Docusign Envelope ID: DBCB7DD9-CF59-44B5-91B6-AE99631720B3

Contract Review Sheet

Public Improvement Agreements **PW-6938-25**

Title: **Construction and Other Site Improvements at Various Radio Communications Sites for the Marion County Radio Project**

Contractor's Name: **Colton Homes, Inc**

Department: **Public Works Department** Contact: **Alicia Jones**

Analyst: **Kathleen George** Phone #: **-4388**

Term - Date From: **Execution** Expires: **July 31, 2026**

Original Contract Amount: **$ 2,087,000.00** Previous Amendments Amount: **$ -**

Current Amendment: **$ -** New Contract Total: **$ 2,087,000.00** Amd% **0%**

Outgoing Funds ☑ Federal Funds ☐ Reinstatement ☐ Retroactive ☐ Amendment greater than 25%

Source Selection Method: **40-0200 Invitation to Bid - Public Improvement** ITB# **PW1707-25**

Description of Services or Grant Award

Construction of Earthwork, Surfacing, Structural, Mechanical, Electrical and Other Site Improvements at Various Radio Communications Sites for the Marion County Radio Project.

Desired BOC Session Date:	**1/7/2026**	Contract should be in DocuSign by:	**12/17/2025**
Agenda Planning Date	**12/25/2025**	Printed packets due in Finance:	**12/23/2025**
Management Update	**12/16/2025**	BOC upload / Board Session email:	**12/24/2025**

BOC Session Presenter(s) **Brian Nicholas** Code: **Y**

REQUIRED APPROVALS

DocuSigned by: A3598E7AEC784F4...	12/29/2025	Signed by: Alicia Jones DA7EBDCC1E7B47D...	12/29/2025
Finance - Contracts	Date	Contract Specialist	Date
Signed by: Steve Elzinga 05FA8DCC8B854C8...	12/29/2025	DocuSigned by: Jan Fritz DC4635412483DE4EC...	12/29/2025
Legal Counsel	Date	Chief Administrative Officer	Date

Docusign Envelope ID: DBCB7DD9-CF59-44B5-91B6-AE99631720B3

MARION COUNTY BOARD OF COMMISSIONERS

Board Session Agenda Review Form

Meeting date: January 7, 2026

Department: Public Works

Title: Radio Sites Improvement Contract with Colton Construction

Management Update/Work Session Date: 12/16/2025 **Audio/Visual aids** ☐

Time Required: 5 minutes **Contact:** Brian Nicholas **Phone:** x7943

Requested Action:

Approve Contract No. PW-6938-25 in the amount of $2,087,000.00 with Colton Construction, Inc. for the construction of site improvements at seven (7) new and existing public safety radio communication sites.

Issue, Description & Background:

Marion County is in the process of constructing the Marion County Radio Project, a new P25-compliant public safety radio communications system for use by first responder agencies and other public service agencies within Marion County. To support the new radio system, Marion County will construct three (3) new radio sites and make improvements to up to eight (8) existing radio sites. The sites to be constructed or improved under this contract are (1) House Mountain, (2) Anderson-Pierce-Wonderly, (3) McCully Mountain, (4) Wipper, (5) METCOM 911, (6) Lower Prospect, and (7) Crooked Finger Road.

Financial Impacts:

This is a budgeted expense in the current fiscal year under CIP 22-308.

Impacts to Department & External Agencies:

The Marion County Sheriff's Office and first responder agencies throughout Marion County will benefit from a stable, unified radio system meeting current public safety radio standards.

List of attachments:

Contract No. PW-6938-25

Presenter:

Brian Nicholas

Department Head Signature:

Brian Nicholas

Digitally signed by Brian Nicholas
Date: 2025.12.22 10:05:53 -08'00'

Docusign Envelope ID: DBCB7DD9-CF59-44B5-91B6-AE99631720B3

CONSTRUCTION CONTRACT PW-6938-25

This Contract is made and entered into by and between Marion County, a political subdivision of the State of Oregon, acting by and through its duly elected and qualified Board of Commissioners, hereinafter called "Agency" and, Colton Homes, Inc. DBA Colton Construction hereinafter called "Contractor" for the Project entitled: Construction and Other Site Improvements at Various Radio Communications Sites for the Marion County Radio Project.

WITNESSETH

Contractor, in consideration of the sum of $2,087,000.00, to be paid to Contractor by Agency in the manner and at the time hereinafter provided, and subject to the terms and conditions provided in the Invitation To Bid and other Contract Documents, all of which are incorporated herein by reference, hereby agrees to perform all Work described and reasonably inferred from the Contract Documents. Contractor shall provide for and furnish all necessary machinery, tools, apparatus, equipment, supplies, materials and labor, and do all things in accordance with the applicable Plans and Specifications, and in accordance with such alterations and modifications of the same as may be made by Agency.

This Agreement shall be binding upon the heirs, executors, administrators, successors and assigns of Contractor.

1. Agency's payments to Contractor under this Contract will be paid in whole or in part using federal funds. By signing this Contract, Contractor certifies neither it nor its employees, contractors, subcontractors or subgrantees who will perform the Project activities are currently employed by an agency or department of the federal government. Contractor shall comply with Exhibit G: *Appendix II To Part 200—Contract Provisions For Non-Federal Entity Contracts Under Federal Awards*.

   In accordance with 2 CFR 200.331, Contractor has been designated:
   - ☐ Subrecipient
   - ☑ Contractor/Vendor
   - ☐ Not applicable – (there are no federal funds tied to the contract)

   Assistance Listing Number (ALN) of federal funds to be paid through this Grant: 21.027.

2. Contract Exhibits. This Contract includes the following exhibits, each of which are incorporated into this Contract and by this reference are made a part hereof as though fully set forth herein:

   Exhibit A – BID SCHEDULE
   Exhibit B – BID CERTIFICATION
   Exhibit C – PERFORMANCE BOND
   Exhibit D – LABOR AND MATERIALS PAYMENT BOND
   Exhibit E – DRUG & ALCOHOL TESTING POLICY CERTIFICATION
   Exhibit F – FIRST-TIER SUBCONTRACTOR DISCLOSURE FORM
   Exhibit G – PROJECT WAGE RATES
   Exhibit H – APPENDIX II TO PART 200 – CONTRACT PROVISIONS FOR NON-FEDERAL ENTITY CONTRACTS UNDER FEDERAL AWARDS
   Exhibit I – SPECIAL PROVISIONS
   Exhibit J – PROJECT SUMMARY LIST (PSL)
   Exhibit K – PLANS AND DRAWINGS
   Exhibit L – GENERAL CONDITIONS FOR CONSTRUCTION FOR MARION COUNTY (v2024)
   Exhibit M – INVITATION TO BID AND INVITATION TO BID ADDENDUM #1 THROUGH #9

   In the event of a conflict between two or more provisions within any of the documents comprising this Contract, the language in the provision with the highest precedence will control. The precedence of each of the documents comprising this Contract is as follows, listed from highest precedence to lowest precedence: (1) this Contract without exhibits, (2) Exhibit I, (3) Exhibit L, (4) Exhibit H, (5) Exhibit G, (6) Exhibit M, (7) Exhibit J, (87) Exhibit K, (9) Exhibit A, (10) Exhibit B, (11) Exhibit C, (12) Exhibit D, (13) Exhibit E, and (14) Exhibit F.

Docusign Envelope ID: DBCB7DD9-CF59-44B5-91B6-AE99631720B3

3. Contractor shall pay all contributions or amounts due the Industrial Accident Fund from such Contractor or Subcontractor incurred in the performance of the Contract.

4. Contractor shall not permit any lien or claim to be filed or prosecuted against Agency, the state, or any subdivision thereof on account of any labor or material furnished.

5. Contractor agrees to pay the Department of Revenue all sums withheld from employees pursuant to ORS 316.167.

6. Contractor shall indemnify, defend, save and hold harmless the Agency and its officers, employees, agents and volunteers, the State of Oregon, Oregon Transportation Commission and its members, Department of Transportation and its officers, employees and agents from and against any and all claims, actions, liabilities, damages, losses, or expenses, including attorneys' fees, arising from a tort, as now or hereafter defined in ORS 30.260, caused, or alleged to be caused, in whole or in part, by the negligent or willful acts or omissions of Contractor or any of the officers, agents, employees or subcontractors of the Contractor ("Claims"). It is the specific intention of the Parties that State shall, in all instances, except for Claims arising solely from the negligent or willful acts or omissions of State, be indemnified by the Contractor and subcontractor from and against any and all Claims.
   Any such indemnification shall also provide that neither Contractor and subcontractor nor any attorney engaged by Contractor and subcontractor shall defend any claim in the name of Marion County or the State of Oregon or any agency of the State of Oregon, nor purport to act as legal representative of the State of Oregon or any of its agencies, without the prior written consent of the Oregon Attorney General. The State of Oregon may, at anytime at its election assume its own defense and settlement in the event that it determines that Contractor is prohibited from defending the State of Oregon, or the Contractor is not adequately defending the State of Oregon's interests, or that an important governmental principle is at issue or that it is in the best interests of the State of Oregon to do so. The State of Oregon reserves all rights to pursue claims it may have against Contractor if the State of Oregon elects to assume its own defense.

7. Money due to Contractor under and by virtue of this Contract may be returned for the use of the Agency; or, in case no money is due, Contractor's surety may be held until such suit or suits, action or actions, claim or claims for injuries or damages as aforesaid shall have been settled and suitable evidence to that effect furnished to the County; except that money due the Contractor will not be withheld when the Contractor produces satisfactory evidence that Contractor is adequately protected by public liability and property damage insurance.

8. THAT in consideration of the faithful performances of all of the obligations, both general and special, herein set out and in consideration of the faithful performance of the Work as set forth in this Contract, the applicable Invitation to Bid, Plans, Specifications, Bid, and all general and detailed specifications and plans which are a part hereof, and in accordance with the directions of the Agency and to its satisfaction, the Agency agrees to pay to the said Contractor the amount earned, as determined from the actual quantities of work performed and the prices and other basis of payment specified, and taking into consideration any amounts that may be deductible under the terms of the Contract, and to make such payments in the manner and at the time provided in the Contract.

9. In the event the Board of Commissioners of the Agency reduces, changes, eliminates, or otherwise modifies the funding for any of the services identified, the Contractor agrees to abide by any such decision, including termination of service.

10. The Agency delegates to the Marion County Engineer the authority and responsibility for issuing approvals, providing notices, receiving notices, issuing directives, authorizing change orders, and avoiding and resolving disputes.

11. This contract may be increased by **twenty (20) percent** over the original contract amount to include additional work for the projects specified in the contract, upon mutual agreement of both parties.

12. Contractor, its assignees and successors in interest agree to comply with the requirements of the Marion County Public Works Department Federally Funded Transportation Program Title VI Plan, herein incorporated by this reference, as follows:

Docusign Envelope ID: DBCB7DD9-CF59-44B5-91B6-AE99631720B3

a. Compliance with Regulations.

The Contractor shall comply with the Regulations relative to nondiscrimination in federally assisted programs of the Department of Transportation (hereinafter DOT), Title 49, Code of Federal Regulations, part 21, as they may be amended from time to time, (hereinafter referred to as the Regulations), which are herein incorporated by reference and made a part of this contract.

b. Nondiscrimination.

The Contractor, with regard to the Work performed during the contract, shall not discriminate on the grounds of race, color, sex, or national origin in the selection and retention of subcontractors, including procurement of materials and leases of equipment. The Contractor shall not participate either directly or indirectly in the discrimination prohibited by Section 21.5 of the Regulations, including employment practices when the contract covers a program set forth in Appendix B of the Regulations.

c. Solicitations for Subcontracts, including Procurement of Materials and Equipment.

In all solicitations either by competitive bidding or negotiations made by the Contractor for work to be performed under a subcontract, including procurement of materials or leases of equipment, each potential subcontractor or supplier shall be notified by the Contractor of the Contractor's obligations under this Contract and the Regulations relative to nondiscrimination on the ground of race, color, sex, or national origin.

d. Information and Reports.

The Contractor shall provide all information and reports required by the Regulations or directives issued pursuant thereto, and shall permit access to its books, records, accounts, other sources of information and its facilities as may be determined by Agency or the Oregon Department of Transportation to be pertinent to ascertain compliance with such Regulations, orders and instructions. Where any information required of a contractor is in the exclusive possession of another who fails or refuses to furnish this information, the Contractor shall so certify to Agency or the Oregon Department of Transportation as appropriate, and shall set forth what efforts it has made to obtain the information.

e. Sanctions for Noncompliance.

In the event of the Contractor's noncompliance with the nondiscrimination provisions of this Contract, Agency and the Oregon Department of Transportation shall impose such contract sanctions as it or the Federal Highway Administration may determine to be appropriate including, but not limited to:

1. Withholding of payments to the contractor under the Contract until the Contractor complies, and/or;
2. Cancellation, termination, or suspension of the Contract, in whole or in part.

13. Incorporation of Provisions.

The Contractor shall include the provisions of paragraphs (1) through (6) in every subcontract, including procurement of materials and leases of equipment, unless exempt by state or federal Regulations or directives issued pursuant thereto. The Contractor shall take such action with respect to any subcontractor or procurement as Marion County may direct as a means of enforcing such provisions including sanctions for noncompliance.

14. Independent Contractor.

Docusign Envelope ID: DBCB7DD9-CF59-44B5-91B6-AE99631720B3

The Contractor is a separate and independently established business, retains sole and absolute discretion over the manner and means of carrying out the Contractor's activities and responsibilities for the purpose of implementing the provisions of this Contract, and maintains the appropriate license/certifications, if required under Oregon Law. Notwithstanding the preceding sentence, Agency reserves the right to determine schedule for the work to be performed and to evaluate the quality of the completed performance. This Contract shall not be construed as creating an agency, partnership, joint venture, employment relationship or any other relationship between the Parties other than that of independent parties. The Contractor is acting as an "independent contractor" and is not an employee of Agency, and accepts full responsibility for taxes or other obligations associated with payment for services under this Contract. As an "independent contractor", Contractor will not receive any benefits normally accruing to Agency employees unless required by applicable law. Furthermore, Contractor is free to contract with other parties for the duration of the Contract.

15. Governing Law and Venue.

Any dispute between the Agency and the Contractor that arises from or relates to this Contract and that is not resolved under the provisions of Section 00199 of the General Conditions shall be brought and conducted solely and exclusively within the Circuit Court of Marion County; provided, however, if a dispute must be brought in a federal forum, then it shall be brought and conducted solely and exclusively within the United States District Court for the District of Oregon. In no event shall this be construed as a waiver by Agency on any form of defense or immunity, whether sovereign immunity, governmental immunity, immunity based on the Eleventh Amendment to the Constitution of the United States or otherwise, from any claim or from the jurisdiction of any court. CONTRACTOR BY EXECUTION OF THE CONTRACT HEREBY CONSENTS TO THE IN PERSONAM JURISDICTION OF THE COURTS REFERENCED IN THIS SECTION.

16. Liquidated Damages

Marion County will sustain damage if the Work required under the Contract is not completed within the specified Contract Time. Also, Interim Completion Dates are specified for each site for certain construction milestones, allowing Marion County's radio vendor to perform work concurrent with the Contractor's construction activities. The actual damage the County will sustain if Contractor fails to meet the specified Contract Time or Interim Completion Dates will be impossible to accurately determine. Therefore, the Contractor agrees to pay to the County, not as a penalty but as liquidated damages, any or all of the following as applicable:

(1) The amount of $1030 for each Calendar Day used in excess of the Contract Time or adjusted Contract Time for all Work under the Contract.

(2) The amount of $120 per site for each Calendar Day used in excess of each Interim Completion Date for the Work associated with that Interim Completion Date.

These liquidated damages are cumulative. Calendar Day amounts are applicable when the Contract Time is expressed on the Calendar Day or fixed date basis.

Docusign Envelope ID: DBCB7DD9-CF59-44B5-91B6-AE99631720B3

IN WITNESS WHEREOF, the parties hereto have subscribed their names and affixed their respective official seals below.

MARION COUNTY SIGNATURE
BOARD OF COMMISSIONERS:

Chair — Date

Commissioner — Date

Commissioner — Date

Authorized Signature: DocuSigned by: Brian Nicholas 8793BA7AGB9B443... — 12/29/2025
Department Director or designee — Date

Authorized Signature: DocuSigned by: Jan Fritz DC16351248DE4EC... — 12/29/2025
Chief Administrative Officer — Date

Reviewed by Signature: Signed by: Steve Elzinga C5FA8DGG00054G0... — 12/29/2025
Marion County Legal Counsel — Date

Reviewed by Signature: DocuSigned by: A3539E7AEG784F4... — 12/29/2025
Marion County Contracts & Procurement — Date

COLTON HOMES, INC. DBA COLTON CONSTRUCTION SIGNATURE

Authorized Signature: _____
Date

Title: _____

Docusign Envelope ID: DBCB7DD9-CF59-44B5-91B6-AE99631720B3

MARION COUNTY PUBLIC WORKS

INVITATION TO BID

FOR

THE CONSTRUCTION OF
EARTHWORK, SURFACING, STRUCTURAL, MECHANICAL, ELECTRICAL AND OTHER SITE IMPROVEMENTS AT VARIOUS RADIO COMMUNICATIONS SITES FOR THE MARION COUNTY RADIO PROJECT

MARION COUNTY, OREGON

Bid Publication Date: October 8, 2025

Bid Opening: October 30, 2025

MARION COUNTY BID #: PW1707-25

OREGONBUYS BID SOLICITATION #: S-C25102-00014407

ONEOFFICE NO. 2026-402
ACCOUNTING PROJECT NO. 105876

MARION COUNTY BOARD OF COMMISSIONERS

Danielle Bethell	Commissioner
Colm Wills	Commissioner
Kevin Cameron	Commissioner

Brian Nicholas, Director of Public Works



Electronic copies of this Invitation To Bid and attachments, if any, can be obtained from the Marion County Procurement Portal at the URL:

https://contracts.co.marion.or.us/gateway/

Docusign Envelope ID: DBCB7DD9-CF59-44B5-91B6-AE99631720B3

TABLE OF CONTENTS

Page

INTRODUCTION 1
BID SCHEDULE 4
BID CERTIFICATION 5
BID BOND 11
PERFORMANCE BOND 12
LABOR AND MATERIALS PAYMENT BOND 14
DRUG & ALCOHOL TESTING POLICY CERTIFICATION 16
FIRST-TIER SUBCONTRACTOR DISCLOSURE FORM INSTRUCTIONS 17
FIRST-TIER SUBCONTRACTOR DISCLOSURE FORM 18
APPENDIX II TO PART 200 – CONTRACT PROVISIONS FOR NON-FEDERAL ENTITY CONTRACTS UNDER FEDERAL AWARDS 19
SAMPLE CONSTRUCTION CONTRACT PW-XXXX-XX 23
PROJECT WAGE RATES 28
SPECIAL PROVISIONS 29
PROJECT SUMMARY LIST ..... **ATTACHMENT A**
PLANS AND DRAWINGS ..... **ATTACHMENT B**

PROJECT VICINITY MAP

ANDERSON-PIERCE-WONDERLY (APW)

T-1 COVER SHEET
V-1 EXISTING CONDITIONS
G-1 GENERAL NOTES
ER-1 GRADING & EROSION CONTROL PLAN
ER-2 GRADING & EROSION CONTROL PLAN DETAILS
C-1 OVERALL SITE PLAN
C-2 ENLARGED SITE PLAN
C-3 ELEVATIONS
C-4 COMPOUND DETAILS
C-5 GENERATOR AND PROPANE TANK DETAILS
C-6 HVAC Details
C-7 EQUIPMENT SHELTER FOUNDATION PLAN
C-8 GENERATOR SHELTER FOUNDATION PLAN
E-1 SITE GROUNDING PLAN & DETAILS
E-2 GROUNDING DETAILS I
E-3 GROUNDING DETAILS II
RF-1.0 RF TOWER APPURTENANCES I
RF-1.1 RF TOWER APPURTENANCES II
RF-1.2 RF TOWER APPURTENANCES III
RF-1.3 RF TOWER APPURTENANCES IV
RF-1.4 RF TOWER APPURTENANCES V
RF-1.5 RF TOWER APPURTENANCES VI
U-1 SOLAR PV ARRAY DETAILS I

Docusign Envelope ID: DBCB7DD9-CF59-44B5-91B6-AE99631720B3

U-2	SOLAR PV ARRAY DETAILS II
U-3	SOLAR PV ARRAY DETAILS III
U-4	SOLAR PV ARRAY DETAILS IV
U-5	SOLAR PV ARRAY DETAILS V
U-6	SOLAR PV ARRAY DETAILS VI
SH-1	EQUIPMENT SHELTER EXTERIOR ELEVATIONS
SH-2	EQUIPMENT SHELTER INTERIOR ELEVATIONS
SH-3	HIGH SNOW ENTRY VESTIBULE
SH-4	ELECTRICAL ONE-LINE DRAWING
SH-5	ELECTRICAL PANEL SCHEDULE
SH-6	GENERATOR SHELTER EXTERIOR ELEVATIONS
SH-7	GENERATOR SHELTER INTERIOR ELEVATIONS

CROOKED FINGER

T-1	COVER SHEET
V-1	EXISTING CONDITIONS
V-2	EXISTING CONDITIONS
G-1	GENERAL NOTES
ER-1	GRADING & EROSION CONTROL PLAN
ER-2	GRADING & EROSION CONTROL PLAN DETAILS
C-1	OVERALL SITE PLAN
C-2	ENLARGED SITE PLAN
C-3	ELEVATIONS
C-4	COMPOUND DETAILS I
C-5	COMPOUND DETAILS II
C-6	GENERATOR AND PROPANE TANK DETAILS
C-7	EQUIPMENT SHELTER FOUNDATION PLAN
E-1	SITE GROUNDING PLAN & DETAILS
E-2	GROUNDING DETAILS I
E-3	GROUNDING DETAILS II
RF-1.0	RF TOWER APPURTENANCES I
RF-1.1	RF TOWER APPURTENANCES II
RF-1.2	RF TOWER APPURTENANCES III
RF-1.3	RF TOWER APPURTENANCES IV
RF-1.4	RF TOWER APPURTENANCES V
SH-1	EQUIPMENT SHELTER EXTERIOR ELEVATIONS
SH-2	EQUIPMENT SHELTER INTERIOR ELEVATIONS
SH-3	ELECTRICAL ONE-LINE DRAWING
SH-4	ELECTRICAL PANEL SCHEDULE

HOUSE MOUNTAIN

T-1	COVER SHEET
V-1	EXISTING CONDITIONS
EX-1	DEMOLITION PLAN
G-1	GENERAL NOTES
ER-1	GRADING & EROSION CONTROL PLAN
ER-2	GRADING & EROSION CONTROL PLAN DETAILS
C-1	OVERALL SITE PLAN
C-2	ENLARGED SITE PLAN
C-3	ELEVATIONS
C-4	COMPOUND DETAILS
C-5	GENERATOR AND PROPANE TANK DETAILS
C-6	HVAC DETAILS
C-7	EQUIPMENT SHELTER FOUNDATION PLAN

Docusign Envelope ID: DBCB7DD9-CF59-44B5-91B6-AE99631720B3

C-8	GENERATOR SHELTER FOUNDATION PLAN
E-1	SITE GROUNDING PLAN & DETAILS
E-2	GROUNDING DETAILS I
E-3	GROUNDING DETAILS II
RF-1.0	RF TOWER APPURTENANCES I
RF-1.1	RF TOWER APPURTENANCES II
RF-1.2	RF TOWER APPURTENANCES III
RF-1.3	RF TOWER APPURTENANCES IV
RF-1.4	RF TOWER APPURTENANCES V
RF-1.5	RF TOWER APPURTENANCES VI
U-1	SOLAR PV ARRAY DETAILS I
U-2	SOLAR PV ARRAY DETAILS II
U-3	SOLAR PV ARRAY DETAILS III
U-4	SOLAR PV ARRAY DETAILS IV
U-5	SOLAR PV ARRAY DETAILS V
SH-1	EQUIPMENT SHELTER EXTERIOR ELEVATIONS
SH-2	EQUIPMENT SHELTER INTERIOR ELEVATIONS
SH-3	HIGH SNOW ENTRY VESTIBULE
SH-4	ELECTRICAL ONE-LINE DRAWING
SH-5	ELECTRICAL PANEL SCHEDULE
SH-6	GENERATOR SHELTER EXTERIOR ELEVATIONS
SH-7	GENERATOR SHELTER INTERIOR ELEVATIONS

LOWER PROSPECT

T-1	COVER SHEET
V-1	EXISTING CONDITIONS
V-2	EXISTING CONDITIONS
G-1	GENERAL NOTES
ER-1	GRADING & EROSION CONTROL PLAN
ER-2	GRADING & EROSION CONTROL PLAN DETAILS
C-1	OVERALL SITE PLAN
C-2	ENLARGED SITE PLAN
C-3	ELEVATIONS
C-4	SHELTER UPGRADE PLAN
C-5	SHELTER SECTIONS
C-6	COMPOUND DETAILS
C-7	GENERATOR AND PROPANE TANK DETAILS
C-8	HVAC DETAILS
E-1	SITE GROUNDING PLAN & DETAILS
E-2	GROUNDING DETAILS I
E-3	GROUNDING DETAILS II
RF-1.0	RF TOWER APPURTENANCES I
RF-1.1	RF TOWER APPURTENANCES II
RF-1.2	RF TOWER APPURTENANCES III
RF-1.3	RF TOWER APPURTENANCES IV
RF-1.4	RF TOWER APPURTENANCES V

MCCULLY MOUNTAIN

T-1	COVER SHEET
V-1	EXISTING CONDITIONS
V-2	EXISTING CONDITIONS
G-1	GENERAL NOTES
ER-1	GRADING & EROSION CONTROL PLAN
ER-2	GRADING & EROSION CONTROL PLAN DETAILS

Docusign Envelope ID: DBCB7DD9-CF59-44B5-91B6-AE99631720B3

C-1 OVERALL SITE PLAN
C-2 ENLARGED SITE PLAN
C-3 ELEVATIONS
C-4 COMPOUND DETAILS I
C-5 COMPOUND DETAILS II
C-6 GENERATOR AND PROPANE TANK DETAILS
C-7 HVAC DETAILS
C-8 EQUIPMENT SHELTER FOUNDATION PLAN
E-1 SITE GROUNDING PLAN & DETAILS
E-2 GROUNDING DETAILS I
E-3 GROUNDING DETAILS II
RF-1.0 RF TOWER APPURTENANCES I
RF-1.1 RF TOWER APPURTENANCES II
RF-1.2 RF TOWER APPURTENANCES III
RF-1.3 RF TOWER APPURTENANCES IV
RF-1.4 RF TOWER APPURTENANCES V
SH-1 EQUIPMENT SHELTER EXTERIOR ELEVATIONS
SH-2 EQUIPMENT SHELTER INTERIOR ELEVATIONS
SH-3 ELECTRICAL ONE-LINE DRAWING
SH-4 ELECTRICAL PANEL SCHEDULE

~~METCOM 911~~ (RESERVED)

~~T-1 COVER SHEET~~
~~EX-1 EXISTING CONDITIONS~~
~~G-1 GENERAL NOTES~~
~~ER-1 GRADING & EROSION CONTROL PLAN~~
~~ER-2 GRADING & EROSION CONTROL PLAN DETAILS~~
~~C-1 OVERALL SITE PLAN~~
~~C-2 ENLARGED SITE PLAN~~
~~C-3 ELEVATIONS~~
~~C-4 COMPOUND DETAILS~~
~~C-5 HVAC DETAILS~~
~~C-6 EQUIPMENT SHELTER FOUNDATION PLAN~~
~~E-1 SITE GROUNDING PLAN & DETAILS~~
~~E-2 GROUNDING DETAILS I~~
~~E-3 GROUNDING DETAILS II~~
~~RF-1.0 RF TOWER APPURTENANCES I~~
~~RF-1.1 RF TOWER APPURTENANCES II~~
~~SH-1 EQUIPMENT SHELTER EXTERIOR ELEVATIONS~~
~~SH-2 EQUIPMENT SHELTER INTERIOR ELEVATIONS~~
~~SH-3 ELECTRICAL ONE-LINE DRAWING~~
~~SH-4 ELECTRICAL PANEL SCHEDULE~~

WIPPER

T-1 COVER SHEET
V-1 EXISTING CONDITIONS
V-2 EXISTING CONDITIONS
G-1 GENERAL NOTES
ER-1 GRADING & EROSION CONTROL PLAN
ER-2 GRADING & EROSION CONTROL DETAILS
C-1 OVERALL SITE PLAN
C-2 ENLARGED SITE PLAN
C-3 ELEVATIONS
C-4 INTERIOR SHELTER PLANS

Docusign Envelope ID: DBCB7DD9-CF59-44B5-91B6-AE99631720B3

C-5 COMPOUND DETAILS I
C-6 COMPOUND DETAILS II
C-7 GENERATOR AND PROPANE TANK DETAILS
E-1 SITE GROUNDING PLAN & DETAILS
E-2 GROUNDING DETAILS I
E-3 GROUNDING DETAILS II
RF-1.0 RF TOWER APPURTENANCES I
RF-1.1 RF TOWER APPURTENANCES II
RF-1.2 RF TOWER APPURTENANCES III
RF-1.3 RF TOWER APPURTENANCES IV

SUPPORTING DOCUMENTS ..... ATTACHMENT C

ANDERSON-PIERCE-WONDERLY (APW)

1. SABRE 180 FT MODEL S3TJ-HD2 TOWER ERECTION DRAWINGS (NORTH FORK)
2. REPORT OF GEOTECHNICAL INVESTIGATION & SITE SPECIFIC SEISMIC HAZARDS STUDY, MARION COUNTY APW TOWER

CROOKED FINGER

1. SABRE 180 FT MODEL S3TJ-HD2 TOWER ERECTION DRAWINGS (CROOKED FINGER)
2. GEOTECHNICAL ENGINEERING EVALUATION (CROOKED FINGER)
3. SOIL RESISTIVITY SURVEY (CROOKED FINGER)

HOUSE MOUNTAIN

1. SABRE 180 FT MODEL S3TJ-HD2 TOWER ERECTION DRAWINGS (HOUSE MOUNTAIN)
2. GEOTECHNICAL ENGINEERING EVALUATION (HOUSE MOUNTAIN)
3. SOIL RESISTIVITY SURVEY (HOUSE MOUNTAIN)

LOWER PROSPECT

1. SABRE 180 FT MODEL S3TJ-HD2 TOWER ERECTION DRAWINGS (LOWER PROSPECT)
2. GEOTECHNICAL ENGINEERING EVALUATION (LOWER PROSPECT)
3. SOIL RESISTIVITY SURVEY (LOWER PROSPECT)

MCCULLY MOUNTAIN

1. SABRE 180 FT MODEL S3TJ-HD2 TOWER ERECTION DRAWINGS (MCCULLY MOUNTAIN)
2. GEOTECHNICAL ENGINEERING EVALUATION (MCCULLY MOUNTAIN)
3. SOIL RESISTIVITY SURVEY (MCCULLY MOUNTAIN)

WIPPER

1. SABRE 180 FT MODEL S3TJ-HD2 TOWER ERECTION DRAWINGS (WIPPER)
2. GEOTECHNICAL ENGINEERING EVALUATION (WIPPER)
3. SOIL RESISTIVITY SURVEY (WIPPER)

CUMMINS

1. SPECIFICATIONS – C36N6 36kW 60Hz OUTDOOR PROPANE GENSET
2. SPECIFICATIONS – C36N6 36kW 60Hz INDOOR PROPANE GENSET
3. SPECIFICATIONS – OTECB TRANSFER SWITCH-ELECTRONIC CONTROL: 150A/225A/260A
4. SPECIFICATIONS – KOHLER 36CCL 3-PHASE OUTDOOR PROPANE GENERATOR
5. SPECIFICATIONS – KOHLER KSS-AFTC-0150S TRANSFER SWITCH

Docusign Envelope ID: DBCB7DD9-CF59-44B5-91B6-AE99631720B3

INTRODUCTION

1.1 Description of Work

Construction includes grading, excavation and backfilling; aggregate surfacing; fencing; structural concrete, miscellaneous structural and architectural improvements, erection of steel lattice radio communication towers, and installation of prefabricated structures; roofing; doors and interior finishes; climate control systems; site electrical, photovoltaic power systems, propane generators and fuel storage, and grounding systems; interior electrical, and miscellaneous related Work.

1.2 Pre-Bid Meetings

Optional pre-bid site visits will be held on Tuesday, October 14, 2025, and Wednesday, October 15, 2025. To participate in these site visits, interested participants shall meet at Marion County Public Works, 5155 Silverton Road NE, Building 1, Salem, Oregon, 97305 at 7:45 am each day. Site visits shall commence at 8:00 am. Site visits will include the APW, House Mountain, Lower Prospect, METCOM 911 and Wipper radio sites. The Crooked Finger and McCully Mountain radio sites are greenfield sites that are readily accessible to the general public and may not be included in the site visits. Participants are responsible to provide their own transportation to and between sites.

Prospective bidders are not required to attend the pre-bid site visits to be eligible to submit a bid. Pre-bid site visits are provided for the convenience and awareness of prospective bidders. Any statement made at the pre-bid site visits will not change the Plans, Specifications, other Contract Documents or any other contract requirement unless a pre-bid addendum is issued by Marion County.

1.3 Requests for Clarification or Changes

As stated in section 00120.15 of the General Conditions for Marion County, any clarification of Plans and Specifications needed by the Bidder shall be submitted to Marion County at least seven (7) calendar days prior to the date of Bid Closing. Failure to request clarification or changes in a timely manner shall be deemed acceptance of all terms and conditions of the advertised Procurement.

1.4 Time, Place and Methods of Receiving Bids

Submit electronic bids as specified in Special Provisions 00120.45 by 2:00 p.m. on October 30, 2025. Bids will be considered time-stamped and received by the Agency at the time they are uploaded to the Procurement Collaboration Portal at:

https://contracts-marioncountygcc.msappproxy.net/gateway/.

It is the Bidder's responsibility to ensure that bids are received by the Agency prior to the stated submission deadline at the specified portal, email or physical address. Bids, withdrawals or modifications submitted after the time set for receiving bids will not be opened or considered.

PUBLIC BID OPENING

Electronic Bids will be publicly opened and read by the Single Point of Contact or designee immediately following the Closing date/time specified in section 1.4 of the ITB, at Marion County Public Works, Building 1, 5155 Silverton Rd NE, Salem, Oregon. Interested parties may attend the bid opening in person or virtually via Microsoft Teams. To attend virtually, join the following Teams meeting at the Closing date/time specified in Section 1.4 of the ITB:

ITB – Construction and Other Site Improvements at Various Radio Communications Sites

Bid results will be posted by 10:00 a.m. the next business day on the OregonBuys website at https://oregonbuys.gov/bso/ under the solicitation number listed above.

Docusign Envelope ID: DBCB7DD9-CF59-44B5-91B6-AE99631720B3

1.5 Revision or Withdrawal of Bids

Refer to section 00120.60 of the General Conditions for Construction for Marion County.

1.6 Time for Completion of Work

Complete all Work to be done no later than July 31, 2026. (Also see Special Provisions 180.50(h)). Recording of the elapse of Calendar Days, if specified, will begin on the day the Contractor begins On-Site Work as defined in 00110.20.

1.7 Funding

This project is federally funded. The awarded proposer must comply with the federal provisions as stated within Appendix II to Part 200 – Contract Provisions for Non-Federal Entity Contracts under Federal Awards, enclosed.

1.8 Project Information

Information pertaining to this Project may be obtained from the following Single Point of Contact at Marion County Public Works, 5155 Silverton Road NE, Salem, Oregon 97305-3802:

Alicia Jones	503-373-4320	PWcontracts@co.marion.or.us

1.9 Bid Guarantee

No bid shall be considered unless it is accompanied by a surety bond, cashier's check, certified check, or irrevocable letter of credit by an insured institution, as defined in ORS 706.008, of the bidder in the amount of ten percent (10%) of the bid per 00120.40(e).

The county shall return the bid security to all bidders upon the execution of the contract. The county shall retain bid security if a bidder who is awarded a contract fails to promptly and properly execute the contract.

1.10 Applicable Specifications

The General Conditions applicable to the Work on this Project are the General Conditions for Construction for Marion County (v2024), Part 00100, available for download on the Marion County website at: https://www.co.marion.or.us/PW/Engineering/Pages/default.aspx.

The Special Provisions applicable to the Work on this Project are enclosed in this Invitation To Bid (ITB). The Special Provisions shall be understood to supersede the General Conditions by modification and/or supplement. All number references in the Special Provisions shall be understood to refer to the section or subsection of the General Conditions bearing like numbers.

1.11 Prevailing Wage Rate Requirements

This Project is subject to Oregon prevailing wage rate law (BOLI), federal Davis-Bacon prevailing wage rates and any amendments in effect at the time of solicitation. The existing state and federal prevailing wage rates last published at least 10 Calendar Days prior to the Bid Closing apply to this Project, unless modified by Addendum.

1.12 Mandatory Submission Forms

The following forms must be completed, signed and returned with the Bidder's submission package as **one pdf file:**

- Bid Schedule
- Bid Certification
- Bid Bond (or other Bid Guarantee as allowed in 00120.40(e))
- Drug and Alcohol Testing Policy Certification

Docusign Envelope ID: DBCB7DD9-CF59-44B5-91B6-AE99631720B3

NOTE: All mandatory submission forms must be combined and submitted as one pdf file.

The following form must be completed, signed and returned within two (2) hours of the Bid Closing:

- First-Tier Subcontractor Disclosure Form

The Agency may consider any Bid that does not include the mandatory submission forms identified in this section, filled out completely and appropriately endorsed, to be non-responsive. The Agency reserves the right to waive minor informalities and irregularities in determining the responsiveness of individual Bids. Non-responsive Bids shall not be considered for award.

1.13 Bid Evaluation

The Agency will perform an analysis of the bids to determine if any significantly unbalanced items are to the detriment of the Agency per Section 00120.70 of the General Conditions. The Agency reserves the right to reject any such bid that is mathematically and materially unbalanced. A materially unbalanced bid is when the Agency determines that an award to the Bidder submitting a mathematically unbalanced bid likely will not result in the lowest ultimate cost to the Agency.

1.14 Time Limit of Unsettled Disputes

No action, suit or other legal proceedings shall be maintained by any party thereto against another party hereto upon any claim or cause of action arising out of the Contract or breach thereof or anything done in connection therewith unless commenced within one (1) year of the Final Acceptance of Work under this Contract. All claims or causes of action in any way resulting from this Contract shall be deemed barred unless action or suit thereon shall have been commenced within such time.

1.15 Contract Expiration Date

The Contract resulting from this solicitation will expire on July 31, 2026.

Docusign Envelope ID: DBCB7DD9-CF59-44B5-91B6-AE99631720B3

ADDENDUM #1
TO THE
INVITATION TO BID
PW1707-25 - ITB - CONSTRUCTION AND OTHER SITE IMPROVEMENTS AT VARIOUS RADIO COMMUNICATIONS SITES FOR THE MARION COUNTY RADIO PROJECT
ISSUED ON 10/8/2025 8:00:00 AM

The following information in this addendum, hereby becomes part of the Invitation To Bid. It is essential that all prospective Offerors note the content of this Addendum.

A. DATE EXTENSION:

1. Cover Page:

a. Bid Opening: ~~October 30, 2025~~ **November 6, 2025**.

2. Section 1.4 Time, Place and Methods of Receiving Bids:

a. Submit electronic bids as specified in Special Provisions 00120.45 by 2:00 p.m. on ~~October 30, 2025~~ **November 6, 2025**.

B. TABLE OF CONTENTS, PLANS AND DRAWINGS.....ATTACHMENT B

1. ITB – Page iv:

Remove the following: U-5 SOLAR PV ARRAY DETAILS V

HOUSE MOUNTAIN
T-1 COVER SHEET
V-1 EXISTING CONDITIONS
EX-1 DEMOLITION PLAN
G-1 GENERAL NOTES
ER-1 GRADING & EROSION CONTROL PLAN
ER-2 GRADING & EROSION CONTROL PLAN DETAILS
C-1 OVERALL SITE PLAN
C-2 ENLARGED SITE PLAN
C-3 ELEVATIONS
C-4 COMPOUND DETAILS
C-5 GENERATOR AND PROPANE TANK DETAILS
C-6 HVAC DETAILS
C-7 EQUIPMENT SHELTER FOUNDATION PLAN

Docusign Envelope ID: DBCB7DD9-CF59-44B5-91B6-AE99631720B3

C-8 GENERATOR SHELTER FOUNDATION PLAN
E-1 SITE GROUNDING PLAN & DETAILS
E-2 GROUNDING DETAILS I
E-3 GROUNDING DETAILS II
RF-1.0 RF TOWER APPURTENANCES I
RF-1.1 RF TOWER APPURTENANCES II
RF-1.2 RF TOWER APPURTENANCES III
RF-1.3 RF TOWER APPURTENANCES IV
RF-1.4 RF TOWER APPURTENANCES V
RF-1.5 RF TOWER APPURTENANCES VI
U-1 SOLAR PV ARRAY DETAILS I
U-2 SOLAR PV ARRAY DETAILS II
U-3 SOLAR PV ARRAY DETAILS III
U-4 SOLAR PV ARRAY DETAILS IV
~~U-5 SOLAR PV ARRAY DETAILS V~~
SH-1 EQUIPMENT SHELTER EXTERIOR ELEVATIONS
SH-2 EQUIPMENT SHELTER INTERIOR ELEVATIONS
SH-3 HIGH SNOW ENTRY VESTIBULE
SH-4 ELECTRICAL ONE-LINE DRAWING
SH-5 ELECTRICAL PANEL SCHEDULE
SH-6 GENERATOR SHELTER EXTERIOR ELEVATIONS
SH-7 GENERATOR SHELTER INTERIOR ELEVATIONS

2. **Replace House Mountain heading and drawing list shown on Page iii with the following Final Construction Plans:**

   a. **Attachment B - Final Construction Plans - House Mountain - REVISION_10-15-2025**

C. TABLE OF CONTENTS, PLANS AND DRAWINGS.....ATTACHMENT B

1. **Replace the METCOM 911 (RESERVED) heading and drawing list shown on Page v with the following:**

METCOM 911

T-1 COVER SHEET
EX-1 EXISTING CONDITIONS
G-1 GENERAL NOTES
ER-1 GRADING & EROSION CONTROL PLAN
ER-2 GRADING & EROSION CONTROL PLAN DETAILS
C-1 OVERALL SITE PLAN
C-2 ENLARGED SITE PLAN
C-3 ELEVATIONS
C-4 COMPOUND DETAILS
C-5 HVAC DETAILS
C-6 EQUIPMENT SHELTER FOUNDATION PLAN
E-1 SITE GROUNDING PLAN & DETAILS
E-2 GROUNDING DETAILS I

Docusign Envelope ID: DBCB7DD9-CF59-44B5-91B6-AE99631720B3

E-3 GROUNDING DETAILS II
RF-1.0 RF TOWER APPURTENANCES I
RF-1.1 RF TOWER APPURTENANCES II
SH-1 EQUIPMENT SHELTER EXTERIOR ELEVATIONS
SH-2 EQUIPMENT SHELTER INTERIOR ELEVATIONS
SH-3 ELECTRICAL ONE-LINE DRAWING
SH-4 ELECTRICAL PANEL SCHEDULE

D. Question and Answers:

1. **Each plan set has the following note "TOWER FOUNDATION; SEE SABRE TOWER DRAWINGS FOR STRUCTURAL INFORMATION"**

   I cannot locate the drawing that is mentioned or details for the tower foundation in any of the plan sets. Please clarify.

   The note "TOWER FOUNDATION; SEE SABRE TOWER DRAWINGS FOR STRUCTURAL INFORMATION" refers to the six (6) Supporting Documents listed, below:

   1. Attachment C - Supporting Documents - Anderson-Pierce-Wonderly (APW) (pages 1-86)
   2. Attachment C - Supporting Documents - Crooked Finger (pages 1-86)
   3. Attachment C - Supporting Documents - House Mountain (Available by 10/20)
   4. Attachment C - Supporting Documents - Lower Prospect (pages 1-82)
   5. Attachment C - Supporting Documents - McCully Mountain (pages 1-86)
   6. Attachment C - Supporting Documents - Wipper (pages 1-86)

   Prospective bidders can download these documents from Marion County's procurement portal. The Contractor will be required to construct the concrete foundation for each tower, including but not limited to excavation, including rock removal where required; subgrade preparation; forming; supply and installation of reinforcing steel, embedded anchors and, where required, ground anchors; supply, placement, consolidation and finishing of structural concrete; backfilling, and all related work necessary to construct the tower foundations. Marion County will issue an addendum to the ITB adding these documents to the Contract Exhibits listed in Section 2 of the '**SAMPLE CONSTRUCTION CONTRACT PW-XXXX-XX**'. Note, further, that the erection drawings for the House Mountain site are currently in production and will be posted to the Marion County procurement portal as soon as we receive them from Sabre.

2. **Sheet EX-1 House Mountain Plans call out for a generator to be removed. is this to be salvaged for re-use or removed in its entirety?**

   The Contractor shall remove and dispose of the existing generator. It will not be reincorporated into the Project.

3. **The special provisions mention "installation of tower-mounted radio equipment by others" and "installation of radio and DC power equipment by others" please confirm**

Docusign Envelope ID: DBCB7DD9-CF59-44B5-91B6-AE99631720B3

the general contractor is not expected to supply/install any equipment on the new towers. please clarify the scope of the electrical / low voltage

Regarding **"installation of tower-mounted radio equipment by others,"** the Contractor is responsible for assembly and erection of the government-furnished steel lattice towers as shown in the steel tower erection drawings (see Supporting Documents for each Project location), including the tower, leg caps, step bolts, safety climb hardware, waveguide ladder, bolts and hardware, and grounding systems. The installation of radio equipment, waveguide, electrical wiring, sidearms, pipe mount kits, tiebacks and ice shields on the tower is excluded from the Contractor's scope of work and will be performed by a separate contractor after tower erection is complete.

Regarding **"installation of radio and DC power equipment by others,"** the Contractor is responsible for setting and anchoring the government-furnished prefabricated radio equipment shelters, installation of HVAC systems, installation of electrical power systems to power the shelter (certain photovoltaic power system components, electrical generators and commercial power hookup), installation of grounding systems and electrical hookup of the shelter, in accordance with the Plans and Drawings. The installation of radio equipment, equipment racks and direct-current (DC) backup power systems inside the equipment shelters is excluded from the Contractor's scope of work and will be performed by Marion County's radio vendor after installation of the radio equipment shelter is complete.

Regarding photovoltaic power systems, the Contractor is responsible to supply and install all photovoltaic support structures and photovoltaic panels as shown in the Plans and Drawings (U Drawings). Supply and installation a photovoltaic cabling and inverts is excluded from the Contractor's scope of work and will be performed by others.

4. **Are installation instruction available for the equipment & generator buildings? Do these need to be assembled or do they come pre-assembled?**

Except as noted in this response, the government-furnished prefabricated radio equipment and generator shelters will be delivered by Shelter One fully assembled and ready to be set and anchored as shown in the Plans and Drawings. The Contractor shall field-install the HVAC systems for each shelter as preinstallation of these systems is not provided by Shelter One. Refer to the Project Summary List for additional information regarding delivery and staging of government-furnished prefabricated shelters.

Provisions have been made for Marion County to receive and store the prefabricated shelters at a county-owned yard located in Aumsville, Oregon (the "Staging Area"). The Contractor is responsible for reloading and transporting the prefabricated shelters from the Staging Area to the project sites. The Contractor may elect to coordinate delivery by Shelter One directly to each project site to save the time and effort associated with reloading and trucking shelters from the Staging Area to the project sites. If the Contractor chooses to do this, the Contractor shall be solely responsible for all costs, risks and coordinating effort associated with the planning and execution of such alternative delivery plans, including but not limited to any

Docusign Envelope ID: DBCB7DD9-CF59-44B5-91B6-AE99631720B3

storage fees, added shipping or delivery fees, unloading and transport costs, and all other related costs.

5. **Is the contractor responsible for hauling owner provided material from storage locations to job site?**

   Yes, the Contractor is responsible for loading, transporting and unloading government-furnished materials from the Staging Areas identified in the Project Summary List to each project site. Marion County believes the opportunity exists for the Contractor to make arrangements with certain suppliers to have certain government-furnished equipment delivered directly to the project sites to save the time and effort associated with the loading and transport of materials from the Staging Areas to the project sites. This includes the Sabre steel lattice towers, the Shelter One prefabricated shelters and the Cummins generators. Refer to the Project Summary List for additional information.

6. **Will each site be awarded separately, or is this an all-inclusive bid covering all sites?**

   The construction of all seven (7) sites will be awarded to a single contractor under a single construction contract.

7. **Has all zoning and permitting been completed for all projects?**

   Land use approvals and Structural building permit acquisition are the responsibility of Marion County and are currently in process. Government-furnished Shelter One prefabricated shelters will be permitted through the Oregon Building Codes Division Prefabricated Structures Program and will arrive bearing the State insignia “Gold Seal” approval. Proposers are to assume that these permits will be provided by Marion County without delay to the Contractor’s construction schedule. The Contractor will be responsible to obtain Electrical and Mechanical (HVAC and Propane Gas Piping) building permits and to pay Electrical and Mechanical building permit fees.

8. **Has electrical permits/designs been completed? and if so can you provide UCR.**

   No, the acquisition of Electrical building permits will be the responsibility of the Contractor. The government-furnished Shelter One prefabricated shelters will include all electrical components pre-installed, including disconnects for the field-installed HVAC systems, as shown in the Plans and Drawings (SH Sheets) and will be inspected under the Oregon Building Codes Division Prefabricated Structures Program.

9. **Is the backhaul/fiber paths going to be included in this project? and if so can you provide UCR.**

   Data backhaul for the new radio system will consist of a new, tower-mounted microwave communications network. The supply and installation of the data backhaul system is excluded from the scope of this contract and will be provided by Marion County radio vendor.

10. **Could you provide a more detailed SOW for each site?**

Docusign Envelope ID: DBCB7DD9-CF59-44B5-91B6-AE99631720B3

The Contractor is responsible for the following construction activities at all sites where indicated in the Plans and Drawings, Special Provisions and Standard Specifications:

a. Clearing, grubbing, excavation, backfill and grading associated with the Work,
b. Construction of steel lattice tower foundations, erection of government-furnished steel lattice towers and installation of all associated equipment and grounding systems supplied by the tower manufacturer,
c. Construction of prefabricated radio equipment and generator shelter foundations, installation and anchorage of government-furnished prefabricated shelters, and installation of complete HVAC systems,
d. Construction of electrical generator foundations, and installation and anchorage of government-furnished generators,
e. Construction of complete liquid propane fuel storage systems, including tank foundations, site piping and bollards,
f. Construction of photovoltaic arrays and support structures,
g. Installation of complete site electrical systems, including trenching, conduits, power up of electrical panels in prefabricated shelters, and procurement of all necessary electrical permits,
h. Installation of fencing, gates and signs,
i. Construction of complete site grounding systems,
j. Gravel surfacing and the construction of new access roads,
k. Removal and disposal of existing steel towers designated for removal (House Mountain, Lower Prospect and Wipper),
l. Installation, maintenance and removal of erosion control measures,
m. Restoration of improved ground surfaces such as lawns, landscaped areas and pavements impacted by Contractor's activities,
n. On-site disposal of clean soil and rock spoils and off-site disposal of all construction debris,
o. Coordination of generator start-up and commissioning by Marion County's generator vendors,
p. Coordination of quality control field testing by Marion County's QC testing contractor,
q. Building permit final inspection reports, as-built drawings and O&M manuals for Contractor-supplied systems,
r. Installation and removal of any temporary commercial power services needed for Contractor's construction activities,
s. Final Inspections and Compliance Reports (refer to Special Provisions Section 00150),
t. General post-construction site cleanup, and
u. All other Work identified in the Plans and Drawings, Special Provisions and Standard Specifications.

Note: House Mountain, Lower Prospect, METCOM 911 and Wipper are existing radio sites that must remain in operation throughout construction. Contractor must accommodate existing radio operations throughout construction, including allowing reasonable time for Marion County, its radio system vendors and colocation partners to relocate existing radio equipment from existing towers and equipment shelters to the new towers and equipment

Docusign Envelope ID: DBCB7DD9-CF59-44B5-91B6-AE99631720B3

shelters installed by the Contractor before the removal of any existing site improvements that would impact existing radio site operations.

The Contractor is not responsible for the following:

a. Demolition of the existing House Mountain tower foundation (this foundation will be abandoned in place) and demolition of the existing Lower Prospect and Wipper tower foundations below the removal extents shown on the Plans and Drawings,
b. Maintenance of existing access roads during and after construction (such maintenance shall be performed by Marion County Public Works),
c. Supply and installation of radio communications equipment and data backhaul systems on radio towers and within equipment shelters, including equipment racks and direct-current (DC) power systems (these systems will be supplied and installed complete by Marion County's radio vendor),
d. Supply and installation of photovoltaic cabling and inverters,
e. On-site quality control testing of Portland cement concrete and soil and aggregate compaction (this testing will be performed by a QC testing firm under contract with Marion County), and
f. Procurement of Structural building permits.

11. Are we to assume that Liquidated damages will start to incur after the contract date of July 31,2026 if incomplete regardless of delays in equipment inclement weather Etc.

Refer to Specification Section 00180. Interim completion dates are specified for each site for certain construction milestones, allowing Marion County's radio vendor to perform work concurrent with the Contractor's construction activities. Liquidated damages of $120 per day per site apply if the Contractor fails to achieve the specified interim project milestones. These liquidated damages are cumulative. Liquidated damages of $1030 per day apply if the Contractor fails to complete all contract work by the specified contract completion date. Potential time extensions for such things as unusual weather delays, unforeseen site conditions and Acts of God will be administered in accordance with the Special Provisions.

12. Are there any environmental reports on these project?

All new towers have been evaluated for environmental concerns as specified by the Federal Communications Commission (FCC) in 47 C.F.R. § 1.1307 NEPA FCC Checklist. It is concluded that the Project is not likely to result in any adverse effects to the categories reviewed.

13. Could you please provide the weight of the shelters for each site?

Answer will be posted in Addendum 2.

14. Do we need to haul wood debris and spoils off-site? Please clarify for each site.

Clean native soil and rock spoils may be disposed of onsite in a location and manner approved by the property owner. All other demolition and construction debris, including grubbings and woody debris, must be disposed of off-site.

Docusign Envelope ID: DBCB7DD9-CF59-44B5-91B6-AE99631720B3

15. **Should we include road improvements in the bid? Please clarify for each site.**

The Contractor is responsible for the construction of new access roads and aggregate surfacing where shown in the Plans and Drawings. The Contractor is not responsible to maintain existing access roads during or after construction. Marion Count will maintain existing access roads and is aware that the access road to the APW site requires additional aggregate surfacing to maintain all-weather access for construction.

16. **Regarding sheet C-4 for locations Crooked Finger Row, McCulley Mountain and Wipper.**

Should we be going off the fencing notes or the typical fence elevation for the post sizes?

Utilize fencing post chart labeled “8' HIGH GATE/FENCE”.

Will Brown privacy slats be installed for all new chain link?

No privacy slats.

Note 21 on general fence notes states the installation of specified concertina 24” diameter barb tape coils unless otherwise noted. Will there be concertina barb tape coils installed to all new fencing?

When matching existing security fencing utilize similar top strands (barbed wire if applicable) and on new compounds utilize concertina as specified in the Plans and Drawings.

Note 21 on general fence notes states that the concertina barb tape coils will be installed onto (6) barb wire arms. Standard barb wire is three strands, 12” above the top rail which is shown in the typical fence elevation drawing. Can we get confirmation on whether it will be six strands or three strands?

Barbed wire installation to be 12" arm with three (3) strands.

Will the top rail be 1-7/8” O.D. or 1-5/8” O.D.?

Gate frame to be -1-7/8" OD, top and -1-5/8" OD, SCH. 40 (50 KSI) ASTM

Docusign Envelope ID: DBCB7DD9-CF59-44B5-91B6-AE99631720B3

ADDENDUM #2
TO THE
INVITATION TO BID
PW1707-25 - ITB - CONSTRUCTION AND OTHER SITE IMPROVEMENTS AT VARIOUS RADIO COMMUNICATIONS SITES FOR THE MARION COUNTY RADIO PROJECT
ISSUED ON 10/8/2025 8:00:00 AM

The following information in this addendum, hereby become part of the Invitation To Bid. It is essential that all prospective Offerors note the content of this Addendum.

A. Introduction:

1. Section 1.12 – Mandatory Submission Forms

a. Replace ~~Bid Schedule~~ with Fillable Bid Schedule PW1707-25 (VERSION 2).

B. Question and Answers:

1. Could you please provide the weight of the shelters for each site?

The approximate weights of the Shelter One prefabricated shelters are as follows:

12’ x 16’ Equipment Shelter = 13,000 lbs.
10’ x 12’ Equipment Shelter = 9750 lbs.
6’ x 6’ Snow Vestibule = 2,800 lbs.
Generator Shelter = 8,500 lbs.

Docusign Envelope ID: DBCB7DD9-CF59-44B5-91B6-AE99631720B3

BID SCHEDULE - VERSION 2

Marion County Public Works
EARTHWORK, SURFACING, STRUCTURAL, MECHANICAL, ELECTRICAL AND OTHER SITE IMPROVEMENTS AT VARIOUS RADIO COMMUNICATIONS SITES FOR THE MARION COUNTY RADIO PROJECT
Marion County Bid Solicitation #: PW1707-25
OregonBuys Bid Solicitation #: S-C25102-00014407
ONEOFFICE #: 2026-402

ITEM #	DESCRIPTION	QTY	UNITS	AMOUNT
1	Project #1 - ANDERSON-PIERCE-WONDERLY (APW)	1.00	LS	
2	Project #2 - CROOKED FINGER	1.00	LS	
3	Project #3 - HOUSE MOUNTAIN	1.00	LS	
4	Project #4 - LOWER PROSPECT	1.00	LS	
5	Project #5 - MCCULLY MOUNTAIN	1.00	LS	
6	Project #6 - METCOM 911	1.00	LS	
7	Project #7 - WIPPER	1.00	LS	
			TOTAL BID	

Docusign Envelope ID: DBCB7DD9-CF59-44B5-91B6-AE99631720B3

ADDENDUM #3
TO THE
INVITATION TO BID
PW1707-25 - ITB - CONSTRUCTION AND OTHER SITE IMPROVEMENTS AT VARIOUS RADIO COMMUNICATIONS SITES FOR THE MARION COUNTY RADIO PROJECT
ISSUED ON 10/8/2025 8:00:00 AM

The following information in this addendum, hereby become part of the Invitation To Bid. It is essential that all prospective Offerors note the content of this Addendum.

A. Question and Answers:

1. **Is the County or the Contractor responsible for offloading the owner provided equipment at the County facilities?**

   If the Contractor does not redirect the delivery of government-furnished equipment directly to individual project sites, Marion County will be responsible for the unloading of equipment delivered by the suppliers at the Staging Areas. The Contractor is responsible for the unloading of government-furnished equipment at the project sites.

2. **Should contractors bid to import backfill material for the matt foundations or can native materials be used for backfill?**

   Refer to geotechnical reports for backfill requirements.

3. **Who installs generator and tank level monitoring alarms? Who punches down the alarms? Is there alarming boards/blocks that come with the new shelters?**

   The new government-furnished prefabricated equipment shelters will arrive with a 2’ x 4’ telco board preinstalled with 4 alarming cable pigtails pre-wired for punch down. The Contractor shall provide and install the monitoring alarms and shall run the control wires to the telco board. Punch down will be the responsibility of Marion County’s radio system vendor under separate contract.

4. **For House Mountain and APW should contractors bid for 4 or 6 Solar Panels? Where are the solar panels to be mounted at?**

   Contractor is to provide photovoltaic panels and support structures as shown in the Plans and Drawings (C Sheets). The quantity of solar panels varies 36 to 40 solar panels per site as shown on the Enlarged Site Plan. The quantity of photovoltaic panels is also stated in the

Docusign Envelope ID: DBCB7DD9-CF59-44B5-91B6-AE99631720B3

Project Details table on the Solar PV Array Details drawings (U Sheets) in the data field titled “total modules”.

5. **Should contractors bid to complete the intial filling of the propaned tanks?**

   Marion County is responsible for the initial filling of propane tanks.

6. **Will any additional/custom duct work be needed for the clean air intake on the installation of the generators inside of the shelters? Will the shelters or generators come with the internal exhaust piping, hangers, blankets ect or does the contractor need to plan on providing and installing this material.**

   Refer to Sheets SH-6 and SH-7 for the generator shelter drawings provided by Shelter 1. If the required details are not shown in these drawings, the Contractor shall provide all necessary components to ensure the generator is fully operational. This includes, but is not limited to, all ductwork, exhaust piping, and hangers, installed in accordance with the generator manufacturer's specifications.

7. **Is there a foundation design that is ready to be released yet for House Mountain?**

   As of October 21, 2025, we are still awaiting the House Mountain tower erection drawings, including foundation design, from Sabre Industries. We will post those documents as soon as they are received.

8. **For the two new site builds Crooked Finger and McCully Mountain is there work orders setup with the Utilities for power plans yet? If so can the drawings be provided? If not who will coordinate the new service work with the utility and how should contractors bid this portion of the work without a known service route?**

   Utility design work for both Crooked Finger and McCully Mountain is currently underway by the respective utility providers. In the meantime, Bidders should base their bid on the installation of a new meter box and a new power route as shown in the current Plans and Drawings, which references the nearest existing transformer.

   Final utility designs will be shared with the contractor as they become available. The contractor will be responsible for coordinating directly with the utility provider to ensure proper service connection and compliance with utility requirements.

9. **Lower Prospect shows re-routing the meter from the utility pole out at the road to inside the compound. Is there a utility drawing/work order for this? Metcom 911 does not have a power plan. Is the contractor bidding any service/electrical scope for this site?**

Docusign Envelope ID: DBCB7DD9-CF59-44B5-91B6-AE99631720B3

Lower Prospect – Currently, no work order has been initiated with the electric utility. Contractor shall coordinate directly with PGE to relocated the meter.

METCOM 911 – Site electrical work at the METCOM 911 site is excluded from this bid. Marion County will provide new electrical service to this site under a separate contract. Contractor shall construct the shelter foundation, install the government-furnished prefabricated shelter and HVAC system, install the site grounding system, and perform all other work shown in the Plans and Drawings.

10. **Will the County maintain survey marks on the sites until construction begins?**

Yes, Marion County will re-stake site corners disturbed prior to the start of construction. It will then be the Contractors responsibility to retain and re-stake damaged or lost stakes during construction.

11. **At House Mountain the following equipment calls to be removed.**

- **(EX) GENERATOR SHELTER & GENERATORS TO BE REMOVED**
- **(EX) EQUIPMENT SHELTER TO BE REMOVED**
- **(EX) EQUIPMENT SHELTER (CONTAINER) TO BE REMOVED**
- **(EX) 60.6' SELF-SUPPORTED TOWER TO REMAIN IN USE DURING WORK IN PROGRESS; TO BE REMOVED PER MARION COUNTY DIRECTION**

If the contractor is removing this equipment is it to be disposed of our should it be returned somewhere? If the contractor is to dispose will there be hazardous materials testing completed by the county or is should contractors bid to complete the testing. If there is hazardous materials found can the abatement be completed by a CO or should contractors include these costs in our bids?

There is also conduits and foundations to be removed and dispsosed of at this site. How far below grade should contractors plan to remove concrete and conduits.

One of the existing House Mountain propane tanks is to be reused by the Contractor at Lower Prospect. Contractor shall delivery a second existing House Mountain propane tank to 17451 Ralph Lane NE, Woodburn, Oregon 97071 for later reuse by Marion County. See the Project Summary List for additional information.

Contractor shall be responsible for disposal of the existing shelters, generators and tower designated for removal. Contractor is responsible for all testing related to the disposal of existing facilities. No hazardous materials are known to exist on or in the existing shelters

Docusign Envelope ID: DBCB7DD9-CF59-44B5-91B6-AE99631720B3

designated for removal. Any costs associated with the discovery of hazardous materials at the House Mountain site will be reimbursed by Contract Change Order.

Existing concrete foundations will be abandoned in place. This applies only to House Mountain. Existing House Mountain conduit and piping is very shallow and, where removal is indicated, must be removed entirely.

12. **Is there a specific Terrafill product that contractors should bid for? If geotech-reports suggest driving ground rods is not possible should contractors bid for the 12"x12"x1/8" ground plates w/ 50lbs of terrafill?**

    Refer to the grounding plans and details in the Plans and Drawings for specified products or approved equivalents. For sites with rocky terrain, consult the recommendations outlined in the Motorola R56 standard for suitable alternative grounding methods, which may include ground plates.

13. **The Legend in the grounding callout for a ground electrode is "TERRADYNE TG-100L-H36-2T-36-4F-P SERIES ELECTRODE W/ INSPECTION WELL." This part number looks like it could be a 100' vertical electrode. The detail shows a 20' horizontial electrode. Please confirm what grounding electrode should be used if called for in the grounding drawings.**

    Use 20’ length electrolytic grounding system, Terradyne TG-20L-H36-2T-36-4F-P or equivalent horizontal electrode.

14. **The shelter at Lower Prospect has some features that are to be removed such as insulation, sheetrock, roofing ect. Does the contractor need to bid for hazardous materials testing? Should contractors also bid for abatement costs or will be abatement if needed be handled by a change order?**

    The Contractor is responsible for the removal and proper disposal of all existing site features designated for demolition. This includes the safe handling and disposal of any hazardous materials encountered, such as insulation, sheetrock, and roofing, in accordance with applicable regulations and environmental guidelines. The existing roofing system is known to contain friable asbestos.

15. **At House Mountain the tanks need relocated while construction occurs onsite. Who is relocating the tanks? Do they need to stay operational while relocated? Can the tanks sit on metal c-channel while relocated? Where should they be relocated to? Who is relocating the generator and where will it be relocated to? Does the generator need to stay operational?**

    All existing radio sites, including House Mountain, must remain operational throughout construction. Care has been taken to locate new site features (ie. the new radio tower foundation, new radio equipment shelter, new generator and generator shelter, relocated propane tanks, and other new features) to allow existing facilities to remain operational

Docusign Envelope ID: DBCB7DD9-CF59-44B5-91B6-AE99631720B3

during construction of the new facilities. The new propane tank concrete slab foundation has been located to avoid conflict with the existing propane tanks. The Contractor is responsible to relocate the existing propane tanks while keeping the site operational, including all necessary temporary piping, supports and controls. Temporary measures utilized by the Contractor shall comply with all structural, mechanical and fire codes applicable to such temporary work. Marion County's existing battery backup system may allow for brief, pre-planned power outages of no more than 30 minutes with prior written approval of Marion County to facilitate power and gas cutovers.

Contractor shall remove and dispose of the existing generators after Contractor places the new propane generator and photovoltaic power system into full operation and Marion County has relocated its existing radio equipment from its existing radio equipment shelter to the new government-furnished prefabricated radio equipment shelter.

16. **Generator installs – Who is responsible for supplying and installing the exhaust and shrouds?**

    See Question 6 response.

17. **Is the contractor responsible for the installation of the alarming and fueling of the propane tanks?**

    See Question 3 response for alarming. See Question 5 response for propane tank fueling.

18. **Will existing shelters be required to upgrade to current R56 standards?**

    Yes

19. **At Lower Prospect, who is responsible for removing and reinstalling the wall mounted equipment during shelter upgrades?**

    Refer to the response to Question 15 for interim requirements. The Contractor is responsible for maintaining site operation throughout construction and must coordinate directly with Marion County personnel and partners to ensure uninterrupted operation during cutovers.

20. **Will the foundation design for House Mtn be provided?**

    See Question 7 response.

21. **The ice bridge kits called out are a "DUAL POST 24" ICE BRIDGE KIT SITE PRO1 PART# 4B24D OR APPROVED EQUAL." This Site Pro part number is a 3.5" OD post. The spec then calls out a 4"Ø O.D. GALV. SCHED. 40 POS. Please calrify if ice bridge posts should be 3.5" or 4" OD.**

    Provide the specified 4" galvanized schedule 40 steel post.

Docusign Envelope ID: DBCB7DD9-CF59-44B5-91B6-AE99631720B3

22. At the walk for the Metcom 911 site there was discussion of the installation of a gravel access drive to the shelter from the existing asphalt parking lot. Is there dimensions or a drawing for this?

Bidders shall exclude from their bids the prospective gravel access driveway improvements mentioned at the METCOM 911 site walk. If the City of Woodburn requests that Marion County provide this improvement, it will be added by Contract Change Order.

23. Will the shelters come with anchors and anchoring hardware or is this on the contractor to procure?

The Contractor shall provide all components of the tiedown hardware shown in the STANDARD TIE-DOWN DETAIL, EQUIPMENT SHELTER FOUNDATION PLAN (C Sheets), including the ½" anchor bold, heavy hex nut, clamp plate and bevel washer.

Docusign Envelope ID: DBCB7DD9-CF59-44B5-91B6-AE99631720B3

ADDENDUM #4
TO THE
INVITATION TO BID
PW1707-25 - ITB - CONSTRUCTION AND OTHER SITE IMPROVEMENTS AT VARIOUS RADIO COMMUNICATIONS SITES FOR THE MARION COUNTY RADIO PROJECT
ISSUED ON 10/8/2025 8:00:00 AM

The following information in this addendum, hereby become part of the Invitation To Bid. It is essential that all prospective Offerors note the content of this Addendum.

A. DATE EXTENSION:

1. Cover Page:

a. Bid Opening: ~~October 30, 2025~~ ~~November 6, 2025~~ **November 13, 2025**.

2. Section 1.4 Time, Place and Methods of Receiving Bids:

a. Submit electronic bids as specified in Special Provisions 00120.45 by 2:00 p.m. on ~~October 30, 2025~~ ~~November 6, 2025~~ **November 13, 2025**.

B. QUESTION PERIOD ENDS:

a. End date for questions is October 31, 2025, 2:00 p.m.

Docusign Envelope ID: DBCB7DD9-CF59-44B5-91B6-AE99631720B3

ADDENDUM #5
TO THE
INVITATION TO BID
PW1707-25 - ITB - CONSTRUCTION AND OTHER SITE IMPROVEMENTS AT VARIOUS RADIO COMMUNICATIONS SITES FOR THE MARION COUNTY RADIO PROJECT
ISSUED ON 10/8/2025 8:00:00 AM

The following information in this addendum, hereby become part of the Invitation To Bid. It is essential that all prospective Offerors note the content of this Addendum.

A. Question and Answers:

1. **Is there an Engineer's Estimate for bonding purposes?**

   The engineer's estimated range is $2,500,000 to $5,000,000.

2. **All sites as applicable: Are there no proposed contour changes from existing contour lines based on Grading plan on ER1? If there are proposed contour changes, can engineer show final contour lines as an overlay with existing contour lines?**

   Grading and contour changes are required at some sites. These changes are depicted in the drawings using a combination of proposed contour lines, spot elevations (spot shots), and slope arrows to convey the intended grading. The existing and proposed grades are represented throughout the plan set in various formats to assist bidders in understanding the scope of grading work. No additional grading plans are anticipated beyond what is currently shown.

3. **All sites as applicable: LP tank detail on Sheet C5 implies an ice canopy is required over LP tank, yet site plan on Sheet C2 does not depict it (on APW) and DOES depict it (on House Mountain). Please confirm which sites REQUIRE LP tank ice canopy. Are any detail or model numbers available for the "Grating Pacific propane canopy"? (Or will any installation of grip strut on legs over the LP tank suffice?) Does the ice canopy need to cover the entire tank footprint as implied in section view of detail on Sheet C5, or only critical components as shown on site plan Sheet C2 at House Mountain (similar to existing)?**

   All the LP tanks are to have ice protection over the fueling plumbing. A 24-inch-wide grip strut canopy assembly—similar in design to the ice bridge—is acceptable for this purpose. The canopy is intended to protect the fuel piping specifically, not necessarily the entire tank footprint. Regardless of depiction, the Contractor supply and install ice protection over the fueling components on all tanks. No specific model number is required for the "Grating

Docusign Envelope ID: DBCB7DD9-CF59-44B5-91B6-AE99631720B3

Pacific propane canopy"; any structurally sound grip strut installation that meets the dimensional and functional intent shown in the detail is acceptable.

4. **Has a Phase 1 ESA been performed for any of the sites? Are there any hazardous materials or conditions the GC should be aware of before excavation?**

   See Addendum #1, Question 12. No hazardous materials have been identified at any site except for the asbestos-containing roofing material at Lower Prospect.

5. **House Mountain: Based on other questions already answered regarding existing generators, LP tanks and maintaining site operations, can the existing site be considered as "operational" with only a single generator and single 1000 gallon LP tank connected for temporary conditions, while other tanks are plumbed for the final install configuration with the new generator?**

   At House Mountain, it is anticipated the Contractor will take advantage of the multiple, existing propane tanks to maintain temporary fuel supply to the existing generators and/or temporary fuel supply to the new generator during the cutover and tank relocation processes. The sequence of executing this work is up to the Contractor. A full 1000-gallon tank provides enough fuel to power the existing generators for a number of weeks. Marion County would not take exception to the use of a single 1000-gallon tank to fuel the existing generators on a temporary basis provided the tank starts with enough fuel to comfortably supply the generators during construction without a risk of running out of fuel or developing a vapor lock.

6. **For the solar powered sites (such as House Mountain or APW) – will the GC be responsible to install any conduits or conductors from any of the PV infrastructure to the shelter? If so, what are the details (they don't appear to be in the drawings). Or will this scope be bid separately or done by others?**

   For solar-powered sites such as House Mountain and APW, the Contractor is responsible for installing conduit runs from the solar array to the shelter, as shown in the drawings. However, the installation of solar conductors (wiring) is not included in this scope and will be performed by others. In other words, the Contractor shall install the cable pathway and Marion County will install the conductor.

7. **For the solar powered sites (such as House Mountain or APW) – is GC responsible to install the (2) hybrid split HVAC systems for which we are responsible to supply? (Note on C2 reads, "Contractor responsible to supply"; Note on SH5 reads, "installed and wired by others" (pertaining to the AC wiring for the HVAC). If GC is responsible for the AC electrical installation of the HVAC, is the GC ALSO responsible for the DC electrical installation of this hybrid HVAC, or will that be part of a future bid for connectivity with other DC work?**

   Yes, the Contractor is responsible to supply and install the (2) hybrid split HVAC systems at the solar-powered sites, such as House Mountain and APW. The Contractor is also responsible for completing the AC electrical connections for these units, as indicated in the

Docusign Envelope ID: DBCB7DD9-CF59-44B5-91B6-AE99631720B3

drawings. However, the DC electrical installation associated with the hybrid HVAC systems will be performed by others and is excluded from the Contractor's scope of work.

8. **Please identify all Shelter One exterior equipment shelter, generator shelter and snow vestibule components that are provided by Shelter One but still require field installation and won't come already installed on the structure "as received" (eg – generator plug, ladder, hood/duct, canopy/awning, light fixture, GFCI, etc.)**

   Refer to the Shelter One drawings in the Plans and Drawings to determine which exterior components are factory-installed versus those requiring field installation. If a component is shown on the Shelter One drawings, it is assumed to be pre-installed unless specifically noted as "provided by others." For example, the HVAC is to be provided and installed by the Contractor. The snow vestibule is delivered as a separate prefabricated structure and must be field-installed by the Contractor in accordance with manufacturer requirements.

9. **House Mountain (and other sites as applicable): bollards are not shown as bonded to ground ring in the grounding plan, yet compliance with Motorola R56 has been cited, which would require bonding of all steel bollards. Is it acceptable to sleeve the bollards with plastic covers to eliminate the need to R56 bond all 11 bollards? Or will you require all 11 bollards be bonded to the ground ring to comply with R56? Or will you waive R56 compliance as it relates to bonding the bollards to the ground ring?**

   All steel bollards are required to be bonded to the site's grounding system in accordance with Motorola R56 standards. Specifically, each bollard must be bonded either to the ground ring or to the propane tank foundation ground to ensure a common grounding path. Sleeving the bollards with plastic covers does not eliminate the requirement for bonding under R56. Unless otherwise directed, the Contractor must bond all 11 bollards at House Mountain—and any similar installations at other applicable sites—to comply with the specified grounding requirements.

10. **House Mountain LP tank bonding to ground ring: only 1 tank of 4 final are shown bonded to the ground ring, yet Motorola R56 compliance would require all 4 to be bonded. Are you waiving this R56 requirement, or will the GC need to bond all 4 (final) LP tanks?**

    At House Mountain, the Contractor must bond all four (4) propane to the site's common grounding system to comply with Motorola R56 standards. R56 compliance is not being waived for this aspect.

11. **Are AGB(s), TGB and EGB to be installed by the GC or by others?**

    The Antenna Ground Bars (AGBs) will be supplied and installed by Marion County's radio vendor under a separate contract and are excluded from the Contractor's scope of work.

    The Contractor shall supply and install the Tower Ground Bars (TGB) located at the base of the towers.

Docusign Envelope ID: DBCB7DD9-CF59-44B5-91B6-AE99631720B3

The Contractor shall supply and install the Exterior Ground Bar (EGB), which must be installed on the ice bridge structure prior to the shelter feed line entry point.

All grounding components shall be installed in accordance with applicable R56 standards.

12. **Sign details: Drawings indicate (5) discreet signs required: No Smoking, RF blue, RF yellow, Emergency Contact & General Notice. How many of each sign is required for each site?**

Contractor shall provide and install two (2) full sets of signs; one (1) set of signs at the entryway to each new government-furnished prefabricated equipment shelter, and one (1) set of signs on the chain link entry gate to each site. The only exception is House Mountain, where only the equipment shelter signs are needed because House Mountain has no perimeter fence.

Docusign Envelope ID: DBCB7DD9-CF59-44B5-91B6-AE99631720B3

ADDENDUM #6
TO THE
INVITATION TO BID
PW1707-25 - ITB - CONSTRUCTION AND OTHER SITE IMPROVEMENTS AT VARIOUS RADIO COMMUNICATIONS SITES FOR THE MARION COUNTY RADIO PROJECT
ISSUED ON 10/8/2025 8:00:00 AM

The following information in this addendum, hereby become part of the Invitation To Bid. It is essential that all prospective Offerors note the content of this Addendum.

A. Question and Answers:

1. **Are special inspection concrete break tests required?**

   Marion County will perform the field testing of cast-in-place concrete, which will include slump and air entrainment testing and the casting of cylinders for 7-day and 28-day strength tests. Concrete field testing is exempted from the Contractor's scope of work.

2. **Self support towers coming with standard appurtenances: lightning rod, safety climb, cable ladder, etc.?**

   The government-furnished steel lattice towers will arrive with all of the appurtenances shown in the Sabre Industries steel tower erection drawings. Prospective Bidders will find these drawings in the Supporting Documents for each site. See Addendum #1, Question 3 for additional clarification.

3. **Are the transmit and receive antennas coming with mounts from Sabre or does contractor provide?**

   Antenna mounts are provided by the tower manufacturer and by Marion County's radio vendor. The Contractor is not responsible to supply antenna mounts.

4. **Is Marion County providing all cabling for transmit and receive antennas? Coax supports to go on tower?**

   Marion County's radio vendor will provide antenna cabling. The installation of tower-mounted antennas and cabling will be performed by others under separate contract. See Addendum #1, Question 3 for additional clarification.

5. **Is there a requirement to sweep test whatever cabling is being used for the transmit and receive antennas?**

Docusign Envelope ID: DBCB7DD9-CF59-44B5-91B6-AE99631720B3

The installation and sweeping of tower-mounted cabling will be performed by others under separate contract and is excluded from the Contractor's scope of work. See Addendum #1, Question 3 for additional clarification.

6. **Are ice bridges coming from Sabre or does contractor provide?**

   The Contractor shall supply and install all ice-bridges between the radio equipment shelters and the towers in accordance with the Plans and Drawings.

7. **Do you have a technical contact number for the Solar Array provider?**

   The Contractor shall supply and install the photovoltaic power systems, support structures, electrical conduit between the arrays and the radio equipment shelters, and all related work shown in the Plans and Drawings. There is no 3rd party solar array provider, per say. Prospective Bidders may choose to engage a licensed electrical contractor experienced with the installation of photovoltaic power systems.

8. **Is there a specific and comprehensive scope for each site's microwave scope of work (how is the microwave path deemed acceptable/accepted? Is the microwave waveguide required to be swept? If so, at what frequency? Are we installing any microwave equipment in shelters (racks, radios, dehydrators, pressure regulators, etc.)?**

   The installation of microwave equipment is excluded from the Contractor's scope of work. All microwave equipment located within radio equipment shelters will be installed by Marion County's radio vendor. All tower-mounted microwave equipment, including waveguide, will be installed and swept by others under a separate contract.

9. **With APW, Crooked Finger, House Mountain, and Wipper all showing rock in boring log, and in some cases significant basalt at as little as 6" below surface, is the contractor simply responsible for rock breaker/drilling/blasting/etc. (i.e. whatever it takes, and responsible for worst case scenario to get required tower foundation excavation dimensions?**

   The Contractor shall construct the tower foundations as shown in the Sabre Industries tower erection plans (see Supporting Documents for each site), which includes rock excavation where necessary.

10. **Is there a generator startup required for each generator install and if so, is Marion County paying for that or the contractor?**

    All new Cummins generators require factory start-up. Marion County has already purchased this service from Cummins. Therefore, the Contractor shall not supply factory start-up services nor bear the cost of such services, but will be required to coordinate with Cummins to enable Cummins to complete the factory start-up service.

11. **In regard to this quote in *Addendum "Marion County believes the opportunity exists for the Contractor to make arrangements with certain suppliers to have certain government-furnished equipment delivered directly to the project sites to save the time and effort associated with the***

Docusign Envelope ID: DBCB7DD9-CF59-44B5-91B6-AE99631720B3

loading and transport of materials from the Staging Areas to the project sites. This includes the Sabre steel lattice towers, the Shelter One prefabricated shelters and the Cummins generators.", **does this mean contractors should include the cost to receive and offload all towers and shelters at their facility, store them, then pay to reload them, pay for transport from their facility to site, and then offload at site?**

No. Refer to the Project Summary List and Addendum #1, Question 5. Marion County has established a Staging Area for each item of government-furnished equipment where Marion County will store such equipment. The Staging Areas are located on county-owned properties and serve as the location where government-furnished equipment will be made available to the Contractor. The Contractor is responsible for the loading, transport and unloading of government-furnished equipment from the Staging Areas to each project site. Alternatively, the Contractor may realize some cost savings by coordinating the delivery of government-furnished equipment by the supplier directly to each project site, bypassing Marion County's Staging Areas, which would require the advance approval of Marion County. The Contractor shall not take possession of government-furnished equipment and store such equipment at any location other than Marion County's Staging Areas or the project sites.

12. There is still an electrical design coming for the Metcomm 911 site?

No. Refer to Addendum #3, Question 9. Site electrical work at the METCOM 911 site is excluded from this bid. Marion County will provide new electrical service to this site under a separate contract. Contractor shall construct the shelter foundation, install the government-furnished prefabricated shelter, supply and install the HVAC system, install the site grounding system, and perform all other work shown in the Plans and Drawings.

13. There is still a tower foundation design coming for House Mtn?

Sabre Industries is unable to provide final steel lattice tower erection drawings for the House Mountain site prior to bid opening. The government-furnished steel lattice tower at House Mountain will be identical to the tower at the Crooked Finger site. For bidding purposes, Bidders shall base their bids for the construction of the House Mountain tower foundation and tower erection on Sabre Industries' tower erection drawings for the Crooked Finger site (see Supporting Documents). Any difference in cost between the Crooked Finger tower foundation design and the final House Mountain tower foundation design shall be compensated via a Contract Change Order.

This response replaces the responses to Addendum #3, Questions 7 and 20.

14. **Are special inspection concrete break tests required? For generator and tank pads? Shelter foundations? Tower foundations? Anything else?**

Refer to Question 1.

15. What concrete design mix is required for the tower foundations?

Docusign Envelope ID: DBCB7DD9-CF59-44B5-91B6-AE99631720B3

Contractor shall provide concrete supplier's commercially available concrete mix design conforming to the General Notes (G Sheets) for Marion County review and approval prior to first use on the Project.

16. **Is there a concrete mix requirement on shelter foundations?**

Contractor shall provide concrete supplier's commercially available concrete mix design conforming to the General Notes (G Sheets) for Marion County review and approval prior to first use on the Project.

17. **On generator/tank pads?**

Contractor shall provide concrete supplier's commercially available concrete mix design conforming to the General Notes (G Sheets) for Marion County review and approval prior to first use on the Project.

18. **I see in addendum #1, item #10, letter k, that existing steel towers at House, Lower, and Wipper will be removed. I see references to removing towers at House & Wipper on CD's, but do NOT see a tower to be removed at Lower Prospect? Please clarify if I am missing it.**

Refer to the Plans and Drawings (ER Sheets) for the removal of existing site features to be performed by the Contractor.

Docusign Envelope ID: DBCB7DD9-CF59-44B5-91B6-AE99631720B3

Marion County
OREGON

ADDENDUM #7
TO THE
INVITATION TO BID
PW1707-25 - ITB - CONSTRUCTION AND OTHER SITE IMPROVEMENTS AT VARIOUS RADIO COMMUNICATIONS SITES FOR THE MARION COUNTY RADIO PROJECT
ISSUED ON 10/8/2025 8:00:00 AM

The following information in this addendum, hereby become part of the Invitation To Bid. It is essential that all prospective Offerors note the content of this Addendum.

A. Question and Answers:

1. **In addendum #6, item #3, you clarify that the antennas and cabling are under other contract, and contractor to not SUPPLY antenna mounts, but are antenna mounts coming with the tower, and is their installation part of the tower install SOW or the future antenna/cabling SOW?**

   Refer to Addendum #1, Question 3.

2. **Previous question related to addendum #1, item #10, letter k, that existing steel towers at House, Lower, and Wipper will be removed. I see references to removing towers at House & Wipper on CD's, but do NOT see a tower to be removed at Lower Prospect? Please clarify if I am missing it. WITH RESPONSE OF: Refer to the Plans and Drawings (ER Sheets) for the removal of existing site features to be performed by the Contractor.**

   I have reviewed ER Sheets and still do not see any reference to a steel tower being removed at Lower Prospect. Please spell out what Tower Demolition scope there is at Lower Prospect.

   Refer to Question 3.

3. **I apologize, I found the tower removal on ER-2 of Lower Prospect. You can remove previous question. I think it should probably not be on an Erosion and Grading plan, but good to now know.**

   No response required.

4. **Regarding solar... if we contract with a company that can provide all the PhotoVoltaic equipment, and we install those arrays, and you want all the related conduit to be installed, but NOT conductor... these will be non-operational units? You will install conductor and make live and operational, as part of a separate contract?**

Docusign Envelope ID: DBCB7DD9-CF59-44B5-91B6-AE99631720B3

The Contractor shall supply and install the photovoltaic panels, support structures and the conduit pathways from the photovoltaic arrays to the government-furnished prefabricated equipment shelters, as shown in the Plans and Drawings (U Sheets). Marion County's radio vendor shall supply and install the inverters, house batteries and the conductor from the photovoltaic arrays to the equipment shelters under a separate contract.

5. **Please confirm there is no U-6 drawing for House Mtn as listed in index**

   Revision 1 to the House Mountain Plans and Drawings dated October 15, 2025, does not include a Sheet U6.

6. **In addendum #1, item #15, you acknowledge that APW needs additonal aggregate surfacing for construction... are we to assume that will be done for the contractor who is awarded prior to starting?**

   Refer to Addendum #1, Question #15. Marion County shall maintain the gravel surface of the APW access road. The Contractor cannot assume that preventive maintenance will be completed prior to the start of the Contractor's work.

7. **Are there solar inverters already specified in the one line and or panel schedule? If there is, we will need to know their make model and size to determine DC circuit size.**

   See Question #4.

8. **If there is no inverter already specified, then we will provide those as "related equipment" with the solar array and other necessary equipment. To specify the proper inverter(s), we will need to see a electrical one line drawing and electrical panel schedule.**

   See Questions #4 and #7.

9. **Please confirm (or clarify)... all generators are being procured by Marion County, and Marion County has purchased startup services with Cummins? and all generators are coming with Automatic transfer switches that contractor install or ATS are provided and installed by contractor?**

   Refer to the Project Summary List. Marion County shall provide all generators as government-furnished equipment for the Contractor to install. Marion County has already purchased factory startup services for each generator. Bidders shall exclude the cost of factory startup services from their bids, but will be responsible to coordinate with the generator supplier to enable factory startup to occur. Marion County has also purchased Automatic Transfer Switches for each generator. The government-furnished prefabricated equipment shelters will arrive with the ATS pre-installed by Shelter One. The Contractor shall field install the ATS at the Lower Prospect and Wipper sites.

10. **On MetComm 911, please confirm... we are not bidding Electrical, but we are bidding to install a Split HVAC system... that won't be powered?**

Docusign Envelope ID: DBCB7DD9-CF59-44B5-91B6-AE99631720B3

Correct. The METCOM 911 government-furnished prefabricated equipment shelter will come prewired to receive the Contractor-installed HVAC equipment. Power will be supplied to the METCOM 911 equipment shelter under a separate contract.

11. **Addendum #6, Question 3 and answer clarify that the antenna mounts will come with the tower from Sabre and do not need to be supplied by the contractor. Further, it is clarified in other places, multiple times, that the L&A installation will be part of a separate RFP and the work is to be performed by others. Often times in wireless SST assembly and erection, antenna (and dish) mounts are purposely left uninstalled on the tower during erection so that antennas (and dishes) may be more easily mounted to them on the ground and the entire assembly may be hoisted onto the tower. Is it Marion County's intent for the GC as part of this RFP to include the assembly and installation of the antenna (and dish) mounts on the tower? Or, is it Marion County's intent for the antenna (and dish) mounts to be installed as part of the L&A RFP yet to be released?**

Refer to Addendum #1, Question #3. The installation of antennas and antenna mounts will be performed by a separate contractor and is excluded from this contract.

12. **Addendum #6 Question 7 and answer indicate, "Contractor shall supply and install the photovoltaic power systems, support structures, electrical conduit between arrays and the radio equipment shelters, and all related work shown in the Plans and Drawings. Can you please define, "photovoltaic power systems" portion of this answer? Based on information available in the plans (at House Mountain, for example), it seems the ONLY thing this may pertain to are the PV panels - 36 of which need to total 14,580W (so 405W minimum spec). We saw no information on inverters, controllers, batteries or other typical PV power systems on the plans. We only see information for PV panels, structural racking system (Ironridge XR1000 Rail), it's anchoring system and some grounding lugs, end clamps and module caps.**

Refer to Question #4.

13. **Addendum #5, Question 5 and answer clarified that it is acceptable for a single 1000 gallon LP tank to be utilized for the temp connection during construction of the new infrastructure. Can you please clarify if only (1) or (2) generators are needed for the temp connection to the existing shelters until the final site configuration is fully cut over?**

For redundancy purposes, both of the existing House Mountain generators must remain operational until cutover to the new generator is complete.

14. **Addendum #5, Question 12 indicates that House Mountain is the only site with no fence and thereby only requiring (1) set of signs. However, APW drawings do not show any proposed fence. Please clarify if 2nd set of signs for APW is intended for some location other than the shelter, or if there is only 1 set of signs needed, or if there is supposed to be fence included in the bid for APW. Metcomm 911 similarly has no proposed fence. Please confirm if the 2nd set of signs are intended for the fence at the entrance to**

Docusign Envelope ID: DBCB7DD9-CF59-44B5-91B6-AE99631720B3

the parking lot, or if there is only 1 set of signs needed, or if there is supposed to be fence included in the bid for Metcom 911.

Good catch, the APW site does not have a perimeter fence and, therefore, only one (1) set of signs is needed at APW. The METCOM site has an existing perimeter fence. The METCOM 911 site does have a perimeter fence and, therefore, two sets of signs are required at METCOM 911.

15. **Crooked Finger drawings have conflicting info related to HVAC: Sheet C2 shows what appear to be outdoor units of split system hanging on the north wall of the shelter, but nothing is called out. Sheet SH1 does not show anything on the exterior of the shelter (even anything to be installed by others). Sheet SH2 DOES call out, "AC Split system by others" on the interior wall view. There is no sheet for HVAC details in the set, as there was in other prefab shelter sets of drawings. Does Crooked Finger have HVAC to be supplied and installed by the GC and if so, can you please confirm the make and model numbers required?**

Contractor shall provide and install HVAC Daikin Split system with exterior units mounted to the North side of the shelter as shown in the plan view (note, Sheet SH1 shows interior raceway for exterior HVAC disconnects). The model of Daikin Split for Crooked Finger to be similar to the McCully Mountain site. Refer to McCully Mountain site Sheet C7 detail (Daikin Model FTX36NVJU / RX36NMVJUA).

Docusign Envelope ID: DBCB7DD9-CF59-44B5-91B6-AE99631720B3

ADDENDUM #8
TO THE
INVITATION TO BID
PW1707-25 - ITB - CONSTRUCTION AND OTHER SITE IMPROVEMENTS AT VARIOUS RADIO COMMUNICATIONS SITES FOR THE MARION COUNTY RADIO PROJECT
ISSUED ON 10/8/2025 8:00:00 AM

The following information in this addendum, hereby become part of the Invitation To Bid. It is essential that all prospective Offerors note the content of this Addendum.

A. QUESTION PERIOD ENDS:

a. End date for questions is November 6, 2025, 2:00 p.m.

Docusign Envelope ID: DBCB7DD9-CF59-44B5-91B6-AE99631720B3

Marion County
OREGON

ADDENDUM #9
TO THE
INVITATION TO BID
PW1707-25 - ITB - CONSTRUCTION AND OTHER SITE IMPROVEMENTS AT VARIOUS RADIO COMMUNICATIONS SITES FOR THE MARION COUNTY RADIO PROJECT
ISSUED ON 10/8/2025 8:00:00 AM

The following information in this addendum, hereby become part of the Invitation To Bid. It is essential that all prospective Offerors note the content of this Addendum.

A. Question and Answers:

1. **What is the warranty period on the work done on the project?**

   Refer to Section 00110.00 of the Special Provisions and 00170.85 of the General Conditions for Construction for Marion County.

2. **Could you advise if the exhaust fans, louvers, exterior hoods and motorized dampers are part of the "Shelter One" equipment and generator shelters or would they be part of a HVAC quote?**

   The exhaust fans, louvers, exterior hoods and motorized dampers as shown in the shelter drawings are provided with the shelter by Shelter One.

3. **Can you clarify if the aluminum ladders for the shelters are included with the shelter or if they need to be supplied?**

   The aluminum ladders will be supplied by the prefabricated shelter supplier, not the Contractor.

4. **Addendum 1 states that the House Mountain Tower foundation plan would be released 10/20. I don't see it.**

   The note "TOWER FOUNDATION; SEE SABRE TOWER DRAWINGS FOR STRUCTURAL INFORMATION" refers to the six (6) Supporting Documents listed, below:
   1. Attachment C - Supporting Documents - Anderson-Pierce-Wonderly (APW) (pages 1-86)
   2. Attachment C - Supporting Documents - Crooked Finger (pages 1-86)
   3. Attachment C - Supporting Documents - House Mountain (Available by 10/20)
   4. Attachment C - Supporting Documents - Lower Prospect (pages 1-82)
   5. Attachment C - Supporting Documents - McCully Mountain (pages 1-86)
   6. Attachment C - Supporting Documents - Wipper (pages 1-86)

   Refer to Addendum #6, Question #13.

Docusign Envelope ID: DBCB7DD9-CF59-44B5-91B6-AE99631720B3

EXHIBIT A

BID SCHEDULE - **VERSION 2**

Marion County Public Works

EARTHWORK, SURFACING, STRUCTURAL, MECHANICAL, ELECTRICAL AND OTHER SITE IMPROVEMENTS AT VARIOUS RADIO COMMUNICATIONS SITES FOR THE MARION COUNTY RADIO PROJECT

Marion County Bid Solicitation #: PW1707-25

OregonBuys Bid Solicitation #: S-C25102-00014407

ONEOFFICE #: 2026-402

ITEM #	DESCRIPTION	QTY	UNITS	AMOUNT
1	Project #1 - ANDERSON-PIERCE-WONDERLY (APW)	1.00	LS	344,000
2	Project #2 - CROOKED FINGER	1.00	LS	330,000
3	Project #3 - HOUSE MOUNTAIN	1.00	LS	406,000
4	Project #4 - LOWER PROSPECT	1.00	LS	339,000
5	Project #5 - MCCULLY MOUNTAIN	1.00	LS	270,000
6	Project #6 - METCOM 911	1.00	LS	102,000
7	Project #7 - WIPPER	1.00	LS	302,000
			TOTAL BID	2,087,000

Docusign Envelope ID: DBCB7DD9-CF59-44B5-91B6-AE99631720B3

EXHIBIT B

BID CERTIFICATION

The Honorable Board of
County Commissioners
Marion County Courthouse
Salem, Oregon 97301

Commissioners:

The Undersigned, hereinafter called the Bidder, declares that the only person or parties interested in this Bid are those named herein; that this Bid Certification is in all respects fair and without fraud; that it is made without collusion with any official or employee of the County, and without any connection or collusion with any person making another certification on this Contract.

The Bidder also certifies to the following:

A. Noncollusion:

- The price(s) and amount of this Bid have been arrived at independently and without consultation, communication, or agreement with any other contractor, bidder, or potential bidder except as disclosed on a separately attached statement.
- Neither the price(s) nor the amount of this Bid, and neither the approximate price(s) nor approximate amount of this Bid has been disclosed to any other firm or person who is a bidder or potential bidder, and they will not be disclosed before the opening of bids.
- No attempt has been made or will be made to induce any firm or person to refrain from bidding on this contract, to submit a bid higher than this Bid, or to submit any intentionally high or noncompetitive bid or other form of complementary bid.
- This Bid is made in good faith and not pursuant to any agreement or discussion with, or inducement from, any firm or person to submit a complementary or other noncompetitive bid.
- The Bidder, its affiliates, subsidiaries, officers, directors, and employees are not currently under investigation by any governmental agency and have not in the last four years been convicted of or found liable for any act, prohibited by State or Federal law in any jurisdiction, involving conspiracy or collusion with respect to bidding on any public contract except as described on a separately attached statement.
- The Bidder understands and acknowledges that the above representations are material and important and will be relied on by Marion County, in awarding the contract(s) for which this Bid is submitted. The Bidder understands that any misstatement in this Certification is and shall be treated as fraudulent concealment from Marion County, of the true facts relating to the submission of bids for this contract.

B. Noninvolvement in Any Debarment and Suspension:

The Bidder, its owners, directors, and officers:

- Are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from covered transactions by any Federal department or agency;
- Have not within a three-year period preceding this Bid been convicted of or had a civil judgment rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, State, or local) transaction or contract under a public transaction;

Docusign Envelope ID: DBCB7DD9-CF59-44B5-91B6-AE99631720B3

violation of Federal or State antitrust statutes or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property.

- Are not presently indicted for or otherwise criminally or civilly charged by a government entity (Federal, State, or local) with commission of any of the offenses enumerated in the preceding paragraph of this Certification; and
- Have not within a three-year period preceding this Bid had one or more public transactions (Federal, State, or local) terminated for cause or default.

Where the prospective primary participant is unable to certify to any of the statements in this Certification, the prospective primary participant shall attach an explanation to this Bid.

List exceptions in writing on one or more pages, as necessary, with the heading, "Certification Exceptions, Bid Insert," and attach all pages to this Bid Certification. For each exception noted, indicate to whom the exception applies, initiating agency, and date(s) of action.

C. Lobbying Activities:

To the best of my knowledge and belief, that:

- No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an employee of any Federal agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.
- If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any Federal agency, a Member of Congress, an officer of employee of Congress, or an employee of a Member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form-LLL, "Disclosure Form to Report Lobbying," in accordance with its instructions to the ODOT Procurement Office - Construction Contracts Unit, MS# 2-2, 3930 Fairview Industrial Drive SE, Salem, Oregon 97302-1166. Copies of Standard Form-LLL are available at the above location.
- This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this Certification is a prerequisite for making or entering into this transaction imposed by Section 1352, Title 31, U.S. Code. Any person who fails to file the required Certification shall be subject to a civil penalty of not less than $10,000 and not more than $100,000 for each such failure.
- The prospective participant also agrees by submitting his or her Bid that he or she shall require that the language of this Certification be inserted in all lower tier subcontracts, which exceed $100,000 and that all such subrecipients shall certify and disclose accordingly.

D. Compliance With Oregon Tax Laws:

- By signature on this Bid, the undersigned hereby certifies under penalty of perjury that the undersigned is authorized to act on behalf of Bidder, that the undersigned has authority and knowledge regarding Bidder's payment of taxes, and that Bidder is, to the best of the undersigned's knowledge, not in violation of any Oregon Tax Laws. For purposes of this certification, "Oregon Tax Laws" means a state tax imposed by ORS 320.005 to 320.150 (Amusement Device Taxes), ORS 403.200 to 403.250 (Tax For Emergency Communications), and ORS Chapters 118 (Inheritance Tax), 314 (Income Tax), 316 (Personal Income Tax), 317 (Corporation Excise Tax), 318 (Corporation Income Tax), 321 (Timber And Forestland Tax), 323 (Cigarettes And Tobacco Products Tax), and the elderly rental assistance

Docusign Envelope ID: DBCB7DD9-CF59-44B5-91B6-AE99631720B3

program under ORS 310.630 to 310.706, and any local taxes administered by the Department of Revenue under ORS 305.620.

E. Employee Drug Testing Program:

- Pursuant to ORS 279C.505(2), that the bidder has an employee drug testing program in place, and will maintain such program for the entire period of this contract. Failure to maintain such program shall constitute a material breach of contract.

F. Nondiscrimination:

- Pursuant to ORS 279A.110, that the Bidder has not discriminated and will not discriminate against a disadvantaged business enterprise, a minority-owned business, a woman-owned business, a business that a service-disabled veteran owns, or an emerging small business in obtaining any required subcontracts. The Bidder understands that it may be disqualified from bidding on this public improvement project if the Agency finds that the Bidder has violated subsection (1) of ORS 279A.110.

G. Use of Registered Subcontractors:

- That all subcontractors performing work on this public improvement contract will be registered with the Construction Contractors Board or licensed by the State Landscape Contractors Board in accordance with ORS 701.035 to 701.055 before the subcontractors commence work under this contract.

H. Incorporation of All Addenda:

- The Bidder has incorporated into this Bid all Addenda issued for this Project.
- The Bidder understands and acknowledges that the Agency will provide all Addenda only by publishing them on the OregonBuys website. Addenda may be downloaded from the OregonBuys website.
- The Bidder shall be responsible for diligently checking the OregonBuys website for Addenda. Bidders should check the web site at least weekly until one (1) week prior to the designated time to receive bids and daily thereafter.
- By submitting this Bid, the Bidder assumes all risks associated with its failure to access all Addenda and waives all claims, suits, and actions against the State, Agency, the Agency's governing commission and its members, and their officers, agents, and employees that may arise out of the Bidder's failure to access all Addenda, in spite of any contingencies such as website failure, down-time, service interruptions, and corrupted, inaccurate, or incomplete Addenda or information.

The Bidder declares that the Bidder has carefully examined the Specifications and other proposed Contract Documents; that the Bidder personally has made an examination of the site of the proposed Work and has made the necessary investigations to determine the conditions to be encountered independently of the indications in the Specifications. The applicable Standard Specifications, General Conditions, Special Provisions, and other Contract Documents bound herewith are by reference a part of this Bid Certification.

The Bidder agrees to accept as full payment for the Work herein proposed or the materials to be furnished the amount computed as determined by the provisions of this Invitation To Bid and based on the following Bid Certification, it being expressly understood that the unit prices listed are independent of the exact quantities involved, where unit prices apply.

The Bidder further declares the total amount of work, expressed in dollars, Bidder's company reasonably believes it is capable of bonding at any one time: $2.5 million. The Bidder declares the portion of this amount which remains available at time of completion of this form is $2.5 million.

The Bidder further agrees that the provisions required by ORS 279C.840 shall be included in the Contract.

Docusign Envelope ID: DBCB7DD9-CF59-44B5-91B6-AE99631720B3

Acknowledgement of receipt of addenda:

No. 1 Date: 10/16/25
No. 2 Date: 10/22/25
No. 3 Date: 10/22/25
No. 4 Date: 10/24/25
No. 5 Date: 10/25/25
NO. 6 10/28/25
NO. 7 11/3/25
NO. 8 11/6/25
NO. 9 11/6/25

[The remainder of this page intentionally left blank.]

Docusign Envelope ID: DBCB7DD9-CF59-44B5-91B6-AE99631720B3

Experience / References

The information on this form may be utilized by Marion County to consider whether a Bidder has met the standards of responsibility set forth in ORS279C.375.

Current Contracts in Force/Previous Experience – minimum of three required of similar nature with public sector work.

Contract #1 — Currently in force

Location (city/state)	Estacada OR 97023
Owners Name	Clackamas County
Type of Work	Siding + Paint repairs
% Completed	75%
Estimated Completion Date	March 2026

Contract #2 — Previous experience

Location (city/state)	Gaston, OR
Owners Name	Washington County - Sam Zaik 503-270-8659
Type of Work	Excavation + culvert replacement, in water work access old Hwy 47
% Completed	100%
Estimated Completion Date	Sep 2025

Contract #3 — Previous experience

Location (city/state)	Damascus, OR
Owners Name	Clackamas County - Stan Monte 503-708-3046
Type of Work	excavation + in water work to install box culvert + footings
% Completed	100%
Estimated Completion Date	Sept 2023

References – minimum of two project owner references and two subcontractor references.

#1 Project Owner Reference

Reference Name	Isaac Talley
Business or Employer	Chemeketa Community College
Telephone	503-309-3775
Project Name/$ Amount	Building 14 Seismic Retrofit $1,092,536.06

#2 Project Owner Reference

Reference Name	Michael Oleson
Business or Employer	Clackamas County
Telephone	503-705-6635
Project Name/$ Amount	Rugg Rd Slide repair $ 879,182.70

#1 Subcontractor Reference

Reference Name	Rick Suran
Business or Employer	Eastside Paving
Telephone	503-519-6478
Project Name/$ Amount	Multiple jobs over the years - each year $20,000 – 60,000 per project

#2 Subcontractor Reference

Reference Name	David Reed
Business or Employer	ADW Concrete
Telephone	503-998-2898
Project Name/$ Amount	Multiple jobs over the years - each year $20,000 - $60,000 per Project.

Docusign Envelope ID: DBCB7DD9-CF59-44B5-91B6-AE99631720B3

The name of the Bidder who is submitting this Bid Certification is:

Company: Colton Homes, Inc DBA Colton Construction
(Print or Type)

Address: PO Box 11168
(Print or Type)

City, State Zip Oregon City OR 97045
(Print or Type)

which address is the address to which all communications considered with this Bid Certification and with the Contract shall be sent.

The names of the principal officers of the corporation submitting this Bid and Bid Certification or of the partners, if the Bid Certification is submitted by a partnership, or of all persons interested in this Bid Certification as principals, are as follows:

Jared Colton - President

Dated this 12th day of November, 2025.

Construction Contractor's
Board Registration Number

184522

Colton Homes Inc, DBA Colton Construction
Firm Name

Signature of Bidder

Jared Colton
Name Print or Type

President
Title Print or Type

Telephone No. 503-939-4765

Email Address: office@coltonhomes.net

Tax ID # 31-1819218

Business Organization: (Check one)

- [X] Corporation
- [ ] Limited Liability Company
- [ ] Joint Venture
- [ ] Partnership
- [ ] Sole Proprietorship
- [ ] Other _____

Docusign Envelope ID: DBCB7DD9-CF59-44B5-91B6-AE99631720B3

BID BOND

KNOW ALL PERSONS BY THESE PRESENTS, that Colton Homes, Inc. dba Colton Construction, hereinafter called the Principal, and The Ohio Casualty Insurance Company, a Corporation organized and existing under and by virtue of the laws of the state New Hampshire duly authorized to do surety business in the State of Oregon as Surety, are held and firmly bound unto Marion County hereinafter called the County, in the sum of Ten Percent (10%) of Bid Amount Dollars ($10% of Bid Amount), for the payment of which, well and truly to be made, we bind ourselves, our heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these presents.

THE CONDITION OF THIS BOND IS SUCH THAT, WHEREAS, the Principal herein is herewith submitting his or its Bid Proposal for Marion County Radio Project; PW1707-25 said Bid Proposal, by reference thereto, being hereby made a part hereof.

NOW THEREFORE, if the said Bid Proposal submitted by the said Principal be accepted, and the Contract be awarded to said Principal, and if the said Principal shall execute the proposed Contract as required by the bidding and the Contract Documents within the time set by said Documents, then this obligation shall be void. If the Principal shall fail to execute the proposed Contract, the Surety hereby agrees to pay to the County the sum as liquidated damages.

Signed and sealed this 13th day of November, 2025.

Colton Homes, Inc. dba Colton Construction
Principal

By: _____

A certified copy of the Agent's Power-of-Attorney must be Attached hereto.

The Ohio Casualty Insurance Company
Surety

By: _____
Attorney-in-Fact Travis J. Robles

Seal No. 8073

Docusign Envelope ID: DBCB7DD9-CF59-44B5-91B6-AE99631720B3

Liberty Mutual. SURETY

POWER OF ATTORNEY

Liberty Mutual Insurance Company
The Ohio Casualty Insurance Company
West American Insurance Company

Certificate No: 8214732-023049

KNOWN ALL PERSONS BY THESE PRESENTS: That The Ohio Casualty Insurance Company is a corporation duly organized under the laws of the State of New Hampshire, that Liberty Mutual Insurance Company is a corporation duly organized under the laws of the State of Massachusetts, and West American Insurance Company is a corporation duly organized under the laws of the State of Indiana (herein collectively called the "Companies"), pursuant to and by authority herein set forth, does hereby name, constitute and appoint, Aliceon A. Keltner; Amelia G. Burrill; Annelies M. Richie; Brandon K. Bush; Brent E. Heilsen; Carley Espiritu; Charla M. Boadle; Christopher Kinyon; Donald Percell Shanklin, Jr.; Edward Sims; Eric A. Zimmerman; Holli Lagerquist; Jacob T. Haddock; James B. Binder; Jamie L. Marques; Julie A. Craker; Justin Dean Price; Kari Michelle Motley; Katharine J. Snider; Lindsey Elaine Jorgensen; Lois F. Weathers; Michael Mansfield; Sarah Whitaker; Tamara A. Ringeisen; Thomas Buell; Travis J. Robles

all of the city of Tacoma state of WA each individually if there be more than one named, its true and lawful attorney-in-fact to make, execute, seal, acknowledge and deliver, for and on its behalf as surety and as its act and deed, any and all undertakings, bonds, recognizances and other surety obligations, in pursuance of these presents and shall be as binding upon the Companies as if they have been duly signed by the president and attested by the secretary of the Companies in their own proper persons.

IN WITNESS WHEREOF, this Power of Attorney has been subscribed by an authorized officer or official of the Companies and the corporate seals of the Companies have been affixed thereto this 9th day of September, 2025.

Liberty Mutual Insurance Company
The Ohio Casualty Insurance Company
West American Insurance Company

By: _____
Nathan J. Zangerle, Assistant Secretary

State of PENNSYLVANIA
County of MONTGOMERY ss

On this 9th day of September, 2025 before me personally appeared Nathan J. Zangerle, who acknowledged himself to be the Assistant Secretary of Liberty Mutual Insurance Company, The Ohio Casualty Company, and West American Insurance Company, and that he, as such, being authorized so to do, execute the foregoing instrument for the purposes therein contained by signing on behalf of the corporations by himself as a duly authorized officer.

IN WITNESS WHEREOF, I have hereunto subscribed my name and affixed my notarial seal at Plymouth Meeting, Pennsylvania, on the day and year first above written.

Commonwealth of Pennsylvania - Notary Seal
Teresa Pastella, Notary Public
Montgomery County
My commission expires March 28, 2029
Commission number 1126044
Member, Pennsylvania Association of Notaries

By: _____
Teresa Pastella, Notary Public

This Power of Attorney is made and executed pursuant to and by authority of the following By-laws and Authorizations of The Ohio Casualty Insurance Company, Liberty Mutual Insurance Company, and West American Insurance Company which resolutions are now in full force and effect reading as follows:

ARTICLE IV – OFFICERS: Section 12. Power of Attorney.
Any officer or other official of the Corporation authorized for that purpose in writing by the Chairman or the President, and subject to such limitation as the Chairman or the President may prescribe, shall appoint such attorneys-in-fact, as may be necessary to act in behalf of the Corporation to make, execute, seal, acknowledge and deliver as surety any and all undertakings, bonds, recognizances and other surety obligations. Such attorneys-in-fact, subject to the limitations set forth in their respective powers of attorney, shall have full power to bind the Corporation by their signature and execution of any such instruments and to attach thereto the seal of the Corporation. When so executed, such instruments shall be as binding as if signed by the President and attested to by the Secretary. Any power or authority granted to any representative or attorney-in-fact under the provisions of this article may be revoked at any time by the Board, the Chairman, the President or by the officer or officers granting such power or authority.

ARTICLE XIII – Execution of Contracts: Section 5. Surety Bonds and Undertakings.
Any officer of the Company authorized for that purpose in writing by the chairman or the president, and subject to such limitations as the chairman or the president may prescribe, shall appoint such attorneys-in-fact, as may be necessary to act in behalf of the Company to make, execute, seal, acknowledge and deliver as surety any and all undertakings, bonds, recognizances and other surety obligations. Such attorneys-in-fact subject to the limitations set forth in their respective powers of attorney, shall have full power to bind the Company by their signature and execution of any such instruments and to attach thereto the seal of the Company. When so executed such instruments shall be as binding as if signed by the president and attested by the secretary.

Certificate of Designation – The President of the Company, acting pursuant to the Bylaws of the Company, authorizes Nathan J. Zangerle, Assistant Secretary to appoint such attorneys-in-fact as may be necessary to act on behalf of the Company to make, execute, seal, acknowledge and deliver as surety any and all undertakings, bonds, recognizances and other surety obligations.

Authorization – By unanimous consent of the Company's Board of Directors, the Company consents that facsimile or mechanically reproduced signature of any assistant secretary of the Company, wherever appearing upon a certified copy of any power of attorney issued by the Company in connection with surety bonds, shall be valid and binding upon the Company with the same force and effect as though manually affixed.

I, Renee C. Llewellyn, the undersigned, Assistant Secretary, The Ohio Casualty Insurance Company, Liberty Mutual Insurance Company, and West American Insurance Company do hereby certify that the original power of attorney of which the foregoing is a full, true and correct copy of the Power of Attorney executed by said Companies, is in full force and effect and has not been revoked.

IN TESTIMONY WHEREOF, I have hereunto set my hand and affixed the seals of said Companies this 13th day of November, 2025.

Seal No. 4373

By: _____
Renee C. Llewellyn, Assistant Secretary

Not valid for mortgage, note, loan, letter of credit, currency rate, interest rate or residual value guarantees.

For bond and/or Power of Attorney (POA) verification inquiries, please call 610-832-8240 or email HOSUR@libertymutual.com.

Docusign Envelope ID: DBCB7DD9-CF59-44B5-91B6-AE99631720B3

EXHIBIT C

Bond No. 023229561

PERFORMANCE BOND

(NOTE: CONTRACTORS MUST USE THIS FORM, NOT A SURETY COMPANY FORM)

KNOW BY ALL PERSONS BY THESE PRESENTS:

We the undersigned Colton Homes Inc. dba Colton Construction as PRINCIPAL (hereinafter called CONTRACTOR), and The Ohio Casualty Insurance Company a corporation organized and existing under and by virtue of the laws of the state of New Hampshire duly authorized to do surety business in the state of Oregon and named on the current list of approved surety companies acceptable on federal bonds and conforming with the underwriting limitations as published in the Federal Register by the audit staff of the Bureau of Accounts and the U.S. Treasury Department and is of the appropriate class for the bond amount as determined by Best's Rating System, as SURETY, hereby hold and firmly bind ourselves, our heirs, executors, administrators, successors and assigns, jointly and severally, to pay to MARION COUNTY as OBLIGEE (hereinafter called MARION COUNTY), the amount of *See Below Dollars ($2,087,000.00----------) in lawful money of the United States of America.

*Two Million Eighty-seven Thousand and No/100

WHEREAS, the CONTRACTOR entered into a contract with MARION COUNTY dated _____ ___, 20___, which Contract is hereunto annexed and made a part hereof, for accomplishment of the project described as follows: ITB #PW1707-25- Construction and Other Site Improvements at Various Radio Communications Sites for the Marion County Radio Project.

NOW, THEREFORE, the condition of this obligation is such that if the CONTRACTOR shall promptly, truly and faithfully perform all the undertakings, covenants, terms, conditions, and agreements of the aforesaid contract and having performed its obligations thereunder, then this obligation shall be null and void; otherwise it shall remain in full force and effect until the expiration of any statutes of limitation or ultimate repose applicable to claims against Principal arising out of said Contract or for as long as CONTRACTOR is liable under the Contract, whichever is later.

Whenever CONTRACTOR shall be declared by MARION COUNTY to be in default under the Contract Documents for the project described herein, the SURETY may promptly remedy the default, or shall promptly complete the project in accordance with the Contract Documents and the project Specifications with a contractor approved by MARION COUNTY. SURETY, for value received, further stipulates and agrees that all changes, extensions of time, alterations, or additions to the terms of the Contract or Specifications for *See Below are within the scope of the SURETY's undertaking on this bond, and SURETY hereby waives notice of any such change, extension of time, alteration or addition to the terms of the Contract or to the Work or to the Specifications. Any such change, extension of time, alteration or addition to the terms of the Contract or to the Work or to the Specifications shall automatically increase the obligation of the Surety hereunder in a like amount, provided that such increase shall not exceed twenty-five percent (25%) of the original amount of the obligation without the consent of the Surety.

*ITB #PW1707-25- Construction and Other Site Improvements at Various Radio Communications Sites for the Marion County Radio Project

This obligation shall continue to bind the PRINCIPAL and SURETY, notwithstanding successive payments made hereunder, until the full amount of the obligation is exhausted.

No right of action shall accrue on this bond to or for the use of any person or corporation other than MARION COUNTY, its respective heirs, executors, administrators, successors or assigns.

If more than one SURETY is on this bond, each SURETY hereby agrees that it is jointly and severally liable for obligations on this bond.

Docusign Envelope ID: DBCB7DD9-CF59-44B5-91B6-AE99631720B3

IN WITNESS WHEREOF, we have hereunto set our hands and seals this 16th day of December, 2025.

The Ohio Casualty Insurance Company	Colton Homes Inc. dba Colton Construction
SURETY	CONTRACTOR
By: Lois F. Weathers	By: Jared colton
Title: Lois F. Weathers, Attorney-In-Fact	Title: President
1001 4th Ave Suite 3700	18472 S. Lorraine Drive,
Street Address	Street Address
Seattle, WA 98104	Oregon City, OR 97045
City State ZIP	City State ZIP
(541) 414-6194	(503) 631-4318
Phone Number	Phone Number

THE OHIO CASUALTY INSURANCE COMPANY INCORPORATED 1919 NEW HAMPSHIRE

Seal No. 8073

Docusign Envelope ID: DBCB7DD9-CF59-44B5-91B6-AE99631720B3

Liberty Mutual Surety
Attention: LMS Claims
PO Box 34526
Seattle, WA 98124
Phone: (206) 473-6210
Fax: (866) 548-6873
Email: HOSCL@libertymutual.com
www.LibertyMutualSuretyClaims.com

BOND RIDER

To be attached to and form a part of Performance and Payment Bond No. 023229561, dated the 16th day of December, 2025, issued by The Ohio Casualty Insurance Company, as Surety, on behalf of Colton Homes Inc. DBA Colton Construction Company, as Principal, in the amount of Two Million Eighty Seven Thousand and No/100 Dollars ($2,087,000.00), in favor of Marion County, as Obligee.

It is agreed that notwithstanding any contrary provision in the bond, the contract for ITB #PW1707-25- Construction and Other Site Improvements at Various Radio Communications Sites for the Marion County Radio Project for which the bond is issued, or any other document which may be incorporated by or into the bond or contract for ITB #PW1707-25- Construction and Other Site Improvements at Various Radio Communications Sites for the Marion County Radio Project, prior written consent of Surety must be obtained for any change, modification, and/or alteration in the contract which increases, separately or in the aggregate, the original contract price by 20% or more.

Provided, however, that the attached bond shall be subject to all agreements, limitations and conditions except herein expressly modified, and further that the liability of the Surety under the attached bond and the bond amended by this Rider shall not be cumulative. Should Surety choose to withhold such consent it shall not constitute a default by Principal under the contract.

SIGNED, SEALED and DATED THIS 16th day of December, 2025.

Colton Homes Inc. DBA Colton Construction Company
Principal

BY: Jared colton
Jared Colton, President

Marion County
Obligee

BY: _____

The Ohio Casualty Insurance Company
Surety

BY: Lois F. Weathers
Lois F. Weathers, Attorney-In-Fact

THE OHIO CASUALTY INSURANCE COMPANY INCORPORATED 1919 NEW HAMPSHIRE

THE OHIO CASUALTY INSURANCE COMPANY INCORPORATED 1919 NEW HAMPSHIRE Seal No. 8073

Docusign Envelope ID: DBCB7DD9-CF59-44B5-91B6-AE99631720B3

EXHIBIT D

Bond No. 023229561

LABOR AND MATERIALS PAYMENT BOND

(NOTE: CONTRACTOR MUST USE THIS FORM, NOT A SURETY COMPANY FORM)

KNOW ALL PERSONS BY THESE PRESENTS:

We the Undersigned Colton Homes Inc. dba Colton Construction as PRINCIPAL and The Ohio Casualty Insurance Company a corporation organized and existing under and by virtue of the laws of the state of New Hampshire, and duly authorized to do surety business in the state of Oregon and named on the current list of approved surety companies acceptable on federal bonds and conforming with the underwriting limitations as published in the Federal Register by the audit staff of the Bureau of Accounts and the U.S. Treasury Department and which carries an "A" rating and is of the appropriate class for the bond amount as determined by Best's Rating System, as SURETY, hereby hold and firmly bind ourselves, our heirs, executors, administrators, successors and assigns, jointly and severally, unto MARION COUNTY and ODOT, as duel OBLIGEE, in the sum of Two Million Eighty-seven Thousand and No/100 Dollars ($2,087,000.00----------) in lawful money of the United States of America, for the payment of that sum for the use and benefit of claimants as defined below.

The condition of this obligation is such that whereas the PRINCIPAL entered into a contract with MARION COUNTY dated _____, 20___, which contract is hereunto annexed and made a part hereof, for accomplishment of the project described as follows: ITB #PW1707-25- Construction and Other Site Improvements at Various Radio Communications Sites for the Marion County Radio Project

NOW THEREFORE, if the PRINCIPAL shall promptly make payments to all persons, firms, subcontractors, corporations and/or others furnishing materials for or performing labor in the prosecution of the Work provided for in the aforesaid Contract, and any authorized extension or modification thereof, including all amounts due for materials, equipment, mechanical repairs, transportation, tools and services consumed or used in connection with the performance of such Work, and for all labor performed in connection with such Work whether by subcontractor or otherwise, and all other requirements imposed by law, then this obligation shall become null and void; otherwise this obligation shall remain in full force and effect, until the expiration of any statutes of limitation or ultimate repose applicable to claims against Principal arising out of said Contract or for as long as CONTRACTOR is liable under the Contract, whichever is later, subject, however, to the following conditions:

1. A claimant is as specified in ORS 279C.600 to 279C.620.

2. The above-named PRINCIPAL and SURETY hereby jointly and severally agree with the OBLIGEE and its assigns that every claimant as above-specified, who has not been paid in full, may sue on this bond for the use of such claimant, prosecute the suit to final judgment in accordance with ORS 279C.610 for such sum or sums as may be justly due claimant, and have execution thereon. The OBLIGEE shall not be liable for the payment of any judgment, costs, expenses or attorneys' fees of any such suit.

PROVIDED, FURTHER, that SURETY for the value received, hereby stipulates and agrees that all changes, extensions of time, alterations to the terms of the Contract or to Work to be performed thereunder or the Specifications accompanying the same shall be within the scope of the SURETY's undertaking on this bond, and SURETY does hereby waive notice of any such change, extension of time, alteration or addition to the terms of the Contract or to the Work or to the Specifications. Any such change, extension of time, alteration or addition to the terms of the contract or to the Work or to the Specifications shall automatically increase the obligation of the SURETY hereunder in a like amount, provided that the total of such increases shall not exceed twenty-five percent (25%) of the original amount of the obligation without the consent of the SURETY.

This obligation shall continue to bind the PRINCIPAL and SURETY, notwithstanding successive payments made hereunder, until the full amount of the obligation is exhausted, or if the full amount of the obligation is not exhausted and no claim is pending resolution, until such time as no further claims can be made pursuant to law with regard to the above-described project, by any claimant specified in ORS 279C.600.

Docusign Envelope ID: DBCB7DD9-CF59-44B5-91B6-AE99631720B3

If more than one SURETY is on this bond, each SURETY hereby agrees that it is jointly and severally liable for all obligations of this bond.

IN WITNESS WHEREOF, we have hereunto set our hands and seals this 16th day of December, 2025.

The Ohio Casualty Insurance Company	Colton Homes Inc. dba Colton Construction
SURETY	CONTRACTOR
By: Lois F. Weathers	By: Jared colton
Title: Lois F. Weathers, Attorney-In-Fact	Title: President
1001 4th Ave Suite 3700	18472 S. Lorraine Drive,
Street Address	Street Address
Seattle, WA 98104	Oregon City, OR 97045
City, State Zip	
(541) 414-6194	(503) 631-4318
Phone Number	Phone Number



Docusign Envelope ID: DBCB7DD9-CF59-44B5-91B6-AE99631720B3

POWER OF ATTORNEY

Liberty Mutual Insurance Company
The Ohio Casualty Insurance Company
West American Insurance Company

Certificate No: **8214732-023049**

KNOWN ALL PERSONS BY THESE PRESENTS: That The Ohio Casualty Insurance Company is a corporation duly organized under the laws of the State of New Hampshire, that Liberty Mutual Insurance Company is a corporation duly organized under the laws of the State of Massachusetts, and West American Insurance Company is a corporation duly organized under the laws of the State of Indiana (herein collectively called the "Companies"), pursuant to and by authority herein set forth, does hereby name, constitute and appoint, Aliceon A. Keltner; Amelia G. Burrill; Annelies M. Richie; Brandon K. Bush; Brent E. Heilsen; Carley Espiritu; Charla M. Boadle; Christopher Kinyon; Donald Percell Shanklin, Jr.; Edward Sims; Eric A. Zimmerman; Holli Lagerquist; Jacob T. Haddock; James B. Binder; Jamie L. Marques; Julie A. Craker; Justin Dean Price; Kari Michelle Motley; Katharine J. Snider; Lindsey Elaine Jorgensen; Lois F. Weathers; Michael Mansfield; Sarah Whitaker; Tamara A. Ringeisen; Thomas Buell; Travis J. Robles

all of the city of Tacoma state of WA each individually if there be more than one named, its true and lawful attorney-in-fact to make, execute, seal, acknowledge and deliver, for and on its behalf as surety and as its act and deed, any and all undertakings, bonds, recognizances and other surety obligations, in pursuance of these presents and shall be as binding upon the Companies as if they have been duly signed by the president and attested by the secretary of the Companies in their own proper persons.

IN WITNESS WHEREOF, this Power of Attorney has been subscribed by an authorized officer or official of the Companies and the corporate seals of the Companies have been affixed thereto this 9th day of September , 2025 .

Liberty Mutual Insurance Company
The Ohio Casualty Insurance Company
West American Insurance Company

By: _____
Nathan J. Zangerle, Assistant Secretary

State of PENNSYLVANIA
County of MONTGOMERY ss

On this 9th day of September , 2025 before me personally appeared Nathan J. Zangerle, who acknowledged himself to be the Assistant Secretary of Liberty Mutual Insurance Company, The Ohio Casualty Company, and West American Insurance Company, and that he, as such, being authorized so to do, execute the foregoing instrument for the purposes therein contained by signing on behalf of the corporations by himself as a duly authorized officer.

IN WITNESS WHEREOF, I have hereunto subscribed my name and affixed my notarial seal at Plymouth Meeting, Pennsylvania, on the day and year first above written.

Commonwealth of Pennsylvania - Notary Seal
Teresa Pastella, Notary Public
Montgomery County
My commission expires March 28, 2029
Commission number 1126044
Member, Pennsylvania Association of Notaries

By: _____
Teresa Pastella, Notary Public

This Power of Attorney is made and executed pursuant to and by authority of the following By-laws and Authorizations of The Ohio Casualty Insurance Company, Liberty Mutual Insurance Company, and West American Insurance Company which resolutions are now in full force and effect reading as follows:

ARTICLE IV – OFFICERS: Section 12. Power of Attorney.
Any officer or other official of the Corporation authorized for that purpose in writing by the Chairman or the President, and subject to such limitation as the Chairman or the President may prescribe, shall appoint such attorneys-in-fact, as may be necessary to act in behalf of the Corporation to make, execute, seal, acknowledge and deliver as surety any and all undertakings, bonds, recognizances and other surety obligations. Such attorneys-in-fact, subject to the limitations set forth in their respective powers of attorney, shall have full power to bind the Corporation by their signature and execution of any such instruments and to attach thereto the seal of the Corporation. When so executed, such instruments shall be as binding as if signed by the President and attested to by the Secretary. Any power or authority granted to any representative or attorney-in-fact under the provisions of this article may be revoked at any time by the Board, the Chairman, the President or by the officer or officers granting such power or authority.

ARTICLE XIII – Execution of Contracts: Section 5. Surety Bonds and Undertakings.
Any officer of the Company authorized for that purpose in writing by the chairman or the president, and subject to such limitations as the chairman or the president may prescribe, shall appoint such attorneys-in-fact, as may be necessary to act in behalf of the Company to make, execute, seal, acknowledge and deliver as surety any and all undertakings, bonds, recognizances and other surety obligations. Such attorneys-in-fact subject to the limitations set forth in their respective powers of attorney, shall have full power to bind the Company by their signature and execution of any such instruments and to attach thereto the seal of the Company. When so executed such instruments shall be as binding as if signed by the president and attested by the secretary.

Certificate of Designation – The President of the Company, acting pursuant to the Bylaws of the Company, authorizes Nathan J. Zangerle, Assistant Secretary to appoint such attorneys-in-fact as may be necessary to act on behalf of the Company to make, execute, seal, acknowledge and deliver as surety any and all undertakings, bonds, recognizances and other surety obligations.

Authorization – By unanimous consent of the Company's Board of Directors, the Company consents that facsimile or mechanically reproduced signature of any assistant secretary of the Company, wherever appearing upon a certified copy of any power of attorney issued by the Company in connection with surety bonds, shall be valid and binding upon the Company with the same force and effect as though manually affixed.

I, Renee C. Llewellyn, the undersigned, Assistant Secretary, The Ohio Casualty Insurance Company, Liberty Mutual Insurance Company, and West American Insurance Company do hereby certify that the original power of attorney of which the foregoing is a full, true and correct copy of the Power of Attorney executed by said Companies, is in full force and effect and has not been revoked.

IN TESTIMONY WHEREOF, I have hereunto set my hand and affixed the seals of said Companies this 16th day of December , 2025 .

Seal No. 8073

By: _____
Renee C. Llewellyn, Assistant Secretary

Not valid for mortgage, note, loan, letter of credit, currency rate, interest rate or residual value guarantees.

For bond and/or Power of Attorney (POA) verification inquiries, please call 610-832-8240 or email HOSUR@libertymutual.com.

Docusign Envelope ID: DBCB7DD9-CF59-44B5-91B6-AE99631720B3

EXHIBIT E

DRUG & ALCOHOL TESTING POLICY CERTIFICATION

Has your firm established and implemented a drug and alcohol policy and testing program that complies with ORS 279C.505 for public improvement contracts?

__X__ Yes _____ No

I hereby certify that the information provided on this form is true and accurate to the best of my knowledge.

Please print or type:

Company Name Colton Homes, Inc DBA Colton Construction

Name/Title Jared Colton - President

Address PO Box 1168 Oregon City OR 97045

Signature _____

Date 11/12/25

Docusign Envelope ID: DBCB7DD9-CF59-44B5-91B6-AE99631720B3

EXHIBIT F

FIRST-TIER SUBCONTRACTOR DISCLOSURE FORM INSTRUCTIONS

Instructions for Submitting Form

Submittal of the First-Tier Subcontractor Disclosure Form is mandatory for all public improvement project bids estimated to exceed $100,000. Submit the First-Tier Subcontractor Disclosure Form in one of the following manners:

- By filling out the Subcontractor Disclosure Form included in the Invitation To Bid and submitting it, in PDF format, together with the Bid documents to the Agency's Procurement Collaboration Portal at the time designated for receipt of Bids; or
- By removing it from the Invitation To Bid, filling it out, signing and dating in ink, and submitting it separately, in PDF format, to the "My Company Info" page within the Agency's Procurement Collaboration Portal; or
- By removing it from the Invitation To Bid, filling it out, signing and dating in ink and submitting it separately in a sealed envelope to the receptionist at Marion County Public Works, Building 1, 5155 Silverton Road NE, Salem Oregon 97305. The envelope shall be plainly labeled "First-Tier Subcontractors for Bid on "Santiam River (Gates) Bridge" (see Invitation To Bid cover page).

Instructions for First-Tier Subcontractor Disclosure

Use the First-Tier Subcontractor Disclosure Form to disclose all subcontracts included in the Bid that are equal to or greater than the following:

1. Five percent (5%) of the total project Bid or $15,000, whichever is greater, or
2. $350,000 regardless of the percentage of the total project Bid

Disclose the following information for each subcontractor:

- The name of the subcontractor
- The category of work that the subcontractor will be performing
- The dollar amount of the subcontract

If your Bid includes no subcontractors or if your Bid includes no contracts that are equal to or greater than the disclosure criteria, above, you are still required to submit the form, with the appropriate box checked or enter "NONE" on the first line.

THE AGENCY MUST REJECT BIDS if the Bidder fails to submit the disclosure form with this information by the stated deadline.

Docusign Envelope ID: DBCB7DD9-CF59-44B5-91B6-AE99631720B3

EXHIBIT F

FIRST-TIER SUBCONTRACTOR DISCLOSURE FORM

Project Name Marion County Radio Project PW1707-25

ONEOFFICE Contract # 2026-402

Bid Opening Date 11/13/25

Name of Bidding Contractor Colton Homes, Inc DBA Colton Construction

☐ *CHECK THIS BOX IF YOU WILL NOT BE USING ANY FIRST-TIER SUBCONTRACTORS OR IF YOU ARE NOT SUBJECT TO THE DISCLOSURE REQUIREMENTS (SEE INSTRUCTIONS).*

FIRST-TIER SUBCONTRACTORS

Firm Name	Dollar Amount
Dreamhouse Electric LLC	$65,000
Category of Work	
electrical	

Firm Name	Dollar Amount
Jacked Crane	$38,000
Category of Work	
lifting + Rigging	

Firm Name	Dollar Amount
P.L.I Systems	$38,000
Category of Work	
Drilling	

Firm Name	Dollar Amount
Category of Work	

Firm Name	Dollar Amount
Category of Work	

Firm Name	Dollar Amount
Category of Work	

Firm Name	Dollar Amount
Category of Work	

(Attach additional sheets as necessary)

Docusign Envelope ID: DBCB7DD9-CF59-44B5-91B6-AE99631720B3

EXHIBIT G

PROJECT WAGE RATES

Minimum Wage Requirements - This Project is subject to State prevailing wage rate requirements. Not less than the existing State prevailing wage rates shall be paid to workers according to 00170.65(b) and 00170.65(e).

Applicable Wages - Prevailing wage rates published in the wage determinations and any applicable modifications or amendments apply to this Project and are incorporated by reference:

(1) Oregon Bureau of Labor and Industries (BOLI), "Prevailing Wage Rates For Public Works Contracts in Oregon".

The applicable State prevailing wage rates last published prior to the time of Bid Opening, which is stated on the Invitation to Bid, apply to this Project.

Wage Rates are Internet-Accessible - The BOLI wage rates can be found on the Oregon Bureau of Labor and Industries website at: https://www.oregon.gov/boli/WHD/PWR/Pages/index.aspx.

Wage Rates are Subject to Change - Modifications or amendments to BOLI wage rates applicable to this Project may occur at any time before Bid Opening. Bidders are responsible to monitor the respective web page for modifications and amendments up until Bid Opening.

Docusign Envelope ID: DBCB7DD9-CF59-44B5-91B6-AE99631720B3

EXHIBIT H

APPENDIX II TO PART 200 – CONTRACT PROVISIONS FOR NON-FEDERAL ENTITY CONTRACTS UNDER FEDERAL AWARDS

Section 1: Appendix II to Part 200 - Contract Provisions for Non-Federal Entity Contracts Under Federal Awards

(A) Contracts for more than the simplified acquisition threshold, which is the inflation adjusted amount determined by the Civilian Agency Acquisition Council and the Defense Acquisition Regulations Council (Councils) as authorized by 41 U.S.C. 1908, must address administrative, contractual, or legal remedies in instances where contractors violate or breach contract terms, and provide for such sanctions and penalties as appropriate.

(B) All contracts in excess of $10,000 must address termination for cause and for convenience by the non-Federal entity including the manner by which it will be affected and the basis for settlement.

(C) Equal Employment Opportunity. Except as otherwise provided under 41 CFR Part 60, all contracts that meet the definition of “federally assisted construction contract” in 41 CFR Part 60-1.3 must include the equal opportunity clause provided under 41 CFR 60-1.4(b), in accordance with Executive Order 11246, “Equal Employment Opportunity” (30 FR 12319, 12935, 3 CFR Part, 1964-1965 Comp., p. 339), as amended by Executive Order 11375, “Amending Executive Order 11246 Relating to Equal Employment Opportunity,” and implementing regulations at 41 CFR part 60, “Office of Federal Contract Compliance Programs, Equal Employment Opportunity, Department of Labor.”

(D) Davis-Bacon Act, as amended (40 U.S.C. 3141-3148). When required by Federal program legislation, all prime construction contracts in excess of $2,000 awarded by non-Federal entities must include a provision for compliance with the Davis-Bacon Act (40 U.S.C. 3141-3144, and 3146-3148) as supplemented by Department of Labor regulations (29 CFR Part 5, “Labor Standards Provisions Applicable to Contracts Covering Federally Financed and Assisted Construction”). In accordance with the statute, contractors must be required to pay wages to laborers and mechanics at a rate not less than the prevailing wages specified in a wage determination made by the Secretary of Labor. In addition, contractors must be required to pay wages not less than once a week. The non-Federal entity must place a copy of the current prevailing wage determination issued by the Department of Labor in each solicitation. The decision to award a contract or subcontract must be conditioned upon the acceptance of the wage determination. The non-Federal entity must report all suspected or reported violations to the Federal awarding agency. The contracts must also include a provision for compliance with the Copeland “Anti-Kickback” Act (40 U.S.C. 3145), as supplemented by Department of Labor regulations (29 CFR Part 3, “Contractors and Subcontractors on Public Building or Public Work Financed in Whole or in Part by Loans or Grants from the United States”). The Act provides that each contractor or subrecipient must be prohibited from inducing, by any means, any person employed in the construction, completion, or repair of public work, to give up any part of the compensation to which he or she is otherwise entitled. The non-Federal entity must report all suspected or reported violations to the Federal awarding agency.

(E) Contract Work Hours and Safety Standards Act (40 U.S.C. 3701-3708). Where applicable, all contracts awarded by the non-Federal entity in excess of $100,000 that involve the employment of mechanics or laborers must include a provision for compliance with 40 U.S.C. 3702 and 3704, as supplemented by Department of Labor regulations (29 CFR Part 5). Under 40 U.S.C. 3702 of the Act, each contractor must be required to compute the wages of every mechanic and laborer on the basis of a standard work week of 40 hours. Work in excess of the standard work week is permissible provided that the worker is compensated at a

Docusign Envelope ID: DBCB7DD9-CF59-44B5-91B6-AE99631720B3

rate of not less than one and a half times the basic rate of pay for all hours worked in excess of 40 hours in the work week. The requirements of 40 U.S.C. 3704 are applicable to construction work and provide that no laborer or mechanic must be required to work in surroundings or under working conditions which are unsanitary, hazardous or dangerous. These requirements do not apply to the purchases of supplies or materials or articles ordinarily available on the open market, or contracts for transportation or transmission of intelligence.

(F) Rights to Inventions Made Under a Contract or Agreement. If the Federal award meets the definition of "funding agreement" under 37 CFR § 401.2 (a) and the recipient or subrecipient wishes to enter into a contract with a small business firm or nonprofit organization regarding the substitution of parties, assignment or performance of experimental, developmental, or research work under that "funding agreement," the recipient or subrecipient must comply with the requirements of 37 CFR Part 401, "Rights to Inventions Made by Nonprofit Organizations and Small Business Firms Under Government Grants, Contracts and Cooperative Agreements," and any implementing regulations issued by the awarding agency.

(G) Clean Air Act (42 U.S.C. 7401-7671q.) and the Federal Water Pollution Control Act (33 U.S.C. 1251-1387), as amended. Contracts and subgrants of amounts in excess of $150,000 must contain a provision that requires the non-Federal award to agree to comply with all applicable standards, orders or regulations issued pursuant to the Clean Air Act (42 U.S.C. 7401-7671q) and the Federal Water Pollution Control Act as amended (33 U.S.C. 1251-1387). Violations must be reported to the Federal awarding agency and the Regional Office of the Environmental Protection Agency (EPA).

(H) Debarment and Suspension (Executive Orders 12549 and 12689). A contract award (see 2 CFR 180.220) must not be made to parties listed on the governmentwide exclusions in the System for Award Management (SAM), in accordance with the OMB guidelines at 2 CFR 180 that implement Executive Orders 12549 (3 CFR part 1986 Comp., p. 189) and 12689 (3 CFR part 1989 Comp., p. 235), "Debarment and Suspension." SAM Exclusions contains the names of parties debarred, suspended, or otherwise excluded by agencies, as well as parties declared ineligible under statutory or regulatory authority other than Executive Order 12549.

(I) Byrd Anti-Lobbying Amendment (31 U.S.C. 1352). Contractors that apply or bid for an award exceeding $100,000 must file the required certification. Each tier certifies to the tier above that it will not and has not used Federal appropriated funds to pay any person or organization for influencing or attempting to influence an officer or employee of any agency, a member of Congress, officer or employee of Congress, or an employee of a member of Congress in connection with obtaining any Federal contract, grant or any other award covered by 31 U.S.C. 1352. Each tier must also disclose any lobbying with non-Federal funds that takes place in connection with obtaining any Federal award. Such disclosures are forwarded from tier to tier up to the non-Federal award.

(J) See § 200.323. Procurement of recovered materials.

(K) See § 200.216. Prohibition on certain telecommunications and video surveillance services or equipment.

(L) See § 200.322. Domestic preference for procurements.

[78 FR 78608, Dec. 26, 2013, as amended at 79 FR 75888, Dec. 19, 2014; 85 FR 49577, Aug. 13, 2020]

Docusign Envelope ID: DBCB7DD9-CF59-44B5-91B6-AE99631720B3

Section 2: Additional Requirements for Non-Federal Entity Contracts

1. Audit Requirements

- Subrecipients must comply with the federal regulations set forth in 2 CFR §200.5XX Subpart F.
- Subrecipient must comply, and require any subcontractor to comply, with applicable audit requirements and responsibilities set forth in this Agreement and applicable state or federal law as set forth in 2 CFR §200.501(h).
- If Subrecipient expends federal awards in excess of $1,000,000 in a fiscal year, Subrecipient is subject to audit conducted in accordance with the provisions of 2 CFR §200.5XX Subpart F. Copies of all audits must be submitted to the County within 30 days of completion.
- Subrecipient must save, protect and hold harmless the County from the cost of any audits or special investigations performed by the Secretary of State with respect to the funds expended under this Agreement. Subrecipient acknowledges and agrees that any audit costs incurred by Subrecipient as a result of allegations of fraud, waste or abuse are ineligible for reimbursement under this or any other agreement between Subrecipient and the County.

2. System for Award Management - 2 CFR Part 25 - Subrecipient must comply with applicable requirements regarding the System for Award Management (SAM), currently accessible at https://www.sam.gov. This includes applicable requirements regarding registration with SAM, as well as maintaining current information in SAM. Subrecipient must also comply with applicable restrictions on subawards ("subgrants") to first tier subcontractors (first-tier "Subcontractors"), including restrictions on subawards to entities that do not acquire and provide (to the County) the unique entity identifier required for SAM registration.

3. Whistleblower Protection Act - 2 CFR § 200.217 - Subrecipient must comply and ensure the compliance by subcontractors, with 41 U.S.C. 4712, Program for Enhancement of Employee Whistleblower Protection. Subrecipient must inform subcontractors, contractors and employees, in writing, in the predominant language of the workforce, of the employee whistleblower rights and protections under 41 USC 4712.

4. Recordkeeping Requirements - Subrecipient must maintain records and financial documents for five years after all funds have been expended or returned to the County. The County may request transfer of records of long-term value at the end of such period. Wherever practicable, such records should be collected, transmitted, and stored in open and machine-readable formats.

Subrecipient must agree to provide or make available such records to the County upon request, and to the Government Accountability Office (“GAO”), U.S. Treasury’s Office of Inspector General (“OIG”), and their authorized representative in order to conduct audits or other investigations.

6. Civil Rights Compliance - Recipients of Federal financial assistance from the U.S. Treasury are required to meet legal requirements relating to nondiscrimination and nondiscriminatory use of Federal funds. Those requirements include ensuring that entities receiving Federal financial assistance from the U.S. Treasury do not deny benefits or services, or otherwise discriminate on the basis of race, color, national origin (including limited English proficiency), disability, age, or sex (including sexual orientation and gender identity), in accordance with the following authorities: Title VI of the Civil Rights Act of 1964 (Title VI) Public Law 88-352, 42 U.S.C. 2000d-1 et seq., and the Subrecipient's implementing regulations, 31 CFR part 22; Section 504 of the Rehabilitation Act of 1973 (Section 504), Public Law 93-112, as amended by Public Law 93-516, 29 U.S.C. 794; Title IX of the Education Amendments of 1972 (Title IX), 20 U.S.C. 1681 et seq., and the Subrecipient's implementing regulations, 31 CFR part 28; Age Discrimination Act of 1975, Public Law 94-135, 42 U.S.C. 6101 et seq., and the Subrecipient implementing regulations at 31 CFR part 23.

Docusign Envelope ID: DBCB7DD9-CF59-44B5-91B6-AE99631720B3

In order to carry out its enforcement responsibilities under Title VI of the Civil Rights Act, U.S. Treasury will collect and review information from non-Tribal recipients to ascertain their compliance with the applicable requirements before and after providing financial assistance. U.S. Treasury's implementing regulations, 31 CFR part 22, and the Department of Justice (DOJ) regulations, Coordination of Non-discrimination in Federally Assisted Programs, 28 CFR part 42, provide for the collection of data and information from recipients (see 28 CFR 42.406). U.S. Treasury may request that recipients submit data for post-award compliance reviews, including information such as a narrative describing their Title VI compliance status. This collection does not apply to Tribal governments.

7. Real Property, Equipment and Other Capital Expenditures - County shall, and shall cause its Subrecipients to, maintain policies and procedures for the management of property and equipment that comply with all requirements of the applicable Uniform Guidance at 2 CFR Part 200, Subpart D, 2 CFR Part 200.310 – 200.316 and 200.439, and specific requirements of the source of funds. These regulations shall apply to all real property, equipment, and other capital expenditures purchased with the federal funding.

Docusign Envelope ID: DBCB7DD9-CF59-44B5-91B6-AE99631720B3

EXHIBIT I
SPECIAL PROVISIONS

PART 00100 - GENERAL CONDITIONS

SECTION 00110 - ORGANIZATION, CONVENTIONS, ABBREVIATIONS, AND DEFINITIONS

Comply with Section 00110 of the General Conditions modified as follows:

00110.00 Organization of Specifications – Replace this subsection in its entirety with the following:

The Specifications are comprised of the following:

- The "General Conditions for Construction for Marion County, v2024" published by the Agency and available for download from the Marion County Public Works Engineering Division website at http://www.co.marion.or.us/PW/Engineering, which contain Part 00100 "General Conditions" and deals with the solicitation process and contractual relationships;
- The "2024 Oregon Standard Specifications for Construction" Parts 00200 through 03000, published by the Oregon Department of Transportation, which contain the detailed "Technical Specifications" involved in prosecution of the Work, organized by subject matter;
- The Special Provisions, and
- The Project Summary List (PSL)

In addition, throughout the Specifications:

- Each Part is divided into Sections and Subsections.
- Reference to a Section includes all applicable requirements of the Section.
- When referring to a Subsection, only the number of the Subsection is used; the word "Subsection" is implied.
- Where Section and Subsection numbers are not consecutive, the interval has been reserved for use in the Special Provisions or future expansion of the Standard Specifications.

SECTION 00120 – BIDDING REQUIREMENTS AND PROCEDURES

Comply with Section 00120 of the General Conditions modified as follows:

00120.00 Prequalification of Bidders – Delete this subsection in its entirety.

00120.01 General Bidding Requirements – Delete the sentence that reads, “For Federal-aid Projects, the identification of the Bidding firm, partnership or joint venture must match the Bidder identification listed in ODOT’s current list of prequalified Bidders.”

SECTION 00130 – AWARD AND EXECUTION OF CONTRACT

Comply with Section 00130 of the General Conditions.

Docusign Envelope ID: DBCB7DD9-CF59-44B5-91B6-AE99631720B3

SECTION 00140 - SCOPE OF WORK

Comply with Section 00140 of the General Conditions.

SECTION 00150 - CONTROL OF WORK

Comply with Section 00150 of the General Conditions modified as follows:

00150.50(c) Contractor Responsibilities – Replace the bullet that begins "Determine the exact location before excavating within …" with the following bullet:

- Determine the exact location before excavating within the tolerance zone according to OAR 952-001-0090(3)(c).

Add the following to the end of the bullet list:

- When power lines overhang the work area, maintain the minimum vertical clearance between power lines and equipment according to the Occupational Safety and Health Administration's "Table A – Minimum Clearance Distances".

Add the following subsection:

00150.50(f) Utility Information - Contractor is responsible to follow rules adopted by the Oregon Utility Notification Center, as set forth in OAR 952-001-0010 through OAR 952-001-0090.

00150.90 Final Inspection – Replace this subsection with the following:

(a) General – Each Project Site shall be considered accepted only when the requirements of this subsection are satisfied and documented by the Contractor. The Contractor shall coordinate final inspections and testing with the Engineer. Costs for any required final testing and inspection services shall be borne by the Contractor and included in the bid price unless otherwise specified.

(b) Compliance Reporting ("Handover Package") – Before scheduling final acceptance testing and inspections with the Engineer, the Contractor shall compile and submit a Handover Package for each Project Site consisting of the following documents:

(1) Grounding and Electrical

- Visual inspection report demonstrating (1) continuity and soundness of all grounding system components, including ground rings and all splices, bonds and connections, and (2) conformance with Motorola R56 Standards and Guidelines for Communication Sites performed prior to backfilling. Include a photograph of each underground connection along with an annotated diagram documenting the location of each photograph.
- Visual inspection report demonstrating continuity of above ground grounding systems, including but not limited to tower, shelter ground bar, generator, propane tanks, fence, ice shields, trays and ladders.
- Certified ground resistance test report.
- Insulation resistance test report of electrical feeders and branch circuits.

(2) Towers

- Plumb and twist survey report stamped by a licensed engineer.

Docusign Envelope ID: DBCB7DD9-CF59-44B5-91B6-AE99631720B3

- Test report documenting anchor bolt torque conforming to Sabre Industries standards.
- Visual inspection report of all bolted connections and tower appurtenances demonstrating conformance with Sabre Industries erection drawings.

(3) Equipment Shelters

- Visual inspection reporting any damage resulting from the delivery and setting of shelters by Contractor.
- Visual inspection and performance test reports for (1) shelter bearing and level, (2) door and door hardware operation, (3) weather seals, (4) interior lighting and switches, (5) electrical outlets, and (6) HVAC functionality.

(4) Generator and Fuel Systems

- Generator and ATS Start-up and Commissioning Report prepared by County's manufacturer-authorized generator vendor.
- Visual inspection and pressurized leak test report of propane fuel system prior to fueling and start-up.

(5) Photovoltaic Systems

- Visual inspection report of system installation, bolt torque testing (PV array support structures and panel mounting hardware) and wiring.
- Test report for insulation resistance testing of PV strings.
- Inverter commissioning report.

(6) Other

- Visual inspection report of fencings and performance testing of gates and gate hardware.
- Visual inspection report of access roads and drainage features, soil stabilization measures and site restoration
- Building permit approved final inspection reports.
- As-built drawings
- O&M manuals and warranties
- Signed "Ready for Equipment Installation" certificate provided by County.

(c) On-site Construction Work - The Engineer will inspect the Project at a time close to the completion of On-Site Work.

When all On-Site Work on the Project is completed, including, but not limited to, Change Order Work and Extra Work, the Engineer will issue Second Notification as specified in 00180.50(g).

Within 15 Calendar Days after the Engineer receives the Contractor's written notification that all punch list items, final trimming and cleanup according to 00140.90 have been completed, the Engineer will review the Project and notify the Contractor that all Work is complete, or will give the Contractor written instruction regarding incomplete or unsatisfactory Work.

(d) All Contract Work - The Engineer will issue the Third Notification when the Contractor has satisfactorily accomplished all of the following: • The Contractor has completed all On-Site Work required under the Contract, including the punch list items from (a) above; • The Contractor has removed all Equipment, other than that incorporated into the Work; and • The Contractor has submitted all required certifications, bills, forms, warranties and other documents.

Docusign Envelope ID: DBCB7DD9-CF59-44B5-91B6-AE99631720B3

SECTION 00160 - SOURCE OF MATERIALS

Comply with Section 00160 of the General Conditions.

SECTION 00165 - QUALITY OF MATERIALS

Comply with Section 00165 of the General Conditions.

SECTION 00170 - LEGAL RELATIONS AND RESPONSIBILITIES

Comply with Section 00170 of the General Conditions modified as follows:

00170.70(a) Insurance Coverages – Add the following after the first paragraph:

Insurance Coverages per Occurrence	Combined Single Limit	Annual Aggregate Limit
• Commercial General Liability	$1,000,000	$2,000,000
• Commercial Auto Liability	$1,000,000	(Aggregate limit not required)

SECTION 00180 - PROSECUTION AND PROGRESS

Comply with Section 00180 of the General Conditions modified as follows:

Add the following subsection:

00180.40(c) Specific Limitations - Limitations of operations specified in these Special Provisions include, but are not limited to, the following:

Limitations	Subsection
Cooperation with Utilities	00150.50
Contract Time	00180.50(h)
Right-of-Way and Access Delays	00180.65
Closed Lanes	00220.40(e)(1)
Special Events	00220.40(e)(2)(b)
Opening Sections to Traffic	00744.51

The Contractor shall be aware of and subject to schedule limitations in the Standard Specifications that are not listed in this subsection.

00180.41 Project Work Schedules - Add the following paragraph:

The Contractor shall submit a Type **B** schedule.

Add the following subsections:

00180.50(h) Contract Time - The Contractor shall complete all Work to be done under the Contract not later than July 31, 2026.

00180.50(i) Interim Completion Dates – The Contractor shall complete all Work associated with the following Project Milestones not later than the following Interim Completion Dates:

Docusign Envelope ID: DBCB7DD9-CF59-44B5-91B6-AE99631720B3

Project Milestone	Crooked Finger, Lower Prospect, McCully Mountain, METCOM 911 and Wipper	House Mountain and APW
Erection of steel lattice radio tower, tower accessories and tower grounding system to allow for the installation of tower-mounted radio equipment by others.	April 1, 2026	May 1, 2026
Installation of prefabricated equipment shelter to allow for the installation of radio and DC power equipment by others.	April 22, 2026	May 22, 2026
Installation of site grounding system and energization of primary and backup site power.	May 13, 2026	June 12, 2026

00180.80(d) Basis for Adjustment of Contract Time – Replace the second to the last bullet in this subsection with the following bullet:

- Reasonably predictable weather conditions; or

00180.85(b) Liquidated Damages - Replace the first paragraph with the following:

Marion County will sustain damage if the Work required under the Contract is not completed within the specified Contract Time. The actual damage the County will sustain will be impossible to accurately determine. Therefore, the Contractor agrees to pay to the County, not as a penalty but as liquidated damages, any or all of the following:

(1) The amount of $1030 for each Calendar Day used in excess of the Contract Time or adjusted Contract Time for all Work under the Contract.
(2) The amount of $120 for each Calendar Day used in excess of each Interim Completion Date for the Work associated with that Interim Completion Date.

Calendar Day amounts are applicable when the Contract Time is expressed on the Calendar Day or fixed date basis.

SECTION 00190 – MEASUREMENT OF PAY QUANTITIES

Replace Section 00190 of the General Conditions in its entirety with the following:

00190.00 Scope – No separate measurement of quantities shall be made to determine Payment for Work.

SECTION 00195 - PAYMENT

Comply with Section 00195 of the General Conditions modified as follows:

00195.00(a) General – Replace this subsection with the following:

The Agency will pay only for materials and efforts incorporated into the Work or performed according to the terms of the Contract. No later than five (5) days prior to the Preconstruction Conference, the Contractor shall submit for approval by the Engineer a Schedule of Values for use in calculating progress payments under Section 00195.50.

Docusign Envelope ID: DBCB7DD9-CF59-44B5-91B6-AE99631720B3

SECTION 00196 - PAYMENT FOR EXTRA WORK

Comply with Section 00196 of the General Conditions.

SECTION 00197 - PAYMENT FOR FORCE ACCOUNT WORK

Comply with Section 00197 of the Standard Specifications.

SECTION 00199 - DISAGREEMENTS, PROTESTS AND CLAIMS

Comply with Section 00199 of the General Conditions.

SECTION 00199 - DISAGREEMENTS, PROTESTS AND CLAIMS

Comply with Section 00199 of the General Conditions.

PART 00200 THRU 03000 – STANDARD SPECIFICATIONS

SECTION 00280 – EROSION AND SEDIMENT CONTROL

Comply with Section 00280 of the Standard Specifications.

SECTION 00290 – ENVIRONMENTAL PROTECTION

Comply with Section 00290 of the Standard Specifications.

SECTION 00310 – REMOVAL OF STRUCTURES AND OBSTRUCTIONS

Comply with Section 00310 of the Standard Specifications.

SECTION 00540 – STRUCTURAL CONCRETE

Comply with Section 00540 of the Standard Specifications.

SECTION 01050 – FENCES

Comply with Section 01050 of the Standard Specifications.

Docusign Envelope ID: DBCB7DD9-CF59-44B5-91B6-AE99631720B3

EXHIBIT J - PROJECT SUMMARY LIST

MARION COUNTY RADIO PROJECT

PSL1. Government Furnished Materials & Equipment

County has purchased the materials and equipment described herein for incorporation into the Work by Contractor. County shall supply these materials and equipment to Contractor as Government Furnished Materials at no cost to Contractor. County has established the anticipated delivery dates stated herein with material and equipment suppliers. County has also established staging areas for the receipt and storage of Government Furnished Materials, as stated herein. County shall make Government Furnished Materials available to Contractor at the specified staging areas with the supplier's as-delivered packaging, wrapping, pallets, crates and dunnage.

Contractor shall incorporate all Government Furnished Materials into the Work in accordance with the Project plans and specifications and the manufacturer's published instructions. Contractor is solely response for the loading, transport, and unloading of Government Furnished Materials from specified staging areas to each Project location. Contractor may, after obtaining County's approval, make alternative arrangements with individual suppliers for the storage and delivery of Government Furnished Materials either directly to individual Project locations or to alternative staging areas and/or on different delivery dates. Contractor shall be solely responsible for all costs, risks and coordinating effort associated with the planning and execution of such alternative delivery plans, including but not limited to any storage fees, added shipping or delivery fees, unloading and transport costs, and all other related costs.

PSL2. Government Property Salvaged for Reuse

Contractor shall salvage two (2) existing 1,000-gallon propane tanks from the House Mountain project site and install one (1) of the salvaged tanks at the Lower Prospect project site and deliver one (1) of the salvaged tanks to the following location for future reuse by County:

Delivery Location:
Marion County Public Works
Crosby Radio Site
17451 Ralph Lane NE
Woodburn, Oregon 97071

County Point of Contact:
Richard Grabotin, Electronics Technician
503.588.5299
rgrabotin@co.marion.or.us

PSL3. Steel Lattice Radio Towers (Government Furnished Materials)

Make: Sabre Industries
Model: 180 Ft. S3TL-HD2
Qty: 6
Accessories: Foundation anchors and templates, equipment mounts, ice shields, bracing

Supplier Point of Contact:
Tammy Johnson, Project Manager
7101 Southbridge Drive
Sioux City, Iowa 51111
712.454.7036
tamjohnson@sabreindustries.com

Docusign Envelope ID: DBCB7DD9-CF59-44B5-91B6-AE99631720B3

Staging Area Locations: Foundation Anchors and Templates
Marion County Public Works Department
5155 Silverton Road NE, Building 2
Salem, Oregon 97305

Towers and Tower Accessories
Marion County Public Works Department
Old Aumsville Maintenance Yard
1115 Main Street
Aumsville, Oregon 97325

County Point of Contact: Michael Pierce, Fleet Supervisor
503.365.3196
mpierce@co.marion.or.us

Refer to Supporting Documents for tower manufacturer's detailed site-specific foundation design and tower erection drawings. Contractor shall install all tower accessories and tower grounding system. The installation of antennas and low-voltage cabling is excluded and will be performed by others. Refer to PSL6 for additional information.

PSL4. Prefabricated Equipment Shelters (Government Furnished Equipment)

Make: Shelter One
Models: 12' x 16' Equipment Shelters (Qty = 6)
10' x 12' Equipment Shelter (Qty = 1)
10' x 10' Generator Shelters (Qty = 2)

Supplier Point of Contact: Norm Yoder, Design and Sales Manager
5887 Monument Drive
Grants Pass, Oregon 97526
(o) 541.479.4622
(c) 541.659.7579
norm@shelter1.com

Staging Area Locations: Marion County Public Works Department
Old Aumsville Maintenance Yard
1115 Main Street
Aumsville, Oregon 97325

County Point of Contact: Michael Pierce, Fleet Supervisor
503.365.3196
mpierce@co.marion.or.us

Refer to PSL6 for additional information.

PSL5. Electrical Generators (Government Furnished Equipment)

Make: Cummins
Models: C36N6 36KW 60 Hz Outdoor Propane Genset (Qty = 4)
C36N6 36KW 60 Hz Indoor Propane Genset (Qty = 2)
OTECB Transfer Switch-Electronic Control (Qty = 1)

Docusign Envelope ID: DBCB7DD9-CF59-44B5-91B6-AE99631720B3

Make: Kohler
Models: 36CCL 36 KW 60 Hz 3PH Outdoor Propane Genset (Qty = 1)
KSS-AFTC-0150S Transfer Switch (Qty = 1)

Supplier Point of Contact: Sam Norman, Project Manager
Cummins Sales & Service North America
(c) 425.902.9513
samantha.norman@cummins.com

Staging Area Locations: Marion County Public Works Department
5155 Silverton Road NE, Building 2
Salem, Oregon 97305

County Point of Contact: Michael Pierce, Fleet Supervisor
503.365.3196
mpierce@co.marion.or.us

Refer to Supporting Documents for manufacturer's product specifications. Refer to PSL6 for additional information.

PSL6. Project Sites

Project #1 - ANDERSON – PIERCE – WONDERLY (APW)
(alternatively referred to as **NORTH FORK**)
2.6 miles north of 910 N. Santiam Hwy W., Gates, OR
LAT: N 44° 46' 52.2" (44.781158)
LONG: W 122° 26' 52.1" (-122.447814)

Source	Government Furnished Material / Equipment	Delivery Date
Sabre	Foundation Anchors and Template	10/20/2025
Sabre	180 Ft. S3TL-HD2 Steel Lattice Radio Tower	3/12/2026
Shelter One	12' x 16' Equipment Shelter	4/1/2026
Shelter One	10' x 10' Generator Shelter	4/1/2026
Cummins	C36N6 36KW 60 Hz Indoor Propane Genset	5/1/2026

Project #2 - CROOKED FINGER
NW corner of 3283 Crooked Finger Road NE, Scotts Mills, OR
LAT: N 44° 58' 24.5" (44.973480)
LONG: W 122° 36' 2.1" (-122.600571)

Source	Government Furnished Material / Equipment	Delivery Date
Sabre	Foundation Anchors and Template	10/20/2025
Sabre	180 Ft. S3TL-HD2 Steel Lattice Radio Tower	3/5/2026
Shelter One	12' x 16' Equipment Shelter	4/1/2026
Cummins	C36N6 36KW 60 Hz Outdoor Propane Genset	5/1/2026

Docusign Envelope ID: DBCB7DD9-CF59-44B5-91B6-AE99631720B3

Project #3 - HOUSE MOUNTAIN
11.1 miles southeast of Drakes Crossing, OR
LAT: N 44° 50' 28.4" (44.841210)
LONG: W 122° 28' 58.9" (-122.483040)

Source	Government Furnished Material / Equipment	Delivery Date
Sabre	Foundation Anchors and Template	10/20/2025
Sabre	180 Ft. S3TL-HD2 Steel Lattice Radio Tower	3/19/2026
Shelter One	12' x 16' Equipment Shelter	4/1/2026
Shelter One	10' x 10' Generator Shelter	4/1/2026
Cummins	C36N6 36KW 60 Hz Indoor Propane Genset	5/1/2026

Project #4 - LOWER PROSPECT
3950 Cole Road S, Salem, OR
LAT: N 44° 50' 47.59" (44.846553)
LONG: W 123° 06' 39.81" (-123.111058)

Source	Government Furnished Material / Equipment	Delivery Date
Sabre	Foundation Anchors and Template	10/20/2025
Sabre	180 Ft. S3TL-HD2 Steel Lattice Radio Tower	2/19/2026
Cummins	C36N6 36KW 60 Hz Outdoor Propane Genset	5/1/2026
Cummins	OTECB Transfer Switch-Electronic Control	On Hand

Project #5 - MCCULLY MOUNTAIN
40505 N McCully Mountain Road, Lyons, OR
LAT: N 44° 45' 48.77" (44.763547)
LONG: W 122° 37' 55.53" (-122.632091)

Source	Government Furnished Material / Equipment	Delivery Date
Sabre	Foundation Anchors and Template	10/20/2025
Sabre	180 Ft. S3TL-HD2 Steel Lattice Radio Tower	2/26/2026
Shelter One	12' x 16' Equipment Shelter	4/1/2026
Cummins	C36N6 36KW 60 Hz Outdoor Propane Genset	5/1/2026

Docusign Envelope ID: DBCB7DD9-CF59-44B5-91B6-AE99631720B3

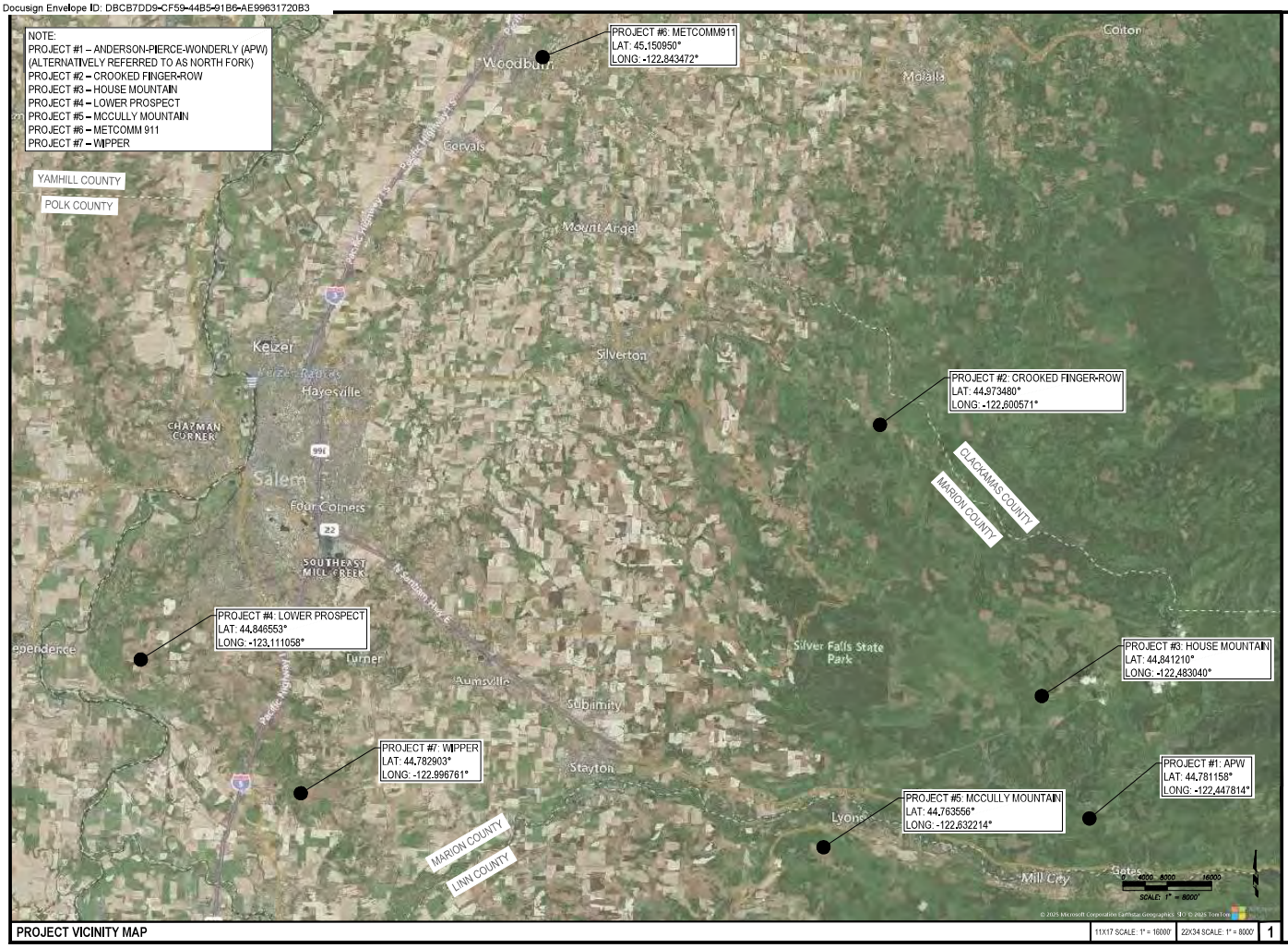
Project #6 - ~~METCOMM 911~~ (RESERVED)
~~1060 Mt. Hood Avenue, Woodburn, OR~~
~~LAT: N 45° 09' 03.4" (45.150950)~~
~~LONG: W 122° 50' 36.5" (-122.843472)~~

~~Source~~	~~Government Furnished Material / Equipment~~	~~Delivery Date~~
~~Shelter One~~	~~10' x 12' Equipment Shelter~~	~~4/1/2026~~

Project #7 - Wipper
11545 Summit Loop SE, Turner, OR
LAT: N 44° 46' 58.451" (44.782903)
LONG: W 122° 59' 48.339" (-122.996761)

Source	Government Furnished Material / Equipment	Delivery Date
Sabre	Foundation Anchors and Template	10/20/2025
Sabre	180 Ft. S3TL-HD2 Steel Lattice Radio Tower	2/12/2026
Kohler	36CCL 3PH Outdoor Propane Genset and KSS-AFTC-0150S Transfer Switch	On Hand

Docusign Envelope ID: DBCB7DD9-CF59-44B5-91B6-AE99631720B3



PROJECT VICINITY MAP | 11X17 SCALE: 1" = 16000' | 22X34 SCALE: 1" = 8000' | 1

Marion County
OREGON

PROJECT INFORMATION:

MARION COUNTY

DATE	RELEASE
ISSUE	PROJECT SUBMITTAL

DRAWING INFORMATION:
THIS DRAWING IS COPYRIGHTED AND IS THE SOLE PROPERTY OF THE OWNER. IT IS PRODUCED SOLELY FOR USE BY THE OWNER AND ITS AFFILIATES. REPRODUCTION OR USE OF THIS DRAWING AND/OR THE INFORMATION CONTAINED IN IT IS FORBIDDEN WITHOUT THE WRITTEN PERMISSION OF THE OWNER.

PLANS PREPARED BY:

Cushing
Civil Engineers
12725 SW MILLIKAN WAY
SUITE 300
BEAVERTON, OR 97005
(503) 387-6331
www.cushingcivilengineers.com

SHEET TITLE:

PROJECT VICINITY MAP

Docusign Envelope ID: DBCB7DD9-CF59-44B5-91B6-AE99631720B3

EXHIBIT K

PLANS AND DRAWINGS

Plans and drawing referenced in other Contract Documents, such as those referenced in the INVITATION TO BID AND INVITATION TO BID ADDENDUM #1 THROUGH #9, are fully incorporated by reference.

EXHIBIT K

SITE NAME:

APW

2.6 MI NORTH OF 910 N SANTIAM HWY W, GATES, OR

SHEET INDEX

CONSTRUCTION SUBMITTAL:

T-1	COVER SHEET
V-1	EXISTING CONDITIONS (SURVEY)
G-1	GENERAL NOTES
ER-1	GRADING & EROSION CONTROL PLAN
ER-2	GRADING & EROSION CONTROL DETAILS
C-1	OVERALL SITE PLAN
C-2	ENLARGED SITE PLAN
C-3	ELEVATIONS
C-4	COMPOUND DETAILS
C-5	GENERATOR & PROPANE TANK DETAILS
C-6	HVAC DETAILS
C-7	EQUIPMENT SHELTER FOUNDATION PLAN
C-8	GENERATOR SHELTER FOUNDATION PLAN
E-1	SITE GROUNDING PLAN & DETAILS
E-2	GROUNDING DETAILS I
E-3	GROUNDING DETAILS II
RF-1.0	RF TOWER APPURTENANCES I
RF-1.1	RF TOWER APPURTENANCES II
RF-1.2	RF TOWER APPURTENANCES III
RF-1.3	RF TOWER APPURTENANCES IV
RF-1.4	RF TOWER APPURTENANCES V
RF-1.5	RF TOWER APPURTENANCES VI
U-1	SOLAR PV ARRAY DETAILS I
U-2	SOLAR PV ARRAY DETAILS II
U-3	SOLAR PV ARRAY DETAILS III
U-4	SOLAR PV ARRAY DETAILS IV
U-5	SOLAR PV ARRAY DETAILS V
U-6	SOLAR PV ARRAY DETAILS VI

SHELTER ONE PREFABRICATED SHELTER DRAWINGS (REFER TO STATE OF OREGON BUILDING CODES DIVISION FOR STATE INSIGNIA):

SH-1	EQUIPMENT SHELTER EXTERIOR ELEVATIONS
SH-2	EQUIPMENT SHELTER INTERIOR ELEVATIONS
SH-3	HIGH SNOW ENTRY VESTIBULE
SH-4	ELECTRICAL ONE-LINE DRAWING
SH-5	ELECTRICAL PANEL SCHEDULE
SH-6	GENERATOR SHELTER EXTERIOR ELEVATIONS
SH-7	GENERATOR INTERIOR ELEVATIONS

PROJECT INFORMATION

PROPERTY OWNER:
WEYERHAEUSER TIMBER HOLDINGS INC ATTN TAX DEPARTMENT
220 OCCIDENTAL AVE S
SEATTLE, WA 98104
CONTACT:
NAME
PHONE

TOWER OWNER:
MARION COUNTY PUBLIC WORKS
5155 SILVERTON RD NE
SALEM, OR 97305
CONTACT:
BRIAN NICHOLAS
(503) 588-7943
bnicholas@co.marion.or.us

COUNTY:
MARION

JURISDICTION:
MARION COUNTY

ZONING:
TC (TIMBER CONSERVATION)

NEPA FCC:
REPORT BY BLACK MOUNTAIN
DATED 09/08/2025

PARCEL NUMBER(S) & AREA:
ACCOUNT #: 111342
TAXLOT #: 093E160000700
7,005,319.2 SQ FEET±
160.82 ACRES±

PROJECT AREA:
TOTAL COMPOUND AREA - 6,458 SQ FEET ±
ACCESS DRIVE AND PARKING - EXISTING
TOTAL - 6,458 SQ FEET ±

PROJECT LOCATION:
*LAT: N 44° 46'52.2" (44.781158)
*LONG: W 122°26'52.1" (-122.447814)
*GROUND ELEVATION (ASML) = 2,430'±

*INFORMATION OBTAINED FROM GOOGLE EARTH

UTILITY PROVIDERS:
TELCO PROVIDER: N/A
POWER PROVIDER: N/A

GENERAL INFORMATION:
1. TRAFFIC IS UNAFFECTED
2. SIGNAGE AT SITE IS PROPOSED
3. SITE IS UNMANNED AND HANDICAP ACCESS IS NOT REQUIRED

CODE INFORMATION:
1. IBC-2018 INTERNATIONAL BUILDING CODE
2. NEC-2017 NATIONAL ELECTRIC CODE
3. 2019 OREGON STRUCTURAL SPECIALTY CODE
4. 2017 NFPA 58 CODE
5. OCCUPANCY GROUP: U
6. CONSTRUCTION TYPE: II-B

PROJECT INFORMATION CONTINUED

APPLICANT:
MARION COUNTY PUBLIC WORKS
5155 SILVERTON RD NE
SALEM, OR 97305
CONTACT:
BRIAN NICHOLAS
(503) 588-7943
bnicholas@co.marion.or.us

PROJECT MANAGER:
PATRICK HOOVER
(971) 295-0152
phoover@rtspnw.com

CONSTRUCTION MANAGER:
PATRICK HOOVER
(971) 295-0152
phoover@rtspnw.com

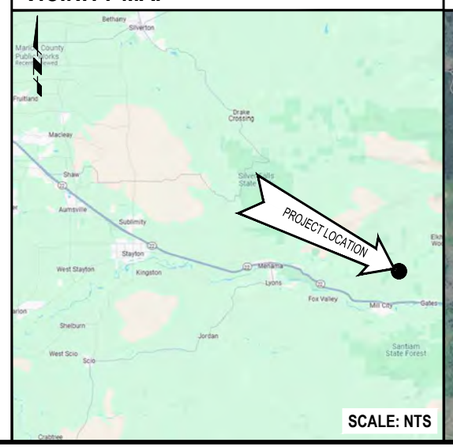
ZONING CONTACT:
CUSHING CIVIL ENGINEERS
12725 SW MILLIKAN WAY, STE 300
BEAVERTON, OR 97005
CONTACT:
ROB HOWE
(503) 387-5331
rob@cushingcivilengineers.com

ENGINEER OF RECORD:
CUSHING CIVIL ENGINEERS
12725 SW MILLIKAN WAY, STE 300
BEAVERTON, OR 97005
CONTACT:
KENNY MCMANAWAY
(503) 387-5331
kenny@cushingcivilengineers.com

SURVEYOR:
ORION GEOMATICS
1724 23RD AVE
FOREST GROVE, OR 97116
CONTACT:
JOHN PUTNAM
(503) 359-1688
jputnam@oriongeomatics.com

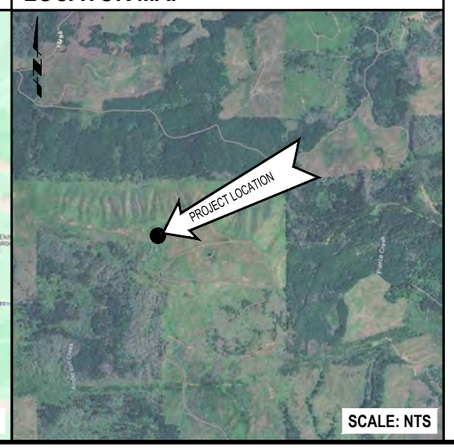
GEOTECH:
CARLSON TESTING, INC
35 SE BRIDGEFORD BLVD
BEND, OR 97702
CONTACT:
PARKER RICHMOND
(541) 330-9155
prichmond@carlsontesting.com

VICINITY MAP



SCALE: NTS

LOCATOR MAP



SCALE: NTS

DRIVING DIRECTIONS

FROM MARION COUNTY PUBLIC WORKS BUILDING:

1. HEAD SOUTHEAST TOWARD OR-213 S (299 FT) & TURN RIGHT ONTO OR-213 S (0.2 MI)
   0.2 MI
2. TURN LEFT ONTO CORDON RD NE (4.3 MI) & TURN LEFT ONTO N 1ST ST/CASCADE HWY NE (226 FT)
   4.3 MI
3. TURN LEFT ONTO GAFFIN RD SE (1.2 MI) & TURN RIGHT ONTO DEER PARK DR SEE (0.3 MI)
   1.5 MI
4. MERGE ONTO OR-22 E/N SANTIAM HWY SE
   28.2 MI
5. TURN LEFT
   2.6 MI

EST. TIME: 48 MINS.
EST. MILEAGE: 36.9 MI

PROJECT DESCRIPTION

1. PROPOSED INSTALLATION OF A NEW PUBLIC SAFETY COMMUNICATIONS FACILITY FOR MARION COUNTY, OREGON.
2. PROPOSED INSTALLATION OF THE FOLLOWING EQUIPMENT ON A NEW 180' SELF-SUPPORT TOWER:
   * ANTENNAS W/ ASSOCIATED ANCILLARY EQUIPMENT
3. PROPOSED INSTALLATION OF THE FOLLOWING EQUIPMENT WITHIN GROUND:
   * (1) 1000 GAL. PROPANE TANK
   * (1) GENERATOR
   * (1) ICE-BRIDGE
   * (1) 12'x16' EQUIPMENT SHELTER
   * (1) 10'x10' GENERATOR SHELTER
   * GROUND MOUNTED SOLAR PV ARRAY

Marion County
OREGON

PROJECT INFORMATION:

MARION COUNTY
APW
2.6 MI NORTH OF 910 N SANTIAM HWY W
GATES, OR

	DATE	RELEASE
	05-23-25	SITE SKETCH
	07-07-25	PRELIMINARY ZONING DRAWINGS
	07-11-25	SITE PLAN KM-2
	08-27-25	PRELIMINARY CONSTRUCTION DRAWINGS
	09-19-25	FINAL CONSTRUCTION DRAWINGS

DRAWING INFORMATION:
THIS DRAWING IS COPYRIGHTED AND IS THE SOLE PROPERTY OF THE OWNER. IT IS PRODUCED SOLELY FOR USE BY THE OWNER AND ITS AFFILIATES. REPRODUCTION OR USE OF THIS DRAWING AND/OR THE INFORMATION CONTAINED IN IT IS FORBIDDEN WITHOUT THE WRITTEN PERMISSION OF THE OWNER.

PLANS PREPARED BY:

cushing Civil Engineers

Cushing Civil Engineers
12725 SW MILLIKAN WAY
SUITE 300
BEAVERTON, OR 97005
(503) 387-5331
www.cushingcivilengineers.com

LICENSURE:

REGISTERED PROFESSIONAL ENGINEER
83233
OREGON
JUNE 7, 2012
KENNY McMANAWAY

RENEWAL DATE 12/31/26

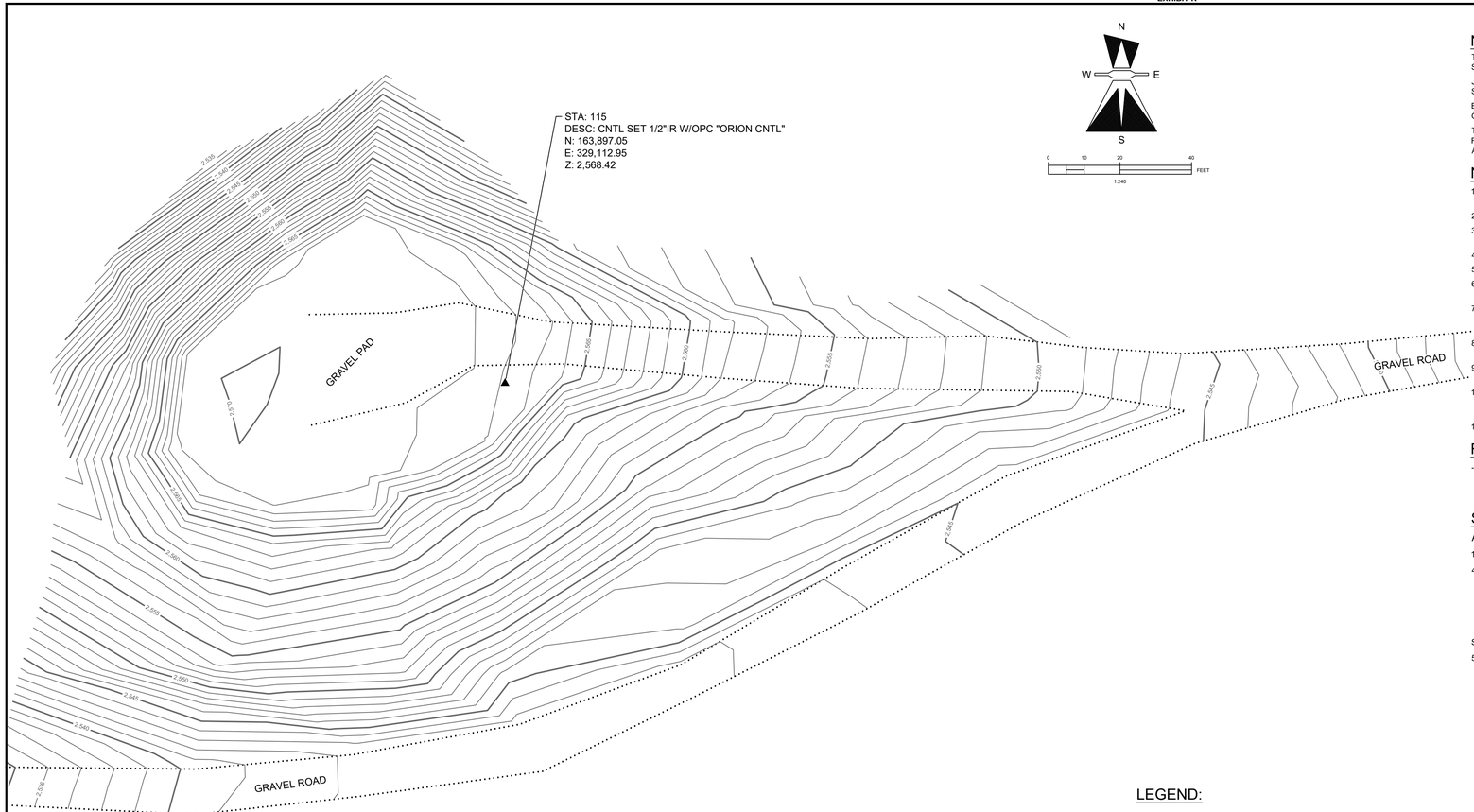
SHEET TITLE:

COVER SHEET

SHEET NUMBER:

T-1

EXHIBIT K



CONTROL TABLE				
CONTROL STATION	DESCRIPTION	NORTHING	EASTING	ORTHOMETRIC HEIGHT
115	CNTL SET 1/2"IR W/OPC "ORION CNTL"	163897.05	329112.95	2568.42
116	CNTL SET 5/8"IR W/OPC "ORION CONTROL"	163804.46	331077.53	2341.94

MONUMENT TABLE			
MONUMENT	DESCRIPTION	FALLING	RECORD
406	FOUND 2-1/2" IP W/ BLM BRASS CAP 'T9S R3E \ 1/4 S16 S21 \ 1976' UP 0.5'	HELD	1976 BLM SURVEY OR-R0618 P 174
407	FOUND 2-1/2" IP W/ BLM BRASS CAP 'T9S R3E \ 1/4 S21 S28 \ 2009' UP 0.3'	HELD	2011 BLM DEPENDENT RESURVEY AND SUBDIVISION OF SECTIONS 17 & 21

NARRATIVE:

THE PURPOSE OF THIS SURVEY IS TO PREPARE A PRE-DESIGN BASE MAP FOR FUTURE EXPANSION OF MARION COUNTY'S COMMUNICATION SITE 'HOUSE MOUNTAIN,.

JOHN D PUTNAM PERFORMED THE FIELD SURVEY ON JUNE 13TH, 2025. TERRESTRIAL MEASUREMENTS WERE MADE UTILIZING A LEICA MS60 1 SECOND ROBOTIC TOTAL STATION. GNSS OBSERVATIONS WERE MADE UTILIZING A LEICA GS16 RECEIVER.

BEARINGS ARE BASED ON THE NAD 1983(2011) [EPOCH 2010] OREGON COORDINATE REFERENCE SYSTEM, SALEM ZONE AS DETERMINED BY GNSS OBSERVATION TO THE OREGON REAL-TIME GNSS NETWORK.

THE NORTH-SOUTH CENTERLINE OF SECTION 21, TOWNSHIP 9 SOUTH, RANGE 3 EAST, WILLAMETTE MERIDIAN WAS ESTABLISHED BY HOLDING FOUND MONUMENTS '406' AND '407'. THE SOUTH LINE OF THE SOUTHWEST ONE-QUARTER OF SECTION 16 WAS ESTABLISHED PER RECORD ANGLE PER BLM CADASTRAL SURVEY 7535 FILED 08/26/2011,

NOTES:

1. FIELD SURVEY AND MAPPING PERFORMED ON JUNE 13TH, 2025 BY J. PUTNAM UTILIZING A LEICA MS60 ROBOTIC TOTAL STATION AND LEICA GS18 GNSS RECEIVERS.
2. UNITS ARE STATED IN INTERNATIONAL FEET.
3. BEARINGS ARE BASED ON THE NAD 1983(2011) [EPOCH 2010] ORGON COORDINATE PREFERENCE SYSTEM, SALEM ZONE AS DETERMINED BY GNSS OBSERVATION TO THE OREGON REAL-TIME GNSS NETWORK .
4. ELEVATIONS ARE BASED NAVD 1988 AS ESTABLISHED BY GNSS OBSERVATION TO THE OREGON REAL-TIME GNSS NETWORK.
5. ALL DISTANCES ARE GRID BASED ON THE LOW DISTORTION ZONE.
6. TRUE GEODETIC AZIMUTH = GRID AZIMUTH (BEARING BASIS) + MAPPING ANGLE. THE MAPPING ANGLE IS 00°26'52" AT CONTROL STATION 115. THE MAGNETIC DECLINATION FROM TRUE GEODETIC AZIMUTH IS 14°26' EAST.
7. THE TERM "CERTIFY" (OR ITS DERIVATIVES) SHALL MEAN A STATEMENT SIGNED AND/OR SEALED BY A SURVEYOR REPRESENTING THAT THE SURVEYOR'S KNOWLEDGE, INFORMATION AND BELIEF, IN ACCORDANCE WITH COMMONLY ACCEPTED PROCEDURES CONSISTENT WITH APPLICABLE STANDARDS OF PRACTICE, AND IS NOT A GUARANTY OR WARRANTY, EITHER EXPRESSED OR IMPLIED.
8. THIS SURVEY SHOWS ONLY THOSE DEDICATIONS AND EASEMENTS CONTAINED IN THE SUPPLIED TITLE SEARCH. IT IS POSSIBLE THAT OTHER RECORDED OR UNRECORDED INSTRUMENTS EFFECTING THIS PROPERTY MAY EXIST.
9. ORION GEOMATICS MAKES NO WARRANTIES AS TO MATTERS OF UNWRITTEN TITLE SUCH AS ADVERSE POSSESSION, ACQUIESCENCE, ESTOPPLE, ETC.
10. ALL STATEMENTS WITHIN THE CERTIFICATION, AND OTHER REFERENCES LOCATED ELSEWHERE HEREON, RELATED TO: UTILITIES, IMPROVEMENTS, STRUCTURES, BUILDINGS, PARTY WALLS, EASEMENTS, SERVITUDES, AND ENCROACHMENTS; ARE BASED SOLELY ON ABOVE GROUND, VISIBLE EVIDENCE, UNLESS ANOTHER SOURCE OF INFORMATION IS SPECIFICALLY REFERENCED HEREON.
11. NO UTILITIES WERE MARKED PRIOR TO SURVEY. [TABLE 'A' ITEM 11]

REFERENCES:

-RECORDS OF SURVEY:

R1) MCSR 39522

R2) BLM DEPENDENT RESURVEY OF SECTION 17 & 21

SURVEY RELATED SPECIAL EXCEPTIONS (SCHEDULE B):

AMERITITLE STATUS OF RECORD TITLE NO. 100775 DATED JULY 8, 2025

1 - 3. NOT SURVEY RELATED

4. AGREEMENT AND THE TERMS AND CONDITIONS CONTAINED THEREIN
BETWEEN: UNITED STATES OF AMERICA, BUREAU OF LAND MANAGEMENT
AND: LONGVIEW TIMBERLANDS LLC, A DELAWARE COPORATION
RECORDED: SEPTEMBER 1, 2009
INSTRUMENT NO.: REEL: 3100 PAGE: 228

SURVEYOR'S NOTE: EXCEPTION IS IS A BLANKET IN NATURE.

5 - 6. NOT SURVEY RELATED.

LEGEND:

CENTERLINE OF ROAD
RIGHT-OF-WAY LINE
SECTION LINE
BOUNDARY LINE
PROPERTY / LOT LINE
EASEMENT LINE
CURB
EDGE OF CONCRETE
EDGE OF PAVEMENT
EDGE OF GRAVEL
CHAIN LINK FENCE
WOOD / METAL FENCE
WIRE FENCE
STRIPING
STORM DRAIN
SANITARY SEWER
WATER LINE
IRRIGATION LINE
GAS LINE
BURIED POWER
BURIED COMS LINE
BURIED FIBER OPTIC
BURIED CABLE TV
BURIED SIGNAL
OVERHEAD UTILITIES
OVERHEAD POWER
OVERHEAD COMS LINE
CONCRETE
ASPHALTIC CONCRETE
RAMP
CANOPY

SANITARY MANHOLE
SANITARY LIFT STATION
SANITARY VAULT
STORM MANHOLE
DRY WELL
STORM INLET
STORM INLET (ROUND)
STORM INLET LID
STORM VAULT
CLEAN OUT
MANHOLE (UNK / OTHER TYPE)
RISER (UNK / OTHER TYPE)
HANDHOLE (UNK / OTHER TYPE)
VAULT (UNK / OTHER TYPE)
FIRE HYDRANT
FIRE AUTO CONNECTION
FIRE RISER
FIRE VALVE
FIRE VAULT
IRRIGATION VALVE
IRRIGATION RISER
IRRIGATION VAULT
WATER METER
WATER VALVE
WATER MANHOLE
WATER RISER
WATER VAULT
NATURAL GAS METER
NATURAL GAS VALVE
NATURAL GAS RISER
NATURAL GAS VAULT

POWER METER
TRANSFORMER
POWER RISER
POWER HANDHOLE
POWER VAULT
POWER MANHOLE
COMS HANDHOLE
COMS RISER
COMS VAULT
COMS MANHOLE
FIBER RISER
FIBER HANDHOLE
FIBER VAULT
TELCO RISER
TELCO HANDHOLE
TELCO VAULT
TELCO MANHOLE
CABLE TV RISER
CABLE TV HANDHOLE
CABLE TV VAULT
FUEL FILLER
FUEL MANHOLE
UTILITY POLE W/DROP
GUY ANCHOR
POLE
TRAFFIC SIGNAL
PEDESTRIAN SIGNAL
SIGNAL CONTROL BOX
SIGNAL HANDHOLE
SIGNAL VAULT
LUMINAIRE / STREET LIGHT
YARD LIGHT

SIGN
BOLLARD
MAIL BOX
TOWER
RR SIGNAL
RR SWITCH THROW
RR RISER
RR HANDHOLE
RR VAULT
RR CROSSING GATE
RR CROSSING SIGNAL (NO GATE)
MONITOR WELL
TEST BORE
TEST PIT
VENT
CONIFER TREE
DECIDUOUS TREE
PALM TREE
SHRUB
HIGH OCCUPANCY VEHICLE
HANDICAP PARKING
BIKE LANE
RAILROAD CROSSING

BENCH MARK
FOUND CONTROL AS NOTED
SET CONTROL AS NOTED
PHOTO CONTROL
FOUND MONUMENT AS NOTED
FOUND MONUMENT AS NOTED (ALTERNATE)
SET MONUMENT AS NOTED
SET MONUMENT AS NOTED (ALTERNATE)
FOUND SECTION CORNER AS NOTED
FOUND QUARTER CONER AS NOTED
SET SECTION CORNER AS NOTED
SET QUARTER CONER AS NOTED
ENCROACHMENT
A/C ASPHALTIC CONCRETE
YPC YELLOW PLASTIC CAP
OPC ORANGE PLASTIC CAP
RPC RED PLASTIC CAP
ALC ALUMINIUM CAP
IR IRON ROD
IP IRON PIPE
BP COPPER PLUG
BRS BRASS
UKN UNKNOWN
COMS COMMUNICATIONS
A AS-BUILT INFORMATION
HFL HELD FOR LINE
SFNF SEARCHED FOR NOT FOUND

UTILITY STATEMENT:

THE UNDERGROUND UTILITIES SHOWN ARE BASED ON SURVEYED UTILITY LOCATE MARKINGS AND EXISTING DRAWINGS. THE SURVEYOR MAKES NO GUARANTEE THAT THE UNDERGROUND UTILITIES SHOWN COMPRISE ALL SUCH UTILITIES IN THE AREA, EITHER IN SERVICE OR ABANDONED. THE SURVEYOR FURTHER DOES NOT WARRANT THAT THE UNDERGROUND UTILITIES SHOWN ARE IN THE EXACT LOCATION INDICATED ALTHOUGH HE DOES CERTIFY THAT THEY ARE LOCATED AS ACCURATELY AS POSSIBLE FROM INFORMATION AVAILABLE. THE SURVEYOR HAS NOT PHYSICALLY LOCATED THE UNDERGROUND UTILITIES.

SECTION 16, T09S, R03E, W.M

11X17 SCALE: 1" = 40'	22X34 SCALE: 1" = 20'	1

Marion County
OREGON

PROJECT INFORMATION:

MARION COUNTY APW

2.6 MI NORTH OF 910 SANTIAM HWY W
GATES, OR

	DATE	RELEASE
0	07/18/2025	INITIAL SURVEY RELEASE

DRAWING INFORMATION:
THIS DRAWING IS COPYRIGHTED AND IS THE SOLE PROPERTY OF THE OWNER. IT IS PRODUCED SOLELY FOR USE BY THE OWNER AND ITS AFFILIATES. REPRODUCTION OR USE OF THIS DRAWING AND/OR THE INFORMATION CONTAINED IN IT IS FORBIDDEN WITHOUT THE WRITTEN PERMISSION OF THE OWNER.

PLANS PREPARED BY:

cushing Civil Engineers

Cushing
Civil Engineers

12725 SW MILLIKAN WAY
SUITE 300
BEAVERTON, OR 97005
(503) 387-5331
www.cushing-engr.com

LICENSURE:

orion GEOMATICS
Because the world is a spatial place™
1724 23rd Avenue | Forest Grove OR 97116
T: 503.359.1688 | www.oriongeomatics.com

REGISTERED
PROFESSIONAL
LAND SURVEYOR

DIGITAL SIGNATURE

OREGON
JULY 19, 1994
JOHN D. PUTNAM
2676

RENEWS: 12-31-26
DIGITALLY SIGNED 07/18/2025

SHEET TITLE:

EXISTING CONDITIONS

SHEET NUMBER:

V-1

EXHIBIT K

GENERAL NOTES:

1. DRAWINGS ARE NOT TO BE SCALED, WRITTEN DIMENSIONS TAKE PRECEDENCE, THIS SET OF DOCUMENTS IS INTENDED TO BE USED FOR DIAGRAMMATIC PURPOSED ONLY, UNLESS NOTED OTHERWISE. THE GENERAL CONTRACTOR'S SCOPE OF WORK SHALL INCLUDE FURNISHING ALL MATERIALS, EQUIPMENT, LABOR AND ANY REQUIREMENTS DEEMED NECESSARY TO COMPLETE INSTALLATION AS DESCRIBED IN THE DRAWINGS AND OWNER'S PROJECT MANUAL.
2. THE CONTRACTOR IS RESPONSIBLE FOR ALL DIMENSIONS AND STANDARDIZED DETAILS THAT REQUIRE MODIFICATIONS DUE TO ACTUAL FIELD CONDITIONS AND REQUIREMENTS MUST BE SUBMITTED TO AND APPROVED BY OWNERS REPRESENTATIVE PRIOR TO START OF WORK.
3. PRIOR TO THE SUBMISSION OF BIDS, CONTRACTORS INVOLVED SHALL VISIT THE JOB SITE TO FAMILIARIZE THEMSELVES WITH ALL CONDITIONS AFFECTING THE PROPOSED PROJECT. CONTRACTORS SHALL VISIT THE CONSTRUCTION SITE WITH THE CONSTRUCTION/CONTRACT DOCUMENTS TO VERIFY FIELD CONDITIONS AND CONFIRM THAT THE PROJECT WILL BE ACCOMPLISHED AS SHOWN. PRIOR TO PROCEEDING WITH CONSTRUCTION, ANY ERRORS, OMISSIONS, OR DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT/ENGINEER VERBALLY AND IN WRITING.
4. THE GENERAL CONTRACTOR SHALL RECEIVE WRITTEN AUTHORIZATION TO PROCEED WITH CONSTRUCTION PRIOR TO STARTING WORK ON ANY ITEM NOT CLEARLY DEFINED BY THE CONSTRUCTION DRAWINGS/CONTRACT DOCUMENTS.
5. THE CONTRACTOR SHALL SUPERVISE AND DIRECT THE PROJECT DESCRIBED IN THE CONTRACT DOCUMENTS. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR ALL CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES, SAFETY, AND PROCEDURES FOR COORDINATING ALL PORTIONS OF THE WORK UNDER THE CONTRACT.
6. THE CONTRACTOR SHALL INSTALL ALL EQUIPMENT AND MATERIALS ACCORDING TO MANUFACTURER'S/VENDOR'S SPECIFICATIONS UNLESS NOTED OTHERWISE OR WHERE LOCAL CODES OR ORDINANCES TAKE PRECEDENCE.
7. ALL WORK PERFORMED ON THE PROJECT AND MATERIALS INSTALLED SHALL BE IN STRICT ACCORDANCE WITH ALL APPLICABLE CODES, REGULATIONS, AND ORDINANCES. CONTRACTOR SHALL GIVE ALL NOTICES AND COMPLY WITH ALL LAWS, ORDINANCES, RULES, REGULATIONS AND LAWFUL ORDERS OF ANY PUBLIC AUTHORITY, MUNICIPAL AND UTILITY COMPANY SPECIFICATIONS, AND LOCAL AND STATE JURISDICTIONAL CODES BEARING ON THE PERFORMANCE OF THE WORK.
8. THE CONTRACTOR SHALL PROVIDE, AT THE PROJECT SITE, A FULL SET OF CONSTRUCTION DOCUMENTS UPDATED WITH THE LATEST REVISIONS INVOLVED WITH THE PROJECT. THIS SET IS A VALID CONTRACT DOCUMENT ONLY IF THE TITLE SHEET IS STAMPED IN RED INK "FOR CONSTRUCTION" AND EACH SUCCESSIVE SHEET BEARS THE ARCHITECT'S/ENGINEER'S SIGNED WET STAMP.
9. THE CONTRACTOR IS RESPONSIBLE FOR ADEQUATELY BRACING AND PROTECTING ALL WORK DURING CONSTRUCTION AGAINST DAMAGE, BREAKAGE, COLLAPSE, ETC. ACCORDING TO APPLICABLE CODES, STANDARDS, AND GOOD CONSTRUCTION PRACTICES. THE STRUCTURAL COMPONENTS OF ADJACENT CONSTRUCTION OR FACILITIES ARE NOT TO BE ALTERED BY THE CONSTRUCTION PROJECT UNLESS NOTED OTHERWISE.
10. THE CONTRACTOR SHALL MEET ALL OSHA REQUIREMENTS FOR ALL INSTALLATIONS.
11. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL DAMAGES TO THE EXISTING CONSTRUCTION AND REPAIR ALL DAMAGES TO EQUAL OR BETTER NEW CONSTRUCTION. THE CONTRACTOR SHALL NOTIFY THE PROJECT MANAGER OF ANY DAMAGE TO THE BUILDING SITE OR ANY ADJACENT STRUCTURES AROUND THE PROJECT. THE OWNERS REPRESENTATIVE SHALL BE SOLE AND FINAL JUDGE AS TO THE QUALITY OF THE REPAIRED CONSTRUCTION. ANY ADDITIONAL MODIFICATIONS WHICH MUST BE MADE SHALL BE MADE AT THE CONTRACTOR'S EXPENSE.
12. WHERE NEW PAVING, CONCRETE SIDEWALKS OR PATHS MEET EXISTING CONSTRUCTION, THE CONTRACTOR SHALL MATCH THE EXISTING PITCH, GRADE, AND ELEVATION SO THE ENTIRE STRUCTURE SHALL HAVE A SMOOTH TRANSITION.
13. THE CONTRACTOR SHALL MODIFY THE EXISTING FLOORS, WALL, CEILING, OR OTHER CONSTRUCTION AS REQUIRED TO GAIN ACCESS TO AREAS FOR ALL MECHANICAL, PLUMBING, ELECTRICAL, OR STRUCTURAL MODIFICATIONS. WHERE THE EXISTING CONSTRUCTION DOORS, PARTITIONS, CEILING, ETC., ARE TO BE REMOVED, MODIFIED, OR REARRANGED OR WHERE THE EXPOSED OR HIDDEN MECHANICAL, ELECTRICAL, SYSTEMS ARE ADDED OR MODIFIED, THE GENERAL CONTRACTOR SHALL REPAIR, PATCH AND MATCH ALL EXISTING CONSTRUCTION AND FINISHES OF ALL FLOORS WALLS AND CEILINGS. WHERE CONCRETE MASONRY CONSTRUCTION IS MODIFIED, THE CONTRACTOR SHALL TOOTH IN ALL NEW CONSTRUCTION TO MATCH THE EXISTING BOND. WHERE CONCRETE CONSTRUCTION IS MODIFIED, THE CONTRACTOR SHALL VERIFY THE EXACT DETAILS TO BE USED FOR CONSTRUCTION. ALL WORK SHALL BE COVERED UNDER THE GENERAL CONTRACT.
14. IF CONTRACTOR OR SUBCONTRACTOR FIND IT NECESSARY TO DEVIATE FROM ORIGINAL APPROVED PLANS, THEN IT IS THE CONTRACTOR'S AND THE SUBCONTRACTOR'S RESPONSIBILITY TO PROVIDE THE PROJECT MANAGER WITH 4 COPIES OF THE PROPOSED CHANGES FOR HIS APPROVAL BEFORE PROCEEDING WITH THE WORK. IN ADDITION THE CONTRACTOR AND SUBCONTRACTORS SHALL BE RESPONSIBLE FOR PROCURING ALL NECESSARY APPROVALS FROM THE BUILDING AUTHORITIES FOR THE PROPOSED CHANGES BEFORE PROCEEDING WITH THE WORK. THE CONTRACTOR AND SUBCONTRACTORS SHALL BE RESPONSIBLE FOR PROCURING ALL NECESSARY INSPECTIONS AND APPROVALS FROM BUILDING AUTHORITIES DURING THE EXECUTION OF THE WORK.
15. CONTRACTOR TO PROVIDE A PORTABLE FIRE EXTINGUISHER WITH A RATING OF NOT LESS THAN 2-A OR 2-A10BC WITHIN 75 FEET TRAVEL DISTANCE TO ALL PORTIONS OF PROJECT AREA DURING CONSTRUCTION.
16. THIS IS AN ESSENTIAL FACILITY THEREFORE SHALL STRICTLY MEET ALL APPLICABLE CODE AND JURISDICTIONAL REQUIREMENTS.

GENERAL NOTES CONTINUED:

17. THE CONTRACTOR SHALL PERFORM WORK DURING SITE/PROPERTY OWNER'S PREFERRED HOURS TO AVOID DISTURBING NORMAL BUSINESS.
18. SEAL ALL PENETRATIONS THROUGH FIRE-RATED AREAS WITH U.L. LISTED OR FIRE MARSHAL APPROVED MATERIALS AS APPLICABLE TO THIS FACILITY AND OR PROJECT SITE.
19. CONTRACTOR SHALL BE RESPONSIBLE FOR UTILITY LOCATES, SCHEDULING, COORDINATING SPECIAL AND BUILDING DEPARTMENT INSPECTIONS.
21. ROUTING OF ALL CONDUITS, CABLES, CABLE TRAYS ETC ARE INDICATED AS PROPOSED LOCATION ONLY. CONFIRM THE EXACT LOCATION AND ROUTING WITH THE ON SITE PROJECT MANAGER PRIOR TO STARTING WORK.

CONCRETE NOTES:

1. ALL CONCRETE WORK SHALL BE IN ACCORDANCE WITH THE ACI 301, ACI 318 AND THE SPECIFICATION CAST-IN-PLACE CONCRETE.
2. ALL CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 3000 PSI AT 28 DAYS (UNO).
3. REINFORCING STEEL SHALL CONFORM TO ASTM A 615, GRADE 60, DEFORMED UNLESS NOTED OTHERWISE. WELDED WIRE FABRIC SHALL CONFORM TO ASTM A 185 WELDED STEEL WIRE FABRIC UNLESS NOTED OTHERWISE. SPLICES CLASS "B" AND ALL HOOKS SHALL BE STANDARD (UNO).
4. THE FOLLOWING MINIMUM CONCRETE COVER SHALL BE PROVIDED FOR REINFORCING STEEL UNLESS SHOWN OTHERWISE ON DRAWINGS: CONCRETE CAST AGAINST EARTH - 3 IN.
   CONCRETE EXPOSED TO EARTH OR WEATHER:
   #6 AND LARGER .....2 IN.
   #5 AND SMALLER & WWF .....1-1/2 IN.
5. A 1/2" TROWELED RADIUS SHALL BE PROVIDED AT ALL EXPOSED EDGES OF CONCRETE (UNO). HOLES TO RECEIVE EXPANSION/WEDGE ANCHORS SHALL BE 1/8" LARGER IN DIAMETER THAN THE ANCHOR BOLT, DOWEL OR ROD AND SHALL CONFORM TO MFR RECOMMENDATION FOR EMBEDMENT DEPTH OR AS SHOWN ON THE DRAWINGS. AVOID CUTTING EXISTING REBAR WHEN DRILLING HOLES IN THE ELEVATED SLAB.
6. INSTALLATION OF CONCRETE EXPANSION AND WEDGE ANCHOR, SHALL BE PER MANUFACTURER'S WRITTEN RECOMMENDED PROCEDURES.
7. FLOAT SURFACE SHALL BE A SMOOTH FINISH. SURFACE SHALL BE FREE OF ALL OBVIOUS DEPRESSIONS. SURFACE SHALL BE SLOPED AT 2% TO PROMOTE DRAINAGE AWAY FROM EQUIPMENT.

SITE WORK NOTES:

1. RUBBISH, STUMPS, DEBRIS, STICKS, STONES AND OTHER REFUSE SHALL BE REMOVED FROM THE SITE AND DISPOSED OF LEGALLY UNLESS OTHERWISE REQUIRED TO BE LEFT AS DEFINED BY LAND/PROPERTY OWNER.
2. THE SITE SHALL BE GRADED TO CAUSE SURFACE WATER TO FLOW AWAY FROM THE EQUIPMENT, EQUIPMENT SHELTER, GENERATOR, FUEL TANK, TOWER AREAS, AND ADJACENT BUILDINGS, ETC.
3. NO FILL OR EMBANKMENT MATERIAL SHALL BE PLACED ON FROZEN GROUND. FROZEN MATERIALS, SNOW OR ICE SHALL NOT BE PLACED IN ANY FILL OR EMBANKMENT.
4. THE SUBGRADE SHALL BE COMPACTED AND BROUGHT TO A SMOOTH UNIFORM GRADE PRIOR TO THE CRUSHED STONE APPLICATION. FABRIC USE AS REQUIRED.
5. ALL APPLICABLE LOCATES SHALL BE PERFORMED PRIOR TO TO ANY EXCAVATION OR SITE GRADING. ALL EXISTING ACTIVE SEWER, WATER, GAS, ELECTRIC, AND OTHER UTILITIES WHERE ENCOUNTERED IN THE WORK, SHALL BE PROTECTED AT ALL TIMES, AND WHERE REQUIRED FOR THE PROPER EXECUTION OF THE WORK, SHALL BE RELOCATED AS DIRECTED BY ENGINEERS. EXTREME CAUTION SHOULD BE USED BY THE CONTRACTOR WHEN EXCAVATING OR PIER DRILLING AROUND OR NEAR UTILITIES. CONTRACTOR SHALL PROVIDE SAFETY TRAINING FOR THE WORKING CREW.
6. ALL EXISTING INACTIVE SEWER, WATER, GAS, ELECTRIC AND OTHER UTILITIES, WHICH INTERFERE WITH THE EXECUTION OF THE WORK, SHALL BE REMOVED AND SHALL BE CAPPED, PLUGGED OR OTHERWISE DISCONTINUED AT POINTS WHICH WILL NOT INTERFERE WITH THE EXECUTION OF THE WORK, SUBJECT TO THE APPROVAL OF ENGINEERING.
7. THE AREAS OF THE PROPERTY DISTURBED BY THE WORK AND NOT COVERED BY THE BUILDING, DRIVEWAY OR CRUSHED STONE, SHALL BE GRADED TO A UNIFORM SLOPE, FERTILIZED, SEEDED, AND COVERED WITH MULCH AS SPECIFIED IN THE SPECIFICATION LANDSCAPE WORK..
8. BEDDING MATERIAL FOR UTILITY LINES, CULVERTS AND PIPING: CLEAN SAND, MEDIUM TP COARSE, SUB ROUNDED NATURAL RIVER OR BANK SAND, WASHED, FREE OF SILT OR CLAY, LOAM, FRIABLE OR SOLUBLE MATERIALS, AND ORGANIC MATTER; GRADED IN ACCORDANCE WITH THE FOLLOWING GRAIN SIZE DISTRIBUTION:

SIEVE SIZE	PERCENT PASSING
	100
NO. 4 MESH	60-90
NO. 8 MESH	0-45
NO. 16 MESH	0-25
NO. 100 MESH	0-2
NO. 200 MESH	0-2

9. BMP'S FOR TEMPORARY EROSION/SEDIMENTATION CONTROL SHALL BE IMPLEMENTED PER LOCAL, CITY OR COUNTY GUIDELINES AND PER PLAN IF APPLICABLE.

SITE WORK NOTES CONTINUED:

10. ALL SITE DESIGN AND CONSTRUCTION MUST COMPLY WITH INDUSTRY STANDARDS AND BE ALIGNED WITH BMP GUIDELINES AS TECHNICALLY APPLICABLE. EACH SITE MUST BE PM APPROVED BEFORE IT SHALL BE CONSIDERED COMPLETE AND ACCEPTED.
11. IF INADVERTENT DISCOVERIES OF NATIVE AMERICAN CULTURAL MATERIALS OR HUMAN REMAINS ARE MADE DURING CONSTRUCTION, ALL WORK SHOULD CEASE AND POTENTIALLY AFFECTED TRIBES, AS WELL AS THE STATE HISTORIC PRESERVATION OFFICE, SHOULD BE NOTIFIED IMMEDIATELY.

TOWER/POLE NOTES:

1. ALL ANTENNAS, LINES AND RELATED INSTALLATION HARDWARE TO BE PROVIDED BY THE LAND MOBILE COMMUNICATIONS PROVIDER.
2. ALL HARDWARE (NUTS AND BOLTS) BE TIGHTENED AND TORQUED IN ACCORDANCE WITH THE TOWER MANUFACTURER'S AND STRUCTURAL ENGINEER'S SPECIFICATIONS.
3. VERIFICATION THAT THE TOWER/POLE CAN SUPPORT THE PROPOSED ANTENNA LOADING IS TO BE DONE BY OTHERS.
4. PROVIDE SUPPORTS FOR THE ANTENNA COAX CABLES TO THE ELEVATION OF ALL INITIAL AND FUTURE ANTENNAS. ANTENNA COAX CABLES ARE TO BE SUPPORTED AND RESTRAINED AT THE CENTERS SUITABLE TO THE MANUFACTURER'S REQUIREMENTS.

ATTENTION (OREGON SITES ONLY):

CALL 1-800-332-2344 48 HOURS BEFORE YOU DIG. OREGON LAW REQUIRES YOU TO FOLLOW OAR 952-001-0010 THRU 952-001-0090. COPIES ARE AVAILABLE AT THE OREGON UTILITY NOTIFICATION CENTER 503-232-1987

DESIGN LOADS:

ROOF SNOW LOAD DATA -	GROUND SNOW LOAD:	199 PSF*
	FLAT-ROOF SNOW LOAD:	N/A
	SNOW EXPOSURE FACTOR:	N/A
	SNOW LOAD IMPORTANCE FACTOR:	N/A
	THERMAL FACTOR:	N/A
WIND DESIGN DATA -	ULTIMATE DESIGN WIND SPEED:	107 MPH*
	RISK CATEGORY:	IV
	WIND EXPOSURE:	C*
	INTERNAL PRESSURE COEFFICIENT:	N/A
	DESIGN WIND PRESSURES;	
	WIND LOAD HORIZONTAL (MWFRS):	N/A
	WIND LOAD (UPLIFT) (MWFRS):	N/A
EARTHQUAKE DESIGN DATA -	RISK CATEGORY:	IV
	SEISMIC IMPORTANCE FACTOR:	N/A
	MAPPED SPECTRAL RESPONSE ACCEL-ERATION PARAMETERS;	
	S_S	0.617
	S_1	0.309
	SITE CLASS:	C
	DESIGN SPECTRAL RESPONSE ACCEL-ERATION PARAMETERS;	
	S_{DS}	0.515
	S_{D1}	0.309
	SEISMIC DESIGN CATEGORY:	D
SYSTEM:	BASIC SEISMIC FORCE-RESISTING	BEARING WALL
	DESIGN BASE SHEAR:	N/A
	SEISMIC RESPONSE COEFFICIENT:	N/A
	RESPONSE MODIFICATION COEFFICIENT:	N/A
	ANALYSIS PROCEDURE USED:	N/A
GEOTECHNICAL INFORMATION -	ALLOWABLE BEARING CAPACITY:	4,000 PSF

REFER TO GEOTECH REPORT BY CARLSON GEOTECHNICAL DATED JULY 14, 2025.

*INFORMATION OBTAINED FROM ASCE 7 HAZARD TOOL

SYMBOLS LEGEND

1 REVISION
1 KEY NOTE DETAIL
3 / C-4 REFERENCE ELEVATION
A / C-3 SECTION REFERENCE
ELEVATION DATUM POINT

CHAINLINK FENCE
CEDAR FENCE
PROPANE — LPG
UNDERGROUND POWER — P
OVERHEAD POWER — OHP

TELCO — T
POWER/TELCO — T/P
GAS — G
WATER — W
COAX — COAX
CENTERLINE
EASEMENT
PROPERTY LINE
SUBJECT PROPERTY LINE

ABBREVIATIONS LEGEND

A/C	AIR CONDITIONING
ADJ	ADJUSTABLE
AFF	ABOVE FINISH FLOOR
AGL	ABOVE GRADE LEVEL
APPROX	APPROXIMATELY
ASTM	AMERICAN SOCIETY FOR TESTING & MATERIALS
AWG	AMERICAN WIRE GAUGE
BLDG	BUILDING
BLK	BLOCK
BMR	BASE MOBILE RADIO
B/S	BUILDING STANDARD
CLG	CEILING
CLR	CLEAR
CONC	CONCRETE
CONST	CONSTRUCTION
CONT	CONTINUOUS
DBL	DOUBLE
DIA, Ø	DIAMETER
DIAG	DIAGONAL
DIM	DIMENSION
DN	DOWN
DTL, DETL	DETAIL
DWG	DRAWING
E	EAST
EA	EACH
EL, ELEV	ELEVATION
ELECT	ELECTRICAL
EQ	EQUAL
EQUIP	EQUIPMENT
E.W.	EACH WAY
EX	EXISTING
EXT	EXTERIOR
FIN	FINISH
FLUOR	FLUORESCENT
FLR	FLOOR
FT	FOOT
GA	GAUGE
GALV	GALVANIZE(D)
GC	GENERAL CONTRACTOR
GRND	GROUND
GWB	GYPSUM WALL BOARD
GYP BD	GYPSUM BOARD
HARD'WD	HARDWOOD
HORIZ	HORIZONTAL
HR	HOUR
HT	HEIGHT
HVAC	HEATING, VENTING AND AIR CONDITIONING
I.D.	INSIDE DIA.
IN	INCH
INFO	INFORMATION
INSUL	INSULATION
INT	INTERIOR
LB(S)	POUND(S)
LNA	ANTENNA AMPLIFIER
MAX	MAXIMUM
MECH	MECHANICAL
MET, MTL	METAL
MFR	MANUFACTURER
MGR	MANAGER
MIN	MINIMUM
MISC	MISCELLANEOUS
N	NORTH
NA	NOT APPLICABLE
NIC	NOT IN CONTRACT
NTS	NOT TO SCALE
OC, o/c	ON CENTER
OD	OUTSIDE DIAMETER
OPG	OPENING
OPP	OPPOSITE
OHP	OVERHEAD POWER
UGP	UNDRGRND POWER
OHT	OVERHEAD TELCO
UGT	UNDRGRND TELCO
PR	PAIR
PROJ	PROJECT
PROP	PROPERTY
P	PROPOSED
PT	PRESSURE TREATED
REQ'D	REQUIRED
RM	ROOM
R.O.	ROUGH OPENING
S	SOUTH
SHT	SHEET
SIM	SIMILAR
SPEC	SPECIFICATION
SQ	SQUARE
SS	STAINLESS STEEL
STL	STEEL
STRUCT	STRUCTURAL
SUSP	SUSPENDED
S.V.	SHEET VINYL
THRU	THROUGH
TNND	TINNED
T.O.C.	TOP OF CONCRETE
T.O.M.	TOP OF MASONRY
TYP	TYPICAL
U.N.O.	UNLESS NOTED OTHERWISE
VERT	VERTICAL
VIF	VERIFY IN FIELD
VT	VINYL TILE
W	WEST
W/	WITH
WIN	WINDOW
W/O	WITHOUT
WP	WATERPROOF
∠	ANGLE
&	AND
℄	CENTER LINE
ℙ	PROPERTY LINE
@	AT
#	NUMBER

Marion County OREGON

PROJECT INFORMATION:

MARION COUNTY APW

2.6 MI NORTH OF 910 N SANTIAM HWY W
GATES, OR

	DATE	RELEASE
	05-23-25	SITE SKETCH
	07-07-25	PRELIMINARY ZONING DRAWINGS
	07-11-25	SITE PLAN KM-2
	08-27-25	PRELIMINARY CONSTRUCTION DRAWINGS
	09-19-25	FINAL CONSTRUCTION DRAWINGS

DRAWING INFORMATION:
THIS DRAWING IS COPYRIGHTED AND IS THE SOLE PROPERTY OF THE OWNER. IT IS PRODUCED SOLELY FOR USE BY THE OWNER AND ITS AFFILIATES. REPRODUCTION OR USE OF THIS DRAWING AND/OR THE INFORMATION CONTAINED IN IT IS FORBIDDEN WITHOUT THE WRITTEN PERMISSION OF THE OWNER.

PLANS PREPARED BY:

cushing Civil Engineers

Cushing
Civil Engineers
12725 SW MILLIKAN WAY
SUITE 300
BEAVERTON, OR 97005
(503) 387-5331
www.cushingcivilengineers.com

LICENSURE:

REGISTERED PROFESSIONAL ENGINEER 83233 OREGON JUNE 7, 2012 KENNY McMANAWAY

RENEWAL DATE 12/31/26

SHEET TITLE:

GENERAL NOTES

SHEET NUMBER:

G-1

EROSION CONTROL NOTES:

1. OWNER OR DESIGNATED PERSON SHALL BE RESPONSIBLE FOR PROPER INSTALLATION AND MAINTENANCE OF ALL EROSION AND SEDIMENT CONTROL MEASURES, IN ACCORDANCE WITH LOCAL, STATE, AND FEDERAL REGULATIONS.
2. THE IMPLEMENTATION OF THESE ESC PLANS AND CONSTRUCTION, MAINTENANCE, REPLACEMENT, AND UPGRADING OF THESE ESC FACILITIES IS THE RESPONSIBILITY OF THE CONTRACTOR UNTIL ALL CONSTRUCTION IS COMPLETED AND APPROVED BY THE LOCAL JURISDICTION, AND VEGETATION/LANDSCAPING IS ESTABLISHED. THE DEVELOPER SHALL BE RESPONSIBLE FOR MAINTENANCE AFTER THE PROJECT IS APPROVED UNTIL THE LOTS ARE SOLD.
3. THE BOUNDARIES OF THE CLEARING LIMITS SHOWN ON THIS PLAN SHALL BE CLEARLY MARKED IN THE FIELD PRIOR TO CONSTRUCTION. DURING THE CONSTRUCTION PERIOD, NO DISTURBANCE BEYOND THE CLEARING LIMITS SHALL BE PERMITTED. THE MARKINGS SHALL BE MAINTAINED BY THE APPLICANT/CONTRACTOR FOR THE DURATION OF CONSTRUCTION.
4. THE ESC FACILITIES SHOWN ON THIS PLAN MUST BE CONSTRUCTED IN CONJUNCTION WITH ALL CLEARING AND GRADING ACTIVITIES, AND IN SUCH A MANNER AS TO INSURE THAT SEDIMENT AND SEDIMENT LADEN WATER DOES NOT ENTER THE DRAINAGE SYSTEM, ROADWAYS, OR VIOLATE APPLICABLE WATER STANDARDS.
5. THE ESC FACILITIES SHOWN ON THIS PLAN ARE MINIMUM REQUIREMENTS FOR ANTICIPATED SITE CONDITIONS. DURING CONSTRUCTION PERIODS, THESE ESC FACILITIES SHALL BE UPGRADED AS NEEDED FOR UNEXPECTED STORM EVENTS AND TO ENSURE THAT SEDIMENT AND SEDIMENT LADEN WATER DOES NOT LEAVE THE SITE.
6. THE ESC FACILITIES SHALL BE INSPECTED DAILY BY THE APPLICANT/CONTRACTOR AND MAINTAINED AS NECESSARY TO ENSURE THEIR CONTINUED FUNCTIONING.
7. AT NO TIME SHALL SEDIMENT BE ALLOWED TO ACCUMULATE MORE THAN 1/3 THE BARRIER HEIGHT. ALL CATCH BASINS AND CONVEYANCE LINES SHALL BE CLEANED PRIOR TO PAVING. THE CLEANING OPERATIONS SHALL NOT FLUSH SEDIMENT-LADEN WATER INTO THE DOWNSTREAM SYSTEM.
8. STABILIZED GRAVEL ENTRANCES SHALL BE INSTALLED AT THE BEGINNING OF CONSTRUCTION AND MAINTAINED FOR THE DURATION OF THE PROJECT. ADDITIONAL MEASURES MAY BE REQUIRED TO INSURE THAT ALL PAVED AREAS ARE KEPT CLEAN FOR THE DURATION OF THE PROJECT.
9. STORM DRAIN INLETS, BASINS, AND AREA DRAINS SHALL BE PROTECTED UNTIL PAVEMENT SURFACES ARE COMPLETED AND/OR VEGETATION IS RE-ESTABLISHED.
10. PAVEMENT SURFACES AND VEGETATION ARE TO BE PLACED AS RAPIDLY AS POSSIBLE.
11. SEEDING SHALL BE PERFORMED NO LATER THAN SEPTEMBER 1 FOR EACH PHASE OF CONSTRUCTION.
12. IF THERE ARE EXPOSED SOILS OR SOILS NOT FULLY ESTABLISHED FROM OCTOBER 1ST THROUGH APRIL 30TH, THE WET WEATHER EROSION PREVENTION MEASURES WILL BE IN EFFECT. SEE THE EROSION PREVENTION AND SEDIMENT CONTROL PLANNING AND DESIGN MANUAL (CHAPTER 4) FOR REQUIREMENTS.
13. NO EXPOSED, BARE SOILS SHALL REMAIN UNSTABILIZED FOR MORE THAN TWO DAYS DURING THE PERIOD OCTOBER 1 THROUGH APRIL 30 OR FOR MORE THAN SEVEN DAYS DURING THE PERIOD OF MAY 1 THROUGH SEPTEMBER 30. ALL DISTURBED SOIL SURFACES SHALL BE STABILIZED BY A SUITABLE APPLICATION OF "BEST MANAGEMENT PRACTICES".
14. WHERE FEASIBLE, NO MORE THAN 500 FEET OF TRENCH SHALL BE OPEN AT ONE TIME. EXCAVATED MATERIAL SHALL BE PLACED ON THE UPHIL SIDE OF TRENCHES PROVIDED IT DOES NOT CONFLICT WITH SAFETY REQUIREMENTS.
15. THE DEVELOPER SHALL REMOVE ESC MEASURES WHEN VEGETATION IS FULLY ESTABLISHED.

GENERAL NOTES

SCALE: NTS | 4

UNADJUSTED CUT/ FILL QUANTITIES

STRIPPING ORGANICS FOR COMPOUND;
CUT = ±43 CU. YD.

STRIPPING FOR ACCESS ROAD AND PARKING;
CUT = EXISTING

PROPOSED COMPOUND AREA;
CUT = 0 CU. YD.
FILL = 0 CU. YD.

PROPOSED ACCESS ROAD AND PARKING;
CUT = 0 CU. YD.
FILL = 0 CU. YD.

PROPOSED TOWER FOUNDATION;
EXCAVATION = ±97 CU. YD.

APPROX. TOTAL AREA OF DISTURBANCE OF PROPOSED GRADING = ±1808 SQ. FT.

REFER TO GEO-TECHNICAL ENGINEERING EVALUATION BY CARLSON GEOTECHNICAL DATED JULY 14, 2025

CUT/ FILL QUANTITIES

SCALE: NTS | 3

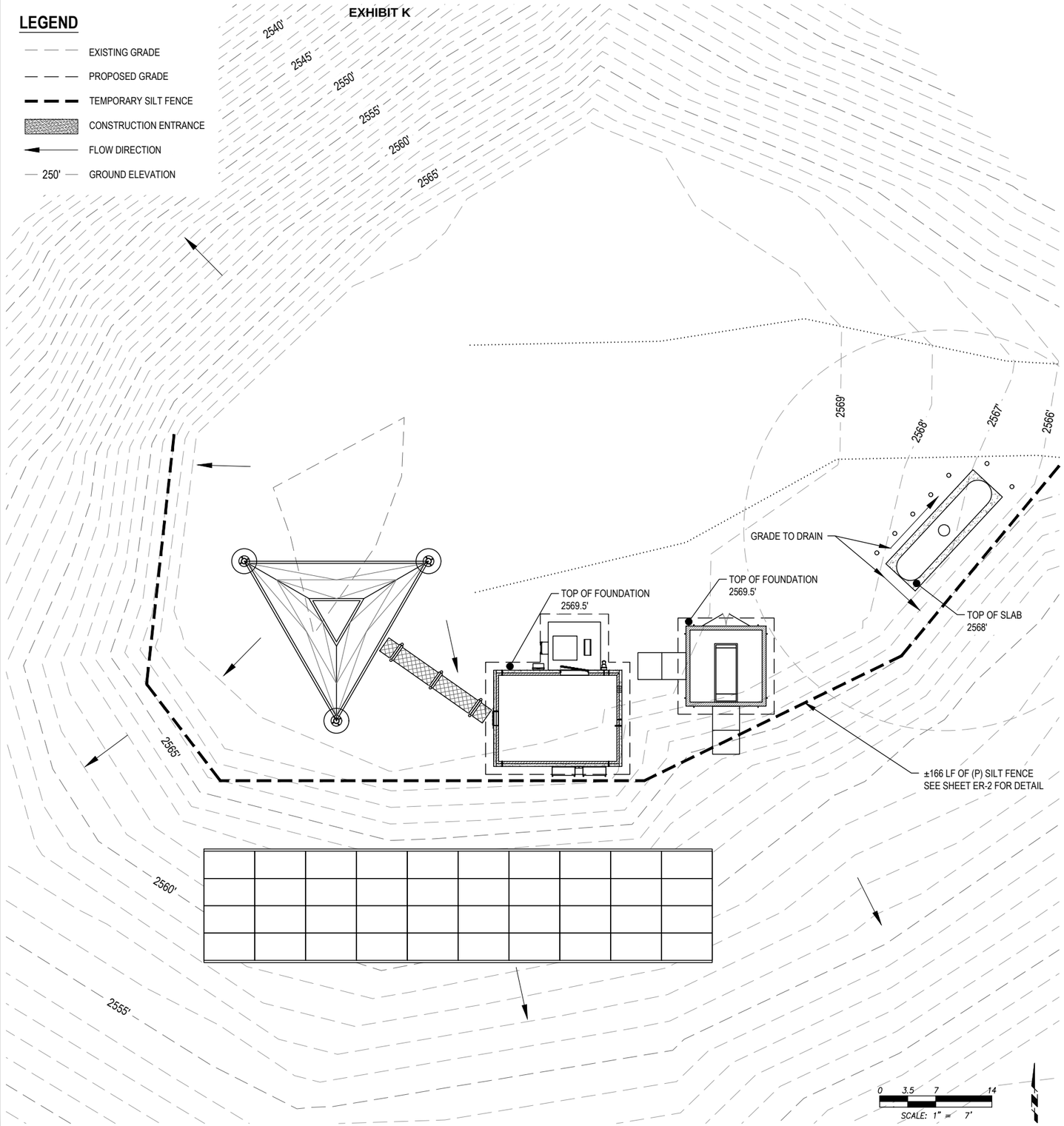
NOT USED

SCALE: NTS | 2

EXHIBIT K

LEGEND

- EXISTING GRADE
- PROPOSED GRADE
- TEMPORARY SILT FENCE
- CONSTRUCTION ENTRANCE
- FLOW DIRECTION
- 250' GROUND ELEVATION



GRADING & EROSION CONTROL PLAN

11X17 SCALE: 1" = 14' | 22X34 SCALE: 1" = 7' | 1

Marion County OREGON

PROJECT INFORMATION:

MARION COUNTY APW

2.6 MI NORTH OF 910 N SANTIAM HWY W
GATES, OR

	DATE	RELEASE
	05-23-25	SITE SKETCH
	07-07-25	PRELIMINARY ZONING DRAWINGS
	07-11-25	SITE PLAN KM-2
	08-27-25	PRELIMINARY CONSTRUCTION DRAWINGS
	09-19-25	FINAL CONSTRUCTION DRAWINGS

DRAWING INFORMATION:
THIS DRAWING IS COPYRIGHTED AND IS THE SOLE PROPERTY OF THE OWNER. IT IS PRODUCED SOLELY FOR USE BY THE OWNER AND ITS AFFILIATES. REPRODUCTION OR USE OF THIS DRAWING AND/OR THE INFORMATION CONTAINED IN IT IS FORBIDDEN WITHOUT THE WRITTEN PERMISSION OF THE OWNER.

PLANS PREPARED BY:

cushing Civil Engineers

Cushing
Civil Engineers
12725 SW MILLIKAN WAY
SUITE 300
BEAVERTON, OR 97005
(503) 387-5331
www.cushingcivilengineers.com

LICENSURE:

REGISTERED PROFESSIONAL ENGINEER
83233
OREGON
JUNE 7, 2012
KENNY McMANAWAY

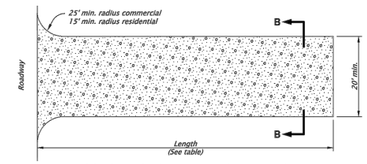
RENEWAL DATE 12/31/26

SHEET TITLE:

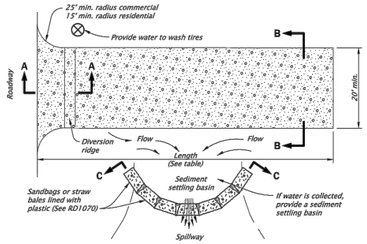
GRADING & EROSION CONTROL PLAN

SHEET NUMBER:

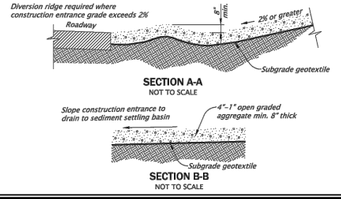
ER-1



CONSTRUCTION ENTRANCE - TYPE 1
NOT TO SCALE

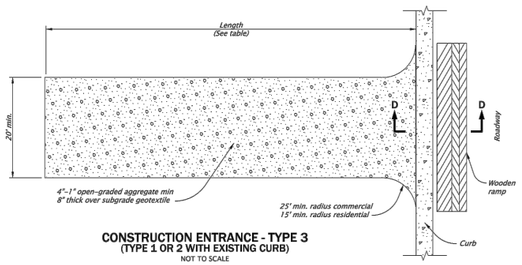


CONSTRUCTION ENTRANCE - TYPE 2
NOT TO SCALE

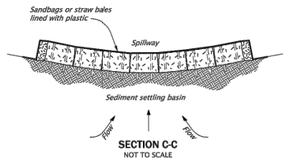


SECTION A-A
NOT TO SCALE

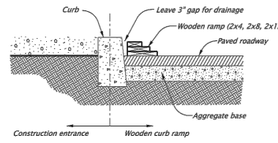
SECTION B-B
NOT TO SCALE



CONSTRUCTION ENTRANCE - TYPE 3
(TYPE 1 OR 2 WITH EXISTING CURB)
NOT TO SCALE



SECTION C-C
NOT TO SCALE



WOODEN CURB RAMP SECTION D-D
NOT TO SCALE

NOTES:
1. The Type 1 entrance is a simple entrance without a diversion ridge or settling basin.
2. The wooden ramp may be used on either Type 1 or Type 2 entrances in situations where there is curb and the curb is not removed for the construction entrance.

CONSTRUCTION ENTRANCE TABLE MINIMUM LENGTH	
Length (FT)	Area Of Exposed Soil (Acre)
20	0.25
50	0.25 < A < 1.0
100	A > 1.0

The selection and use of this Standard Drawing, while designed in accordance with generally accepted engineering principles and practices, is the sole responsibility of the user and should not be used without first consulting a Registered Professional Engineer.

All materials shall be in accordance with the current Oregon Standard Specifications.
OREGON STANDARD DRAWINGS
CONSTRUCTION ENTRANCES
2021

DATE	REVISION DESCRIPTION
01-2021	REMOVED CALC BOOK NUMBERS

CALC BOOK NO. N/A | SDR DATE 20-JAN-2021 | **RD1000**

GRAVEL CONSTRUCTION ENTRANCE

SCALE: NTS | 1

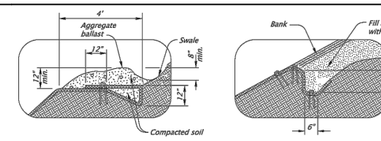


FIGURE A1:
TOP OF BANK ANCHOR TRENCH, H>3' AND TERMINAL SLOPE
NOT TO SCALE

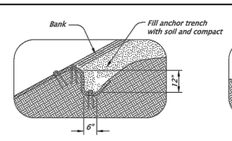


FIGURE A2:
TOP OF BANK ANCHOR TRENCH, H<3'
NOT TO SCALE

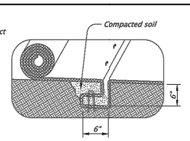


FIGURE A3:
CHANNEL CHECK SLOT
NOT TO SCALE

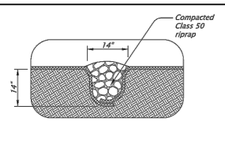


FIGURE A4:
CHANNEL CHECK SLOT WITH ROCK BACKFILL
NOT TO SCALE

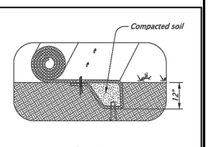
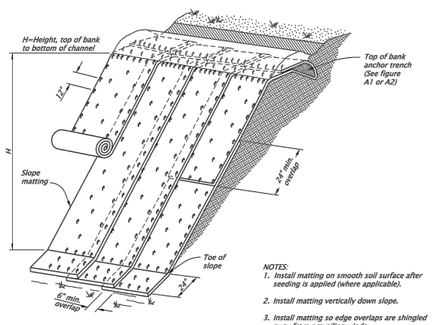
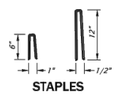


FIGURE A5:
INITIAL CHANNEL ANCHOR TRENCH
NOT TO SCALE

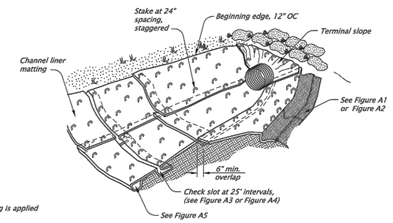


SLOPE MATTING ISOMETRIC VIEW
NOT TO SCALE

NOTES:
1. Install matting on smooth soil surface after seeding is applied (where applicable).
2. Install matting vertically down slope.
3. Install matting so edge overlaps are shingled away from prevailing winds.
4. Place fastener at 12" OC on matting edges
5. Overlap upper mat over lower mat, and fasten.
6. Stagger alternate rows of fasteners placed at 24" OC
7. Extend mat 24" beyond toe of slope; fold mat back under 4" and fasten.
8. Matting Types A through E: Furnish fully biodegradable product. Matting with plastic or photodegradable components will not be accepted.



STAPLES
NOT TO SCALE



CHANNEL MATTING ISOMETRIC VIEW
NOT TO SCALE

NOTES:
1. Install matting on smooth soil surface after seeding is applied (where applicable).
2. Install channel liner matting, in the direction of water flow. Anchor upstream end of mat with check slot for culvert outfalls, place mat under pipe 12" minimum upstream from pipe outlet.
3. Construct check slots across channel bottom at 25' spacing and at the end of each mat (Fig. A3 or A4).
4. Overlap side channel liner matting edges 6" over the center channel liner matting and fasten edges 12" OC. Continue overlap and stapling pattern for each additional side channel liner mat.
5. Lap upstream matting end 12" over beginning edge of downstream matting. Fasten 12" OC
6. Anchor top edge of side channel matting in trench and fasten 12" OC (Fig. A2).
7. Fasten matting interior at 24" OC with staggered spacing.
8. Construct initial anchor trench at downstream end of matting and terminal slope anchor at upstream end.
9. Matting Types A through E: Furnish fully biodegradable product. Matting with plastic or photodegradable components will not be accepted.

The selection and use of this Standard Drawing, while designed in accordance with generally accepted engineering principles and practices, is the sole responsibility of the user and should not be used without first consulting a Registered Professional Engineer.

All materials shall be in accordance with the current Oregon Standard Specifications.
OREGON STANDARD DRAWINGS
SLOPE AND CHANNEL MATTING
2021

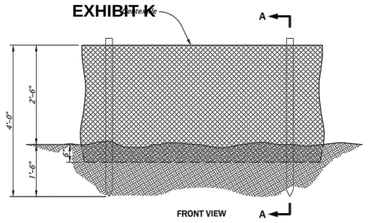
DATE	REVISION DESCRIPTION
01-2021	REMOVED CALC BOOK NUMBERS

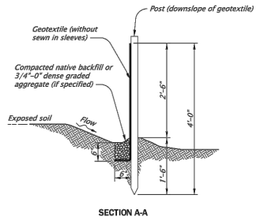
CALC BOOK NO. N/A | SDR DATE 20-JAN-2021 | **RD1055**

PLASTIC SHEETING

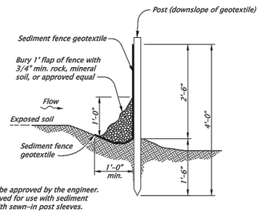
SCALE: NTS | 3

EXHIBIT K



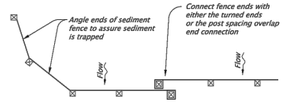


SEDIMENT FENCE AND GEOTEXTILE BURY DETAIL - TYPE 1
NOT TO SCALE

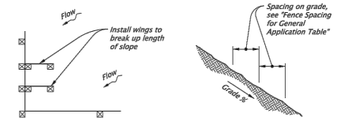


NOTES:
1. Use must be approved by the engineer.
2. Not approved for use with sediment fencing with sewn-in post sleeves.

ALTERNATE SEDIMENT FENCE WITHOUT TRENCHING - TYPE 2
NOT TO SCALE



PLAN VIEW

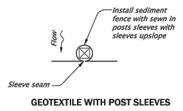


TERMINATION AT CORNER OR PROPERTY LINE

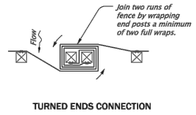
GENERAL NOTES:
1. Use 2"x2" wood fence posts.
2. Posts to be installed on downhill side of sediment fence geotextile. Position posts to prevent separation from geotextile.
3. Compact filter fabric trench backfill and soil on uphill side of fence.
4. Locate fence no closer than three feet to the toe of a slope.
5. Wing spacing shall comply with "Fence Spacing for General Application Table".

FENCE SPACING FOR GENERAL APPLICATION TABLE	
INSTALL PARALLEL ALONG CONTOURS AS FOLLOWS	
GRADE	MAXIMUM SPACING ON GRADE
Grade < 10%	300'
10% ≤ Grade < 15%	150'
15% ≤ Grade < 20%	100'
20% ≤ Grade < 30%	50'
30% ≤ Grade	25'

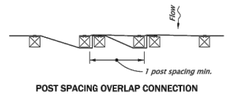
POST SPACING TABLE	
6'	Sediment Fence with Geotextile elongation less than 50%
4'	Sediment Fence with Geotextile elongation 50% or more



GEOTEXTILE WITH POST SLEEVES



TURNED ENDS CONNECTION



POST SPACING OVERLAP CONNECTION

GEOTEXTILE END CONNECTIONS
NOT TO SCALE

The selection and use of this Standard Drawing, while designed in accordance with generally accepted engineering principles and practices, is the sole responsibility of the user and should not be used without first consulting a Registered Professional Engineer.

All materials shall be in accordance with the current Oregon Standard Specifications.
OREGON STANDARD DRAWINGS
SEDIMENT FENCE
2021

DATE	REVISION DESCRIPTION
01-2021	REMOVED CALC BOOK NUMBERS

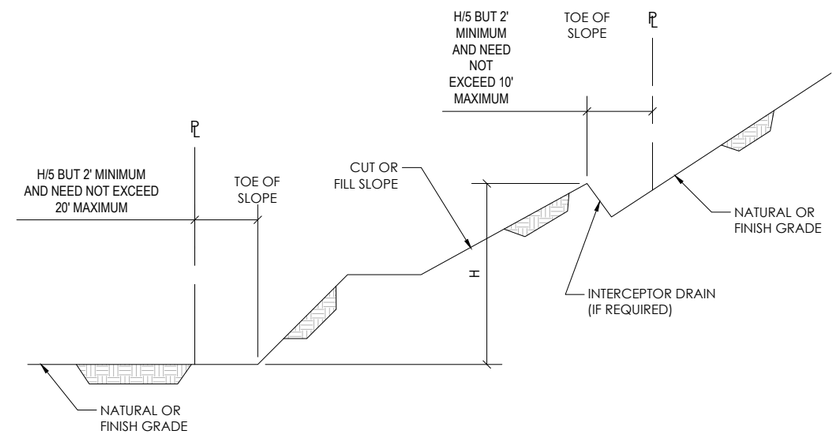
CALC BOOK NO. N/A | SDR DATE 20-JAN-2021 | **RD1040**

TEMPORARY SEDIMENT FENCE

SCALE: NTS | 2

SEDIMENT FENCE NOTES:

1. THE FILTER FABRIC FENCE SHALL BE INSTALLED TO FOLLOW THE CONTOURS WHERE FEASIBLE. THE FENCE POSTS SHALL BE SPACED A MAXIMUM OF 6' APART AND DRIVEN SECURELY INTO THE GROUND A MINIMUM OF 24".
2. THE FILTER FABRIC SHALL BE PURCHASED IN A CONTINUOUS ROLL CUT TO THE LENGTH OF THE BARRIER TO AVOID USE OF JOINTS. WHEN JOINTS ARE NECESSARY, FILTER CLOTH SHALL BE SPLICED TOGETHER ONLY AT A SUPPORT POST, WITH A MINIMUM 6" OVERLAP, AND BOTH ENDS SECURELY FASTENED TO THE POST, OR OVERLAP 2" X 2" POSTS AND ATTACH AS SHOWN ON DETAIL SHEET 4-3A OF THE EROSION CONTROL MANUAL.
3. THE FILTER FABRIC SHALL HAVE A MINIMUM VERTICAL BURIAL OF 6". ALL EXCAVATED MATERIAL FROM FILTER FABRIC INSTALLATION SHALL BE BACKFILLED AND COMPACTED ALONG THE ENTIRE DISTURBED AREA.
4. STANDARD OR HEAVY-DUTY FILTER FABRIC FENCES SHALL HAVE MANUFACTURED STITCHED LOOPS FOR 2" X 2" POST INSTALLATION. STITCHED LOOPS SHALL BE INSTALLED ON THE UP HILLSIDE OF THE SLOPED AREA.
5. FILTER FABRIC FENCES SHALL BE REMOVED WHEN THEY HAVE SERVED THEIR USEFUL PURPOSE, BUT NOT BEFORE THE UPSLOPE AREA HAS BEEN PERMANENTLY PROTECTED AND STABILIZED.
6. FILTER FABRIC FENCES SHALL BE INSPECTED BY APPLICANT/CONTRACTOR IMMEDIATELY AFTER EACH RAINFALL AND AT LEAST DAILY DURING PROLONGED RAINFALL. ANY REQUIRED REPAIRS SHALL BE MADE IMMEDIATELY.



SETBACKS AND DRAINAGE DIMENSIONS

SCALE: NTS | 4

Marion County
OREGON

PROJECT INFORMATION:

MARION COUNTY APW

2.6 MI NORTH OF 910 N SANTIAM HWY W
GATES, OR

	DATE	RELEASE
	05-23-25	SITE SKETCH
	07-07-25	PRELIMINARY ZONING DRAWINGS
	07-11-25	SITE PLAN KM-2
	08-27-25	PRELIMINARY CONSTRUCTION DRAWINGS
	09-19-25	FINAL CONSTRUCTION DRAWINGS

DRAWING INFORMATION:

THIS DRAWING IS COPYRIGHTED AND IS THE SOLE PROPERTY OF THE OWNER. IT IS PRODUCED SOLELY FOR USE BY THE OWNER AND ITS AFFILIATES. REPRODUCTION OR USE OF THIS DRAWING AND/OR THE INFORMATION CONTAINED IN IT IS FORBIDDEN WITHOUT THE WRITTEN PERMISSION OF THE OWNER.

PLANS PREPARED BY:

cushing
Civil Engineers

Cushing
Civil Engineers

12725 SW MILLIKAN WAY
SUITE 300
BEAVERTON, OR 97005
(503) 387-5331
www.cushingcivilengineers.com

LICENSURE:



RENEWAL DATE 12/31/26

SHEET TITLE:

GRADING & EROSION CONTROL DETAILS

SHEET NUMBER:

ER-2

EXHIBIT K

NOTE:
THIS IS NOT A SURVEY; ALL EXISTING INFORMATION IS PROVIDED BY MARION COUNTY GIS.

PARCEL#: 093E160000500
ZONING: TC

PARCEL#: 093E160000600
ZONING: TC

PARCEL#: 093E160000700
ZONING: TC

PROPOSED PROJECT AREA
SEE SHEET C-2 FOR DETAILS

±1173'

±2473'

±1511'

±2834'

(EX) SITE ACCESS ROAD

PARCEL#: 093E210000100
ZONING: TC

PARCEL#: 093E210000200
ZONING: TC

0 100 200 400
SCALE: 1" = 200'

© 2025 Microsoft Corporation © 2025 Maxar ©CNES (2025) Distribution Airbus DS

OVERALL SITE PLAN | 11X17 SCALE: 1" = 400' | 22X34 SCALE: 1" = 200' | 1

Marion County
OREGON

PROJECT INFORMATION:

MARION COUNTY APW

2.6 MI NORTH OF 910 N SANTIAM HWY W
GATES, OR

	DATE	RELEASE
	05-23-25	SITE SKETCH
	07-07-25	PRELIMINARY ZONING DRAWINGS
	07-11-25	SITE PLAN KM-2
	08-27-25	PRELIMINARY CONSTRUCTION DRAWINGS
	09-19-25	FINAL CONSTRUCTION DRAWINGS

DRAWING INFORMATION:
THIS DRAWING IS COPYRIGHTED AND IS THE SOLE PROPERTY OF THE OWNER. IT IS PRODUCED SOLELY FOR USE BY THE OWNER AND ITS AFFILIATES. REPRODUCTION OR USE OF THIS DRAWING AND/OR THE INFORMATION CONTAINED IN IT IS FORBIDDEN WITHOUT THE WRITTEN PERMISSION OF THE OWNER.

PLANS PREPARED BY:

cushing
Civil Engineers

Cushing
Civil Engineers

12725 SW MILLIKAN WAY
SUITE 300
BEAVERTON, OR 97005
(503) 387-5331
www.cushingcivilengineers.com

LICENSURE:

REGISTERED PROFESSIONAL ENGINEER
83233
OREGON
JUNE 7, 2012
KENNY McMANAWAY

RENEWAL DATE 12/31/26

SHEET TITLE:

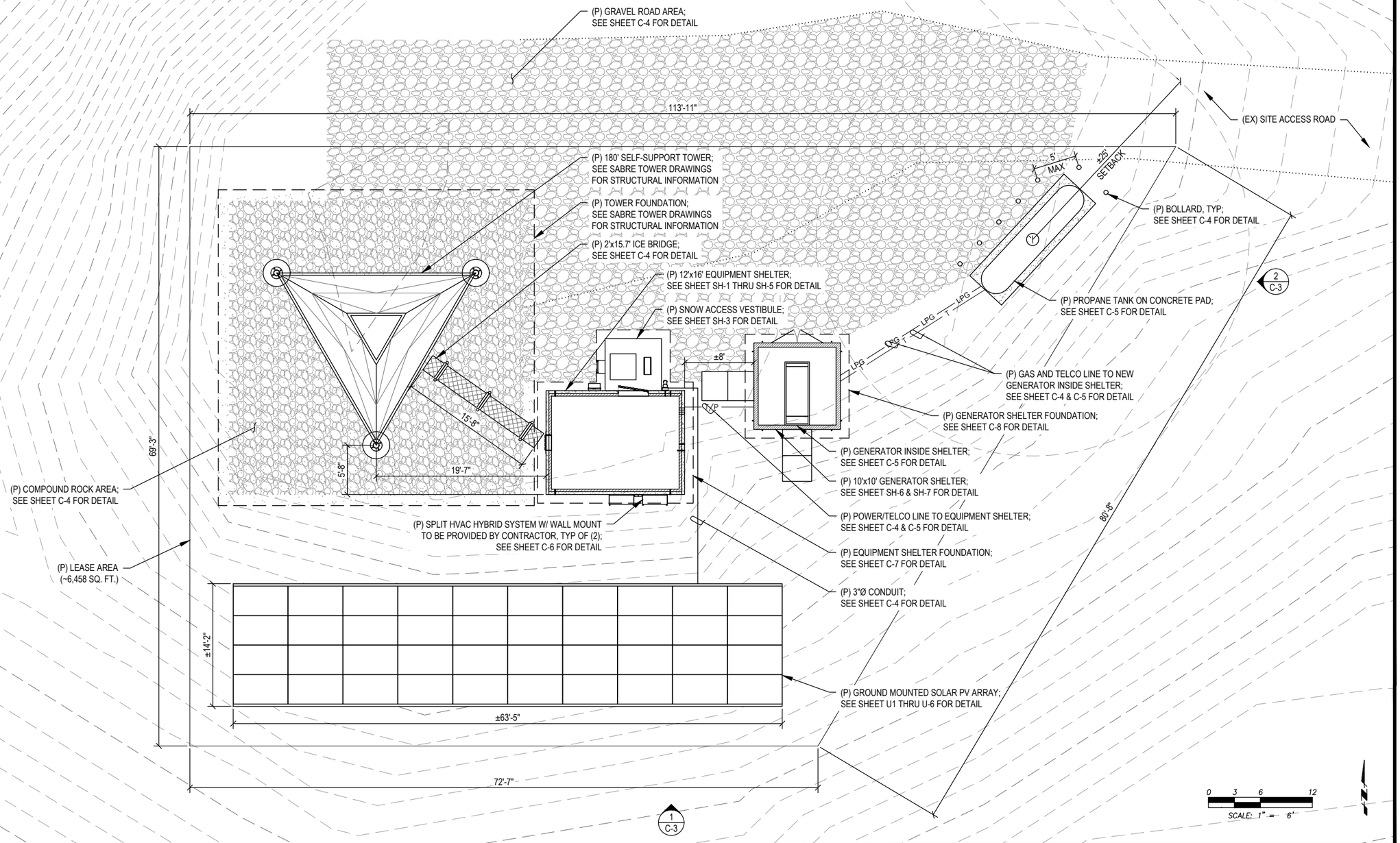
OVERALL SITE PLAN

SHEET NUMBER:

C-1

EXHIBIT K

NOTES:
1. TOWER INFO SHOWN FOR CONCEPTUAL USE ONLY. SEE SABRE TOWER STRUCTURAL DESIGN FOR DETAIL.
2. THIS IS NOT A SURVEY ALL EXISTING INFORMATION IS PROVIDED BY GIS, SURVEY & SITE WALK NOTES.
3. PROPOSED AND EXISTING ANTENNAS NOT SHOWN FOR CLARITY.



ENLARGED SITE PLAN | 11X17 SCALE: 1" = 12' | 22X34 SCALE: 1" = 6' | 1

Marion County OREGON

PROJECT INFORMATION:

MARION COUNTY APW

2.6 MI NORTH OF 910 N SANTIAM HWY W
GATES, OR

	DATE	RELEASE
	05-23-25	SITE SKETCH
	07-07-25	PRELIMINARY ZONING DRAWINGS
	07-11-25	SITE PLAN KM-2
	08-27-25	PRELIMINARY CONSTRUCTION DRAWINGS
	09-19-25	FINAL CONSTRUCTION DRAWINGS

DRAWING INFORMATION:
THIS DRAWING IS COPYRIGHTED AND IS THE SOLE PROPERTY OF THE OWNER. IT IS PRODUCED SOLELY FOR USE BY THE OWNER AND ITS AFFILIATES. REPRODUCTION OR USE OF THIS DRAWING AND/OR THE INFORMATION CONTAINED IN IT IS FORBIDDEN WITHOUT THE WRITTEN PERMISSION OF THE OWNER.

PLANS PREPARED BY:

cushing Civil Engineers

Cushing Civil Engineers
12725 SW MILLIKAN WAY
SUITE 300
BEAVERTON, OR 97005
(503) 387-5331
www.cushingcivilengineers.com

LICENSURE:

REGISTERED PROFESSIONAL ENGINEER 83233 OREGON JUNE 7, 2012 KENNY McMANAWAY

RENEWAL DATE 12/31/26

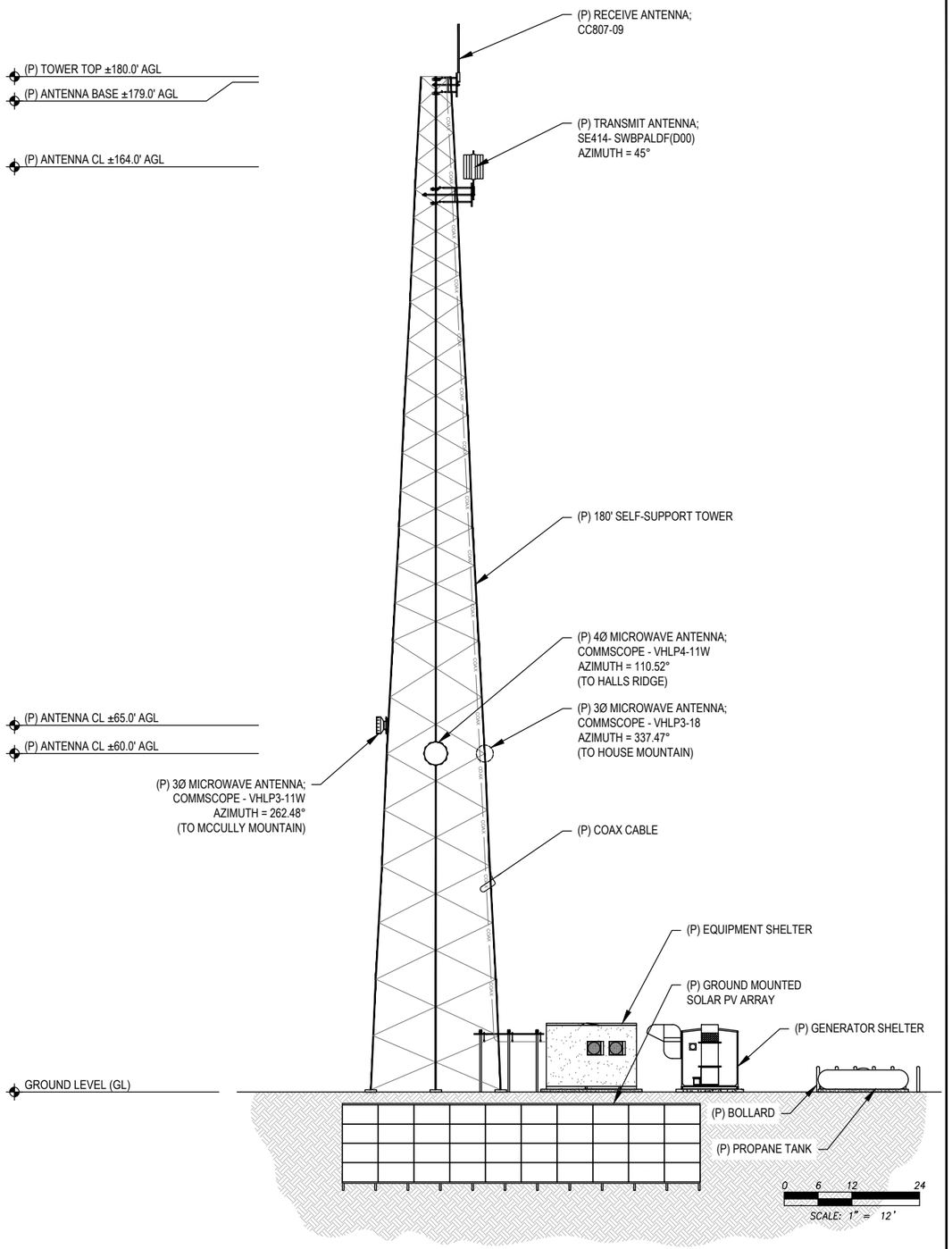
SHEET TITLE:

ENLARGED SITE PLAN

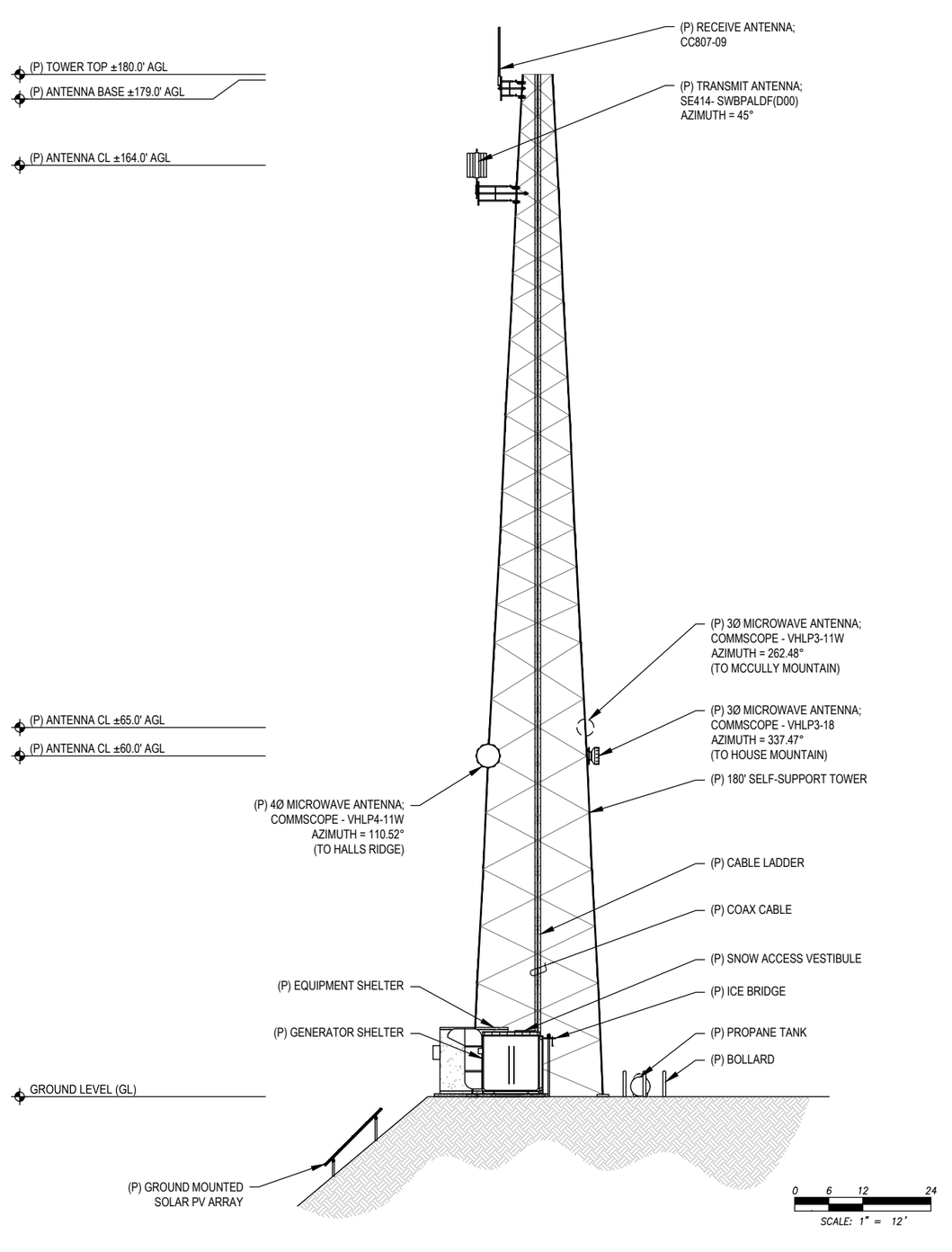
SHEET NUMBER:

C-2

EXHIBIT K



PROPOSED SOUTH ELEVATION | 11X17 SCALE: 1" = 24' | 22X34 SCALE: 1" = 12' | 1



PROPOSED EAST ELEVATION | 11X17 SCALE: 1" = 24' | 22X34 SCALE: 1" = 12' | 2

NOTES:
1. TOWER INFO SHOWN FOR CONCEPTUAL USE ONLY. SEE SABRE TOWER STRUCTURAL REPORT FOR DETAIL.
2. TOWER SHALL BE PAINTED WITH A DULL, NON-REFLECTIVE GRAY COLOR.
3. LOADING INFORMATION PROVIDED BY TAIT COMMUNICATIONS.

Marion County
OREGON

PROJECT INFORMATION:

MARION COUNTY APW

2.6 MI NORTH OF 910 N SANTIAM HWY W
GATES, OR

	DATE	RELEASE
	05-23-25	SITE SKETCH
	07-07-25	PRELIMINARY ZONING DRAWINGS
	07-11-25	SITE PLAN KM-2
	08-27-25	PRELIMINARY CONSTRUCTION DRAWINGS
	09-19-25	FINAL CONSTRUCTION DRAWINGS

DRAWING INFORMATION:

THIS DRAWING IS COPYRIGHTED AND IS THE SOLE PROPERTY OF THE OWNER. IT IS PRODUCED SOLELY FOR USE BY THE OWNER AND ITS AFFILIATES. REPRODUCTION OR USE OF THIS DRAWING AND/OR THE INFORMATION CONTAINED IN IT IS FORBIDDEN WITHOUT THE WRITTEN PERMISSION OF THE OWNER.

PLANS PREPARED BY:

cushing Civil Engineers

Cushing Civil Engineers
12725 SW MILLIKAN WAY
SUITE 300
BEAVERTON, OR 97005
(503) 387-5331
www.cushingcivilengineers.com

LICENSURE:

REGISTERED PROFESSIONAL ENGINEER
83233
OREGON
JUNE 7, 2012
KENNY McMANAWAY

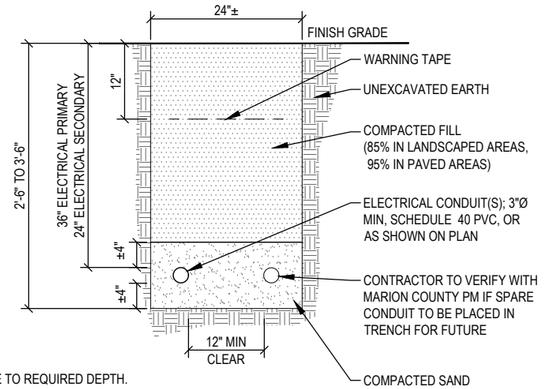
RENEWAL DATE 12/31/26

SHEET TITLE:

ELEVATIONS

SHEET NUMBER:

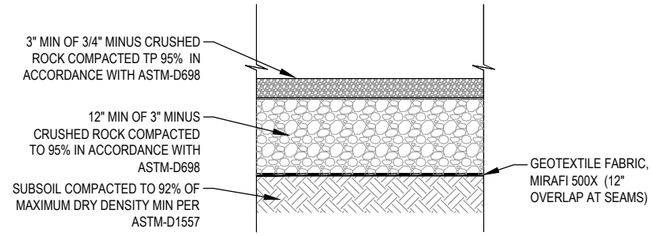
C-3



NOTES:
1. EXCAVATE TO REQUIRED DEPTH.
2. VERIFY ALL TRENCHING REQUIREMENTS PER LOCAL UTILITIES.
3. CONTRACTOR TO PROVIDE (1) 300 POUND NYLON PULL CORD AND CONDUCTORS AS REQUIRED PER CONDUIT.

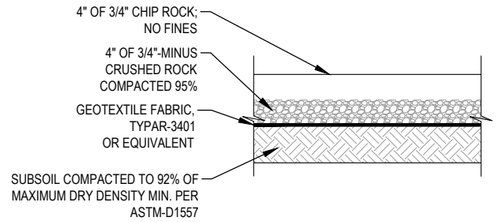
POWER LINE TRENCH
SCALE: NTS | 1

EXHIBIT K



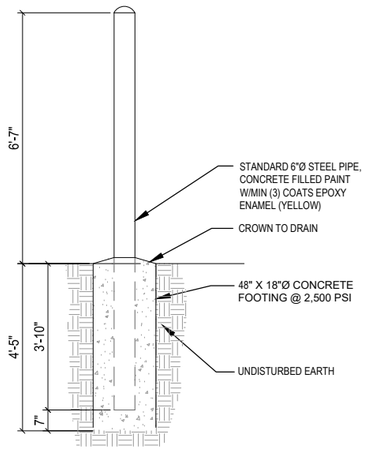
NOTES:
1. CONTRACTOR SHALL STRIP SUPERFICIAL, SOFT, WET, ORGANIC OR DELETERIOUS SOILS TO EXPOSE FIRM AND UNYIELDING SOIL (BETWEEN 6" & 12"). IF STRIPPING IS REQUIRED DEEPER THAN 12", CONTRACTOR SHALL CONTACT THE SITE CONSTRUCTION MANGER TO DETERMINE THE APPROPRIATE STRIPPING DEPTH AT THE TIME OF CONSTRUCTION.
2. MATERIAL AND INSTALLATION SHALL CONFORM TO CURRENT ODOT/APWA STANDARD SPECIFICATIONS AND MANUFACTURERS RECOMMENDATIONS.

GRAVEL ROAD SECTION DETAIL
SCALE: NTS | 2

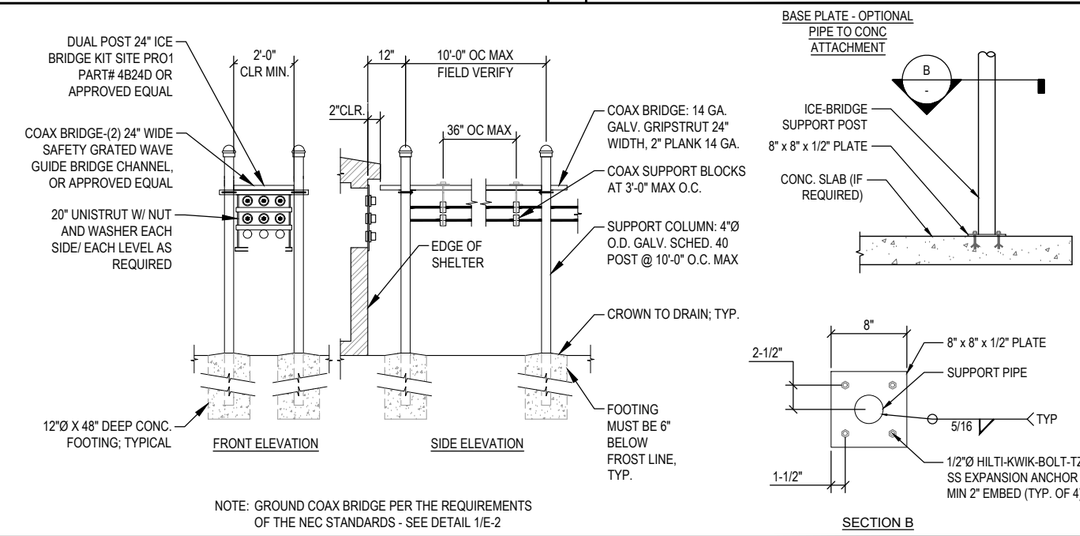


NOTE: STRIP ALL ORGANICS

COMPOUND ROCK SECTION DETAIL
SCALE: NTS | 3



BOLLARD DETAIL
SCALE: NTS | 4



NOTE: GROUND COAX BRIDGE PER THE REQUIREMENTS OF THE NEC STANDARDS - SEE DETAIL 1/E-2

ICE BRIDGE DETAIL
SCALE: NTS | 5



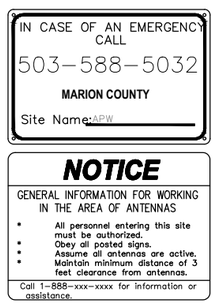
SIGN NOTES:
1. SIGN MATERIAL: 18GA ALUMINUM
2. LETTERING COLOR = BLACK
3. BACKGROUND COLOR = WHITE / RED



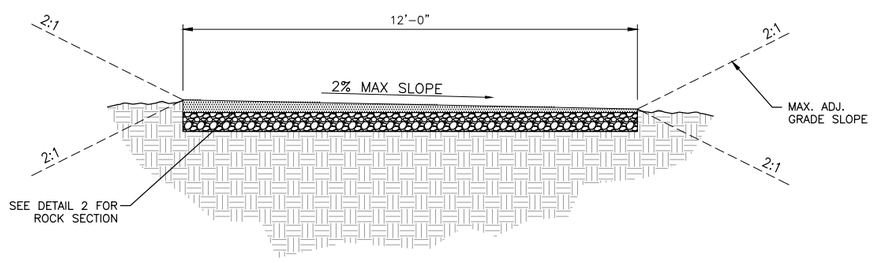
SIGN NOTES:
1. SIGN MATERIAL: 18GA ALUMINUM
2. LETTERING COLOR = BLACK / WHITE
3. BACKGROUND COLOR = WHITE / BLUE



SIGN NOTES:
1. SIGN MATERIAL: 18GA ALUMINUM
2. LETTERING COLOR = BLACK
3. BACKGROUND COLOR = YELLOW



SIGN DETAILS
SCALE: NTS | 6



TYPICAL

NOTE:
CONTRACTOR SHALL STRIP SUPERFICIAL, SOFT, WET, ORGANIC OR DELETERIOUS SOILS TO EXPOSE FIRM AND UNYIELDING SOIL (MIN. 6"). IF STRIPPING IS REQUIRED DEEPER THAN 6", CONTRACTOR SHALL CONTACT THE SITE CONSTRUCTION MANAGER TO DETERMINE THE APPROPRIATE STRIPPING DEPTH AT THE TIME OF CONSTRUCTION.

ACCESS ROAD SECTION DETAIL
SCALE: NTS | 7

Marion County OREGON

PROJECT INFORMATION:

MARION COUNTY APW

2.6 MI NORTH OF 910 N SANTIAM HWY W
GATES, OR

	DATE	RELEASE
	05-23-25	SITE SKETCH
	07-07-25	PRELIMINARY ZONING DRAWINGS
	07-11-25	SITE PLAN KM-2
	08-27-25	PRELIMINARY CONSTRUCTION DRAWINGS
	09-19-25	FINAL CONSTRUCTION DRAWINGS

DRAWING INFORMATION:
THIS DRAWING IS COPYRIGHTED AND IS THE SOLE PROPERTY OF THE OWNER. IT IS PRODUCED SOLELY FOR USE BY THE OWNER AND ITS AFFILIATES. REPRODUCTION OR USE OF THIS DRAWING AND/OR THE INFORMATION CONTAINED IN IT IS FORBIDDEN WITHOUT THE WRITTEN PERMISSION OF THE OWNER.

PLANS PREPARED BY:

cushing Civil Engineers

Cushing
Civil Engineers
12725 SW MILLIKAN WAY
SUITE 300
BEAVERTON, OR 97005
(503) 387-5331
www.cushingcivilengineers.com

LICENSURE:

REGISTERED PROFESSIONAL ENGINEER
83233
OREGON
JUNE 7, 2012
KENNY McMANAWAY

RENEWAL DATE 12/31/26

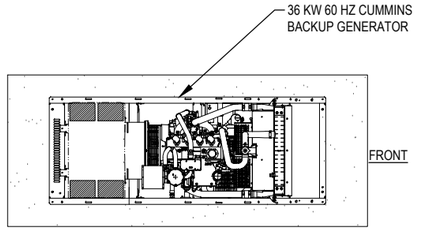
SHEET TITLE:

COMPOUND DETAILS

SHEET NUMBER:

C-4

EXHIBIT K



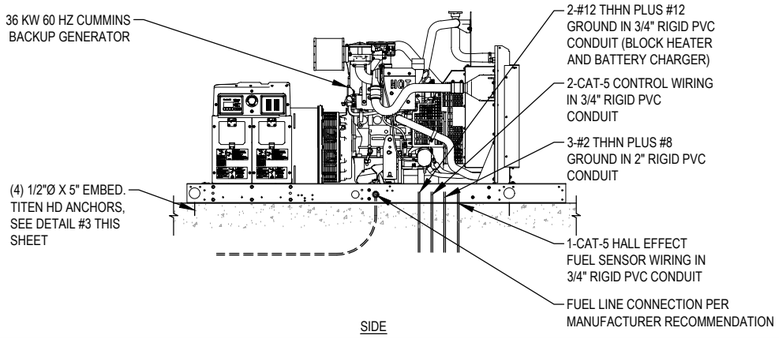
SIDE

NOTE: SEE GENERATOR SPEC SHEET FOR DIMENSIONS AND WEIGHTS

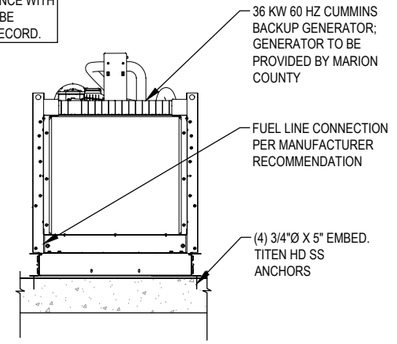
GENERATOR PLAN

SCALE: NTS | 1

NOTE: DOCUMENTATION FOR THE GENERATOR IS TO BE PROVIDED BY THE SUPPLIER CERTIFYING THAT ALL HAZARDOUS CONTENTS WILL REMAIN CONTAINED FOLLOWING THE DESIGN EARTHQUAKE FOR THIS SITE. CERTIFICATION OF CONTAINMENT IS TO BE PROVIDED BY 1) ANALYSIS, 2) APPROVED SHAKE TABLE TESTING IN ACCORDANCE WITH SECTION 13.2.5 OF ASCE 7, OR 3) EXPERIENCE DATA IN ACCORDANCE WITH ASCE 7 SECTION 13.2.6. EVIDENCE DEMONSTRATING COMPLIANCE OF THIS REQUIREMENT SHALL BE SUBMITTED TO THE LOCAL JURISDICTION AFTER REVIEW AND APPROVAL BY THE ENGINEER OF RECORD.



SIDE



FRONT

GENERATOR ELEVATION

SCALE: NTS | 2

NOT USED

SCALE: NTS | 3

1. CONTRACTOR TO VERIFY AND CONFIRM ALL DIMENSIONS AND CONDITIONS AND NOTIFY ENGINEER OF RECORD OF ANY DISCREPANCIES PRIOR TO START OF WORK.
2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR STRUCTURAL STABILITY DURING CONSTRUCTION. THE STRUCTURE SHOWN ON THE DRAWINGS HAS BEEN DESIGNED FOR STABILITY UNDER THE FINAL CONFIGURATION ONLY.
3. CODE: 2018 INTERNATIONAL BUILDING CODE (IBC).
4. THE FOOTINGS HAVE BEEN DESIGNED FOR AN ALLOWABLE SOIL BEARING PRESSURE OF 1,500 PSF.
5. CONCRETE: FOOTINGS, F'C = 3,000 PSI MINIMUM COMPRESSIVE STRENGTH AT 28 DAYS.
6. REINFORCING STEEL: F'Y = 60,000 PSI
7. STRUCTURAL AND MISCELLANEOUS STEEL SHALL BE IN ACCORDANCE WITH AISC SPECIFICATION FOR THE DESIGN, FABRICATION AND ERECTION OF STRUCTURAL STEEL FOR BUILDINGS AND SHALL BE ASTM A-36 U.O.N. ALL BOLTS HOLES SHALL BE PUNCHED OR DRILLED; BURNING OF HOLES SHALL NOT BE PERMITTED. ALL STRUCTURAL STEEL SHALL HAVE ONE SHOP COAT OF PAINT.
   ALL MATERIALS SHALL CONFORM TO THE FOLLOWING STANDARDS:

PIPE:	A53 GR. B (MIN. FY = 35 KSI)
SHAPES:	ASTM A36/ ASTM A572 GR. 50
WIDE FLANGE:	ASTM A992
TUBES:	A500 GR. B, FY = 46 KSI
PLATES:	A36
WELDS:	E70XX ELECTRODES
STRUCTURAL BOLTS:	ASTM A325N
NON-STRUCTURAL BOLTS:	SAE J429 GR. 5 / F1554-36
U-BOLTS:	ASTM A36
THREADED ROD:	ASTM A307

SPECIAL INSPECTION BY OWNERS TESTING AGENCY

SPECIAL INSPECTIONS AND TESTING SHALL BE PERFORMED BY AN APPROVED AGENCY IN ACCORDANCE WITH INTERNATIONAL BUILDING CODE (IBC) CHAPTER 17 SECTIONS 1703 AND SECTIONS 1704, AND WITH THE STATEMENT OF SPECIAL INSPECTIONS AS REQUIRED BY IBC SECTIONS 1704.2.3 AND 1705 FOR BUILDING STRUCTURAL ELEMENTS SUMMARIZED AS FOLLOWS:

1. STRUCTURAL STEEL CONSTRUCTION PER IBC SECTIONS 1705.3 AND TABLE 1705.3 INCLUDING MATERIAL IDENTIFICATION, AND SHOP WELDING.

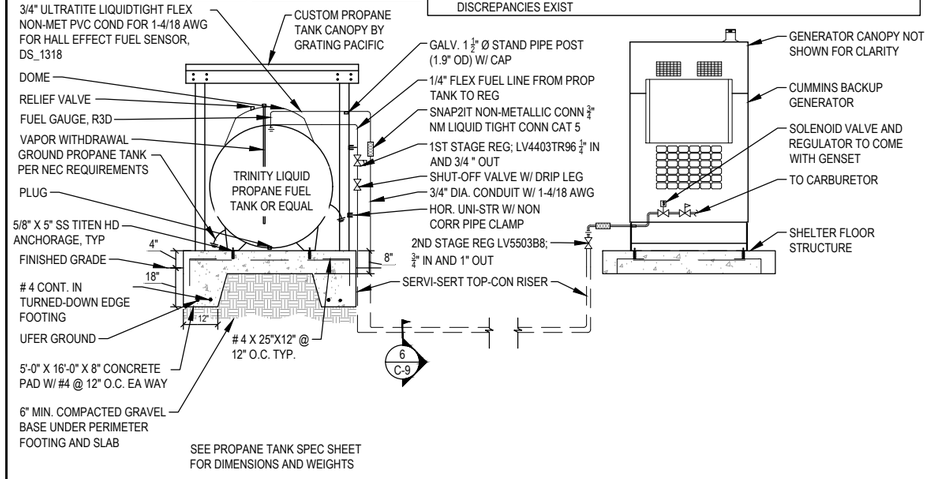
GENERAL NOTES

SCALE: NTS | 4

NOTES:
1. PROPANE TANK REGISTERED WITH NATIONAL BOARD AND COMPLIES AND INSTALLED PER NFPA 58 CODE
2. PROPANE TANK INSTALLED AT LEAST 10 FT FROM EXTERNAL SOURCE OF IGNITION

LEGEND
- SHUT-OFF VALVE
- UNION
- PRESSURE REGULATOR
- SOLENOID VALVE
- FLEXIBLE CONNECTION

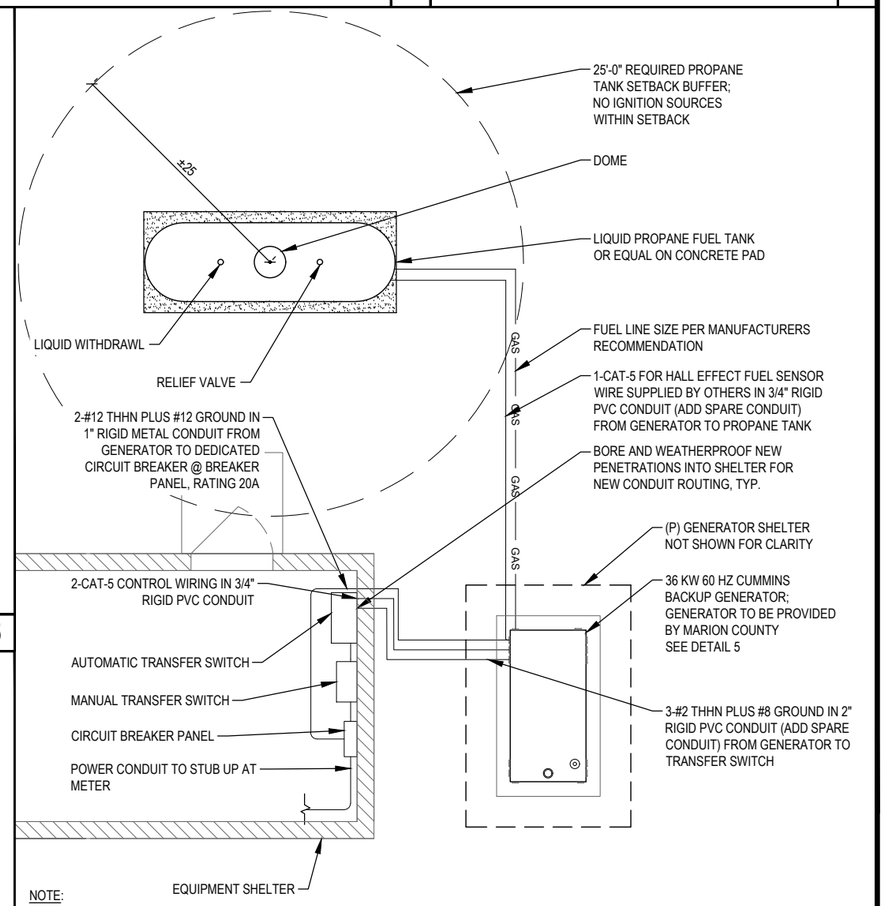
NOTES:
1. GROUND SYSTEM SHOULD COMPLY WITH INDUSTRY STANDARDS
2. CONFIRM CONNECTIONS PROVIDED WITH FUEL TANK
3. USE GASEOUS LP VAPOR WITHDRAWAL SYSTEM
4. TO CODE OFFICIAL, PAD IS FOR EQUIPMENT ONLY (NO BUILDINGS)
5. CONTRACTOR IS TO VERIFY THAT ALL PROPOSED ANCHORS WILL PROVIDE ADEQUATE FIT PRIOR TO POURING CONCRETE PADS, NOTIFY DON CUSHING ASSOCIATES IF ANY DISCREPANCIES EXIST



SEE PROPANE TANK SPEC SHEET FOR DIMENSIONS AND WEIGHTS

GENERATOR FUEL SYSTEM ELEVATION

SCALE: NTS | 5



NOTE:

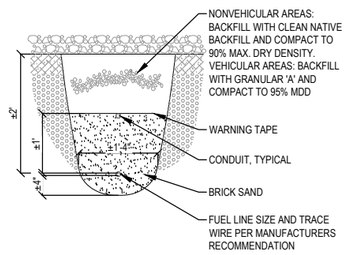
ALL CONDUIT INSIDE THE BUILDING MUST BE METAL AND BE GROUNDED PER R-56 STANDARDS.

INTERIOR SHELTER LAYOUT IS FOR REFERENCE ONLY.

THIS GENERATOR & PROPANE LAYOUT IS FOR INFORMATION ONLY AND IS PRESENTED AS A GUIDELINE. VERIFY SITE CONDITIONS AND LAYOUT PRIOR TO INSTALLATION OF ALL EQUIPMENT. INSTALL ALL EQUIPMENT PER MANUFACTURER'S INSTRUCTIONS.

TYPICAL GENERATOR LAYOUT

SCALE: NTS | 9



TRENCH SECTION

SCALE: NTS | 6

NOT USED

SCALE: NTS | 7

NOT USED

SCALE: NTS | 8

Marion County OREGON

PROJECT INFORMATION:

MARION COUNTY APW

2.6 MI NORTH OF 910 N SANTIAM HWY W
GATES, OR

	DATE	RELEASE
	05-23-25	SITE SKETCH
	07-07-25	PRELIMINARY ZONING DRAWINGS
	07-11-25	SITE PLAN KM-2
	08-27-25	PRELIMINARY CONSTRUCTION DRAWINGS
	09-19-25	FINAL CONSTRUCTION DRAWINGS

DRAWING INFORMATION:

THIS DRAWING IS COPYRIGHTED AND IS THE SOLE PROPERTY OF THE OWNER. IT IS PRODUCED SOLELY FOR USE BY THE OWNER AND ITS AFFILIATES. REPRODUCTION OR USE OF THIS DRAWING AND/OR THE INFORMATION CONTAINED IN IT IS FORBIDDEN WITHOUT THE WRITTEN PERMISSION OF THE OWNER.

PLANS PREPARED BY:

cushing Civil Engineers

Cushing
Civil Engineers
12725 SW MILLIKAN WAY
SUITE 300
BEAVERTON, OR 97005
(503) 387-5331
www.cushingcivilengineers.com

LICENSURE:

REGISTERED PROFESSIONAL ENGINEER 83233 OREGON JUNE 7, 2012 KENNY McMANAWAY

RENEWAL DATE 12/31/26

SHEET TITLE:

GENERATOR & PROPANE TANK DETAILS

SHEET NUMBER:

C-5

hotspot energy

Solar Air Conditioner

Solar Hybrid Heat Pump
Model ACDC24C

HotSpot Energy, Inc.
(757) 410-8640



Connect 4 Or More Panels (>/= Total 1800W)
Runs On Solar Power Only, AC Only, or Solar w/ AC Power
24,000 BTU Cooling & Heating
Plug-And-Play Solar Connection
No Batteries or Grid/AC Required
The Worlds Original Solar AC Manufacturer
Celebrating Over 10 Years of Production





Home / Office

Keep the inside cool all day for next to nothing in energy costs. Preventing daytime heat build-up also cuts evening cooling costs. Cool or heat up to a 1500 Sq. Ft. (140m²) room..

International

Compatible with all types of solar panels & 50Hz and 60Hz power, use it anywhere in the world.



Display shows DC/Solar power utilization. Shown in heating mode at setting 90 °F, no AC connected. Display visible only when unit is on.

Intertek

AHRI CERTIFIED® www.ahridirectory.org Globally Recognized. Industry Respected.

Simple To Install

This unit installs exactly like a normal mini-split air conditioner. Standard MC4 cabling are used to connect the solar panels directly to the ACDC24C outdoor unit.

Ultra-High SEER Solar Air Conditioner

Your air conditioner needs the most power when the sun is shining, a coincidence you can take advantage of with our ACDC24C solar air conditioner. It can keep an indoor area cool during the day for free, or for just pennies, at times when solar power is not sufficient to carry 100% of the load. Use this system to cool a small area or to augment a larger system.

Connect up to six 72/144-cell panels in series, suggested panels >/= 450w. Many other panel configurations are possible, contact us to discuss. The unit can also connect to 220v (208v-240v) AC power for extra power during overcast conditions, transient clouds, or at night. No need for batteries. Even when the sun is not shining at all, with an AC connection this ultra high-efficiency (**SEER 20** without solar) heat pump will keep you comfortable and save you money using far less electricity than a normal AC or heat pump unit of the same capacity. Calculated using only paid energy in hybrid AC-DC operation, the ACDC24C can produce an equivalent SEER above **SEER 60**. Max string voltage 325 VOC rating, max actual string voltage 370v DC. For ACDC24C we suggest PV >/= 450w per panel. Actual string under load voltage must be >125v DC to operate on solar.

SOLAR HYBRID HEAT PUMP - ACDC24C HYBRID SCALE: NTS 1

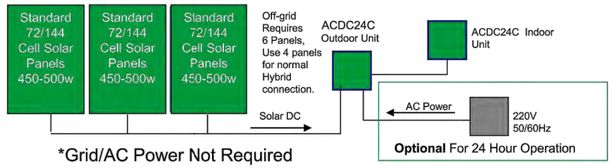
hotspot energy

EXHIBIT K

World's Original Solar AC Manufacturer - Since 2007

ACDC24C Hybrid
Solar Air Conditioner

Connects Directly To 4-6 Solar Panels



*Grid/AC Power Not Required

No batteries needed. Like all DC-Inverter air conditioners, the ACDC24C compressor runs on DC power, which may at times be converted from AC power. This special solar air conditioner can accept DC power directly from solar panels, without needing an inverter, charge controller, or batteries. The solar DC power directly replaces AC power from the power company and can cut daytime energy costs for air conditioning or heating by up to 100%. No power is exported and no net metering agreement or special meter is needed. Can be used with all-DC, all-AC, or AC-DC whereby the unit can seamlessly blend both power sources with a bias towards using all available DC (solar) power first.

During the day, the ACDC24C can get all or most of its power from 4-6 >/= 450W solar panels. The unit can be connected with up to 6 panels for running on 100% solar power with no AC connection or when the sun is not at full strength. The system is designed for hybrid operation with solar providing most or all of the energy needed during daylight hours, supplemented by AC power at night or during times of cloud cover. This air conditioner may be connected to a 208-240VAC 50/60Hz power source as desired for night time or cloudy day operation. Ratings per AHRI 210/240.

Power AC	208-240V, 50/60Hz		SEER (AC)/ ACDC Equivalent	20 / 60
*Cooling Capacity (rated/max) BTU	23,000 / 24,000		HSPF (AC) / ACDC	9.5 / 29
Power Input @ Max Cooling	1950W		Power DC, PV, series connection	110-300 Vmp
Avg. Power Consumption, Cooling	1143W		Solar Power Input	</=15a
Cooling EER / COP at Rated Cooling	19.78/ 5.8		Outdoor Range (cooling/heating)	50F-125F / 5F-86F
SEER / SEER w/ solar calculation	>21 / >65		LRA / RLA	29 / 5.2
*Heating Capacity	24,000 BTU		Swing (manual)	Up & Down
Power Input @ Rated Heating	2400W		Dehumidification	2.15 L/h
Avg. Power Consumption, Heating	1390W		Outdoor Unit, weight	106 Lbs.
Heating COP (Full Speed)	2.92		Outdoor Unit Dimension (W*H*D)	900×700×350 mm
Max power Input	2400W		Refrigerant g/oz	1.62 kg./ 58 Oz.
Indoor Fan Motor	BLDC		Max. Lineset / Max. Elevation (Ft.)	50 ft. / 16 ft.
Indoor Fan Input (Highest speed)	50W		Moisture Removal	2.4 L/h
Indoor Air Flow (CFM)	1300/1090/880		Refrigerant g/oz	1.62 kg./ 58 Oz.
Outdoor Fan Motor	Variable BLDC		Refrigerant Oil	VG74 / 770 ml
Indoor Noise Level (Hi/Med/Lo)	50/42/34 dB(a)		Design Pressure	601/167 PSIG
Indoor Unit Dimensions (W*H*D)mm	1121x329x231		Liquid side/ Gas side (Flare)	φ6.35*0.5+φ15.88×0.75
Indoor / Outdoor Unit Weight	30 Lbs. /		Certifications	ETL / UL, Energy Star

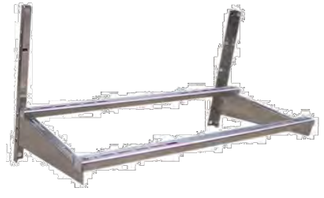
All specifications subject to change without notice. Images for reference only. See website for full details on operation and requirements. *Off-grid BTU capacity will be reduced when solar power is limited. An AC backup connection is recommended for full & uninterrupted operation. Extra panels, up to eight, should be used for intended off-grid applications.

hotspot energy

Optional Exterior Wall Mount For Air Conditioner Condensing Unit

Used to mount the outdoor air conditioning unit on an exterior wall to protect unit from snowdrift, flood, or for installation convenience.

Use Only All Stainless Steel





Above mounting hardware images for reference only. Products available through online sellers such as Lowes, Home Depot, Amazon. Not provided by HotSpot Energy.

Copyright 2023 HotSpot Energy INC

CONDENSING UNIT WALL MOUNT SCALE: NTS 2

Marion County OREGON

PROJECT INFORMATION:

MARION COUNTY APW

2.6 MI NORTH OF 910 N SANTIAM HWY W
GATES, OR

	DATE	RELEASE
	05-23-25	SITE SKETCH
	07-07-25	PRELIMINARY ZONING DRAWINGS
	07-11-25	SITE PLAN KM-2
	08-27-25	PRELIMINARY CONSTRUCTION DRAWINGS
	09-19-25	FINAL CONSTRUCTION DRAWINGS

DRAWING INFORMATION:

THIS DRAWING IS COPYRIGHTED AND IS THE SOLE PROPERTY OF THE OWNER. IT IS PRODUCED SOLELY FOR USE BY THE OWNER AND ITS AFFILIATES. REPRODUCTION OR USE OF THIS DRAWING AND/OR THE INFORMATION CONTAINED IN IT IS FORBIDDEN WITHOUT THE WRITTEN PERMISSION OF THE OWNER.

PLANS PREPARED BY:

cushing Civil Engineers

Cushing
Civil Engineers

12725 SW MILLIKAN WAY
SUITE 300
BEAVERTON, OR 97005
(503) 387-5331
www.cushingcivilengineers.com

LICENSURE:

REGISTERED PROFESSIONAL ENGINEER 83233 OREGON JUNE 7, 2012 KENNY McMANAWAY

RENEWAL DATE 12/31/26

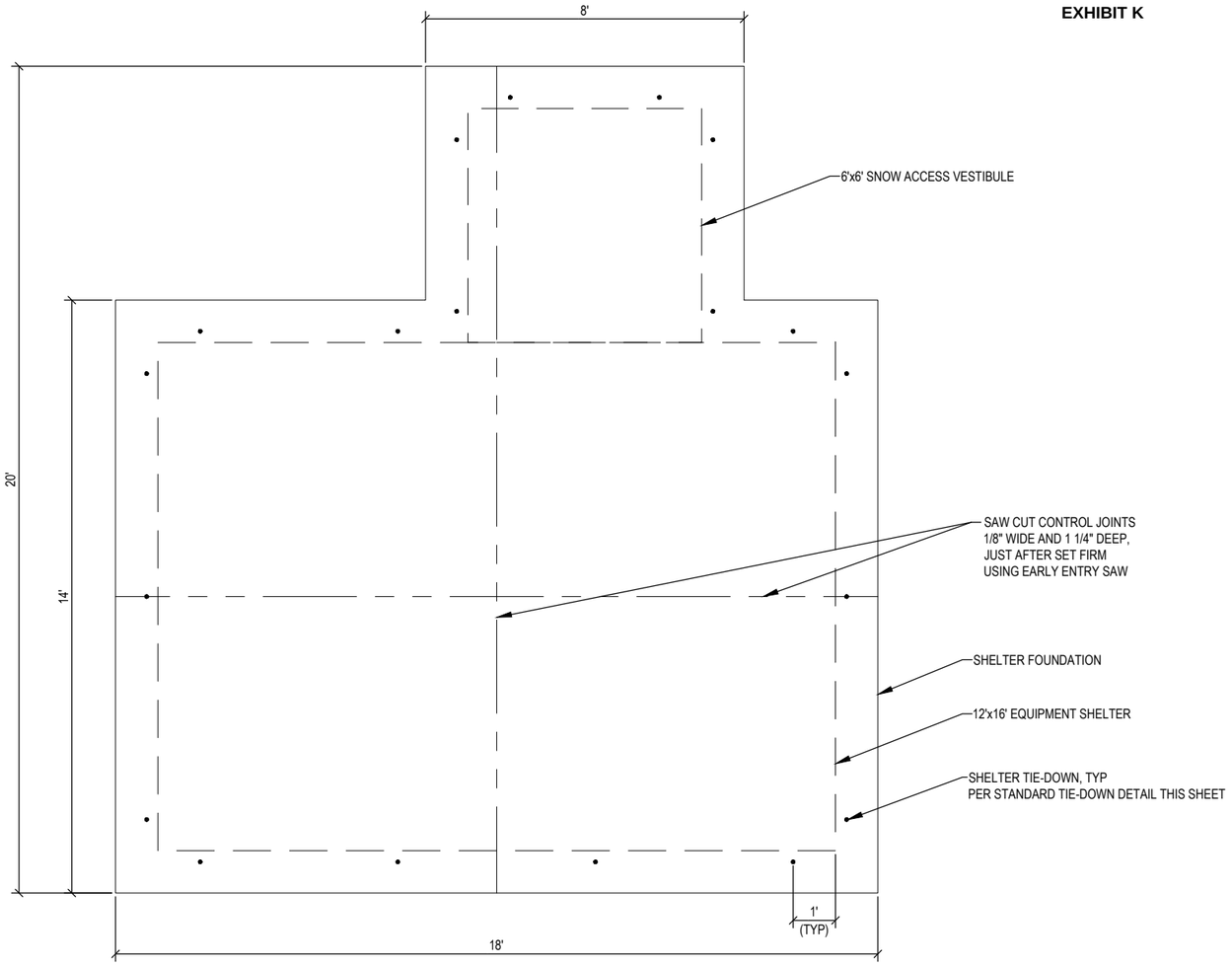
SHEET TITLE:

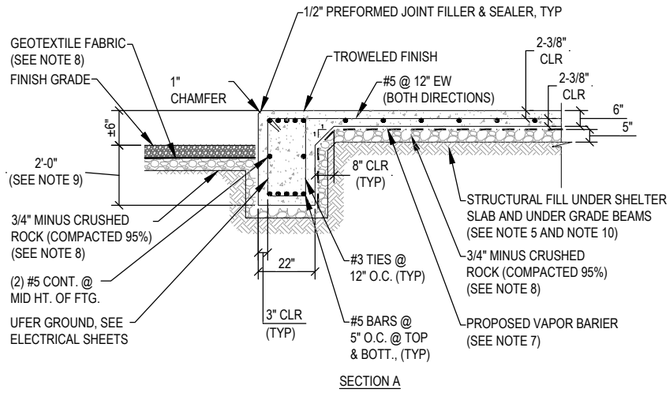
HVAC DETAILS

SHEET NUMBER:

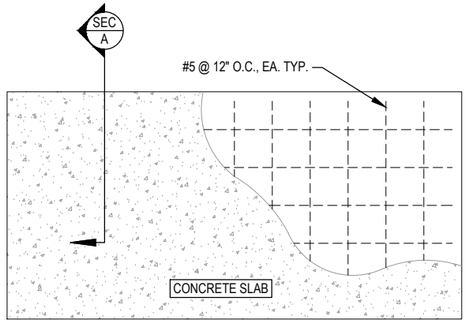
C-6

EXHIBIT K

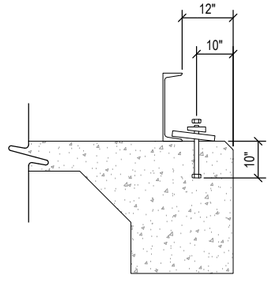




SECTION A



FOUNDATION PLAN



STANDARD TIE-DOWN DETAIL

NOTES:

1. TIEDOWN HARDWARE:
   - 1.1. CLAMP PLATE, 3/8"x3"x4" GALV. STEEL
   - 1.2. 1/2" BEVEL WASHER
   - 1.3. ANCHOR BOLT- 1/2-10x12" HEX HEAD
   - 1.4. 1/2"-10 HEAVY HEX NUT BY OTHERS.

NOTES:

1. ULTIMATE COMPRESSIVE STRENGTH OF CONCRETE AT 28 DAYS SHALL BE 3000 PSI, UNLESS OTHERWISE SPECIFIED.
2. REINFORCING BARS SHALL BE DEFORMED BARS CONFORMING TO ASTM A615 "DEFORMED AND PLAIN BILLET STEEL BARS FOR CONCRETE REINFORCEMENT," LATEST EDITION, GRADE 60.
3. LAP LENGTH FOR SPLICES SHALL NOT BE LESS THAN CLASS B SPLICE, UNLESS OTHERWISE SPECIFIED. WELDING OF REINFORCEMENT WILL NOT BE PERMITTED.
4. CONTRACTOR MAY USE EARTH FORMS FOR UNEXPOSED CONCRETE WHERE SOIL IS FIRM AND STABLE. EARTH FORMS SHALL BE TRENCHED NEATLY AND ACCURATELY. SIDES OF FOUNDATIONS, WHERE EARTH SLOUGHS, SHALL BE FORMED. EARTH FORMS SHALL BE TAMPED FIRM, AND CLEANED OF ALL DEBRIS AND LOOSE MATERIAL, BEFORE DEPOSITING CONCRETE.
5. STRUCTURAL FILL USED FOR SITE GRADING SHALL BE FREE FROM TOP SOIL, ORGANIC CONTAMINATED SOIL, AND ROCK FRAGMENTS HAVING A MAXIMUM DIMENSION GREATER THAN 3 INCHES. MATERIAL SHALL BE CLEAN AND SHALL BE SUBJECT TO THE FOLLOWING RESTRICTIONS.

   SILT CLAYS OR SANDY CLAY
   PLASTICITY INDEX 10 TO 24
   LIQUID LIMIT <45

   CLAYEY SANDS OR SLIGHTLY CLAYEY SILTY SANDS
   PLASTICITY INDEX 3 TO 15
   LIQUID LIMIT <35
6. MINIMUM CONCRETE COVER FOR REINFORCEMENT SHALL BE 3 INCHES FOR CONCRETE CAST AGAINST AND PERMANENTLY EXPOSED EARTH AND 1-1/2 INCHES FOR TOP BARS ON SIDEWALK AND SHELTER FOUNDATIONS.
7. VAPOR BARRIER SHALL BE VAPORBLOCK 10, OR APPROVED EQUAL.
8. CRUSHED ROCK AND GEOTEXTILE FABRIC IN THE COMPOUND AREA SHALL MEET THE REQUIREMENTS OF DETAIL 3 ON DWG C-5 AND ALL APPLICABLE GRADING NOTES.
9. IN INSTANCES WHERE ROCK IS ENCOUNTERED AT LESS THAN 2'-0", CONCRETE MAY BEAR ON THE ROCK.
10. PAINT SHEAR PLATES WITH COLD GALV.

Marion County OREGON

PROJECT INFORMATION:

MARION COUNTY APW

2.6 MI NORTH OF 910 N SANTIAM HWY W
GATES, OR

	DATE	RELEASE
	05-23-25	SITE SKETCH
	07-07-25	PRELIMINARY ZONING DRAWINGS
	07-11-25	SITE PLAN KM-2
	08-27-25	PRELIMINARY CONSTRUCTION DRAWINGS
	09-19-25	FINAL CONSTRUCTION DRAWINGS

DRAWING INFORMATION:

THIS DRAWING IS COPYRIGHTED AND IS THE SOLE PROPERTY OF THE OWNER. IT IS PRODUCED SOLELY FOR USE BY THE OWNER AND ITS AFFILIATES. REPRODUCTION OR USE OF THIS DRAWING AND/OR THE INFORMATION CONTAINED IN IT IS FORBIDDEN WITHOUT THE WRITTEN PERMISSION OF THE OWNER.

PLANS PREPARED BY:

cushing Civil Engineers

Cushing
Civil Engineers

12725 SW MILLIKAN WAY
SUITE 300
BEAVERTON, OR 97005
(503) 387-5331
www.cushingcivilengineers.com

LICENSURE:

REGISTERED PROFESSIONAL ENGINEER
83233
OREGON
JUNE 7, 2012
KENNY McMANAWAY

RENEWAL DATE 12/31/26

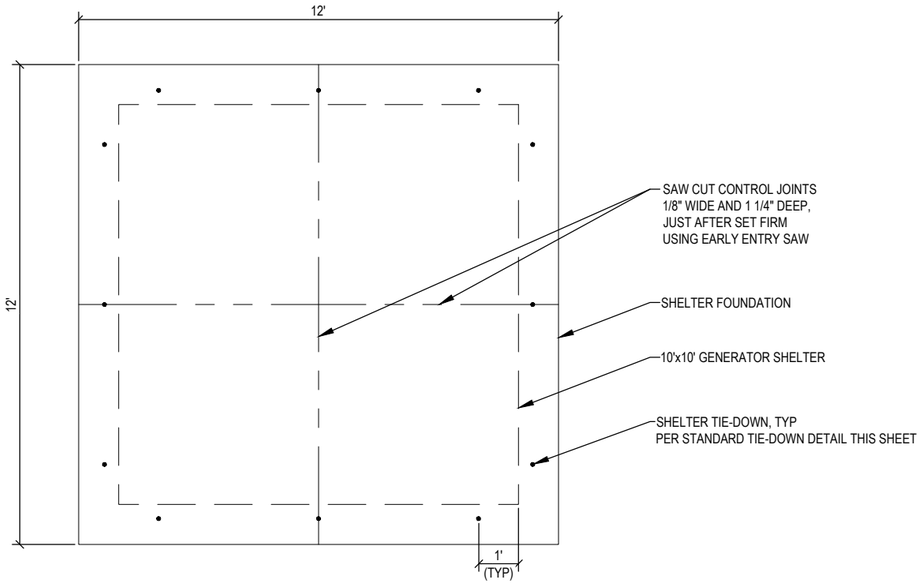
SHEET TITLE:

EQUIPMENT SHELTER FOUNDATION PLAN

SHEET NUMBER:

C-7

EXHIBIT K

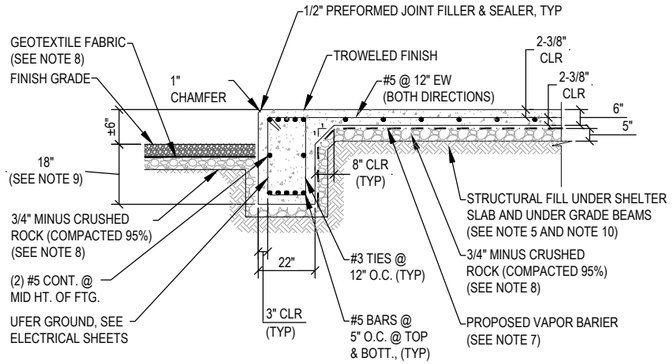


NOTES:

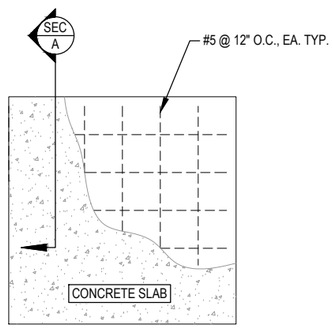
1. ULTIMATE COMPRESSIVE STRENGTH OF CONCRETE AT 28 DAYS SHALL BE 3000 PSI, UNLESS OTHERWISE SPECIFIED.
2. REINFORCING BARS SHALL BE DEFORMED BARS CONFORMING TO ASTM A615 "DEFORMED AND PLAIN BILLET STEEL BARS FOR CONCRETE REINFORCEMENT," LATEST EDITION, GRADE 60.
3. LAP LENGTH FOR SPLICES SHALL NOT BE LESS THAN CLASS B SPLICE, UNLESS OTHERWISE SPECIFIED. WELDING OF REINFORCEMENT WILL NOT BE PERMITTED.
4. CONTRACTOR MAY USE EARTH FORMS FOR UNEXPOSED CONCRETE WHERE SOIL IS FIRM AND STABLE. EARTH FORMS SHALL BE TRENCHED NEATLY AND ACCURATELY. SIDES OF FOUNDATIONS, WHERE EARTH SLOUGHS, SHALL BE FORMED. EARTH FORMS SHALL BE TAMPED FIRM, AND CLEANED OF ALL DEBRIS AND LOOSE MATERIAL, BEFORE DEPOSITING CONCRETE.
5. STRUCTURAL FILL USED FOR SITE GRADING SHALL BE FREE FROM TOP SOIL, ORGANIC CONTAMINATED SOIL, AND ROCK FRAGMENTS HAVING A MAXIMUM DIMENSION GREATER THAN 3 INCHES. MATERIAL SHALL BE CLEAN AND SHALL BE SUBJECT TO THE FOLLOWING RESTRICTIONS.

   SILT CLAYS OR SANDY CLAY
   PLASTICITY INDEX 10 TO 24
   LIQUID LIMIT <45

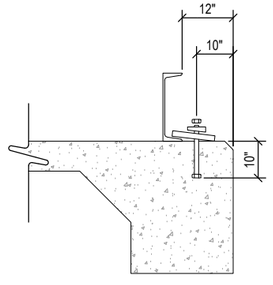
   CLAYEY SANDS OR SLIGHTLY CLAYEY SILTY SANDS
   PLASTICITY INDEX 3 TO 15
   LIQUID LIMIT <35
6. MINIMUM CONCRETE COVER FOR REINFORCEMENT SHALL BE 3 INCHES FOR CONCRETE CAST AGAINST AND PERMANENTLY EXPOSED EARTH AND 1-1/2 INCHES FOR TOP BARS ON SIDEWALK AND SHELTER FOUNDATIONS.
7. VAPOR BARRIER SHALL BE VAPORBLOCK 10, OR APPROVED EQUAL.
8. CRUSHED ROCK AND GEOTEXTILE FABRIC IN THE COMPOUND AREA SHALL MEET THE REQUIREMENTS OF DETAIL 3 ON DWG C-5 AND ALL APPLICABLE GRADING NOTES.
9. IN INSTANCES WHERE ROCK IS ENCOUNTERED AT LESS THAN 2'-0", CONCRETE MAY BEAR ON THE ROCK.
10. PAINT SHEAR PLATES WITH COLD GALV.



SECTION A



FOUNDATION PLAN



STANDARD TIE-DOWN DETAIL

NOTES:

1. TIEDOWN HARDWARE:
   - 1.1. CLAMP PLATE, 3/8"x3"x4" GALV. STEEL
   - 1.2. 1/2" BEVEL WASHER
   - 1.3. ANCHOR BOLT- 1/2-10x12" HEX HEAD
   - 1.4. 1/2"-10 HEAVY HEX NUT BY OTHERS.

Marion County
OREGON

PROJECT INFORMATION:

MARION COUNTY APW

2.6 MI NORTH OF 910 N SANTIAM HWY W
GATES, OR

	DATE	RELEASE
	05-23-25	SITE SKETCH
	07-07-25	PRELIMINARY ZONING DRAWINGS
	07-11-25	SITE PLAN KM-2
	08-27-25	PRELIMINARY CONSTRUCTION DRAWINGS
	09-19-25	FINAL CONSTRUCTION DRAWINGS

DRAWING INFORMATION:

THIS DRAWING IS COPYRIGHTED AND IS THE SOLE PROPERTY OF THE OWNER. IT IS PRODUCED SOLELY FOR USE BY THE OWNER AND ITS AFFILIATES. REPRODUCTION OR USE OF THIS DRAWING AND/OR THE INFORMATION CONTAINED IN IT IS FORBIDDEN WITHOUT THE WRITTEN PERMISSION OF THE OWNER.

PLANS PREPARED BY:

cushing
Civil Engineers

Cushing
Civil Engineers

12725 SW MILLIKAN WAY
SUITE 300
BEAVERTON, OR 97005
(503) 387-5331
www.cushingcivilengineers.com

LICENSURE:

REGISTERED PROFESSIONAL ENGINEER
83233
OREGON
JUNE 7, 2012
KENNY McMANAWAY

RENEWAL DATE 12/31/26

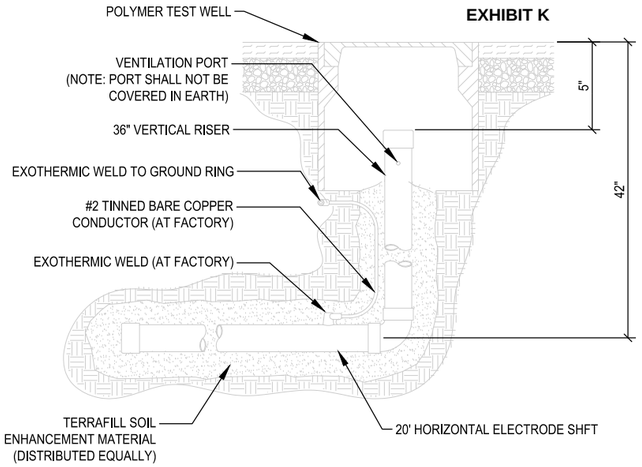
SHEET TITLE:

GENERATOR SHELTER FOUNDATION PLAN

SHEET NUMBER:

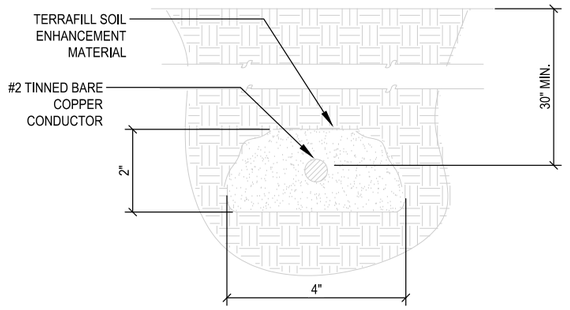
C-8

EXHIBIT K



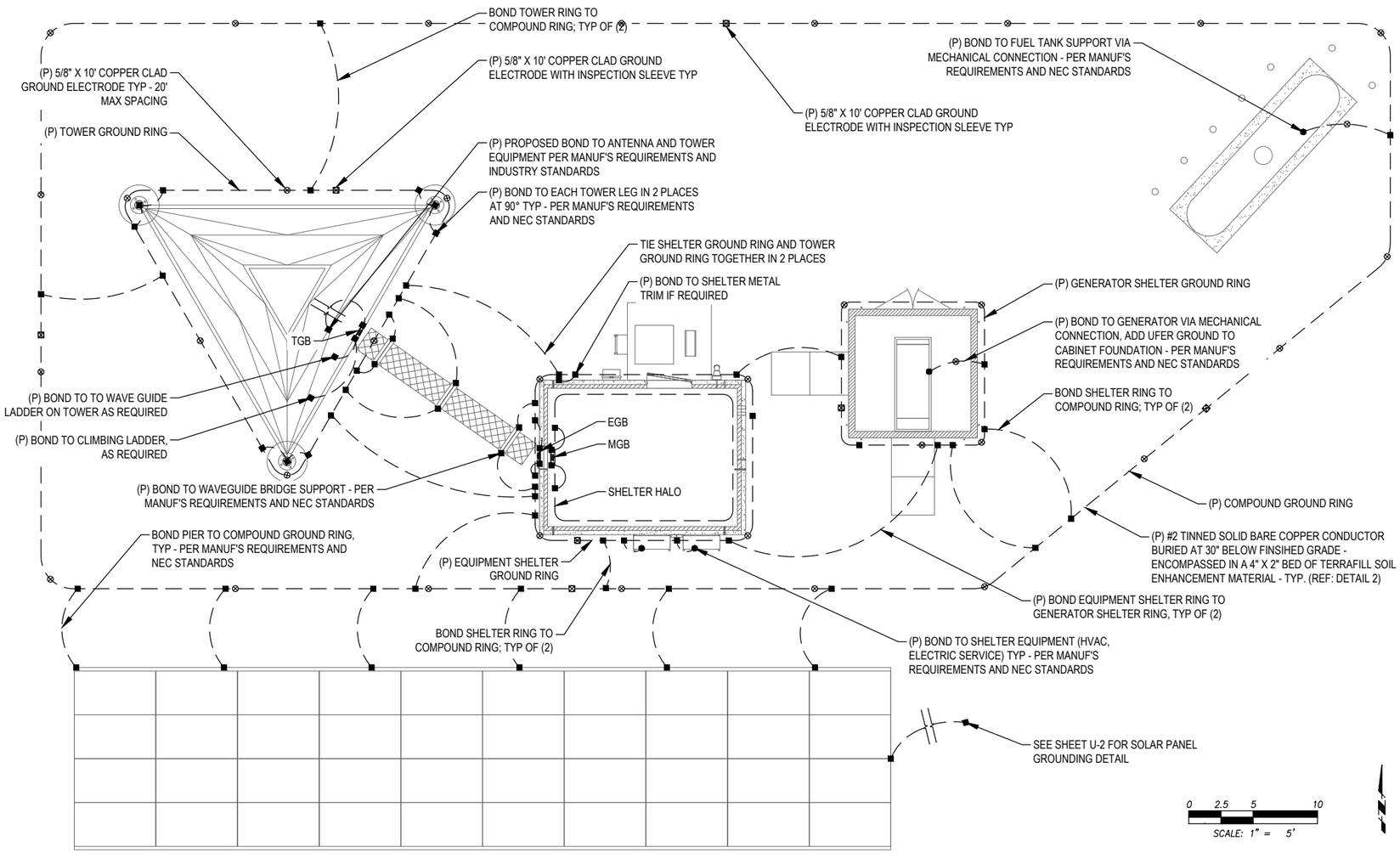
TERRADYNE ELECTROLYTIC GROUND ELECTRODE

SCALE: NTS | 3



SOIL ENHANCEMENT DETAIL

SCALE: NTS | 2



SITE COMPOUND GROUNDING PLAN

11X17 SCALE: 1" = 10' | 22X34 SCALE: 1" = 5' | 1

GENERAL NOTES:

1. ALL INSTALLATIONS ARE TO BE FIELD VERIFIED.
2. GROUND CONDUCTORS ARE TO BE BURIED AT A MINIMUM 30" BELOW GRADE OR 6" BELOW FREEZE LINE, WHICHEVER IS GREATER.
3. ALL BELOW GRADE GROUNDING CONDUCTORS ARE TO BE ENCOMPASSED IN A 2" X 4" BED OF SOIL ENHANCEMENT MATERIAL.
4. BONDS TO FENCE POSTS ARE TO BE MADE AT 12" ABOVE GRADE WHERE APPLICABLE.
5. NO CONDUCTOR SHALL HAVE A BEND IN RADIUS OF LESS THAN 12" AND SHALL NOT EXCEED 90 DEGREES.
6. TERRADYNE ELECTROLYTIC GROUND ELECTRODES ARE NOT TO SHARE THE SAME TRENCH AS GROUNDING CONDUCTOR, NOR RUN IN A PARALLEL PATH TO THE CONDUCTOR.
7. ALL GROUND SYSTEMS ARE TO BE MADE COMMON.
8. ALL BONDS ARE TO BE COATED WITH ANTI-OXIDATION COMPOUND.
9. WHERE STANDARD GROUND ELECTRODES ARE UNABLE TO BE DRIVEN, 12" X 12" X 1/8" COPPER GROUND PLATES SHALL BE INSTALLED 30" BELOW FINISHED GRADE & ENCOMPASSED IN 50LBS OF TERRAFILL SOIL ENHANCEMENT MATERIAL.

LEGEND:

- TERRADYNE TG-100L-H36-2T-36-4F-P SERIES ELECTRODE W/ INSPECTION WELL
- EXOTHERMIC WELD
- MECHANICAL CONNECTION
- 5/8" X 10' COPPER CLAD GROUND ELECTRODE
- 5/8" X 10' COPPER CLAD GROUND ELECTRODE WITH INSPECTION SLEEVE
- #2 TINNED SOLID COPPER CONDUCTOR

Marion County OREGON

PROJECT INFORMATION:

MARION COUNTY APW

2.6 MI NORTH OF 910 N SANTIAM HWY W
GATES, OR

	DATE	RELEASE
	05-23-25	SITE SKETCH
	07-07-25	PRELIMINARY ZONING DRAWINGS
	07-11-25	SITE PLAN KM-2
	08-27-25	PRELIMINARY CONSTRUCTION DRAWINGS
	09-19-25	FINAL CONSTRUCTION DRAWINGS

DRAWING INFORMATION:

THIS DRAWING IS COPYRIGHTED AND IS THE SOLE PROPERTY OF THE OWNER. IT IS PRODUCED SOLELY FOR USE BY THE OWNER AND ITS AFFILIATES. REPRODUCTION OR USE OF THIS DRAWING AND/OR THE INFORMATION CONTAINED IN IT IS FORBIDDEN WITHOUT THE WRITTEN PERMISSION OF THE OWNER.

PLANS PREPARED BY:

cushing Civil Engineers

Cushing
Civil Engineers
12725 SW MILLIKAN WAY
SUITE 300
BEAVERTON, OR 97005
(503) 387-5331
www.cushingcivilengineers.com

LICENSURE:

REGISTERED PROFESSIONAL ENGINEER 83233 OREGON JUNE 7, 2012 KENNY McMANAWAY

RENEWAL DATE 12/31/26

SHEET TITLE:

SITE GROUNDING PLAN & DETAILS

SHEET NUMBER:

E-1

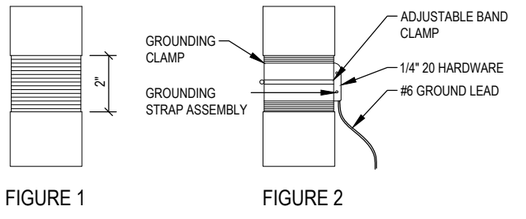


FIGURE 1 FIGURE 2

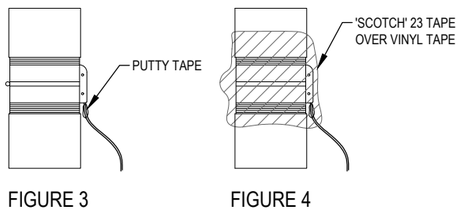


FIGURE 3 FIGURE 4

EXHIBIT K

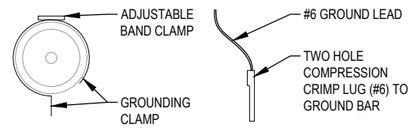
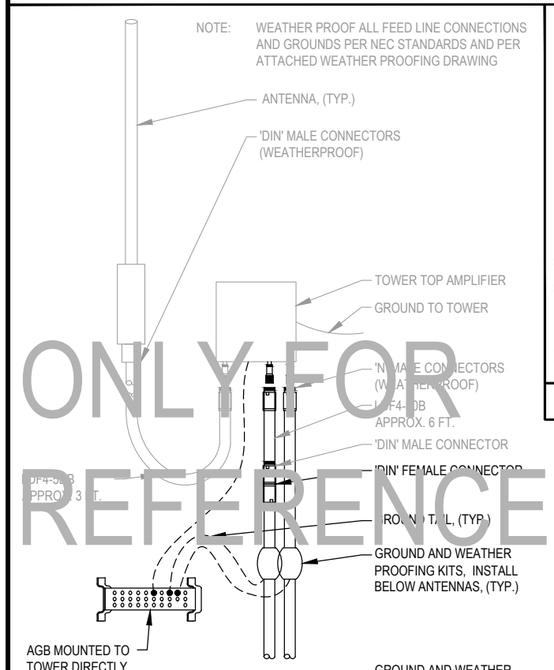


FIGURE 5 FIGURE 6

NOTE: NOT GC

FEED LINE CABLE GROUNDING

SCALE: NTS | 2

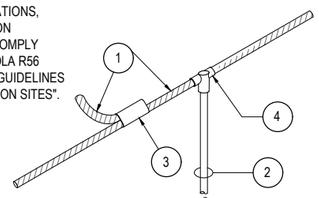


ONLY FOR REFERENCE

STANDARD RX GROUNDING SCHEMATICS

SCALE: NTS | 1

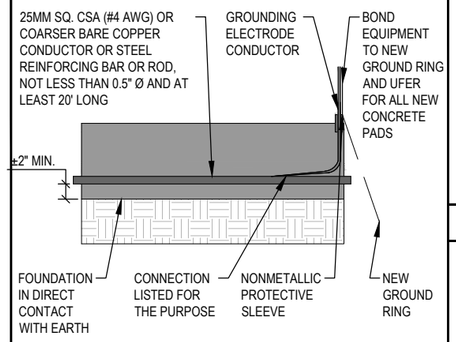
NOTE: ALL GROUNDING DESIGN, SPECIFICATIONS, AND CONSTRUCTION METHODS SHALL COMPLY WITH THE MOTOROLA R56 "STANDARDS AND GUIDELINES FOR COMMUNICATION SITES".



1. MAIN CONDUCTOR, COPPER CABLE
2. 5/8" X 10' COPPER CLAD STEEL GROUND ROD, TO BE PLACED ON CENTER 10' ALONG CONDUCTOR
3. EXOTHERMIC TYPE "NC"
4. EXOTHERMIC TYPE "GT"

GROUND ROD DETAIL

SCALE: NTS | 4



NOTE: FOR REFERENCE ONLY

UFER DETAIL

SCALE: NTS | 5

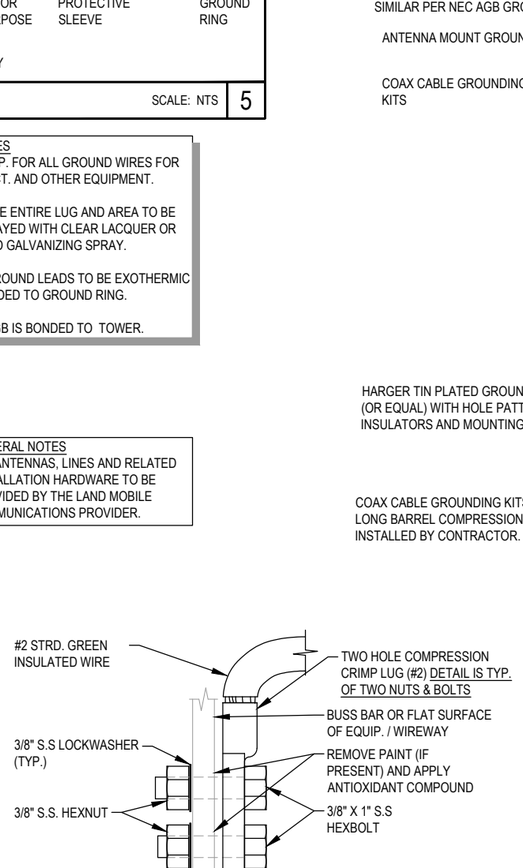
NOTE: BENDS SHOWN ON GROUND TAILS AND GROUND CONNECTION WIRES ARE FOR ILLUSTRATION PURPOSES ONLY. AVOID EXCESSIVE BENDS. WIRES TO BE AS STRAIGHT AS POSSIBLE; INSTALL DIRECT FROM EQUIPMENT TO GROUND POINT. ALL GROUNDING DESIGN, SPECIFICATIONS, AND CONSTRUCTION METHODS SHALL COMPLY WITH THE MOTOROLA R56 "STANDARDS AND GUIDELINES FOR COMMUNICATION SITES".

NOTES
1. TYP. FOR ALL GROUND WIRES FOR ELECT. AND OTHER EQUIPMENT.
2. THE ENTIRE LUG AND AREA TO BE SPRAYED WITH CLEAR LACQUER OR COLD GALVANIZING SPRAY.
3. GROUND LEADS TO BE EXOTHERMIC WELDED TO GROUND RING.
4. AGB IS BONDED TO TOWER.

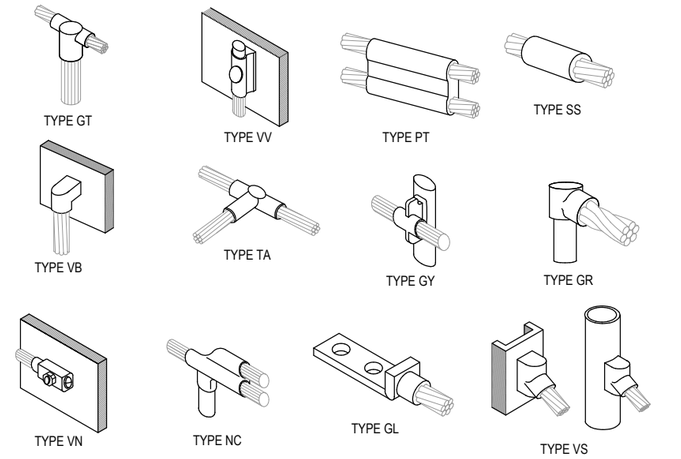
GENERAL NOTES
ALL ANTENNAS, LINES AND RELATED INSTALLATION HARDWARE TO BE PROVIDED BY THE LAND MOBILE COMMUNICATIONS PROVIDER.

GROUND BAR DETAILS

SCALE: NTS | 6

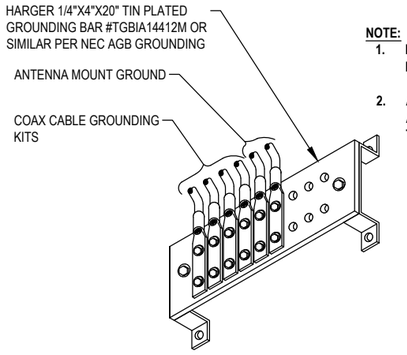


MGB (AT BASE OF TOWER AND EQUIPMENT)



TYPICAL EXOTHERMIC CONNECTION DETAILS

SCALE: NTS | 3



NOTE:
1. **DO NOT BOND AIR TERMINAL OR LIGHTNING ROD TO AGB**
2. **AGB GROUND BAR TO BE PLATED. AGB TO BE BONDED DIRECTLY TO TOWER.**

AGB (AT ANTENNAS)

PROJECT INFORMATION:

MARION COUNTY APW

2.6 MI NORTH OF 910 N SANTIAM HWY W
GATES, OR

	DATE	RELEASE
	05-23-25	SITE SKETCH
	07-07-25	PRELIMINARY ZONING DRAWINGS
	07-11-25	SITE PLAN KM-2
	08-27-25	PRELIMINARY CONSTRUCTION DRAWINGS
	09-19-25	FINAL CONSTRUCTION DRAWINGS

DRAWING INFORMATION:
THIS DRAWING IS COPYRIGHTED AND IS THE SOLE PROPERTY OF THE OWNER. IT IS PRODUCED SOLELY FOR USE BY THE OWNER AND ITS AFFILIATES. REPRODUCTION OR USE OF THIS DRAWING AND/OR THE INFORMATION CONTAINED IN IT IS FORBIDDEN WITHOUT THE WRITTEN PERMISSION OF THE OWNER.

PLANS PREPARED BY:

Cushing
Civil Engineers

12725 SW MILLIKAN WAY
SUITE 300
BEAVERTON, OR 97005
(503) 387-5331
www.cushingcivilengineers.com

LICENSURE:

REGISTERED PROFESSIONAL ENGINEER 83233 OREGON JUNE 7, 2012 KENNY McMANAWAY

RENEWAL DATE 12/31/26

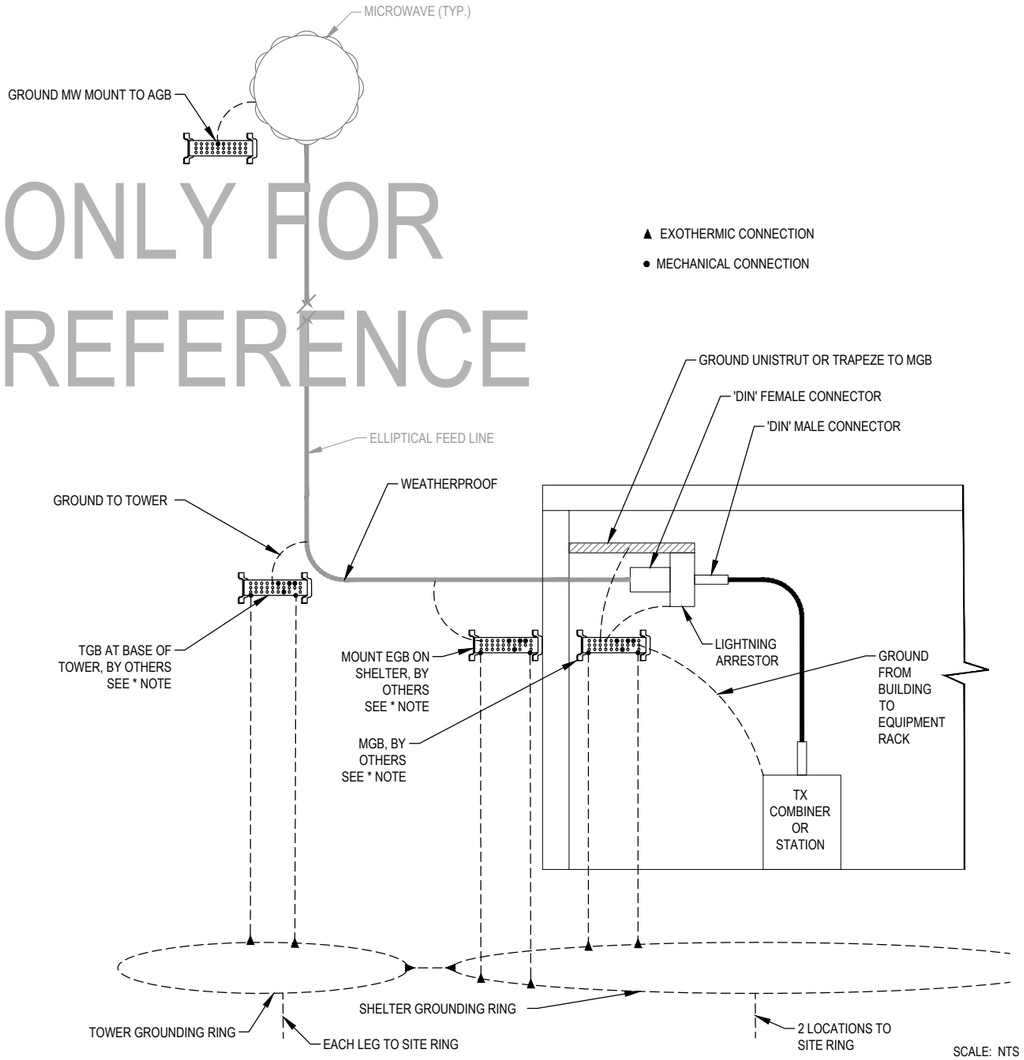
SHEET TITLE:

GROUNDING DETAILS I

SHEET NUMBER:

E-2

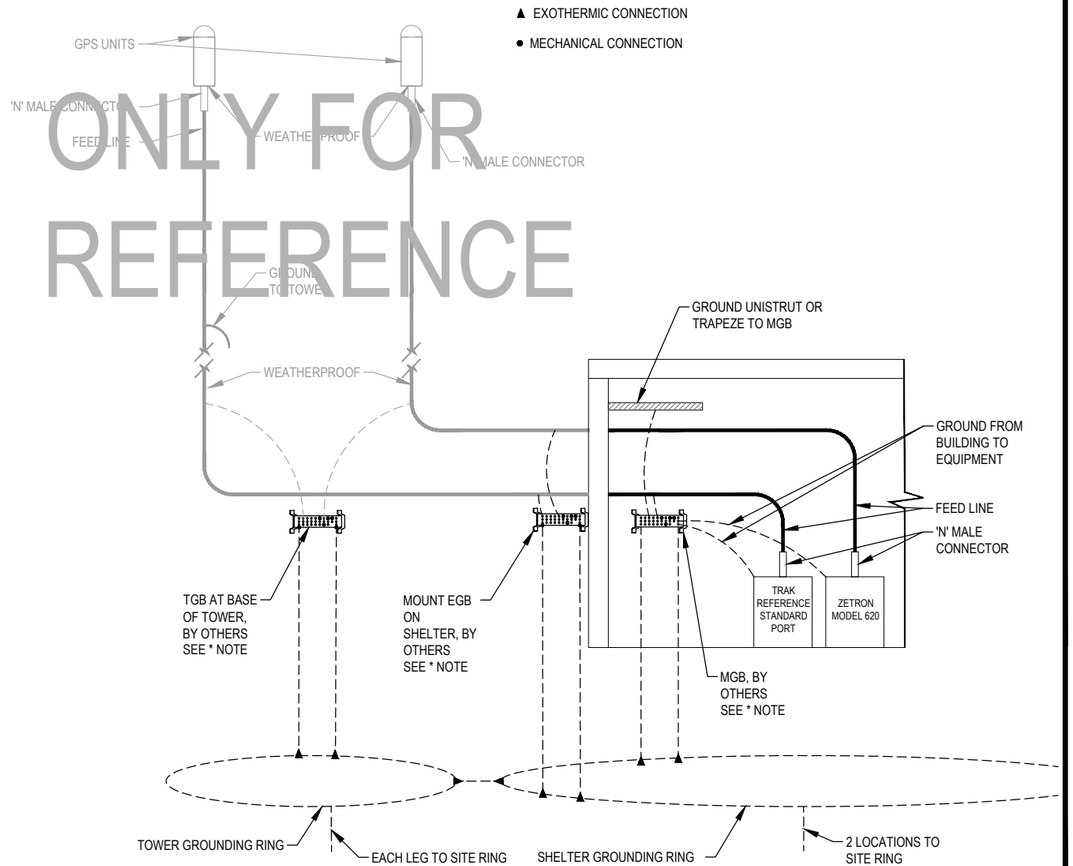
EXHIBIT K



ONLY FOR REFERENCE

TYPICAL MICROWAVE ANTENNA GROUNDING SCHEMATICS 1

NOTE:
TOWER INFO SHOWN FOR CONCEPTUAL USE ONLY. SEE TOWER STRUCTURAL REPORT BY OTHERS.



ONLY FOR REFERENCE

TYPICAL GPS ANTENNA GROUNDING SCHEMATICS SCALE: NTS 2

Marion County
OREGON

PROJECT INFORMATION:

MARION COUNTY
APW

2.6 MI NORTH OF 910 N SANTIAM HWY W
GATES, OR

	DATE	RELEASE
	05-23-25	SITE SKETCH
	07-07-25	PRELIMINARY ZONING DRAWINGS
	07-11-25	SITE PLAN KM-2
	08-27-25	PRELIMINARY CONSTRUCTION DRAWINGS
	09-19-25	FINAL CONSTRUCTION DRAWINGS

DRAWING INFORMATION:

THIS DRAWING IS COPYRIGHTED AND IS THE SOLE PROPERTY OF THE OWNER. IT IS PRODUCED SOLELY FOR USE BY THE OWNER AND ITS AFFILIATES. REPRODUCTION OR USE OF THIS DRAWING AND/OR THE INFORMATION CONTAINED IN IT IS FORBIDDEN WITHOUT THE WRITTEN PERMISSION OF THE OWNER.

PLANS PREPARED BY:

cushing Civil Engineers

Cushing Civil Engineers
12725 SW MILLIKAN WAY
SUITE 300
BEAVERTON, OR 97005
(503) 387-5331
www.cushingcivilengineers.com

LICENSURE:

REGISTERED PROFESSIONAL ENGINEER
83233
OREGON
JUNE 7, 2012
KENNY McMANAWAY

RENEWAL DATE 12/31/26

SHEET TITLE:

GROUNDING DETAILS II

SHEET NUMBER:

E-3

SITE INFORMATION	
SITE NAME	**APW**

LOCATION INFORMATION			
COUNTY	MARION COUNTY		
STREET ADDRESS	2.6 MI NORTH OF 910 N SANTIAM HWY W		
CITY	GATES	STATE	OR
ZIP CODE	----		
LATITUDE (DEC.)/(DEG)	44.781158 / 44° 46'52.2" N		
LONGITUDE (DEC.)/(DEG)	-122.447814 / 122°26'52.1" W		

TOWER INFORMATION			
STRUCTURE	SELF-SUPPORTING	TOWER MANUFACTURER	SABRE
TOWER OWNER	MCPW	SERIAL/MODEL #	-
GROUND ELEVATION	±2,430'	# OF APPURTENANCE	-
# OF LEGS	3	HIGHEST POINT W/ ANT	-
TOWER HEIGHT W/O ANT	180'		

EXHIBIT K

#	Description	Part Number	Length (ft)	Leg/Face	Status	Base Height (ft)	Centerline Height(ft)	Tip Height (ft)	Antenna Azimuth	Mount Azimuth	Mount	Transmission Line Size/Type
1	P25 TX Antenna	SE414-5WBPALDF(D00)	4.4	B	New	162	164	166	45		Site-Pro PSA-6 (6' standoff)	7/8"
2	P25 RX Antenna	CC807-09	10.3	B	New	179	184	189	-		Standard	1/2" to TTA
3	TTA	NPD3633A-TTA	1.0	B	New	176	177	177	-		Standard	7/8"
4	Microwave - McCully	VHLP3-11W	3.0	C	New	64	65	67	262.48	262.48	Standard w/ tieback	EW90
5	Microwave - House Mtn	VHLP3-18	3.0	A	New	59	60	62	337.47	337.47	Standard w/ tieback	EW90
6	Microwave - Halls Ridge	VHLP4-11W	4.0	B	New	58	60	62	110.52	110.52	Standard w/ tieback	EWP180-180

NOTE:

INFORMATION BASED ON TAIT COMMUNICATIONS' DOCUMENT DATED 08/11/2025 PROVIDED BY MARION COUNTY.

PROVISIONAL

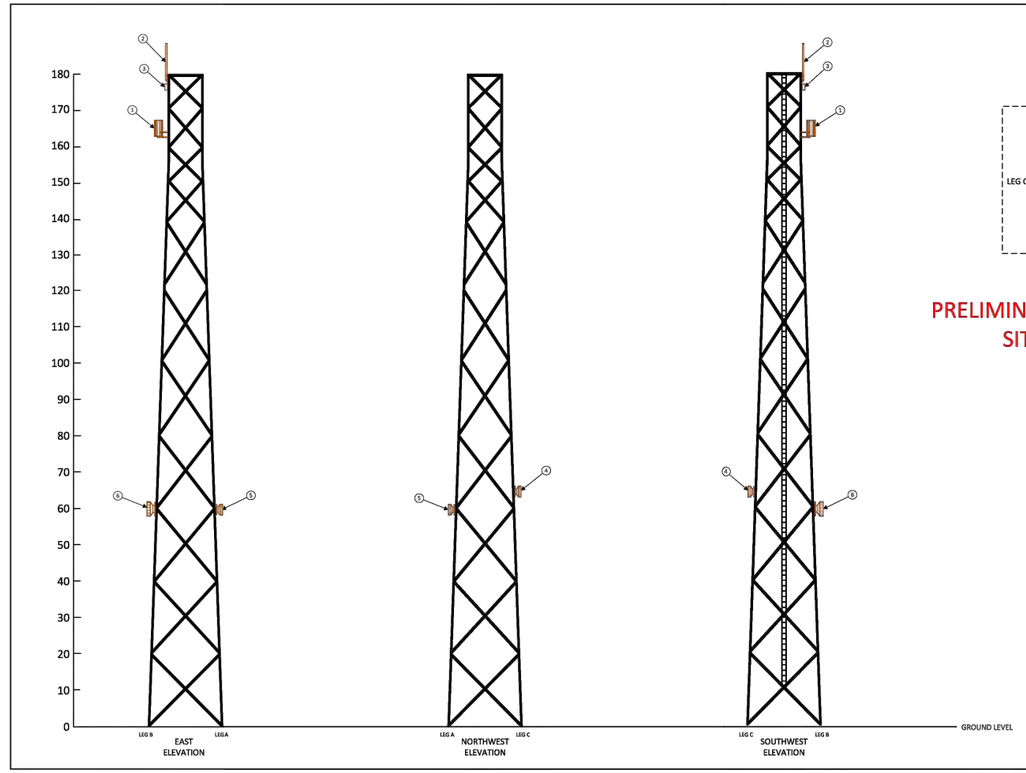
tait communications

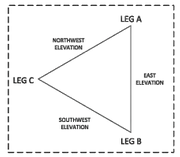
Marion County, OR
700 MHz
P25 Phase II

Date	8/11/2025
Drawn	RCA
Checked	-

FILE: I:\marion county or_apw.vsd

APW
Appurtenance Chart





PRELIMINARY – PENDING SITE CIVILS

PROVISIONAL

tait communications

Marion County, OR
700 MHz
P25 Phase II

Date	8/11/2025
Drawn	RCA
Checked	-

FILE: I:\marion county or_apw.vsd

APW
Tower Plan

Marion County
OREGON

PROJECT INFORMATION:

MARION COUNTY
APW

2.6 MI NORTH OF 910 N SANTIAM HWY W
GATES, OR

	DATE	RELEASE
	05-23-25	SITE SKETCH
	07-07-25	PRELIMINARY ZONING DRAWINGS
	07-11-25	SITE PLAN KM-2
	08-27-25	PRELIMINARY CONSTRUCTION DRAWINGS
	09-19-25	FINAL CONSTRUCTION DRAWINGS

DRAWING INFORMATION:

THIS DRAWING IS COPYRIGHTED AND IS THE SOLE PROPERTY OF THE OWNER. IT IS PRODUCED SOLELY FOR USE BY THE OWNER AND ITS AFFILIATES. REPRODUCTION OR USE OF THIS DRAWING AND/OR THE INFORMATION CONTAINED IN IT IS FORBIDDEN WITHOUT THE WRITTEN PERMISSION OF THE OWNER.

PLANS PREPARED BY:

cushing Civil Engineers

Cushing
Civil Engineers

12725 SW MILLIKAN WAY
SUITE 300
BEAVERTON, OR 97005
(503) 387-5331
www.cushingcivilengineers.com

LICENSURE:

REGISTERED PROFESSIONAL ENGINEER
83233
OREGON
JUNE 7, 2012
KENNY McMANAWAY

RENEWAL DATE 12/31/26

SHEET TITLE:

RF TOWER APPURTENANCES I

SHEET NUMBER:

RF-1.0

EXHIBIT K

VHLPX4-11W/A

Base Product



1.2 m | 4 ft ValuLine® High Performance Low Profile Antenna, dual-polarized, 10.125–11.700 GHz

Product Classification

Product Type	Microwave antenna
Product Brand	ValuLine®

General Specifications

Antenna Type	VHLPX - ValuLine® High Performance Low Profile Antenna, dual-polarized
Polarization	Dual
Side Struts, Included	1 inboard
Side Struts, Optional	1 inboard

Dimensions

Diameter, nominal	1.2 m | 4 ft

Electrical Specifications

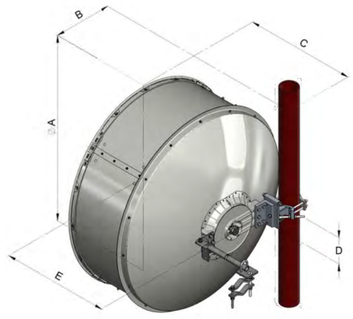
Operating Frequency Band	10.125 – 11.700 GHz
Gain, Low Band	40.2 dBi
Gain, Mid Band	40.7 dBi
Gain, Top Band	41 dBi
Boresite Cross Polarization Discrimination (XPD)	30 dB
Front-to-Back Ratio	66 dB
Beamwidth, Horizontal	1.6 °
Beamwidth, Vertical	1.6 °
Return Loss	17.7 dB
VSWR	1.3
Radiation Pattern Envelope Reference (RPE)	7185A
Electrical Compliance	Brazil Anatel Class 2 | Canada SRSP 310.5 | Canada SRSP 310.7 Part A | Canada SRSP 310.7 Part B | ETSI 302 217 Class

©2024 CommScope, Inc. All rights reserved. CommScope and the CommScope logo are registered trademarks of CommScope and/or its affiliates in the U.S. and other countries. For additional trademark information see https://www.commscope.com/trademarks. All product names, trademarks and registered trademarks are property of their respective owners. Revised: September 1, 2023

COMMSCOPE®

VHLPX4-11W/A

Antenna Dimensions and Mounting Information



Dimensions in inches (mm)					
Antenna size, ft (m)	A	B	C	D	E
4 (1.2)	50.8 (1291)	16 (407)	30.2 (767)	7.2 (183)	29.5 (748)

Wind Forces at Wind Velocity Survival Rating

Axial Force (FA)	5326 N | 1,197.333 lbf
Side Force (FS)	2638 N | 593.046 lbf
Twisting Moment (MT)	2162 N-m | 19,135.312 in lb
Force on Inboard Strut Side	2862 N | 643.403 lbf
Zcg without Ice	43 mm | 1.693 in
Zcg with 1/2 in (12 mm) Radial Ice	284 mm | 11.181 in
Weight with 1/2 in (12 mm) Radial Ice	74 kg | 163.142 lb

©2024 CommScope, Inc. All rights reserved. CommScope and the CommScope logo are registered trademarks of CommScope and/or its affiliates in the U.S. and other countries. For additional trademark information see https://www.commscope.com/trademarks. All product names, trademarks and registered trademarks are property of their respective owners. Revised: September 1, 2023

COMMSCOPE®

NOTE: MODEL SHOWN IS PRELIMINARY AND SUBJECT TO CHANGE UPON FINAL RF CONFIGURATION.

Marion County OREGON

PROJECT INFORMATION:

MARION COUNTY APW

2.6 MI NORTH OF 910 N SANTIAM HWY W
GATES, OR

	DATE	RELEASE
	05-23-25	SITE SKETCH
	07-07-25	PRELIMINARY ZONING DRAWINGS
	07-11-25	SITE PLAN KM-2
	08-27-25	PRELIMINARY CONSTRUCTION DRAWINGS
	09-19-25	FINAL CONSTRUCTION DRAWINGS

DRAWING INFORMATION:

THIS DRAWING IS COPYRIGHTED AND IS THE SOLE PROPERTY OF THE OWNER. IT IS PRODUCED SOLELY FOR USE BY THE OWNER AND ITS AFFILIATES. REPRODUCTION OR USE OF THIS DRAWING AND/OR THE INFORMATION CONTAINED IN IT IS FORBIDDEN WITHOUT THE WRITTEN PERMISSION OF THE OWNER.

PLANS PREPARED BY:

cushing Civil Engineers

Cushing
Civil Engineers

12725 SW MILLIKAN WAY
SUITE 300
BEAVERTON, OR 97005
(503) 387-5331
www.cushingcivilengineers.com

LICENSURE:

REGISTERED PROFESSIONAL ENGINEER
83233
OREGON
JUNE 7, 2012
KENNY McMANAWAY

RENEWAL DATE 12/31/26

SHEET TITLE:

RF TOWER APPURTENANCES II

SHEET NUMBER:

RF-1.1

EXHIBIT K

VHLPX3-11W/A

Base Product



0.9m | 3 ft ValuLine® High Performance Low Profile Antenna, dual-polarized, 10.125–11.700 GHz

Product Classification

Product Type	Microwave antenna
Product Brand	ValuLine®

General Specifications

Antenna Type	VHLPX - ValuLine® High Performance Low Profile Antenna, dual-polarized
Polarization	Dual
Side Struts, Included	0
Side Struts, Optional	1 inboard

Dimensions

Diameter, nominal	0.9 m | 3 ft

Electrical Specifications

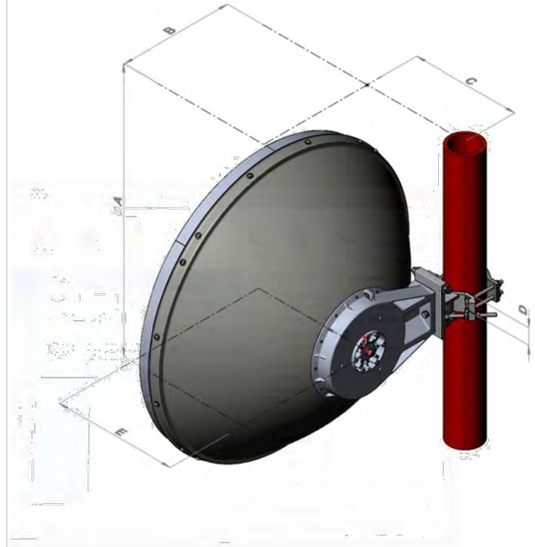
Operating Frequency Band	10.125 – 11.700 GHz
Gain, Low Band	37.8 dBi
Gain, Mid Band	38.4 dBi
Gain, Top Band	39 dBi
Boresite Cross Polarization Discrimination (XPD)	30 dB
Front-to-Back Ratio	64 dB
Beamwidth, Horizontal	2 °
Beamwidth, Vertical	2 °
Return Loss	17.7 dB
VSWR	1.3
Radiation Pattern Envelope Reference (RPE)	7177A | 7178A
Electrical Compliance	Brazil Anatel Class 2 | Canada SRSP 310.5 | ETSI 302 217 Class 3 | US FCC Part 101A @ 10.55–10.7 GHz | US FCC Part 101A @

©2024 CommScope, Inc. All rights reserved. CommScope and the CommScope logo are registered trademarks of CommScope and/or its affiliates in the U.S. and other countries. For additional trademark information see https://www.commscope.com/trademarks. All product names, trademarks and registered trademarks are property of their respective owners. Revised: September 1, 2023

COMMSCOPE®

VHLPX3-11W/A

Antenna Dimensions and Mounting Information



Dimension in Inches (mm)					
Antenna size, ft (m)	A	B	C	D	E
3 (1.0)	39.3 (999)	16 (407)	15.2 (387)	2.4 (60)	17.2 (437)

Wind Forces at Wind Velocity Survival Rating

Axial Force (FA)	2903 N | 652.621 lbf
Angle α for MT Max	0 °
Side Force (FS)	1439 N | 323.5 lbf
Twisting Moment (MT)	1179 N-m | 10,435.029 in lb
Zcg without Ice	135 mm | 5.315 in
Zcg with 1/2 in (12 mm) Radial Ice	84 mm | 3.307 in
Weight with 1/2 in (12 mm) Radial Ice	46 kg | 101.413 lb

©2024 CommScope, Inc. All rights reserved. CommScope and the CommScope logo are registered trademarks of CommScope and/or its affiliates in the U.S. and other countries. For additional trademark information see https://www.commscope.com/trademarks. All product names, trademarks and registered trademarks are property of their respective owners. Revised: September 1, 2023

COMMSCOPE®

NOTE: MODEL SHOWN IS PRELIMINARY AND SUBJECT TO CHANGE UPON FINAL RF CONFIGURATION.

Marion County OREGON

PROJECT INFORMATION:

MARION COUNTY
APW
2.6 MI NORTH OF 910 N SANTIAM HWY W
GATES, OR

	DATE	RELEASE
	05-23-25	SITE SKETCH
	07-07-25	PRELIMINARY ZONING DRAWINGS
	07-11-25	SITE PLAN KM-2
	08-27-25	PRELIMINARY CONSTRUCTION DRAWINGS
	09-19-25	FINAL CONSTRUCTION DRAWINGS

DRAWING INFORMATION:
THIS DRAWING IS COPYRIGHTED AND IS THE SOLE PROPERTY OF THE OWNER. IT IS PRODUCED SOLELY FOR USE BY THE OWNER AND ITS AFFILIATES. REPRODUCTION OR USE OF THIS DRAWING AND/OR THE INFORMATION CONTAINED IN IT IS FORBIDDEN WITHOUT THE WRITTEN PERMISSION OF THE OWNER.

PLANS PREPARED BY:

cushing Civil Engineers

Cushing
Civil Engineers

12725 SW MILLIKAN WAY
SUITE 300
BEAVERTON, OR 97005
(503) 387-5331
www.cushingcivilengineers.com

LICENSURE:

REGISTERED PROFESSIONAL ENGINEER
83233
OREGON
JUNE 7, 2012
KENNY McMANAWAY

RENEWAL DATE 12/31/26

SHEET TITLE:

RF TOWER APPURTENANCES III

SHEET NUMBER:

RF-1.2

EXHIBIT K

VHLP3-18/A

Base Product



0.9m | 3 ft ValuLine® High Performance Low Profile Antenna, single-polarized, 17.700–19.700 GHz

Product Classification

Product Type	Microwave antenna
Product Brand	ValuLine®

General Specifications

Antenna Type	VHLP - ValuLine® High Performance Low Profile Antenna, single-polarized
Polarization	Single
Side Struts, Included	0
Side Struts, Optional	1 inboard

Dimensions

Diameter, nominal	0.9 m | 3 ft

Electrical Specifications

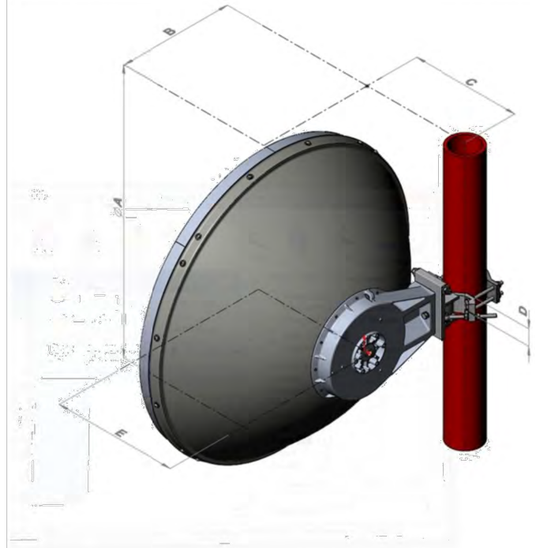
Operating Frequency Band	17.700 – 19.700 GHz
Gain, Low Band	43.1 dBi
Gain, Mid Band	43.5 dBi
Gain, Top Band	43.7 dBi
Boresite Cross Polarization Discrimination (XPD)	30 dB
Front-to-Back Ratio	71 dB
Beamwidth, Horizontal	1.1 °
Beamwidth, Vertical	1.1 °
Return Loss	17.7 dB
VSWR	1.3
Radiation Pattern Envelope Reference (RPE)	7152A
Electrical Compliance	Brazil Anatel Class 2 | Canada SRSP 317.8 Part A | ETSI 302 217 Class 3 | US FCC Part 101A

©2025 ANDREW, an Amphenol company. All rights reserved. Amphenol and ANDREW are registered trademarks of Amphenol and/or its affiliates in the U.S. and other countries. All product names, trademarks and registered trademarks are property of their respective owners.
Revised: March 12, 2025

ANDREW an Amphenol company

VHLP3-18/A

Antenna Dimensions and Mounting Information



Dimension in Inches (mm)

Antenna size, ft (m)	A	B	C	D	E
3 (1.0)	39.3 (999)	16 (407)	15.2 (387)	2.4 (60)	17.2 (437)

Wind Forces at Wind Velocity Survival Rating

Axial Force (FA)	2903 N | 652.621 lbf
Angle α for MT Max	0 °
Side Force (FS)	1439 N | 323.5 lbf
Twisting Moment (MT)	1179 N-m | 10,435.029 in lb
Zcg without Ice	135 mm | 5.315 in
Zcg with 1/2 in (12 mm) Radial Ice	84 mm | 3.307 in
Weight with 1/2 in (12 mm) Radial Ice	46 kg | 101.413 lb

©2025 ANDREW, an Amphenol company. All rights reserved. Amphenol and ANDREW are registered trademarks of Amphenol and/or its affiliates in the U.S. and other countries. All product names, trademarks and registered trademarks are property of their respective owners.
Revised: March 12, 2025

ANDREW an Amphenol company

NOTE: MODEL SHOWN IS PRELIMINARY AND SUBJECT TO CHANGE UPON FINAL RF CONFIGURATION.

Marion County OREGON

PROJECT INFORMATION:

MARION COUNTY APW

2.6 MI NORTH OF 910 N SANTIAM HWY W
GATES, OR

	DATE	RELEASE
	05-23-25	SITE SKETCH
	07-07-25	PRELIMINARY ZONING DRAWINGS
	07-11-25	SITE PLAN KM-2
	08-27-25	PRELIMINARY CONSTRUCTION DRAWINGS
	09-19-25	FINAL CONSTRUCTION DRAWINGS

DRAWING INFORMATION:
THIS DRAWING IS COPYRIGHTED AND IS THE SOLE PROPERTY OF THE OWNER. IT IS PRODUCED SOLELY FOR USE BY THE OWNER AND ITS AFFILIATES. REPRODUCTION OR USE OF THIS DRAWING AND/OR THE INFORMATION CONTAINED IN IT IS FORBIDDEN WITHOUT THE WRITTEN PERMISSION OF THE OWNER.

PLANS PREPARED BY:

cushing Civil Engineers

Cushing
Civil Engineers

12725 SW MILLIKAN WAY
SUITE 300
BEAVERTON, OR 97005
(503) 387-5331
www.cushingcivilengineers.com

LICENSURE:

REGISTERED PROFESSIONAL ENGINEER
83233
OREGON
JUNE 7, 2012
KENNY McMANAWAY

RENEWAL DATE 12/31/26

SHEET TITLE:

RF TOWER APPURTENANCES IV

SHEET NUMBER:

RF-1.3

EXHIBIT K

Antennas
700-1000 MHz Antennas
SE414-WBAL - PIM Certified Series

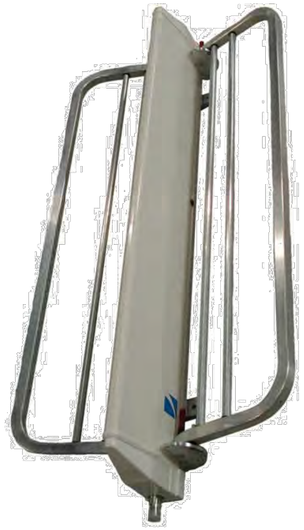
SE414-SWBPALDF(D00) Enclosed dipole, 8-11.5 dBd, adj. beamwidth, Low PIM, 746-960MHz

- Wide band design covers whole 746-960 MHz band, PIP rated
- Horizontal beamwidth can be adjusted (60º/90º/105º/130º/160º)
- Gain depends on horizontal beamwidth setting (11.5/10/9/8.5/8 dBd)
- 0-10º electrical downtilt available

One wideband antenna for your 700, 800, 900 MHz systems. Sinclair's SE414-WBL series of enclosed dipole arrays offer excellent intermodulation performance covering 746-960 MHz in a single antenna. These highly versatile antennas are particularly well suited to communication systems where a specific coverage pattern is required. These include cellular systems, trunked radio, paging, and data transmission, where predictable and highly reliable performance is a must.

The SE414-WBAL series come with field adjustable reflectors that provide horizontal beamwidths between 60 and 160 degrees. The creative design and construction permits excellent pattern control and greater efficiency.

This antenna shall be mounted in an upright position.
Clamps for mechanical downtilt can be ordered separately.
Electrical downtilt is available upon request.



Antenna may not appear exactly as picture.

www.sinctech.com

Region	United States	Europe, Middle East and Africa	Caribbean and Latin America	Canada and rest of the world
Telephone	USA: 1 800 263 3275	International: +44 (0) 1487 84 28 19	International: +1 905 726 7676	Canada: 1 800 263 3275 International: +1 905 727 0165
E-mail	salesusa@sinctech.com	salesuk@sinctech.com	salesla@sinctech.com	salescan@sinctech.com

Sinclair's commitment to product leadership may result in improvement or change to this product
Copyright © Sinclair Technologies

Antennas
700-1000 MHz Antennas
SE414-WBAL - PIM Certified Series

Electrical Specifications

Frequency Range	MHz	746 to 960	
Bandwidth	MHz	214	
Connector		7/16 DIN-Female	
Gain (nominal)	dBd (dBi)	11.5 (13.6)	*1
Input VSWR (max)		1.5:1	
Polarization		vertical	
Impedance	Ω	50	
Pattern		Directional and Adjustable	
Horizontal beamwidth (typ)	degrees	60	*2
Vertical beamwidth (typ)	degrees	20	
Average Power Input (max)	W	500	
Passive intermod. (2x20W, 3rd ord.)	dBc	-150	*3
PIP(KW, max)		25	
Lightning protection		DC ground	
Electrical tilt (available)		0 to 10 degrees	
Front-to-back ratio (min)	dB	20	

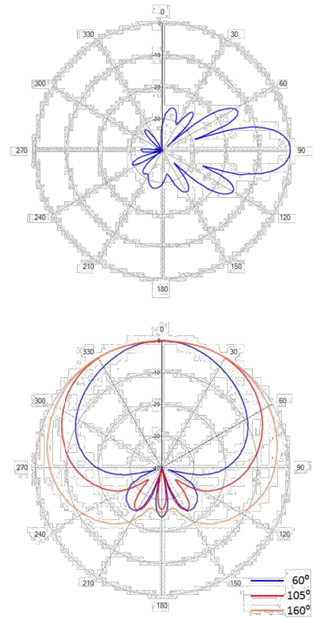
Mechanical Specifications

Width	in (mm)	25 (635)	*4
Depth	in (mm)	8.5 (216)	*5
Length/ Height	in (mm)	53 (1346)	
Base pipe diameter	in (mm)	2.88 (73)	*6
Base pipe mounting length	in (mm)	30.5 (775)	
Radiating element material		prntd circuit bd	
Weight	lbs (kg)	19.5 (8.85)	
Mounting Hardware (Included)		#130 clamp	
Mounting configurations		upright	
Actual shipping weight	lbs (kg)	24.5 (11.12)	
Shipping dimensions	in (mm)	58x14x17 (1473x356x432)	

Environmental Specifications

Temperature range	°F (°C)	-40 to +140 (-40 to +60)
Wind Loading Area (Flat Plate Equivalent)	ft² (m²)	4.8 (0.45)
Wind Loading Area (1/2" ice)	ft² (m²)	5.7 (0.53)
Rated wind velocity (no ice)	mph (km/h)	155 (250)
Rated wind velocity (1/2" radial ice)	mph (km/h)	140 (225)
Lateral Thrust (100 mph No Ice)	lbs (N)	180 (800.6)
Torsional moment (100 mph No Ice)	ft-lbs (Nm)	93 (125.6)

Notes
*1 : Dependant on reflector setting 10/9/8.5/8 dBd
*2 : 90/105/130/160
*3 : Measured in the receive band: 2 - 20W carriers
*4 : 90° beamwidth configuration, clamp not included in measurement
*5 : 90° beamwidth configuration, clamp not included in measurement
*6 : Ref. clamp maximum



www.sinctech.com

Region | United States | Europe, Middle East and Africa | Caribbean and Latin America | Canada and rest of the world
Telephone | USA: 1 800 263 3275 | International: +44 (0) 1487 84 28 19 | International: +1 905 726 7676 | Canada: 1 800 263 3275 International: +1 905 727 0165
E-mail | salesusa@sinctech.com | salesuk@sinctech.com | salesla@sinctech.com | salescan@sinctech.com
Product Specification Sheet SE414-SWBPALDF(D00) Issue: 2 Dated: 24-07-17
EPR 018751 Dated: 16-12-15
Customer Tech Manual 005044
Sinclair's commitment to product leadership may result in improvement or change to this product
Copyright © Sinclair Technologies

NOTE: MODEL SHOWN IS PRELIMINARY AND SUBJECT TO CHANGE UPON FINAL RF CONFIGURATION.

Marion County OREGON

PROJECT INFORMATION:

MARION COUNTY APW

2.6 MI NORTH OF 910 N SANTIAM HWY W
GATES, OR

	DATE	RELEASE
	05-23-25	SITE SKETCH
	07-07-25	PRELIMINARY ZONING DRAWINGS
	07-11-25	SITE PLAN KM-2
	08-27-25	PRELIMINARY CONSTRUCTION DRAWINGS
	09-19-25	FINAL CONSTRUCTION DRAWINGS

DRAWING INFORMATION:
THIS DRAWING IS COPYRIGHTED AND IS THE SOLE PROPERTY OF THE OWNER. IT IS PRODUCED SOLELY FOR USE BY THE OWNER AND ITS AFFILIATES. REPRODUCTION OR USE OF THIS DRAWING AND/OR THE INFORMATION CONTAINED IN IT IS FORBIDDEN WITHOUT THE WRITTEN PERMISSION OF THE OWNER.

PLANS PREPARED BY:

Cushing
Civil Engineers

Cushing
Civil Engineers
12725 SW MILLIKAN WAY
SUITE 300
BEAVERTON, OR 97005
(503) 387-5331
www.cushingcivilengineers.com

LICENSURE:

REGISTERED PROFESSIONAL ENGINEER
83233
OREGON
JUNE 7, 2012
KENNY McMANAWAY

RENEWAL DATE 12/31/26

SHEET TITLE:

RF TOWER APPURTENANCES V

SHEET NUMBER:

RF-1.4

EXHIBIT K

800MHz Corporate Collinear Antennas

748-870MHz

CC807 Series

These industry leading, full featured corporate collinear arrays allow site operators to combine, with complete integrity, a large number of communications services into a single, low profile antenna solution.

The corporate feed design employed by RFI maintains superior pattern control, allowing gain to be maximised with zero tilt variation over a very broad bandwidth, comparable to that only previously available in exposed dipole array configurations. This is achieved in the preferred form factor of a fully enclosed fibreglass radome, providing a reduction in wind loading, ice loading and tower loading in comparison.

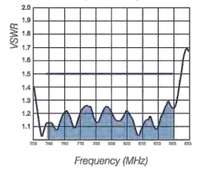
The CC807 series have been designed with an exceptional power rating of 500W across the band as well as a Peak Instantaneous Power (PIP) rating of 25kW to cater for the peak voltage levels present in large multi-carrier combining environments. RFI's refined design processes and proven construction methods achieve a PIM rating of –150dBc, further ensuring performance is maintained for the service life of the antenna.

Features:

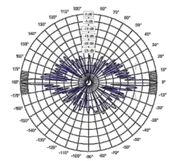
- 500W Continuous Power rating
- -150dBc Passive Intermodulation (PIM) rating, 100% PIM tested
- 25 kW Peak Instantaneous Power (PIP) rating
- DC grounding on all elements for the ultimate in lightning protection and dissipation of static noise.
- Light weight dipole construction using RFI's patented flexi-PCB architecture, maintains a low centre of gravity reducing tip deflection and sway
- Field invertible (excluding tilt models)
- Preset downtilt variations of 2 and 4 degrees available, see note (1)



Typical VSWR Response (CC807-12)



CC807-12 - E Plane



Electrical Specifications

Model Number	CC807-09-P	CC807-12-P
Nominal Gain *dBd (dBi)*	9.0 (11.1)	11.5 (13.6)
Frequency *MHz*	746-870	
Tuned Bandwidth *MHz*	Full	
VSWR *(Return Loss)*	1.5:1	
Nominal Impedance Ω	50	
Downtilt°	0 Std 2, 4 (1)	
Vertical Beamwidth°	8	4
Horizontal Beamwidth°	Omni +/- 0.5dB	
Input Power W	500	
Passive IM 3rd order (2x20W) *dBc*	-150	
Peak Instantaneous Power *kW*	25	

Mechanical

Model Number		CC807-09-P	CC807-12-P
Construction		Sky blue fibreglass radome	
Radome Diameter mm (inches)		76 (3.0)	
Length mm (inches)		3135 (123.4)	6235 (245.5)
Weight *kg (lbs)*		14 (30.9)	25.5 (56.2)
Termination		Integrated 4.3-10 Female	
Mountaing Area mm (inches)		750 x 90 (30 x 3.5) diameter Ecofilm™ plated aluminium	
Suggested Clamps		3 x UC-114	
Shipping Dimensions *mm (inches)*	H	115 (4.5)	
	W	115 (4.5)	
	L	3335 (131.3)	6435 (253.3)
Shipping Weight *kg (lbs)*		20.0 (44.1)	36.5 (80.5)
Projected area *cm² (ft²)*	No Ice	2597 (2.8)	5559 (6.0)
	With Ice	3192 (3.4)	7037 (7.6)
Lateral Thrust @160km/h *N* (100 mph lbs)		308 (69)	659 (148)
Wind Gust Rating *km/h (mph)*	No Ice	>240 (150)	
Torque @ 160km/h *Nm* (100mph ft-lbs)		413 (305)	1823 (1345)

(1) To order pre-set downtilt versions available, simply add a -T2 or -T4 towards the end of the part number to denote downtilt model required. For eg. CC807-12-T2-P to order CC807-12-P with 2deg of downtilt. Please note: Models with downtilt are NOT field invertible. . Eg. CC807-12-T2-P

Asia Pacific | EMEA | Americas

Copyright RF Industries Pty Ltd 2020. Subject to change without notice.

rfi.com.au

NOTE: MODEL SHOWN IS PRELIMINARY AND SUBJECT TO CHANGE UPON FINAL RF CONFIGURATION.

Marion County OREGON

PROJECT INFORMATION:

MARION COUNTY APW

2.6 MI NORTH OF 910 N SANTIAM HWY W
GATES, OR

	DATE	RELEASE
	05-23-25	SITE SKETCH
	07-07-25	PRELIMINARY ZONING DRAWINGS
	07-11-25	SITE PLAN KM-2
	08-27-25	PRELIMINARY CONSTRUCTION DRAWINGS
	09-19-25	FINAL CONSTRUCTION DRAWINGS

DRAWING INFORMATION:

THIS DRAWING IS COPYRIGHTED AND IS THE SOLE PROPERTY OF THE OWNER. IT IS PRODUCED SOLELY FOR USE BY THE OWNER AND ITS AFFILIATES. REPRODUCTION OR USE OF THIS DRAWING AND/OR THE INFORMATION CONTAINED IN IT IS FORBIDDEN WITHOUT THE WRITTEN PERMISSION OF THE OWNER.

PLANS PREPARED BY:

cushing Civil Engineers

Cushing Civil Engineers

12725 SW MILLIKAN WAY
SUITE 300
BEAVERTON, OR 97005
(503) 387-5331
www.cushingcivilengineers.com

LICENSURE:

REGISTERED PROFESSIONAL ENGINEER
83233
OREGON
JUNE 7, 2012
KENNY McMANAWAY

RENEWAL DATE 12/31/26

SHEET TITLE:

RF TOWER APPURTENANCES VI

SHEET NUMBER:

RF-1.5

EXHIBIT K

APW (I14981128)
ground based

IRONRIDGE
28357 INDUSTRIAL BLVD., HAYWARD, CA 94545

Project Details			
Name	APW	**Date**	09/19/2025
Location	Gates, OR 97346	**ASCE code**	7.22
Total modules	40	**Wind speed**	110 mph
Module	Waaree: WSMDIB-405 (35mm)	**Snow load**	60 psf
Dimensions	Dimensions: 75.75" x 40.87" x 1.38" (1924.0mm x 1038.0mm x 35.0mm)	**Wind exposure**	C
Total watts	16,200	**Piers**	30
Inter sub-array spacing	23.0" *Calculated using solar azimuth of -42.88° and solar elevation of 9.43° at 9AM (America/Los_Angeles) on the winter solstice.*		

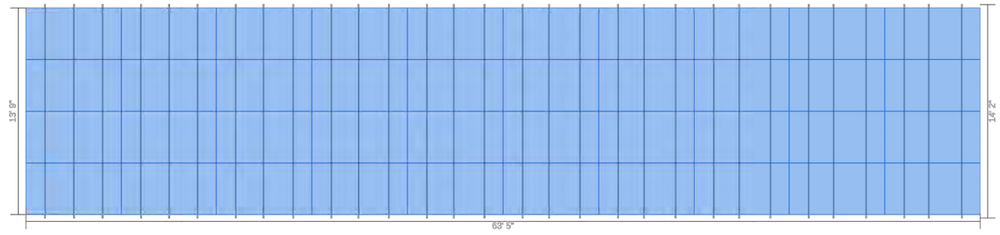


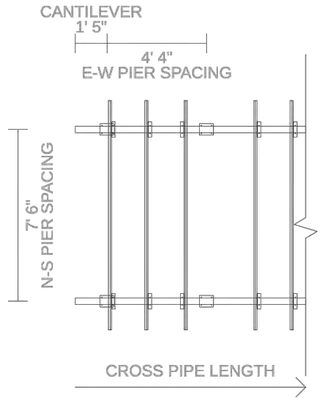
Substructure & Foundation			
Tilt	45°	**South facing grade**	40°
Pipe/tubing diameter	3"	**Soil class**	2 - 5
Foundation type	Ground screws	**Screw length**	81" (2050mm)
Freeze thaw depth	None entered	**Hex head set screws / Screw**	3

APW (I14981128)
ground based

IRONRIDGE
28357 INDUSTRIAL BLVD., HAYWARD, CA 94545

Sub array #1					
** IronRidge engineering requires a 3rd rail for each column in this array due to the project parameters and site conditions.*					
Rows	4	**Columns**	10	**# Arrays**	1
Area	63' 5" (EW) × 13' 11" (NS)	**Rail type**	XR1000	**Diagonal bracing**	no
E/W spacing	4' 4"	**Rail cantilever**	1' 9"	**Pipe cantilever**	1' 5"
Piers/array	30	**Total south piers**	15 (3' 11")	**Total north piers**	15 (5' 2")
Total cross pipes	2 (63' 5")	**Total pipe length**	263'		
Shear	1,138 lbs	**Moment**	2,845 ft-lbs	**Uplift**	-444 lbs





Marion County
OREGON

PROJECT INFORMATION:

MARION COUNTY
APW

2.6 MI NORTH OF 910 N SANTIAM HWY W
GATES, OR

	DATE	RELEASE
	05-23-25	SITE SKETCH
	07-07-25	PRELIMINARY ZONING DRAWINGS
	07-11-25	SITE PLAN KM-2
	08-27-25	PRELIMINARY CONSTRUCTION DRAWINGS
	09-19-25	FINAL CONSTRUCTION DRAWINGS

DRAWING INFORMATION:

THIS DRAWING IS COPYRIGHTED AND IS THE SOLE PROPERTY OF THE OWNER. IT IS PRODUCED SOLELY FOR USE BY THE OWNER AND ITS AFFILIATES. REPRODUCTION OR USE OF THIS DRAWING AND/OR THE INFORMATION CONTAINED IN IT IS FORBIDDEN WITHOUT THE WRITTEN PERMISSION OF THE OWNER.

PLANS PREPARED BY:

cushing
Civil Engineers

Cushing
Civil Engineers

12725 SW MILLIKAN WAY
SUITE 300
BEAVERTON, OR 97005
(503) 387-5331
www.cushingcivilengineers.com

LICENSURE:

REGISTERED PROFESSIONAL ENGINEER
83233
OREGON
JUNE 7, 2012
KENNY McMANAWAY

RENEWAL DATE 12/31/26

SHEET TITLE:

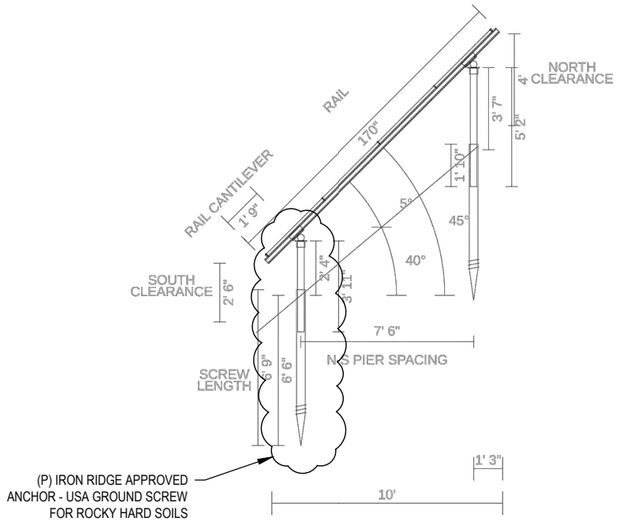
SOLAR PV ARRAY DETAILS I

SHEET NUMBER:

U-1

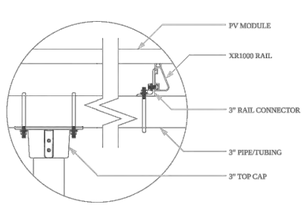
EXHIBIT K

IRONRIDGE
28357 INDUSTRIAL BLVD., HAYWARD, CA 94545

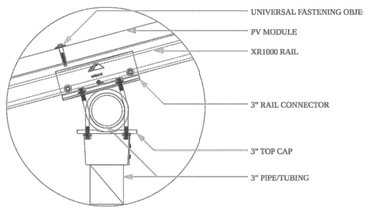


Pipe Fitting Detail

XR1000 Rail

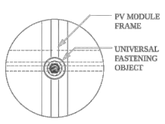


Front View

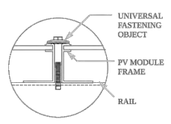


Side View

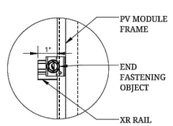
Clamp Detail



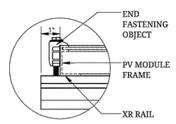
Mid Clamp, Plan



Mid Clamp, Front



End Clamp, Plan

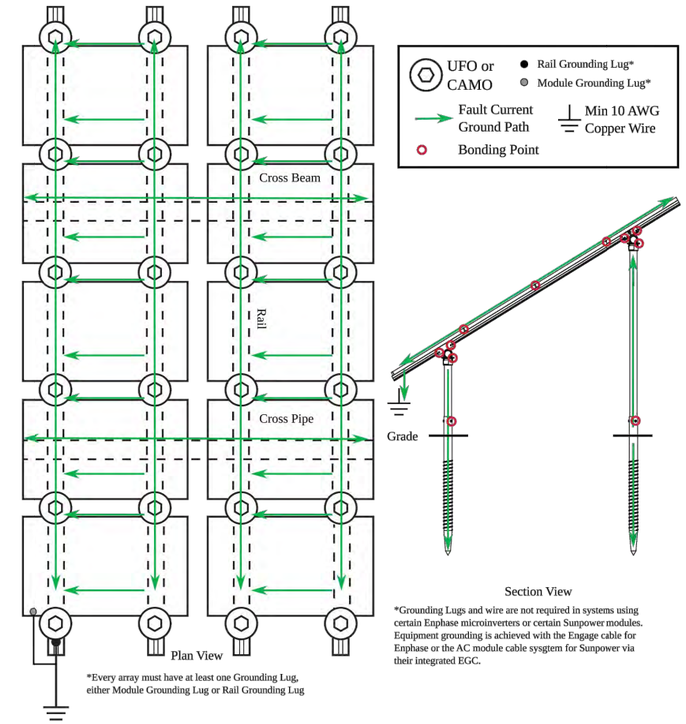


End Clamp, Front

APW (#1498128)
ground based

IRONRIDGE
28357 INDUSTRIAL BLVD., HAYWARD, CA 94545

Grounding Diagram



Plan View

*Every array must have at least one Grounding Lug, either Module Grounding Lug or Rail Grounding Lug

Section View

*Grounding Lugs and wire are not required in systems using certain Enphase microinverters or certain Sunpower modules. Equipment grounding is achieved with the Engage cable for Enphase or the AC module cable sysgtem for Sunpower via their integrated EGC.

Bill of Materials

Part	Spares	Qty
Rails		
XR-1000-170M XR-1000, 170" (14' 2") Mill	0	30
Clamps & Grounding		
UFO-CL-01-A1 Universal Module Clamp, Clear	0	90
UFO-END-01-A1 End Fastening Object (End Clamp, 30-40mm), Mill	0	60
XR-LUG-04-A1 End Grounding Lug, Low Profile	0	1
Substructure		
70-0300-SGA SGA Top Cap at 3"	0	30
GM-BRC3-01-M1 Ground Mount Bonded Rail Connector - 3"	0	60
GM-HSHW-01-M1 Hex Head Set Screw	0	90

Marion County
OREGON

PROJECT INFORMATION:

MARION COUNTY
APW

2.6 MI NORTH OF 910 N SANTIAM HWY W
GATES, OR

	DATE	RELEASE
	05-23-25	SITE SKETCH
	07-07-25	PRELIMINARY ZONING DRAWINGS
	07-11-25	SITE PLAN KM-2
	08-27-25	PRELIMINARY CONSTRUCTION DRAWINGS
	09-19-25	FINAL CONSTRUCTION DRAWINGS

DRAWING INFORMATION:

THIS DRAWING IS COPYRIGHTED AND IS THE SOLE PROPERTY OF THE OWNER. IT IS PRODUCED SOLELY FOR USE BY THE OWNER AND ITS AFFILIATES. REPRODUCTION OR USE OF THIS DRAWING AND/OR THE INFORMATION CONTAINED IN IT IS FORBIDDEN WITHOUT THE WRITTEN PERMISSION OF THE OWNER.

PLANS PREPARED BY:

cushing Civil Engineers

Cushing Civil Engineers

12725 SW MILLIKAN WAY
SUITE 300
BEAVERTON, OR 97005
(503) 387-5331
www.cushingcivilengineers.com

LICENSURE:



RENEWAL DATE 12/31/26

SHEET TITLE:

SOLAR PV ARRAY DETAILS II

SHEET NUMBER:

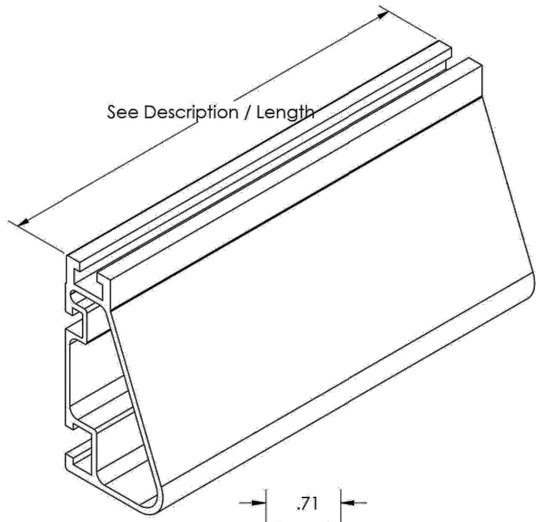
U-2

EXHIBIT K

Cut Sheet

IRONRIDGE

XR1000® Rail



Rail Section Properties	
Property	Value
Total Cross-Sectional Area	0.807 in^2
Section Modulus (X-axis)	0.530 in^3
Moment of Inertia (X-axis)	0.843 in^4
Moment of Inertia (Y-axis)	0.182 in^4
Torsional Constant	0.436 in^3
Polar Moment of Inertia	0.330 in^4

Part Number	Finish	Description / Length	Material	Weight
XR-1000-170M	Mill	XR1000, Rail 170" (14' 2" Feet)	6000-Series Aluminum	14.30 lbs.
XR-1000-210M	Mill	XR1000, Rail 210" (17' 6" Feet)		17.88 lbs.

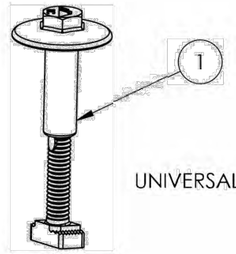
v1.10

Cut Sheet

IRONRIDGE

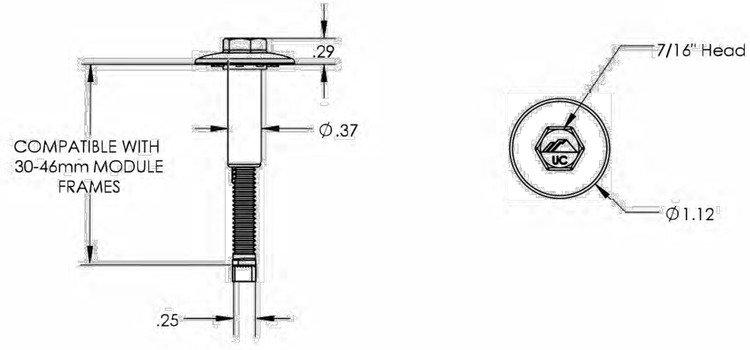
Universal Fastening Object®

Only for installation and use with IronRidge products in accord with written instructions see IronRidge.com/UFO



UNIVERSAL FASTENING OBJECT®

ITEM NO.	DESCRIPTION
UFO-CL-01-A1	UNIVERSAL MODULE CLAMP, CLEAR
UFO-CL-01-B1	UNIVERSAL MODULE CLAMP, BLACK



Property	Value
Material	300 Series Stainless Steel
Finish	Clear and Black

v1.32

Marion County OREGON

PROJECT INFORMATION:

MARION COUNTY APW

2.6 MI NORTH OF 910 N SANTIAM HWY W
GATES, OR

	DATE	RELEASE
	05-23-25	SITE SKETCH
	07-07-25	PRELIMINARY ZONING DRAWINGS
	07-11-25	SITE PLAN KM-2
	08-27-25	PRELIMINARY CONSTRUCTION DRAWINGS
	09-19-25	FINAL CONSTRUCTION DRAWINGS

DRAWING INFORMATION:

THIS DRAWING IS COPYRIGHTED AND IS THE SOLE PROPERTY OF THE OWNER. IT IS PRODUCED SOLELY FOR USE BY THE OWNER AND ITS AFFILIATES. REPRODUCTION OR USE OF THIS DRAWING AND/OR THE INFORMATION CONTAINED IN IT IS FORBIDDEN WITHOUT THE WRITTEN PERMISSION OF THE OWNER.

PLANS PREPARED BY:

cushing Civil Engineers

Cushing
Civil Engineers
12725 SW MILLIKAN WAY
SUITE 300
BEAVERTON, OR 97005
(503) 387-5331
www.cushingcivilengineers.com

LICENSURE:

REGISTERED PROFESSIONAL ENGINEER
83233
OREGON
JUNE 7, 2012
KENNY McMANAWAY

RENEWAL DATE 12/31/26

SHEET TITLE:

SOLAR PV ARRAY DETAILS III

SHEET NUMBER:

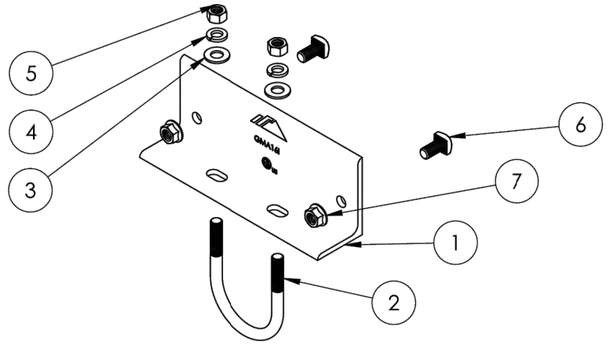
U-3

EXHIBIT K

Cut Sheet

IRONRIDGE

Bonded Rail Connector

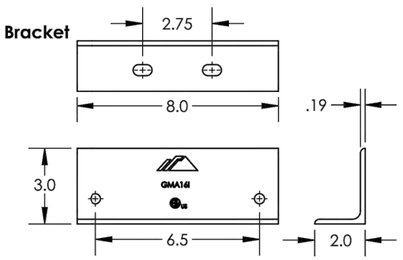


Item Number	Component	Qty in Kit
1	RAIL, 2" PIPE ATTACHING BRKT	1
2	UBOLT, CUSTOM SGA PIPE	1
3	WASHER, FLAT 3/8 GALV	2
4	WASHER, LOCK 3/8 GALV	2
5	NUT, HEX 3/8-16 GALV	2
6	BOLT, BOND 3/8-16 X .75 LG SQ HEAD	2
7	NUT, FLANGE HEX 3/8-16 SS	2

Part Number	Description
GM-BRC-002	GROUND MOUNT BONDED RAIL CONNECTOR - 2"
GM-BRC-003	GROUND MOUNT BONDED RAIL CONNECTOR - 3"

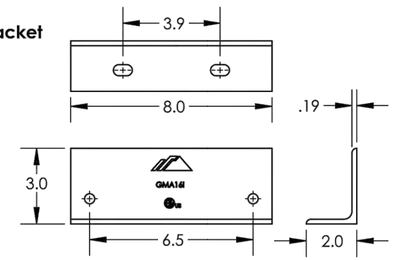
1) Rail, Pipe Attaching Bracket

2" Bracket



Property	Value
Material	Aluminum
Finish	Mill

3" Bracket



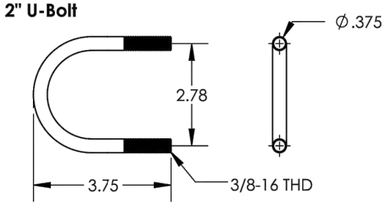
Property	Value
Material	Aluminum
Finish	Mill

v1.0

Cut Sheet

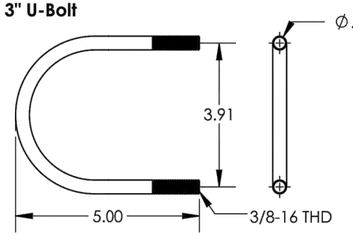
2) U-bolt, Custom SGA Pipe

2" U-Bolt



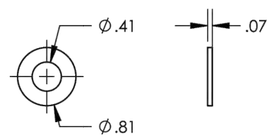
Property	Value
Material	Steel
Finish	Hot-Dip Galvanized

3" U-Bolt



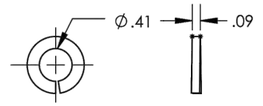
Property	Value
Material	Steel
Finish	Hot-Dip Galvanized

3) Washer, Flat 3/8 Galv



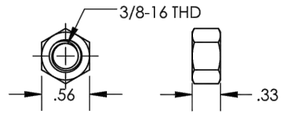
Property	Value
Material	Steel
Finish	Hot-Dip Galvanized

4) Washer, Lock 3/8 Galv



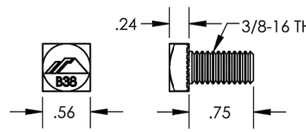
Property	Value
Material	Steel
Finish	Hot-Dip Galvanized

5) Nut, Hex 3/8-16 Galv



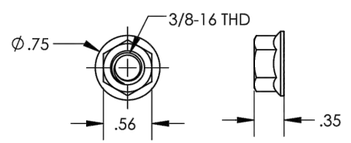
Property	Value
Material	Steel
Finish	Hot-Dip Galvanized

6) Bolt, Bond 3/8-16 X .75 LG SQ Head



Property	Value
Material	Stainless Steel
Finish	Clear

7) Nut, Flange Hex 3/8-16 SS



Property	Value
Material	Stainless Steel
Finish	Clear

v1.0

Marion County OREGON

PROJECT INFORMATION:

MARION COUNTY APW

2.6 MI NORTH OF 910 N SANTIAM HWY W
GATES, OR

	DATE	RELEASE
	05-23-25	SITE SKETCH
	07-07-25	PRELIMINARY ZONING DRAWINGS
	07-11-25	SITE PLAN KM-2
	08-27-25	PRELIMINARY CONSTRUCTION DRAWINGS
	09-19-25	FINAL CONSTRUCTION DRAWINGS

DRAWING INFORMATION:

THIS DRAWING IS COPYRIGHTED AND IS THE SOLE PROPERTY OF THE OWNER. IT IS PRODUCED SOLELY FOR USE BY THE OWNER AND ITS AFFILIATES. REPRODUCTION OR USE OF THIS DRAWING AND/OR THE INFORMATION CONTAINED IN IT IS FORBIDDEN WITHOUT THE WRITTEN PERMISSION OF THE OWNER.

PLANS PREPARED BY:

cushing Civil Engineers

Cushing
Civil Engineers
12725 SW MILLIKAN WAY
SUITE 300
BEAVERTON, OR 97005
(503) 387-5331
www.cushingcivilengineers.com

LICENSURE:

REGISTERED PROFESSIONAL ENGINEER
83233
OREGON
JUNE 7, 2012
KENNY McMANAWAY

RENEWAL DATE 12/31/26

SHEET TITLE:

SOLAR PV ARRAY DETAILS IV

SHEET NUMBER:

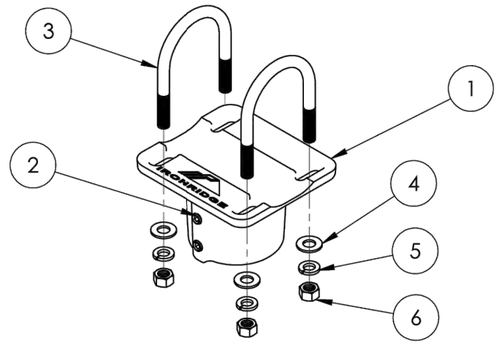
U-4

EXHIBIT K

Cut Sheet

IRONRIDGE

Top Cap

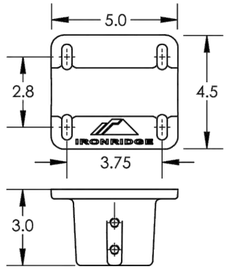


Item Number	Component	Qty in Kit
1	CAP, FLAT CSTG, ALUM	1
2	SET SCREW, CONE POINT, 3/8-16 X 3/4 LONG	2
3	UBOLT, CUSTOM SGA PIPE	2
4	WASHER, FLAT 3/8 GALV	4
5	WASHER, LOCK 3/8 GALV	4
6	NUT, HEX 3/8-16 GALV	4

Part Number	Description
70-0200-SGA	SGA Top Cap at 2", Mill
70-0300-SGA	SGA Top Cap at 3", Mill

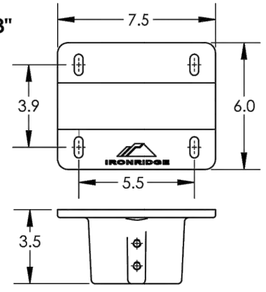
1) Cap, Flat CSTG, Alum

SGA 2"



Property	Value
Material	ALMAG 535
Finish	Clear

SGA 3"

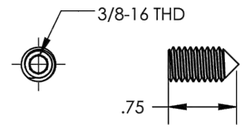


Property	Value
Material	ALMAG 535
Finish	Clear

v1.0

Cut Sheet

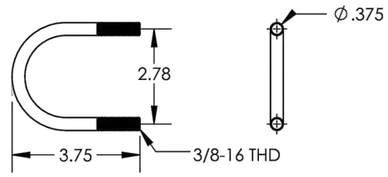
2) Set Screw, Cone Point



Property	Value
Material	Steel
Finish	Zinc Plated

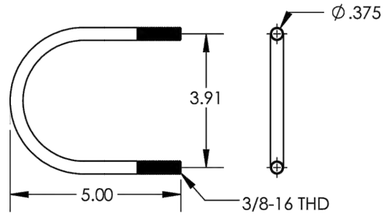
3) U-bolt, Custom SGA Pipe

SGA 2"



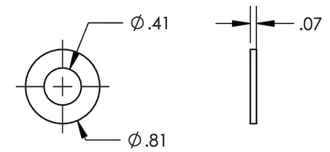
Property	Value
Material	Steel
Finish	Hot-Dip Galvanized

SGA 3"



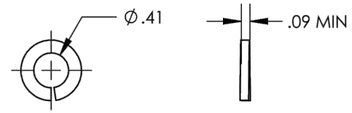
Property	Value
Material	Steel
Finish	Hot-Dip Galvanized

4) Washer, Flat 3/8 Galv



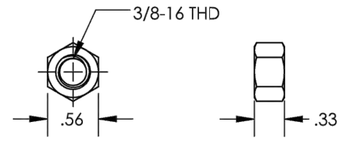
Property	Value
Material	Steel
Finish	Hot-Dip Galvanized

5) Washer, Lock 3/8 Galv



Property	Value
Material	Steel
Finish	Hot-Dip Galvanized

6) Nut, Hex 3/8-16 Galv



Property	Value
Material	Steel
Finish	Hot-Dip Galvanized

v1.0

Marion County OREGON

PROJECT INFORMATION:

MARION COUNTY APW

2.6 MI NORTH OF 910 N SANTIAM HWY W
GATES, OR

	DATE	RELEASE
	05-23-25	SITE SKETCH
	07-07-25	PRELIMINARY ZONING DRAWINGS
	07-11-25	SITE PLAN KM-2
	08-27-25	PRELIMINARY CONSTRUCTION DRAWINGS
	09-19-25	FINAL CONSTRUCTION DRAWINGS

DRAWING INFORMATION:

THIS DRAWING IS COPYRIGHTED AND IS THE SOLE PROPERTY OF THE OWNER. IT IS PRODUCED SOLELY FOR USE BY THE OWNER AND ITS AFFILIATES. REPRODUCTION OR USE OF THIS DRAWING AND/OR THE INFORMATION CONTAINED IN IT IS FORBIDDEN WITHOUT THE WRITTEN PERMISSION OF THE OWNER.

PLANS PREPARED BY:

cushing Civil Engineers

Cushing
Civil Engineers

12725 SW MILLIKAN WAY
SUITE 300
BEAVERTON, OR 97005
(503) 387-5331
www.cushingcivilengineers.com

LICENSURE:

REGISTERED PROFESSIONAL ENGINEER
83233
OREGON
JUNE 7, 2012
KENNY McMANAWAY

RENEWAL DATE 12/31/26

SHEET TITLE:

SOLAR PV ARRAY DETAILS V

SHEET NUMBER:

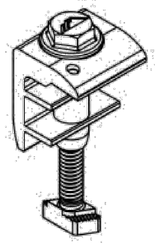
U-5

EXHIBIT K

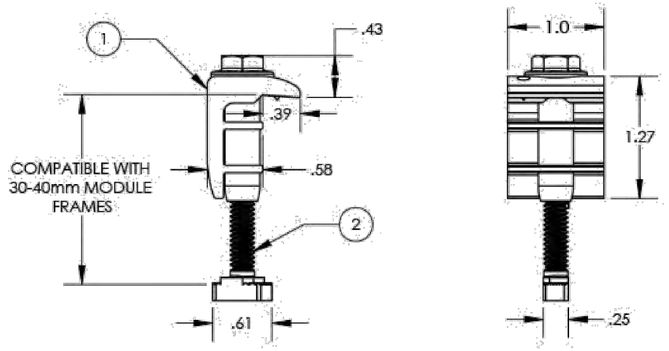
Cut Sheet

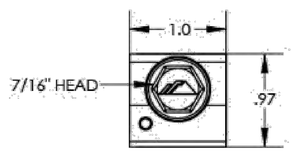
IRONRIDGE

End Fastening Object



PART NO.	DESCRIPTION
UFO-END-01-B1	END FASTENING OBJECT (END CLAMP, 30-40mm), BLACK





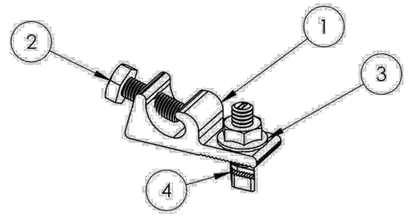
ITEM NO.	MATERIAL	FINISH
1	6000 SERIES ALUMINUM	MILL OR BLACK
2	300 SERIES STAINLESS STEEL	CLEAR AND BLACK

v1.10

Cut Sheet

IRONRIDGE

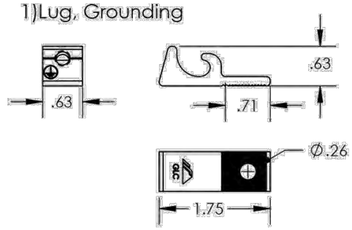
Grounding Lug



ITEM NO.	DESCRIPTION
1	LUG, GROUNDING, LAY-IN - LOW PROFILE
2	BOLT, 1/4-28 X .750" HEX CS SST
3	NUT, FLANGE HEX 1/4-20 SST
4	BOLT, T CSTM 1/4-20 X 1.188" LOCK SS

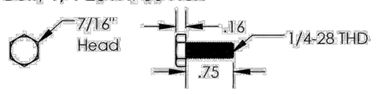
Part Number	Description	Wire Size Range (AWG)
XR-LUG-04-A1	GROUNDING LUG, LOW PROFILE	4-10

1)Lug, Grounding



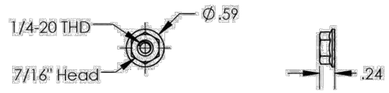
Property	Value
Material	Tin Plated Aluminum
Finish	Clear Matte

2) Bolt, 1/4-28 x .750 Hex



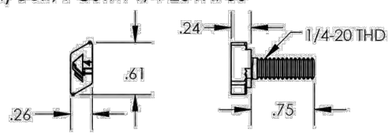
Property	Value
Material	300 Series Stainless Steel
Finish	Clear

3) Nut, Flange Hex 1/4-20



Property	Value
Material	300 Series Stainless Steel
Finish	Clear

4) Bolt, T CSTM 1/4-20 x .750



Property	Value
Material	300 Series Stainless Steel
Finish	Clear

v1.20

Marion County OREGON

PROJECT INFORMATION:

MARION COUNTY APW

2.6 MI NORTH OF 910 N SANTIAM HWY W
GATES, OR

	DATE	RELEASE
	05-23-25	SITE SKETCH
	07-07-25	PRELIMINARY ZONING DRAWINGS
	07-11-25	SITE PLAN KM-2
	08-27-25	PRELIMINARY CONSTRUCTION DRAWINGS
	09-19-25	FINAL CONSTRUCTION DRAWINGS

DRAWING INFORMATION:
THIS DRAWING IS COPYRIGHTED AND IS THE SOLE PROPERTY OF THE OWNER. IT IS PRODUCED SOLELY FOR USE BY THE OWNER AND ITS AFFILIATES. REPRODUCTION OR USE OF THIS DRAWING AND/OR THE INFORMATION CONTAINED IN IT IS FORBIDDEN WITHOUT THE WRITTEN PERMISSION OF THE OWNER.

PLANS PREPARED BY:

cushing Civil Engineers

Cushing
Civil Engineers
12725 SW MILLIKAN WAY
SUITE 300
BEAVERTON, OR 97005
(503) 387-5331
www.cushingcivilengineers.com

LICENSURE:

REGISTERED PROFESSIONAL ENGINEER
83233
OREGON
JUNE 7, 2012
KENNY McMANAWAY

RENEWAL DATE 12/31/26

SHEET TITLE:

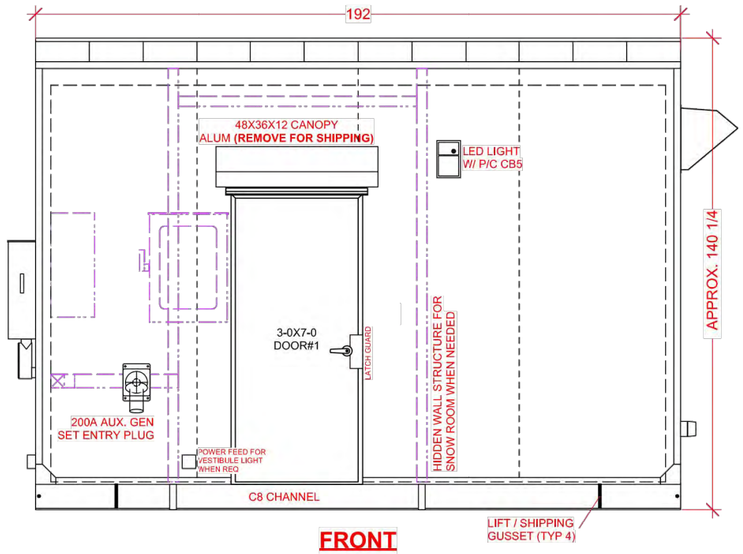
SOLAR PV ARRAY DETAILS VI

SHEET NUMBER:

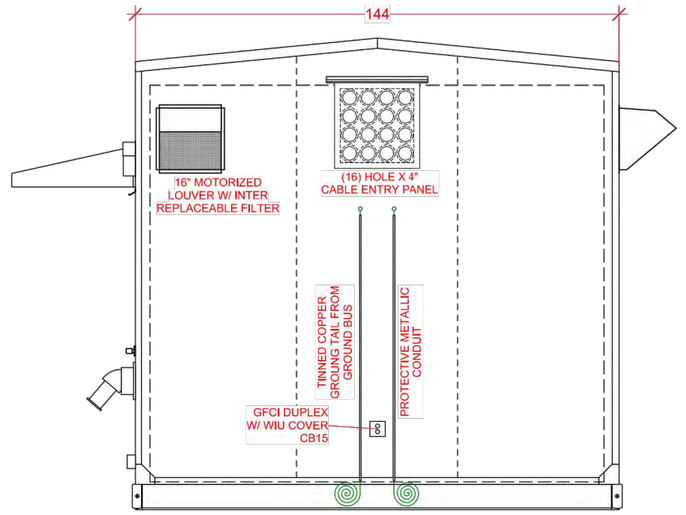
U-6

NOTE:
INFORMATION BASED ON SHELTER ONE PREFABRICATED EQUIPMENT SHELTER DRAWINGS. REFER TO STATE OF OREGON BUILDING CODES DIVISION FOR STATE INSIGNIA.

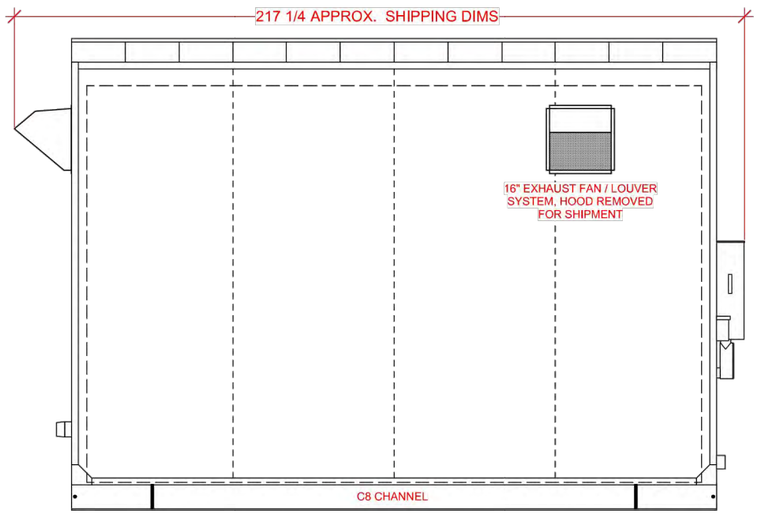
EXHIBIT K



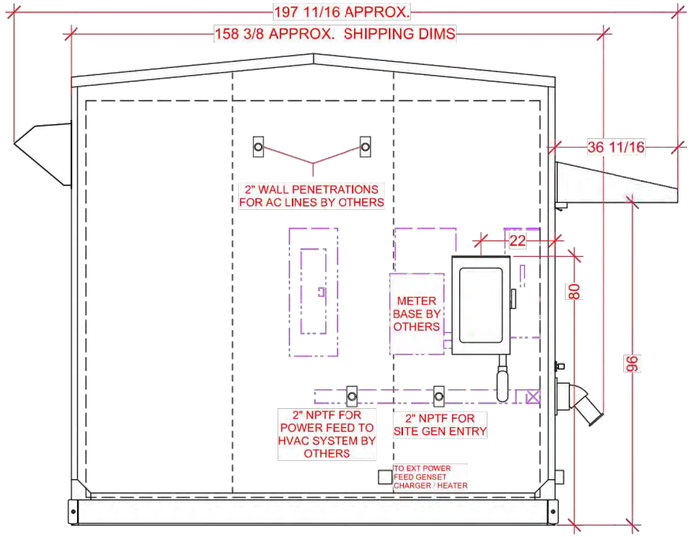
FRONT



RIGHT

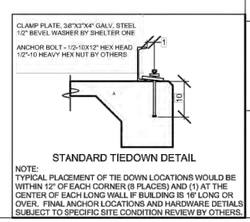


REAR



LEFT

NOTES:
1. SHELTER IS DESIGNED FOR A SLAB TYPE FOUNDATION.
2. EXTERIOR CLADDING TO BE 24 GA. PREFINISHED STEEL, COLOR - (TBD).
3. EXTERIOR TRIM TO BE MATCHING 24GA STEEL TRIM
4. SKID TO BE EPOXY PAINTED COLOR - (TBD).
5. 24GA PRE-FINISHED STEEL STANDING SEAM ROOF SYSTE - COLOR - (TBD)



STANDARD TIEDOWN DETAIL

NOTE:
TYPICAL PLACEMENT OF TIE DOWN LOCATIONS WOULD BE WITHIN 12" OF EACH CORNER (8 PLACES) AND (1) AT THE CENTER OF EACH LONG WALL IF BUILDING IS 16' LONG OR OVER. FINAL ANCHOR LOCATIONS AND HARDWARE DETIALS SUBJECT TO SPECIFIC SITE CONDITION REVIEW BY OTHERS.

SEAL

APPROVED:

DATE:

NOTICE: THIS DOCUMENT CONTAINS PROPRIETARY INFORMATION THAT IS THE SOLE PROPERTY OF SHELTER ONE AND SHOULD BE TREATED AS SUCH. NO ONE MAY COPY, REPRODUCE, TRANSMIT OR DISTRIBUTE THIS DOCUMENT IN ANY PART WITHOUT THE EXPRESSED WRITTEN PERMISSION OF SHELTER ONE OR IT'S DESIGNATED AGENTS.

SHELTER ONE

Headquarters & Manufacturing
5887 Monument Drive
Grants Pass, OR 97526
541/479-4622
F:541/479-5289
www.shelter1.com

PROJECT INFORMATION

25027 MARION COUNTY OR 12X16

FILENAME
25027 Marion County OR 12x16.vwx

DRAWN BY:	DATE:
NJY	7/24/25
CHECKED BY:	DATE:

DWG NO: 25027

SCALE: 1:40

TITLE:
EXTERIOR ELEVATIONS

SHEET	REV.
A1	

Marion County OREGON

PROJECT INFORMATION:

MARION COUNTY APW

2.6 MI NORTH OF 910 N SANTIAM HWY W
GATES, OR

	DATE	RELEASE
	05-23-25	SITE SKETCH
	07-07-25	PRELIMINARY ZONING DRAWINGS
	07-11-25	SITE PLAN KM-2
	08-27-25	PRELIMINARY CONSTRUCTION DRAWINGS
	09-19-25	FINAL CONSTRUCTION DRAWINGS

DRAWING INFORMATION:
THIS DRAWING IS COPYRIGHTED AND IS THE SOLE PROPERTY OF THE OWNER. IT IS PRODUCED SOLELY FOR USE BY THE OWNER AND ITS AFFILIATES. REPRODUCTION OR USE OF THIS DRAWING AND/OR THE INFORMATION CONTAINED IN IT IS FORBIDDEN WITHOUT THE WRITTEN PERMISSION OF THE OWNER.

PLANS PREPARED BY:

cushing Civil Engineers

Cushing Civil Engineers
12725 SW MILLIKAN WAY
SUITE 300
BEAVERTON, OR 97005
(503) 387-5331
www.cushingcivilengineers.com

LICENSURE:

REGISTERED PROFESSIONAL ENGINEER
83233
OREGON
JUNE 7, 2012
KENNY McMANAWAY

RENEWAL DATE 12/31/26

SHEET TITLE:

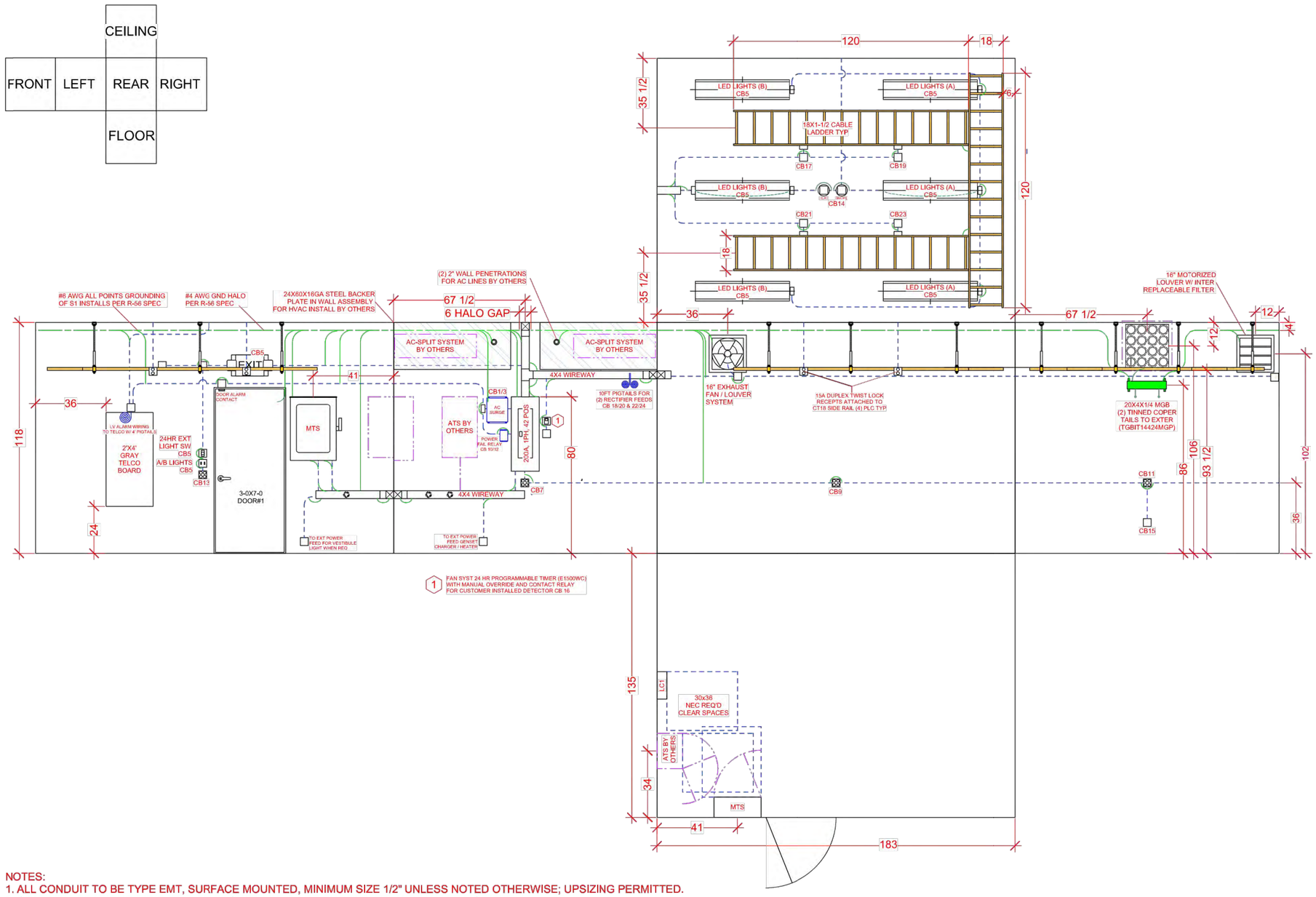
EQUIPMENT SHELTER EXTERIOR ELEVATIONS

SHEET NUMBER:

SH-1

NOTE:
INFORMATION BASED ON SHELTER ONE PREFABRICATED EQUIPMENT SHELTER DRAWINGS. REFER TO STATE OF OREGON BUILDING CODES DIVISION FOR STATE INSIGNIA.

EXHIBIT K



NOTES:
1. ALL CONDUIT TO BE TYPE EMT, SURFACE MOUNTED, MINIMUM SIZE 1/2" UNLESS NOTED OTHERWISE; UPSIZING PERMITTED.
2. CONDUIT LOCATIONS INDICATED BY DASHED LINES ARE SUGGESTED AND MAY BE MODIFIED (+ or - 3").
3. DIRECTIONS ARE ARBITRARY FOR SHOP ORIENTATION ONLY AND DO NOT RELATE TO ACTUAL SITE DIRECTIONS.
4. INTERIOR CLADDING TO BE FRP, COLOR - (STANDARD WHITE).
5. FLOORING TO BE .COMMERCIAL GRADE VINYL TILE OVER 1/4" STEEL FLOOR PLATE.
6. GROUNDING HALO AND ALL POINTS GROUNDING TO MEET R-56 STANDARDS

SEAL

APPROVED:

DATE:

NOTICE: THIS DOCUMENT CONTAINS PROPRIETARY INFORMATION THAT IS THE SOLE PROPERTY OF SHELTER ONE AND SHOULD BE TREATED AS SUCH. NO ONE MAY COPY, REPRODUCE, TRANSMIT OR DISTRIBUTE THIS DOCUMENT IN ANY PART WITHOUT THE EXPRESSED WRITTEN PERMISSION OF SHELTER ONE OR IT'S DESIGNATED AGENTS.

SHELTER ONE

Headquarters & Manufacturing
5887 Monument Drive
Grants Pass, OR 97526
541/479-4622
F:541/479-5289
www.shelter1.com

PROJECT INFORMATION

25027 MARION COUNTY OR 12X16

FILENAME
25027 Marion County OR 12x16.vwx

DRAWN BY:	DATE:
NJY	7/24/25
CHECKED BY:	DATE:

DWG NO: 25027

SCALE: 1:50

TITLE:
INTERIOR ELEVATIONS

SHEET	REV.
A2	

Marion County OREGON

PROJECT INFORMATION:

MARION COUNTY APW

2.6 MI NORTH OF 910 N SANTIAM HWY W
GATES, OR

	DATE	RELEASE
	05-23-25	SITE SKETCH
	07-07-25	PRELIMINARY ZONING DRAWINGS
	07-11-25	SITE PLAN KM-2
	08-27-25	PRELIMINARY CONSTRUCTION DRAWINGS
	09-19-25	FINAL CONSTRUCTION DRAWINGS

DRAWING INFORMATION:
THIS DRAWING IS COPYRIGHTED AND IS THE SOLE PROPERTY OF THE OWNER. IT IS PRODUCED SOLELY FOR USE BY THE OWNER AND ITS AFFILIATES. REPRODUCTION OR USE OF THIS DRAWING AND/OR THE INFORMATION CONTAINED IN IT IS FORBIDDEN WITHOUT THE WRITTEN PERMISSION OF THE OWNER.

PLANS PREPARED BY:

cushing Civil Engineers

Cushing
Civil Engineers
12725 SW MILLIKAN WAY
SUITE 300
BEAVERTON, OR 97005
(503) 387-5331
www.cushingcivilengineers.com

LICENSURE:

REGISTERED PROFESSIONAL ENGINEER 83233 OREGON JUNE 7, 2012 KENNY McMANAWAY

RENEWAL DATE 12/31/26

SHEET TITLE:

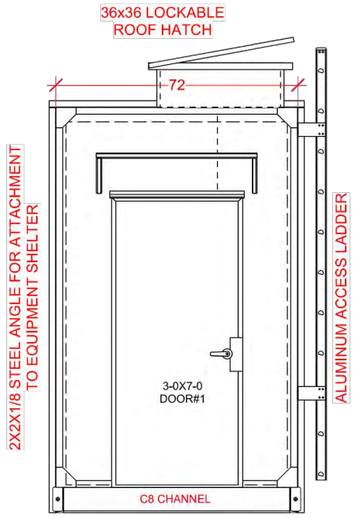
EQUIPMENT SHELTER INTERIOR ELEVATIONS

SHEET NUMBER:

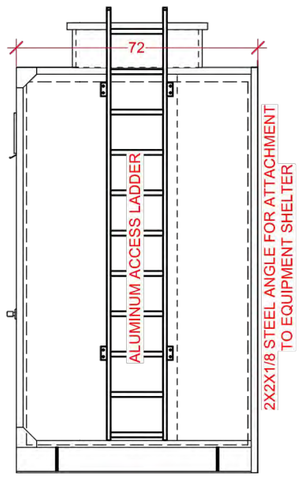
SH-2

NOTE:
INFORMATION BASED ON SHELTER ONE PREFABRICATED EQUIPMENT SHELTER DRAWINGS. REFER TO STATE OF OREGON BUILDING CODES DIVISION FOR STATE INSIGNIA.

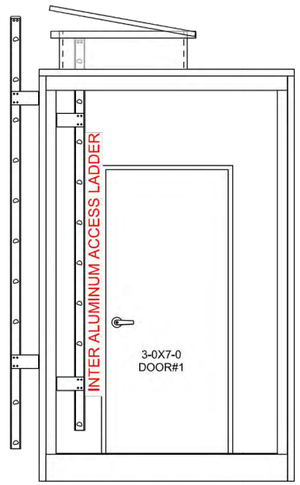
EXHIBIT K



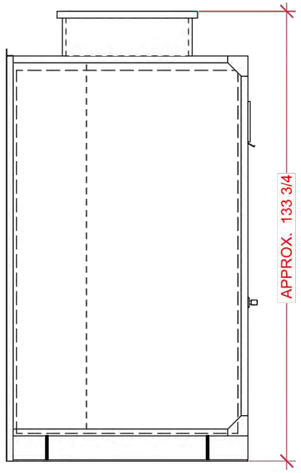
FRONT



RIGHT

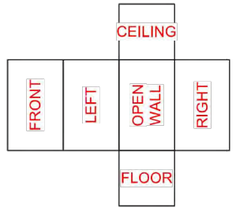


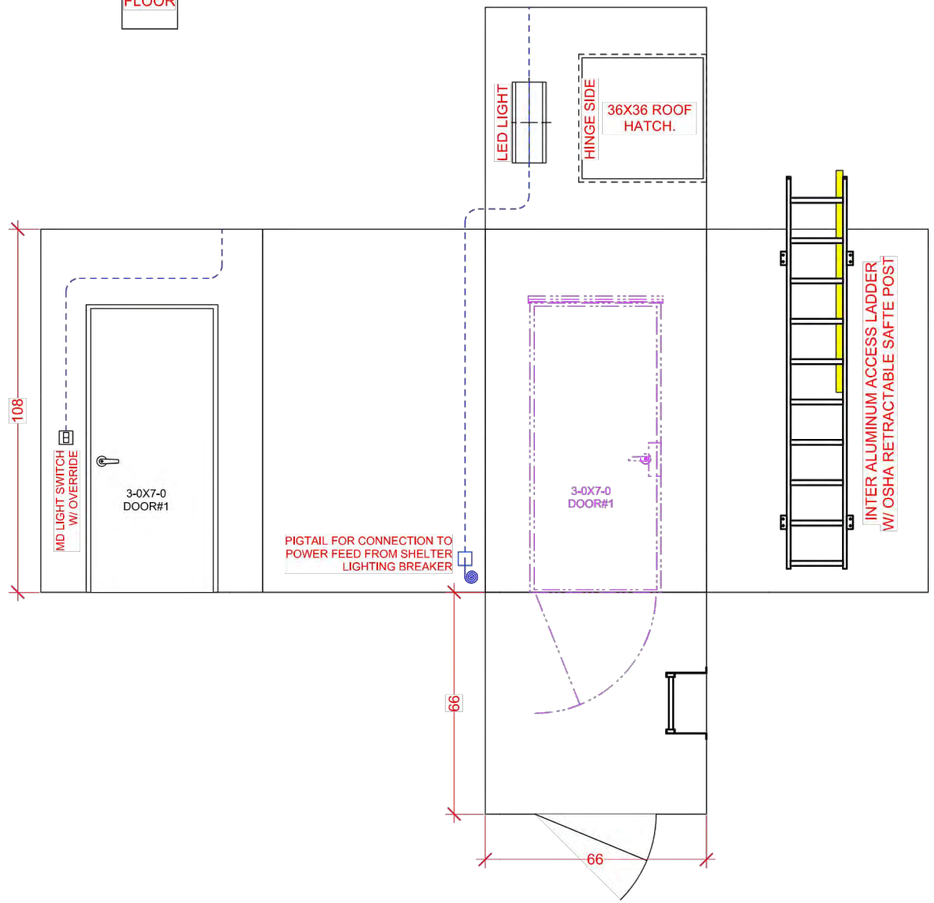
REAR



LEFT

NOTES:
1. SHELTER IS DESIGNED FOR A SLAB TYPE FOUNDATION.
2. EXTERIOR CLADDING TO BE 24 GA. PREFINISHED STEEL, COLOR - (TBD).
3. EXTERIOR TRIM TO BE MATCHING 24GA STEEL TRIM
4. SKID TO BE EPOXY PAINTED COLOR - (TBD).
5. WHITE DURO-LAST ROOFING SYSTEM W/ SLIP RESISTANT WAL STRIPS





NOTES:
1. ALL CONDUIT TO BE TYPE EMT, SURFACE MOUNTED, MINIMUM SIZE 1/2" UNLESS NOTED OTHERWISE; UPSIZING PERMITTED.
2. CONDUIT LOCATIONS INDICATED BY DASHED LINES ARE SUGGESTED AND MAY BE MODIFIED (+ or - 3").
3. DIRECTIONS ARE ARBITRARY FOR SHOP ORIENTATION ONLY AND DO NOT RELATE TO ACTUAL SITE DIRECTIONS.
4. INTERIOR CLADDING TO BE FRP, COLOR - (STANDARD WHITE).
5. FLOORING TO BE .COMMERCIAL GRADE VINYL TILE OVER 1/4" STEEL FLOOR PLATE.

SEAL

NOTICE: THIS DOCUMENT CONTAINS PROPRIETARY INFORMATION THAT IS THE SOLE PROPERTY OF SHELTER ONE AND SHOULD BE TREATED AS SUCH. NO ONE MAY COPY, REPRODUCE, TRANSMIT OR DISTRIBUTE THIS DOCUMENT IN ANY PART WITHOUT THE EXPRESSED WRITTEN PERMISSION OF SHELTER ONE OR IT'S DESIGNATED AGENTS.

SHELTER ONE

Headquarters & Manufacturing
5887 Monument Drive
Grants Pass, OR 97526
541/479-4622
F:541/479-5289
www.shelter1.com

PROJECT INFORMATION

25027 MARION COUNTY OR 12X16

FILENAME
25027 Marion County OR 12x16.vwx

DRAWN BY:	DATE:
NJY	7/24/25
CHECKED BY:	DATE:

DWG NO: 25027

SCALE: 1:40

TITLE:
HIGH SNOW ENTRY

SHEET	REV.
A1.1	

Marion County OREGON

PROJECT INFORMATION:

MARION COUNTY APW

2.6 MI NORTH OF 910 N SANTIAM HWY W
GATES, OR

	DATE	RELEASE
	05-23-25	SITE SKETCH
	07-07-25	PRELIMINARY ZONING DRAWINGS
	07-11-25	SITE PLAN KM-2
	08-27-25	PRELIMINARY CONSTRUCTION DRAWINGS
	09-19-25	FINAL CONSTRUCTION DRAWINGS

DRAWING INFORMATION:
THIS DRAWING IS COPYRIGHTED AND IS THE SOLE PROPERTY OF THE OWNER. IT IS PRODUCED SOLELY FOR USE BY THE OWNER AND ITS AFFILIATES. REPRODUCTION OR USE OF THIS DRAWING AND/OR THE INFORMATION CONTAINED IN IT IS FORBIDDEN WITHOUT THE WRITTEN PERMISSION OF THE OWNER.

PLANS PREPARED BY:

cushing Civil Engineers

Cushing Civil Engineers
12725 SW MILLIKAN WAY
SUITE 300
BEAVERTON, OR 97005
(503) 387-5331
www.cushingcivilengineers.com

LICENSURE:

REGISTERED PROFESSIONAL ENGINEER 83233 OREGON JUNE 7, 2012 KENNY McMANAWAY

RENEWAL DATE 12/31/26

SHEET TITLE:

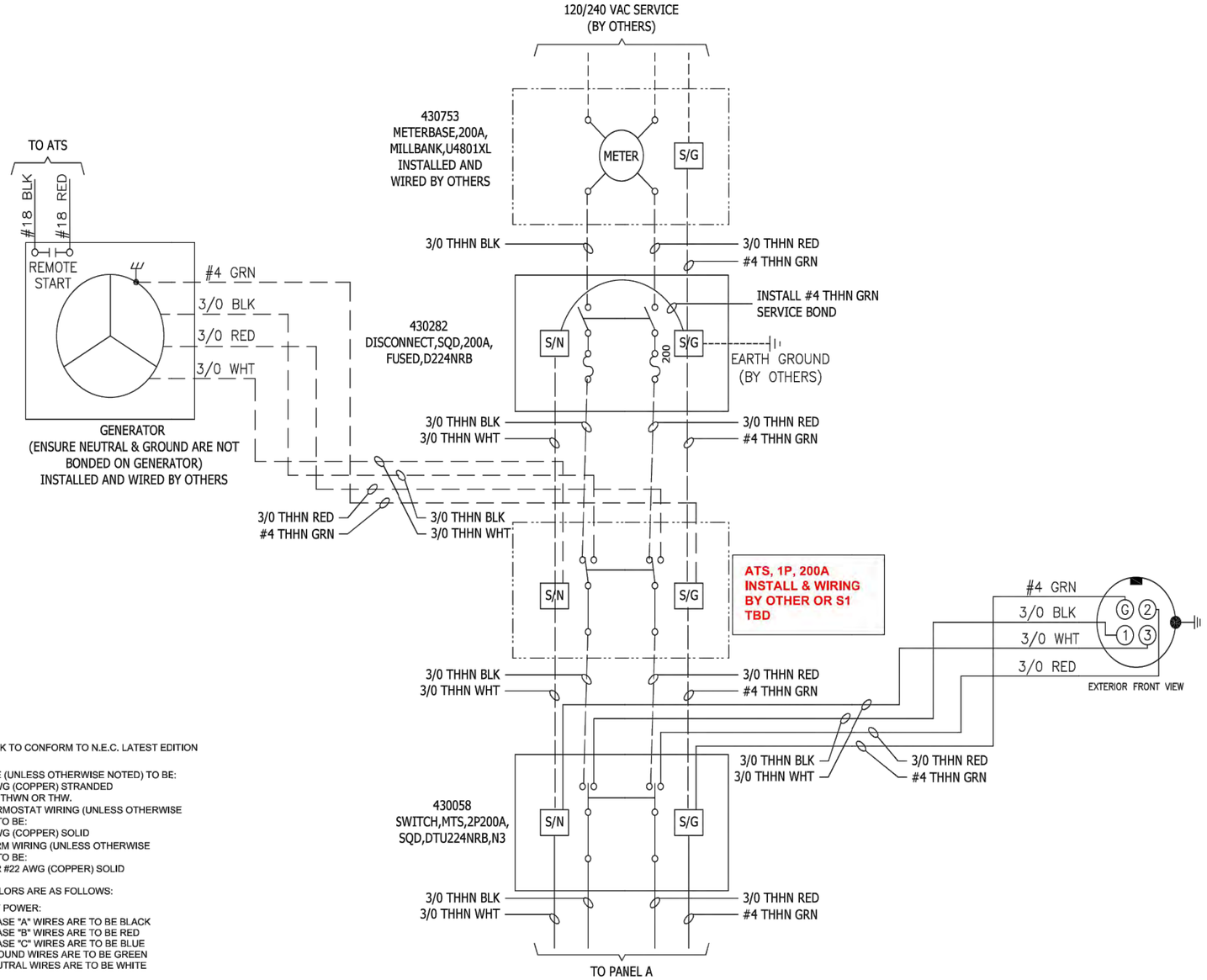
HIGH SNOW ENTRY VESTIBULE

SHEET NUMBER:

SH-3

NOTE:
INFORMATION BASED ON SHELTER ONE PREFABRICATED EQUIPMENT SHELTER DRAWINGS. REFER TO STATE OF OREGON BUILDING CODES DIVISION FOR STATE INSIGNIA.

EXHIBIT K



NOTES:

1. ALL WORK TO CONFORM TO N.E.C. LATEST EDITION
2. ALL WIRE (UNLESS OTHERWISE NOTED) TO BE:
   * #12 AWG (COPPER) STRANDED
   * THHN, THWN OR THW.

   ALL THERMOSTAT WIRING (UNLESS OTHERWISE NOTED) TO BE:
   * #18 AWG (COPPER) SOLID

   ALL ALARM WIRING (UNLESS OTHERWISE NOTED) TO BE:
   * #18 OR #22 AWG (COPPER) SOLID
3. WIRE COLORS ARE AS FOLLOWS:

   PRIMARY POWER:
   * ALL PHASE "A" WIRES ARE TO BE BLACK
   * ALL PHASE "B" WIRES ARE TO BE RED
   * ALL PHASE "C" WIRES ARE TO BE BLUE
   * ALL GROUND WIRES ARE TO BE GREEN
   * ALL NEUTRAL WIRES ARE TO BE WHITE
4. ALL CIRCUITS TO HAVE AN EQUIPMENT GROUNDING CONDUCTOR
5. ----- DASHED LINES DENOTE FIELD WORK.
6. NEUTRAL AND GROUND ARE TO BE BONDED AS REQUIRED
7. NO TAPS, SPLICES, OR JOINTS ARE TO BE MADE WITHIN WIREWAYS.

COPPER WIRE SIZE

BREAKER SIZE	MINIMUM WIRE SIZE
15A	12 AWG
20A	12 AWG
30A	10 AWG
40A	8 AWG
50A	8 AWG
60A	6 AWG
70A	4 AWG
80A	4 AWG
90A	3 AWG
100A	3 AWG
125A	1 AWG
150A	1/0
200A	3/0

SERVICE ENTRY GROUND WIRE SIZE

ENTRY WIRE SIZE	GROUND WIRE SIZE
2 AWG OR SMALLER	8 AWG
1 AWG OR 1/0	6 AWG
2/0 OR 3/0	4 AWG

SEAL

APPROVED:

DATE:

NOTICE: THIS DOCUMENT CONTAINS PROPRIETARY INFORMATION THAT IS THE SOLE PROPERTY OF SHELTER ONE AND SHOULD BE TREATED AS SUCH. NO ONE MAY COPY, REPRODUCE, TRANSMIT OR DISTRIBUTE THIS DOCUMENT IN ANY PART WITHOUT THE EXPRESSED WRITTEN PERMISSION OF SHELTER ONE OR IT'S DESIGNATED AGENTS.

SHELTER ONE®

Headquarters & Manufacturing
5887 Monument Drive
Grants Pass, OR 97526
541/479-4622
F:541/479-5289
www.shelter1.com

PROJECT INFORMATION

25027 MARION COUNTY OR 12X16

FILENAME
25027 Marion County OR 12x16.vwx

DRAWN BY:	DATE:
NJY	7/24/25
CHECKED BY:	DATE:

DWG NO: 25027

SCALE: NOT TO SCALE

TITLE:
POWER LINE DRAWING

SHEET E1 | REV.

Marion County OREGON

PROJECT INFORMATION:

MARION COUNTY APW

2.6 MI NORTH OF 910 N SANTIAM HWY W
GATES, OR

	DATE	RELEASE
	05-23-25	SITE SKETCH
	07-07-25	PRELIMINARY ZONING DRAWINGS
	07-11-25	SITE PLAN KM-2
	08-27-25	PRELIMINARY CONSTRUCTION DRAWINGS
	09-19-25	FINAL CONSTRUCTION DRAWINGS

DRAWING INFORMATION:
THIS DRAWING IS COPYRIGHTED AND IS THE SOLE PROPERTY OF THE OWNER. IT IS PRODUCED SOLELY FOR USE BY THE OWNER AND ITS AFFILIATES. REPRODUCTION OR USE OF THIS DRAWING AND/OR THE INFORMATION CONTAINED IN IT IS FORBIDDEN WITHOUT THE WRITTEN PERMISSION OF THE OWNER.

PLANS PREPARED BY:

cushing Civil Engineers

Cushing
Civil Engineers
12725 SW MILLIKAN WAY
SUITE 300
BEAVERTON, OR 97005
(503) 387-5331
www.cushingcivilengineers.com

LICENSURE:

REGISTERED PROFESSIONAL ENGINEER
83233
OREGON
JUNE 7, 2012
KENNY McMANAWAY

RENEWAL DATE 12/31/26

SHEET TITLE:

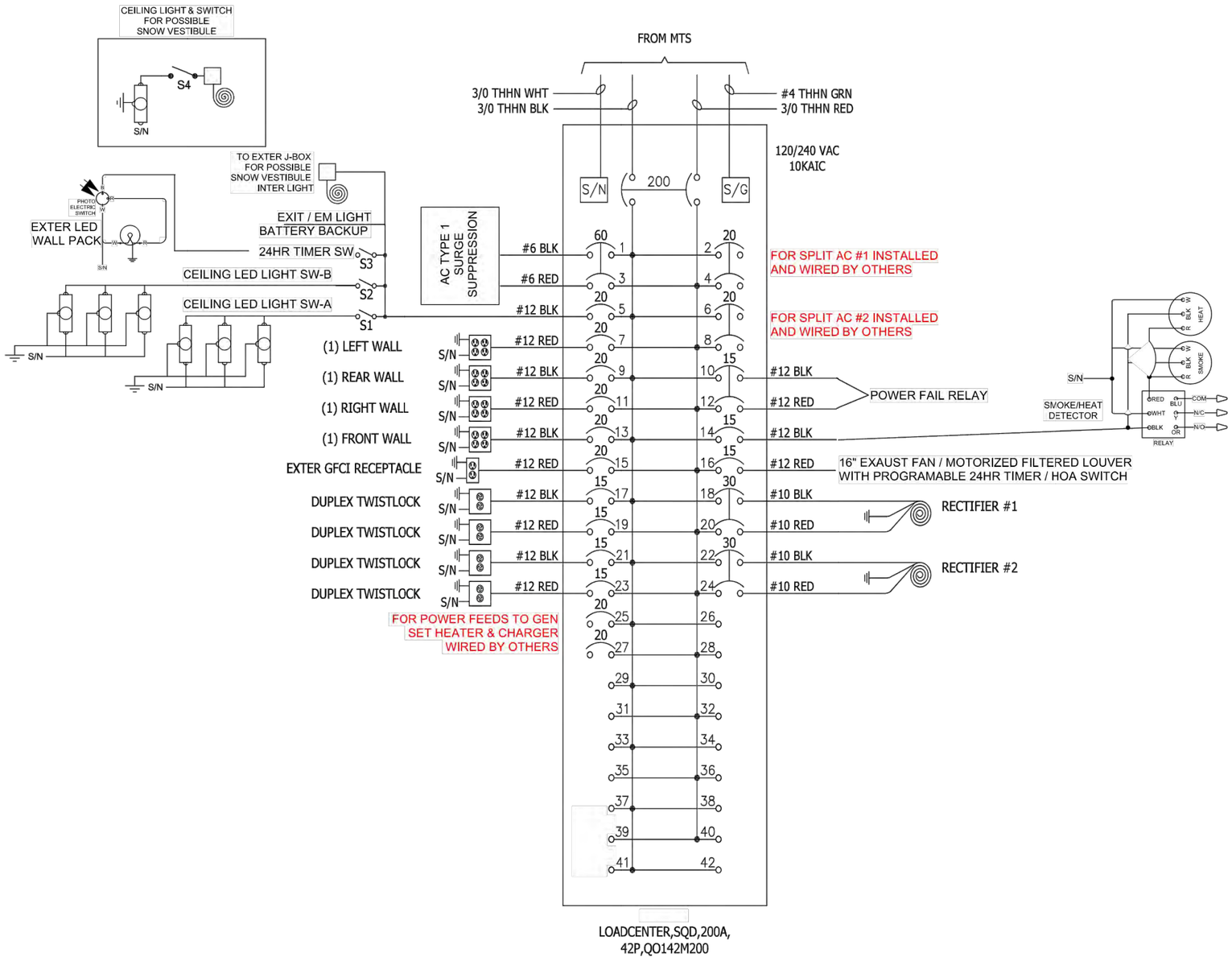
ELECTRICAL ONE-LINE DRAWING

SHEET NUMBER:

SH-4

NOTE:
INFORMATION BASED ON SHELTER ONE PREFABRICATED EQUIPMENT SHELTER DRAWINGS. REFER TO STATE OF OREGON BUILDING CODES DIVISION FOR STATE INSIGNIA.

EXHIBIT K



SEAL

APPROVED:

DATE:

NOTICE: THIS DOCUMENT CONTAINS PROPRIETARY INFORMATION THAT IS THE SOLE PROPERTY OF SHELTER ONE AND SHOULD BE TREATED AS SUCH. NO ONE MAY COPY, REPRODUCE, TRANSMIT OR DISTRIBUTE THIS DOCUMENT IN ANY PART WITHOUT THE EXPRESSED WRITTEN PERMISSION OF SHELTER ONE OR IT'S DESIGNATED AGENTS.

SHELTER ONE®

Headquarters & Manufacturing
5887 Monument Drive
Grants Pass, OR 97526
541/479-4622
F:541/479-5289
www.shelter1.com

PROJECT INFORMATION

25027 MARION COUNTY OR 12X16

FILENAME
25027 Marion County OR 12x16.vwx

DRAWN BY:	DATE:
NJY	7/24/25
CHECKED BY:	DATE:

DWG NO: 25027

SCALE: NOT TO SCALE

TITLE:
PANEL SCHEDULE

SHEET	REV.
E2	

Marion County OREGON

PROJECT INFORMATION:

MARION COUNTY APW

2.6 MI NORTH OF 910 N SANTIAM HWY W
GATES, OR

	DATE	RELEASE
	05-23-25	SITE SKETCH
	07-07-25	PRELIMINARY ZONING DRAWINGS
	07-11-25	SITE PLAN KM-2
	08-27-25	PRELIMINARY CONSTRUCTION DRAWINGS
	09-19-25	FINAL CONSTRUCTION DRAWINGS

DRAWING INFORMATION:

THIS DRAWING IS COPYRIGHTED AND IS THE SOLE PROPERTY OF THE OWNER. IT IS PRODUCED SOLELY FOR USE BY THE OWNER AND ITS AFFILIATES. REPRODUCTION OR USE OF THIS DRAWING AND/OR THE INFORMATION CONTAINED IN IT IS FORBIDDEN WITHOUT THE WRITTEN PERMISSION OF THE OWNER.

PLANS PREPARED BY:

cushing Civil Engineers

Cushing
Civil Engineers
12725 SW MILLIKAN WAY
SUITE 300
BEAVERTON, OR 97005
(503) 387-5331
www.cushingcivilengineers.com

LICENSURE:

REGISTERED PROFESSIONAL ENGINEER 83233 OREGON JUNE 7, 2012 KENNY McMANAWAY

RENEWAL DATE 12/31/26

SHEET TITLE:

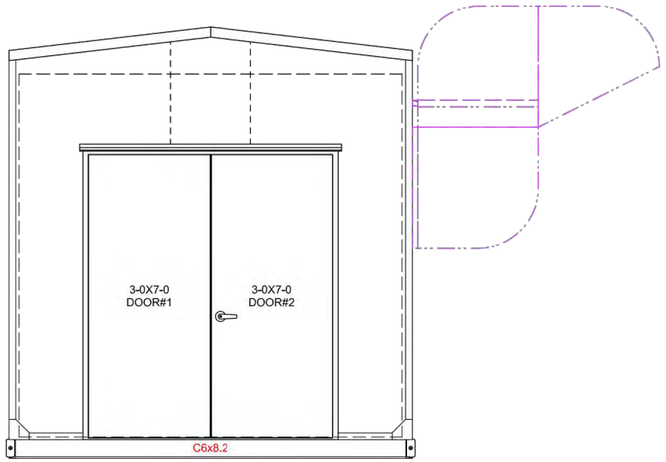
ELECTRICAL PANEL SCHEDULE

SHEET NUMBER:

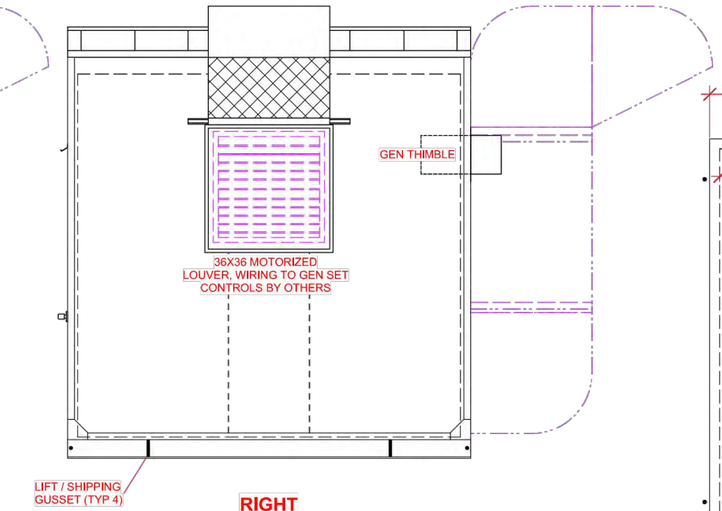
SH-5

NOTE:
INFORMATION BASED ON SHELTER ONE PREFABRICATED EQUIPMENT SHELTER DRAWINGS. REFER TO STATE OF OREGON BUILDING CODES DIVISION FOR STATE INSIGNIA.

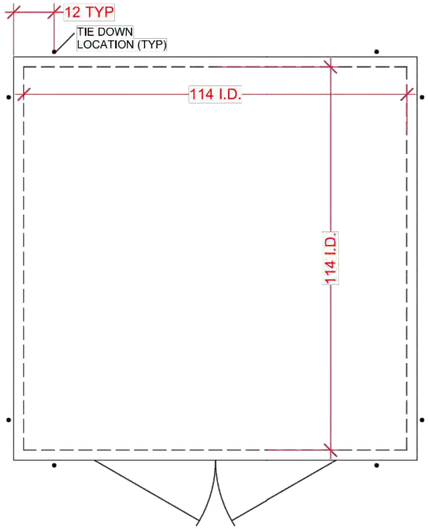
EXHIBIT K



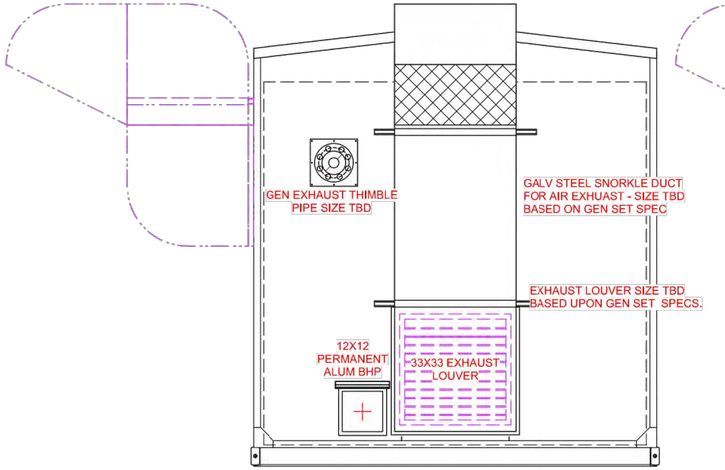
FRONT



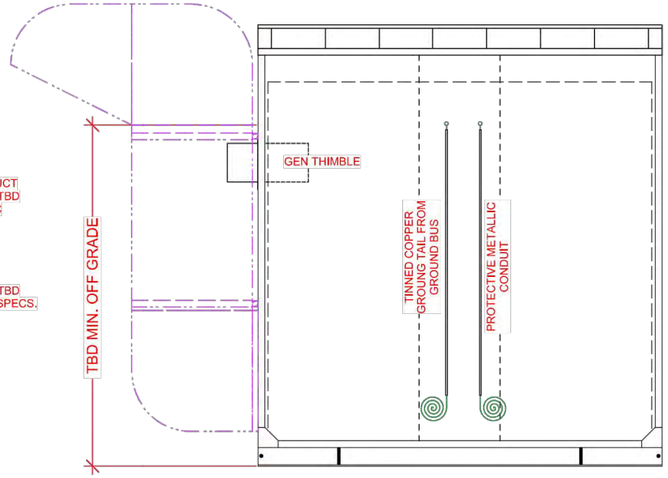
RIGHT



FRONT
ROOF PLAN VIEW



REAR



LEFT

NOTES:
1. SHELTER IS DESIGNED FOR A SLAB TYPE FOUNDATION.
2. EXTERIOR CLADDING TO BE 24 GA. PREFINISHED STEEL, COLOR - (TBD).
3. EXTERIOR TRIM TO BE MATCHING 24GA STEEL TRIM
4. SKID TO BE EPOXY PAINTED COLOR - (TBD).
5. 24GA PRE-FINISHED STEEL STANDING SEAM ROOF SYSTE - COLOR - (TBD)

SEAL

NOTICE: THIS DOCUMENT CONTAINS PROPRIETARY INFORMATION THAT IS THE SOLE PROPERTY OF SHELTER ONE AND SHOULD BE TREATED AS SUCH. NO ONE MAY COPY, REPRODUCE, TRANSMIT OR DISTRIBUTE THIS DOCUMENT IN ANY PART WITHOUT THE EXPRESSED WRITTEN PERMISSION OF SHELTER ONE OR IT'S DESIGNATED AGENTS.

SHELTER ONE

Headquarters & Manufacturing
5887 Monument Drive
Grants Pass, OR 97526
541/479-4622
F:541/479-5289
www.shelter1.com

PROJECT INFORMATION

MARION COUNTY GENERATOR SHELTER C10109

FILENAME
25026 Marion County Gen Shelter.vwx

DRAWN BY:	DATE:
NJY	7/25/25
CHECKED BY:	DATE:

DWG NO: 25026

SCALE: 1:40

TITLE:
EXTERIOR ELEVATIONS

SHEET	REV.
A1	

Marion County OREGON

PROJECT INFORMATION:

MARION COUNTY APW

2.6 MI NORTH OF 910 N SANTIAM HWY W
GATES, OR

	DATE	RELEASE
	05-23-25	SITE SKETCH
	07-07-25	PRELIMINARY ZONING DRAWINGS
	07-11-25	SITE PLAN KM-2
	08-27-25	PRELIMINARY CONSTRUCTION DRAWINGS
	09-19-25	FINAL CONSTRUCTION DRAWINGS

DRAWING INFORMATION:
THIS DRAWING IS COPYRIGHTED AND IS THE SOLE PROPERTY OF THE OWNER. IT IS PRODUCED SOLELY FOR USE BY THE OWNER AND ITS AFFILIATES. REPRODUCTION OR USE OF THIS DRAWING AND/OR THE INFORMATION CONTAINED IN IT IS FORBIDDEN WITHOUT THE WRITTEN PERMISSION OF THE OWNER.

PLANS PREPARED BY:

cushing Civil Engineers

Cushing Civil Engineers
12725 SW MILLIKAN WAY
SUITE 300
BEAVERTON, OR 97005
(503) 387-5331
www.cushingcivilengineers.com

LICENSURE:

REGISTERED PROFESSIONAL ENGINEER
83233
OREGON
JUNE 7, 2012
KENNY McMANAWAY

RENEWAL DATE 12/31/26

SHEET TITLE:

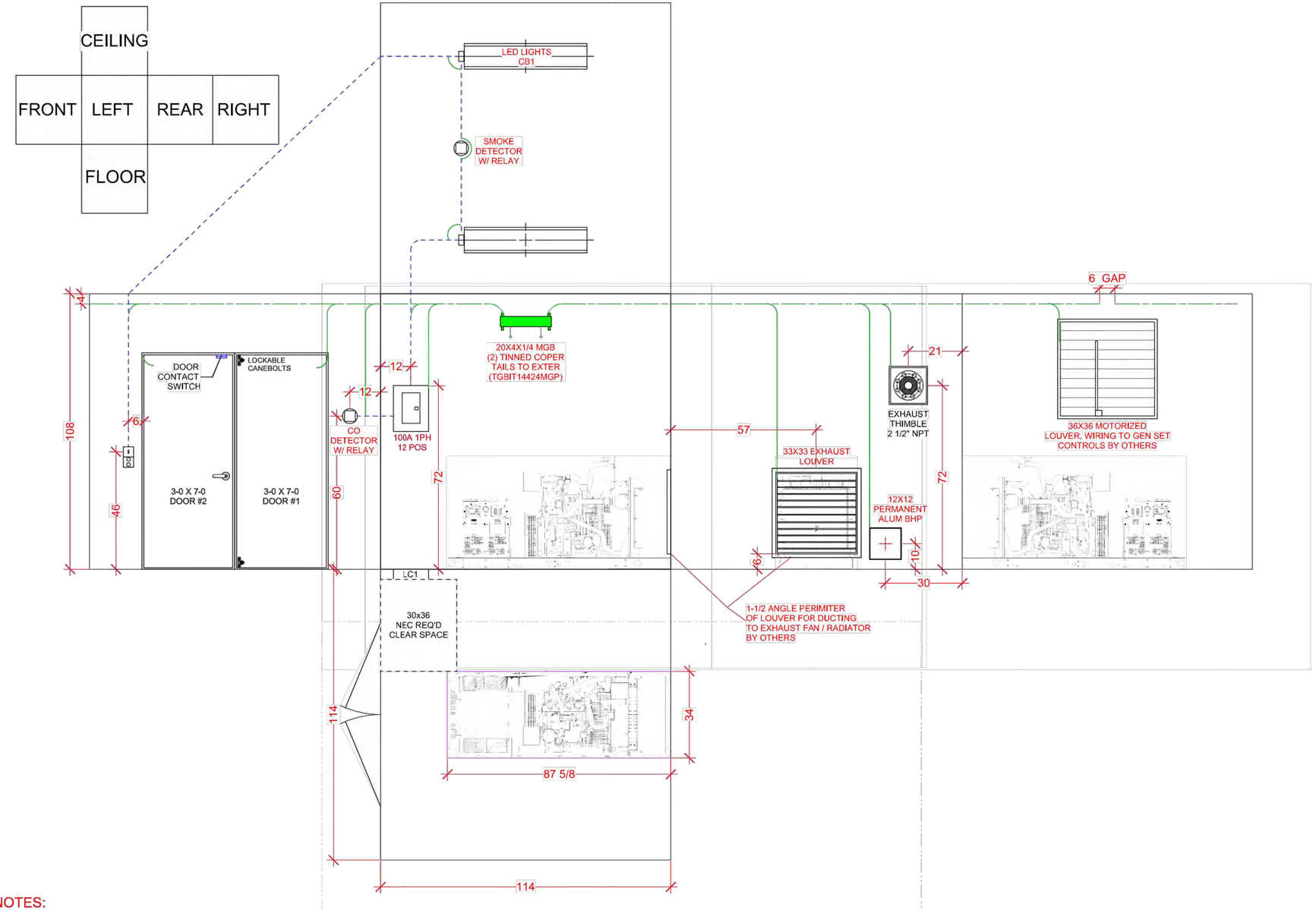
GENERATOR SHELTER EXTERIOR ELEVATIONS

SHEET NUMBER:

SH-6

NOTE:
INFORMATION BASED ON SHELTER ONE PREFABRICATED EQUIPMENT SHELTER DRAWINGS. REFER TO STATE OF OREGON BUILDING CODES DIVISION FOR STATE INSIGNIA.

EXHIBIT K



NOTES:
1. ALL CONDUIT TO BE TYPE EMT, SURFACE MOUNTED, MINIMUM SIZE 1/2" UNLESS NOTED OTHERWISE; UPSIZING PERMITTED.
2. CONDUIT LOCATIONS INDICATED BY DASHED LINES ARE SUGGESTED AND MAY BE MODIFIED UPON APPROVAL.
3. DIRECTIONS ARE ARBITRARY FOR SHOP ORIENTATION ONLY AND DO NOT RELATE TO ACTUAL SITE DIRECTIONS.
4. INTERIOR CLADDING TO BE FRP, COLOR - (WHITE).
5. FLOORING TO BE COMMERCIAL VINYL TILE OVER 1/4" STEEL FLAT FLOOR PLATE.

SEAL

NOTICE: THIS DOCUMENT CONTAINS PROPRIETARY INFORMATION THAT IS THE SOLE PROPERTY OF SHELTER ONE AND SHOULD BE TREATED AS SUCH. NO ONE MAY COPY, REPRODUCE, TRANSMIT OR DISTRIBUTE THIS DOCUMENT IN ANY PART WITHOUT THE EXPRESSED WRITTEN PERMISSION OF SHELTER ONE OR IT'S DESIGNATED AGENTS.

SHELTER ONE

Headquarters & Manufacturing
5887 Monument Drive
Grants Pass, OR 97526
541/479-4622
F:541/479-5289
www.shelter1.com

PROJECT INFORMATION

MARION COUNTY GENERATOR SHELTER C10109

FILENAME	25026 Marion County Gen Shelter.vwx
DRAWN BY: NJY	DATE: 7/25/25
CHECKED BY:	DATE:
DWG NO:	25026
SCALE:	1:40
TITLE:	INTERIOR ELEVATIONS
SHEET: A2	REV.

Marion County OREGON

PROJECT INFORMATION:

MARION COUNTY APW

2.6 MI NORTH OF 910 N SANTIAM HWY W
GATES, OR

	DATE	RELEASE
	05-23-25	SITE SKETCH
	07-07-25	PRELIMINARY ZONING DRAWINGS
	07-11-25	SITE PLAN KM-2
	08-27-25	PRELIMINARY CONSTRUCTION DRAWINGS
	09-19-25	FINAL CONSTRUCTION DRAWINGS

DRAWING INFORMATION:

THIS DRAWING IS COPYRIGHTED AND IS THE SOLE PROPERTY OF THE OWNER. IT IS PRODUCED SOLELY FOR USE BY THE OWNER AND ITS AFFILIATES. REPRODUCTION OR USE OF THIS DRAWING AND/OR THE INFORMATION CONTAINED IN IT IS FORBIDDEN WITHOUT THE WRITTEN PERMISSION OF THE OWNER.

PLANS PREPARED BY:

cushing Civil Engineers

Cushing
Civil Engineers
12725 SW MILLIKAN WAY
SUITE 300
BEAVERTON, OR 97005
(503) 387-5331
www.cushingcivilengineers.com

LICENSURE:

REGISTERED PROFESSIONAL ENGINEER 83233 OREGON JUNE 7, 2012 KENNY McMANAWAY

RENEWAL DATE 12/31/26

SHEET TITLE:

GENERATOR SHELTER EXTERIOR ELEVATIONS

SHEET NUMBER:

SH-7

EXHIBIT K

SITE NAME:

CROOKED FINGER ROW

NW CORNER OF 3283 CROOKED FINGER RD NE, SCOTTS MILLS, OR 97375

SHEET INDEX

CONSTRUCTION SUBMITTAL:

T-1	COVER SHEET
V-1	EXISTING CONDITIONS (SURVEY)
V-2	EXISTING CONDITIONS (SURVEY)
G-1	GENERAL NOTES
ER-1	GRADING & EROSION CONTROL PLAN
ER-2	GRADING & EROSION CONTROL DETAILS
C-1	OVERALL SITE PLAN
C-2	ENLARGED SITE PLAN
C-3	ELEVATIONS
C-4	COMPOUND DETAILS I
C-5	COMPOUND DETAILS II
C-6	GENERATOR & PROPANE TANK DETAILS
C-7	EQUIPMENT SHELTER FOUNDATION PLAN
E-1	SITE GROUNDING PLAN & DETAILS
E-2	GROUNDING DETAILS I
E-3	GROUNDING DETAILS II
RF-1.0	RF TOWER APPURTENANCES I
RF-1.1	RF TOWER APPURTENANCES II
RF-1.2	RF TOWER APPURTENANCES III
RF-1.3	RF TOWER APPURTENANCES IV
RF-1.4	RF TOWER APPURTENANCES V

SHELTER ONE PREFABRICATED SHELTER DRAWINGS (REFER TO STATE OF OREGON BUILDING CODES DIVISION FOR STATE INSIGNIA):

SH-1	EQUIPMENT SHELTER EXTERIOR ELEVATIONS
SH-2	EQUIPMENT SHELTER INTERIOR ELEVATIONS
SH-3	ELECTRICAL ONE LINE DRAWING
SH-4	ELECTRICAL PANEL SCHEDULE

PROJECT INFORMATION

PROPERTY OWNER:
RIGHT-OF-WAY
CONTACT:
BRIAN NICHOLAS
(503) 588-7943
bnicholas@co.marion.or.us

TOWER OWNER:
MARION COUNTY PUBLIC WORKS
5155 SILVERTON RD NE
SALEM, OR 97305
CONTACT:
BRIAN NICHOLAS
(503) 588-7943
bnicholas@co.marion.or.us

COUNTY:
MARION

JURISDICTION:
MARION COUNTY

ZONING:
FT (FARM TIMBER)

PARCEL NUMBER(S) & AREA:
ACCOUNT #: RIGHT-OF-WAY
TAXLOT #: RIGHT-OF-WAY
14,549.04 SQ FEET±
0.334 ACRES±

PROJECT AREA:
TOTAL COMPOUND AREA - 2,750 SQ FEET ±
ACCESS DRIVE AND PARKING - 286 SQ FEET ±
TOTAL - 3,036 SQ FEET ±

PROJECT LOCATION:
*LAT: N 44° 58'24.5" (44.973480)
*LONG: W 122°36'02.1" (-122.600571)
*GROUND ELEVATION (ASML) = 1,876'±

*INFORMATION OBTAINED FROM GOOGLE EARTH

UTILITY PROVIDERS:
TELCO PROVIDER: N/A
POWER PROVIDER: PORTLAND GENERAL ELECTRIC

GENERAL INFORMATION:
1. TRAFFIC IS UNAFFECTED
2. SIGNAGE AT SITE IS PROPOSED
3. SITE IS UNMANNED AND HANDICAP ACCESS IS NOT REQUIRED

CODE INFORMATION:
1. IBC-2018 INTERNATIONAL BUILDING CODE
2. NEC-2017 NATIONAL ELECTRIC CODE
3. 2019 OREGON STRUCTURAL SPECIALTY CODE
4. 2017 NFPA 58 CODE
5. OCCUPANCY GROUP: U
6. CONSTRUCTION TYPE: II-B

PROJECT INFORMATION CONTINUED

APPLICANT:
MARION COUNTY PUBLIC WORKS
5155 SILVERTON RD NE
SALEM, OR 97305
CONTACT:
BRIAN NICHOLAS
(503) 588-7943
bnicholas@co.marion.or.us

PROJECT MANAGER:
PATRICK HOOVER
(971) 295-0152
phoover@rtspnw.com

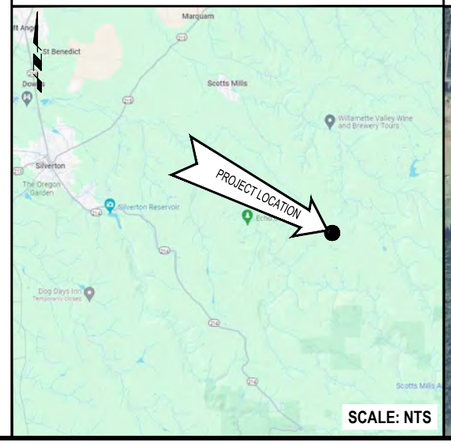
CONSTRUCTION MANAGER:
PATRICK HOOVER
(971) 295-0152
phoover@rtspnw.com

ZONING CONTACT:
CUSHING CIVIL ENGINEERS
12725 SW MILLIKAN WAY, STE 300
BEAVERTON, OR 97005
CONTACT:
ROB HOWE
(503) 387-5331
rob@cushingcivilengineers.com

ENGINEER OF RECORD:
CUSHING CIVIL ENGINEERS
12725 SW MILLIKAN WAY, STE 300
BEAVERTON, OR 97005
CONTACT:
KENNY MCMANAWAY
(503) 387-5331
kenny@cushingcivilengineers.com

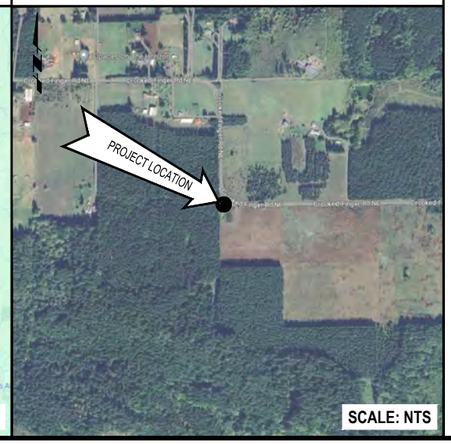
SURVEYEOR
ORION GEOMATICS
1724 23RD AVE
FOREST GROVE, OR 97116
CONTACT:
JOHN PUTNAM
(503) 359-1688
jputnam@oriongeomatics.com

VICINITY MAP



SCALE: NTS

LOCATOR MAP



SCALE: NTS

DRIVING DIRECTIONS

FROM MARION COUNTY PUBLIC WORKS BUILDING:

1. HEAD NORTHWEST TOWARD OR-213 N & CONTINUE TO OR-213 N
   1 MIN (0.2 MI)
2. TURN LEFT ONTO OR-213 N (9.2 MI) & TURN LEFT ONTO N 1ST ST/CASCADE HWY NE (230 FT)
   9.2 MI
3. TURN RIGHT AT THE 1ST CROSS STREET ONTO OAK ST (1.1 MI) & CONTINUE ONTO OR-213 N/CASCADE HWY NE (3.7 MI)
   4.8 MI
4. TURN RIGHT ONTO MT ANGEL SCOTTS MILLS RD NE
   2.3 MI
5. CONTINUE ONTO 3RD ST
   0.4 MI
6. TURN RIGHT ONTO CROOKED FINGER RD NE. DESTINATION WILL BE ON THE RIGHT.
   6.4 MI

EST. TIME: 38 MINS.
EST. MILEAGE: 23.4 MI

PROJECT DESCRIPTION

1. PROPOSED INSTALLATION OF A NEW PUBLIC SAFETY COMMUNICATIONS FACILITY FOR MARION COUNTY, OREGON.
2. PROPOSED INSTALLATION OF THE FOLLOWING EQUIPMENT ON A NEW 180' SELF-SUPPORT TOWER:
   * ANTENNAS W/ ASSOCIATED ANCILLARY EQUIPMENT
3. PROPOSED INSTALLATION OF THE FOLLOWING EQUIPMENT WITHIN GROUND:
   * 1000 GAL. PROPANE TANK
   * GENERATOR
   * 12'x16' EQUIPMENT SHELTER
   * 55'x50' CHAINLINK FENCED COMPOUND

PROJECT INFORMATION:

MARION COUNTY
CROOKED FINGER ROW

NW CORNER OF 3283 CROOKED FINGER RD NE
SCOTTS MILLS, OR 97375

	DATE	RELEASE
	04-03-25	SITE SKETCH
	04-21-25	PRELIMINARY CONSTRUCTION DRAWINGS
	08-28-25	REVISED PRELIM. CONSTRUCTION DRAWINGS
	09-03-25	FINAL CONSTRUCTION DRAWINGS

DRAWING INFORMATION:
THIS DRAWING IS COPYRIGHTED AND IS THE SOLE PROPERTY OF THE OWNER. IT IS PRODUCED SOLELY FOR USE BY THE OWNER AND ITS AFFILIATES. REPRODUCTION OR USE OF THIS DRAWING AND/OR THE INFORMATION CONTAINED IN IT IS FORBIDDEN WITHOUT THE WRITTEN PERMISSION OF THE OWNER.

PLANS PREPARED BY:

Cushing
Civil Engineers

12725 SW MILLIKAN WAY
SUITE 300
BEAVERTON, OR 97005
(503) 387-5331
www.cushingcivilengineers.com

LICENSURE:

REGISTERED PROFESSIONAL ENGINEER
83233
OREGON
JUNE 7, 2012
KENNY McMANAWAY

RENEWAL DATE 12/31/26

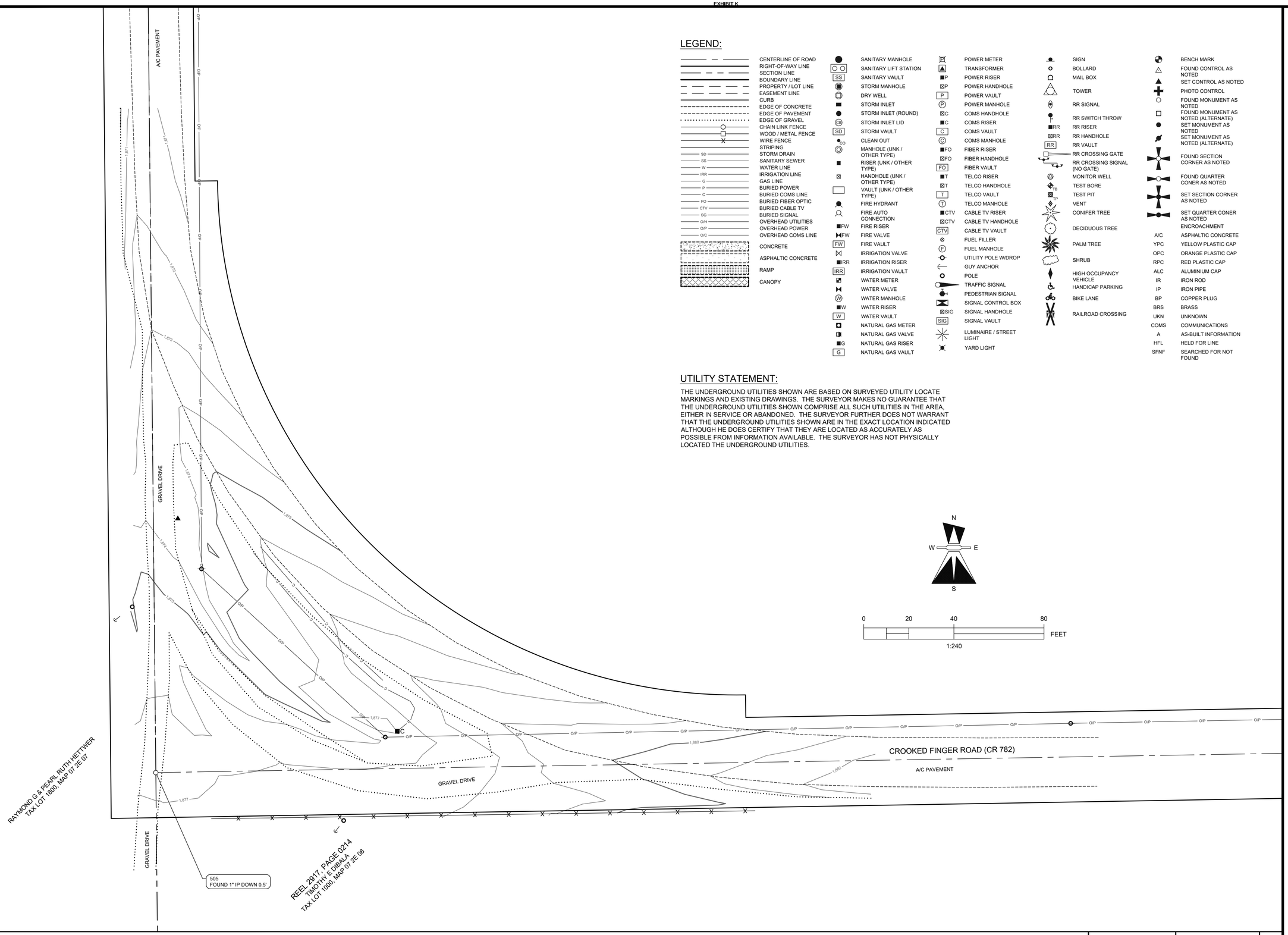
SHEET TITLE:

COVER SHEET

SHEET NUMBER:

T-1

EXHIBIT K



LEGEND:

- CENTERLINE OF ROAD
- RIGHT-OF-WAY LINE
- SECTION LINE
- BOUNDARY LINE
- PROPERTY / LOT LINE
- EASEMENT LINE
- CURB
- EDGE OF CONCRETE
- EDGE OF PAVEMENT
- EDGE OF GRAVEL
- CHAIN LINK FENCE
- WOOD / METAL FENCE
- WIRE FENCE
- STRIPING
- SD — STORM DRAIN
- SS — SANITARY SEWER
- W — WATER LINE
- IRR — IRRIGATION LINE
- G — GAS LINE
- P — BURIED POWER
- C — BURIED COMS LINE
- FO — BURIED FIBER OPTIC
- CTV — BURIED CABLE TV
- SG — BURIED SIGNAL
- O/H — OVERHEAD UTILITIES
- O/P — OVERHEAD POWER
- O/C — OVERHEAD COMS LINE
- CONCRETE
- ASPHALTIC CONCRETE
- RAMP
- CANOPY

- SANITARY MANHOLE
- SANITARY LIFT STATION
- SS — SANITARY VAULT
- STORM MANHOLE
- DRY WELL
- STORM INLET
- STORM INLET (ROUND)
- CB — STORM INLET LID
- SD — STORM VAULT
- CLEAN OUT
- MANHOLE (UNK / OTHER TYPE)
- RISER (UNK / OTHER TYPE)
- HANDHOLE (UNK / OTHER TYPE)
- VAULT (UNK / OTHER TYPE)
- FIRE HYDRANT
- FIRE AUTO CONNECTION
- FW — FIRE RISER
- FW — FIRE VALVE
- FW — FIRE VAULT
- IRRIGATION VALVE
- IRR — IRRIGATION RISER
- IRR — IRRIGATION VAULT
- WATER METER
- WATER VALVE
- W — WATER MANHOLE
- W — WATER RISER
- W — WATER VAULT
- NATURAL GAS METER
- NATURAL GAS VALVE
- G — NATURAL GAS RISER
- G — NATURAL GAS VAULT

- POWER METER
- TRANSFORMER
- P — POWER RISER
- P — POWER HANDHOLE
- P — POWER VAULT
- P — POWER MANHOLE
- C — COMS HANDHOLE
- C — COMS RISER
- C — COMS VAULT
- C — COMS MANHOLE
- FO — FIBER RISER
- FO — FIBER HANDHOLE
- FO — FIBER VAULT
- T — TELCO RISER
- T — TELCO HANDHOLE
- T — TELCO VAULT
- T — TELCO MANHOLE
- CTV — CABLE TV RISER
- CTV — CABLE TV HANDHOLE
- CTV — CABLE TV VAULT
- FUEL FILLER
- F — FUEL MANHOLE
- UTILITY POLE W/DROP
- GUY ANCHOR
- POLE
- TRAFFIC SIGNAL
- PEDESTRIAN SIGNAL
- SIGNAL CONTROL BOX
- SIG — SIGNAL HANDHOLE
- SIG — SIGNAL VAULT
- LUMINAIRE / STREET LIGHT
- YARD LIGHT

- SIGN
- BOLLARD
- MAIL BOX
- TOWER
- RR SIGNAL
- RR SWITCH THROW
- RR — RR RISER
- RR — RR HANDHOLE
- RR — RR VAULT
- RR CROSSING GATE
- RR CROSSING SIGNAL (NO GATE)
- MONITOR WELL
- TB — TEST BORE
- TP — TEST PIT
- VENT
- CONIFER TREE
- DECIDUOUS TREE
- PALM TREE
- SHRUB
- HIGH OCCUPANCY VEHICLE
- HANDICAP PARKING
- BIKE LANE
- RAILROAD CROSSING

- BENCH MARK
- FOUND CONTROL AS NOTED
- SET CONTROL AS NOTED
- PHOTO CONTROL
- FOUND MONUMENT AS NOTED
- FOUND MONUMENT AS NOTED (ALTERNATE)
- SET MONUMENT AS NOTED
- SET MONUMENT AS NOTED (ALTERNATE)
- FOUND SECTION CORNER AS NOTED
- FOUND QUARTER CONER AS NOTED
- SET SECTION CORNER AS NOTED
- SET QUARTER CONER AS NOTED
- ENCROACHMENT
- A/C — ASPHALTIC CONCRETE
- YPC — YELLOW PLASTIC CAP
- OPC — ORANGE PLASTIC CAP
- RPC — RED PLASTIC CAP
- ALC — ALUMINIUM CAP
- IR — IRON ROD
- IP — IRON PIPE
- BP — COPPER PLUG
- BRS — BRASS
- UKN — UNKNOWN
- COMS — COMMUNICATIONS
- A — AS-BUILT INFORMATION
- HFL — HELD FOR LINE
- SFNF — SEARCHED FOR NOT FOUND

UTILITY STATEMENT:

THE UNDERGROUND UTILITIES SHOWN ARE BASED ON SURVEYED UTILITY LOCATE MARKINGS AND EXISTING DRAWINGS. THE SURVEYOR MAKES NO GUARANTEE THAT THE UNDERGROUND UTILITIES SHOWN COMPRISE ALL SUCH UTILITIES IN THE AREA, EITHER IN SERVICE OR ABANDONED. THE SURVEYOR FURTHER DOES NOT WARRANT THAT THE UNDERGROUND UTILITIES SHOWN ARE IN THE EXACT LOCATION INDICATED ALTHOUGH HE DOES CERTIFY THAT THEY ARE LOCATED AS ACCURATELY AS POSSIBLE FROM INFORMATION AVAILABLE. THE SURVEYOR HAS NOT PHYSICALLY LOCATED THE UNDERGROUND UTILITIES.

SECTION 8, T07S, R02E, W.M

11X17 SCALE: 1" = 40'	22X34 SCALE: 1" = 20'	1

Marion County
OREGON

PROJECT INFORMATION:

MARION COUNTY CROOKED FINGER

3283 CROOKED FINGER RD NE
SCOTTS MILLS, OR 97375

	DATE	RELEASE
0	11/21/2024	INITIAL SURVEY RELEASE
1	05/09/2025	REVISED SITE LOCATION (CNTL UPDATED)

DRAWING INFORMATION:

THIS DRAWING IS COPYRIGHTED AND IS THE SOLE PROPERTY OF THE OWNER. IT IS PRODUCED SOLELY FOR USE BY THE OWNER AND ITS AFFILIATES. REPRODUCTION OR USE OF THIS DRAWING AND/OR THE INFORMATION CONTAINED IN IT IS FORBIDDEN WITHOUT THE WRITTEN PERMISSION OF THE OWNER.

PLANS PREPARED BY:

cushing Civil Engineers

Cushing Civil Engineers
12725 SW MILLIKAN WAY
SUITE 300
BEAVERTON, OR 97005
(503) 387-5331
www.cushing-engr.com

LICENSURE:

orion GEOMATICS
Because the world is a spatial place™
1724 23rd Avenue | Forest Grove OR 97116
T: 503.359.1688 | www.oriongeomatics.com

REGISTERED
PROFESSIONAL
LAND SURVEYOR

DIGITAL SIGNATURE

OREGON
JULY 19, 1994
JOHN D. PUTNAM
2676

RENEWS: 12-31-26
DIGITALLY SIGNED 05/09/2025

SHEET TITLE:

EXISTING CONDITIONS

SHEET NUMBER:

V-1

NARRATIVE:

THE PURPOSE OF THIS SURVEY IS TO PREPARE A PRE-DESIGN BASE MAP FOR FUTURE EXPANSION OF MARION COUNTY'S COMMUNICATION SITE 'CROOKED FINGER'.

JOHN D PUTNAM PERFORMED THE FIELD SURVEY ON OCTOBER 3RD & 29TH, 2024; AND APRIL 28, 2025. TERRESTRIAL MEASUREMENTS WERE MADE UTILIZING A LEICA MS60 1 SECOND ROBOTIC TOTAL STATION. GNSS OBSERVATIONS WERE MADE UTILIZING A LEICA GS16 RECEIVER.

BEARINGS ARE BASED ON THE NAD 1983(2011) [EPOCH 2010] OREGON COORDINATE REFERENCE SYSTEM, SALEM ZONE AS DETERMINED BY GNSS OBSERVATION TO THE OREGON REAL-TIME GNSS NETWORK.

THE CENTERLINE OF CROOKED FINGER ROAD (CR 782) ESTABLISHED BY HOLDING FOUND MONUMENTS '405', '505' & '506' PER SURVEY NUMBER (SN) 2607. SN 2607 ESTABLISHED MONUMENT '505' AS THE S 1/16 CORNER COMMON TO SECTIONS 7 & 8, TOWNSHIP 7 SOUTH, RANGE 2 EAST BY HOLDING WEST ONE-QUARTER CORNER AND SOUTHWEST CORNER OF SAID SECTION 8.

THE SOUTHERN LINE OF THE SOUTHWEST ONE-QUARTER OF SECTION 8, TOWNSHIP 7S, RANGE 2 EAST WAS ESTABLISHED BY HOLDING FOUND MONUMENTS '400' & '401'. ITS WESTERN LINE WAS ESTABLISHED BY HOLDING FOUND MONUMENTS '400' & '505'. SN 38516 ESTABLISHED THE S 1/16 CC CORNER BY HOLDING SOUTH ONE-QUARTER CORNER AND CENTER CORNER OF SAID SECTION 8. FOR THE PURPOSE OF THIS SURVEY THE NORTHERN AND EASTERN LINES OF THE ONE-QUARTER SECTION WERE ESTABLISHED PER THE RECORD RELATIONSHIP FROM SN 38516 HOLDING MONUMENTS '401', '405', '505' AND 506'. THE GROUND DISTANCES DEPICTED ON SN 3856 WERE SCALED BY A PROJECT COMBINED 0.999942136 TO MATCH GRID DISTANCES. THE QUARTER SECTION WAS BROKEN INTO STANDARD ALIQUOT PARTS TO ESTABLISH THE BOUNDARY OF THE PARENT PROPERTY.

ALL MEASUREMENTS SHOWN MATCH RECORD UNLESS OTHERWISE NOTED.

FALLINGS SHOWN ARE FROM THE TRUE POINT.

NOTES:

1. FIELD SURVEY AND MAPPING PERFORMED ON OCTOBER 3RD & 29TH, 2024; AND APRIL 28, 2025 BY J. PUTNAM UTILIZING A LEICA MS60 ROBOTIC TOTAL STATION AND LEICA GS18 GNSS RECEIVERS.
2. UNITS ARE STATED IN INTERNATIONAL FEET.
3. BEARINGS ARE BASED ON THE NAD 1983(2011) [EPOCH 2010] ORGON COORDINATE PREFERENCE SYSTEM, SALEM ZONE AS DETERMINED BY GNSS OBSERVATION TO THE OREGON REAL-TIME GNSS NETWORK .
4. ELEVATIONS ARE BASED NAVD 1988 AS ESTABLISHED BY GNSS OBSERVATION TO THE OREGON REAL-TIME GNSS NETWORK.
5. ALL DISTANCES ARE GRID BASED ON THE LOW DISTORTION ZONE.
6. TRUE GEODETIC AZIMUTH = GRID AZIMUTH (BEARING BASIS) + MAPPING ANGLE. THE MAPPING ANGLE IS 00°20'28" AT CONTROL STATION 113. THE MAGNETIC DECLINATION FROM TRUE GEODETIC AZIMUTH IS 14°31' EAST.
7. THE TERM "CERTIFY" (OR ITS DERIVATIVES) SHALL MEAN A STATEMENT SIGNED AND/OR SEALED BY A SURVEYOR REPRESENTING THAT THE SURVEYOR'S KNOWLEDGE, INFORMATION AND BELIEF, IN ACCORDANCE WITH COMMONLY ACCEPTED PROCEDURES CONSISTENT WITH APPLICABLE STANDARDS OF PRACTICE, AND IS NOT A GUARANTY OR WARRANTY, EITHER EXPRESSED OR IMPLIED.
8. THIS SURVEY SHOWS ONLY THOSE DEDICATIONS AND EASEMENTS CONTAINED IN THE SUPPLIED TITLE SEARCH. IT IS POSSIBLE THAT OTHER RECORDED OR UNRECORDED INSTRUMENTS EFFECTING THIS PROPERTY MAY EXIST.
9. ORION GEOMATICS MAKES NO WARRANTIES AS TO MATTERS OF UNWRITTEN TITLE SUCH AS ADVERSE POSSESSION, ACQUIESCENCE, ESTOPPLE, ETC.
10. ALL STATEMENTS WITHIN THE CERTIFICATION, AND OTHER REFERENCES LOCATED ELSEWHERE HEREON, RELATED TO: UTILITIES, IMPROVEMENTS, STRUCTURES, BUILDINGS, PARTY WALLS, EASEMENTS, SERVITUDES, AND ENCROACHMENTS; ARE BASED SOLELY ON ABOVE GROUND, VISIBLE EVIDENCE, UNLESS ANOTHER SOURCE OF INFORMATION IS SPECIFICALLY REFERENCED HEREON.
11. UTILITIES WERE MARKED PRIOR TO SURVEY PER OREGON ON CALL TICKET 25106911.
12. THE MARION COUNTY ASSESSOR LIST THE INCORRECT VESTING DOCUMENTS FOR TAX LOT 1100, MAP 07 2E 08. NOTED OWNER'S IS BASED ON ASSESSOR'S INFORMATION.

REFERENCES:

-RECORDS OF SURVEY:

R1) SN 2607

R2) SN 30641

R3) SN 31487

R4) SN 38516

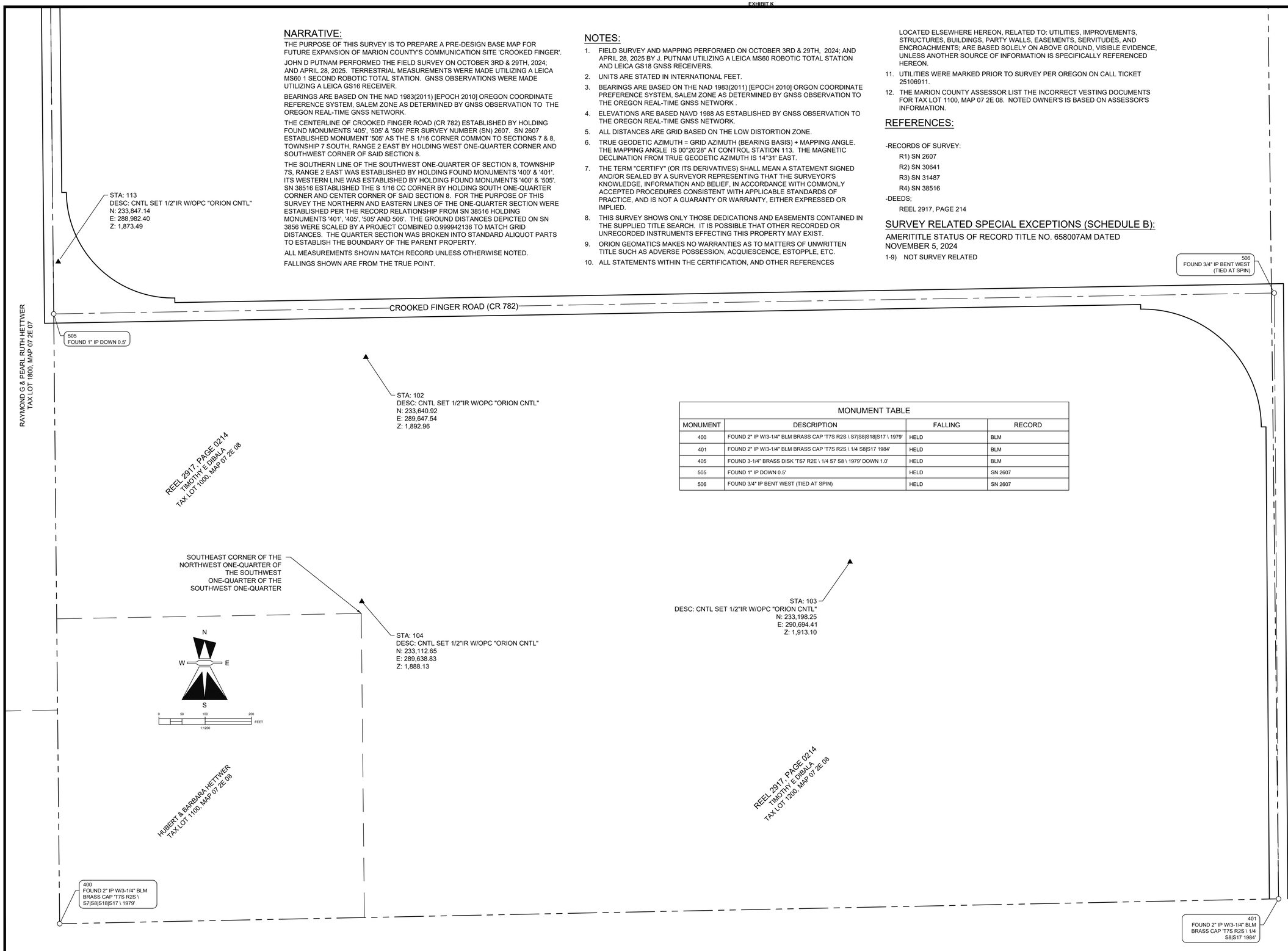
-DEEDS;

REEL 2917, PAGE 214

SURVEY RELATED SPECIAL EXCEPTIONS (SCHEDULE B):

AMERITITLE STATUS OF RECORD TITLE NO. 658007AM DATED NOVEMBER 5, 2024

1-9) NOT SURVEY RELATED



MONUMENT TABLE

MONUMENT	DESCRIPTION	FALLING	RECORD
400	FOUND 2" IP W/3-1/4" BLM BRASS CAP 'T7S R2S \ S7|S8|S18|S17 \ 1979'	HELD	BLM
401	FOUND 2" IP W/3-1/4" BLM BRASS CAP 'T7S R2S \ 1/4 S8|S17 1984'	HELD	BLM
405	FOUND 3-1/4" BRASS DISK 'TS7 R2E \ 1/4 S7 S8 \ 1979' DOWN 1.0'	HELD	BLM
505	FOUND 1" IP DOWN 0.5'	HELD	SN 2607
506	FOUND 3/4" IP BENT WEST (TIED AT SPIN)	HELD	SN 2607

SECTION 8, T07S, R02E, W.M

11X17 SCALE: 1" = 200' | 22X34 SCALE: 1" = 100' | 2

Marion County OREGON

PROJECT INFORMATION:

MARION COUNTY CROOKED FINGER

3283 CROOKED FINGER RD NE
SCOTTS MILLS, OR 97375

	DATE	RELEASE
0	11/21/2024	INITIAL SURVEY RELEASE
1	05/09/2025	REVISED SITE LOCATION (CNTL UPDATED)

DRAWING INFORMATION:
THIS DRAWING IS COPYRIGHTED AND IS THE SOLE PROPERTY OF THE OWNER. IT IS PRODUCED SOLELY FOR USE BY THE OWNER AND ITS AFFILIATES. REPRODUCTION OR USE OF THIS DRAWING AND/OR THE INFORMATION CONTAINED IN IT IS FORBIDDEN WITHOUT THE WRITTEN PERMISSION OF THE OWNER.

PLANS PREPARED BY:

cushing Civil Engineers

Cushing
Civil Engineers

12725 SW MILLIKAN WAY
SUITE 300
BEAVERTON, OR 97005
(503) 387-5331
www.cushing-engr.com

LICENSURE:

orion GEOMATICS
Because the world is a spatial place™
1724 23rd Avenue | Forest Grove OR 97116
T: 503.359.1688 | www.oriongeomatics.com

REGISTERED
PROFESSIONAL
LAND SURVEYOR

DIGITAL SIGNATURE

OREGON
JULY 19, 1994
JOHN D. PUTNAM
2676

RENEWS: 12-31-26
DIGITALLY SIGNED 05/09/2025

SHEET TITLE:

EXISTING CONDITIONS

SHEET NUMBER:

V-2

EXHIBIT K

GENERAL NOTES:

1. DRAWINGS ARE NOT TO BE SCALED, WRITTEN DIMENSIONS TAKE PRECEDENCE, THIS SET OF DOCUMENTS IS INTENDED TO BE USED FOR DIAGRAMMATIC PURPOSED ONLY, UNLESS NOTED OTHERWISE. THE GENERAL CONTRACTOR'S SCOPE OF WORK SHALL INCLUDE FURNISHING ALL MATERIALS, EQUIPMENT, LABOR AND ANY REQUIREMENTS DEEMED NECESSARY TO COMPLETE INSTALLATION AS DESCRIBED IN THE DRAWINGS AND OWNER'S PROJECT MANUAL.
2. THE CONTRACTOR IS RESPONSIBLE FOR ALL DIMENSIONS AND STANDARDIZED DETAILS THAT REQUIRE MODIFICATIONS DUE TO ACTUAL FIELD CONDITIONS AND REQUIREMENTS MUST BE SUBMITTED TO AND APPROVED BY OWNERS REPRESENTATIVE PRIOR TO START OF WORK.
3. PRIOR TO THE SUBMISSION OF BIDS, CONTRACTORS INVOLVED SHALL VISIT THE JOB SITE TO FAMILIARIZE THEMSELVES WITH ALL CONDITIONS AFFECTING THE PROPOSED PROJECT. CONTRACTORS SHALL VISIT THE CONSTRUCTION SITE WITH THE CONSTRUCTION/CONTRACT DOCUMENTS TO VERIFY FIELD CONDITIONS AND CONFIRM THAT THE PROJECT WILL BE ACCOMPLISHED AS SHOWN. PRIOR TO PROCEEDING WITH CONSTRUCTION, ANY ERRORS, OMISSIONS, OR DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT/ENGINEER VERBALLY AND IN WRITING.
4. THE GENERAL CONTRACTOR SHALL RECEIVE WRITTEN AUTHORIZATION TO PROCEED WITH CONSTRUCTION PRIOR TO STARTING WORK ON ANY ITEM NOT CLEARLY DEFINED BY THE CONSTRUCTION DRAWINGS/CONTRACT DOCUMENTS.
5. THE CONTRACTOR SHALL SUPERVISE AND DIRECT THE PROJECT DESCRIBED IN THE CONTRACT DOCUMENTS. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR ALL CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES, SAFETY, AND PROCEDURES FOR COORDINATING ALL PORTIONS OF THE WORK UNDER THE CONTRACT.
6. THE CONTRACTOR SHALL INSTALL ALL EQUIPMENT AND MATERIALS ACCORDING TO MANUFACTURER'S/VENDOR'S SPECIFICATIONS UNLESS NOTED OTHERWISE OR WHERE LOCAL CODES OR ORDINANCES TAKE PRECEDENCE.
7. ALL WORK PERFORMED ON THE PROJECT AND MATERIALS INSTALLED SHALL BE IN STRICT ACCORDANCE WITH ALL APPLICABLE CODES, REGULATIONS, AND ORDINANCES. CONTRACTOR SHALL GIVE ALL NOTICES AND COMPLY WITH ALL LAWS, ORDINANCES, RULES, REGULATIONS AND LAWFUL ORDERS OF ANY PUBLIC AUTHORITY, MUNICIPAL AND UTILITY COMPANY SPECIFICATIONS, AND LOCAL AND STATE JURISDICTIONAL CODES BEARING ON THE PERFORMANCE OF THE WORK.
8. THE CONTRACTOR SHALL PROVIDE, AT THE PROJECT SITE, A FULL SET OF CONSTRUCTION DOCUMENTS UPDATED WITH THE LATEST REVISIONS INVOLVED WITH THE PROJECT. THIS SET IS A VALID CONTRACT DOCUMENT ONLY IF THE TITLE SHEET IS STAMPED IN RED INK "FOR CONSTRUCTION" AND EACH SUCCESSIVE SHEET BEARS THE ARCHITECT'S/ENGINEER'S SIGNED WET STAMP.
9. THE CONTRACTOR IS RESPONSIBLE FOR ADEQUATELY BRACING AND PROTECTING ALL WORK DURING CONSTRUCTION AGAINST DAMAGE, BREAKAGE, COLLAPSE, ETC. ACCORDING TO APPLICABLE CODES, STANDARDS, AND GOOD CONSTRUCTION PRACTICES. THE STRUCTURAL COMPONENTS OF ADJACENT CONSTRUCTION OR FACILITIES ARE NOT TO BE ALTERED BY THE CONSTRUCTION PROJECT UNLESS NOTED OTHERWISE.
10. THE CONTRACTOR SHALL MEET ALL OSHA REQUIREMENTS FOR ALL INSTALLATIONS.
11. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL DAMAGES TO THE EXISTING CONSTRUCTION AND REPAIR ALL DAMAGES TO EQUAL OR BETTER NEW CONSTRUCTION. THE CONTRACTOR SHALL NOTIFY THE PROJECT MANAGER OF ANY DAMAGE TO THE BUILDING SITE OR ANY ADJACENT STRUCTURES AROUND THE PROJECT. THE OWNERS REPRESENTATIVE SHALL BE SOLE AND FINAL JUDGE AS TO THE QUALITY OF THE REPAIRED CONSTRUCTION. ANY ADDITIONAL MODIFICATIONS WHICH MUST BE MADE SHALL BE MADE AT THE CONTRACTOR'S EXPENSE.
12. WHERE NEW PAVING, CONCRETE SIDEWALKS OR PATHS MEET EXISTING CONSTRUCTION, THE CONTRACTOR SHALL MATCH THE EXISTING PITCH, GRADE, AND ELEVATION SO THE ENTIRE STRUCTURE SHALL HAVE A SMOOTH TRANSITION.
13. THE CONTRACTOR SHALL MODIFY THE EXISTING FLOORS, WALL, CEILING, OR OTHER CONSTRUCTION AS REQUIRED TO GAIN ACCESS TO AREAS FOR ALL MECHANICAL, PLUMBING, ELECTRICAL, OR STRUCTURAL MODIFICATIONS. WHERE THE EXISTING CONSTRUCTION DOORS, PARTITIONS, CEILING, ETC., ARE TO BE REMOVED, MODIFIED, OR REARRANGED OR WHERE THE EXPOSED OR HIDDEN MECHANICAL, ELECTRICAL, SYSTEMS ARE ADDED OR MODIFIED, THE GENERAL CONTRACTOR SHALL REPAIR, PATCH AND MATCH ALL EXISTING CONSTRUCTION AND FINISHES OF ALL FLOORS WALLS AND CEILINGS. WHERE CONCRETE MASONRY CONSTRUCTION IS MODIFIED, THE CONTRACTOR SHALL TOOTH IN ALL NEW CONSTRUCTION TO MATCH THE EXISTING BOND. WHERE CONCRETE CONSTRUCTION IS MODIFIED, THE CONTRACTOR SHALL VERIFY THE EXACT DETAILS TO BE USED FOR CONSTRUCTION. ALL WORK SHALL BE COVERED UNDER THE GENERAL CONTRACT.
14. IF CONTRACTOR OR SUBCONTRACTOR FIND IT NECESSARY TO DEVIATE FROM ORIGINAL APPROVED PLANS, THEN IT IS THE CONTRACTOR'S AND THE SUBCONTRACTOR'S RESPONSIBILITY TO PROVIDE THE PROJECT MANAGER WITH 4 COPIES OF THE PROPOSED CHANGES FOR HIS APPROVAL BEFORE PROCEEDING WITH THE WORK. IN ADDITION THE CONTRACTOR AND SUBCONTRACTORS SHALL BE RESPONSIBLE FOR PROCURING ALL NECESSARY APPROVALS FROM THE BUILDING AUTHORITIES FOR THE PROPOSED CHANGES BEFORE PROCEEDING WITH THE WORK. THE CONTRACTOR AND SUBCONTRACTORS SHALL BE RESPONSIBLE FOR PROCURING ALL NECESSARY INSPECTIONS AND APPROVALS FROM BUILDING AUTHORITIES DURING THE EXECUTION OF THE WORK.
15. CONTRACTOR TO PROVIDE A PORTABLE FIRE EXTINGUISHER WITH A RATING OF NOT LESS THAN 2-A OR 2-A10BC WITHIN 75 FEET TRAVEL DISTANCE TO ALL PORTIONS OF PROJECT AREA DURING CONSTRUCTION.
16. THIS IS AN ESSENTIAL FACILITY THEREFORE SHALL STRICTLY MEET ALL APPLICABLE CODE AND JURISDICTIONAL REQUIREMENTS.

GENERAL NOTES CONTINUED:

17. THE CONTRACTOR SHALL PERFORM WORK DURING SITE/PROPERTY OWNER'S PREFERRED HOURS TO AVOID DISTURBING NORMAL BUSINESS.
18. SEAL ALL PENETRATIONS THROUGH FIRE-RATED AREAS WITH U.L. LISTED OR FIRE MARSHAL APPROVED MATERIALS AS APPLICABLE TO THIS FACILITY AND OR PROJECT SITE.
19. CONTRACTOR SHALL BE RESPONSIBLE FOR UTILITY LOCATES, SCHEDULING, COORDINATING SPECIAL AND BUILDING DEPARTMENT INSPECTIONS.
21. ROUTING OF ALL CONDUITS, CABLES, CABLE TRAYS ETC ARE INDICATED AS PROPOSED LOCATION ONLY. CONFIRM THE EXACT LOCATION AND ROUTING WITH THE ON SITE PROJECT MANAGER PRIOR TO STARTING WORK.

CONCRETE NOTES:

1. ALL CONCRETE WORK SHALL BE IN ACCORDANCE WITH THE ACI 301, ACI 318 AND THE SPECIFICATION CAST-IN-PLACE CONCRETE.
2. ALL CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 3000 PSI AT 28 DAYS (UNO).
3. REINFORCING STEEL SHALL CONFORM TO ASTM A 615, GRADE 60, DEFORMED UNLESS NOTED OTHERWISE. WELDED WIRE FABRIC SHALL CONFORM TO ASTM A 185 WELDED STEEL WIRE FABRIC UNLESS NOTED OTHERWISE. SPLICES CLASS "B" AND ALL HOOKS SHALL BE STANDARD (UNO).
4. THE FOLLOWING MINIMUM CONCRETE COVER SHALL BE PROVIDED FOR REINFORCING STEEL UNLESS SHOWN OTHERWISE ON DRAWINGS: CONCRETE CAST AGAINST EARTH - 3 IN.
   CONCRETE EXPOSED TO EARTH OR WEATHER:
   #6 AND LARGER .....2 IN.
   #5 AND SMALLER & WWF .....1-1/2 IN.
5. A 1/2" TROWELED RADIUS SHALL BE PROVIDED AT ALL EXPOSED EDGES OF CONCRETE (UNO). HOLES TO RECEIVE EXPANSION/WEDGE ANCHORS SHALL BE 1/8" LARGER IN DIAMETER THAN THE ANCHOR BOLT, DOWEL OR ROD AND SHALL CONFORM TO MFR RECOMMENDATION FOR EMBEDMENT DEPTH OR AS SHOWN ON THE DRAWINGS. AVOID CUTTING EXISTING REBAR WHEN DRILLING HOLES IN THE ELEVATED SLAB.
6. INSTALLATION OF CONCRETE EXPANSION AND WEDGE ANCHOR, SHALL BE PER MANUFACTURER'S WRITTEN RECOMMENDED PROCEDURES.
7. FLOAT SURFACE SHALL BE A SMOOTH FINISH. SURFACE SHALL BE FREE OF ALL OBVIOUS DEPRESSIONS. SURFACE SHALL BE SLOPED AT 2% TO PROMOTE DRAINAGE AWAY FROM EQUIPMENT.

SITE WORK NOTES:

1. RUBBISH, STUMPS, DEBRIS, STICKS, STONES AND OTHER REFUSE SHALL BE REMOVED FROM THE SITE AND DISPOSED OF LEGALLY UNLESS OTHERWISE REQUIRED TO BE LEFT AS DEFINED BY LAND/PROPERTY OWNER.
2. THE SITE SHALL BE GRADED TO CAUSE SURFACE WATER TO FLOW AWAY FROM THE EQUIPMENT, EQUIPMENT SHELTER, GENERATOR, FUEL TANK, TOWER AREAS, AND ADJACENT BUILDINGS, ETC.
3. NO FILL OR EMBANKMENT MATERIAL SHALL BE PLACED ON FROZEN GROUND. FROZEN MATERIALS, SNOW OR ICE SHALL NOT BE PLACED IN ANY FILL OR EMBANKMENT.
4. THE SUBGRADE SHALL BE COMPACTED AND BROUGHT TO A SMOOTH UNIFORM GRADE PRIOR TO THE CRUSHED STONE APPLICATION. FABRIC USE AS REQUIRED.
5. ALL APPLICABLE LOCATES SHALL BE PERFORMED PRIOR TO TO ANY EXCAVATION OR SITE GRADING. ALL EXISTING ACTIVE SEWER, WATER, GAS, ELECTRIC, AND OTHER UTILITIES WHERE ENCOUNTERED IN THE WORK, SHALL BE PROTECTED AT ALL TIMES, AND WHERE REQUIRED FOR THE PROPER EXECUTION OF THE WORK, SHALL BE RELOCATED AS DIRECTED BY ENGINEERS. EXTREME CAUTION SHOULD BE USED BY THE CONTRACTOR WHEN EXCAVATING OR PIER DRILLING AROUND OR NEAR UTILITIES. CONTRACTOR SHALL PROVIDE SAFETY TRAINING FOR THE WORKING CREW.
6. ALL EXISTING INACTIVE SEWER, WATER, GAS, ELECTRIC AND OTHER UTILITIES, WHICH INTERFERE WITH THE EXECUTION OF THE WORK, SHALL BE REMOVED AND SHALL BE CAPPED, PLUGGED OR OTHERWISE DISCONTINUED AT POINTS WHICH WILL NOT INTERFERE WITH THE EXECUTION OF THE WORK, SUBJECT TO THE APPROVAL OF ENGINEERING.
7. THE AREAS OF THE PROPERTY DISTURBED BY THE WORK AND NOT COVERED BY THE BUILDING, DRIVEWAY OR CRUSHED STONE, SHALL BE GRADED TO A UNIFORM SLOPE, FERTILIZED, SEEDED, AND COVERED WITH MULCH AS SPECIFIED IN THE SPECIFICATION LANDSCAPE WORK..
8. BEDDING MATERIAL FOR UTILITY LINES, CULVERTS AND PIPING: CLEAN SAND, MEDIUM TP COARSE, SUB ROUNDED NATURAL RIVER OR BANK SAND, WASHED, FREE OF SILT OR CLAY, LOAM, FRIABLE OR SOLUBLE MATERIALS, AND ORGANIC MATTER; GRADED IN ACCORDANCE WITH THE FOLLOWING GRAIN SIZE DISTRIBUTION:

SIEVE SIZE	PERCENT PASSING
	100
NO. 4 MESH	60-90
NO. 8 MESH	0-45
NO. 16 MESH	0-25
NO. 100 MESH	0-2
NO. 200 MESH	0-2

9. BMP'S FOR TEMPORARY EROSION/SEDIMENTATION CONTROL SHALL BE IMPLEMENTED PER LOCAL, CITY OR COUNTY GUIDELINES AND PER PLAN IF APPLICABLE.

SITE WORK NOTES CONTINUED:

10. ALL SITE DESIGN AND CONSTRUCTION MUST COMPLY WITH INDUSTRY STANDARDS AND BE ALIGNED WITH BMP GUIDELINES AS TECHNICALLY APPLICABLE. EACH SITE MUST BE PM APPROVED BEFORE IT SHALL BE CONSIDERED COMPLETE AND ACCEPTED.
11. IF INADVERTENT DISCOVERIES OF NATIVE AMERICAN CULTURAL MATERIALS OR HUMAN REMAINS ARE MADE DURING CONSTRUCTION, ALL WORK SHOULD CEASE AND POTENTIALLY AFFECTED TRIBES, AS WELL AS THE STATE HISTORIC PRESERVATION OFFICE, SHOULD BE NOTIFIED IMMEDIATELY.

TOWER/POLE NOTES:

1. ALL ANTENNAS, LINES AND RELATED INSTALLATION HARDWARE TO BE PROVIDED BY THE LAND MOBILE COMMUNICATIONS PROVIDER.
2. ALL HARDWARE (NUTS AND BOLTS) BE TIGHTENED AND TORQUED IN ACCORDANCE WITH THE TOWER MANUFACTURER'S AND STRUCTURAL ENGINEER'S SPECIFICATIONS.
3. VERIFICATION THAT THE TOWER/POLE CAN SUPPORT THE PROPOSED ANTENNA LOADING IS TO BE DONE BY OTHERS.
4. PROVIDE SUPPORTS FOR THE ANTENNA COAX CABLES TO THE ELEVATION OF ALL INITIAL AND FUTURE ANTENNAS. ANTENNA COAX CABLES ARE TO BE SUPPORTED AND RESTRAINED AT THE CENTERS SUITABLE TO THE MANUFACTURER'S REQUIREMENTS.

ATTENTION (OREGON SITES ONLY):

CALL 1-800-332-2344 48 HOURS BEFORE YOU DIG. OREGON LAW REQUIRES YOU TO FOLLOW OAR 952-001-0010 THRU 952-001-0090. COPIES ARE AVAILABLE AT THE OREGON UTILITY NOTIFICATION CENTER 503-232-1987

DESIGN LOADS:

ROOF SNOW LOAD DATA -	GROUND SNOW LOAD:	167 PSF*
	FLAT-ROOF SNOW LOAD:	N/A
	SNOW EXPOSURE FACTOR:	N/A
	SNOW LOAD IMPORTANCE FACTOR:	N/A
	THERMAL FACTOR:	N/A
WIND DESIGN DATA -	ULTIMATE DESIGN WIND SPEED:	107 MPH*
	RISK CATEGORY:	IV
	WIND EXPOSURE:	C*
	INTERNAL PRESSURE COEFFICIENT:	N/A
	DESIGN WIND PRESSURES;	
	WIND LOAD HORIZONTAL (MWFRS):	N/A
	WIND LOAD (UPLIFT) (MWFRS):	N/A
EARTHQUAKE DESIGN DATA -	RISK CATEGORY:	IV
	SEISMIC IMPORTANCE FACTOR:	N/A
	MAPPED SPECTRAL RESPONSE ACCEL-ERATION PARAMETERS;	
	S_S	0.81
	S_1	0.31
	SITE CLASS:	C
	DESIGN SPECTRAL RESPONSE ACCEL-ERATION PARAMETERS;	
	S_{DS}	0.61
	S_{D1}	0.29
	SEISMIC DESIGN CATEGORY:	D
SYSTEM:	BASIC SEISMIC FORCE-RESISTING BEARING WALL	
	DESIGN BASE SHEAR:	N/A
	SEISMIC RESPONSE COEFFICIENT:	N/A
	RESPONSE MODIFICATION COEFFICIENT:	N/A
	ANALYSIS PROCEDURE USED:	N/A
GEOTECHNICAL INFORMATION -	ALLOWABLE BEARING CAPACITY:	2,500 PSF

REFER TO GEOTECH REPORT BY BLACK MOUNTAIN DATED APRIL 26, 2025.

*INFORMATION OBTAINED FROM ASCE 7 HAZARD TOOL

ABBREVIATIONS LEGEND

A/C	AIR CONDITIONING
ADJ	ADJUSTABLE
AFF	ABOVE FINISH FLOOR
AGL	ABOVE GRADE LEVEL
APPROX	APPROXIMATELY
ASTM	AMERICAN SOCIETY FOR TESTING & MATERIALS
AWG	AMERICAN WIRE GAUGE
BLDG	BUILDING
BLK	BLOCK
BMR	BASE MOBILE RADIO
B/S	BUILDING STANDARD
CLG	CEILING
CLR	CLEAR
CONC	CONCRETE
CONST	CONSTRUCTION
CONT	CONTINUOUS
DBL	DOUBLE
DIA, Ø	DIAMETER
DIAG	DIAGONAL
DIM	DIMENSION
DN	DOWN
DTL, DETL	DETAIL
DWG	DRAWING
E	EAST
EA	EACH
EL, ELEV	ELEVATION
ELECT	ELECTRICAL
EQ	EQUAL
EQUIP	EQUIPMENT
E.W.	EACH WAY
EX	EXISTING
EXT	EXTERIOR
FIN	FINISH
FLUOR	FLUORESCENT
FLR	FLOOR
FT	FOOT
GA	GAUGE
GALV	GALVANIZE(D)
GC	GENERAL CONTRACTOR
GRND	GROUND
GWB	GYPSUM WALL BOARD
GYP BD	GYPSUM BOARD
HARD'WD	HARDWOOD
HORIZ	HORIZONTAL
HR	HOUR
HT	HEIGHT
HVAC	HEATING, VENTING AND AIR CONDITIONING
I.D.	INSIDE DIA.
IN	INCH
INFO	INFORMATION
INSUL	INSULATION
INT	INTERIOR
LB(S)	POUND(S)
LNA	ANTENNA AMPLIFIER
MAX	MAXIMUM
MECH	MECHANICAL
MET, MTL	METAL
MFR	MANUFACTURER
MGR	MANAGER
MIN	MINIMUM
MISC	MISCELLANEOUS
N	NORTH
NA	NOT APPLICABLE
NIC	NOT IN CONTRACT
NTS	NOT TO SCALE
OC, o/c	ON CENTER
OD	OUTSIDE DIAMETER
OPG	OPENING
OPP	OPPOSITE
OHP	OVERHEAD POWER
UGP	UNDRGRND POWER
OHT	OVERHEAD TELCO
UGT	UNDRGRND TELCO
PR	PAIR
PROJ	PROJECT
PROP	PROPERTY
P	PROPOSED
PT	PRESSURE TREATED
REQ'D	REQUIRED
RM	ROOM
R.O.	ROUGH OPENING
S	SOUTH
SHT	SHEET
SIM	SIMILAR
SPEC	SPECIFICATION
SQ	SQUARE
SS	STAINLESS STEEL
STL	STEEL
STRUCT	STRUCTURAL
SUSP	SUSPENDED
S.V.	SHEET VINYL
THRU	THROUGH
TNND	TINNED
T.O.C.	TOP OF CONCRETE
T.O.M.	TOP OF MASONRY
TYP	TYPICAL
U.N.O.	UNLESS NOTED OTHERWISE
VERT	VERTICAL
VIF	VERIFY IN FIELD
VT	VINYL TILE
W	WEST
W/	WITH
WIN	WINDOW
W/O	WITHOUT
WP	WATERPROOF
∠	ANGLE
&	AND
℄	CENTER LINE
ℙ	PROPERTY LINE
@	AT
#	NUMBER

SYMBOLS LEGEND

1 REVISION
1 KEY NOTE DETAIL
3 / C-4 REFERENCE ELEVATION
A / C-3 SECTION REFERENCE
ELEVATION DATUM POINT

CHAINLINK FENCE
CEDAR FENCE
PROPANE — LPG
UNDERGROUND POWER — P
OVERHEAD POWER — OHP

TELCO — T
POWER/TELCO — T/P
GAS — G
WATER — W
COAX — COAX
CENTERLINE
EASEMENT
PROPERTY LINE
SUBJECT PROPERTY LINE

Marion County OREGON

PROJECT INFORMATION:

MARION COUNTY
CROOKED FINGER ROW

NW CORNER OF 3283 CROOKED FINGER RD NE
SCOTTS MILLS, OR 97375

	DATE	RELEASE
	04-03-25	SITE SKETCH
	04-21-25	PRELIMINARY CONSTRUCTION DRAWINGS
	08-28-25	REVISED PRELIM. CONSTRUCTION DRAWINGS
	09-03-25	FINAL CONSTRUCTION DRAWINGS

DRAWING INFORMATION:
THIS DRAWING IS COPYRIGHTED AND IS THE SOLE PROPERTY OF THE OWNER. IT IS PRODUCED SOLELY FOR USE BY THE OWNER AND ITS AFFILIATES. REPRODUCTION OR USE OF THIS DRAWING AND/OR THE INFORMATION CONTAINED IN IT IS FORBIDDEN WITHOUT THE WRITTEN PERMISSION OF THE OWNER.

PLANS PREPARED BY:

cushing Civil Engineers

Cushing
Civil Engineers
12725 SW MILLIKAN WAY
SUITE 300
BEAVERTON, OR 97005
(503) 387-5331
www.cushingcivilengineers.com

LICENSURE:

REGISTERED PROFESSIONAL ENGINEER 83233 OREGON JUNE 7, 2012 KENNY McMANAWAY

RENEWAL DATE 12/31/26

SHEET TITLE:

GENERAL NOTES

SHEET NUMBER:

G-1

EROSION CONTROL NOTES:

1. OWNER OR DESIGNATED PERSON SHALL BE RESPONSIBLE FOR PROPER INSTALLATION AND MAINTENANCE OF ALL EROSION AND SEDIMENT CONTROL MEASURES, IN ACCORDANCE WITH LOCAL, STATE, AND FEDERAL REGULATIONS.
2. THE IMPLEMENTATION OF THESE ESC PLANS AND CONSTRUCTION, MAINTENANCE, REPLACEMENT, AND UPGRADING OF THESE ESC FACILITIES IS THE RESPONSIBILITY OF THE CONTRACTOR UNTIL ALL CONSTRUCTION IS COMPLETED AND APPROVED BY THE LOCAL JURISDICTION, AND VEGETATION/LANDSCAPING IS ESTABLISHED. THE DEVELOPER SHALL BE RESPONSIBLE FOR MAINTENANCE AFTER THE PROJECT IS APPROVED UNTIL THE LOTS ARE SOLD.
3. THE BOUNDARIES OF THE CLEARING LIMITS SHOWN ON THIS PLAN SHALL BE CLEARLY MARKED IN THE FIELD PRIOR TO CONSTRUCTION. DURING THE CONSTRUCTION PERIOD, NO DISTURBANCE BEYOND THE CLEARING LIMITS SHALL BE PERMITTED. THE MARKINGS SHALL BE MAINTAINED BY THE APPLICANT/CONTRACTOR FOR THE DURATION OF CONSTRUCTION.
4. THE ESC FACILITIES SHOWN ON THIS PLAN MUST BE CONSTRUCTED IN CONJUNCTION WITH ALL CLEARING AND GRADING ACTIVITIES, AND IN SUCH A MANNER AS TO INSURE THAT SEDIMENT AND SEDIMENT LADEN WATER DOES NOT ENTER THE DRAINAGE SYSTEM, ROADWAYS, OR VIOLATE APPLICABLE WATER STANDARDS.
5. THE ESC FACILITIES SHOWN ON THIS PLAN ARE MINIMUM REQUIREMENTS FOR ANTICIPATED SITE CONDITIONS. DURING CONSTRUCTION PERIODS, THESE ESC FACILITIES SHALL BE UPGRADED AS NEEDED FOR UNEXPECTED STORM EVENTS AND TO ENSURE THAT SEDIMENT AND SEDIMENT LADEN WATER DOES NOT LEAVE THE SITE.
6. THE ESC FACILITIES SHALL BE INSPECTED DAILY BY THE APPLICANT/CONTRACTOR AND MAINTAINED AS NECESSARY TO ENSURE THEIR CONTINUED FUNCTIONING.
7. AT NO TIME SHALL SEDIMENT BE ALLOWED TO ACCUMULATE MORE THAN 1/3 THE BARRIER HEIGHT. ALL CATCH BASINS AND CONVEYANCE LINES SHALL BE CLEANED PRIOR TO PAVING. THE CLEANING OPERATIONS SHALL NOT FLUSH SEDIMENT-LADEN WATER INTO THE DOWNSTREAM SYSTEM.
8. STABILIZED GRAVEL ENTRANCES SHALL BE INSTALLED AT THE BEGINNING OF CONSTRUCTION AND MAINTAINED FOR THE DURATION OF THE PROJECT. ADDITIONAL MEASURES MAY BE REQUIRED TO INSURE THAT ALL PAVED AREAS ARE KEPT CLEAN FOR THE DURATION OF THE PROJECT.
9. STORM DRAIN INLETS, BASINS, AND AREA DRAINS SHALL BE PROTECTED UNTIL PAVEMENT SURFACES ARE COMPLETED AND/OR VEGETATION IS RE-ESTABLISHED.
10. PAVEMENT SURFACES AND VEGETATION ARE TO BE PLACED AS RAPIDLY AS POSSIBLE.
11. SEEDING SHALL BE PERFORMED NO LATER THAN SEPTEMBER 1 FOR EACH PHASE OF CONSTRUCTION.
12. IF THERE ARE EXPOSED SOILS OR SOILS NOT FULLY ESTABLISHED FROM OCTOBER 1ST THROUGH APRIL 30TH, THE WET WEATHER EROSION PREVENTION MEASURES WILL BE IN EFFECT. SEE THE EROSION PREVENTION AND SEDIMENT CONTROL PLANNING AND DESIGN MANUAL (CHAPTER 4) FOR REQUIREMENTS.
13. NO EXPOSED, BARE SOILS SHALL REMAIN UNSTABILIZED FOR MORE THAN TWO DAYS DURING THE PERIOD OCTOBER 1 THROUGH APRIL 30 OR FOR MORE THAN SEVEN DAYS DURING THE PERIOD OF MAY 1 THROUGH SEPTEMBER 30. ALL DISTURBED SOIL SURFACES SHALL BE STABILIZED BY A SUITABLE APPLICATION OF "BEST MANAGEMENT PRACTICES".
14. WHERE FEASIBLE, NO MORE THAN 500 FEET OF TRENCH SHALL BE OPEN AT ONE TIME. EXCAVATED MATERIAL SHALL BE PLACED ON THE UPHILL SIDE OF TRENCHES PROVIDED IT DOES NOT CONFLICT WITH SAFETY REQUIREMENTS.
15. THE DEVELOPER SHALL REMOVE ESC MEASURES WHEN VEGETATION IS FULLY ESTABLISHED.

GENERAL NOTES

SCALE: NTS | 4

UNADJUSTED CUT/ FILL QUANTITIES

STRIPPING ORGANICS FOR COMPOUND;
CUT = ±93 CU. YD.

STRIPPING FOR ACCESS ROAD AND PARKING;
CUT = ±11 CU. YD.

PROPOSED COMPOUND AREA;
CUT = ±20 CU. YD.
FILL = ±7 CU. YD.

PROPOSED ACCESS ROAD AND PARKING;
CUT = ±1 CU. YD.
FILL = ±0 CU. YD.

PROPOSED TOWER FOUNDATION;
EXCAVATION = ±93 CU. YD.

APPROX. TOTAL AREA OF DISTURBANCE OF PROPOSED GRADING = 2,750 SQ. FT.

REFER TO GEO-TECHNICAL ENGINEERING EVALUATION BY BLACK MOUNTAIN DATED APRIL 26, 2025

CUT/ FILL QUANTITIES

SCALE: NTS | 3

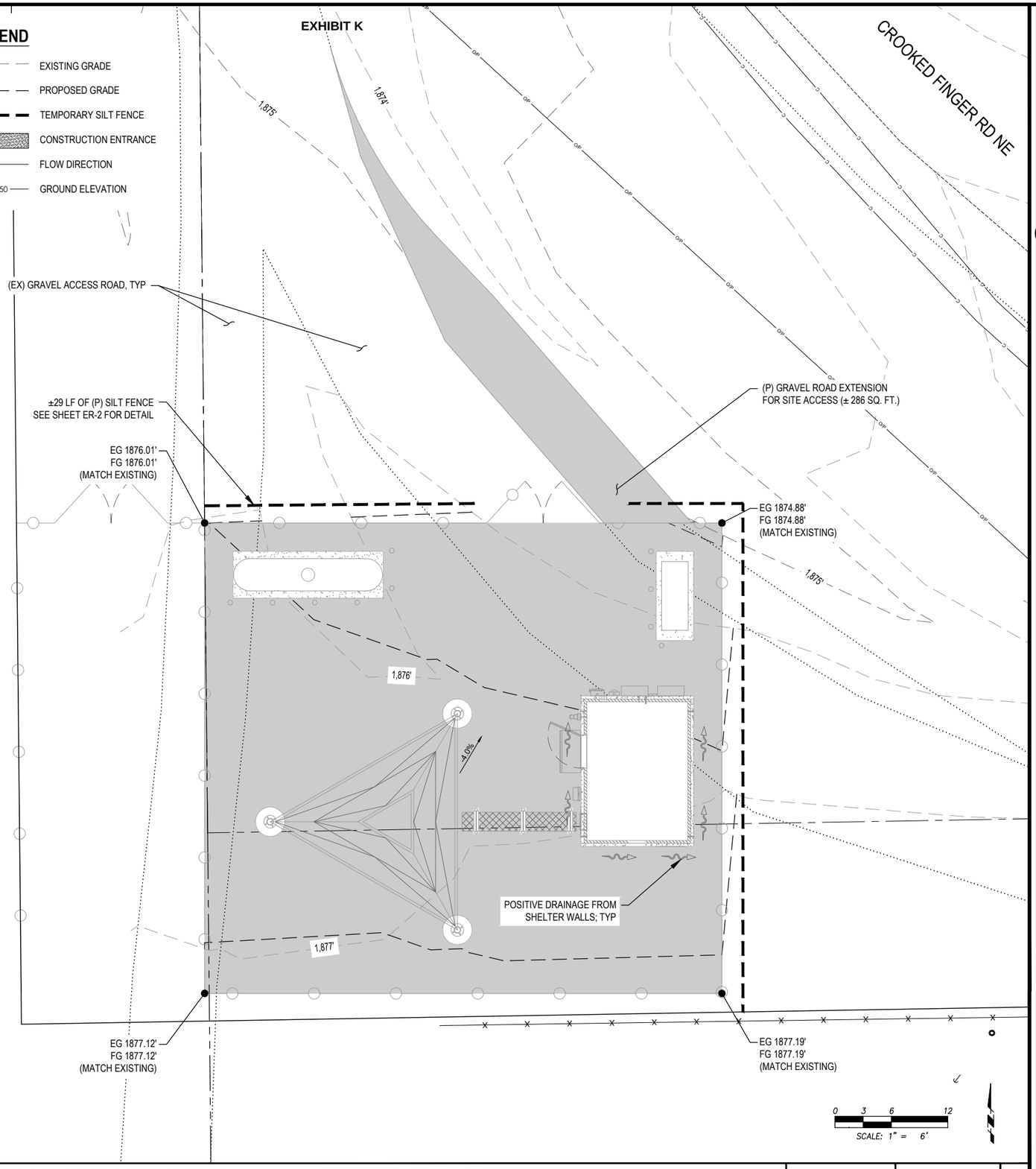
NOT USED

SCALE: NTS | 2

EXHIBIT K

LEGEND

- EXISTING GRADE
- PROPOSED GRADE
- TEMPORARY SILT FENCE
- CONSTRUCTION ENTRANCE
- FLOW DIRECTION
- 250 GROUND ELEVATION



GRADING & EROSION CONTROL PLAN

11X17 SCALE: 1" = 12' | 22X34 SCALE: 1" = 6' | 1

Marion County OREGON

PROJECT INFORMATION:

MARION COUNTY CROOKED FINGER ROW

NW CORNER OF 3283 CROOKED FINGER RD NE
SCOTTS MILLS, OR 97375

	DATE	RELEASE
	04-03-25	SITE SKETCH
	04-21-25	PRELIMINARY CONSTRUCTION DRAWINGS
	08-28-25	REVISED PRELIM. CONSTRUCTION DRAWINGS
	09-03-25	FINAL CONSTRUCTION DRAWINGS

DRAWING INFORMATION:
THIS DRAWING IS COPYRIGHTED AND IS THE SOLE PROPERTY OF THE OWNER. IT IS PRODUCED SOLELY FOR USE BY THE OWNER AND ITS AFFILIATES. REPRODUCTION OR USE OF THIS DRAWING AND/OR THE INFORMATION CONTAINED IN IT IS FORBIDDEN WITHOUT THE WRITTEN PERMISSION OF THE OWNER.

PLANS PREPARED BY:

cushing Civil Engineers

Cushing
Civil Engineers
12725 SW MILLIKAN WAY
SUITE 300
BEAVERTON, OR 97005
(503) 387-5331
www.cushingcivilengineers.com

LICENSURE:

REGISTERED PROFESSIONAL ENGINEER 83233 OREGON JUNE 7, 2012 KENNY McMANAWAY

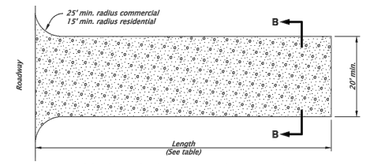
RENEWAL DATE 12/31/26

SHEET TITLE:

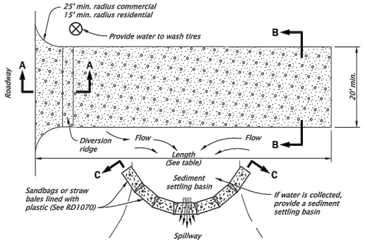
GRADING & EROSION CONTROL PLAN

SHEET NUMBER:

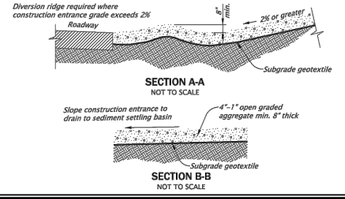
ER-1



CONSTRUCTION ENTRANCE - TYPE 1
NOT TO SCALE

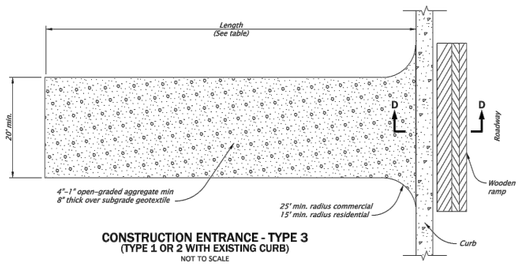


CONSTRUCTION ENTRANCE - TYPE 2
NOT TO SCALE

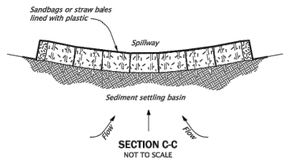


SECTION A-A
NOT TO SCALE

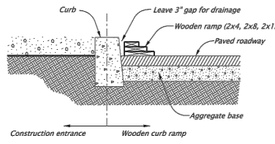
SECTION B-B
NOT TO SCALE



CONSTRUCTION ENTRANCE - TYPE 3
(TYPE 1 OR 2 WITH EXISTING CURB)
NOT TO SCALE



SECTION C-C
NOT TO SCALE



WOODEN CURB RAMP SECTION D-D
NOT TO SCALE

NOTES:
1. The Type 1 entrance is a simple entrance without a diversion ridge or settling basin.
2. The wooden ramp may be used on either Type 1 or Type 2 entrances in situations where there is curb and the curb is not removed for the construction entrance.

CONSTRUCTION ENTRANCE TABLE MINIMUM LENGTH	
Length (FT)	Area Of Exposed Soil (Acre)
20	0.25
50	0.25 < A < 1.0
100	A > 1.0

The selection and use of this Standard Drawing, while designed in accordance with generally accepted engineering principles and practices, is the sole responsibility of the user and should not be used without first consulting a Registered Professional Engineer.

All materials shall be in accordance with the current Oregon Standard Specifications.
OREGON STANDARD DRAWINGS
CONSTRUCTION ENTRANCES
2021

DATE	REVISION DESCRIPTION
01-2021	REMOVED CALC BOOK NUMBERS

CALC BOOK NO. N/A | SDR DATE 20-JAN-2021 | **RD1000**

GRAVEL CONSTRUCTION ENTRANCE

SCALE: NTS | 1

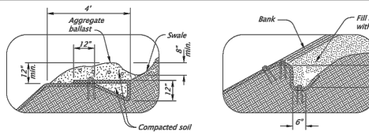


FIGURE A1:
TOP OF BANK ANCHOR TRENCH, H>3' AND TERMINAL SLOPE
NOT TO SCALE

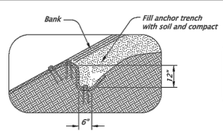


FIGURE A2:
TOP OF BANK ANCHOR TRENCH, H<3'
NOT TO SCALE

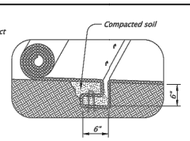


FIGURE A3:
CHANNEL CHECK SLOT
NOT TO SCALE

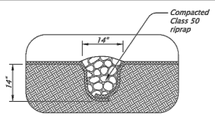


FIGURE A4:
CHANNEL CHECK SLOT WITH ROCK BACKFILL
NOT TO SCALE

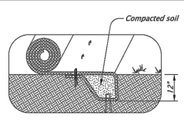
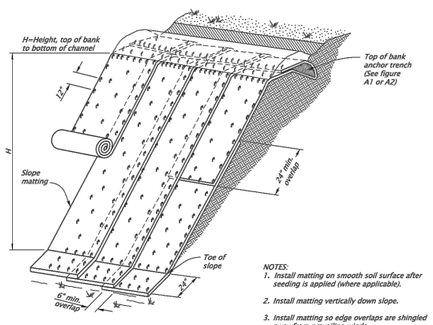
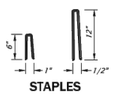


FIGURE A5:
INITIAL CHANNEL ANCHOR TRENCH
NOT TO SCALE

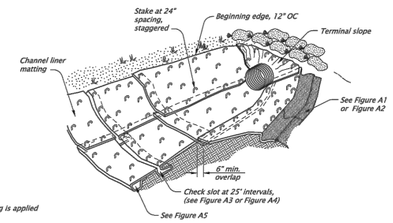


SLOPE MATTING ISOMETRIC VIEW
NOT TO SCALE

NOTES:
1. Install matting on smooth soil surface after seeding is applied (where applicable).
2. Install matting vertically down slope.
3. Install matting so edge overlaps are shingled away from prevailing winds.
4. Place fastener at 12" OC on matting edges
5. Overlap upper mat over lower mat, and fasten.
6. Stagger alternate rows of fasteners placed at 24" OC
7. Extend mat 24" beyond toe of slope; fold mat back under 4" and fasten.
8. Matting Types A through E: Furnish fully biodegradable product. Matting with plastic or photodegradable components will not be accepted.



STAPLES
NOT TO SCALE



CHANNEL MATTING ISOMETRIC VIEW
NOT TO SCALE

NOTES:
1. Install matting on smooth soil surface after seeding is applied (where applicable).
2. Install channel liner matting, in the direction of water flow. Anchor upstream end of mat with check slot for culvert outfalls, place mat under pipe 12" minimum upstream from pipe outlet.
3. Construct check slots across channel bottom at 25' spacing and at the end of each mat (Fig. A3 or A4).
4. Overlap side channel liner matting edges 6" over the center channel liner matting and fasten edges 12" OC. Continue overlap and stapling pattern for each additional side channel liner mat.
5. Lap upstream matting end 12" over beginning edge of downstream matting. Fasten 12" OC
6. Anchor top edge of side channel matting in trench and fasten 12" OC (Fig. A2).
7. Fasten matting interior at 24" OC with staggered spacing.
8. Construct initial anchor trench at downstream end of matting and terminal slope anchor at upstream end.
9. Matting Types A through E: Furnish fully biodegradable product. Matting with plastic or photodegradable components will not be accepted.

The selection and use of this Standard Drawing, while designed in accordance with generally accepted engineering principles and practices, is the sole responsibility of the user and should not be used without first consulting a Registered Professional Engineer.

All materials shall be in accordance with the current Oregon Standard Specifications.
OREGON STANDARD DRAWINGS
SLOPE AND CHANNEL MATTING
2021

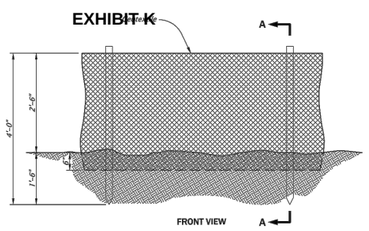
DATE	REVISION DESCRIPTION
01-2021	REMOVED CALC BOOK NUMBERS

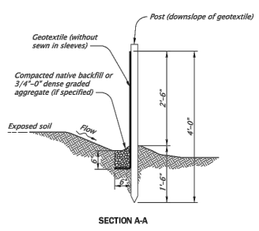
CALC BOOK NO. N/A | SDR DATE 20-JAN-2021 | **RD1055**

PLASTIC SHEETING

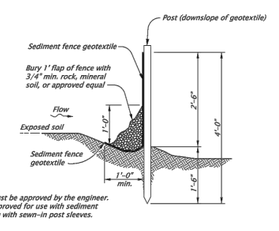
SCALE: NTS | 3

EXHIBIT K



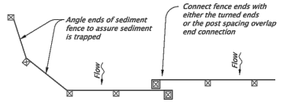


SEDIMENT FENCE AND GEOTEXTILE BURY DETAIL - TYPE 1
NOT TO SCALE



NOTES:
1. Use must be approved by the engineer.
2. Not approved for use with sediment fencing with sewn-in post sleeves.

ALTERNATE SEDIMENT FENCE WITHOUT TRENCHING - TYPE 2
NOT TO SCALE



PLAN VIEW

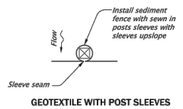


TERMINATION AT CORNER OR PROPERTY LINE

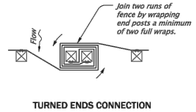
GENERAL NOTES:
1. Use 2"x2" wood fence posts.
2. Posts to be installed on downhill side of sediment fence geotextile. Position posts to prevent separation from geotextile.
3. Compact filter fabric trench backfill and soil on uphill side of fence.
4. Locate fence no closer than three feet to the toe of a slope.
5. Wing spacing shall comply with "Fence Spacing for General Application Table".

FENCE SPACING FOR GENERAL APPLICATION TABLE	
INSTALL PARALLEL ALONG CONTOURS AS FOLLOWS	
GRADE	MAXIMUM SPACING ON GRADE
Grade < 10%	300'
10% ≤ Grade < 15%	150'
15% ≤ Grade < 20%	100'
20% ≤ Grade < 30%	50'
30% ≤ Grade	25'

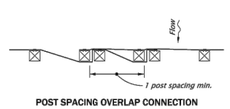
POST SPACING TABLE	
6'	Sediment Fence with Geotextile elongation less than 50%
4'	Sediment Fence with Geotextile elongation 50% or more



GEOTEXTILE WITH POST SLEEVES



TURNED ENDS CONNECTION



POST SPACING OVERLAP CONNECTION

GEOTEXTILE END CONNECTIONS
NOT TO SCALE

The selection and use of this Standard Drawing, while designed in accordance with generally accepted engineering principles and practices, is the sole responsibility of the user and should not be used without first consulting a Registered Professional Engineer.

All materials shall be in accordance with the current Oregon Standard Specifications.
OREGON STANDARD DRAWINGS
SEDIMENT FENCE
2021

DATE	REVISION DESCRIPTION
01-2021	REMOVED CALC BOOK NUMBERS

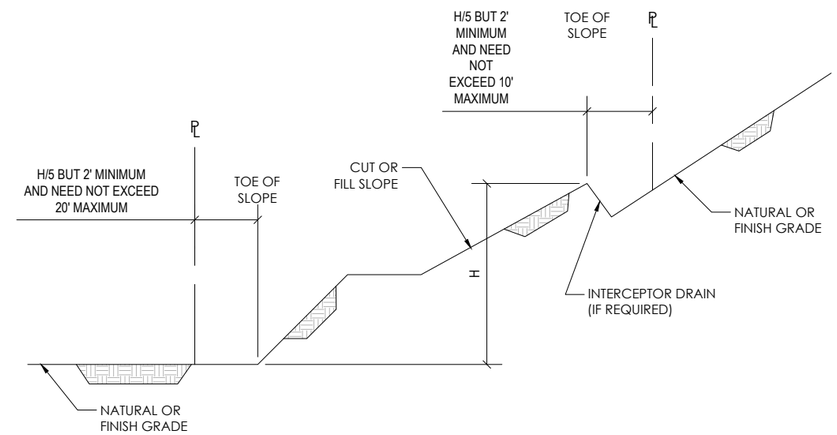
CALC BOOK NO. N/A | SDR DATE 20-JAN-2021 | **RD1040**

TEMPORARY SEDIMENT FENCE

SCALE: NTS | 2

SEDIMENT FENCE NOTES:

1. THE FILTER FABRIC FENCE SHALL BE INSTALLED TO FOLLOW THE CONTOURS WHERE FEASIBLE. THE FENCE POSTS SHALL BE SPACED A MAXIMUM OF 6' APART AND DRIVEN SECURELY INTO THE GROUND A MINIMUM OF 24".
2. THE FILTER FABRIC SHALL BE PURCHASED IN A CONTINUOUS ROLL CUT TO THE LENGTH OF THE BARRIER TO AVOID USE OF JOINTS. WHEN JOINTS ARE NECESSARY, FILTER CLOTH SHALL BE SPLICED TOGETHER ONLY AT A SUPPORT POST, WITH A MINIMUM 6" OVERLAP, AND BOTH ENDS SECURELY FASTENED TO THE POST, OR OVERLAP 2" X 2" POSTS AND ATTACH AS SHOWN ON DETAIL SHEET 4-3A OF THE EROSION CONTROL MANUAL.
3. THE FILTER FABRIC SHALL HAVE A MINIMUM VERTICAL BURIAL OF 6". ALL EXCAVATED MATERIAL FROM FILTER FABRIC INSTALLATION SHALL BE BACKFILLED AND COMPACTED ALONG THE ENTIRE DISTURBED AREA.
4. STANDARD OR HEAVY-DUTY FILTER FABRIC FENCES SHALL HAVE MANUFACTURED STITCHED LOOPS FOR 2" X 2" POST INSTALLATION. STITCHED LOOPS SHALL BE INSTALLED ON THE UP HILLSIDE OF THE SLOPED AREA.
5. FILTER FABRIC FENCES SHALL BE REMOVED WHEN THEY HAVE SERVED THEIR USEFUL PURPOSE, BUT NOT BEFORE THE UPSLOPE AREA HAS BEEN PERMANENTLY PROTECTED AND STABILIZED.
6. FILTER FABRIC FENCES SHALL BE INSPECTED BY APPLICANT/CONTRACTOR IMMEDIATELY AFTER EACH RAINFALL AND AT LEAST DAILY DURING PROLONGED RAINFALL. ANY REQUIRED REPAIRS SHALL BE MADE IMMEDIATELY.



SETBACKS AND DRAINAGE DIMENSIONS

SCALE: NTS | 4

Marion County
OREGON

PROJECT INFORMATION:

MARION COUNTY
CROOKED FINGER ROW

NW CORNER OF 3283 CROOKED FINGER RD NE
SCOTTS MILLS, OR 97375

	DATE	RELEASE
	04-03-25	SITE SKETCH
	04-21-25	PRELIMINARY CONSTRUCTION DRAWINGS
	08-28-25	REVISED PRELIM. CONSTRUCTION DRAWINGS
	09-03-25	FINAL CONSTRUCTION DRAWINGS

DRAWING INFORMATION:
THIS DRAWING IS COPYRIGHTED AND IS THE SOLE PROPERTY OF THE OWNER. IT IS PRODUCED SOLELY FOR USE BY THE OWNER AND ITS AFFILIATES. REPRODUCTION OR USE OF THIS DRAWING AND/OR THE INFORMATION CONTAINED IN IT IS FORBIDDEN WITHOUT THE WRITTEN PERMISSION OF THE OWNER.

PLANS PREPARED BY:

cushing
Civil Engineers

Cushing
Civil Engineers
12725 SW MILLIKAN WAY
SUITE 300
BEAVERTON, OR 97005
(503) 387-5331
www.cushingcivilengineers.com

LICENSURE:

REGISTERED PROFESSIONAL ENGINEER
83233
OREGON
JUNE 7, 2012
KENNY McMANAWAY

RENEWAL DATE 12/31/26

SHEET TITLE:

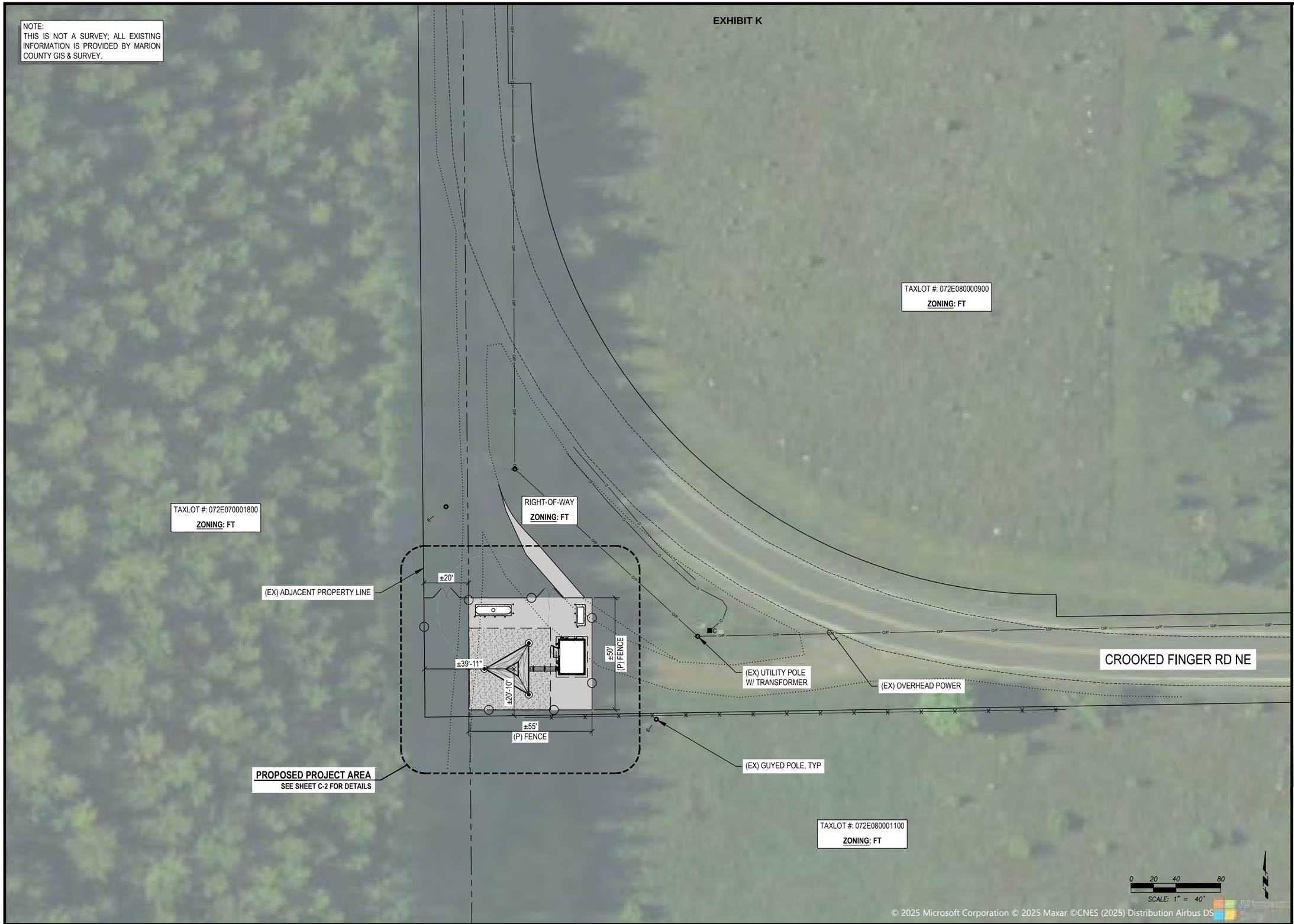
GRADING & EROSION CONTROL DETAILS

SHEET NUMBER:

ER-2

NOTE:
THIS IS NOT A SURVEY; ALL EXISTING INFORMATION IS PROVIDED BY MARION COUNTY GIS & SURVEY.

EXHIBIT K



Marion County
OREGON

PROJECT INFORMATION:

MARION COUNTY
CROOKED FINGER ROW

NW CORNER OF 3283 CROOKED FINGER RD NE
SCOTTS MILLS, OR 97375

	DATE	RELEASE
	04-03-25	SITE SKETCH
	04-21-25	PRELIMINARY CONSTRUCTION DRAWINGS
	08-28-25	REVISED PRELIM. CONSTRUCTION DRAWINGS
	09-03-25	FINAL CONSTRUCTION DRAWINGS

DRAWING INFORMATION:
THIS DRAWING IS COPYRIGHTED AND IS THE SOLE PROPERTY OF THE OWNER. IT IS PRODUCED SOLELY FOR USE BY THE OWNER AND ITS AFFILIATES. REPRODUCTION OR USE OF THIS DRAWING AND/OR THE INFORMATION CONTAINED IN IT IS FORBIDDEN WITHOUT THE WRITTEN PERMISSION OF THE OWNER.

PLANS PREPARED BY:

cushing
Civil Engineers

Cushing
Civil Engineers
12725 SW MILLIKAN WAY
SUITE 300
BEAVERTON, OR 97005
(503) 387-5331
www.cushingcivilengineers.com

LICENSURE:

REGISTERED PROFESSIONAL ENGINEER
83233
OREGON
JUNE 7, 2012
KENNY McMANAWAY

RENEWAL DATE 12/31/26

SHEET TITLE:

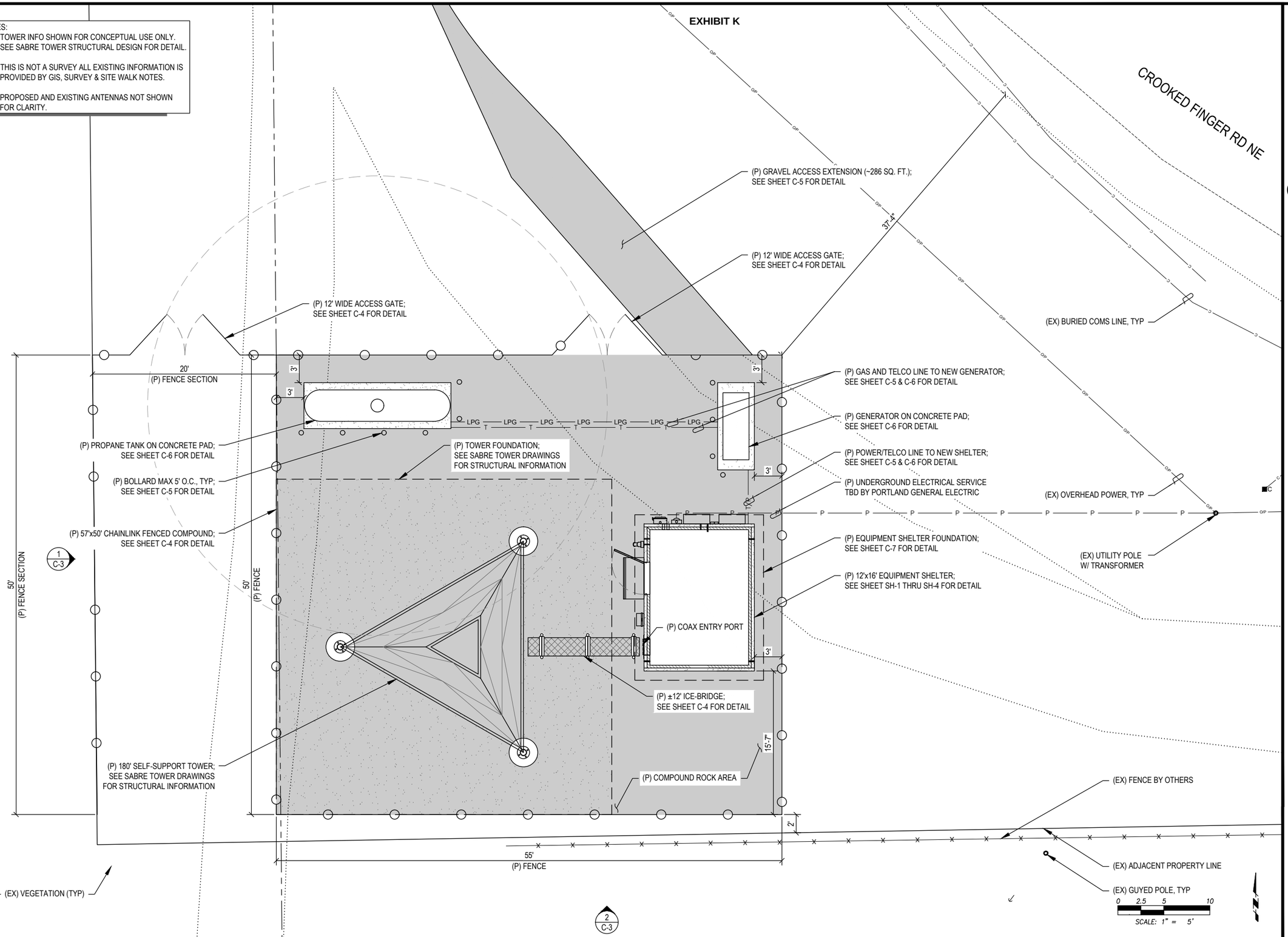
OVERALL SITE PLAN

SHEET NUMBER:

C-1

EXHIBIT K

NOTES:
1. TOWER INFO SHOWN FOR CONCEPTUAL USE ONLY. SEE SABRE TOWER STRUCTURAL DESIGN FOR DETAIL.
2. THIS IS NOT A SURVEY ALL EXISTING INFORMATION IS PROVIDED BY GIS, SURVEY & SITE WALK NOTES.
3. PROPOSED AND EXISTING ANTENNAS NOT SHOWN FOR CLARITY.



ENLARGED SITE PLAN

11X17 SCALE: 1" = 10'	22X34 SCALE: 1" = 5'	1

Marion County OREGON

PROJECT INFORMATION:

MARION COUNTY CROOKED FINGER ROW

NW CORNER OF 3283 CROOKED FINGER RD NE
SCOTTS MILLS, OR 97375

	DATE	RELEASE
	04-03-25	SITE SKETCH
	04-21-25	PRELIMINARY CONSTRUCTION DRAWINGS
	08-28-25	REVISED PRELIM. CONSTRUCTION DRAWINGS
	09-03-25	FINAL CONSTRUCTION DRAWINGS

DRAWING INFORMATION:
THIS DRAWING IS COPYRIGHTED AND IS THE SOLE PROPERTY OF THE OWNER. IT IS PRODUCED SOLELY FOR USE BY THE OWNER AND ITS AFFILIATES. REPRODUCTION OR USE OF THIS DRAWING AND/OR THE INFORMATION CONTAINED IN IT IS FORBIDDEN WITHOUT THE WRITTEN PERMISSION OF THE OWNER.

PLANS PREPARED BY:

cushing Civil Engineers

Cushing Civil Engineers
12725 SW MILLIKAN WAY
SUITE 300
BEAVERTON, OR 97005
(503) 387-5331
www.cushingcivilengineers.com

LICENSURE:

REGISTERED PROFESSIONAL ENGINEER
83233
OREGON
JUNE 7, 2012
KENNY McMANAWAY

RENEWAL DATE 12/31/26

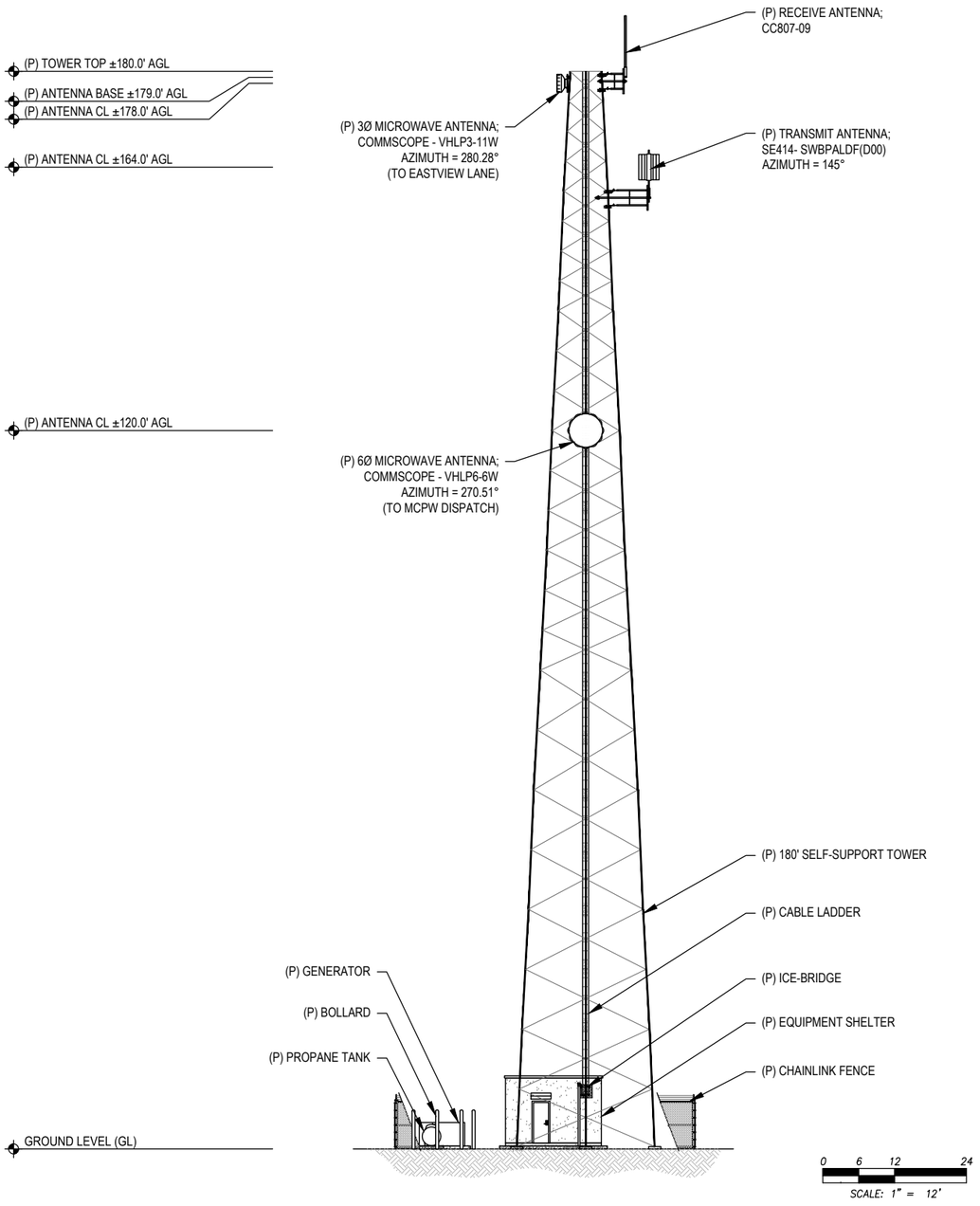
SHEET TITLE:

ENLARGED SITE PLAN

SHEET NUMBER:

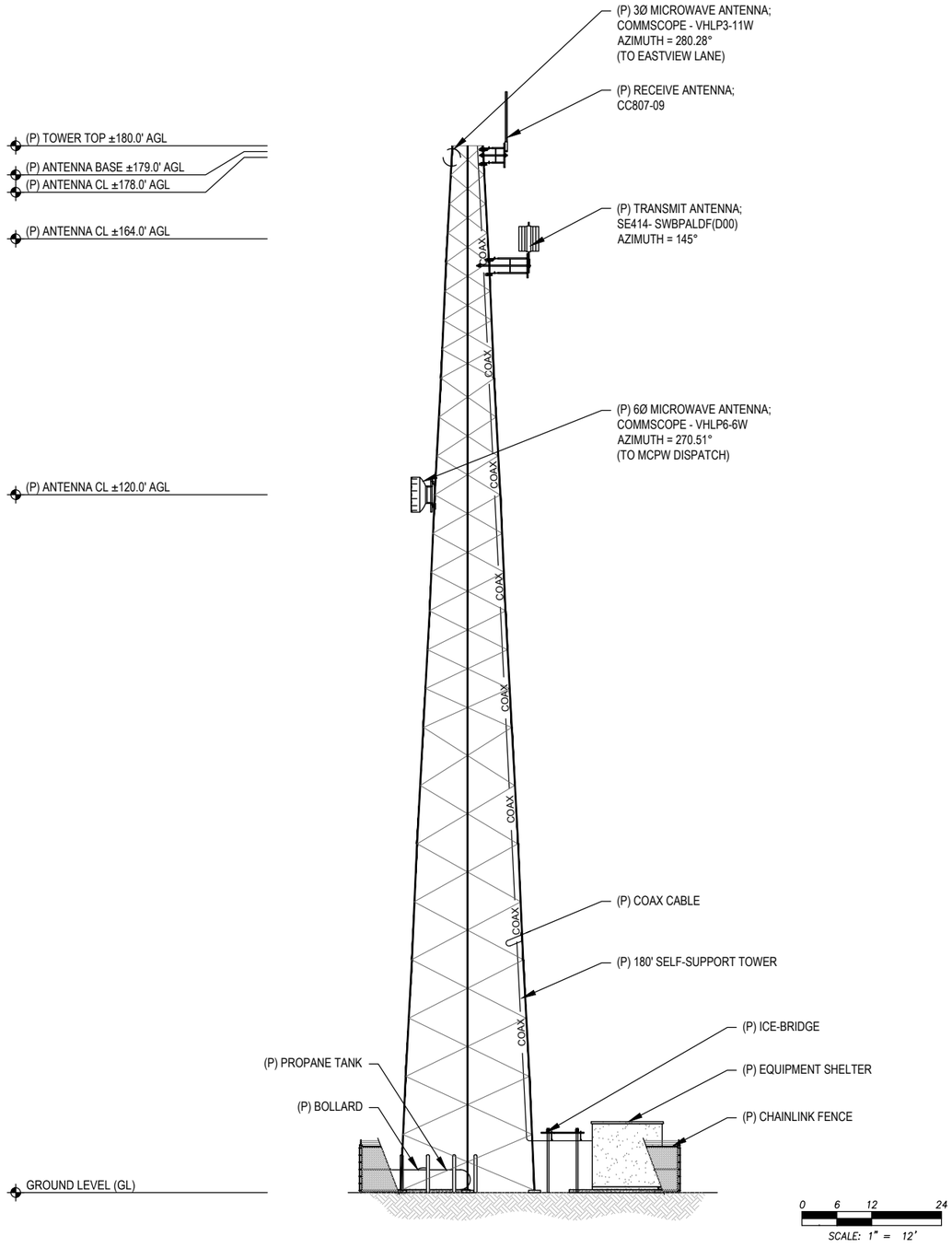
C-2

EXHIBIT K



PROPOSED WEST ELEVATION | 11X17 SCALE: 1" = 24' | 22X34 SCALE: 1" = 12' | 1

NOTES:
1. TOWER INFO SHOWN FOR CONCEPTUAL USE ONLY. SEE SABRE TOWER STRUCTURAL REPORT FOR DETAIL.
2. TOWER SHALL BE PAINTED WITH A DULL, NON-REFLECTIVE GRAY COLOR.
3. LOADING INFORMATION PROVIDED BY TAIT COMMUNICATIONS.



PROPOSED SOUTH ELEVATION | 11X17 SCALE: 1" = 24' | 22X34 SCALE: 1" = 12' | 2

Marion County OREGON

PROJECT INFORMATION:

MARION COUNTY CROOKED FINGER ROW

NW CORNER OF 3283 CROOKED FINGER RD NE
SCOTTS MILLS, OR 97375

	DATE	RELEASE
	04-03-25	SITE SKETCH
	04-21-25	PRELIMINARY CONSTRUCTION DRAWINGS
	08-28-25	REVISED PRELIM. CONSTRUCTION DRAWINGS
	09-03-25	FINAL CONSTRUCTION DRAWINGS

DRAWING INFORMATION:

THIS DRAWING IS COPYRIGHTED AND IS THE SOLE PROPERTY OF THE OWNER. IT IS PRODUCED SOLELY FOR USE BY THE OWNER AND ITS AFFILIATES. REPRODUCTION OR USE OF THIS DRAWING AND/OR THE INFORMATION CONTAINED IN IT IS FORBIDDEN WITHOUT THE WRITTEN PERMISSION OF THE OWNER.

PLANS PREPARED BY:

cushing Civil Engineers

Cushing Civil Engineers

12725 SW MILLIKAN WAY
SUITE 300
BEAVERTON, OR 97005
(503) 387-5331
www.cushingcivilengineers.com

LICENSURE:

REGISTERED PROFESSIONAL ENGINEER
83233
OREGON
JUNE 7, 2012
KENNY McMANAWAY

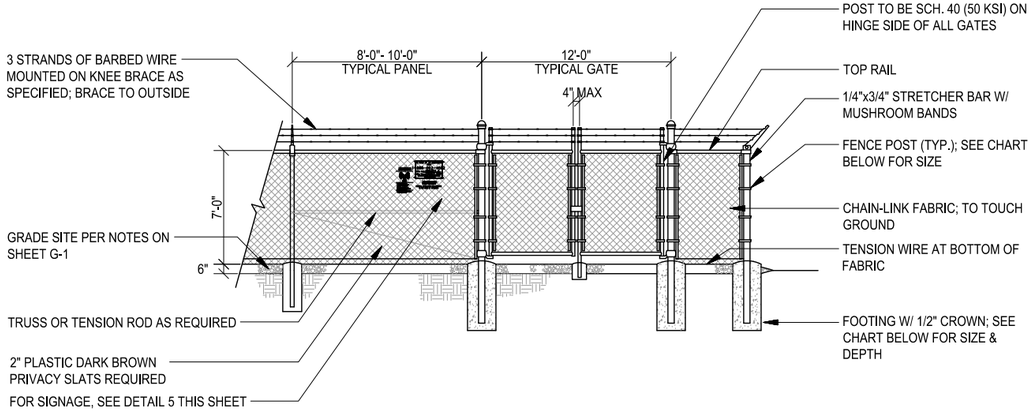
RENEWAL DATE 12/31/26

SHEET TITLE:

ELEVATIONS

SHEET NUMBER:

C-3



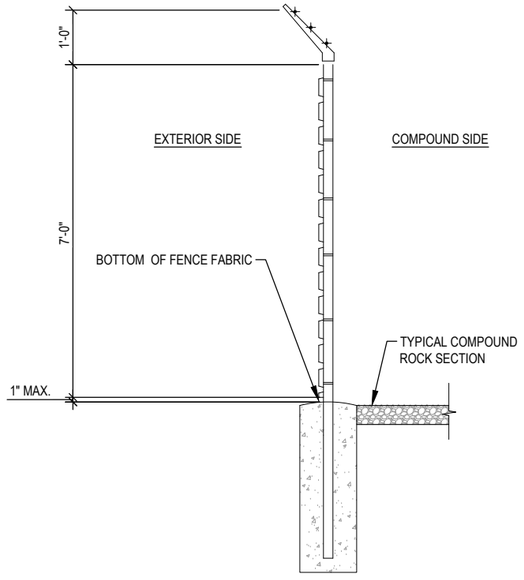
FENCE & GATE NOTES:

1. GATE FRAME-1-7/8" OD, TOP & BRACE RAIL-1-5/8" OD, SCH. 40 (50 KSI) ASTM-F1083.
2. FABRIC: 9 GA. CORE WIRE SIZE 2" MESH FABRIC; FABRIC TO TOUCH GRAVEL BASE.
3. TIE WIRE: MINIMUM 11 GA. GALVANIZED STEEL.
4. BARBED WIRE: 12" (3) STRAND.
5. GATE LATCH: SEE DETAIL 3 THIS SHEET; VERIFY WITH PROPERTY OWNER.

8' HIGH GATE/FENCE			
POST TYPE	POST DIAMETER	FOOTING SIZE	NOTES:
LINE POST	3.5"Ø	12"Øx33"	1. ALL POSTS: SCH. 40 (50 KSI) ASTM-F1083
CORNER POST	4"Ø	16"Øx48"	2. ALL FENCING TO BE ENGINEERED BY FENCING MANUFACTURER & APPROVED BY PROJ. MGR. FENCE MANUFACTURER IS TO VERIFY ADEQUACY OF TABULATED POST & FOOTING SIZES
GATE POST	4"Ø	16"Øx48"	

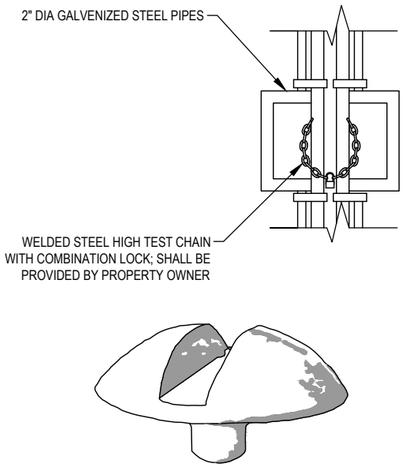
TYPICAL FENCE ELEVATION

SCALE: NTS | 1



TYPICAL FENCE SECTION

SCALE: NTS | 2



CONCRETE MUSHROOM GATE STOP INSTALLED ABOVE THE FINAL GRAVELED GRADE (INSTALL PER MANUFACTURER'S INSTRUCTIONS)

GATE LOCK & CENTER STOP

SCALE: NTS | 3

FENCING NOTES:

EXHIBIT K

1. GATE POST, CORNER, END, OR PULL POST 4" NOMNIAL (4" O.D.) SCHEDULE 40 (50 KSI) PIPE, FOR GATE WIDTHS UP TO 6 FEET OR 12 FEET FOR DOUBLE SWING GATE PER ASTM-F1083.
2. LINE POST: 2-3/8" O.D. 3.65 LBS/LIN FT. ASTM-F1083.
3. TOP RAIL AND BRACE RAIL: 1-1/2" (1.9" O.D.) PIPE 2.72 LBS/LIN FT PER ASTM-F1083. INSTALL BRACE AT ALL CORNER LOCATIONS AND ADJACENT TO GATES.
4. GATE FRAME: 1-1/2" (1.9 O.D.) 2.72 LBS/LIN FT. ASTM-F1083.
5. FABRIC SHALL BE TWO-INCH CHAINLINK MESH NO. 9 GAUGE (0.148") WIRE. THE FABRIC SHALL HAVE A KNUCKLED FINISH FOR THE TOP SELVAGES. FABRIC SHALL CONFORM TO ASTM A-392 CLASS 1.
6. TIE WIRE: MINIMUM 11Ga. GALVANIZED STEEL. PROVIDE A SINGLE WRAP OF FABRIC, TIE AT POSTS, RAILS, AND AT TENSION WIRE BY HOG RINGS. MAXIMUM SPACING 24" O.C.
7. TENSION WIRE: MINIMUM 7 Ga. GALVANIZED STEEL.
8. U.N.O. BARBED WIRE: DOUBLE STRAND 12 Ga. 1/2" O.D. TWISTED WIRE TO MATCH W/ FABRIC, 14 Ga. 4PT. BARBS SPACED ON APPROX. 5" CENTERS.
9. U.N.O. BARBED WIRE GATE GUARDS SHALL BE FITTED WITH DOME CAPS.
10. U.N.O. BARBED WIRE SUPPORT ARMS SHALL BE PRESSED STEEL COMPLETE WITH SET BOLT AND LOCK WIRE IN THE ARM.
11. PROVIDE TWO 6 FOOT WIDE OUT SWINGING GATES, (UNLESS NOTED OTHERWISE). NO PERSONNEL GATES ARE REQUIRED (UNLESS AS DIRECTED BY THE PROPERTY OWNER). GATES SHALL BE ABLE TO LOCK.
12. U.N.O. GATE POSTS SHALL BE EXTENDED 12 INCHES, INCLUDING DOME CAP, TO PROVIDE FOR ATTACHMENT OF BARBED WIRE.
13. GATE FRAMES SHALL HAVE A FULL-HEIGHT VERTICAL BRACE, AND A FULL-WIDTH HORIZONTAL BRACE, SECURED IN PLACE BY USE OF GATE BRACE CLAMPS.
14. GATE HINGES SHALL BE MERCHANTS METAL MODEL 64386 HINGE ADAPTOR WITH MODEL 6409, 180-DEGREE ATTACHMENT OR APPROVED EQUAL.
15. GATE LATCH: 1-3/8" O.D. PLUNGER ROD W/ MUSHROOM TYPE CATCH.
16. A 6" X 1/2" DIAMETER EYEBOLT TO HOLD TENSION WIRE SHALL BE PLACED AT LINE POSTS.
17. STRETCHER BARS SHALL BE 3/16" OR HAVE EQUIVALENT CROSS-SECTIONAL AREA.
18. U.N.O. ALL POSTS EXCEPT GATE POSTS SHALL HAVE A COMBINATION CAP AND BARBED WIRE SUPPORTING ARM.
19. ALL CAPS SHALL BE MALLEABLE IRON, DOME OR ACORN SHAPED AS REQUIRED BY PIPE SIZE.
20. OTHER HARDWARE MAY INCLUDE BUT NOT BE LIMITED TO TIE CLIPS, BAND CLIPS AND TENSION BAND CLIPS.
21. U.N.O. WHERE THE USE OF CONCERTINA HAS BEEN SPECIFIED, 24" DIAMETER COIL. BARBED TAPE, STAINLESS STEEL, CYCLONE FENCE MODEL G8P TO TYPE III SHALL BE FURNISHED. IT SHALL BE SUPPORTED ABOVE THE TOP RAIL BY USE OF SIX (6) BARBED WIRE ARMS POSITIONED ATOP EACH LINE/CORNER POST.
22. U.N.O. ALL CHAINLINK FENCING COMPONENTS MUST BE HOT DIPPED GALVANIZED.
23. WHEN IN USE, PRIVACY SLATS TO BE A NEUTRAL COLOR.

GENERAL FENCE NOTES

SCALE: NTS | 4



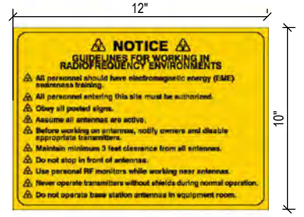
SIGN NOTES:

1. SIGN MATERIAL: 18GA ALUMINUM
2. LETTERING COLOR = BLACK
3. BACKGROUND COLOR = WHITE / RED



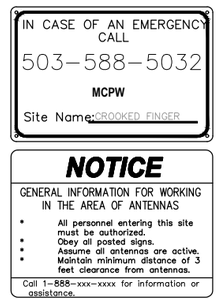
SIGN NOTES:

1. SIGN MATERIAL: 18GA ALUMINUM
2. LETTERING COLOR = BLACK / WHITE
3. BACKGROUND COLOR = WHITE / BLUE



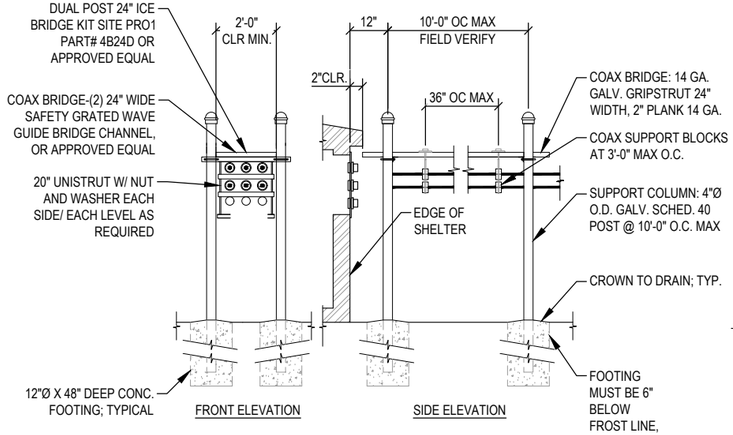
SIGN NOTES:

1. SIGN MATERIAL: 18GA ALUMINUM
2. LETTERING COLOR = BLACK
3. BACKGROUND COLOR = YELLOW

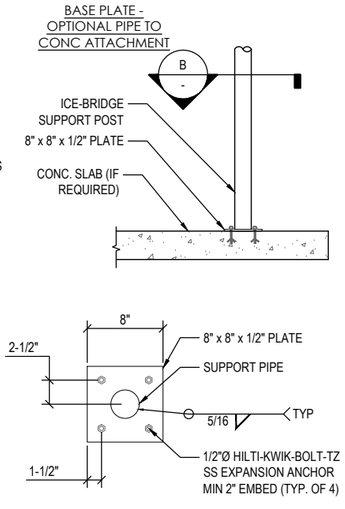


SIGN DETAILS

SCALE: NTS | 5



NOTE: GROUND COAX BRIDGE PER THE REQUIREMENTS OF THE NEC STANDARDS - SEE DETAIL 1/E-2



SECTION B

ICE BRIDGE DETAIL

SCALE: NTS | 6

Marion County OREGON

PROJECT INFORMATION:

MARION COUNTY CROOKED FINGER ROW

NW CORNER OF 3283 CROOKED FINGER RD NE
SCOTTS MILLS, OR 97375

	DATE	RELEASE
	04-03-25	SITE SKETCH
	04-21-25	PRELIMINARY CONSTRUCTION DRAWINGS
	08-28-25	REVISED PRELIM. CONSTRUCTION DRAWINGS
	09-03-25	FINAL CONSTRUCTION DRAWINGS

DRAWING INFORMATION:

THIS DRAWING IS COPYRIGHTED AND IS THE SOLE PROPERTY OF THE OWNER. IT IS PRODUCED SOLELY FOR USE BY THE OWNER AND ITS AFFILIATES. REPRODUCTION OR USE OF THIS DRAWING AND/OR THE INFORMATION CONTAINED IN IT IS FORBIDDEN WITHOUT THE WRITTEN PERMISSION OF THE OWNER.

PLANS PREPARED BY:

cushing Civil Engineers

Cushing Civil Engineers

12725 SW MILLIKAN WAY
SUITE 300
BEAVERTON, OR 97005
(503) 387-5331
www.cushingcivilengineers.com

LICENSURE:

REGISTERED PROFESSIONAL ENGINEER 83233 OREGON JUNE 7, 2012 KENNY McMANAWAY

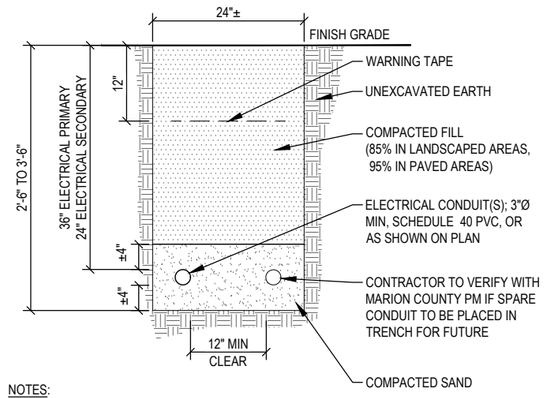
RENEWAL DATE 12/31/26

SHEET TITLE:

COMPOUND DETAILS I

SHEET NUMBER:

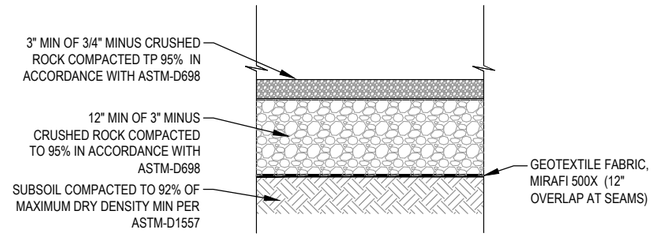
C-4



NOTES:
1. EXCAVATE TO REQUIRED DEPTH.
2. VERIFY ALL TRENCHING REQUIREMENTS PER LOCAL UTILITIES.
3. CONTRACTOR TO PROVIDE (1) 300 POUND NYLON PULL CORD AND CONDUCTORS AS REQUIRED PER CONDUIT.

POWER LINE TRENCH — SCALE: NTS — 1

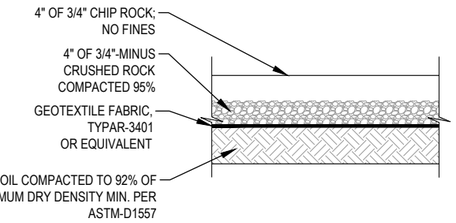
EXHIBIT K



NOTES:

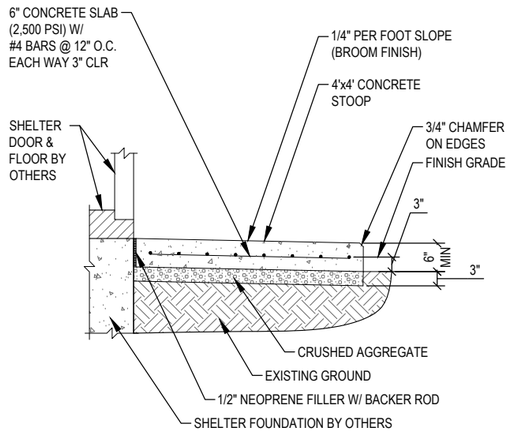
1. CONTRACTOR SHALL STRIP SUPERFICIAL, SOFT, WET, ORGANIC OR DELETERIOUS SOILS TO EXPOSE FIRM AND UNYIELDING SOIL (BETWEEN 6" & 12"). IF STRIPPING IS REQUIRED DEEPER THAN 12", CONTRACTOR SHALL CONTACT THE SITE CONSTRUCTION MANGER TO DETERMINE THE APPROPRIATE STRIPPING DEPTH AT THE TIME OF CONSTRUCTION.
2. MATERIAL AND INSTALLATION SHALL CONFORM TO CURRENT ODOT/APWA STANDARD SPECIFICATIONS AND MANUFACTURERS RECOMMENDATIONS.

GRAVEL ROAD SECTION DETAIL — SCALE: NTS — 2

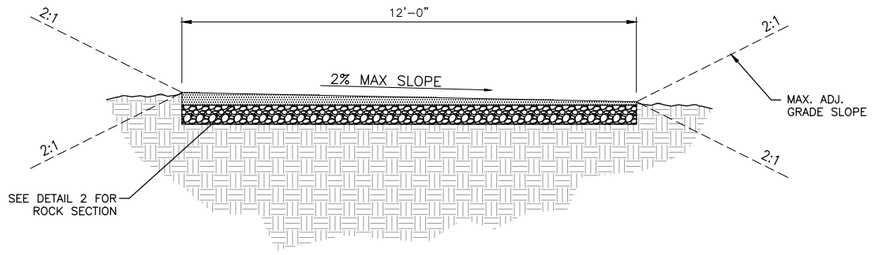


NOTE: STRIP ALL ORGANICS

COMPOUND ROCK SECTION DETAIL — SCALE: NTS — 3



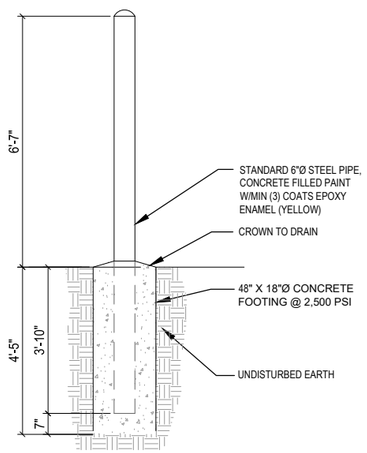
STOOP SECTION DETAIL — SCALE: NTS — 4



TYPICAL

NOTE:
CONTRACTOR SHALL STRIP SUPERFICIAL, SOFT, WET, ORGANIC OR DELETERIOUS SOILS TO EXPOSE FIRM AND UNYIELDING SOIL (MIN. 6"). IF STRIPPING IS REQUIRED DEEPER THAN 6", CONTRACTOR SHALL CONTACT THE SITE CONSTRUCTION MANAGER TO DETERMINE THE APPROPRIATE STRIPPING DEPTH AT THE TIME OF CONSTRUCTION.

ACCESS ROAD SECTION DETAIL — SCALE: NTS — 5



BOLLARD DETAIL — SCALE: NTS — 6

Marion County OREGON

PROJECT INFORMATION:

MARION COUNTY CROOKED FINGER ROW

NW CORNER OF 3283 CROOKED FINGER RD NE
SCOTTS MILLS, OR 97375

	DATE	RELEASE
	04-03-25	SITE SKETCH
	04-21-25	PRELIMINARY CONSTRUCTION DRAWINGS
	08-28-25	REVISED PRELIM. CONSTRUCTION DRAWINGS
	09-03-25	FINAL CONSTRUCTION DRAWINGS

DRAWING INFORMATION:
THIS DRAWING IS COPYRIGHTED AND IS THE SOLE PROPERTY OF THE OWNER. IT IS PRODUCED SOLELY FOR USE BY THE OWNER AND ITS AFFILIATES. REPRODUCTION OR USE OF THIS DRAWING AND/OR THE INFORMATION CONTAINED IN IT IS FORBIDDEN WITHOUT THE WRITTEN PERMISSION OF THE OWNER.

PLANS PREPARED BY:

cushing Civil Engineers

Cushing
Civil Engineers
12725 SW MILLIKAN WAY
SUITE 300
BEAVERTON, OR 97005
(503) 387-5331
www.cushingcivilengineers.com

LICENSURE:

REGISTERED PROFESSIONAL ENGINEER
83233
OREGON
JUNE 7, 2012
KENNY McMANAWAY

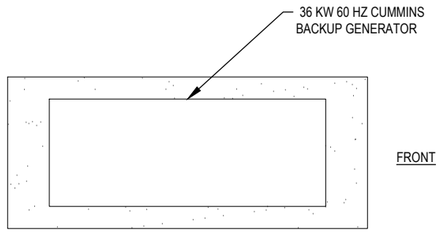
RENEWAL DATE 12/31/26

SHEET TITLE:

COMPOUND DETAILS II

SHEET NUMBER:

C-5

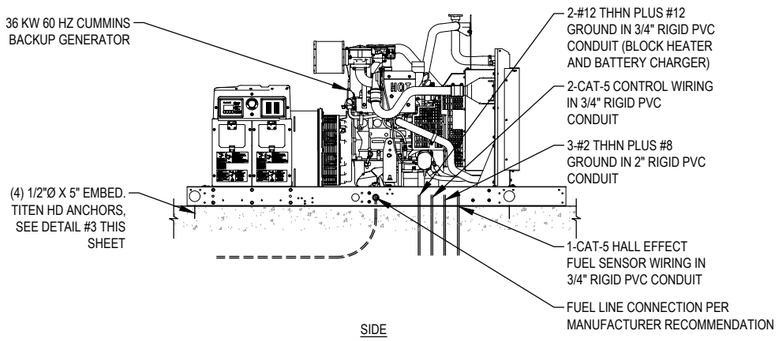


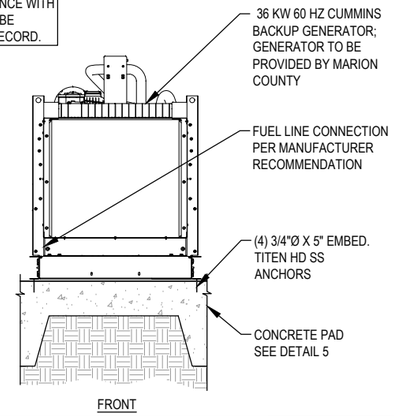
NOTE: SEE GENERATOR SPEC SHEET FOR DIMENSIONS AND WEIGHTS

GENERATOR PLAN

SCALE: NTS | 1

NOTE: DOCUMENTATION FOR THE GENERATOR IS TO BE PROVIDED BY THE SUPPLIER CERTIFYING THAT ALL HAZARDOUS CONTENTS WILL REMAIN CONTAINED FOLLOWING THE DESIGN EARTHQUAKE FOR THIS SITE. CERTIFICATION OF CONTAINMENT IS TO BE PROVIDED BY 1) ANALYSIS, 2) APPROVED SHAKE TABLE TESTING IN ACCORDANCE WITH SECTION 13.2.5 OF ASCE 7, OR 3) EXPERIENCE DATA IN ACCORDANCE WITH ASCE 7 SECTION 13.2.6. EVIDENCE DEMONSTRATING COMPLIANCE OF THIS REQUIREMENT SHALL BE SUBMITTED TO THE LOCAL JURISDICTION AFTER REVIEW AND APPROVAL BY THE ENGINEER OF RECORD.





GENERATOR ELEVATION

SCALE: NTS | 2

NOT USED

SCALE: NTS | 3

1. CONTRACTOR TO VERIFY AND CONFIRM ALL DIMENSIONS AND CONDITIONS AND NOTIFY ENGINEER OF RECORD OF ANY DISCREPANCIES PRIOR TO START OF WORK.
2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR STRUCTURAL STABILITY DURING CONSTRUCTION. THE STRUCTURE SHOWN ON THE DRAWINGS HAS BEEN DESIGNED FOR STABILITY UNDER THE FINAL CONFIGURATION ONLY.
3. CODE: 2018 INTERNATIONAL BUILDING CODE (IBC).
4. THE FOOTINGS HAVE BEEN DESIGNED FOR AN ALLOWABLE SOIL BEARING PRESSURE OF 1,500 PSF.
5. CONCRETE: FOOTINGS, F'C = 3,000 PSI MINIMUM COMPRESSIVE STRENGTH AT 28 DAYS.
6. REINFORCING STEEL: FY = 60,000 PSI
7. STRUCTURAL AND MISCELLANEOUS STEEL SHALL BE IN ACCORDANCE WITH AISC SPECIFICATION FOR THE DESIGN, FABRICATION AND ERECTION OF STRUCTURAL STEEL FOR BUILDINGS AND SHALL BE ASTM A-36 U.O.N. ALL BOLTS HOLES SHALL BE PUNCHED OR DRILLED; BURNING OF HOLES SHALL NOT BE PERMITTED. ALL STRUCTURAL STEEL SHALL HAVE ONE SHOP COAT OF PAINT.
   ALL MATERIALS SHALL CONFORM TO THE FOLLOWING STANDARDS:

PIPE:	A53 GR. B (MIN. FY = 35 KSI)
SHAPES:	ASTM A36/ ASTM A572 GR. 50
WIDE FLANGE:	ASTM A992
TUBES:	A500 GR. B, FY = 46 KSI
PLATES:	A36
WELDS:	E70XX ELECTRODES
STRUCTURAL BOLTS:	ASTM A325N
NON-STRUCTURAL BOLTS:	SAE J429 GR. 5 / F1554-36
U-BOLTS:	ASTM A36
THREADED ROD:	ASTM A307

SPECIAL INSPECTION BY OWNERS TESTING AGENCY
SPECIAL INSPECTIONS AND TESTING SHALL BE PERFORMED BY AN APPROVED AGENCY IN ACCORDANCE WITH INTERNATIONAL BUILDING CODE (IBC) CHAPTER 17 SECTIONS 1703 AND SECTIONS 1704, AND WITH THE STATEMENT OF SPECIAL INSPECTIONS AS REQUIRED BY IBC SECTIONS 1704.2.3 AND 1705 FOR BUILIDNG STRUCTURAL ELEMENTS SUMMARIZED AS FOLLOWS:

1. STRUCTURAL STEEL CONSTRUCTION PER IBC SECTIONS 1705.3 AND TABLE 1705.3 INCLUDING MATERIAL IDENTIFICATION, AND SHOP WELDING.

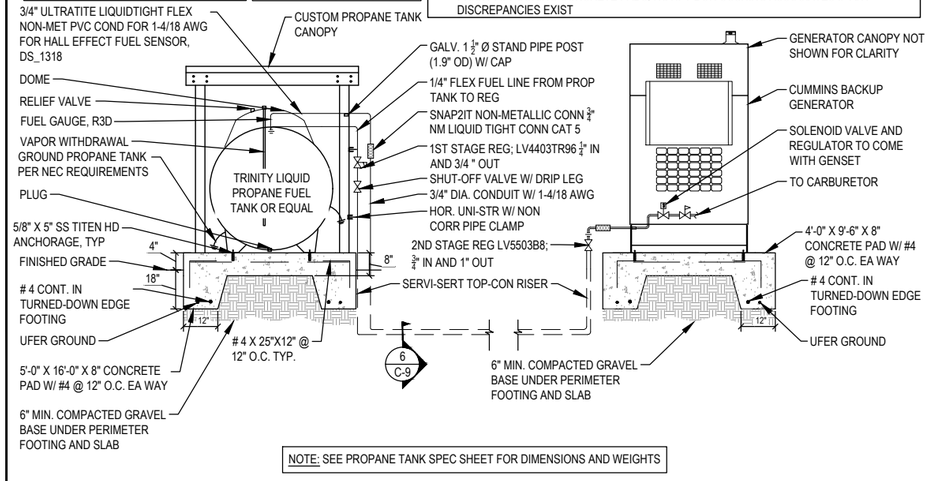
GENERAL NOTES

SCALE: NTS | 4

NOTES:
1. PROPANE TANK REGISTERED WITH NATIONAL BOARD AND COMPLIES AND INSTALLED PER NFPA 58 CODE
2. PROPANE TANK INSTALLED AT LEAST 10 FT FROM EXTERNAL SOURCE OF IGNITION

LEGEND
- SHUT-OFF VALVE
- UNION
- PRESSURE REGULATOR
- SOLENOID VALVE
- FLEXIBLE CONNECTION

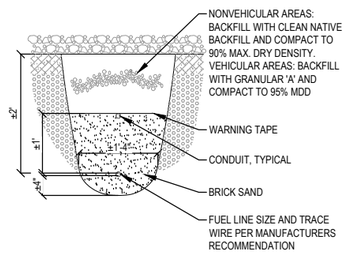
NOTES:
1. GROUND SYSTEM SHOULD COMPLY WITH INDUSTRY STANDARDS
2. CONFIRM CONNECTIONS PROVIDED WITH FUEL TANK
3. USE GASEOUS LP VAPOR WITHDRAWAL SYSTEM
4. TO CODE OFFICIAL, PAD IS FOR EQUIPMENT ONLY (NO BUILDINGS)
5. CONTRACTOR IS TO VERIFY THAT ALL PROPOSED ANCHORS WILL PROVIDE ADEQUATE FIT PRIOR TO POURING CONCRETE PADS, NOTIFY DON CUSHING ASSOCIATES IF ANY DISCREPANCIES EXIST



NOTE: SEE PROPANE TANK SPEC SHEET FOR DIMENSIONS AND WEIGHTS

GENERATOR FUEL SYSTEM ELEVATION

SCALE: NTS | 5



TRENCH SECTION

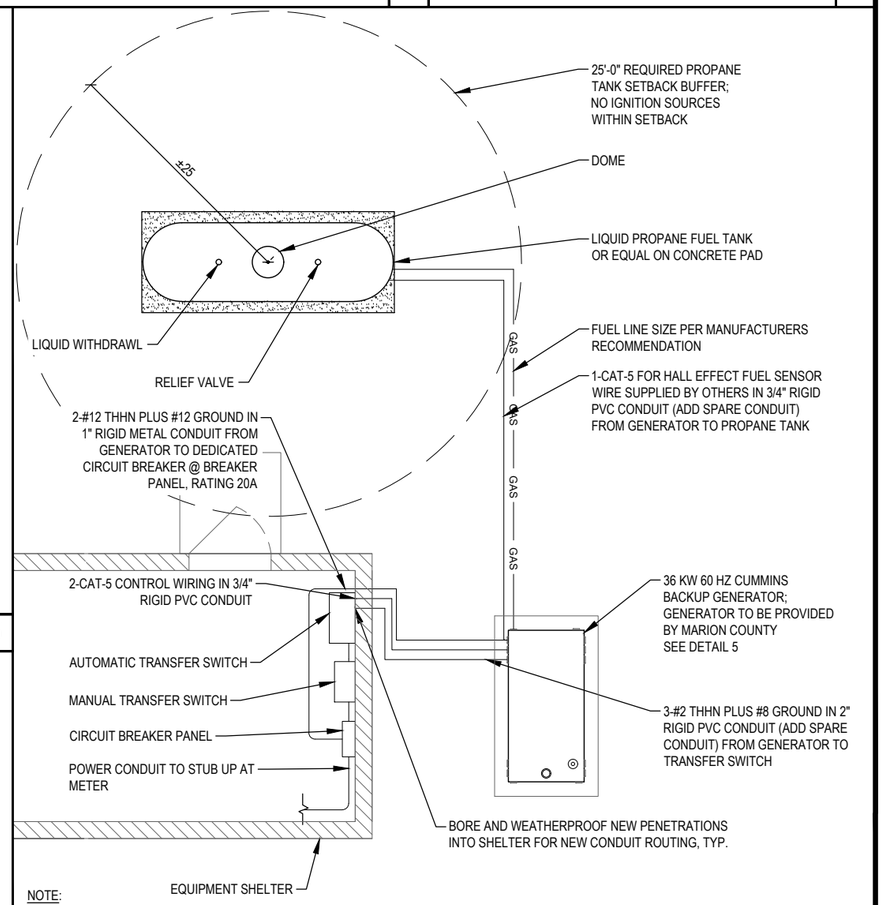
SCALE: NTS | 6

NOT USED

SCALE: NTS | 7

NOT USED

SCALE: NTS | 8



NOTE:

ALL CONDUIT INSIDE THE BUILDING MUST BE METAL AND BE GROUNDED PER R-56 STANDARDS.

INTERIOR SHELTER LAYOUT IS FOR REFERENCE ONLY.

THIS GENERATOR & PROPANE LAYOUT IS FOR INFORMATION ONLY AND IS PRESENTED AS A GUIDELINE. VERIFY SITE CONDITIONS AND LAYOUT PRIOR TO INSTALLATION OF ALL EQUIPMENT. INSTALL ALL EQUIPMENT PER MANUFACTURER'S INSTRUCTIONS.

TYPICAL GENERATOR LAYOUT

SCALE: NTS | 9

Marion County
OREGON

PROJECT INFORMATION:

MARION COUNTY
CROOKED FINGER ROW

NW CORNER OF 3283 CROOKED
FINGER RD NE
SCOTTS MILLS, OR 97375

	DATE	RELEASE
	04-03-25	SITE SKETCH
	04-21-25	PRELIMINARY CONSTRUCTION DRAWINGS
	08-28-25	REVISED PRELIM. CONSTRUCTION DRAWINGS
	09-03-25	FINAL CONSTRUCTION DRAWINGS

DRAWING INFORMATION:
THIS DRAWING IS COPYRIGHTED AND IS THE SOLE PROPERTY OF THE OWNER. IT IS PRODUCED SOLELY FOR USE BY THE OWNER AND ITS AFFILIATES. REPRODUCTION OR USE OF THIS DRAWING AND/OR THE INFORMATION CONTAINED IN IT IS FORBIDDEN WITHOUT THE WRITTEN PERMISSION OF THE OWNER.

PLANS PREPARED BY:

cushing
Civil Engineers

Cushing
Civil Engineers
12725 SW MILLIKAN WAY
SUITE 300
BEAVERTON, OR 97005
(503) 387-5331
www.cushingcivilengineers.com

LICENSURE:

REGISTERED PROFESSIONAL ENGINEER
83233
OREGON
JUNE 7, 2012
KENNY McMANAWAY

RENEWAL DATE 12/31/26

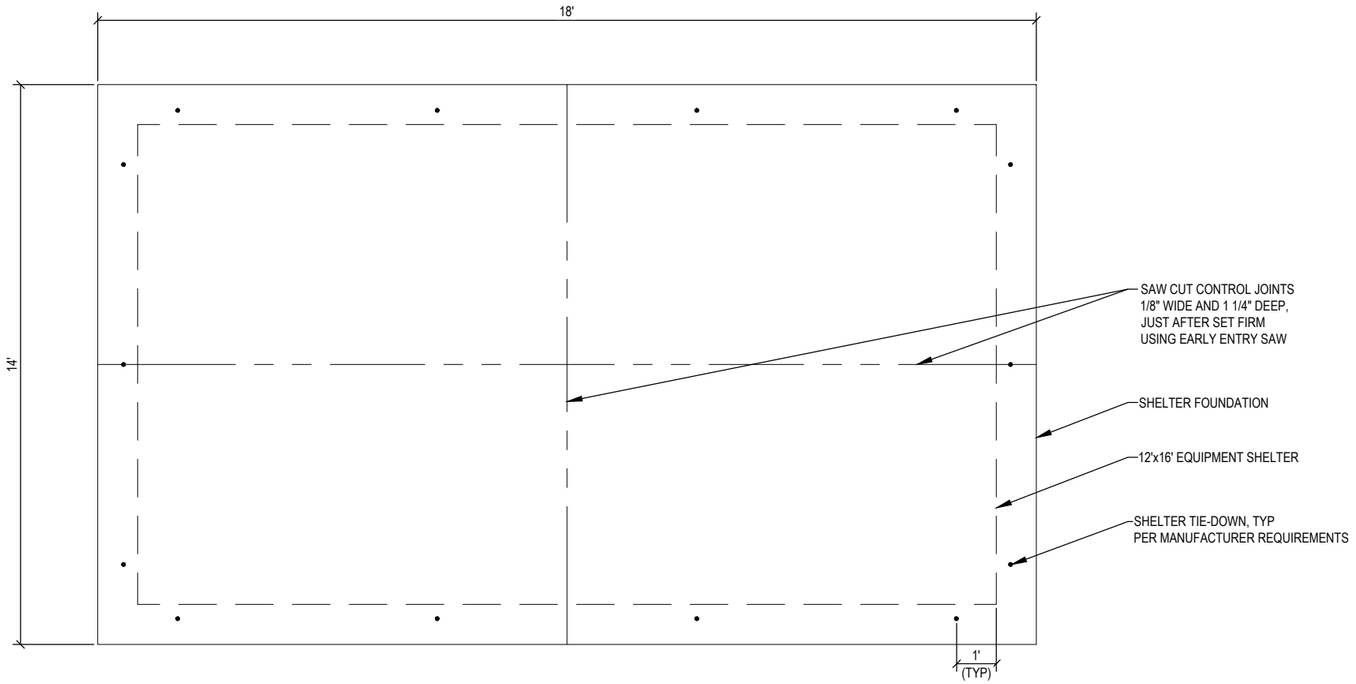
SHEET TITLE:

GENERATOR & PROPANE TANK DETAILS

SHEET NUMBER:

C-6

EXHIBIT K

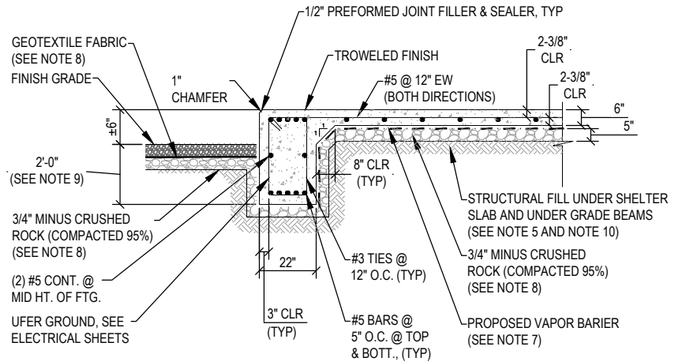


NOTES:

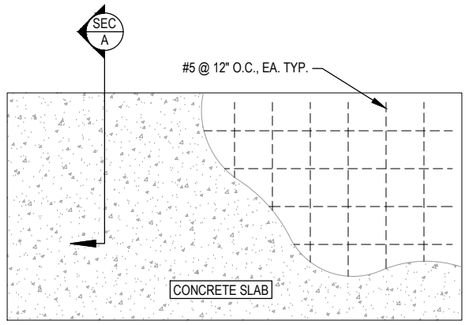
1. ULTIMATE COMPRESSIVE STRENGTH OF CONCRETE AT 28 DAYS SHALL BE 3000 PSI, UNLESS OTHERWISE SPECIFIED.
2. REINFORCING BARS SHALL BE DEFORMED BARS CONFORMING TO ASTM A615 "DEFORMED AND PLAIN BILLET STEEL BARS FOR CONCRETE REINFORCEMENT," LATEST EDITION, GRADE 60.
3. LAP LENGTH FOR SPLICES SHALL NOT BE LESS THAN CLASS B SPLICE, UNLESS OTHERWISE SPECIFIED. WELDING OF REINFORCEMENT WILL NOT BE PERMITTED.
4. CONTRACTOR MAY USE EARTH FORMS FOR UNEXPOSED CONCRETE WHERE SOIL IS FIRM AND STABLE. EARTH FORMS SHALL BE TRENCHED NEATLY AND ACCURATELY. SIDES OF FOUNDATIONS, WHERE EARTH SLOUGHS, SHALL BE FORMED. EARTH FORMS SHALL BE TAMPED FIRM, AND CLEANED OF ALL DEBRIS AND LOOSE MATERIAL, BEFORE DEPOSITING CONCRETE.
5. STRUCTURAL FILL USED FOR SITE GRADING SHALL BE FREE FROM TOP SOIL, ORGANIC CONTAMINATED SOIL, AND ROCK FRAGMENTS HAVING A MAXIMUM DIMENSION GREATER THAN 3 INCHES. MATERIAL SHALL BE CLEAN AND SHALL BE SUBJECT TO THE FOLLOWING RESTRICTIONS.

   SILT CLAYS OR SANDY CLAY
   PLASTICITY INDEX 10 TO 24
   LIQUID LIMIT <45

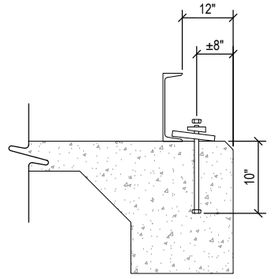
   CLAYEY SANDS OR SLIGHTLY CLAYEY SILTY SANDS
   PLASTICITY INDEX 3 TO 15
   LIQUID LIMIT <35
6. MINIMUM CONCRETE COVER FOR REINFORCEMENT SHALL BE 3 INCHES FOR CONCRETE CAST AGAINST AND PERMANENTLY EXPOSED EARTH AND 1-1/2 INCHES FOR TOP BARS ON SIDEWALK AND SHELTER FOUNDATIONS.
7. VAPOR BARRIER SHALL BE VAPORBLOCK 10, OR APPROVED EQUAL.
8. CRUSHED ROCK AND GEOTEXTILE FABRIC IN THE COMPOUND AREA SHALL MEET THE REQUIREMENTS OF DETAIL 3 ON DWG C-5 AND ALL APPLICABLE GRADING NOTES.
9. IN INSTANCES WHERE ROCK IS ENCOUNTERED AT LESS THAN 2'-0", CONCRETE MAY BEAR ON THE ROCK.
10. PAINT SHEAR PLATES WITH COLD GALV.



SECTION A



FOUNDATION PLAN



STANDARD TIEDOWN DETAIL

NOTES:

1. TIEDOWN HARDWARE:
   - 1.1. CLAMP PLATE, 3/8"x3"x4" GALV. STEEL
   - 1.2. 1/2" BEVEL WASHER
   - 1.3. ANCHOR BOLT- 1/2-10x12" HEX HEAD
   - 1.4. 1/2"-10 HEAVY HEX NUT BY OTHERS.

Marion County
OREGON

PROJECT INFORMATION:

MARION COUNTY CROOKED FINGER ROW

NW CORNER OF 3283 CROOKED FINGER RD NE
SCOTTS MILLS, OR 97375

	DATE	RELEASE
	04-03-25	SITE SKETCH
	04-21-25	PRELIMINARY CONSTRUCTION DRAWINGS
	08-28-25	REVISED PRELIM. CONSTRUCTION DRAWINGS
	09-03-25	FINAL CONSTRUCTION DRAWINGS

DRAWING INFORMATION:

THIS DRAWING IS COPYRIGHTED AND IS THE SOLE PROPERTY OF THE OWNER. IT IS PRODUCED SOLELY FOR USE BY THE OWNER AND ITS AFFILIATES. REPRODUCTION OR USE OF THIS DRAWING AND/OR THE INFORMATION CONTAINED IN IT IS FORBIDDEN WITHOUT THE WRITTEN PERMISSION OF THE OWNER.

PLANS PREPARED BY:

cushing
Civil Engineers

Cushing
Civil Engineers

12725 SW MILLIKAN WAY
SUITE 300
BEAVERTON, OR 97005
(503) 387-5331
www.cushingcivilengineers.com

LICENSURE:

REGISTERED PROFESSIONAL ENGINEER
83233
OREGON
JUNE 7, 2012
KENNY McMANAWAY

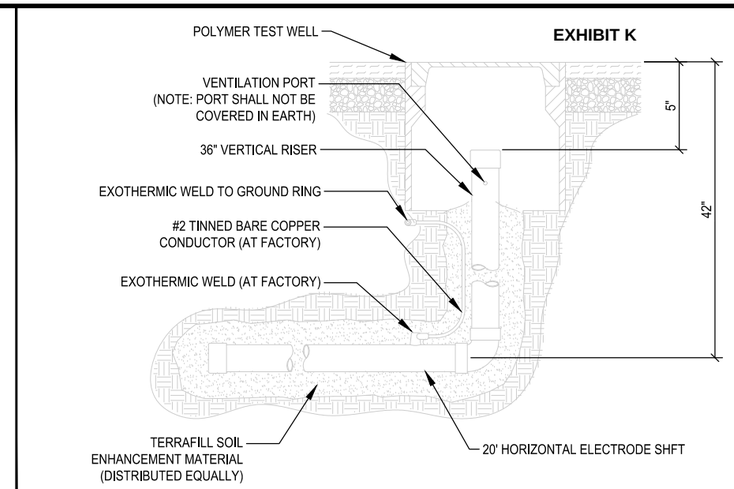
RENEWAL DATE 12/31/26

SHEET TITLE:

EQUIPMENT SHELTER FOUNDATION PLAN

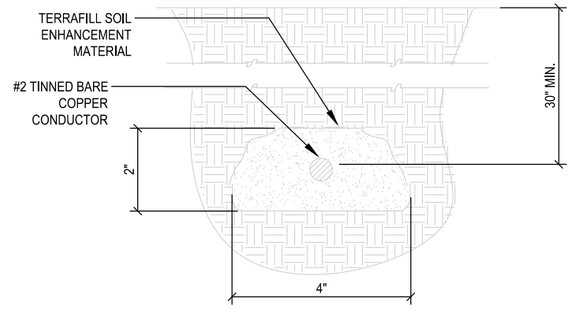
SHEET NUMBER:

C-7



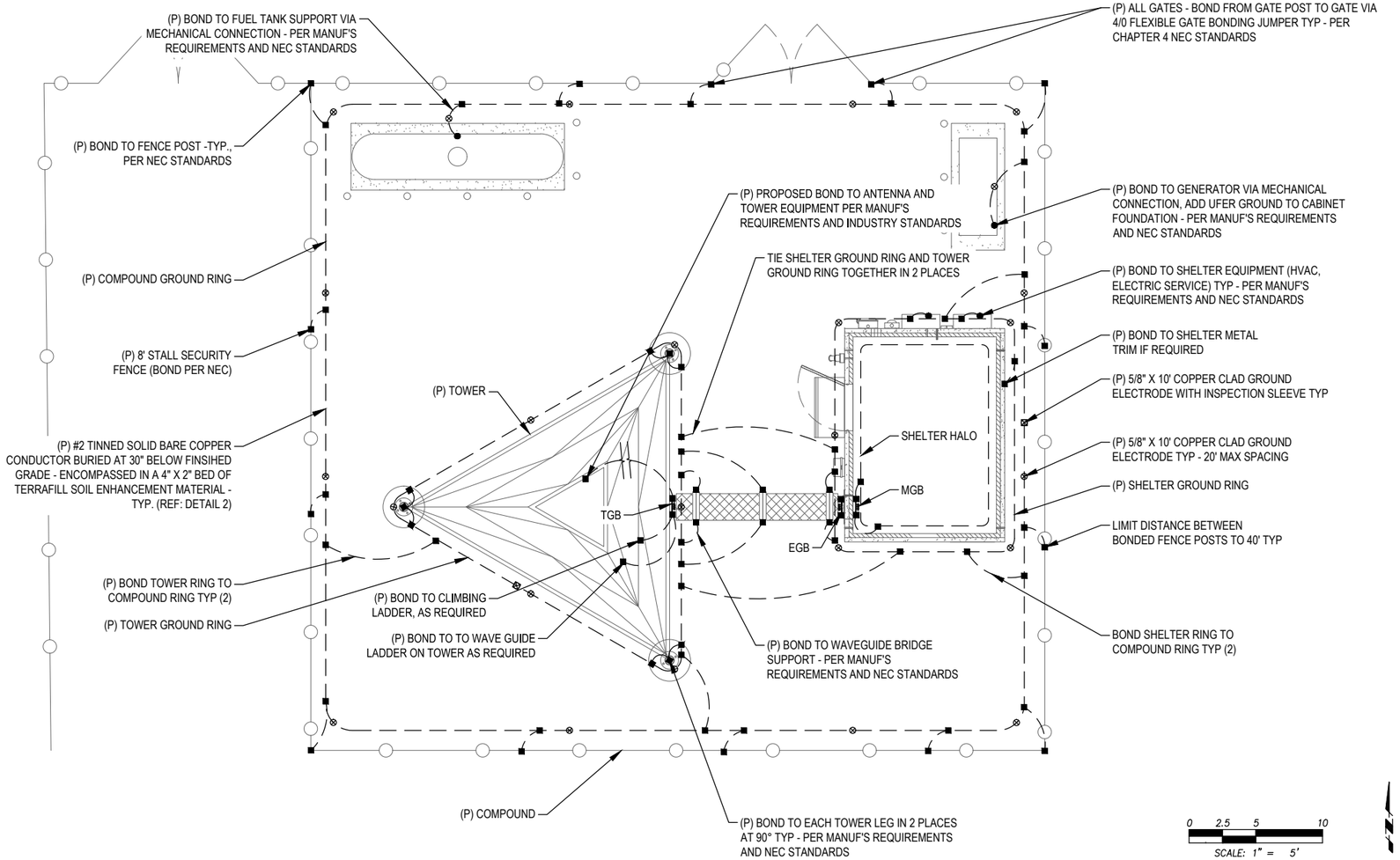
TERRADYNE ELECTROLYTIC GROUND ELECTRODE

SCALE: NTS | 3



SOIL ENHANCEMENT DETAIL

SCALE: NTS | 2



SITE COMPOUND GROUNDING PLAN

11X17 SCALE: 1" = 10' | 22X34 SCALE: 1" = 5' | 1

GENERAL NOTES:

1. ALL INSTALLATIONS ARE TO BE FIELD VERIFIED.
2. GROUND CONDUCTORS ARE TO BE BURIED AT A MINIMUM 30" BELOW GRADE OR 6" BELOW FREEZE LINE, WHICHEVER IS GREATER.
3. ALL BELOW GRADE GROUNDING CONDUCTORS ARE TO BE ENCOMPASSED IN A 2" X 4" BED OF SOIL ENHANCEMENT MATERIAL.
4. BONDS TO FENCE POSTS ARE TO BE MADE AT 12" ABOVE GRADE WHERE APPLICABLE.
5. NO CONDUCTOR SHALL HAVE A BEND IN RADIUS OF LESS THAN 12" AND SHALL NOT EXCEED 90 DEGREES.
6. TERRADYNE ELECTROLYTIC GROUND ELECTRODES ARE NOT TO SHARE THE SAME TRENCH AS GROUNDING CONDUCTOR, NOR RUN IN A PARALLEL PATH TO THE CONDUCTOR.
7. ALL GROUND SYSTEMS ARE TO BE MADE COMMON.
8. ALL BONDS ARE TO BE COATED WITH ANTI-OXIDATION COMPOUND.
9. WHERE STANDARD GROUND ELECTRODES ARE UNABLE TO BE DRIVEN, 12" X 12" X 1/8" COPPER GROUND PLATES SHALL BE INSTALLED 30" BELOW FINISHED GRADE & ENCOMPASSED IN 50LBS OF TERRAFILL SOIL ENHANCEMENT MATERIAL.

LEGEND:

- TERRADYNE TG-100L-H36-2T-36-4F-P SERIES ELECTRODE W/ INSPECTION WELL
- EXOTHERMIC WELD
- MECHANICAL CONNECTION
- 5/8" X 10' COPPER CLAD GROUND ELECTRODE
- 5/8" X 10' COPPER CLAD GROUND ELECTRODE WITH INSPECTION SLEEVE
- #2 TINNED SOLID COPPER CONDUCTOR

Marion County OREGON

PROJECT INFORMATION:

MARION COUNTY
CROOKED FINGER ROW

NW CORNER OF 3283 CROOKED
FINGER RD NE
SCOTTS MILLS, OR 97375

	DATE	RELEASE
	04-03-25	SITE SKETCH
	04-21-25	PRELIMINARY CONSTRUCTION DRAWINGS
	08-28-25	REVISED PRELIM. CONSTRUCTION DRAWINGS
	09-03-25	FINAL CONSTRUCTION DRAWINGS

DRAWING INFORMATION:
THIS DRAWING IS COPYRIGHTED AND IS THE SOLE PROPERTY OF THE OWNER. IT IS PRODUCED SOLELY FOR USE BY THE OWNER AND ITS AFFILIATES. REPRODUCTION OR USE OF THIS DRAWING AND/OR THE INFORMATION CONTAINED IN IT IS FORBIDDEN WITHOUT THE WRITTEN PERMISSION OF THE OWNER.

PLANS PREPARED BY:

cushing Civil Engineers

Cushing
Civil Engineers
12725 SW MILLIKAN WAY
SUITE 300
BEAVERTON, OR 97005
(503) 387-5331
www.cushingcivilengineers.com

LICENSURE:

REGISTERED PROFESSIONAL ENGINEER
83233
OREGON
JUNE 7, 2012
KENNY McMANAWAY

RENEWAL DATE 12/31/26

SHEET TITLE:

SITE GROUNDING PLAN & DETAILS

SHEET NUMBER:

E-1

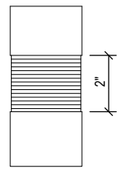


FIGURE 1

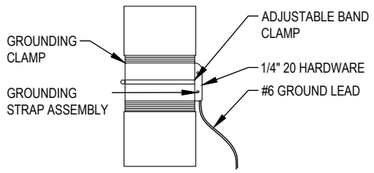


FIGURE 2

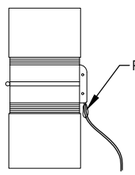


FIGURE 3

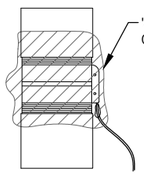


FIGURE 4

EXHIBIT K

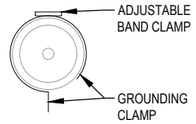


FIGURE 5

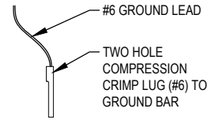
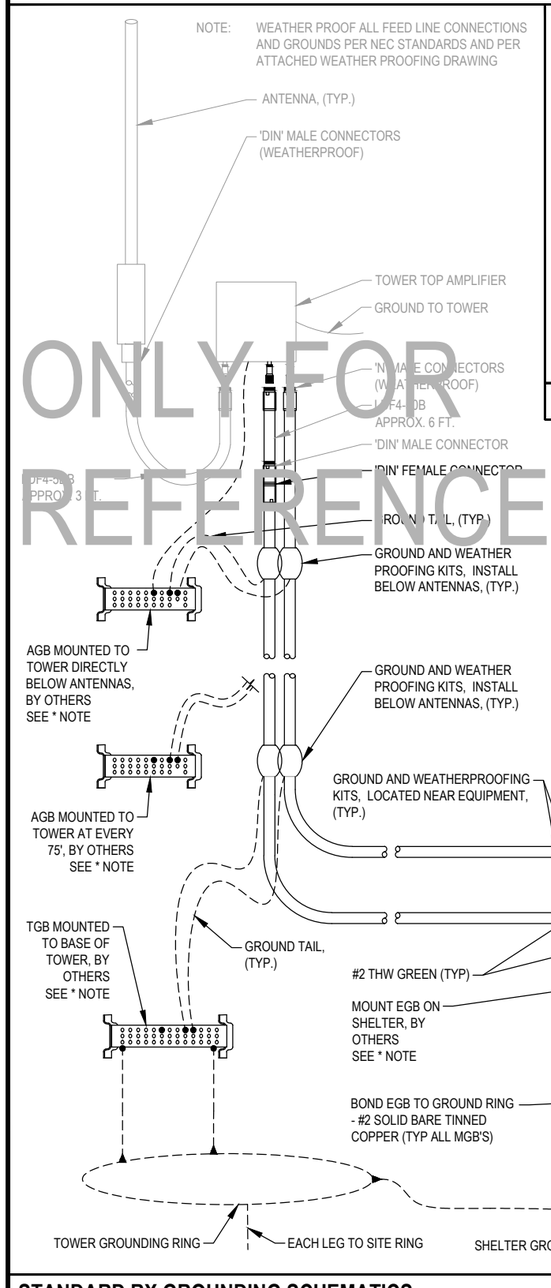


FIGURE 6

NOTE: NOT GC

FEED LINE CABLE GROUNDING

SCALE: NTS | 2

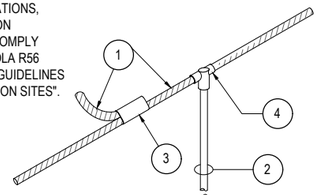


ONLY FOR REFERENCE

STANDARD RX GROUNDING SCHEMATICS

SCALE: NTS | 1

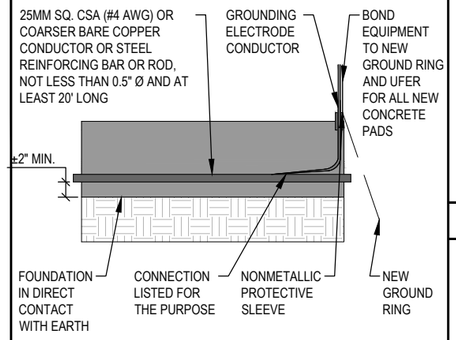
NOTE: ALL GROUNDING DESIGN, SPECIFICATIONS, AND CONSTRUCTION METHODS SHALL COMPLY WITH THE MOTOROLA R56 "STANDARDS AND GUIDELINES FOR COMMUNICATION SITES".



1. MAIN CONDUCTOR, COPPER CABLE
2. 5/8" X 10' COPPER CLAD STEEL GROUND ROD, TO BE PLACED ON CENTER 10' ALONG CONDUCTOR
3. EXOTHERMIC TYPE "NC"
4. EXOTHERMIC TYPE "GT"

GROUND ROD DETAIL

SCALE: NTS | 4



NOTE: FOR REFERENCE ONLY

UFER DETAIL

SCALE: NTS | 5

NOTE: BENDS SHOWN ON GROUND TAILS AND GROUND CONNECTION WIRES ARE FOR ILLUSTRATION PURPOSES ONLY. AVOID EXCESSIVE BENDS. WIRES TO BE AS STRAIGHT AS POSSIBLE; INSTALL DIRECT FROM EQUIPMENT TO GROUND POINT. ALL GROUNDING DESIGN, SPECIFICATIONS, AND CONSTRUCTION METHODS SHALL COMPLY WITH THE MOTOROLA R56 "STANDARDS AND GUIDELINES FOR COMMUNICATION SITES".

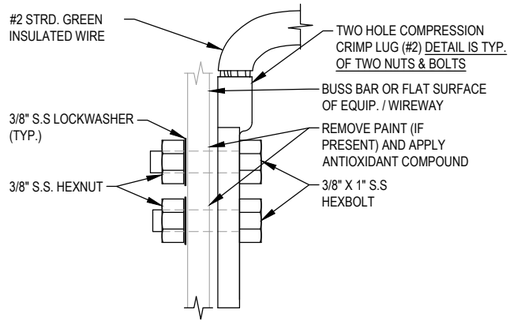
NOTES
1. TYP. FOR ALL GROUND WIRES FOR ELECT. AND OTHER EQUIPMENT.

2. THE ENTIRE LUG AND AREA TO BE SPRAYED WITH CLEAR LACQUER OR COLD GALVANIZING SPRAY.

3. GROUND LEADS TO BE EXOTHERMIC WELDED TO GROUND RING.

4. AGB IS BONDED TO TOWER.

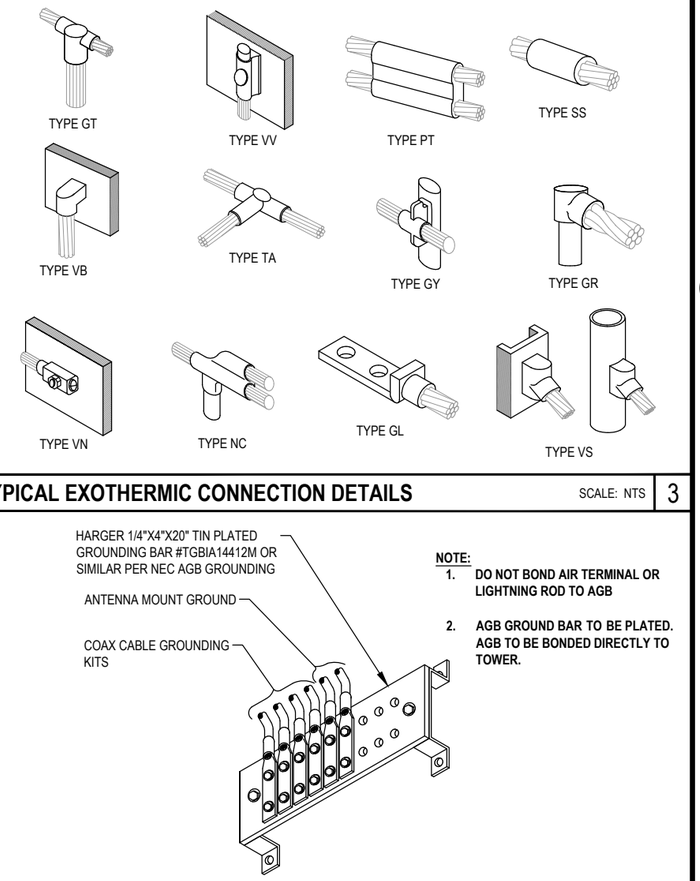
GENERAL NOTES
ALL ANTENNAS, LINES AND RELATED INSTALLATION HARDWARE TO BE PROVIDED BY THE LAND MOBILE COMMUNICATIONS PROVIDER.



MGB (AT BASE OF TOWER AND EQUIPMENT)

GROUND BAR DETAILS

SCALE: NTS | 6

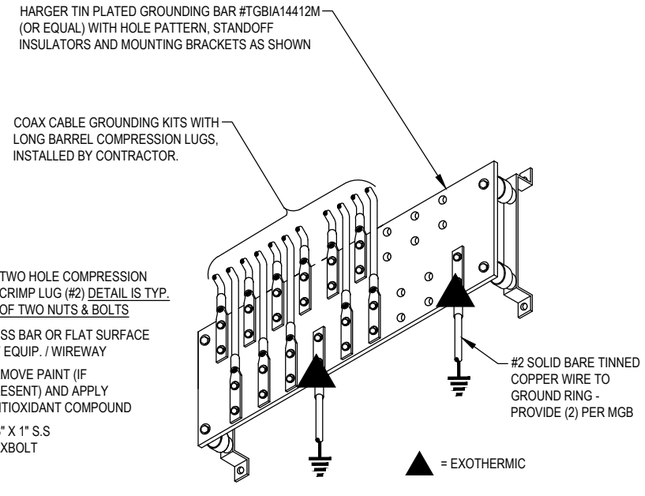


TYPICAL EXOTHERMIC CONNECTION DETAILS

SCALE: NTS | 3

NOTE:
1. **DO NOT BOND AIR TERMINAL OR LIGHTNING ROD TO AGB**
2. **AGB GROUND BAR TO BE PLATED. AGB TO BE BONDED DIRECTLY TO TOWER.**

AGB (AT ANTENNAS)





PROJECT INFORMATION:

MARION COUNTY
CROOKED FINGER ROW

NW CORNER OF 3283 CROOKED FINGER RD NE
SCOTTS MILLS, OR 97375

	DATE	RELEASE
	04-03-25	SITE SKETCH
	04-21-25	PRELIMINARY CONSTRUCTION DRAWINGS
	08-28-25	REVISED PRELIM. CONSTRUCTION DRAWINGS
	09-03-25	FINAL CONSTRUCTION DRAWINGS

DRAWING INFORMATION:

THIS DRAWING IS COPYRIGHTED AND IS THE SOLE PROPERTY OF THE OWNER. IT IS PRODUCED SOLELY FOR USE BY THE OWNER AND ITS AFFILIATES. REPRODUCTION OR USE OF THIS DRAWING AND/OR THE INFORMATION CONTAINED IN IT IS FORBIDDEN WITHOUT THE WRITTEN PERMISSION OF THE OWNER.

PLANS PREPARED BY:

cushing Civil Engineers

Cushing Civil Engineers

12725 SW MILLIKAN WAY
SUITE 300
BEAVERTON, OR 97005
(503) 387-5331
www.cushingcivilengineers.com

LICENSURE:



RENEWAL DATE 12/31/26

SHEET TITLE:

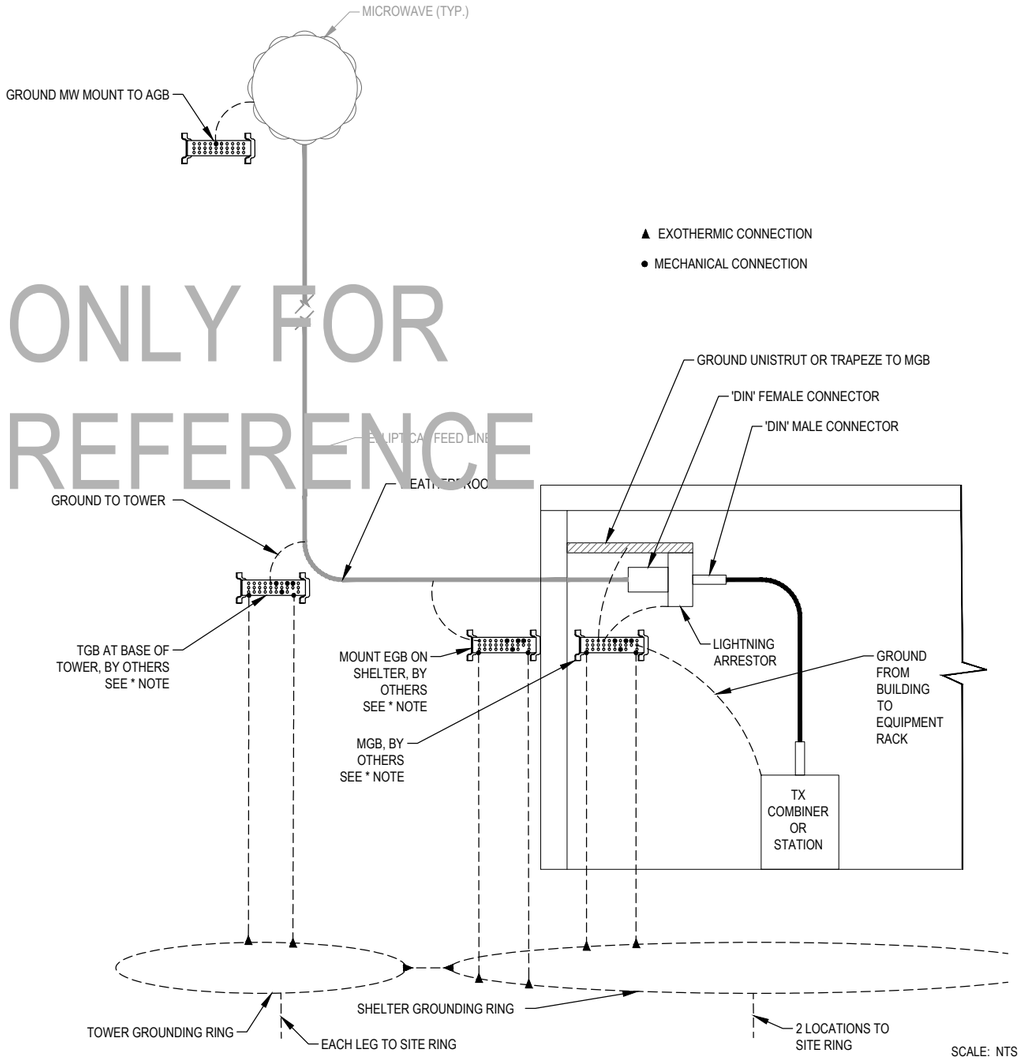
GROUNDING DETAILS I

SHEET NUMBER:

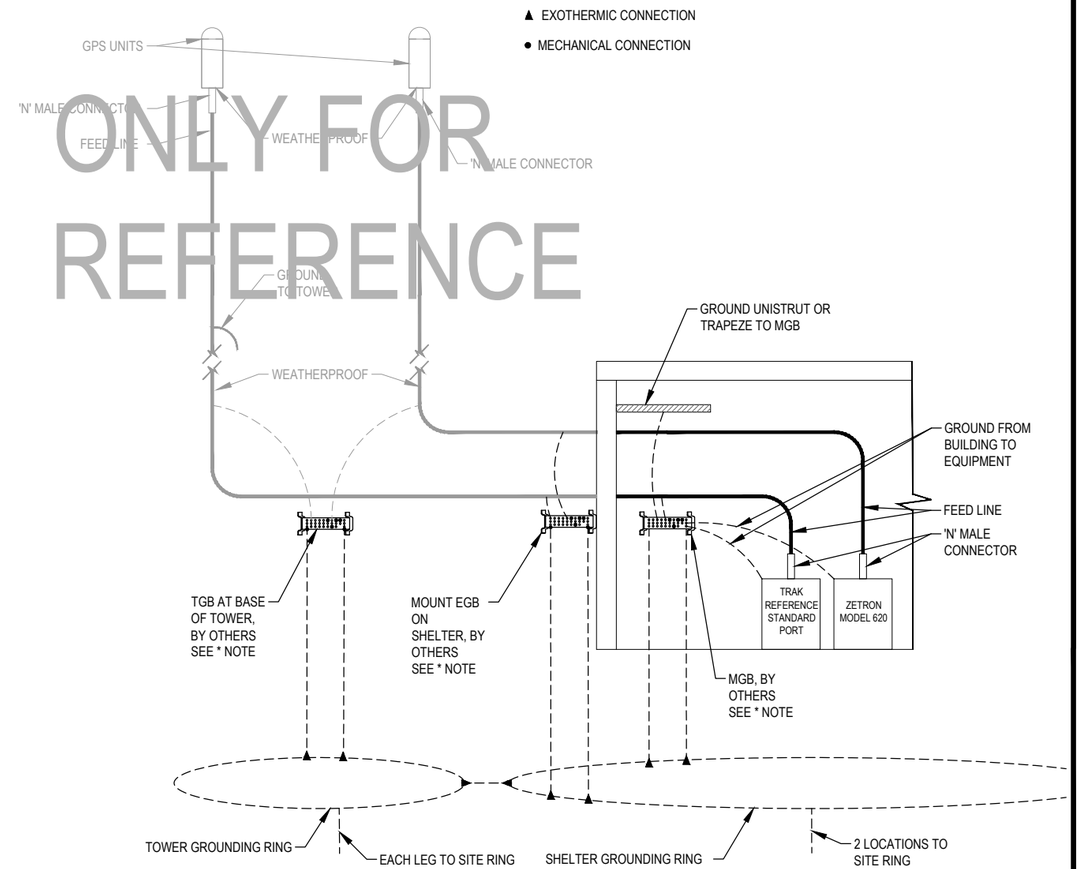
E-2

EXHIBIT K

NOTE:
TOWER INFO SHOWN FOR CONCEPTUAL USE ONLY. SEE TOWER STRUCTURAL REPORT BY OTHERS.



TYPICAL MICROWAVE ANTENNA GROUNDING SCHEMATICS | 1



TYPICAL GPS ANTENNA GROUNDING SCHEMATICS SCALE: NTS | 2

Marion County
OREGON

PROJECT INFORMATION:

MARION COUNTY
CROOKED FINGER ROW

NW CORNER OF 3283 CROOKED FINGER RD NE
SCOTTS MILLS, OR 97375

	DATE	RELEASE
	04-03-25	SITE SKETCH
	04-21-25	PRELIMINARY CONSTRUCTION DRAWINGS
	08-28-25	REVISED PRELIM. CONSTRUCTION DRAWINGS
	09-03-25	FINAL CONSTRUCTION DRAWINGS

DRAWING INFORMATION:

THIS DRAWING IS COPYRIGHTED AND IS THE SOLE PROPERTY OF THE OWNER. IT IS PRODUCED SOLELY FOR USE BY THE OWNER AND ITS AFFILIATES. REPRODUCTION OR USE OF THIS DRAWING AND/OR THE INFORMATION CONTAINED IN IT IS FORBIDDEN WITHOUT THE WRITTEN PERMISSION OF THE OWNER.

PLANS PREPARED BY:

cushing Civil Engineers

Cushing Civil Engineers
12725 SW MILLIKAN WAY
SUITE 300
BEAVERTON, OR 97005
(503) 387-5331
www.cushingcivilengineers.com

LICENSURE:

REGISTERED PROFESSIONAL ENGINEER
83233
OREGON
JUNE 7, 2012
KENNY McMANAWAY

RENEWAL DATE 12/31/26

SHEET TITLE:

GROUNDING DETAILS II

SHEET NUMBER:

E-3

SITE INFORMATION	
SITE NAME	**CROOKED FINGER ROW**

LOCATION INFORMATION			
COUNTY	MARION COUNTY		
STREET ADDRESS	NW CORNER OF 3283 CROOKED FINGER RD NE		
CITY	SCOTTS MILLS	STATE	OR
ZIP CODE	97375		
LATITUDE (DEC.)/(DEG)	44.973480 / 44° 58'24.5" N		
LONGITUDE (DEC.)/(DEG)	-122.600571 / 122°36'02.1" W		

TOWER INFORMATION			
STRUCTURE	SELF-SUPPORTING TOWER	TOWER MANUFACTURER	SABRE
TOWER OWNER	MARION COUNTY	SERIAL/MODEL #	-
GROUND ELEVATION	±1,876'	# OF APPURTENANCE	-
# OF LEGS	3	HIGHEST POINT W/ ANT	-
TOWER HEIGHT W/O ANT	180'		

EXHIBIT K

#	Description	Part Number	Length (ft)	Leg/Face	Status	Base Height (ft)	Centerline Height(ft)	Tip Height (ft)	Antenna Azimuth	Mount Azimuth	Mount	Transmission Line Size/Type
1	P25 TX Antenna	SE414-SWBPALDF(D00)	4.4	B	New	162	164	166	145		Site-Pro P5A-6 (6' standoff)	7/8"
2	P25 RX Antenna	CC807-09	10.3	B	New	179	184	189	-		Standard	1/2" to TTA
3	TTA	NPD3633A-TTA	1.0	B	New	176	177	177	-		Standard	7/8"
4	Microwave - MCPW	VHLP6-6W	6.0	C	New	117	120	123	270.51	270.51	Standard w/ tieback	EW63
5	Microwave - Eastview Lane	VHLP3-11W	3.0	C	New	177	178	180	280.28	280.28	Standard w/ tieback	EW90

NOTE:

INFORMATION BASED ON TAIT COMMUNICATIONS' DOCUMENT DATED 08/11/2025 PROVIDED BY MARION COUNTY.

PROVISIONAL

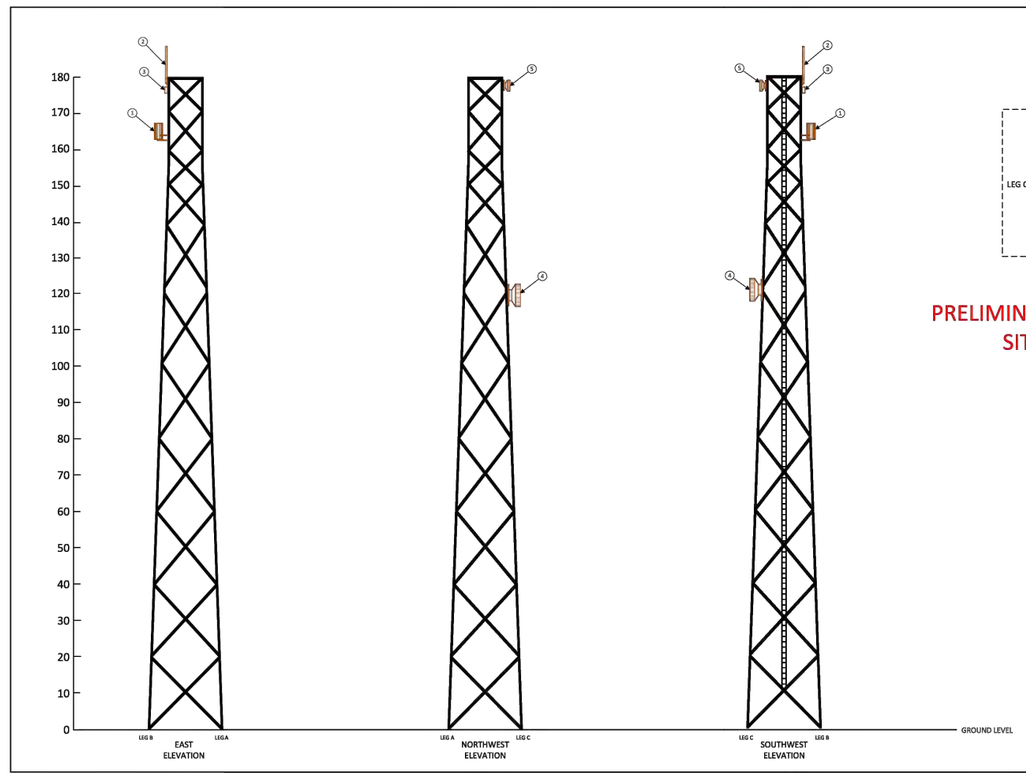
tait communications

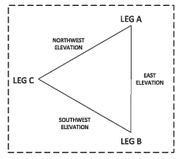
Marion County, OR
700 MHz
P25 Phase II

Date	8/11/2025
Drawn	RCA
Checked	-

FILE:\marion county or_crooked finger.vsd

Crooked Finger Appurtenance Chart





PRELIMINARY – PENDING SITE CIVILS

PROVISIONAL

tait communications

Marion County, OR
700 MHz
P25 Phase II

Date	8/11/2025
Drawn	RCA
Checked	-

FILE:\marion county or_crooked finger.vsd

Crooked Finger Tower Plan

Marion County OREGON

PROJECT INFORMATION:

MARION COUNTY CROOKED FINGER ROW

NW CORNER OF 3283 CROOKED FINGER RD NE
SCOTTS MILLS, OR 97375

	DATE	RELEASE
	04-03-25	SITE SKETCH
	04-21-25	PRELIMINARY CONSTRUCTION DRAWINGS
	08-28-25	REVISED PRELIM. CONSTRUCTION DRAWINGS
	09-03-25	FINAL CONSTRUCTION DRAWINGS

DRAWING INFORMATION:

THIS DRAWING IS COPYRIGHTED AND IS THE SOLE PROPERTY OF THE OWNER. IT IS PRODUCED SOLELY FOR USE BY THE OWNER AND ITS AFFILIATES. REPRODUCTION OR USE OF THIS DRAWING AND/OR THE INFORMATION CONTAINED IN IT IS FORBIDDEN WITHOUT THE WRITTEN PERMISSION OF THE OWNER.

PLANS PREPARED BY:

cushing Civil Engineers

Cushing
Civil Engineers

12725 SW MILLIKAN WAY
SUITE 300
BEAVERTON, OR 97005
(503) 387-5331
www.cushingcivilengineers.com

LICENSURE:

REGISTERED PROFESSIONAL ENGINEER
83233
OREGON
JUNE 7, 2012
KENNY McMANAWAY

RENEWAL DATE 12/31/26

SHEET TITLE:

RF TOWER APPURTENANCES I

SHEET NUMBER:

RF-1.0

VHLPX3-11W/A

Base Product



0.9m | 3 ft ValuLine® High Performance Low Profile Antenna, dual-polarized, 10.125–11.700 GHz

Product Classification

Product Type	Microwave antenna
Product Brand	ValuLine®

General Specifications

Antenna Type	VHLPX - ValuLine® High Performance Low Profile Antenna, dual-polarized
Polarization	Dual
Side Struts, Included	0
Side Struts, Optional	1 inboard

Dimensions

Diameter, nominal	0.9 m | 3 ft

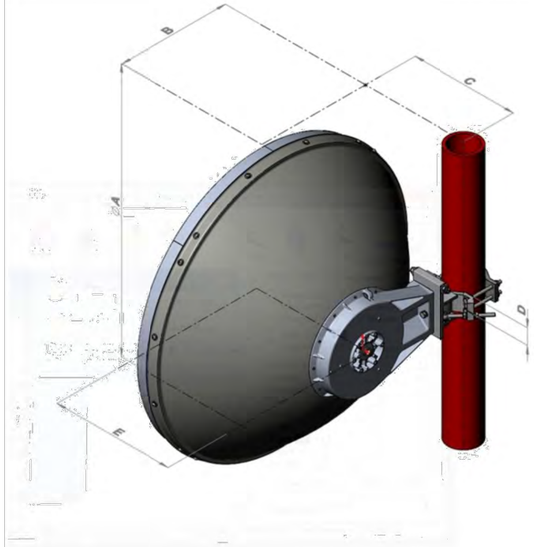
Electrical Specifications

Operating Frequency Band	10.125 – 11.700 GHz
Gain, Low Band	37.8 dBi
Gain, Mid Band	38.4 dBi
Gain, Top Band	39 dBi
Boresite Cross Polarization Discrimination (XPD)	30 dB
Front-to-Back Ratio	64 dB
Beamwidth, Horizontal	2 °
Beamwidth, Vertical	2 °
Return Loss	17.7 dB
VSWR	1.3
Radiation Pattern Envelope Reference (RPE)	7177A | 7178A
Electrical Compliance	Brazil Anatel Class 2 | Canada SRSP 310.5 | ETSI 302 217 Class 3 | US FCC Part 101A @ 10.55–10.7 GHz | US FCC Part 101A @

©2024 CommScope, Inc. All rights reserved. CommScope and the CommScope logo are registered trademarks of CommScope and/or its affiliates in the U.S. and other countries. For additional trademark information see https://www.commscope.com/trademarks. All product names, trademarks and registered trademarks are property of their respective owners. Revised: September 1, 2023

VHLPX3-11W/A

Antenna Dimensions and Mounting Information



Dimension in Inches (mm)					
Antenna size, ft (m)	A	B	C	D	E
3 (1.0)	39.3 (999)	16 (407)	15.2 (387)	2.4 (60)	17.2 (437)

Wind Forces at Wind Velocity Survival Rating

Axial Force (FA)	2903 N | 652.621 lbf
Angle α for MT Max	0 °
Side Force (FS)	1439 N | 323.5 lbf
Twisting Moment (MT)	1179 N-m | 10,435.029 in lb
Zcg without Ice	135 mm | 5.315 in
Zcg with 1/2 in (12 mm) Radial Ice	84 mm | 3.307 in
Weight with 1/2 in (12 mm) Radial Ice	46 kg | 101.413 lb

©2024 CommScope, Inc. All rights reserved. CommScope and the CommScope logo are registered trademarks of CommScope and/or its affiliates in the U.S. and other countries. For additional trademark information see https://www.commscope.com/trademarks. All product names, trademarks and registered trademarks are property of their respective owners. Revised: September 1, 2023

NOTE: MICROWAVE MODEL SHOWN IS PRELIMINARY AND SUBJECT TO CHANGE UPON FINAL RF CONFIGURATION.

Marion County OREGON

PROJECT INFORMATION:

MARION COUNTY
CROOKED FINGER ROW

NW CORNER OF 3283 CROOKED FINGER RD NE
SCOTTS MILLS, OR 97375

	DATE	RELEASE
	04-03-25	SITE SKETCH
	04-21-25	PRELIMINARY CONSTRUCTION DRAWINGS
	08-28-25	REVISED PRELIM. CONSTRUCTION DRAWINGS
	09-03-25	FINAL CONSTRUCTION DRAWINGS

DRAWING INFORMATION:
THIS DRAWING IS COPYRIGHTED AND IS THE SOLE PROPERTY OF THE OWNER. IT IS PRODUCED SOLELY FOR USE BY THE OWNER AND ITS AFFILIATES. REPRODUCTION OR USE OF THIS DRAWING AND/OR THE INFORMATION CONTAINED IN IT IS FORBIDDEN WITHOUT THE WRITTEN PERMISSION OF THE OWNER.

PLANS PREPARED BY:

Cushing
Civil Engineers

Cushing
Civil Engineers

12725 SW MILLIKAN WAY
SUITE 300
BEAVERTON, OR 97005
(503) 387-5331
www.cushingcivilengineers.com

LICENSURE:

REGISTERED PROFESSIONAL ENGINEER
83233
OREGON
JUNE 7, 2012
KENNY McMANAWAY

RENEWAL DATE 12/31/26

SHEET TITLE:

RF TOWER APPURTENANCES II

SHEET NUMBER:

RF-1.1

VHLPX6-6W/B

Base Product



1.8 m | 6 ft ValuLine® High Performance Low Profile Antenna, dual-polarized, 5.925–7.125 GHz

Product Classification

Product Type	Microwave antenna
Product Brand	ValuLine®

General Specifications

Antenna Type	VHLPX - ValuLine® High Performance Low Profile Antenna, dual-polarized
Polarization	Dual
Side Struts, Included	1
Side Struts, Optional	1 inboard

Dimensions

Diameter, nominal	1.8 m	6 ft

Electrical Specifications

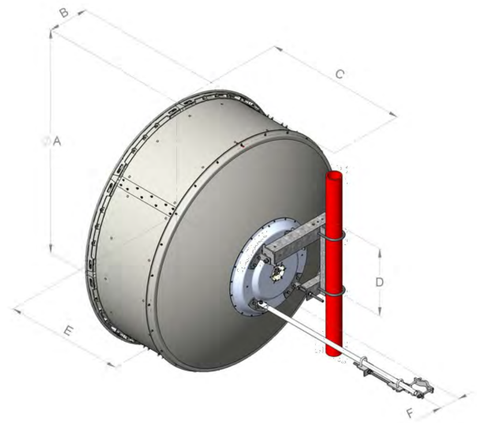
Operating Frequency Band	5.925 – 7.125 GHz
Gain, Low Band	38.5 dBi
Gain, Mid Band	39.3 dBi
Gain, Top Band	40.1 dBi
Boresite Cross Polarization Discrimination (XPD)	30 dB
Front-to-Back Ratio	66 dB
Beamwidth, Horizontal	1.8 °
Beamwidth, Vertical	1.8 °
Return Loss	17.7 dB
VSWR	1.3
Radiation Pattern Envelope Reference (RPE)	7139B
Electrical Compliance	Brazil Anatel Class 3 | Canada SRSP 305.9 Part A | Canada SRSP 306.4 Part A | ETSI 302 217 Class 3 | US FCC Part 101A

©2024 CommScope, Inc. All rights reserved. CommScope and the CommScope logo are registered trademarks of CommScope and/or its affiliates in the U.S. and other countries. For additional trademark information see https://www.commscope.com/trademarks. All product names, trademarks and registered trademarks are property of their respective owners. Revised: September 1, 2023

COMMSCOPE®

VHLPX6-6W/B

Antenna Dimensions and Mounting Information



Dimensions in inches (mm)						
Antenna size, ft (m)	A	B	C	D	E	F
6 (1.8)	74.8 (1899)	13.4 (340)	47.5 (1206)	22.4 (570)	39.4 (1001)	6.9 (174)

Wind Forces at Wind Velocity Survival Rating

Axial Force (FA)	10670 N | 2,398.712 lbf
Angle α for MT Max	-120 °
Side Force (FS)	5286 N | 1,188.34 lbf
Twisting Moment (MT)	4752 N-m | 42,058.742 in lb
Zcg without Ice	363 mm | 14.291 in
Zcg with 1/2 in (12 mm) Radial Ice	543 mm | 21.378 in
Weight with 1/2 in (12 mm) Radial Ice	234 kg | 515.881 lb

©2024 CommScope, Inc. All rights reserved. CommScope and the CommScope logo are registered trademarks of CommScope and/or its affiliates in the U.S. and other countries. For additional trademark information see https://www.commscope.com/trademarks. All product names, trademarks and registered trademarks are property of their respective owners. Revised: September 1, 2023

COMMSCOPE®

NOTE: MICROWAVE MODEL SHOWN IS PRELIMINARY AND SUBJECT TO CHANGE UPON FINAL RF CONFIGURATION.

Marion County OREGON

PROJECT INFORMATION:

MARION COUNTY
CROOKED FINGER ROW

NW CORNER OF 3283 CROOKED FINGER RD NE
SCOTTS MILLS, OR 97375

	DATE	RELEASE
	04-03-25	SITE SKETCH
	04-21-25	PRELIMINARY CONSTRUCTION DRAWINGS
	08-28-25	REVISED PRELIM. CONSTRUCTION DRAWINGS
	09-03-25	FINAL CONSTRUCTION DRAWINGS

DRAWING INFORMATION:
THIS DRAWING IS COPYRIGHTED AND IS THE SOLE PROPERTY OF THE OWNER. IT IS PRODUCED SOLELY FOR USE BY THE OWNER AND ITS AFFILIATES. REPRODUCTION OR USE OF THIS DRAWING AND/OR THE INFORMATION CONTAINED IN IT IS FORBIDDEN WITHOUT THE WRITTEN PERMISSION OF THE OWNER.

PLANS PREPARED BY:

cushing Civil Engineers

Cushing
Civil Engineers
12725 SW MILLIKAN WAY
SUITE 300
BEAVERTON, OR 97005
(503) 387-5331
www.cushingcivilengineers.com

LICENSURE:

REGISTERED PROFESSIONAL ENGINEER
83233
OREGON
JUNE 7, 2012
KENNY McMANAWAY

RENEWAL DATE 12/31/26

SHEET TITLE:

RF TOWER APPURTENANCES III

SHEET NUMBER:

RF-1.2

SINCLAIR
Superior then, Superior now.
A Norsat Company | Norsat International Inc.

Antennas
700-1000 MHz Antennas
SE414-WBAL - PIM Certified Series

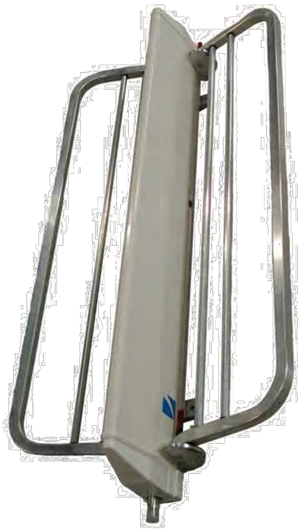
SE414-SWBPALDF(D00) Enclosed dipole, 8-11.5 dBd, adj. beamwidth, Low PIM, 746-960MHz

- Wide band design covers whole 746-960 MHz band, PIP rated
- Horizontal beamwidth can be adjusted (60º/90º/105º/130º/160º)
- Gain depends on horizontal beamwidth setting (11.5/10/9/8.5/8 dBd)
- 0-10º electrical downtilt available

One wideband antenna for your 700, 800, 900 MHz systems. Sinclair's SE414-WBL series of enclosed dipole arrays offer excellent intermodulation performance covering 746-960 MHz in a single antenna. These highly versatile antennas are particularly well suited to communication systems where a specific coverage pattern is required. These include cellular systems, trunked radio, paging, and data transmission, where predictable and highly reliable performance is a must.

The SE414-WBAL series come with field adjustable reflectors that provide horizontal beamwidths between 60 and 160 degrees. The creative design and construction permits excellent pattern control and greater efficiency.

This antenna shall be mounted in an upright position.
Clamps for mechanical downtilt can be ordered separately.
Electrical downtilt is available upon request.



Antenna may not appear exactly as picture.

www.sinctech.com

SINCLAIR
Superior then, Superior now.
A Norsat Company | Norsat International Inc.

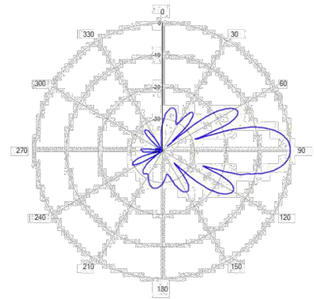
Antennas
700-1000 MHz Antennas
SE414-WBAL - PIM Certified Series

Electrical Specifications			
Frequency Range	MHz	746 to 960	
Bandwidth	MHz	214	
Connector		7/16 DIN-Female	
Gain (nominal)	dBd (dBi)	11.5 (13.6)	*1
Input VSWR (max)		1.5:1	
Polarization		vertical	
Impedance	Ω	50	
Pattern		Directional and Adjustable	
Horizontal beamwidth (typ)	degrees	60	*2
Vertical beamwidth (typ)	degrees	20	
Average Power Input (max)	W	500	
Passive intermod. (2x20W, 3rd ord.)	dBc	-150	*3
PIP(KW, max)		25	
Lightning protection		DC ground	
Electrical tilt (available)		0 to 10 degrees	
Front-to-back ratio (min)	dB	20	

Mechanical Specifications			
Width	in (mm)	25 (635)	*4
Depth	in (mm)	8.5 (216)	*5
Length/ Height	in (mm)	53 (1346)	
Base pipe diameter	in (mm)	2.88 (73)	*6
Base pipe mounting length	in (mm)	30.5 (775)	
Radiating element material		prntd circuit bd	
Weight	lbs (kg)	19.5 (8.85)	
Mounting Hardware (Included)		#130 clamp	
Mounting configurations		upright	
Actual shipping weight	lbs (kg)	24.5 (11.12)	
Shipping dimensions	in (mm)	58x14x17 (1473x356x432)	

Environmental Specifications		
Temperature range	°F (°C)	-40 to +140 (-40 to +60)
Wind Loading Area (Flat Plate Equivalent)	ft² (m²)	4.8 (0.45)
Wind Loading Area (1/2" ice)	ft² (m²)	5.7 (0.53)
Rated wind velocity (no ice)	mph (km/h)	155 (250)
Rated wind velocity (1/2" radial ice)	mph (km/h)	140 (225)
Lateral Thrust (100 mph No Ice)	lbs (N)	180 (800.6)
Torsional moment (100 mph No Ice)	ft-lbs (Nm)	93 (125.6)

Notes
*1 : Dependant on reflector setting 10/9/8.5/8 dBd
*2 : 90/105/130/160
*3 : Measured in the receive band: 2 - 20W carriers
*4 : 90° beamwidth configuration, clamp not included in measurement
*5 : 90° beamwidth configuration, clamp not included in measurement
*6 : Ref. clamp maximum



www.sinctech.com

Region	United States	Europe, Middle East and Africa	Caribbean and Latin America	Canada and rest of the world
Telephone	USA: 1 800 263 3275	International: +44 (0) 1487 84 28 19	International: +1 905 726 7676	Canada: 1 800 263 3275 International: +1 905 727 0165
E-mail	salesusa@sinctech.com	salesuk@sinctech.com	salesla@sinctech.com	salescan@sinctech.com

Product Specification Sheet SE414-SWBPALDF(D00) Issue: 2 Dated: 24-07-17
EPR 018751 Dated: 16-12-15
Customer Tech Manual 005044

Sinclair's commitment to product leadership may result in improvement or change to this product
Copyright © Sinclair Technologies

Region	United States	Europe, Middle East and Africa	Caribbean and Latin America	Canada and rest of the world
Telephone	USA: 1 800 263 3275	International: +44 (0) 1487 84 28 19	International: +1 905 726 7676	Canada: 1 800 263 3275 International: +1 905 727 0165
E-mail	salesusa@sinctech.com	salesuk@sinctech.com	salesla@sinctech.com	salescan@sinctech.com

Product Specification Sheet SE414-SWBPALDF(D00) Issue: 2 Dated: 24-07-17
EPR 018751 Dated: 16-12-15
Customer Tech Manual 005044

Sinclair's commitment to product leadership may result in improvement or change to this product
Copyright © Sinclair Technologies

NOTE: MODEL SHOWN IS PRELIMINARY AND SUBJECT TO CHANGE UPON FINAL RF CONFIGURATION.

Marion County
OREGON

PROJECT INFORMATION:

MARION COUNTY
CROOKED FINGER ROW

NW CORNER OF 3283 CROOKED FINGER RD NE
SCOTTS MILLS, OR 97375

	DATE	RELEASE
	04-03-25	SITE SKETCH
	04-21-25	PRELIMINARY CONSTRUCTION DRAWINGS
	08-28-25	REVISED PRELIM. CONSTRUCTION DRAWINGS
	09-03-25	FINAL CONSTRUCTION DRAWINGS

DRAWING INFORMATION:
THIS DRAWING IS COPYRIGHTED AND IS THE SOLE PROPERTY OF THE OWNER. IT IS PRODUCED SOLELY FOR USE BY THE OWNER AND ITS AFFILIATES. REPRODUCTION OR USE OF THIS DRAWING AND/OR THE INFORMATION CONTAINED IN IT IS FORBIDDEN WITHOUT THE WRITTEN PERMISSION OF THE OWNER.

PLANS PREPARED BY:

cushing Civil Engineers

Cushing
Civil Engineers
12725 SW MILLIKAN WAY
SUITE 300
BEAVERTON, OR 97005
(503) 387-5331
www.cushingcivilengineers.com

LICENSURE:

REGISTERED PROFESSIONAL ENGINEER
83233
OREGON
JUNE 7, 2012
KENNY McMANAWAY
RENEWAL DATE 12/31/26

SHEET TITLE:

RF TOWER APPURTENANCES IV

SHEET NUMBER:

RF-1.3

EXHIBIT K

800MHz Corporate Collinear Antennas

748-870MHz

CC807 Series

These industry leading, full featured corporate collinear arrays allow site operators to combine, with complete integrity, a large number of communications services into a single, low profile antenna solution.

The corporate feed design employed by RFI maintains superior pattern control, allowing gain to be maximised with zero tilt variation over a very broad bandwidth, comparable to that only previously available in exposed dipole array configurations. This is achieved in the preferred form factor of a fully enclosed fibreglass radome, providing a reduction in wind loading, ice loading and tower loading in comparison.

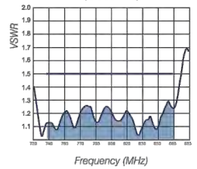
The CC807 series have been designed with an exceptional power rating of 500W across the band as well as a Peak Instantaneous Power (PIP) rating of 25kW to cater for the peak voltage levels present in large multi-carrier combining environments. RFI's refined design processes and proven construction methods achieve a PIM rating of –150dBc, further ensuring performance is maintained for the service life of the antenna.

Features:

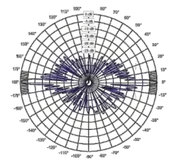
- 500W Continuous Power rating
- -150dBc Passive Intermodulation (PIM) rating, 100% PIM tested
- 25 kW Peak Instantaneous Power (PIP) rating
- DC grounding on all elements for the ultimate in lightning protection and dissipation of static noise.
- Light weight dipole construction using RFI's patented flexi-PCB architecture, maintains a low centre of gravity reducing tip deflection and sway
- Field invertible (excluding tilt models)
- Preset downtilt variations of 2 and 4 degrees available, see note (1)



Typical VSWR Response (CC807-12)



CC807-12 - E Plane



Electrical Specifications

Model Number	CC807-09-P	CC807-12-P
Nominal Gain *dBd (dBi)*	9.0 (11.1)	11.5 (13.6)
Frequency *MHz*	746-870	
Tuned Bandwidth *MHz*	Full	
VSWR *(Return Loss)*	1.5:1	
Nominal Impedance Ω	50	
Downtilt°	0 Std 2, 4 (1)	
Vertical Beamwidth°	8	4
Horizontal Beamwidth°	Omni +/- 0.5dB	
Input Power W	500	
Passive IM 3rd order (2x20W) *dBc*	-150	
Peak Instantaneous Power *kW*	25	

Mechanical

Model Number		CC807-09-P	CC807-12-P
Construction		Sky blue fibreglass radome	
Radome Diameter mm (inches)		76 (3.0)	
Length mm (inches)		3135 (123.4)	6235 (245.5)
Weight *kg (lbs)*		14 (30.9)	25.5 (56.2)
Termination		Integrated 4.3-10 Female	
Mountaing Area mm (inches)		750 x 90 (30 x 3.5) diameter Ecofilm™ plated aluminium	
Suggested Clamps		3 x UC-114	
Shipping Dimensions *mm (inches)*	H	115 (4.5)	
	W	115 (4.5)	
	L	3335 (131.3)	6435 (253.3)
Shipping Weight *kg (lbs)*		20.0 (44.1)	36.5 (80.5)
Projected area *cm² (ft²)*	No Ice	2597 (2.8)	5559 (6.0)
	With Ice	3192 (3.4)	7037 (7.6)
Lateral Thrust @160km/h *N* (100 mph lbs)		308 (69)	659 (148)
Wind Gust Rating *km/h (mph)*	No Ice	>240 (150)	
Torque @ 160km/h *Nm* (100mph ft-lbs)		413 (305)	1823 (1345)

(1) To order pre-set downtilt versions available, simply add a -T2 or -T4 towards the end of the part number to denote downtilt model required. For eg. CC807-12-T2-P to order CC807-12-P with 2deg of downtilt. Please note: Models with downtilt are NOT field invertible. . Eg. CC807-12-T2-P

Copyright RF Industries Pty Ltd 2020. Subject to change without notice.

NOTE: MODEL SHOWN IS PRELIMINARY AND SUBJECT TO CHANGE UPON FINAL RF CONFIGURATION.

Marion County OREGON

PROJECT INFORMATION:

MARION COUNTY CROOKED FINGER ROW

NW CORNER OF 3283 CROOKED FINGER RD NE
SCOTTS MILLS, OR 97375

	DATE	RELEASE
	04-03-25	SITE SKETCH
	04-21-25	PRELIMINARY CONSTRUCTION DRAWINGS
	08-28-25	REVISED PRELIM. CONSTRUCTION DRAWINGS
	09-03-25	FINAL CONSTRUCTION DRAWINGS

DRAWING INFORMATION:

THIS DRAWING IS COPYRIGHTED AND IS THE SOLE PROPERTY OF THE OWNER. IT IS PRODUCED SOLELY FOR USE BY THE OWNER AND ITS AFFILIATES. REPRODUCTION OR USE OF THIS DRAWING AND/OR THE INFORMATION CONTAINED IN IT IS FORBIDDEN WITHOUT THE WRITTEN PERMISSION OF THE OWNER.

PLANS PREPARED BY:

cushing Civil Engineers

Cushing Civil Engineers

12725 SW MILLIKAN WAY
SUITE 300
BEAVERTON, OR 97005
(503) 387-5331
www.cushingcivilengineers.com

LICENSURE:

REGISTERED PROFESSIONAL ENGINEER
83233
OREGON
JUNE 7, 2012
KENNY McMANAWAY

RENEWAL DATE 12/31/26

SHEET TITLE:

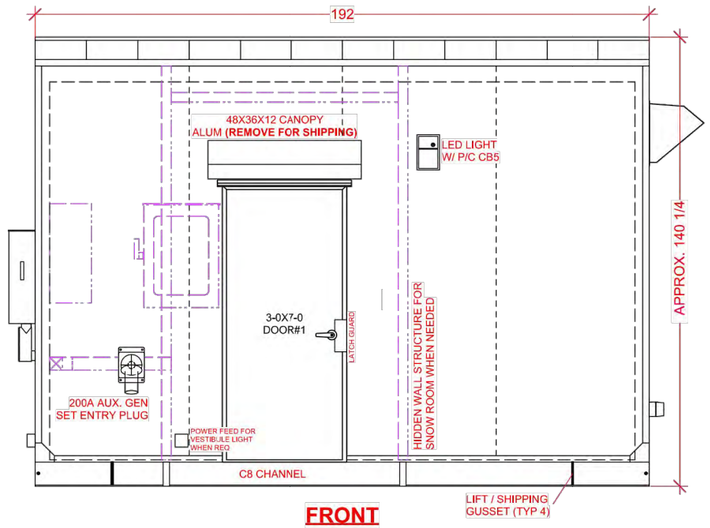
RF TOWER APPURTENANCES V

SHEET NUMBER:

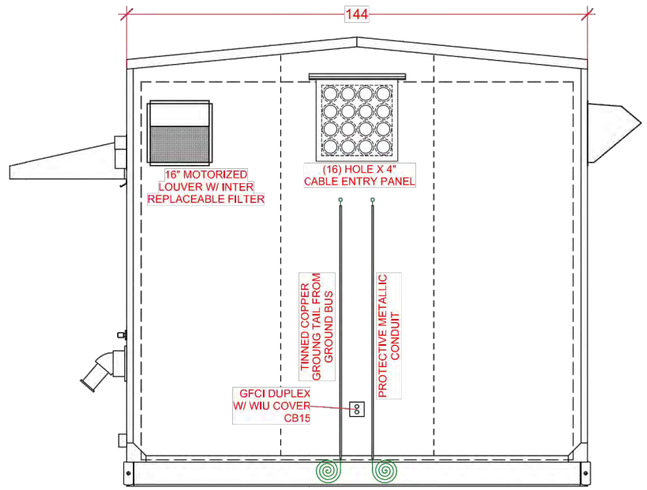
RF-1.4

NOTE:
INFORMATION BASED ON SHELTER ONE PREFABRICATED EQUIPMENT SHELTER DRAWINGS. REFER TO STATE OF OREGON BUILDING CODES DIVISION FOR STATE INSIGNIA.

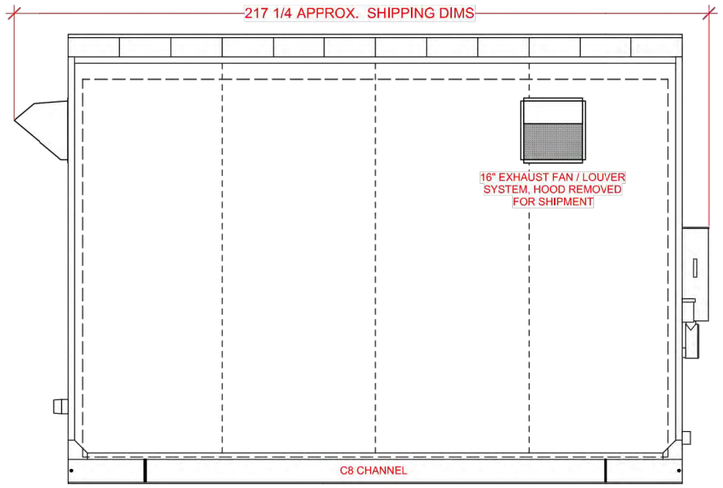
EXHIBIT K



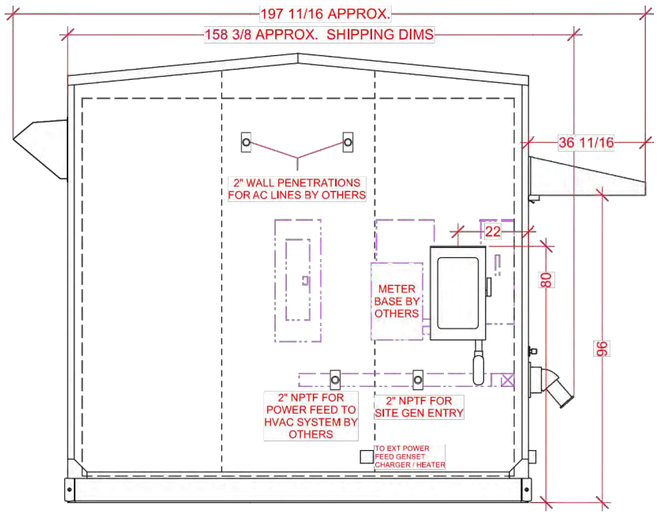
FRONT



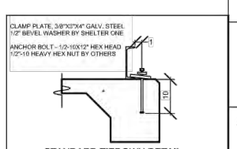
RIGHT



REAR



LEFT



STANDARD TIEDOWN DETAIL

NOTE:
TYPICAL PLACEMENT OF TIE DOWN LOCATIONS WOULD BE WITHIN 12" OF EACH CORNER (8 PLACES) AND (1) AT THE CENTER OF EACH LONG WALL IF BUILDING IS 16' LONG OR OVER. FINAL ANCHOR LOCATIONS AND HARDWARE DETIALS SUBJECT TO SPECIFIC SITE CONDITION REVIEW BY OTHERS.

NOTES:
1. SHELTER IS DESIGNED FOR A SLAB TYPE FOUNDATION.
2. EXTERIOR CLADDING TO BE 24 GA. PREFINISHED STEEL, COLOR - (TBD).
3. EXTERIOR TRIM TO BE MATCHING 24GA STEEL TRIM
4. SKID TO BE EPOXY PAINTED COLOR - (TBD).
5. 24GA PRE-FINISHED STEEL STANDING SEAM ROOF SYSTE - COLOR - (TBD)

SEAL

APPROVED:

DATE:

NOTICE: THIS DOCUMENT CONTAINS PROPRIETARY INFORMATION THAT IS THE SOLE PROPERTY OF SHELTER ONE AND SHOULD BE TREATED AS SUCH. NO ONE MAY COPY, REPRODUCE, TRANSMIT OR DISTRIBUTE THIS DOCUMENT IN ANY PART WITHOUT THE EXPRESSED WRITTEN PERMISSION OF SHELTER ONE OR IT'S DESIGNATED AGENTS.

SHELTER ONE

Headquarters & Manufacturing
5887 Monument Drive
Grants Pass, OR 97526
541/479-4622
F:541/479-5289
www.shelter1.com

PROJECT INFORMATION

25027 MARION COUNTY OR 12X16

FILENAME
25027 Marion County OR 12x16.vwx

DRAWN BY:	DATE:
NJY	7/24/25
CHECKED BY:	DATE:

DWG NO: 25027

SCALE: 1:40

TITLE:
EXTERIOR ELEVATIONS

SHEET A1 | REV.

Marion County OREGON

PROJECT INFORMATION:

MARION COUNTY CROOKED FINGER ROW

NW CORNER OF 3283 CROOKED FINGER RD NE
SCOTTS MILLS, OR 97375

	DATE	RELEASE
	04-03-25	SITE SKETCH
	04-21-25	PRELIMINARY CONSTRUCTION DRAWINGS
	08-28-25	REVISED PRELIM. CONSTRUCTION DRAWINGS
	09-03-25	FINAL CONSTRUCTION DRAWINGS

DRAWING INFORMATION:
THIS DRAWING IS COPYRIGHTED AND IS THE SOLE PROPERTY OF THE OWNER. IT IS PRODUCED SOLELY FOR USE BY THE OWNER AND ITS AFFILIATES. REPRODUCTION OR USE OF THIS DRAWING AND/OR THE INFORMATION CONTAINED IN IT IS FORBIDDEN WITHOUT THE WRITTEN PERMISSION OF THE OWNER.

PLANS PREPARED BY:

cushing Civil Engineers

Cushing Civil Engineers
12725 SW MILLIKAN WAY
SUITE 300
BEAVERTON, OR 97005
(503) 387-5331
www.cushingcivilengineers.com

LICENSURE:

REGISTERED PROFESSIONAL ENGINEER
83233
OREGON
JUNE 7, 2012
KENNY McMANAWAY

RENEWAL DATE 12/31/26

SHEET TITLE:

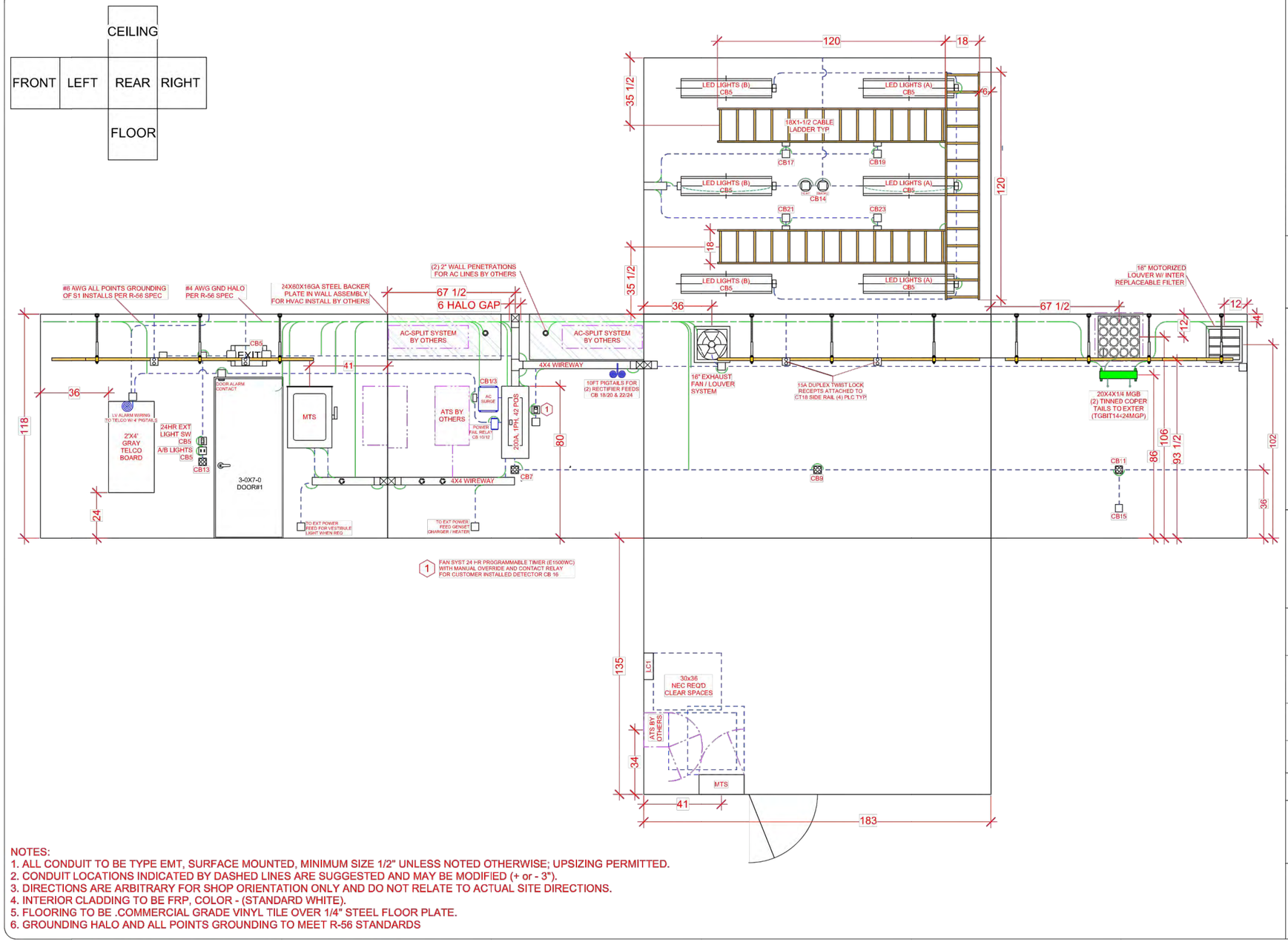
EQUIPMENT SHELTER EXTERIOR ELEVATIONS

SHEET NUMBER:

SH-1

NOTE:
INFORMATION BASED ON SHELTER ONE PREFABRICATED EQUIPMENT SHELTER DRAWINGS. REFER TO STATE OF OREGON BUILDING CODES DIVISION FOR STATE INSIGNIA.

EXHIBIT K



NOTES:
1. ALL CONDUIT TO BE TYPE EMT, SURFACE MOUNTED, MINIMUM SIZE 1/2" UNLESS NOTED OTHERWISE; UPSIZING PERMITTED.
2. CONDUIT LOCATIONS INDICATED BY DASHED LINES ARE SUGGESTED AND MAY BE MODIFIED (+ or - 3").
3. DIRECTIONS ARE ARBITRARY FOR SHOP ORIENTATION ONLY AND DO NOT RELATE TO ACTUAL SITE DIRECTIONS.
4. INTERIOR CLADDING TO BE FRP, COLOR - (STANDARD WHITE).
5. FLOORING TO BE .COMMERCIAL GRADE VINYL TILE OVER 1/4" STEEL FLOOR PLATE.
6. GROUNDING HALO AND ALL POINTS GROUNDING TO MEET R-56 STANDARDS

SEAL

APPROVED:

DATE:

NOTICE: THIS DOCUMENT CONTAINS PROPRIETARY INFORMATION THAT IS THE SOLE PROPERTY OF SHELTER ONE AND SHOULD BE TREATED AS SUCH. NO ONE MAY COPY, REPRODUCE, TRANSMIT OR DISTRIBUTE THIS DOCUMENT IN ANY PART WITHOUT THE EXPRESSED WRITTEN PERMISSION OF SHELTER ONE OR IT'S DESIGNATED AGENTS.

SHELTER ONE

Headquarters & Manufacturing
5887 Monument Drive
Grants Pass, OR 97526
541/479-4622
F:541/479-5289
www.shelter1.com

PROJECT INFORMATION

25027 MARION COUNTY OR 12X16

FILENAME
25027 Marion County OR 12x16.vwx

DRAWN BY:	DATE:
NJY	7/24/25
CHECKED BY:	DATE:

DWG NO: 25027

SCALE: 1:50

TITLE: INTERIOR ELEVATIONS

SHEET A2 | REV.

SHELTER INTERIOR ELEVATIONS SCALE: NTS | 1

Marion County OREGON

PROJECT INFORMATION:

MARION COUNTY CROOKED FINGER ROW

NW CORNER OF 3283 CROOKED FINGER RD NE
SCOTTS MILLS, OR 97375

	DATE	RELEASE
	04-03-25	SITE SKETCH
	04-21-25	PRELIMINARY CONSTRUCTION DRAWINGS
	08-28-25	REVISED PRELIM. CONSTRUCTION DRAWINGS
	09-03-25	FINAL CONSTRUCTION DRAWINGS

DRAWING INFORMATION:
THIS DRAWING IS COPYRIGHTED AND IS THE SOLE PROPERTY OF THE OWNER. IT IS PRODUCED SOLELY FOR USE BY THE OWNER AND ITS AFFILIATES. REPRODUCTION OR USE OF THIS DRAWING AND/OR THE INFORMATION CONTAINED IN IT IS FORBIDDEN WITHOUT THE WRITTEN PERMISSION OF THE OWNER.

PLANS PREPARED BY:

cushing Civil Engineers

Cushing Civil Engineers
12725 SW MILLIKAN WAY
SUITE 300
BEAVERTON, OR 97005
(503) 387-5331
www.cushingcivilengineers.com

LICENSURE:

REGISTERED PROFESSIONAL ENGINEER 83233 OREGON JUNE 7, 2012 KENNY McMANAWAY

RENEWAL DATE 12/31/26

SHEET TITLE:

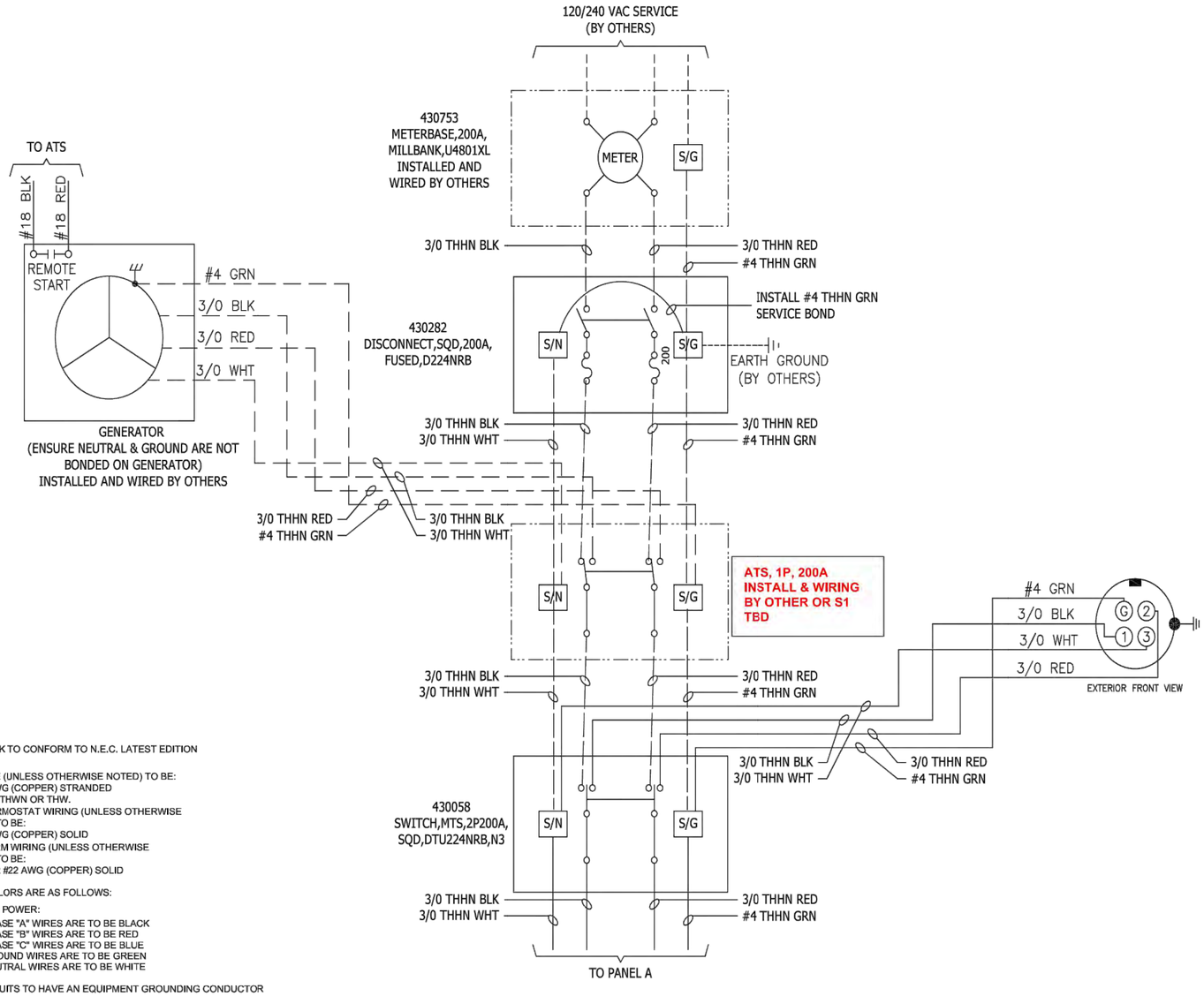
EQUIPMENT SHELTER INTERIOR ELEVATIONS

SHEET NUMBER:

SH-2

NOTE:
INFORMATION BASED ON SHELTER ONE PREFABRICATED EQUIPMENT SHELTER DRAWINGS. REFER TO STATE OF OREGON BUILDING CODES DIVISION FOR STATE INSIGNIA.

EXHIBIT K



NOTES:
1. ALL WORK TO CONFORM TO N.E.C. LATEST EDITION
2. ALL WIRE (UNLESS OTHERWISE NOTED) TO BE:
   * #12 AWG (COPPER) STRANDED
   * THHN, THWN OR THW.
   ALL THERMOSTAT WIRING (UNLESS OTHERWISE NOTED) TO BE:
   * #18 AWG (COPPER) SOLID
   ALL ALARM WIRING (UNLESS OTHERWISE NOTED) TO BE:
   * #18 OR #22 AWG (COPPER) SOLID
3. WIRE COLORS ARE AS FOLLOWS:
   PRIMARY POWER:
   * ALL PHASE "A" WIRES ARE TO BE BLACK
   * ALL PHASE "B" WIRES ARE TO BE RED
   * ALL PHASE "C" WIRES ARE TO BE BLUE
   * ALL GROUND WIRES ARE TO BE GREEN
   * ALL NEUTRAL WIRES ARE TO BE WHITE
4. ALL CIRCUITS TO HAVE AN EQUIPMENT GROUNDING CONDUCTOR
5. ----- DASHED LINES DENOTE FIELD WORK.
6. NEUTRAL AND GROUND ARE TO BE BONDED AS REQUIRED
7. NO TAPS, SPLICES, OR JOINTS ARE TO BE MADE WITHIN WIREWAYS.

COPPER WIRE SIZE

BREAKER SIZE	MINIMUM WIRE SIZE
15A	12 AWG
20A	12 AWG
30A	10 AWG
40A	8 AWG
50A	8 AWG
60A	6 AWG
70A	4 AWG
80A	4 AWG
90A	3 AWG
100A	3 AWG
125A	1 AWG
150A	1/0
200A	3/0

SERVICE ENTRY GROUND WIRE SIZE

ENTRY WIRE SIZE	GROUND WIRE SIZE
2 AWG OR SMALLER	8 AWG
1 AWG OR 1/0	6 AWG
2/0 OR 3/0	4 AWG

SEAL

APPROVED:

DATE:

NOTICE: THIS DOCUMENT CONTAINS PROPRIETARY INFORMATION THAT IS THE SOLE PROPERTY OF SHELTER ONE AND SHOULD BE TREATED AS SUCH. NO ONE MAY COPY, REPRODUCE, TRANSMIT OR DISTRIBUTE THIS DOCUMENT IN ANY PART WITHOUT THE EXPRESSED WRITTEN PERMISSION OF SHELTER ONE OR IT'S DESIGNATED AGENTS.

SHELTER ONE®

Headquarters & Manufacturing
5887 Monument Drive
Grants Pass, OR 97526
541/479-4622
F:541/479-5289
www.shelter1.com

PROJECT INFORMATION

25027 MARION COUNTY OR 12X16

FILENAME
25027 Marion County OR 12x16.vwx

DRAWN BY:	DATE:
NJY	7/24/25
CHECKED BY:	DATE:

DWG NO: 25027

SCALE: NOT TO SCALE

TITLE:
POWER LINE DRAWING

SHEET E1 | REV.

Marion County OREGON

PROJECT INFORMATION:

MARION COUNTY
CROOKED FINGER ROW

NW CORNER OF 3283 CROOKED FINGER RD NE
SCOTTS MILLS, OR 97375

	DATE	RELEASE
	04-03-25	SITE SKETCH
	04-21-25	PRELIMINARY CONSTRUCTION DRAWINGS
	08-28-25	REVISED PRELIM. CONSTRUCTION DRAWINGS
	09-03-25	FINAL CONSTRUCTION DRAWINGS

DRAWING INFORMATION:
THIS DRAWING IS COPYRIGHTED AND IS THE SOLE PROPERTY OF THE OWNER. IT IS PRODUCED SOLELY FOR USE BY THE OWNER AND ITS AFFILIATES. REPRODUCTION OR USE OF THIS DRAWING AND/OR THE INFORMATION CONTAINED IN IT IS FORBIDDEN WITHOUT THE WRITTEN PERMISSION OF THE OWNER.

PLANS PREPARED BY:

cushing Civil Engineers

Cushing Civil Engineers
12725 SW MILLIKAN WAY
SUITE 300
BEAVERTON, OR 97005
(503) 387-5331
www.cushingcivilengineers.com

LICENSURE:

REGISTERED PROFESSIONAL ENGINEER
83233
OREGON
JUNE 7, 2012
KENNY McMANAWAY

RENEWAL DATE 12/31/26

SHEET TITLE:

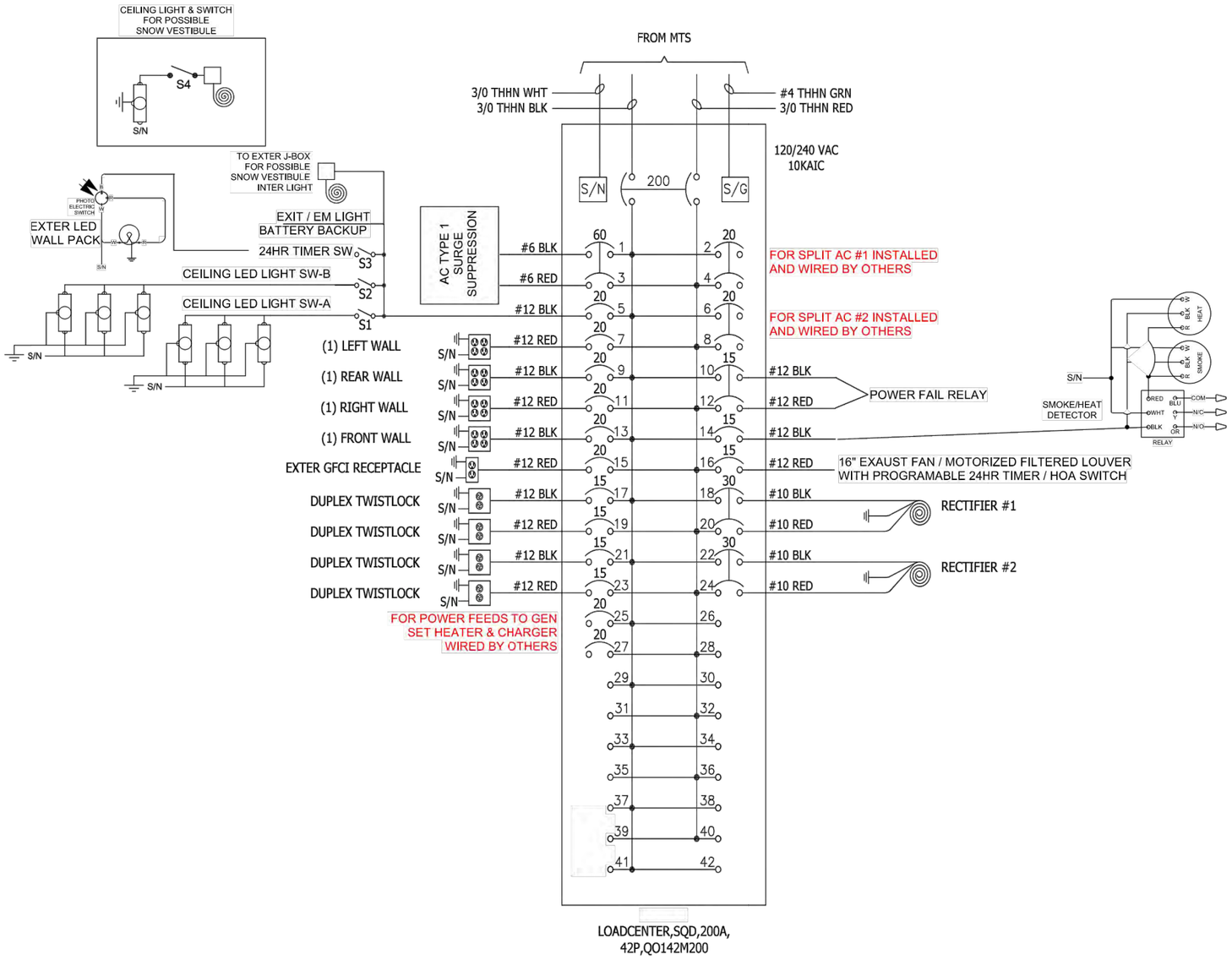
ELECTRICAL ONE LINE DRAWING

SHEET NUMBER:

SH-3

NOTE:
INFORMATION BASED ON SHELTER ONE PREFABRICATED EQUIPMENT SHELTER DRAWINGS. REFER TO STATE OF OREGON BUILDING CODES DIVISION FOR STATE INSIGNIA.

EXHIBIT K



SEAL

APPROVED:

DATE:

NOTICE: THIS DOCUMENT CONTAINS PROPRIETARY INFORMATION THAT IS THE SOLE PROPERTY OF SHELTER ONE AND SHOULD BE TREATED AS SUCH. NO ONE MAY COPY, REPRODUCE, TRANSMIT OR DISTRIBUTE THIS DOCUMENT IN ANY PART WITHOUT THE EXPRESSED WRITTEN PERMISSION OF SHELTER ONE OR ITS DESIGNATED AGENTS.

SHELTER ONE

Headquarters & Manufacturing
5887 Monument Drive
Grants Pass, OR 97526
541/479-4622
F:541/479-5289
www.shelter1.com

PROJECT INFORMATION

25027 MARION COUNTY OR 12X16

FILENAME
25027 Marion County OR 12x16.vwx

DRAWN BY:	DATE:
NJY	7/24/25
CHECKED BY:	DATE:

DWG NO: 25027

SCALE: NOT TO SCALE

TITLE:
PANEL SCHEDULE

SHEET E2 | REV.

Marion County OREGON

PROJECT INFORMATION:

MARION COUNTY CROOKED FINGER ROW

NW CORNER OF 3283 CROOKED FINGER RD NE
SCOTTS MILLS, OR 97375

	DATE	RELEASE
	04-03-25	SITE SKETCH
	04-21-25	PRELIMINARY CONSTRUCTION DRAWINGS
	08-28-25	REVISED PRELIM. CONSTRUCTION DRAWINGS
	09-03-25	FINAL CONSTRUCTION DRAWINGS

DRAWING INFORMATION:
THIS DRAWING IS COPYRIGHTED AND IS THE SOLE PROPERTY OF THE OWNER. IT IS PRODUCED SOLELY FOR USE BY THE OWNER AND ITS AFFILIATES. REPRODUCTION OR USE OF THIS DRAWING AND/OR THE INFORMATION CONTAINED IN IT IS FORBIDDEN WITHOUT THE WRITTEN PERMISSION OF THE OWNER.

PLANS PREPARED BY:

cushing Civil Engineers

Cushing
Civil Engineers
12725 SW MILLIKAN WAY
SUITE 300
BEAVERTON, OR 97005
(503) 387-5331
www.cushingcivilengineers.com

LICENSURE:

REGISTERED PROFESSIONAL ENGINEER 83233 OREGON JUNE 7, 2012 KENNY McMANAWAY

RENEWAL DATE 12/31/26

SHEET TITLE:

ELECTRICAL PANEL SCHEDULE

SHEET NUMBER:

SH-4

EXHIBIT K

SITE NAME:

HOUSE MOUNTAIN

11.1 MILES SOUTHEAST OF DRAKES CROSSING, OR

SHEET INDEX

CONSTRUCTION SUBMITTAL:

T-1	COVER SHEET
V-1	EXISTING CONDITIONS (SURVEY)
EX-1	DEMOLITION PLAN
G-1	GENERAL NOTES
ER-1	GRADING & EROSION CONTROL PLAN
ER-2	GRADING & EROSION CONTROL DETAILS
C-1	OVERALL SITE PLAN
C-2	ENLARGED SITE PLAN
C-3	ELEVATIONS
C-4	COMPOUND DETAILS
C-5	GENERATOR & PROPANE TANK DETAILS
C-6	HVAC DETAILS
C-7	EQUIPMENT SHELTER FOUNDATION PLAN
C-8	GENERATOR SHELTER FOUNDATION PLAN
E-1	SITE GROUNDING PLAN & DETAILS
E-2	GROUNDING DETAILS I
E-3	GROUNDING DETAILS II
RF-1.0	RF TOWER APPURTENANCES I
RF-1.1	RF TOWER APPURTENANCES II
RF-1.2	RF TOWER APPURTENANCES III
RF-1.3	RF TOWER APPURTENANCES IV
RF-1.4	RF TOWER APPURTENANCES V
RF-1.5	RF TOWER APPURTENANCES VI
U-1	SOLAR PV ARRAY DETAILS I
U-2	SOLAR PV ARRAY DETAILS II
U-3	SOLAR PV ARRAY DETAILS III
U-4	SOLAR PV ARRAY DETAILS IV

SHELTER ONE PREFABRICATED SHELTER DRAWINGS (REFER TO STATE OF OREGON BUILDING CODES DIVISION FOR STATE INSIGNIA):

SH-1	EQUIPMENT SHELTER EXTERIOR ELEVATIONS
SH-2	EQUIPMENT SHELTER INTERIOR ELEVATIONS
SH-3	HIGH SNOW ENTRY VESTIBULE
SH-4	ELECTRICAL ONE LINE DRAWING
SH-5	ELECTRICAL PANEL SCHEDULE
SH-6	GENERATOR SHELTER EXTERIOR ELEVATIONS
SH-7	GENERATOR INTERIOR ELEVATIONS

PROJECT INFORMATION

PROPERTY OWNER:
WEYERHAEUSER TIMBER HOLDINGS INC ATTN TAX DEPARMENT
220 OCCIDNETAL AVE S
SEATTLE, WA 98104
CONTACT:
NAME
PHONE

TOWER OWNER:
MARION COUNTY PUBLIC WORKS
5155 SILVERTON RD NE
SALEM, OR 97305
CONTACT:
BRIAN NICHOLAS
(503) 588-7943
bnicholas@co.marion.or.us

COUNTY:
MARION

JURISDICTION:
MARION COUNTY

ZONING:
TC (TIMBER CONSERVATION)

NEPA FCC:
REPORT BY BLACK MOUNTAIN DATED 04/03/2025

PARCEL NUMBER(S) & AREA:
ACCOUNT #: 111272
TAXLOT #: 083E000000200
579,550,989.6 SQ FEET±
13304.66 ACRES±

PROJECT AREA:
TOTAL COMPOUND AREA - 10,589 SQ FEET ±
ACCESS DRIVE AND PARKING - EXISTING
TOTAL - 10,589 SQ FEET ±

PROJECT LOCATION:
*LAT: N 44° 50'28.4" (44.841210)
*LONG: W 122°28'58.9" (-122.483040)
*GROUND ELEVATION (ASML) = 3,955'±

*INFORMATION OBTAINED FROM GOOGLE EARTH

UTILITY PROVIDERS:
TELCO PROVIDER: N/A
POWER PROVIDER: CONSUMERS POWER

GENERAL INFORMATION:
1. TRAFFIC IS UNAFFECTED
2. SIGNAGE AT SITE IS PROPOSED
3. SITE IS UNMANNED AND HANDICAP ACCESS IS NOT REQUIRED

CODE INFORMATION:
1. IBC-2018 INTERNATIONAL BUILDING CODE
2. NEC-2017 NATIONAL ELECTRIC CODE
3. 2019 OREGON STRUCTURAL SPECIALTY CODE
4. 2017 NFPA 58 CODE
5. OCCUPANCY GROUP: U
6. CONSTRUCTION TYPE: II-B

PROJECT INFORMATION CONTINUED

APPLICANT:
MARION COUNTY PUBLIC WORKS
5155 SILVERTON RD NE
SALEM, OR 97305
CONTACT:
BRIAN NICHOLAS
(503) 588-7943
bnicholas@co.marion.or.us

PROJECT MANAGER:
PATRICK HOOVER
(971) 295-0152
phoover@rtspnw.com

CONSTRUCTION MANAGER:
PATRICK HOOVER
(971) 295-0152
phoover@rtspnw.com

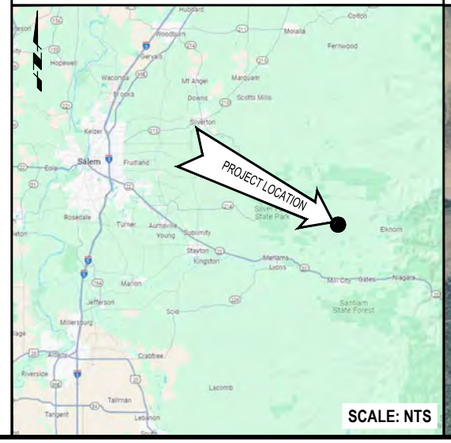
ZONING CONTACT:
CUSHING CIVIL ENGINEERS
12725 SW MILLIKAN WAY, STE 300
BEAVERTON, OR 97005
CONTACT:
ROB HOWE
(503) 387-5331
rob@cushingcivilengineers.com

ENGINEER OF RECORD:
CUSHING CIVIL ENGINEERS
12725 SW MILLIKAN WAY, STE 300
BEAVERTON, OR 97005
CONTACT:
KENNY MCMANAWAY
(503) 387-5331
kenny@cushingcivilengineers.com

SURVEYOR:
ORION GEOMATICS
1724 23RD AVE
FOREST GROVE, OR 97116
CONTACT:
JOHN PUTNAM
(503) 359-1688
jputnam@oriongeomatics.com

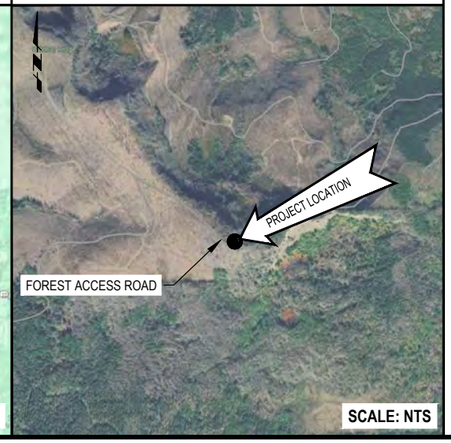
GEOTECH:
BLACK MOUNTAIN CONSULTING LLC
22566 SW WASHINGTON STE #206
SHERWOOD, OR 97140
CONTACT:
TAMMY STEMPEL
(503) 625-2517
tammys@blkmountain.com

VICINITY MAP



SCALE: NTS

LOCATOR MAP



SCALE: NTS

DRIVING DIRECTIONS

FROM MARION COUNTY PUBLIC WORKS BUILDING:

1. HEAD SOUTHEAST TOWARD OR-213 S (305 FT) & TURN RIGHT ONTO OR-213 S (0.2 MI)
   0.2 MI
2. TURN LEFT ONTO CORDON RD NE (4.1 MI) & SHARP LEFT ONTO MACLEAY RD SE (0.2 MI)
   4.3 MI
3. TURN RIGHT ONTO CULVER DR SE (1.0 MI) & TURN RIGHT ONTO DEER PARK DR SE (0.6 MI)
   1.6 M
4. MERGE ONTO OR-22 E/N SANTIAM HWY SE
   19 MIN (19.2 MI)
5. TURN LEFT ONTO N FORK RD/LITTLE NORTH FORK. CONTINUE TO FOLLOW N FORK RD
   4.5 MI
6. SLIGHT LEFT (0.6 MI) & TURN RIGHT AT KIEL CREEK RD (2.0 MI)
   2.6 MI
7. SLIGHT LEFT (1.4 MI) & TURN LEFT (1.4 MI)
   2.8 MI
8. TURN RIGHT (1.0 MI) & SHARP RIGHT. DESITINATION WILL BE ON THE LEFT (0.4 MI)
   1.4 MI

EST. TIME: 50 MINS.
EST. MILEAGE: 36.6 MI

PROJECT DESCRIPTION

1. PROPOSED MODIFICATION OF AN EXISTING PUBLIC SAFETY COMMUNICATIONS FACILITY FOR MARION COUNTY, OREGON.
2. PROPOSED REPLACEMENT OF EXISTING 60.6' SELF-SUPPORT TOWER W/ NEW 180'-0" SELF-SUPPORT TOWER
3. PROPOSED INSTALLATION OF THE FOLLOWING EQUIPMENT ON A NEW 180'-0" SELF-SUPPORTED TOWER:
   * NEW & EXISTING ANTENNAS & ASSOCIATED ANCILLARY EQUIPMENT
4. PROPOSED REMOVAL OF THE FOLLOWING EQUIPMENT WITHIN EXISTING GROUND SPACE:
   * EQUIPMENT SHELTERS
   * GENERATOR SHELTER
   * ICE BRIDGES
   * GENERATORS
   * PROPANE TANKS
5. PROPOSED INSTALLATION OF THE FOLLOWING EQUIPMENT WITHIN EXISTING GROUND SPACE:
   * (1) 12'x16' EQUIPMENT SHELTER
   * (1) 10'x10' GENERATOR SHELTER
   * (1) GENERATOR
   * ICE BRIDGE
   * PROPANE TANK ICE CANOPY (REPLACE EXISTING)
   * GROUND MOUNTED SOLAR PV ARRAY

Marion County
OREGON

PROJECT INFORMATION:

MARION COUNTY
HOUSE MOUNTAIN

11.1 MILES SOUTHEAST OF
DRAKES CROSSING, OR

	DATE	RELEASE
	07-26-24	SITE SKETCH
	02-12-25	PRELIMINARY ZONING DRAWINGS
	05-22-25	PRELIMINARY CONSTRUCTION DRAWINGS
	09-23-25	FINAL CONSTRUCTION DRAWINGS
	09-30-25	REV. FCD FOR PROPANE TANK UPDATE
	10-15-25	REV. FCD FOR SITE CONFIGURATION

REVISION 1, 10/15/2025

DRAWING INFORMATION:
THIS DRAWING IS COPYRIGHTED AND IS THE SOLE PROPERTY OF THE OWNER. IT IS PRODUCED SOLELY FOR USE BY THE OWNER AND ITS AFFILIATES. REPRODUCTION OR USE OF THIS DRAWING AND/OR THE INFORMATION CONTAINED IN IT IS FORBIDDEN WITHOUT THE WRITTEN PERMISSION OF THE OWNER.

PLANS PREPARED BY:

Cushing
Civil Engineers

Cushing
Civil Engineers
12725 SW MILLIKAN WAY
SUITE 300
BEAVERTON, OR 97005
(503) 387-5331
www.cushingcivilengineers.com

LICENSURE:

REGISTERED PROFESSIONAL ENGINEER
83233
OREGON
JUNE 7, 2012
KENNY McMANAWAY

RENEWAL DATE 12/31/26

SHEET TITLE:

COVER SHEET

SHEET NUMBER:

T-1

EXHIBIT K

UTILITY STATEMENT:

THE UNDERGROUND UTILITIES SHOWN ARE BASED ON SURVEYED UTILITY LOCATE MARKINGS AND EXISTING DRAWINGS. THE SURVEYOR MAKES NO GUARANTEE THAT THE UNDERGROUND UTILITIES SHOWN COMPRISE ALL SUCH UTILITIES IN THE AREA, EITHER IN SERVICE OR ABANDONED. THE SURVEYOR FURTHER DOES NOT WARRANT THAT THE UNDERGROUND UTILITIES SHOWN ARE IN THE EXACT LOCATION INDICATED ALTHOUGH HE DOES CERTIFY THAT THEY ARE LOCATED AS ACCURATELY AS POSSIBLE FROM INFORMATION AVAILABLE. THE SURVEYOR HAS NOT PHYSICALLY LOCATED THE UNDERGROUND UTILITIES.

LEGEND:

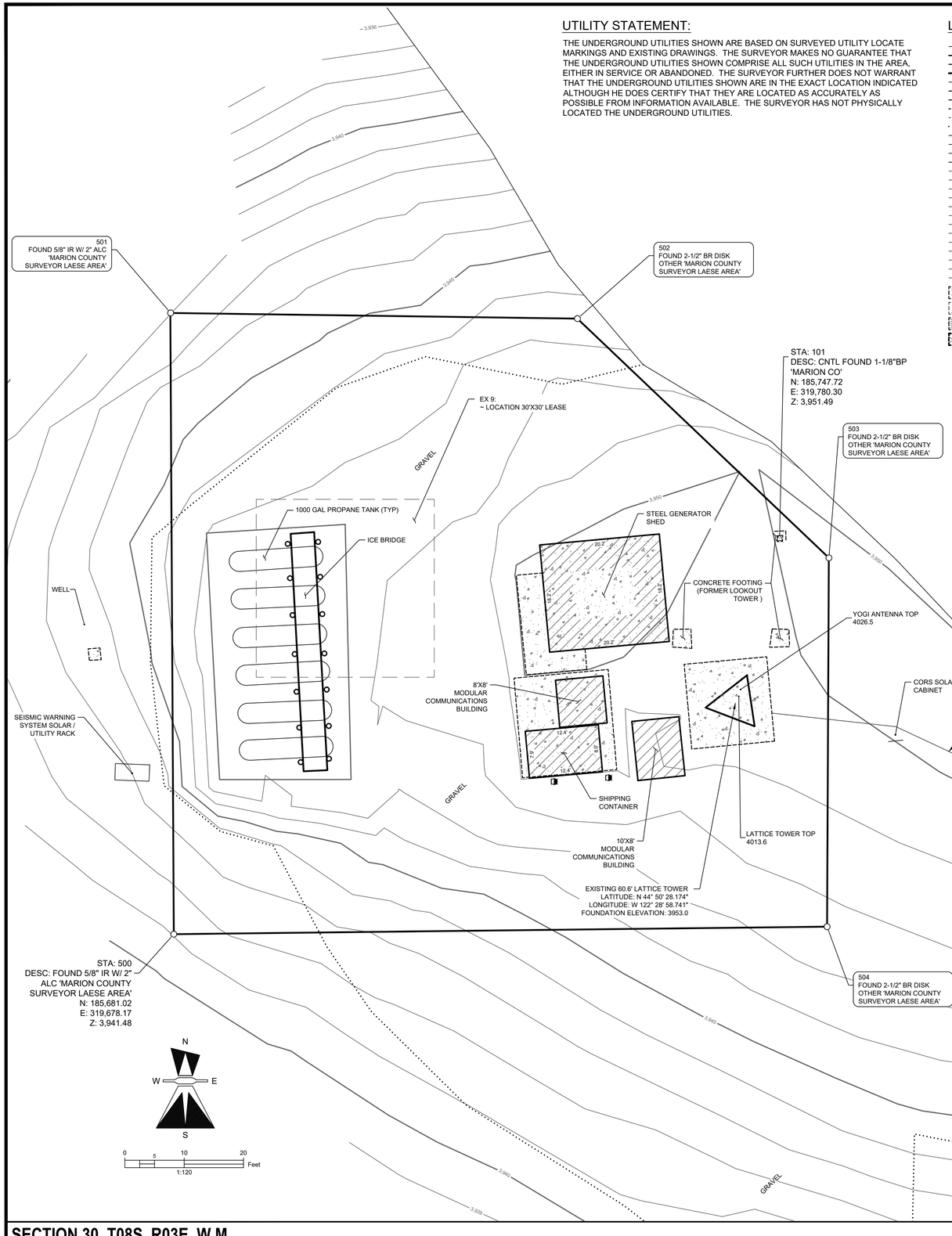
- CENTERLINE OF ROAD
- RIGHT-OF-WAY LINE
- SECTION LINE
- BOUNDARY LINE
- PROPERTY / LOT LINE
- EASEMENT LINE
- CURB
- EDGE OF CONCRETE
- EDGE OF PAVEMENT
- EDGE OF GRAVEL
- CHAIN LINK FENCE
- WOOD / METAL FENCE
- WIRE FENCE
- STRIPING
- STORM DRAIN (SD)
- SANITARY SEWER (SS)
- WATER LINE (W)
- IRRIGATION LINE (IRR)
- GAS LINE (G)
- BURIED POWER (P)
- BURIED COMS LINE (C)
- BURIED FIBER OPTIC (FO)
- BURIED CABLE TV (CTV)
- BURIED SIGNAL (SG)
- OVERHEAD UTILITIES (O/H)
- OVERHEAD POWER (O/P)
- OVERHEAD COMS LINE (O/C)
- CONCRETE
- ASPHALTIC CONCRETE
- RAMP
- CANOPY

- SANITARY MANHOLE
- SANITARY LIFT STATION
- SANITARY VAULT (SS)
- STORM MANHOLE
- DRY WELL
- STORM INLET
- STORM INLET (ROUND)
- STORM INLET LID (CB)
- STORM VAULT (SD)
- CLEAN OUT (CO)
- MANHOLE (UNK / OTHER TYPE)
- RISER (UNK / OTHER TYPE)
- HANDHOLE (UNK / OTHER TYPE)
- VAULT (UNK / OTHER TYPE)
- FIRE HYDRANT
- FIRE AUTO CONNECTION
- FIRE RISER (FW)
- FIRE VALVE (FW)
- FIRE VAULT (FW)
- IRRIGATION VALVE
- IRRIGATION RISER (IRR)
- IRRIGATION VAULT (IRR)
- WATER METER
- WATER VALVE
- WATER MANHOLE (W)
- WATER RISER (W)
- WATER VAULT (W)
- NATURAL GAS METER
- NATURAL GAS VALVE
- NATURAL GAS RISER (G)
- NATURAL GAS VAULT (G)

- POWER METER
- TRANSFORMER
- POWER RISER (P)
- POWER HANDHOLE (P)
- POWER VAULT (P)
- POWER MANHOLE (P)
- COMS HANDHOLE (C)
- COMS RISER (C)
- COMS VAULT (C)
- COMS MANHOLE (C)
- FIBER RISER (FO)
- FIBER HANDHOLE (FO)
- FIBER VAULT (FO)
- TELCO RISER (T)
- TELCO HANDHOLE (T)
- TELCO VAULT (T)
- TELCO MANHOLE (T)
- CABLE TV RISER (CTV)
- CABLE TV HANDHOLE (CTV)
- CABLE TV VAULT (CTV)
- FUEL FILLER
- FUEL MANHOLE (F)
- UTILITY POLE W/DROP
- GUY ANCHOR
- POLE
- TRAFFIC SIGNAL
- PEDESTRIAN SIGNAL
- SIGNAL CONTROL BOX
- SIGNAL HANDHOLE (SIG)
- SIGNAL VAULT (SIG)
- LUMINAIRE / STREET LIGHT
- YARD LIGHT

- SIGN
- BOLLARD
- MAIL BOX
- TOWER
- RR SIGNAL
- RR SWITCH THROW
- RR RISER (RR)
- RR HANDHOLE (RR)
- RR VAULT (RR)
- RR CROSSING GATE
- RR CROSSING SIGNAL (NO GATE)
- MONITOR WELL
- TEST BORE (TB)
- TEST PIT (TP)
- VENT
- CONIFER TREE
- DECIDUOUS TREE
- PALM TREE
- SHRUB
- HIGH OCCUPANCY VEHICLE
- HANDICAP PARKING
- BIKE LANE
- RAILROAD CROSSING

- BENCH MARK
- FOUND CONTROL AS NOTED
- SET CONTROL AS NOTED
- PHOTO CONTROL
- FOUND MONUMENT AS NOTED
- FOUND MONUMENT AS NOTED (ALTERNATE)
- SET MONUMENT AS NOTED
- SET MONUMENT AS NOTED (ALTERNATE)
- FOUND SECTION CORNER AS NOTED
- FOUND QUARTER CONER AS NOTED
- SET SECTION CORNER AS NOTED
- SET QUARTER CONER AS NOTED
- ENCROACHMENT
- A/C ASPHALTIC CONCRETE
- YPC YELLOW PLASTIC CAP
- OPC ORANGE PLASTIC CAP
- RPC RED PLASTIC CAP
- ALC ALUMINIUM CAP
- IR IRON ROD
- IP IRON PIPE
- BP COPPER PLUG
- BRS BRASS
- UKN UNKNOWN
- COMS COMMUNICATIONS
- A AS-BUILT INFORMATION
- HFL HELD FOR LINE
- SFNF SEARCHED FOR NOT FOUND



NARRATIVE:

THE PURPOSE OF THIS SURVEY IS TO PREPARE A PRE-DESIGN BASE MAP FOR FUTURE EXPANSION OF MARION COUNTY'S COMMUNICATION SITE 'HOUSE MOUNTAIN.'

JOHN D PUTNAM PERFORMED THE FIELD SURVEY ON OCTOBER 1ST, 2024. TERRESTRIAL MEASUREMENTS WERE MADE UTILIZING A LEICA MS60 1 SECOND ROBOTIC TOTAL STATION. GNSS OBSERVATIONS WERE MADE UTILIZING A LEICA GS16 RECEIVER.

BEARINGS ARE BASED ON THE NAD 1983(2011) [EPOCH 2010] OREGON COORDINATE REFERENCE SYSTEM, SALEM ZONE AS DETERMINED BY GNSS OBSERVATION TO THE OREGON REAL-TIME GNSS NETWORK.

THE LEASE AREA WAS ESTABLISHED BY HOLDING FOUND MONUMENTS '500' - '504'.

ALL MEASUREMENTS SHOWN MATCH RECORD UNLESS OTHERWISE NOTED.

FALLINGS SHOWN ARE FROM THE TRUE POINT.

NOTES:

1. FIELD SURVEY AND MAPPING PERFORMED ON OCTOBER 1ST, 2024 BY J. PUTNAM UTILIZING A LEICA MS60 ROBOTIC TOTAL STATION AND LEICA GS18 GNSS RECEIVERS.
2. UNITS ARE STATED IN INTERNATIONAL FEET.
3. BEARINGS ARE BASED ON THE NAD 1983(2011) [EPOCH 2010] ORGON COORDINATE PREFERENCE SYSTEM, SALEM ZONE AS DETERMINED BY GNSS OBSERVATION TO THE OREGON REAL-TIME GNSS NETWORK .
4. ELEVATIONS ARE BASED NAVD 1988 AS ESTABLISHED BY GNSS OBSERVATION TO THE OREGON REAL-TIME GNSS NETWORK.
5. ALL DISTANCES ARE GRID BASED ON THE LOW DISTORTION ZONE.
6. TRUE GEODETIC AZIMUTH = GRID AZIMUTH (BEARING BASIS) + MAPPING ANGLE. THE MAPPING ANGLE IS 00°25'24" AT CONTROL STATION 101. THE MAGNETIC DECLINATION FROM TRUE GEODETIC AZIMUTH IS 14°33 EAST.
7. THE TERM "CERTIFY" (OR ITS DERIVATIVES) SHALL MEAN A STATEMENT SIGNED AND/OR SEALED BY A SURVEYOR REPRESENTING THAT THE SURVEYOR'S KNOWLEDGE, INFORMATION AND BELIEF, IN ACCORDANCE WITH COMMONLY ACCEPTED PROCEDURES CONSISTENT WITH APPLICABLE STANDARDS OF PRACTICE, AND IS NOT A GUARANTY OR WARRANTY, EITHER EXPRESSED OR IMPLIED.
8. THIS SURVEY SHOWS ONLY THOSE DEDICATIONS AND EASEMENTS CONTAINED IN THE SUPPLIED TITLE SEARCH. IT IS POSSIBLE THAT OTHER RECORDED OR UNRECORDED INSTRUMENTS EFFECTING THIS PROPERTY MAY EXIST.
9. ORION GEOMATICS MAKES NO WARRANTIES AS TO MATTERS OF UNWRITTEN TITLE SUCH AS ADVERSE POSSESSION, ACQUIESCENCE, ESTOPPLE, ETC.
10. ALL STATEMENTS WITHIN THE CERTIFICATION, AND OTHER REFERENCES LOCATED ELSEWHERE HEREON, RELATED TO: UTILITIES, IMPROVEMENTS, STRUCTURES, BUILDINGS, PARTY WALLS, EASEMENTS, SERVITUDES, AND ENCROACHMENTS; ARE BASED SOLELY ON ABOVE GROUND, VISIBLE EVIDENCE, UNLESS ANOTHER SOURCE OF INFORMATION IS SPECIFICALLY REFERENCED HEREON.
11. NO UTILITIES WERE MARKED PRIOR TO SURVEY. [TABLE 'A' ITEM 11]

REFERENCES:

-RECORDS OF SURVEY:

R1) SN 2607

R2) SN 30641

R3) SN 31487

R4) SN 38516

SURVEY RELATED SPECIAL EXCEPTIONS (SCHEDULE B):

AMERITITLE STATUS OF RECORD TITLE NO. 658004AM DATED NOVEMBER 19, 2024

1 - 4. NOT SURVEY RELATED

5. RIGHT-OF-WAY PERMIT, INCLUDING THE TERMS AND PROVISIONS THEREOF,
   GRANTED TO: PORTLAND GENERAL ELECTRIC COMPANY
   RECORDED: FEBRUARY 8, 1936
   INSTRUMENT NO.: VOLUME: 225 PAGE: 48

SURVEYOR'S NOTE: EXCEPTION IS IS A BLANKET IN NATURE.

6. RIGHT OF WAY PERMIT, INCLUDING THE TERMS AND PROVISIONS THEREOF,
   RECORDED: JULY 29, 1940
   INSTRUMENT NO.: VOLUME: 249 PAGE: 691

SURVEYOR'S NOTE: EXCEPTION IS IS A BLANKET IN NATURE.

7 & 8. NOT SURVEY RELATED.

9. AN UNRECORDED LEASE WITH CERTAIN TERMS, COVENANTS, CONDITIONS AND PROVISIONS SET FORTH THEREIN AND SUCH OTHER EXCEPTIONS AS MAY APPEAR NECESSARY UPON RECORDING THEREOF,
   LESSOR: LONGVIEW FIBRE COMPANY
   LESSEE: US WEST NEWVECTOR GROUP, INC., A COLORADO CORPORATION, AS SUCCESSOR-IN-INTEREST TO GTE MOBILNET OF NORTHWEST OREGON LIMITED PARTNERSHIP
   DISCLOSED BY: MEMORANDUM OF LEASE AGREEMENT DATE: JULY 2, 1997
   RECORDED: NOVEMBER 5, 1997
   INSTRUMENT NO.: REEL: 1438 PAGE: 516

SURVEYOR'S NOTE: THERE WAS NO OBSERVED EVIDENCE OF THIS EXCEPTION AT THE TIME OF THE FIELDWORK. LEASE WAS SET TO EXPIRE ON MARCH 31, 2002. THE DOCUMENT CONTAINS ONLY A SITE SKETCH. APPROXIMATE LOCATION PLOTTED HEREON.

10 - 12.NOT SURVEY RELATED.

STA: 100
DESC: CNTL SET 1/2"IR
W/OPC "ORION CNTL"
N: 185,635.37
E: 319,900.02
Z: 3,942.54

SECTION 30, T08S, R03E, W.M

11X17 SCALE: 1" = 40'	22X34 SCALE: 1" = 20'	1

Marion County
OREGON

PROJECT INFORMATION:

MARION COUNTY HOUSE MOUNTAIN

11.1 MILES SOUTHEAST OF DRAKES CROSSING, OR

	DATE	RELEASE
0	12/12/2024	INITIAL SURVEY RELEASE

DRAWING INFORMATION:

THIS DRAWING IS COPYRIGHTED AND IS THE SOLE PROPERTY OF THE OWNER. IT IS PRODUCED SOLELY FOR USE BY THE OWNER AND ITS AFFILIATES. REPRODUCTION OR USE OF THIS DRAWING AND/OR THE INFORMATION CONTAINED IN IT IS FORBIDDEN WITHOUT THE WRITTEN PERMISSION OF THE OWNER.

PLANS PREPARED BY:

cushing Civil Engineers

Cushing
Civil Engineers
12725 SW MILLIKAN WAY
SUITE 300
BEAVERTON, OR 97005
(503) 387-5331
www.cushing-engr.com

LICENSURE:

orion GEOMATICS
Because the world is a spatial place™
1724 23rd Avenue | Forest Grove OR 97116
T: 503.359.1688 | www.oriongeomatics.com

REGISTERED
PROFESSIONAL
LAND SURVEYOR

DIGITAL SIGNATURE

OREGON
JULY 19, 1994
JOHN D. PUTNAM
2676

RENEWS: 12-31-24
DIGITALLY SIGNED 12/13/2024

SHEET TITLE:

EXISTING CONDITIONS

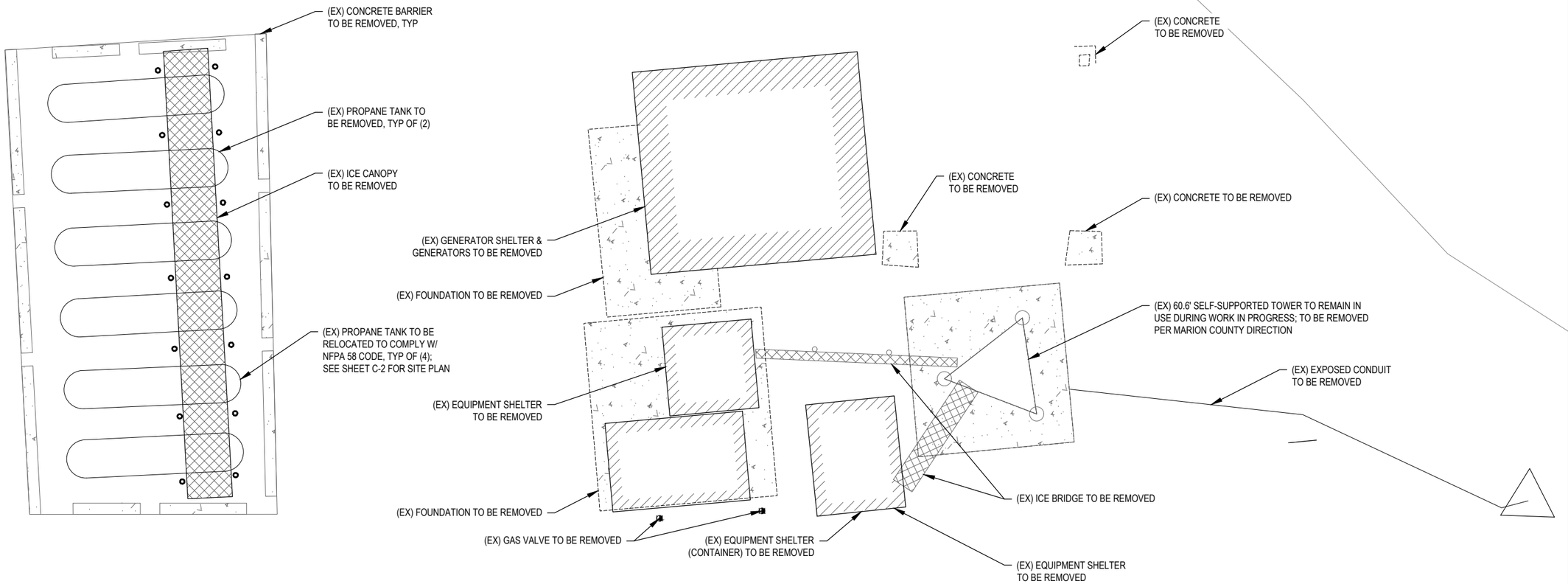
SHEET NUMBER:

V-1

NOTE:

THIS IS NOT A SURVEY; ALL EXISTING INFORMATION IS PROVIDED BY GIS, SURVEY & SITE WALK NOTES.

EXHIBIT K



0 2 4 8

SCALE: 1" = 4'

DEMOLITION PLAN | 11X17 SCALE: 1" = 10' | 22X34 SCALE: 1" = 5' | 1

Marion County OREGON

PROJECT INFORMATION:

MARION COUNTY
HOUSE MOUNTAIN

11.1 MILES SOUTHEAST OF DRAKES CROSSING, OR

	DATE	RELEASE
	07-26-24	SITE SKETCH
	02-12-25	PRELIMINARY ZONING DRAWINGS
	05-22-25	PRELIMINARY CONSTRUCTION DRAWINGS
	09-23-25	FINAL CONSTRUCTION DRAWINGS
	09-30-25	REV. FCD FOR PROPANE TANK UPDATE
	10-15-25	REV. FCD FOR SITE CONFIGURATION

REVISION 1, 10/15/2025

DRAWING INFORMATION:
THIS DRAWING IS COPYRIGHTED AND IS THE SOLE PROPERTY OF THE OWNER. IT IS PRODUCED SOLELY FOR USE BY THE OWNER AND ITS AFFILIATES. REPRODUCTION OR USE OF THIS DRAWING AND/OR THE INFORMATION CONTAINED IN IT IS FORBIDDEN WITHOUT THE WRITTEN PERMISSION OF THE OWNER.

PLANS PREPARED BY:

cushing Civil Engineers

Cushing Civil Engineers

12725 SW MILLIKAN WAY
SUITE 300
BEAVERTON, OR 97005
(503) 387-5331
www.cushingcivilengineers.com

LICENSURE:

REGISTERED PROFESSIONAL ENGINEER 83233 OREGON JUNE 7, 2012 KENNY McMANAWAY

RENEWAL DATE 12/31/26

SHEET TITLE:

DEMOLITION PLAN

SHEET NUMBER:

EX-1

EXHIBIT K

GENERAL NOTES:

1. DRAWINGS ARE NOT TO BE SCALED, WRITTEN DIMENSIONS TAKE PRECEDENCE, THIS SET OF DOCUMENTS IS INTENDED TO BE USED FOR DIAGRAMMATIC PURPOSED ONLY, UNLESS NOTED OTHERWISE. THE GENERAL CONTRACTOR'S SCOPE OF WORK SHALL INCLUDE FURNISHING ALL MATERIALS, EQUIPMENT, LABOR AND ANY REQUIREMENTS DEEMED NECESSARY TO COMPLETE INSTALLATION AS DESCRIBED IN THE DRAWINGS AND OWNER'S PROJECT MANUAL.
2. THE CONTRACTOR IS RESPONSIBLE FOR ALL DIMENSIONS AND STANDARDIZED DETAILS THAT REQUIRE MODIFICATIONS DUE TO ACTUAL FIELD CONDITIONS AND REQUIREMENTS MUST BE SUBMITTED TO AND APPROVED BY OWNERS REPRESENTATIVE PRIOR TO START OF WORK.
3. PRIOR TO THE SUBMISSION OF BIDS, CONTRACTORS INVOLVED SHALL VISIT THE JOB SITE TO FAMILIARIZE THEMSELVES WITH ALL CONDITIONS AFFECTING THE PROPOSED PROJECT. CONTRACTORS SHALL VISIT THE CONSTRUCTION SITE WITH THE CONSTRUCTION/CONTRACT DOCUMENTS TO VERIFY FIELD CONDITIONS AND CONFIRM THAT THE PROJECT WILL BE ACCOMPLISHED AS SHOWN. PRIOR TO PROCEEDING WITH CONSTRUCTION, ANY ERRORS, OMISSIONS, OR DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT/ENGINEER VERBALLY AND IN WRITING.
4. THE GENERAL CONTRACTOR SHALL RECEIVE WRITTEN AUTHORIZATION TO PROCEED WITH CONSTRUCTION PRIOR TO STARTING WORK ON ANY ITEM NOT CLEARLY DEFINED BY THE CONSTRUCTION DRAWINGS/CONTRACT DOCUMENTS.
5. THE CONTRACTOR SHALL SUPERVISE AND DIRECT THE PROJECT DESCRIBED IN THE CONTRACT DOCUMENTS. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR ALL CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES, SAFETY, AND PROCEDURES FOR COORDINATING ALL PORTIONS OF THE WORK UNDER THE CONTRACT.
6. THE CONTRACTOR SHALL INSTALL ALL EQUIPMENT AND MATERIALS ACCORDING TO MANUFACTURER'S/VENDOR'S SPECIFICATIONS UNLESS NOTED OTHERWISE OR WHERE LOCAL CODES OR ORDINANCES TAKE PRECEDENCE.
7. ALL WORK PERFORMED ON THE PROJECT AND MATERIALS INSTALLED SHALL BE IN STRICT ACCORDANCE WITH ALL APPLICABLE CODES, REGULATIONS, AND ORDINANCES. CONTRACTOR SHALL GIVE ALL NOTICES AND COMPLY WITH ALL LAWS, ORDINANCES, RULES, REGULATIONS AND LAWFUL ORDERS OF ANY PUBLIC AUTHORITY, MUNICIPAL AND UTILITY COMPANY SPECIFICATIONS, AND LOCAL AND STATE JURISDICTIONAL CODES BEARING ON THE PERFORMANCE OF THE WORK.
8. THE CONTRACTOR SHALL PROVIDE, AT THE PROJECT SITE, A FULL SET OF CONSTRUCTION DOCUMENTS UPDATED WITH THE LATEST REVISIONS INVOLVED WITH THE PROJECT. THIS SET IS A VALID CONTRACT DOCUMENT ONLY IF THE TITLE SHEET IS STAMPED IN RED INK "FOR CONSTRUCTION" AND EACH SUCCESSIVE SHEET BEARS THE ARCHITECT'S/ENGINEER'S SIGNED WET STAMP.
9. THE CONTRACTOR IS RESPONSIBLE FOR ADEQUATELY BRACING AND PROTECTING ALL WORK DURING CONSTRUCTION AGAINST DAMAGE, BREAKAGE, COLLAPSE, ETC. ACCORDING TO APPLICABLE CODES, STANDARDS, AND GOOD CONSTRUCTION PRACTICES. THE STRUCTURAL COMPONENTS OF ADJACENT CONSTRUCTION OR FACILITIES ARE NOT TO BE ALTERED BY THE CONSTRUCTION PROJECT UNLESS NOTED OTHERWISE.
10. THE CONTRACTOR SHALL MEET ALL OSHA REQUIREMENTS FOR ALL INSTALLATIONS.
11. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL DAMAGES TO THE EXISTING CONSTRUCTION AND REPAIR ALL DAMAGES TO EQUAL OR BETTER NEW CONSTRUCTION. THE CONTRACTOR SHALL NOTIFY THE PROJECT MANAGER OF ANY DAMAGE TO THE BUILDING SITE OR ANY ADJACENT STRUCTURES AROUND THE PROJECT. THE OWNERS REPRESENTATIVE SHALL BE SOLE AND FINAL JUDGE AS TO THE QUALITY OF THE REPAIRED CONSTRUCTION. ANY ADDITIONAL MODIFICATIONS WHICH MUST BE MADE SHALL BE MADE AT THE CONTRACTOR'S EXPENSE.
12. WHERE NEW PAVING, CONCRETE SIDEWALKS OR PATHS MEET EXISTING CONSTRUCTION, THE CONTRACTOR SHALL MATCH THE EXISTING PITCH, GRADE, AND ELEVATION SO THE ENTIRE STRUCTURE SHALL HAVE A SMOOTH TRANSITION.
13. THE CONTRACTOR SHALL MODIFY THE EXISTING FLOORS, WALL, CEILING, OR OTHER CONSTRUCTION AS REQUIRED TO GAIN ACCESS TO AREAS FOR ALL MECHANICAL, PLUMBING, ELECTRICAL, OR STRUCTURAL MODIFICATIONS. WHERE THE EXISTING CONSTRUCTION DOORS, PARTITIONS, CEILING, ETC., ARE TO BE REMOVED, MODIFIED, OR REARRANGED OR WHERE THE EXPOSED OR HIDDEN MECHANICAL, ELECTRICAL, SYSTEMS ARE ADDED OR MODIFIED, THE GENERAL CONTRACTOR SHALL REPAIR, PATCH AND MATCH ALL EXISTING CONSTRUCTION AND FINISHES OF ALL FLOORS WALLS AND CEILINGS. WHERE CONCRETE MASONRY CONSTRUCTION IS MODIFIED, THE CONTRACTOR SHALL TOOTH IN ALL NEW CONSTRUCTION TO MATCH THE EXISTING BOND. WHERE CONCRETE CONSTRUCTION IS MODIFIED, THE CONTRACTOR SHALL VERIFY THE EXACT DETAILS TO BE USED FOR CONSTRUCTION. ALL WORK SHALL BE COVERED UNDER THE GENERAL CONTRACT.
14. IF CONTRACTOR OR SUBCONTRACTOR FIND IT NECESSARY TO DEVIATE FROM ORIGINAL APPROVED PLANS, THEN IT IS THE CONTRACTOR'S AND THE SUBCONTRACTOR'S RESPONSIBILITY TO PROVIDE THE PROJECT MANAGER WITH 4 COPIES OF THE PROPOSED CHANGES FOR HIS APPROVAL BEFORE PROCEEDING WITH THE WORK. IN ADDITION THE CONTRACTOR AND SUBCONTRACTORS SHALL BE RESPONSIBLE FOR PROCURING ALL NECESSARY APPROVALS FROM THE BUILDING AUTHORITIES FOR THE PROPOSED CHANGES BEFORE PROCEEDING WITH THE WORK. THE CONTRACTOR AND SUBCONTRACTORS SHALL BE RESPONSIBLE FOR PROCURING ALL NECESSARY INSPECTIONS AND APPROVALS FROM BUILDING AUTHORITIES DURING THE EXECUTION OF THE WORK.
15. CONTRACTOR TO PROVIDE A PORTABLE FIRE EXTINGUISHER WITH A RATING OF NOT LESS THAN 2-A OR 2-A10BC WITHIN 75 FEET TRAVEL DISTANCE TO ALL PORTIONS OF PROJECT AREA DURING CONSTRUCTION.
16. THIS IS AN ESSENTIAL FACILITY THEREFORE SHALL STRICTLY MEET ALL APPLICABLE CODE AND JURISDICTIONAL REQUIREMENTS.

GENERAL NOTES CONTINUED:

17. THE CONTRACTOR SHALL PERFORM WORK DURING SITE/PROPERTY OWNER'S PREFERRED HOURS TO AVOID DISTURBING NORMAL BUSINESS.
18. SEAL ALL PENETRATIONS THROUGH FIRE-RATED AREAS WITH U.L. LISTED OR FIRE MARSHAL APPROVED MATERIALS AS APPLICABLE TO THIS FACILITY AND OR PROJECT SITE.
19. CONTRACTOR SHALL BE RESPONSIBLE FOR UTILITY LOCATES, SCHEDULING, COORDINATING SPECIAL AND BUILDING DEPARTMENT INSPECTIONS.
21. ROUTING OF ALL CONDUITS, CABLES, CABLE TRAYS ETC ARE INDICATED AS PROPOSED LOCATION ONLY. CONFIRM THE EXACT LOCATION AND ROUTING WITH THE ON SITE PROJECT MANAGER PRIOR TO STARTING WORK.

CONCRETE NOTES:

1. ALL CONCRETE WORK SHALL BE IN ACCORDANCE WITH THE ACI 301, ACI 318 AND THE SPECIFICATION CAST-IN-PLACE CONCRETE.
2. ALL CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 3000 PSI AT 28 DAYS (UNO).
3. REINFORCING STEEL SHALL CONFORM TO ASTM A 615, GRADE 60, DEFORMED UNLESS NOTED OTHERWISE. WELDED WIRE FABRIC SHALL CONFORM TO ASTM A 185 WELDED STEEL WIRE FABRIC UNLESS NOTED OTHERWISE. SPLICES CLASS "B" AND ALL HOOKS SHALL BE STANDARD (UNO).
4. THE FOLLOWING MINIMUM CONCRETE COVER SHALL BE PROVIDED FOR REINFORCING STEEL UNLESS SHOWN OTHERWISE ON DRAWINGS: CONCRETE CAST AGAINST EARTH - 3 IN.
   CONCRETE EXPOSED TO EARTH OR WEATHER:
   #6 AND LARGER .....2 IN.
   #5 AND SMALLER & WWF .....1-1/2 IN.
5. A 1/2" TROWELED RADIUS SHALL BE PROVIDED AT ALL EXPOSED EDGES OF CONCRETE (UNO). HOLES TO RECEIVE EXPANSION/WEDGE ANCHORS SHALL BE 1/8" LARGER IN DIAMETER THAN THE ANCHOR BOLT, DOWEL OR ROD AND SHALL CONFORM TO MFR RECOMMENDATION FOR EMBEDMENT DEPTH OR AS SHOWN ON THE DRAWINGS. AVOID CUTTING EXISTING REBAR WHEN DRILLING HOLES IN THE ELEVATED SLAB.
6. INSTALLATION OF CONCRETE EXPANSION AND WEDGE ANCHOR, SHALL BE PER MANUFACTURER'S WRITTEN RECOMMENDED PROCEDURES.
7. FLOAT SURFACE SHALL BE A SMOOTH FINISH. SURFACE SHALL BE FREE OF ALL OBVIOUS DEPRESSIONS. SURFACE SHALL BE SLOPED AT 2% TO PROMOTE DRAINAGE AWAY FROM EQUIPMENT.

SITE WORK NOTES:

1. RUBBISH, STUMPS, DEBRIS, STICKS, STONES AND OTHER REFUSE SHALL BE REMOVED FROM THE SITE AND DISPOSED OF LEGALLY UNLESS OTHERWISE REQUIRED TO BE LEFT AS DEFINED BY LAND/PROPERTY OWNER.
2. THE SITE SHALL BE GRADED TO CAUSE SURFACE WATER TO FLOW AWAY FROM THE EQUIPMENT, EQUIPMENT SHELTER, GENERATOR, FUEL TANK, TOWER AREAS, AND ADJACENT BUILDINGS, ETC.
3. NO FILL OR EMBANKMENT MATERIAL SHALL BE PLACED ON FROZEN GROUND. FROZEN MATERIALS, SNOW OR ICE SHALL NOT BE PLACED IN ANY FILL OR EMBANKMENT.
4. THE SUBGRADE SHALL BE COMPACTED AND BROUGHT TO A SMOOTH UNIFORM GRADE PRIOR TO THE CRUSHED STONE APPLICATION. FABRIC USE AS REQUIRED.
5. ALL APPLICABLE LOCATES SHALL BE PERFORMED PRIOR TO TO ANY EXCAVATION OR SITE GRADING. ALL EXISTING ACTIVE SEWER, WATER, GAS, ELECTRIC, AND OTHER UTILITIES WHERE ENCOUNTERED IN THE WORK, SHALL BE PROTECTED AT ALL TIMES, AND WHERE REQUIRED FOR THE PROPER EXECUTION OF THE WORK, SHALL BE RELOCATED AS DIRECTED BY ENGINEERS. EXTREME CAUTION SHOULD BE USED BY THE CONTRACTOR WHEN EXCAVATING OR PIER DRILLING AROUND OR NEAR UTILITIES. CONTRACTOR SHALL PROVIDE SAFETY TRAINING FOR THE WORKING CREW.
6. ALL EXISTING INACTIVE SEWER, WATER, GAS, ELECTRIC AND OTHER UTILITIES, WHICH INTERFERE WITH THE EXECUTION OF THE WORK, SHALL BE REMOVED AND SHALL BE CAPPED, PLUGGED OR OTHERWISE DISCONTINUED AT POINTS WHICH WILL NOT INTERFERE WITH THE EXECUTION OF THE WORK, SUBJECT TO THE APPROVAL OF ENGINEERING.
7. THE AREAS OF THE PROPERTY DISTURBED BY THE WORK AND NOT COVERED BY THE BUILDING, DRIVEWAY OR CRUSHED STONE, SHALL BE GRADED TO A UNIFORM SLOPE, FERTILIZED, SEEDED, AND COVERED WITH MULCH AS SPECIFIED IN THE SPECIFICATION LANDSCAPE WORK..
8. BEDDING MATERIAL FOR UTILITY LINES, CULVERTS AND PIPING: CLEAN SAND, MEDIUM TP COARSE, SUB ROUNDED NATURAL RIVER OR BANK SAND, WASHED, FREE OF SILT OR CLAY, LOAM, FRIABLE OR SOLUBLE MATERIALS, AND ORGANIC MATTER; GRADED IN ACCORDANCE WITH THE FOLLOWING GRAIN SIZE DISTRIBUTION:

SIEVE SIZE	PERCENT PASSING
	100
NO. 4 MESH	60-90
NO. 8 MESH	0-45
NO. 16 MESH	0-25
NO. 100 MESH	0-2
NO. 200 MESH	0-2

9. BMP'S FOR TEMPORARY EROSION/SEDIMENTATION CONTROL SHALL BE IMPLEMENTED PER LOCAL, CITY OR COUNTY GUIDELINES AND PER PLAN IF APPLICABLE.

SITE WORK NOTES CONTINUED:

10. ALL SITE DESIGN AND CONSTRUCTION MUST COMPLY WITH INDUSTRY STANDARDS AND BE ALIGNED WITH BMP GUIDELINES AS TECHNICALLY APPLICABLE. EACH SITE MUST BE PM APPROVED BEFORE IT SHALL BE CONSIDERED COMPLETE AND ACCEPTED.
11. IF INADVERTENT DISCOVERIES OF NATIVE AMERICAN CULTURAL MATERIALS OR HUMAN REMAINS ARE MADE DURING CONSTRUCTION, ALL WORK SHOULD CEASE AND POTENTIALLY AFFECTED TRIBES, AS WELL AS THE STATE HISTORIC PRESERVATION OFFICE, SHOULD BE NOTIFIED IMMEDIATELY.

TOWER/POLE NOTES:

1. ALL ANTENNAS, LINES AND RELATED INSTALLATION HARDWARE TO BE PROVIDED BY THE LAND MOBILE COMMUNICATIONS PROVIDER.
2. ALL HARDWARE (NUTS AND BOLTS) BE TIGHTENED AND TORQUED IN ACCORDANCE WITH THE TOWER MANUFACTURER'S AND STRUCTURAL ENGINEER'S SPECIFICATIONS.
3. VERIFICATION THAT THE TOWER/POLE CAN SUPPORT THE PROPOSED ANTENNA LOADING IS TO BE DONE BY OTHERS.
4. PROVIDE SUPPORTS FOR THE ANTENNA COAX CABLES TO THE ELEVATION OF ALL INITIAL AND FUTURE ANTENNAS. ANTENNA COAX CABLES ARE TO BE SUPPORTED AND RESTRAINED AT THE CENTERS SUITABLE TO THE MANUFACTURER'S REQUIREMENTS.

ATTENTION (OREGON SITES ONLY):

CALL 1-800-332-2344 48 HOURS BEFORE YOU DIG. OREGON LAW REQUIRES YOU TO FOLLOW OAR 952-001-0010 THRU 952-001-0090. COPIES ARE AVAILABLE AT THE OREGON UTILITY NOTIFICATION CENTER 503-232-1987

DESIGN LOADS:

ROOF SNOW LOAD DATA -	GROUND SNOW LOAD:	407 PSF*
	FLAT-ROOF SNOW LOAD:	N/A
	SNOW EXPOSURE FACTOR:	N/A
	SNOW LOAD IMPORTANCE FACTOR:	N/A
	THERMAL FACTOR:	N/A
WIND DESIGN DATA -	ULTIMATE DESIGN WIND SPEED:	107 MPH*
	RISK CATEGORY:	II
	WIND EXPOSURE:	C*
	INTERNAL PRESSURE COEFFICIENT:	N/A
	DESIGN WIND PRESSURES;	
	WIND LOAD HORIZONTAL (MWFRS):	N/A
	WIND LOAD (UPLIFT) (MWFRS):	N/A
EARTHQUAKE DESIGN DATA -	RISK CATEGORY:	IV
	SEISMIC IMPORTANCE FACTOR:	N/A
	MAPPED SPECTRAL RESPONSE ACCEL-ERATION PARAMETERS;	
	S_S	0.71
	S_1	0.28
	SITE CLASS:	B/C
	DESIGN SPECTRAL RESPONSE ACCEL-ERATION PARAMETERS;	
	S_{DS}	0.43
	S_{D1}	0.19
	SEISMIC DESIGN CATEGORY:	D
	BASIC SEISMIC FORCE-RESISTING SYSTEM:	N/A
	DESIGN BASE SHEAR:	N/A
	SEISMIC RESPONSE COEFFICIENT:	N/A
	RESPONSE MODIFICATION COEFFICIENT:	N/A
	ANALYSIS PROCEDURE USED:	N/A
GEOTECHNICAL INFORMATION -	ALLOWABLE BEARING CAPACITY:	2,500 PSF

REFER TO GEOTECH REPORT BY BLACK MOUNTAIN DATED SEPTEMBER 19, 2024

*INFORMATION OBTAINED FROM ASCE 7 HAZARD TOOL AND/OR OREGON SNOW LOAD MAP

SYMBOLS LEGEND

1 REVISION
1 KEY NOTE DETAIL
3 / C-4 REFERENCE ELEVATION
A / C-3 SECTION REFERENCE
ELEVATION DATUM POINT

CHAINLINK FENCE
CEDAR FENCE
PROPANE — LPG
UNDERGROUND POWER — P
OVERHEAD POWER — OHP
TELCO — T
POWER/TELCO — T/P
GAS — G
WATER — W
COAX — COAX
CENTERLINE
EASEMENT
PROPERTY LINE
SUBJECT PROPERTY LINE

ABBREVIATIONS LEGEND

A/C	AIR CONDITIONING
ADJ	ADJUSTABLE
AFF	ABOVE FINISH FLOOR
AGL	ABOVE GRADE LEVEL
APPROX	APPROXIMATELY
ASTM	AMERICAN SOCIETY FOR TESTING & MATERIALS
AWG	AMERICAN WIRE GAUGE
BLDG	BUILDING
BLK	BLOCK
BMR	BASE MOBILE RADIO
B/S	BUILDING STANDARD
CLG	CEILING
CLR	CLEAR
CONC	CONCRETE
CONST	CONSTRUCTION
CONT	CONTINUOUS
DBL	DOUBLE
DIA, Ø	DIAMETER
DIAG	DIAGONAL
DIM	DIMENSION
DN	DOWN
DTL, DETL	DETAIL
DWG	DRAWING
E	EAST
EA	EACH
EL, ELEV	ELEVATION
ELECT	ELECTRICAL
EQ	EQUAL
EQUIP	EQUIPMENT
E.W.	EACH WAY
EX	EXISTING
EXT	EXTERIOR
FIN	FINISH
FLUOR	FLUORESCENT
FLR	FLOOR
FT	FOOT
GA	GAUGE
GALV	GALVANIZE(D)
GC	GENERAL CONTRACTOR
GRND	GROUND
GWB	GYPSUM WALL BOARD
GYP BD	GYPSUM BOARD
HARD'WD	HARDWOOD
HORIZ	HORIZONTAL
HR	HOUR
HT	HEIGHT
HVAC	HEATING, VENTING AND AIR CONDITIONING
I.D.	INSIDE DIA.
IN	INCH
INFO	INFORMATION
INSUL	INSULATION
INT	INTERIOR
LB(S)	POUND(S)
LNA	ANTENNA AMPLIFIER
MAX	MAXIMUM
MECH	MECHANICAL
MET, MTL	METAL
MFR	MANUFACTURER
MGR	MANAGER
MIN	MINIMUM
MISC	MISCELLANEOUS
N	NORTH
NA	NOT APPLICABLE
NIC	NOT IN CONTRACT
NTS	NOT TO SCALE
OC, o/c	ON CENTER
OD	OUTSIDE DIAMETER
OPG	OPENING
OPP	OPPOSITE
OHP	OVERHEAD POWER
UGP	UNDRGRND POWER
OHT	OVERHEAD TELCO
UGT	UNDRGRND TELCO
PR	PAIR
PROJ	PROJECT
PROP	PROPERTY
P	PROPOSED
PT	PRESSURE TREATED
REQ'D	REQUIRED
RM	ROOM
R.O.	ROUGH OPENING
S	SOUTH
SHT	SHEET
SIM	SIMILAR
SPEC	SPECIFICATION
SQ	SQUARE
SS	STAINLESS STEEL
STL	STEEL
STRUCT	STRUCTURAL
SUSP	SUSPENDED
S.V.	SHEET VINYL
THRU	THROUGH
TNND	TINNED
T.O.C.	TOP OF CONCRETE
T.O.M.	TOP OF MASONRY
TYP	TYPICAL
U.N.O.	UNLESS NOTED OTHERWISE
VERT	VERTICAL
VIF	VERIFY IN FIELD
VT	VINYL TILE
W	WEST
W/	WITH
WIN	WINDOW
W/O	WITHOUT
WP	WATERPROOF
∠	ANGLE
&	AND
℄	CENTER LINE
ℙ	PROPERTY LINE
@	AT
#	NUMBER

Marion County OREGON

PROJECT INFORMATION:

MARION COUNTY HOUSE MOUNTAIN

11.1 MILES SOUTHEAST OF DRAKES CROSSING, OR

	DATE	RELEASE
	07-26-24	SITE SKETCH
	02-12-25	PRELIMINARY ZONING DRAWINGS
	05-22-25	PRELIMINARY CONSTRUCTION DRAWINGS
	09-23-25	FINAL CONSTRUCTION DRAWINGS
	09-30-25	REV. FCD FOR PROPANE TANK UPDATE
	10-15-25	REV. FCD FOR SITE CONFIGURATION

REVISION 1, 10/15/2025

DRAWING INFORMATION:
THIS DRAWING IS COPYRIGHTED AND IS THE SOLE PROPERTY OF THE OWNER. IT IS PRODUCED SOLELY FOR USE BY THE OWNER AND ITS AFFILIATES. REPRODUCTION OR USE OF THIS DRAWING AND/OR THE INFORMATION CONTAINED IN IT IS FORBIDDEN WITHOUT THE WRITTEN PERMISSION OF THE OWNER.

PLANS PREPARED BY:
cushing Civil Engineers
Cushing Civil Engineers
12725 SW MILLIKAN WAY
SUITE 300
BEAVERTON, OR 97005
(503) 387-5331
www.cushingcivilengineers.com

LICENSURE:

REGISTERED PROFESSIONAL ENGINEER 83233 OREGON JUNE 7, 2012 KENNY McMANAWAY

RENEWAL DATE 12/31/26

SHEET TITLE:

GENERAL NOTES

SHEET NUMBER:

G-1

EROSION CONTROL NOTES:

1. OWNER OR DESIGNATED PERSON SHALL BE RESPONSIBLE FOR PROPER INSTALLATION AND MAINTENANCE OF ALL EROSION AND SEDIMENT CONTROL MEASURES, IN ACCORDANCE WITH LOCAL, STATE, AND FEDERAL REGULATIONS.
2. THE IMPLEMENTATION OF THESE ESC PLANS AND CONSTRUCTION, MAINTENANCE, REPLACEMENT, AND UPGRADING OF THESE ESC FACILITIES IS THE RESPONSIBILITY OF THE CONTRACTOR UNTIL ALL CONSTRUCTION IS COMPLETED AND APPROVED BY THE LOCAL JURISDICTION, AND VEGETATION/LANDSCAPING IS ESTABLISHED. THE DEVELOPER SHALL BE RESPONSIBLE FOR MAINTENANCE AFTER THE PROJECT IS APPROVED UNTIL THE LOTS ARE SOLD.
3. THE BOUNDARIES OF THE CLEARING LIMITS SHOWN ON THIS PLAN SHALL BE CLEARLY MARKED IN THE FIELD PRIOR TO CONSTRUCTION. DURING THE CONSTRUCTION PERIOD, NO DISTURBANCE BEYOND THE CLEARING LIMITS SHALL BE PERMITTED. THE MARKINGS SHALL BE MAINTAINED BY THE APPLICANT/CONTRACTOR FOR THE DURATION OF CONSTRUCTION.
4. THE ESC FACILITIES SHOWN ON THIS PLAN MUST BE CONSTRUCTED IN CONJUNCTION WITH ALL CLEARING AND GRADING ACTIVITIES, AND IN SUCH A MANNER AS TO INSURE THAT SEDIMENT AND SEDIMENT LADEN WATER DOES NOT ENTER THE DRAINAGE SYSTEM, ROADWAYS, OR VIOLATE APPLICABLE WATER STANDARDS.
5. THE ESC FACILITIES SHOWN ON THIS PLAN ARE MINIMUM REQUIREMENTS FOR ANTICIPATED SITE CONDITIONS. DURING CONSTRUCTION PERIODS, THESE ESC FACILITIES SHALL BE UPGRADED AS NEEDED FOR UNEXPECTED STORM EVENTS AND TO ENSURE THAT SEDIMENT AND SEDIMENT LADEN WATER DOES NOT LEAVE THE SITE.
6. THE ESC FACILITIES SHALL BE INSPECTED DAILY BY THE APPLICANT/CONTRACTOR AND MAINTAINED AS NECESSARY TO ENSURE THEIR CONTINUED FUNCTIONING.
7. AT NO TIME SHALL SEDIMENT BE ALLOWED TO ACCUMULATE MORE THAN 1/3 THE BARRIER HEIGHT. ALL CATCH BASINS AND CONVEYANCE LINES SHALL BE CLEANED PRIOR TO PAVING. THE CLEANING OPERATIONS SHALL NOT FLUSH SEDIMENT-LADEN WATER INTO THE DOWNSTREAM SYSTEM.
8. STABILIZED GRAVEL ENTRANCES SHALL BE INSTALLED AT THE BEGINNING OF CONSTRUCTION AND MAINTAINED FOR THE DURATION OF THE PROJECT. ADDITIONAL MEASURES MAY BE REQUIRED TO INSURE THAT ALL PAVED AREAS ARE KEPT CLEAN FOR THE DURATION OF THE PROJECT.
9. STORM DRAIN INLETS, BASINS, AND AREA DRAINS SHALL BE PROTECTED UNTIL PAVEMENT SURFACES ARE COMPLETED AND/OR VEGETATION IS RE-ESTABLISHED.
10. PAVEMENT SURFACES AND VEGETATION ARE TO BE PLACED AS RAPIDLY AS POSSIBLE.
11. SEEDING SHALL BE PERFORMED NO LATER THAN SEPTEMBER 1 FOR EACH PHASE OF CONSTRUCTION.
12. IF THERE ARE EXPOSED SOILS OR SOILS NOT FULLY ESTABLISHED FROM OCTOBER 1ST THROUGH APRIL 30TH, THE WET WEATHER EROSION PREVENTION MEASURES WILL BE IN EFFECT. SEE THE EROSION PREVENTION AND SEDIMENT CONTROL PLANNING AND DESIGN MANUAL (CHAPTER 4) FOR REQUIREMENTS.
13. NO EXPOSED, BARE SOILS SHALL REMAIN UNSTABILIZED FOR MORE THAN TWO DAYS DURING THE PERIOD OCTOBER 1 THROUGH APRIL 30 OR FOR MORE THAN SEVEN DAYS DURING THE PERIOD OF MAY 1 THROUGH SEPTEMBER 30. ALL DISTURBED SOIL SURFACES SHALL BE STABILIZED BY A SUITABLE APPLICATION OF "BEST MANAGEMENT PRACTICES".
14. WHERE FEASIBLE, NO MORE THAN 500 FEET OF TRENCH SHALL BE OPEN AT ONE TIME. EXCAVATED MATERIAL SHALL BE PLACED ON THE UPHIL SIDE OF TRENCHES PROVIDED IT DOES NOT CONFLICT WITH SAFETY REQUIREMENTS.
15. THE DEVELOPER SHALL REMOVE ESC MEASURES WHEN VEGETATION IS FULLY ESTABLISHED.

GENERAL NOTES

SCALE: NTS | 4

UNADJUSTED CUT/ FILL QUANTITIES

STRIPPING ORGANICS FOR COMPOUND;
CUT = ±84 CU. YD.

STRIPPING FOR ACCESS ROAD AND PARKING;
CUT = EXISTING

PROPOSED COMPOUND AREA;
CUT = 0 CU. YD.
FILL = 0 CU. YD.

PROPOSED ACCESS ROAD AND PARKING;
CUT = 0 CU. YD.
FILL = 0 CU. YD.

PROPOSED TOWER FOUNDATION;
EXCAVATION = ±148 CU. YD.

APPROX. TOTAL AREA OF DISTURBANCE OF PROPOSED GRADING = 2,245 SQ. FT.

REFER TO GEO-TECHNICAL ENGINEERING EVALUATION BY BLACK MOUNTAIN DATED 09/19/2024

CUT/ FILL QUANTITIES

SCALE: NTS | 3

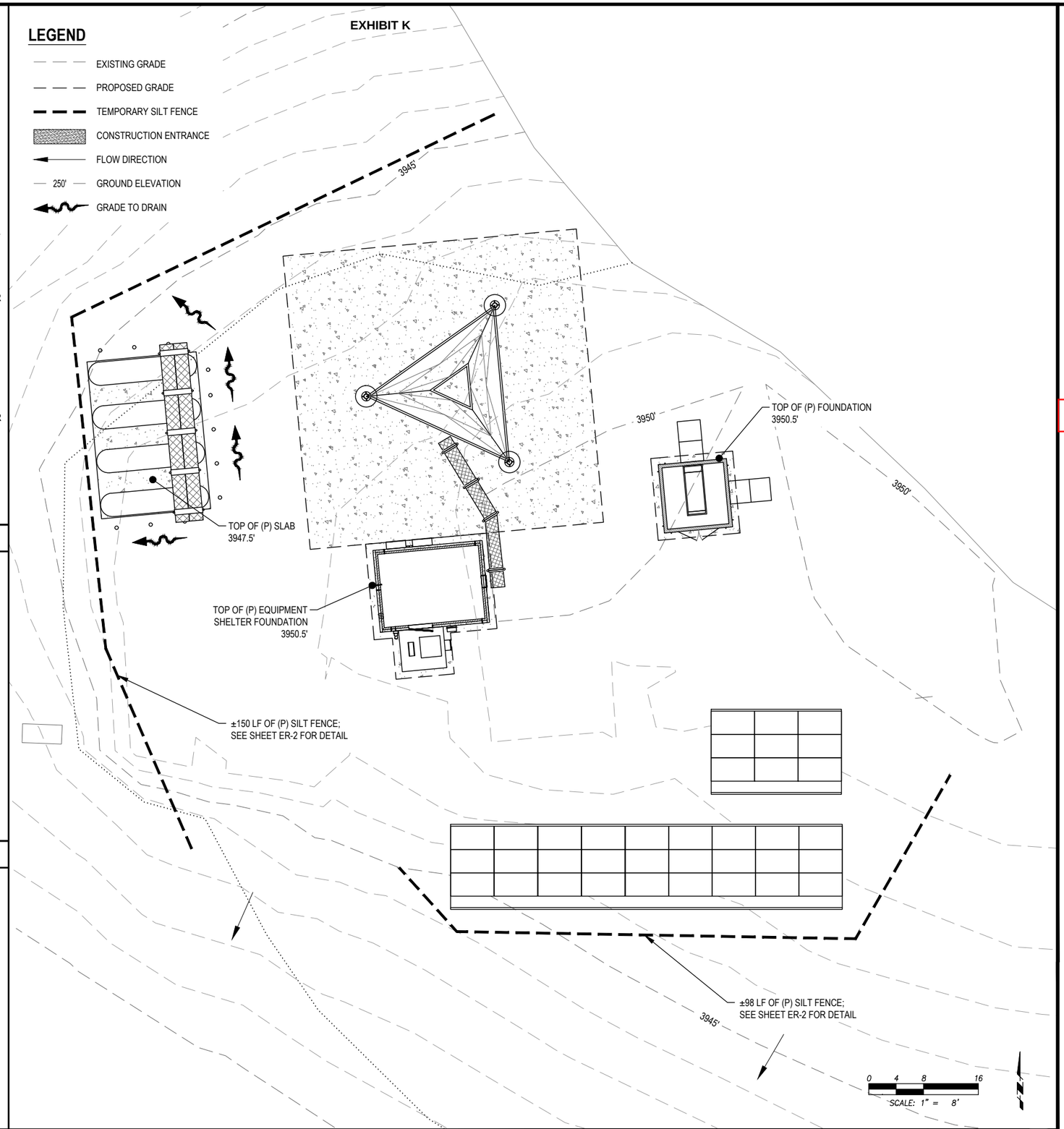
NOT USED

SCALE: NTS | 2

EXHIBIT K

LEGEND

- EXISTING GRADE
- PROPOSED GRADE
- TEMPORARY SILT FENCE
- CONSTRUCTION ENTRANCE
- FLOW DIRECTION
- 250' GROUND ELEVATION
- GRADE TO DRAIN



GRADING & EROSION CONTROL PLAN

11X17 SCALE: 1" = 16' | 22X34 SCALE: 1" = 8' | 1

Marion County OREGON

PROJECT INFORMATION:

MARION COUNTY
HOUSE MOUNTAIN

11.1 MILES SOUTHEAST OF
DRAKES CROSSING, OR

	DATE	RELEASE
	07-26-24	SITE SKETCH
	02-12-25	PRELIMINARY ZONING DRAWINGS
	05-22-25	PRELIMINARY CONSTRUCTION DRAWINGS
	09-23-25	FINAL CONSTRUCTION DRAWINGS
	09-30-25	REV. FCD FOR PROPANE TANK UPDATE
	10-15-25	REV. FCD FOR SITE CONFIGURATION

REVISION 1, 10/15/2025

DRAWING INFORMATION:
THIS DRAWING IS COPYRIGHTED AND IS THE SOLE PROPERTY OF THE OWNER. IT IS PRODUCED SOLELY FOR USE BY THE OWNER AND ITS AFFILIATES. REPRODUCTION OR USE OF THIS DRAWING AND/OR THE INFORMATION CONTAINED IN IT IS FORBIDDEN WITHOUT THE WRITTEN PERMISSION OF THE OWNER.

PLANS PREPARED BY:

cushing Civil Engineers

Cushing
Civil Engineers

12725 SW MILLIKAN WAY
SUITE 300
BEAVERTON, OR 97005
(503) 387-5331
www.cushingcivilengineers.com

LICENSURE:

REGISTERED PROFESSIONAL ENGINEER
83233
OREGON
JUNE 7, 2012
KENNY McMANAWAY

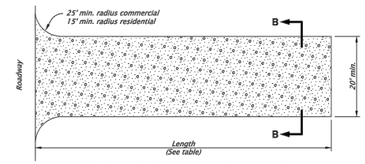
RENEWAL DATE 12/31/26

SHEET TITLE:

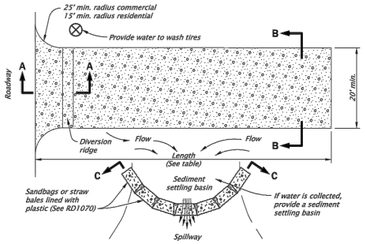
GRADING & EROSION CONTROL PLAN

SHEET NUMBER:

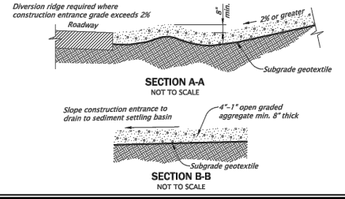
ER-1



CONSTRUCTION ENTRANCE - TYPE 1
NOT TO SCALE

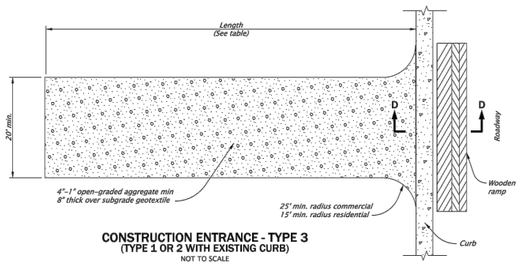


CONSTRUCTION ENTRANCE - TYPE 2
NOT TO SCALE

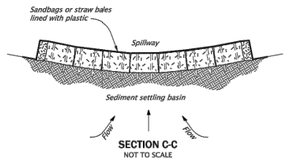


SECTION A-A
NOT TO SCALE

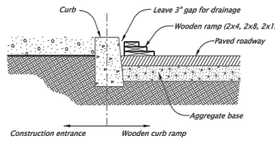
SECTION B-B
NOT TO SCALE



CONSTRUCTION ENTRANCE - TYPE 3
(TYPE 1 OR 2 WITH EXISTING CURB)
NOT TO SCALE



SECTION C-C
NOT TO SCALE



WOODEN CURB RAMP SECTION D-D
NOT TO SCALE

NOTES:
1. The Type 1 entrance is a simple entrance without a diversion ridge or settling basin.
2. The wooden ramp may be used on either Type 1 or Type 2 entrances in situations where there is curb and the curb is not removed for the construction entrance.

CONSTRUCTION ENTRANCE TABLE
MINIMUM LENGTH

Length (FT)	Area Of Exposed Soil (Acre)
20	0.25
50	0.25 < A < 1.0
100	A > 1.0

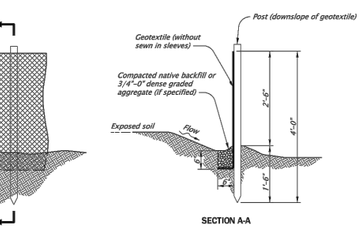
The selection and use of this Standard Drawing, while designed in accordance with generally accepted engineering principles and practices, is the sole responsibility of the user and should not be used without first consulting a Registered Professional Engineer.

All materials shall be in accordance with the current Oregon Standard Specifications.
OREGON STANDARD DRAWINGS
CONSTRUCTION ENTRANCES
2021

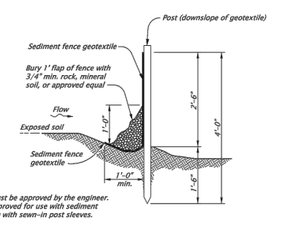
DATE	REVISION DESCRIPTION
01-2021	REMOVED CALC BOOK NUMBERS

CALC BOOK NO. N/A — SDR DATE 20-JAN-2021 — **RD1000**

GRAVEL CONSTRUCTION ENTRANCE
SCALE: NTS | 1

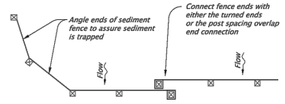


SEDIMENT FENCE AND GEOTEXTILE BURY DETAIL - TYPE 1
NOT TO SCALE

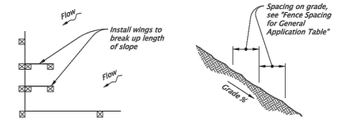


NOTES:
1. Use must be approved by the engineer.
2. Not approved for use with sediment fencing with sewn-in post sleeves.

ALTERNATE SEDIMENT FENCE WITHOUT TRENCHING - TYPE 2
NOT TO SCALE



PLAN VIEW



TERMINATION AT CORNER OR PROPERTY LINE

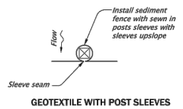
GENERAL NOTES:
1. Use 2"x2" wood fence posts.
2. Posts to be installed on downhill side of sediment fence geotextile. Position posts to prevent separation from geotextile.
3. Compact filter fabric trench backfill and soil on uphill side of fence.
4. Locate fence no closer than three feet to the toe of a slope.
5. Wing spacing shall comply with "Fence Spacing for General Application Table".

FENCE SPACING FOR GENERAL APPLICATION TABLE

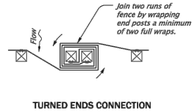
INSTALL PARALLEL ALONG CONTOURS AS FOLLOWS	
GRADE	MAXIMUM SPACING ON GRADE
Grade < 10%	300'
10% ≤ Grade < 15%	150'
15% ≤ Grade < 20%	100'
20% ≤ Grade < 30%	50'
30% ≤ Grade	25'

POST SPACING TABLE

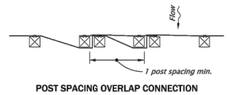
6'	Sediment Fence with Geotextile elongation less than 50%
4'	Sediment Fence with Geotextile elongation 50% or more



GEOTEXTILE WITH POST SLEEVES



TURNED ENDS CONNECTION



POST SPACING OVERLAP CONNECTION

GEOTEXTILE END CONNECTIONS
NOT TO SCALE

The selection and use of this Standard Drawing, while designed in accordance with generally accepted engineering principles and practices, is the sole responsibility of the user and should not be used without first consulting a Registered Professional Engineer.

All materials shall be in accordance with the current Oregon Standard Specifications.
OREGON STANDARD DRAWINGS
SEDIMENT FENCE
2021

DATE	REVISION DESCRIPTION
01-2021	REMOVED CALC BOOK NUMBERS

CALC BOOK NO. N/A — SDR DATE 20-JAN-2021 — **RD1040**

TEMPORARY SEDIMENT FENCE
SCALE: NTS | 2

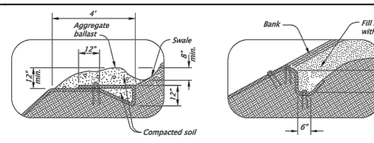


FIGURE A1:
TOP OF BANK ANCHOR TRENCH, H>3' AND TERMINAL SLOPE
NOT TO SCALE

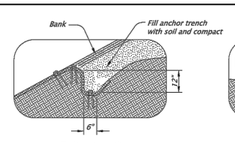


FIGURE A2:
TOP OF BANK ANCHOR TRENCH, H<3'
NOT TO SCALE

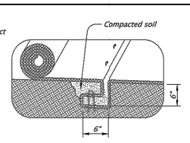


FIGURE A3:
CHANNEL CHECK SLOT
NOT TO SCALE

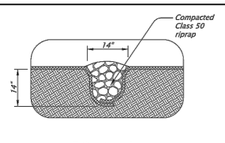


FIGURE A4:
CHANNEL CHECK SLOT WITH ROCK BACKFILL
NOT TO SCALE

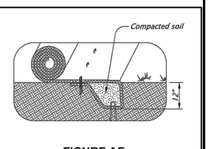
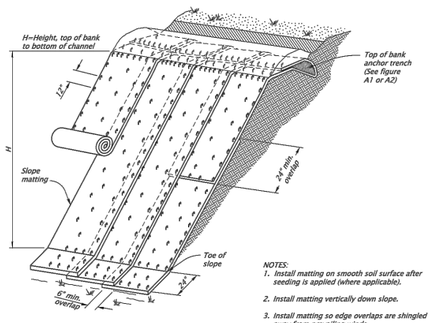
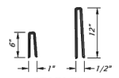


FIGURE A5:
INITIAL CHANNEL ANCHOR TRENCH
NOT TO SCALE

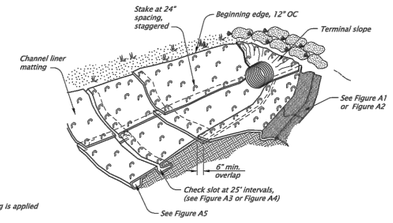


SLOPE MATTING ISOMETRIC VIEW
NOT TO SCALE

NOTES:
1. Install matting on smooth soil surface after seeding is applied (where applicable).
2. Install matting vertically down slope.
3. Install matting so edge overlaps are shingled away from prevailing winds.
4. Place fastener at 12" OC on matting edges
5. Overlap upper mat over lower mat, and fasten.
6. Stagger alternate rows of fasteners placed at 24" OC
7. Extend mat 24" beyond toe of slope; fold mat back under 4" and fasten.
8. Matting Types A through E: Furnish fully biodegradable product. Matting with plastic or photodegradable components will not be accepted.



STAPLES
NOT TO SCALE



CHANNEL MATTING ISOMETRIC VIEW
NOT TO SCALE

NOTES:
1. Install matting on smooth soil surface after seeding is applied (where applicable).
2. Install channel liner matting, in the direction of water flow. Anchor upstream end of mat with check slot for culvert outfalls, place mat under pipe 12" minimum upstream from pipe outlet.
3. Construct check slots across channel bottom at 25' spacing and at the end of each mat (Fig. A3 or A4).
4. Overlap side channel liner matting edges 6" over the center channel liner matting and fasten edges 12" OC. Continue overlap and stapling pattern for each additional side channel liner mat.
5. Lap upstream matting end 12" over beginning edge of downstream matting. Fasten 12" OC
6. Anchor top edge of side channel matting in trench and fasten 12" OC (Fig. A2).
7. Fasten matting interior at 24" OC with staggered spacing.
8. Construct initial anchor trench at downstream end of matting and terminal slope anchor at upstream end.
9. Matting Types A through E: Furnish fully biodegradable product. Matting with plastic or photodegradable components will not be accepted.

The selection and use of this Standard Drawing, while designed in accordance with generally accepted engineering principles and practices, is the sole responsibility of the user and should not be used without first consulting a Registered Professional Engineer.

All materials shall be in accordance with the current Oregon Standard Specifications.
OREGON STANDARD DRAWINGS
SLOPE AND CHANNEL MATTING
2021

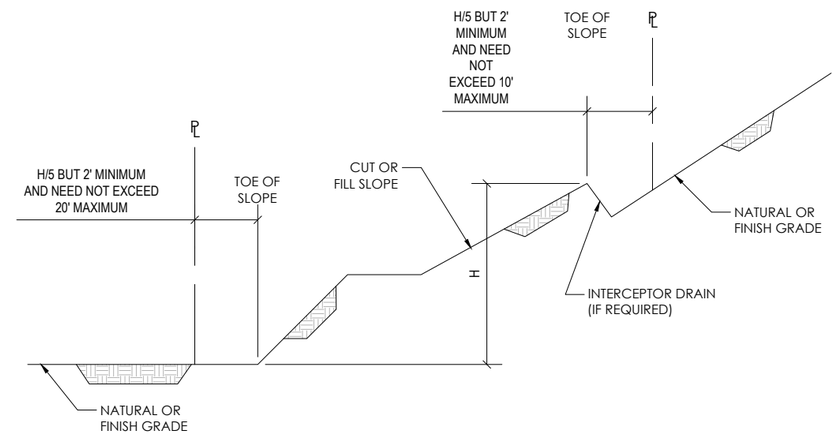
DATE	REVISION DESCRIPTION
01-2021	REMOVED CALC BOOK NUMBERS

CALC BOOK NO. N/A — SDR DATE 20-JAN-2021 — **RD1055**

PLASTIC SHEETING
SCALE: NTS | 3

SEDIMENT FENCE NOTES:

1. THE FILTER FABRIC FENCE SHALL BE INSTALLED TO FOLLOW THE CONTOURS WHERE FEASIBLE. THE FENCE POSTS SHALL BE SPACED A MAXIMUM OF 6' APART AND DRIVEN SECURELY INTO THE GROUND A MINIMUM OF 24".
2. THE FILTER FABRIC SHALL BE PURCHASED IN A CONTINUOUS ROLL CUT TO THE LENGTH OF THE BARRIER TO AVOID USE OF JOINTS. WHEN JOINTS ARE NECESSARY, FILTER CLOTH SHALL BE SPLICED TOGETHER ONLY AT A SUPPORT POST, WITH A MINIMUM 6" OVERLAP, AND BOTH ENDS SECURELY FASTENED TO THE POST, OR OVERLAP 2" X 2" POSTS AND ATTACH AS SHOWN ON DETAIL SHEET 4-3A OF THE EROSION CONTROL MANUAL.
3. THE FILTER FABRIC SHALL HAVE A MINIMUM VERTICAL BURIAL OF 6". ALL EXCAVATED MATERIAL FROM FILTER FABRIC INSTALLATION SHALL BE BACKFILLED AND COMPACTED ALONG THE ENTIRE DISTURBED AREA.
4. STANDARD OR HEAVY-DUTY FILTER FABRIC FENCES SHALL HAVE MANUFACTURED STITCHED LOOPS FOR 2" X 2" POST INSTALLATION. STITCHED LOOPS SHALL BE INSTALLED ON THE UP HILLSIDE OF THE SLOPED AREA.
5. FILTER FABRIC FENCES SHALL BE REMOVED WHEN THEY HAVE SERVED THEIR USEFUL PURPOSE, BUT NOT BEFORE THE UPSLOPE AREA HAS BEEN PERMANENTLY PROTECTED AND STABILIZED.
6. FILTER FABRIC FENCES SHALL BE INSPECTED BY APPLICANT/CONTRACTOR IMMEDIATELY AFTER EACH RAINFALL AND AT LEAST DAILY DURING PROLONGED RAINFALL. ANY REQUIRED REPAIRS SHALL BE MADE IMMEDIATELY.



SETBACKS AND DRAINAGE DIMENSIONS
SCALE: NTS | 4

Marion County OREGON

PROJECT INFORMATION:

MARION COUNTY HOUSE MOUNTAIN

11.1 MILES SOUTHEAST OF DRAKES CROSSING, OR

	DATE	RELEASE
	07-26-24	SITE SKETCH
	02-12-25	PRELIMINARY ZONING DRAWINGS
	05-22-25	PRELIMINARY CONSTRUCTION DRAWINGS
	09-23-25	FINAL CONSTRUCTION DRAWINGS
	09-30-25	REV. FCD FOR PROPANE TANK UPDATE
	10-15-25	REV. FCD FOR SITE CONFIGURATION

REVISION 1, 10/15/2025

DRAWING INFORMATION:
THIS DRAWING IS COPYRIGHTED AND IS THE SOLE PROPERTY OF THE OWNER. IT IS PRODUCED SOLELY FOR USE BY THE OWNER AND ITS AFFILIATES. REPRODUCTION OR USE OF THIS DRAWING AND/OR THE INFORMATION CONTAINED IN IT IS FORBIDDEN WITHOUT THE WRITTEN PERMISSION OF THE OWNER.

PLANS PREPARED BY:

cushing Civil Engineers

Cushing Civil Engineers
12725 SW MILLIKAN WAY
SUITE 300
BEAVERTON, OR 97005
(503) 387-5331
www.cushingcivilengineers.com

LICENSURE:

REGISTERED PROFESSIONAL ENGINEER
83233
OREGON
JUNE 7, 2012
KENNY McMANAWAY

RENEWAL DATE 12/31/26

SHEET TITLE:

GRADING & EROSION CONTROL DETAILS

SHEET NUMBER:

ER-2

EXHIBIT K

NOTE:
THIS IS NOT A SURVEY; ALL EXISTING INFORMATION IS PROVIDED BY MARION COUNTY GIS.

ZONING: TC

ZONING: TC

ZONING: TC

±2550'

PARCEL#: 083E000000200
ZONING: TC

PROPOSED PROJECT AREA
SEE SHEET C-2 FOR DETAILS

(EX) ACCESS ROAD

±3976'

±1241'

±779'

ZONING: TC

0 700 1400 2800
SCALE: 1" = 1400'

© 2024 Microsoft Corporation © 2024 Maxar CC-BY (2024) Distribution Airbus DS

OVERALL SITE PLAN | 11X17 SCALE: 1" = 2800' | 22X34 SCALE: 1" = 1400' | 1

Marion County
OREGON

PROJECT INFORMATION:

MARION COUNTY
HOUSE MOUNTAIN

11.1 MILES SOUTHEAST OF
DRAKES CROSSING, OR

	DATE	RELEASE
	07-26-24	SITE SKETCH
	02-12-25	PRELIMINARY ZONING DRAWINGS
	05-22-25	PRELIMINARY CONSTRUCTION DRAWINGS
	09-23-25	FINAL CONSTRUCTION DRAWINGS
	09-30-25	REV. FCD FOR PROPANE TANK UPDATE
	10-15-25	REV. FCD FOR SITE CONFIGURATION

REVISION 1, 10/15/2025

DRAWING INFORMATION:
THIS DRAWING IS COPYRIGHTED AND IS THE SOLE PROPERTY OF THE OWNER. IT IS PRODUCED SOLELY FOR USE BY THE OWNER AND ITS AFFILIATES. REPRODUCTION OR USE OF THIS DRAWING AND/OR THE INFORMATION CONTAINED IN IT IS FORBIDDEN WITHOUT THE WRITTEN PERMISSION OF THE OWNER.

PLANS PREPARED BY:

cushing Civil Engineers

Cushing
Civil Engineers

12725 SW MILLIKAN WAY
SUITE 300
BEAVERTON, OR 97005
(503) 387-5331
www.cushingcivilengineers.com

LICENSURE:

REGISTERED PROFESSIONAL ENGINEER
83233
OREGON
JUNE 7, 2012
KENNY McMANAWAY

RENEWAL DATE 12/31/26

SHEET TITLE:

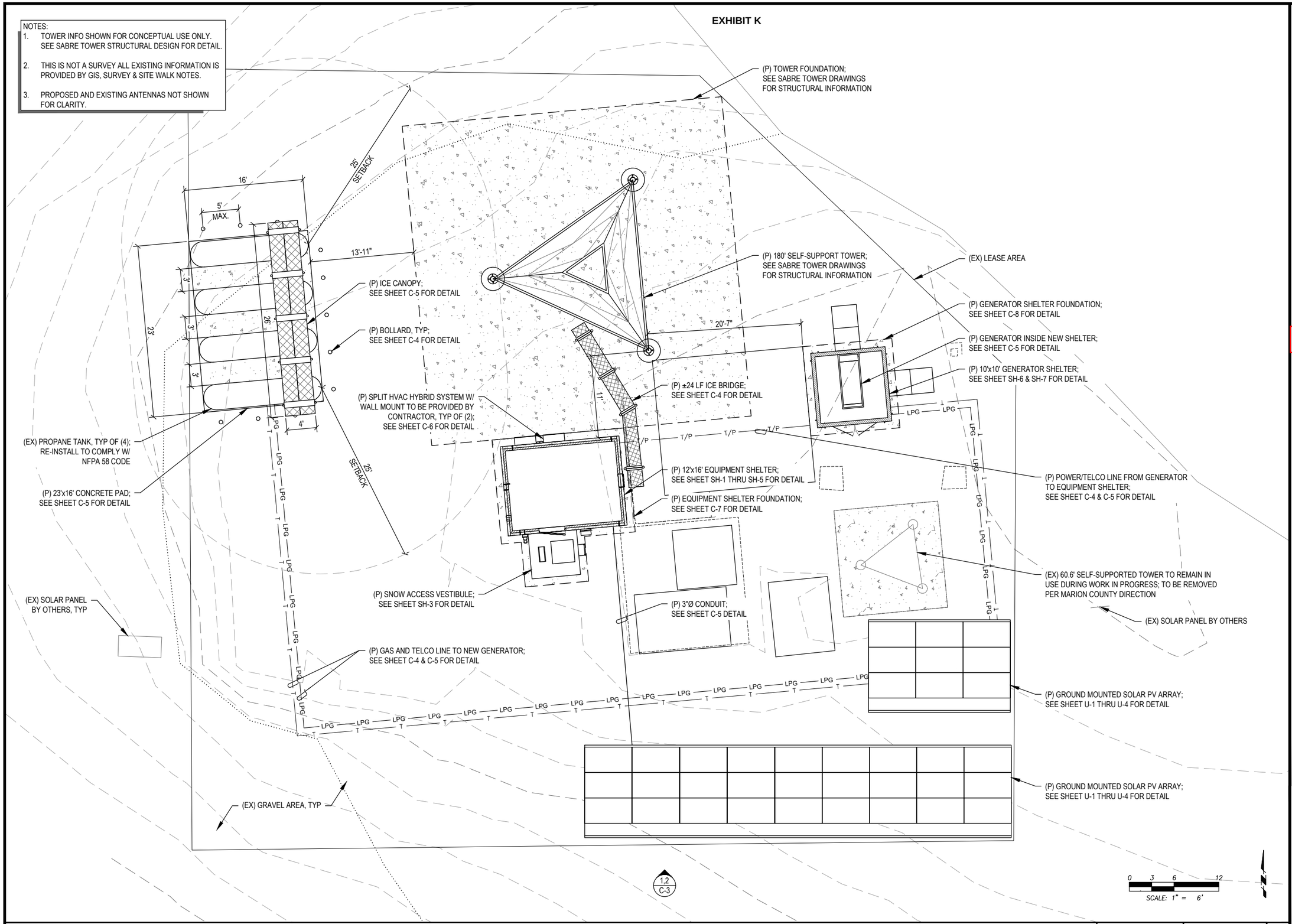
OVERALL SITE PLAN

SHEET NUMBER:

C-1

EXHIBIT K

NOTES:
1. TOWER INFO SHOWN FOR CONCEPTUAL USE ONLY. SEE SABRE TOWER STRUCTURAL DESIGN FOR DETAIL.
2. THIS IS NOT A SURVEY ALL EXISTING INFORMATION IS PROVIDED BY GIS, SURVEY & SITE WALK NOTES.
3. PROPOSED AND EXISTING ANTENNAS NOT SHOWN FOR CLARITY.



ENLARGED SITE PLAN | 11X17 SCALE: 1" = 12' | 22X34 SCALE: 1" = 6' | 1

Marion County OREGON

PROJECT INFORMATION:

MARION COUNTY HOUSE MOUNTAIN

11.1 MILES SOUTHEAST OF DRAKES CROSSING, OR

	DATE	RELEASE
	07-26-24	SITE SKETCH
	02-12-25	PRELIMINARY ZONING DRAWINGS
	05-22-25	PRELIMINARY CONSTRUCTION DRAWINGS
	09-23-25	FINAL CONSTRUCTION DRAWINGS
	09-30-25	REV. FCD FOR PROPANE TANK UPDATE
	10-15-25	REV. FCD FOR SITE CONFIGURATION

REVISION 1, 10/15/2025

DRAWING INFORMATION:
THIS DRAWING IS COPYRIGHTED AND IS THE SOLE PROPERTY OF THE OWNER. IT IS PRODUCED SOLELY FOR USE BY THE OWNER AND ITS AFFILIATES. REPRODUCTION OR USE OF THIS DRAWING AND/OR THE INFORMATION CONTAINED IN IT IS FORBIDDEN WITHOUT THE WRITTEN PERMISSION OF THE OWNER.

PLANS PREPARED BY:

cushing Civil Engineers

Cushing Civil Engineers

12725 SW MILLIKAN WAY
SUITE 300
BEAVERTON, OR 97005
(503) 387-5331
www.cushingcivilengineers.com

LICENSURE:

REGISTERED PROFESSIONAL ENGINEER 83233 OREGON JUNE 7, 2012 KENNY McMANAWAY

RENEWAL DATE 12/31/26

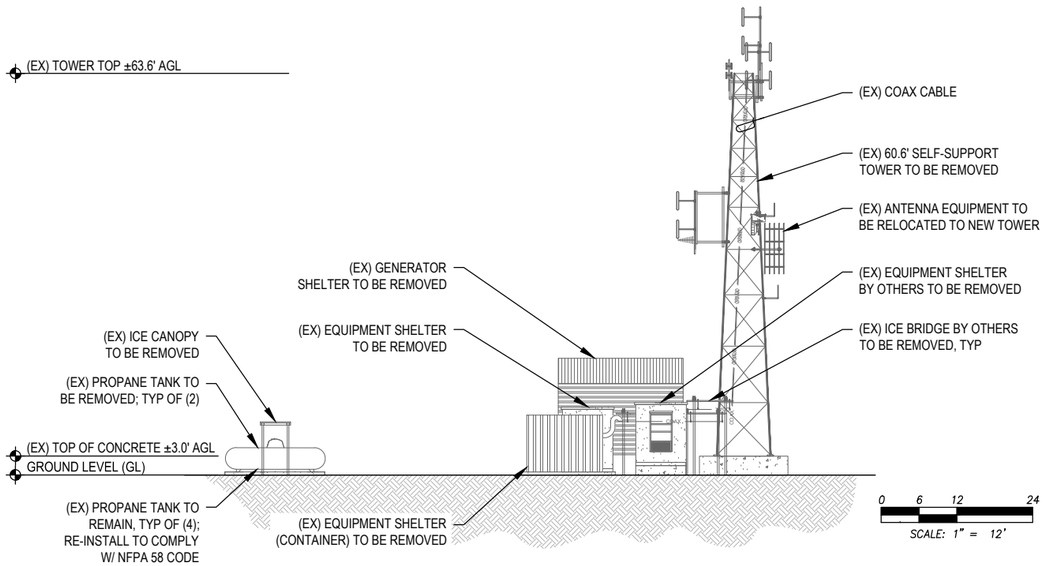
SHEET TITLE:

ENLARGED SITE PLAN

SHEET NUMBER:

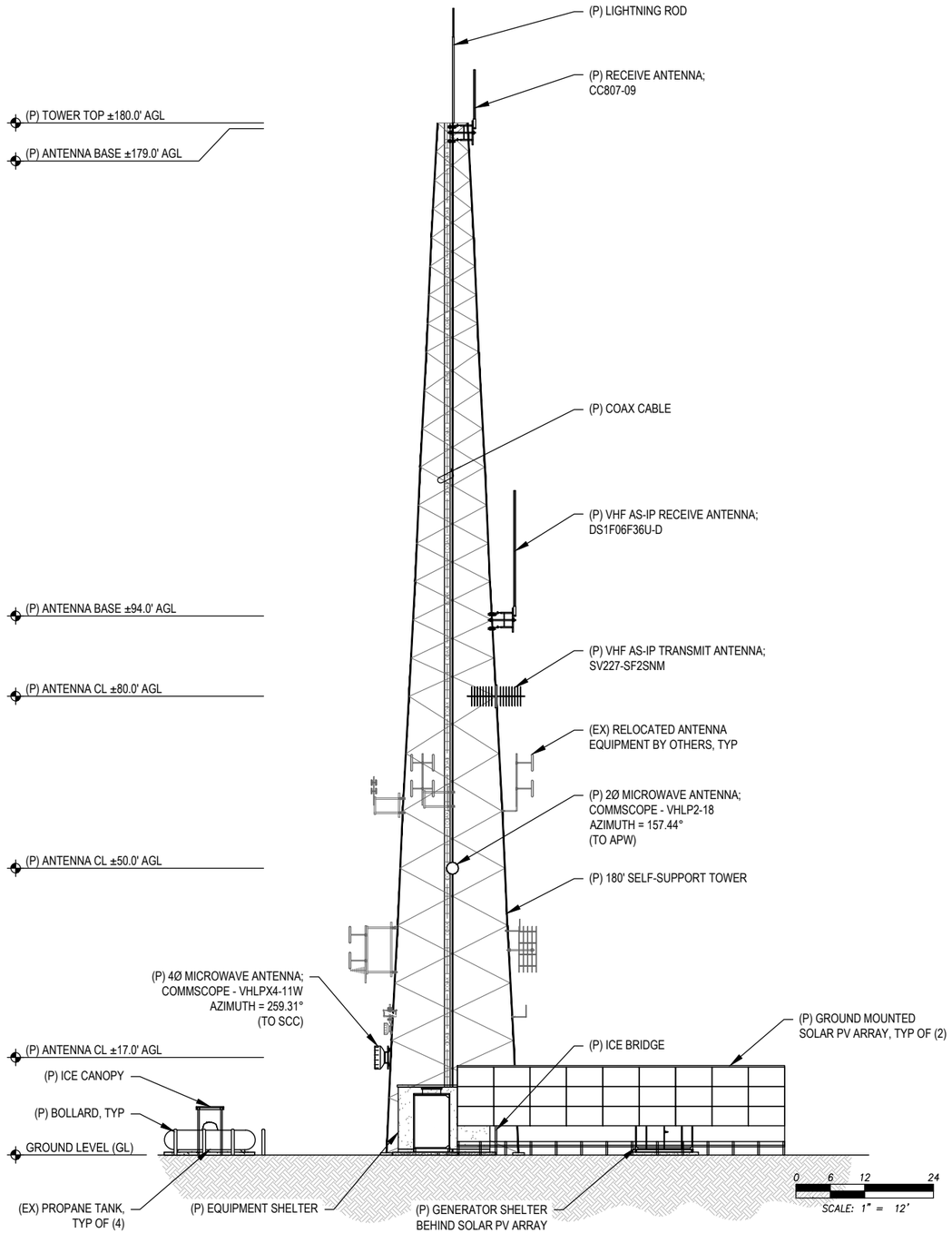
C-2

EXHIBIT K



EXISTING SOUTH ELEVATION | 11X17 SCALE: 1" = 24' | 22X34 SCALE: 1" = 12' | **1**

NOTES:
1. TOWER INFO SHOWN FOR CONCEPTUAL USE ONLY. SEE SABRE TOWER STRUCTURAL REPORT FOR DETAIL.
2. TOWER SHALL BE PAINTED WITH A DULL, NON-REFLECTIVE GRAY COLOR.
3. LOADING INFORMATION PROVIDED BY TAIT COMMUNICATIONS.



PROPOSED SOUTH ELEVATION | 11X17 SCALE: 1" = 24' | 22X34 SCALE: 1" = 12' | **2**

Marion County OREGON

PROJECT INFORMATION:

MARION COUNTY HOUSE MOUNTAIN

11.1 MILES SOUTHEAST OF DRAKES CROSSING, OR

	DATE	RELEASE
	07-26-24	SITE SKETCH
	02-12-25	PRELIMINARY ZONING DRAWINGS
	05-22-25	PRELIMINARY CONSTRUCTION DRAWINGS
	09-23-25	FINAL CONSTRUCTION DRAWINGS
	09-30-25	REV. FCD FOR PROPANE TANK UPDATE
	10-15-25	REV. FCD FOR SITE CONFIGURATION

REVISION 1, 10/15/2025

DRAWING INFORMATION:
THIS DRAWING IS COPYRIGHTED AND IS THE SOLE PROPERTY OF THE OWNER. IT IS PRODUCED SOLELY FOR USE BY THE OWNER AND ITS AFFILIATES. REPRODUCTION OR USE OF THIS DRAWING AND/OR THE INFORMATION CONTAINED IN IT IS FORBIDDEN WITHOUT THE WRITTEN PERMISSION OF THE OWNER.

PLANS PREPARED BY:

cushing Civil Engineers

Cushing Civil Engineers
12725 SW MILLIKAN WAY
SUITE 300
BEAVERTON, OR 97005
(503) 387-5331
www.cushingcivilengineers.com

LICENSURE:

REGISTERED PROFESSIONAL ENGINEER 83233 OREGON JUNE 7, 2012 KENNY McMANAWAY

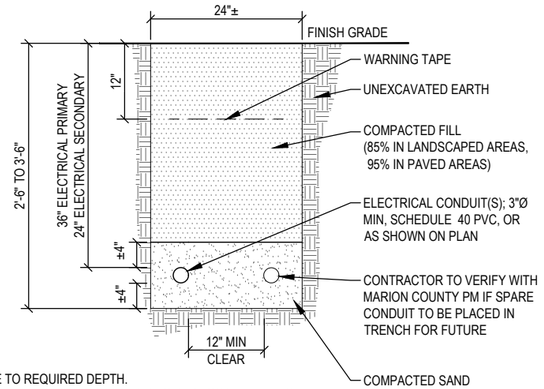
RENEWAL DATE 12/31/26

SHEET TITLE:

ELEVATIONS

SHEET NUMBER:

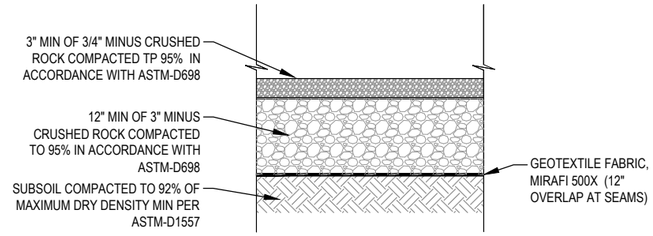
C-3



NOTES:
1. EXCAVATE TO REQUIRED DEPTH.
2. VERIFY ALL TRENCHING REQUIREMENTS PER LOCAL UTILITIES.
3. CONTRACTOR TO PROVIDE (1) 300 POUND NYLON PULL CORD AND CONDUCTORS AS REQUIRED PER CONDUIT.

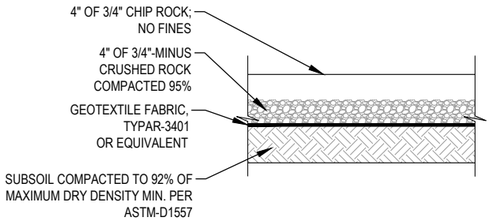
POWER LINE TRENCH — SCALE: NTS — 1

EXHIBIT K



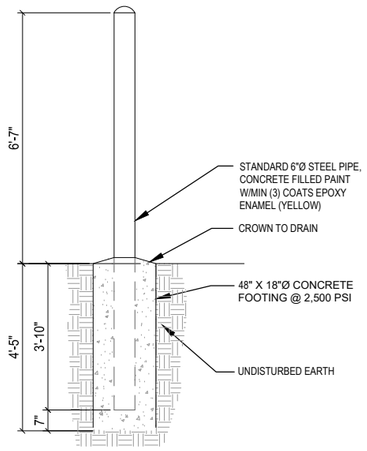
NOTES:
1. CONTRACTOR SHALL STRIP SUPERFICIAL, SOFT, WET, ORGANIC OR DELETERIOUS SOILS TO EXPOSE FIRM AND UNYIELDING SOIL (BETWEEN 6" & 12"). IF STRIPPING IS REQUIRED DEEPER THAN 12", CONTRACTOR SHALL CONTACT THE SITE CONSTRUCTION MANGER TO DETERMINE THE APPROPRIATE STRIPPING DEPTH AT THE TIME OF CONSTRUCTION.
2. MATERIAL AND INSTALLATION SHALL CONFORM TO CURRENT ODOT/APWA STANDARD SPECIFICATIONS AND MANUFACTURERS RECOMMENDATIONS.

GRAVEL ROAD SECTION DETAIL — SCALE: NTS — 2

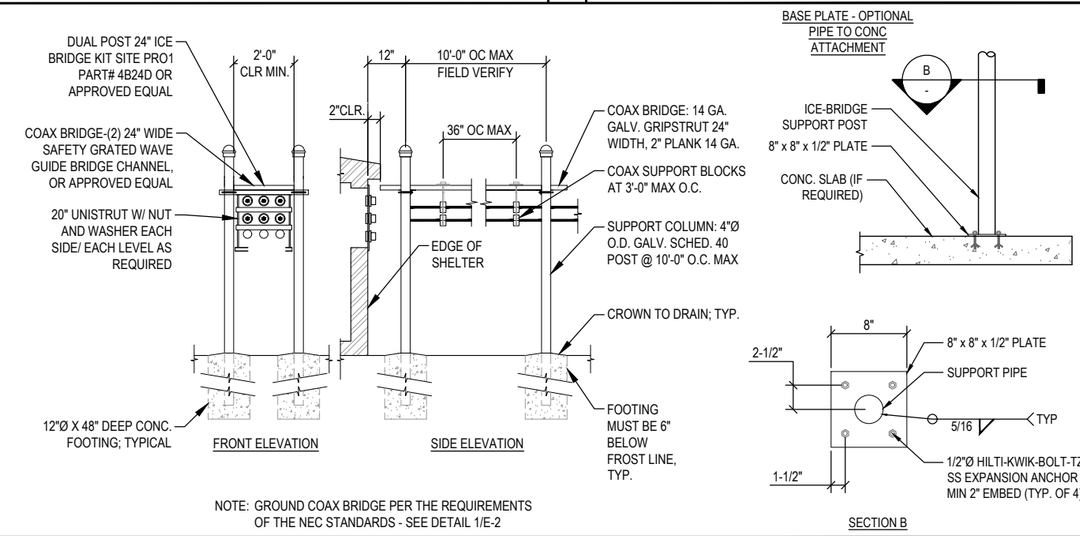


NOTE: STRIP ALL ORGANICS

COMPOUND ROCK SECTION DETAIL — SCALE: NTS — 3



BOLLARD DETAIL — SCALE: NTS — 4



NOTE: GROUND COAX BRIDGE PER THE REQUIREMENTS OF THE NEC STANDARDS - SEE DETAIL 1/E-2

ICE BRIDGE DETAIL — SCALE: NTS — 5



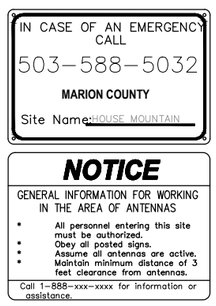
SIGN NOTES:
1. SIGN MATERIAL: 18GA ALUMINUM
2. LETTERING COLOR = BLACK
3. BACKGROUND COLOR = WHITE / RED



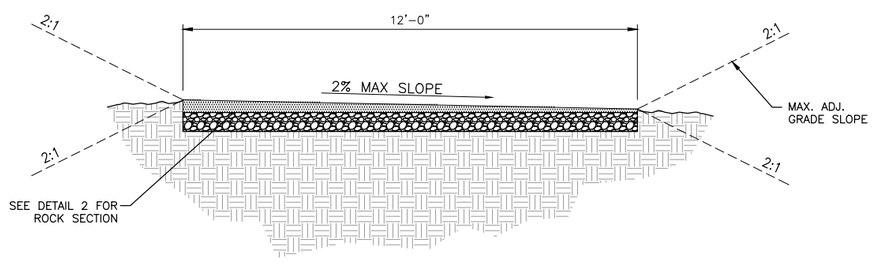
SIGN NOTES:
1. SIGN MATERIAL: 18GA ALUMINUM
2. LETTERING COLOR = BLACK / WHITE
3. BACKGROUND COLOR = WHITE / BLUE



SIGN NOTES:
1. SIGN MATERIAL: 18GA ALUMINUM
2. LETTERING COLOR = BLACK
3. BACKGROUND COLOR = YELLOW



SIGN DETAILS — SCALE: NTS — 6



TYPICAL

NOTE:
CONTRACTOR SHALL STRIP SUPERFICIAL, SOFT, WET, ORGANIC OR DELETERIOUS SOILS TO EXPOSE FIRM AND UNYIELDING SOIL (MIN. 6"). IF STRIPPING IS REQUIRED DEEPER THAN 6", CONTRACTOR SHALL CONTACT THE SITE CONSTRUCTION MANAGER TO DETERMINE THE APPROPRIATE STRIPPING DEPTH AT THE TIME OF CONSTRUCTION.

ACCESS ROAD SECTION DETAIL — SCALE: NTS — 7

Marion County OREGON

PROJECT INFORMATION:

MARION COUNTY
HOUSE MOUNTAIN

11.1 MILES SOUTHEAST OF
DRAKES CROSSING, OR

	DATE	RELEASE
	07-26-24	SITE SKETCH
	02-12-25	PRELIMINARY ZONING DRAWINGS
	05-22-25	PRELIMINARY CONSTRUCTION DRAWINGS
	09-23-25	FINAL CONSTRUCTION DRAWINGS
	09-30-25	REV. FCD FOR PROPANE TANK UPDATE
	10-15-25	REV. FCD FOR SITE CONFIGURATION

REVISION 1, 10/15/2025

DRAWING INFORMATION:
THIS DRAWING IS COPYRIGHTED AND IS THE SOLE PROPERTY OF THE OWNER. IT IS PRODUCED SOLELY FOR USE BY THE OWNER AND ITS AFFILIATES. REPRODUCTION OR USE OF THIS DRAWING AND/OR THE INFORMATION CONTAINED IN IT IS FORBIDDEN WITHOUT THE WRITTEN PERMISSION OF THE OWNER.

PLANS PREPARED BY:

cushing Civil Engineers

Cushing
Civil Engineers
12725 SW MILLIKAN WAY
SUITE 300
BEAVERTON, OR 97005
(503) 387-5331
www.cushingcivilengineers.com

LICENSURE:

REGISTERED PROFESSIONAL ENGINEER
83233
OREGON
JUNE 7, 2012
KENNY McMANAWAY

RENEWAL DATE 12/31/26

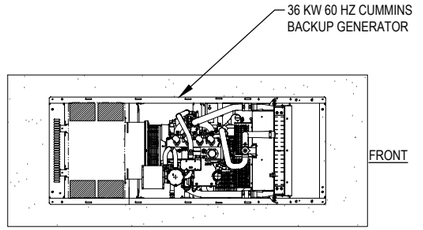
SHEET TITLE:

COMPOUND DETAILS

SHEET NUMBER:

C-4

EXHIBIT K



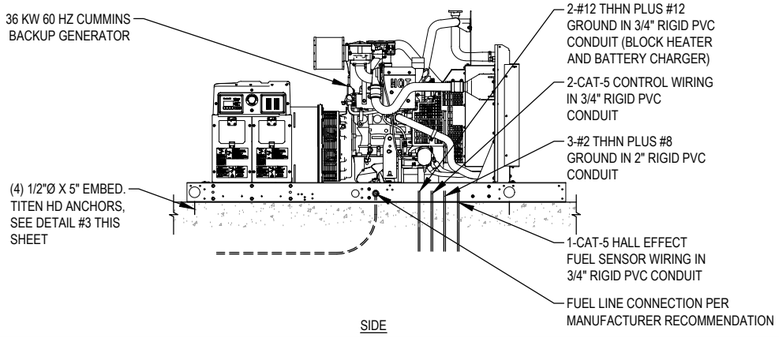
SIDE

NOTE: SEE GENERATOR SPEC SHEET FOR DIMENSIONS AND WEIGHTS

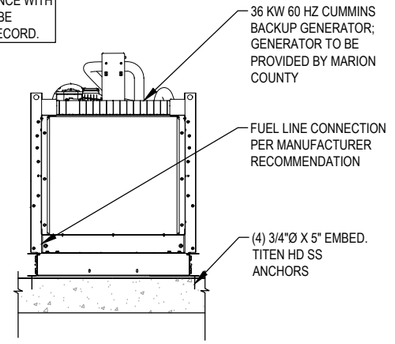
GENERATOR PLAN

SCALE: NTS | 1

NOTE: DOCUMENTATION FOR THE GENERATOR IS TO BE PROVIDED BY THE SUPPLIER CERTIFYING THAT ALL HAZARDOUS CONTENTS WILL REMAIN CONTAINED FOLLOWING THE DESIGN EARTHQUAKE FOR THIS SITE. CERTIFICATION OF CONTAINMENT IS TO BE PROVIDED BY 1) ANALYSIS, 2) APPROVED SHAKE TABLE TESTING IN ACCORDANCE WITH SECTION 13.2.5 OF ASCE 7, OR 3) EXPERIENCE DATA IN ACCORDANCE WITH ASCE 7 SECTION 13.2.6. EVIDENCE DEMONSTRATING COMPLIANCE OF THIS REQUIREMENT SHALL BE SUBMITTED TO THE LOCAL JURISDICTION AFTER REVIEW AND APPROVAL BY THE ENGINEER OF RECORD.



SIDE



FRONT

GENERATOR ELEVATION

SCALE: NTS | 2

NOT USED

SCALE: NTS | 3

1. CONTRACTOR TO VERIFY AND CONFIRM ALL DIMENSIONS AND CONDITIONS AND NOTIFY ENGINEER OF RECORD OF ANY DISCREPANCIES PRIOR TO START OF WORK.
2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR STRUCTURAL STABILITY DURING CONSTRUCTION. THE STRUCTURE SHOWN ON THE DRAWINGS HAS BEEN DESIGNED FOR STABILITY UNDER THE FINAL CONFIGURATION ONLY.
3. CODE: 2018 INTERNATIONAL BUILDING CODE (IBC).
4. THE FOOTINGS HAVE BEEN DESIGNED FOR AN ALLOWABLE SOIL BEARING PRESSURE OF 1,500 PSF.
5. CONCRETE: FOOTINGS, F'C = 3,000 PSI MINIMUM COMPRESSIVE STRENGTH AT 28 DAYS.
6. REINFORCING STEEL: F'Y = 60,000 PSI
7. STRUCTURAL AND MISCELLANEOUS STEEL SHALL BE IN ACCORDANCE WITH AISC SPECIFICATION FOR THE DESIGN, FABRICATION AND ERECTION OF STRUCTURAL STEEL FOR BUILDINGS AND SHALL BE ASTM A-36 U.O.N. ALL BOLTS HOLES SHALL BE PUNCHED OR DRILLED; BURNING OF HOLES SHALL NOT BE PERMITTED. ALL STRUCTURAL STEEL SHALL HAVE ONE SHOP COAT OF PAINT.
   ALL MATERIALS SHALL CONFORM TO THE FOLLOWING STANDARDS:

PIPE:	A53 GR. B (MIN. FY = 35 KSI)
SHAPES:	ASTM A36/ ASTM A572 GR. 50
WIDE FLANGE:	ASTM A992
TUBES:	A500 GR. B, FY = 46 KSI
PLATES:	A36
WELDS:	E70XX ELECTRODES
STRUCTURAL BOLTS:	ASTM A325N
NON-STRUCTURAL BOLTS:	SAE J429 GR. 5 / F1554-36
U-BOLTS:	ASTM A36
THREADED ROD:	ASTM A307

SPECIAL INSPECTION BY OWNERS TESTING AGENCY

SPECIAL INSPECTIONS AND TESTING SHALL BE PERFORMED BY AN APPROVED AGENCY IN ACCORDANCE WITH INTERNATIONAL BUILDING CODE (IBC) CHAPTER 17 SECTIONS 1703 AND SECTIONS 1704, AND WITH THE STATEMENT OF SPECIAL INSPECTIONS AS REQUIRED BY IBC SECTIONS 1704.2.3 AND 1705 FOR BUILIDNG STRUCTURAL ELEMENTS SUMMARIZED AS FOLLOWS:

1. STRUCTURAL STEEL CONSTRUCTION PER IBC SECTIONS 1705.3 AND TABLE 1705.3 INCLUDING MATERIAL IDENTIFICATION, AND SHOP WELDING.

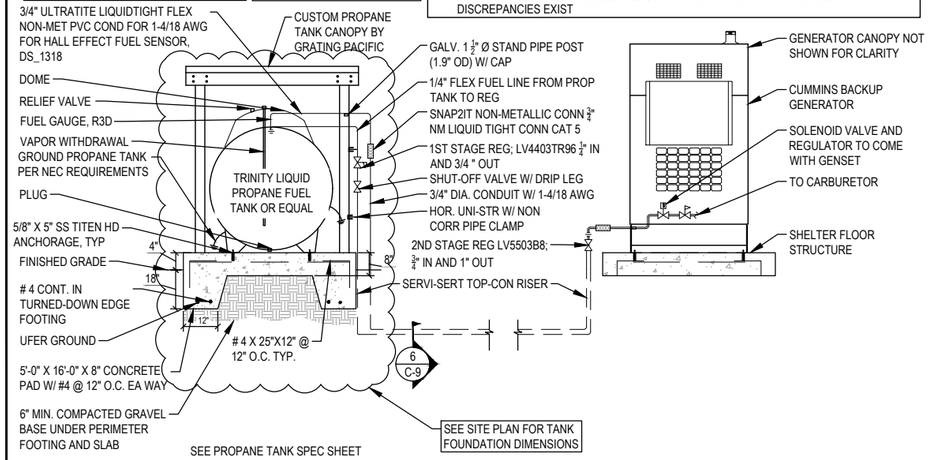
GENERAL NOTES

SCALE: NTS | 4

NOTES:
1. PROPANE TANK REGISTERED WITH NATIONAL BOARD AND COMPLIES AND INSTALLED PER NFPA 58 CODE
2. PROPANE TANK INSTALLED AT LEAST 10 FT FROM EXTERNAL SOURCE OF IGNITION

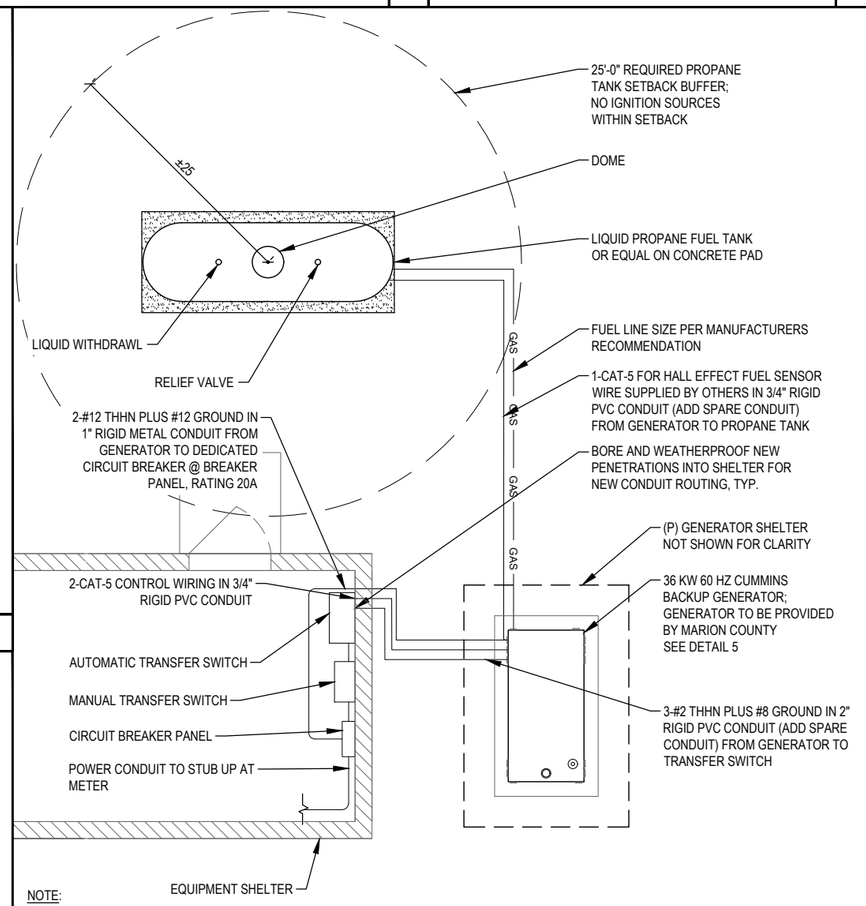
LEGEND
- SHUT-OFF VALVE
- UNION
- PRESSURE REGULATOR
- SOLENOID VALVE
- FLEXIBLE CONNECTION

NOTES:
1. GROUND SYSTEM SHOULD COMPLY WITH INDUSTRY STANDARDS
2. CONFIRM CONNECTIONS PROVIDED WITH FUEL TANK
3. USE GASEOUS LP VAPOR WITHDRAWAL SYSTEM
4. TO CODE OFFICIAL, PAD IS FOR EQUIPMENT ONLY (NO BUILDINGS)
5. CONTRACTOR IS TO VERIFY THAT ALL PROPOSED ANCHORS WILL PROVIDE ADEQUATE FIT PRIOR TO POURING CONCRETE PADS, NOTIFY DON CUSHING ASSOCIATES IF ANY DISCREPANCIES EXIST



GENERATOR FUEL SYSTEM ELEVATION

SCALE: NTS | 5



NOTE:

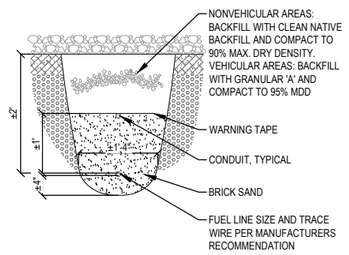
ALL CONDUIT INSIDE THE BUILDING MUST BE METAL AND BE GROUNDED PER R-56 STANDARDS.

INTERIOR SHELTER LAYOUT IS FOR REFERENCE ONLY.

THIS GENERATOR & PROPANE LAYOUT IS FOR INFORMATION ONLY AND IS PRESENTED AS A GUIDELINE. VERIFY SITE CONDITIONS AND LAYOUT PRIOR TO INSTALLATION OF ALL EQUIPMENT. INSTALL ALL EQUIPMENT PER MANUFACTURER'S INSTRUCTIONS.

TYPICAL GENERATOR LAYOUT

SCALE: NTS | 9



TRENCH SECTION

SCALE: NTS | 6

NOT USED

SCALE: NTS | 7

NOT USED

SCALE: NTS | 8

Marion County OREGON

PROJECT INFORMATION:

MARION COUNTY HOUSE MOUNTAIN

11.1 MILES SOUTHEAST OF DRAKES CROSSING, OR

	DATE	RELEASE
	07-26-24	SITE SKETCH
	02-12-25	PRELIMINARY ZONING DRAWINGS
	05-22-25	PRELIMINARY CONSTRUCTION DRAWINGS
	09-23-25	FINAL CONSTRUCTION DRAWINGS
	09-30-25	REV. FCD FOR PROPANE TANK UPDATE
	10-15-25	REV. FCD FOR SITE CONFIGURATION

REVISION 1, 10/15/2025

DRAWING INFORMATION:

THIS DRAWING IS COPYRIGHTED AND IS THE SOLE PROPERTY OF THE OWNER. IT IS PRODUCED SOLELY FOR USE BY THE OWNER AND ITS AFFILIATES. REPRODUCTION OR USE OF THIS DRAWING AND/OR THE INFORMATION CONTAINED IN IT IS FORBIDDEN WITHOUT THE WRITTEN PERMISSION OF THE OWNER.

PLANS PREPARED BY:

cushing Civil Engineers

Cushing
Civil Engineers
12725 SW MILLIKAN WAY
SUITE 300
BEAVERTON, OR 97005
(503) 387-5331
www.cushingcivilengineers.com

LICENSURE:

REGISTERED PROFESSIONAL ENGINEER 83233 OREGON JUNE 7, 2012 KENNY McMANAWAY

RENEWAL DATE 12/31/26

SHEET TITLE:

GENERATOR & PROPANE TANK DETAILS

SHEET NUMBER:

C-5

EXHIBIT K

hotspot energy

HotSpot Energy, Inc.
(757) 410-8640

Solar Air Conditioner

Solar Hybrid Heat Pump
Model ACDC24C



Connect 4 Or More Panels (>/= Total 1800W)
Runs On Solar Power Only, AC Only, or Solar w/ AC Power
24,000 BTU Cooling & Heating
Plug-And-Play Solar Connection
No Batteries or Grid/AC Required
The Worlds Original Solar AC Manufacturer
Celebrating Over 10 Years of Production





Home / Office

Keep the inside cool all day for next to nothing in energy costs. Preventing daytime heat build-up also cuts evening cooling costs. Cool or heat up to a 1500 Sq. Ft. (140m²) room..

International

Compatible with all types of solar panels & 50Hz and 60Hz power, use it anywhere in the world.



Display shows DC/Solar power utilization. Shown in heating mode at setting 90 °F, no AC connected. Display visible only when unit is on.

Simple To Install

This unit installs exactly like a normal mini-split air conditioner. Standard MC4 cabling are used to connect the solar panels directly to the ACDC24C outdoor unit.

Ultra-High SEER Solar Air Conditioner

Your air conditioner needs the most power when the sun is shining, a coincidence you can take advantage of with our ACDC24C solar air conditioner. It can keep an indoor area cool during the day for free, or for just pennies, at times when solar power is not sufficient to carry 100% of the load. Use this system to cool a small area or to augment a larger system.

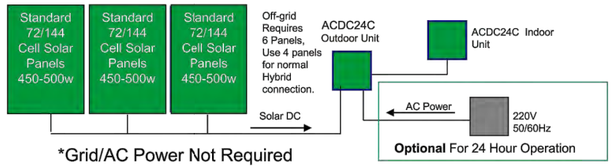
Connect up to six 72/144-cell panels in series, suggested panels >/= 450w. Many other panel configurations are possible, contact us to discuss. The unit can also connect to 220v (208v-240v) AC power for extra power during overcast conditions, transient clouds, or at night. No need for batteries. Even when the sun is not shining at all, with an AC connection this ultra high-efficiency (**SEER 20** without solar) heat pump will keep you comfortable and save you money using far less electricity than a normal AC or heat pump unit of the same capacity. Calculated using only paid energy in hybrid AC-DC operation, the ACDC24C can produce an equivalent SEER above **SEER 60**. Max string voltage 325 VOC rating, max actual string voltage 370v DC. For ACDC24C we suggest PV >/= 450w per panel. Actual string under load voltage must be >125v DC to operate on solar.

hotspot energy

World's Original Solar AC Manufacturer - Since 2007

ACDC24C Hybrid
Solar Air Conditioner

Connects Directly To 4-6 Solar Panels



*Grid/AC Power Not Required

No batteries needed. Like all DC-Inverter air conditioners, the ACDC24C compressor runs on DC power, which may at times be converted from AC power. This special solar air conditioner can accept DC power directly from solar panels, without needing an inverter, charge controller, or batteries. The solar DC power directly replaces AC power from the power company and can cut daytime energy costs for air conditioning or heating by up to 100%. No power is exported and no net metering agreement or special meter is needed. Can be used with all-DC, all-AC, or AC-DC whereby the unit can seamlessly blend both power sources with a bias towards using all available DC (solar) power first.

During the day, the ACDC24C can get all or most of its power from 4-6 >/= 450W solar panels. The unit can be connected with up to 6 panels for running on 100% solar power with no AC connection or when the sun is not at full strength. The system is designed for hybrid operation with solar providing most or all of the energy needed during daylight hours, supplemented by AC power at night or during times of cloud cover. This air conditioner may be connected to a 208-240VAC 50/60Hz power source as desired for night time or cloudy day operation. Ratings per AHRI 210/240.

Power AC	208-240V, 50/60Hz		SEER (AC)/ ACDC Equivalent	20 / 60
*Cooling Capacity (rated/max) BTU	23,000 / 24,000		HSPF (AC) / ACDC	9.5 / 29
Power Input @ Max Cooling	1950W		Power DC, PV, series connection	110-300 Vmp
Avg. Power Consumption, Cooling	1143W		Solar Power Input	</=15a
Cooling EER / COP at Rated Cooling	19.78/ 5.8		Outdoor Range (cooling/heating)	50F-125F / 5F-86F
SEER / SEER w/ solar calculation	>21 / >65		LRA / RLA	29 / 5.2
*Heating Capacity	24,000 BTU		Swing (manual)	Up & Down
Power Input @ Rated Heating	2400W		Dehumidification	2.15 L/h
Avg. Power Consumption, Heating	1390W		Outdoor Unit, weight	106 Lbs.
Heating COP (Full Speed)	2.92		Outdoor Unit Dimension (W*H*D)	900×700×350 mm
Max power Input	2400W		Refrigerant g/oz	1.62 kg./ 58 Oz.
Indoor Fan Motor	BLDC		Max. Lineset / Max. Elevation (Ft.)	50 ft. / 16 ft.
Indoor Fan Input (Highest speed)	50W		Moisture Removal	2.4 L/h
Indoor Air Flow (CFM)	1300/1090/880		Refrigerant g/oz	1.62 kg./ 58 Oz.
Outdoor Fan Motor	Variable BLDC		Refrigerant Oil	VG74 / 770 ml
Indoor Noise Level (Hi/Med/Lo)	50/42/34 dB(a)		Design Pressure	601/167 PSIG
Indoor Unit Dimensions (W*H*D)mm	1121x329x231		Liquid side/ Gas side (Flare)	φ6.35*0.5+φ15.88×0.75
Indoor / Outdoor Unit Weight	30 Lbs. /		Certifications	ETL / UL, Energy Star

All specifications subject to change without notice. Images for reference only. See website for full details on operation and requirements. *Off-grid BTU capacity will be reduced when solar power is limited. An AC backup connection is recommended for full & uninterrupted operation. Extra panels, up to eight, should be used for intended off-grid applications.

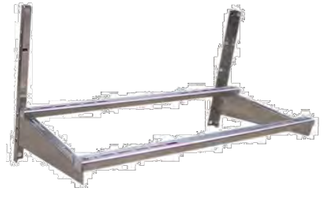
SOLAR HYBRID HEAT PUMP - ACDC24C HYBRID SCALE: NTS 1

hotspot energy

Optional Exterior Wall Mount For Air Conditioner Condensing Unit

Used to mount the outdoor air conditioning unit on an exterior wall to protect unit from snowdrift, flood, or for installation convenience.

Use Only All Stainless Steel





Above mounting hardware images for reference only. Products available through online sellers such as Lowes, Home Depot, Amazon. Not provided by HotSpot Energy.

Copyright 2023 HotSpot Energy INC

CONDENSING UNIT WALL MOUNT SCALE: NTS 2

Marion County OREGON

PROJECT INFORMATION:

MARION COUNTY HOUSE MOUNTAIN

11.1 MILES SOUTHEAST OF DRAKES CROSSING, OR

	DATE	RELEASE
	07-26-24	SITE SKETCH
	02-12-25	PRELIMINARY ZONING DRAWINGS
	05-22-25	PRELIMINARY CONSTRUCTION DRAWINGS
	09-23-25	FINAL CONSTRUCTION DRAWINGS
	09-30-25	REV. FCD FOR PROPANE TANK UPDATE
	10-15-25	REV. FCD FOR SITE CONFIGURATION

REVISION 1, 10/15/2025

DRAWING INFORMATION:

THIS DRAWING IS COPYRIGHTED AND IS THE SOLE PROPERTY OF THE OWNER. IT IS PRODUCED SOLELY FOR USE BY THE OWNER AND ITS AFFILIATES. REPRODUCTION OR USE OF THIS DRAWING AND/OR THE INFORMATION CONTAINED IN IT IS FORBIDDEN WITHOUT THE WRITTEN PERMISSION OF THE OWNER.

PLANS PREPARED BY:

cushing Civil Engineers

Cushing
Civil Engineers

12725 SW MILLIKAN WAY
SUITE 300
BEAVERTON, OR 97005
(503) 387-5331
www.cushingcivilengineers.com

LICENSURE:

REGISTERED PROFESSIONAL ENGINEER 83233 OREGON JUNE 7, 2012 KENNY McMANAWAY

RENEWAL DATE 12/31/26

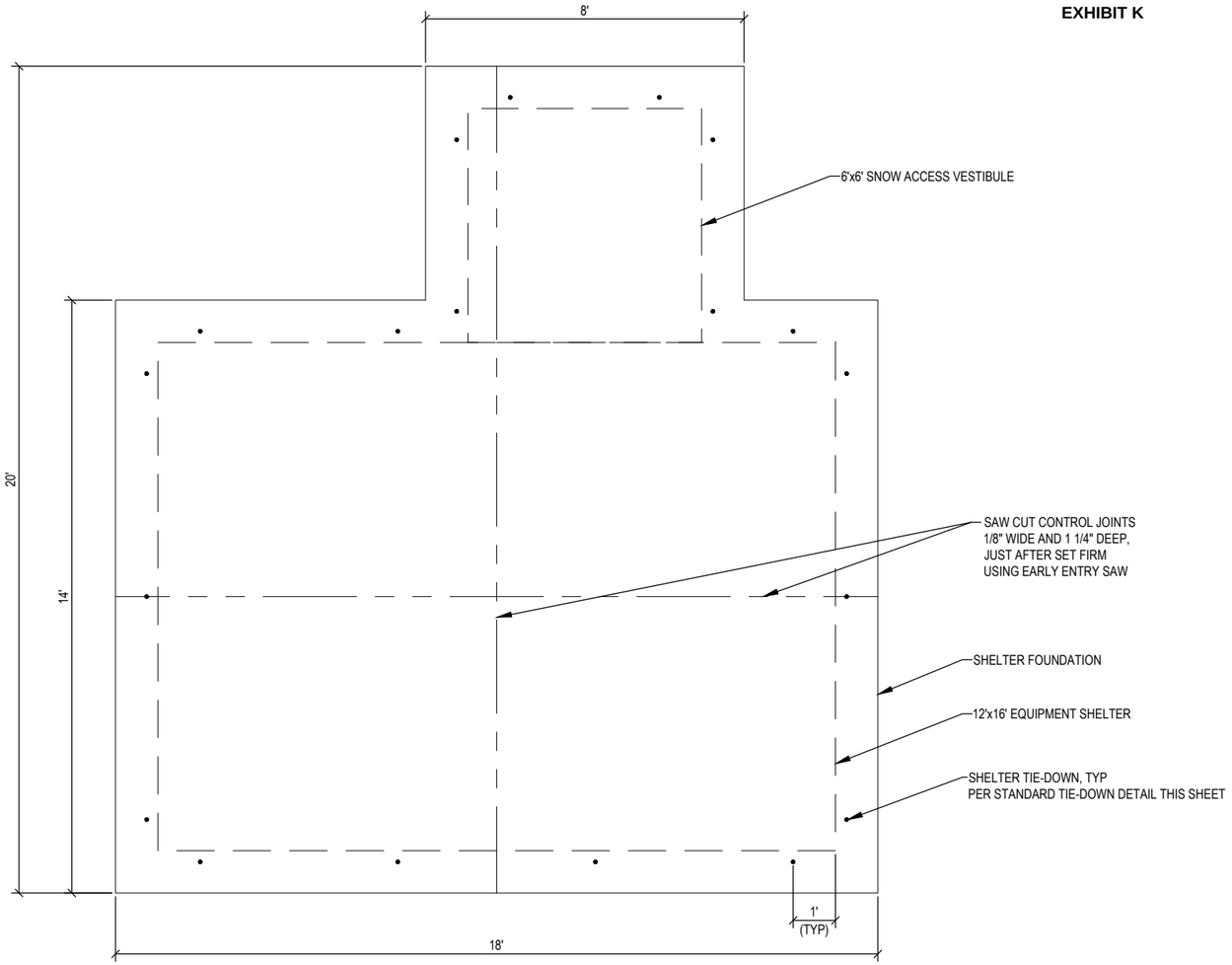
SHEET TITLE:

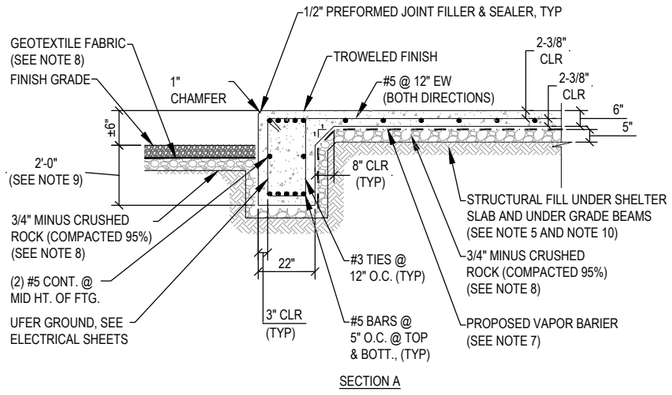
HVAC DETAILS

SHEET NUMBER:

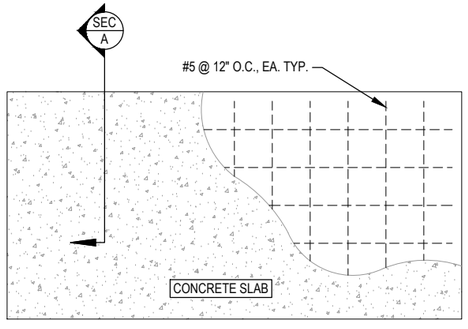
C-6

EXHIBIT K

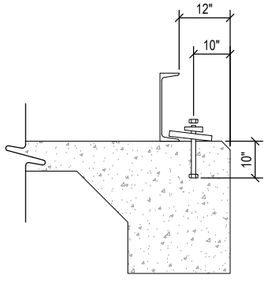




SECTION A



FOUNDATION PLAN



STANDARD TIE-DOWN DETAIL

NOTES:

1. ULTIMATE COMPRESSIVE STRENGTH OF CONCRETE AT 28 DAYS SHALL BE 3000 PSI, UNLESS OTHERWISE SPECIFIED.
2. REINFORCING BARS SHALL BE DEFORMED BARS CONFORMING TO ASTM A615 "DEFORMED AND PLAIN BILLET STEEL BARS FOR CONCRETE REINFORCEMENT," LATEST EDITION, GRADE 60.
3. LAP LENGTH FOR SPLICES SHALL NOT BE LESS THAN CLASS B SPLICE, UNLESS OTHERWISE SPECIFIED. WELDING OF REINFORCEMENT WILL NOT BE PERMITTED.
4. CONTRACTOR MAY USE EARTH FORMS FOR UNEXPOSED CONCRETE WHERE SOIL IS FIRM AND STABLE. EARTH FORMS SHALL BE TRENCHED NEATLY AND ACCURATELY. SIDES OF FOUNDATIONS, WHERE EARTH SLOUGHS, SHALL BE FORMED. EARTH FORMS SHALL BE TAMPED FIRM, AND CLEANED OF ALL DEBRIS AND LOOSE MATERIAL, BEFORE DEPOSITING CONCRETE.
5. STRUCTURAL FILL USED FOR SITE GRADING SHALL BE FREE FROM TOP SOIL, ORGANIC CONTAMINATED SOIL, AND ROCK FRAGMENTS HAVING A MAXIMUM DIMENSION GREATER THAN 3 INCHES. MATERIAL SHALL BE CLEAN AND SHALL BE SUBJECT TO THE FOLLOWING RESTRICTIONS.

   SILT CLAYS OR SANDY CLAY
   PLASTICITY INDEX 10 TO 24
   LIQUID LIMIT <45

   CLAYEY SANDS OR SLIGHTLY CLAYEY SILTY SANDS
   PLASTICITY INDEX 3 TO 15
   LIQUID LIMIT <35
6. MINIMUM CONCRETE COVER FOR REINFORCEMENT SHALL BE 3 INCHES FOR CONCRETE CAST AGAINST AND PERMANENTLY EXPOSED EARTH AND 1-1/2 INCHES FOR TOP BARS ON SIDEWALK AND SHELTER FOUNDATIONS.
7. VAPOR BARRIER SHALL BE VAPORBLOCK 10, OR APPROVED EQUAL.
8. CRUSHED ROCK AND GEOTEXTILE FABRIC IN THE COMPOUND AREA SHALL MEET THE REQUIREMENTS OF DETAIL 3 ON DWG C-5 AND ALL APPLICABLE GRADING NOTES.
9. IN INSTANCES WHERE ROCK IS ENCOUNTERED AT LESS THAN 2'-0", CONCRETE MAY BEAR ON THE ROCK.
10. PAINT SHEAR PLATES WITH COLD GALV.

NOTES:

1. TIEDOWN HARDWARE:
   - 1.1. CLAMP PLATE, 3/8"x3"x4" GALV. STEEL
   - 1.2. 1/2" BEVEL WASHER
   - 1.3. ANCHOR BOLT- 1/2-10x12" HEX HEAD
   - 1.4. 1/2"-10 HEAVY HEX NUT BY OTHERS.

Marion County OREGON

PROJECT INFORMATION:

MARION COUNTY HOUSE MOUNTAIN

11.1 MILES SOUTHEAST OF DRAKES CROSSING, OR

	DATE	RELEASE
	07-26-24	SITE SKETCH
	02-12-25	PRELIMINARY ZONING DRAWINGS
	05-22-25	PRELIMINARY CONSTRUCTION DRAWINGS
	09-23-25	FINAL CONSTRUCTION DRAWINGS
	09-30-25	REV. FCD FOR PROPANE TANK UPDATE
	10-15-25	REV. FCD FOR SITE CONFIGURATION

REVISION 1, 10/15/2025

DRAWING INFORMATION:
THIS DRAWING IS COPYRIGHTED AND IS THE SOLE PROPERTY OF THE OWNER. IT IS PRODUCED SOLELY FOR USE BY THE OWNER AND ITS AFFILIATES. REPRODUCTION OR USE OF THIS DRAWING AND/OR THE INFORMATION CONTAINED IN IT IS FORBIDDEN WITHOUT THE WRITTEN PERMISSION OF THE OWNER.

PLANS PREPARED BY:

cushing Civil Engineers

Cushing
Civil Engineers

12725 SW MILLIKAN WAY
SUITE 300
BEAVERTON, OR 97005
(503) 387-5331
www.cushingcivilengineers.com

LICENSURE:

REGISTERED PROFESSIONAL ENGINEER
83233
OREGON
JUNE 7, 2012
KENNY McMANAWAY

RENEWAL DATE 12/31/26

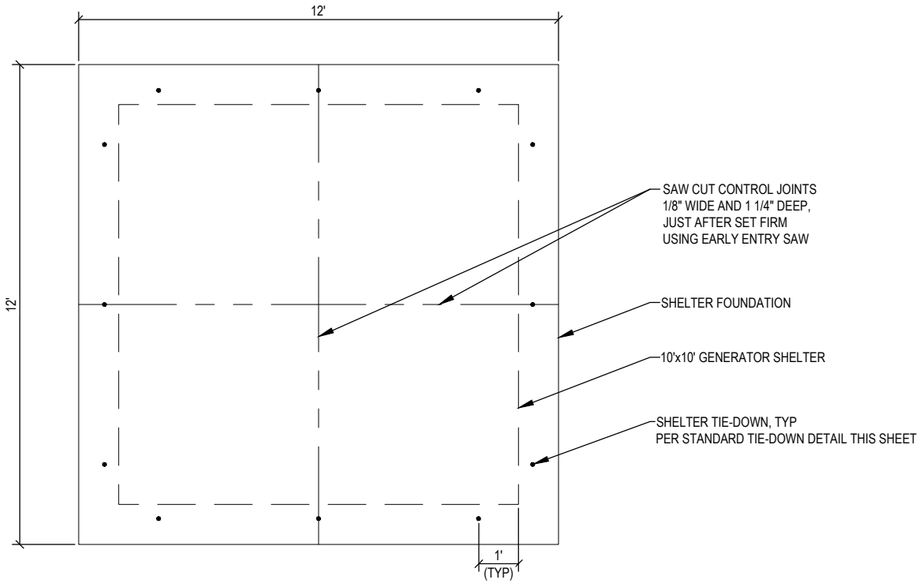
SHEET TITLE:

EQUIPMENT SHELTER FOUNDATION PLAN

SHEET NUMBER:

C-7

EXHIBIT K

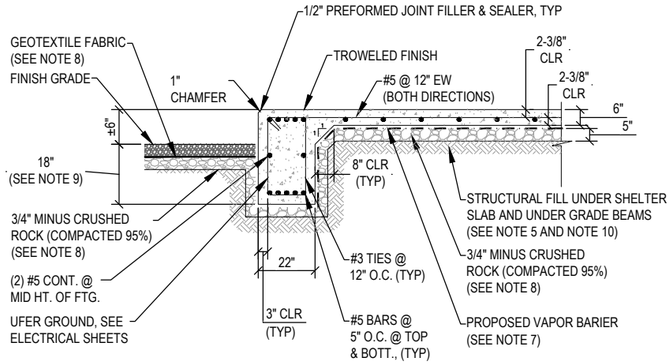


NOTES:

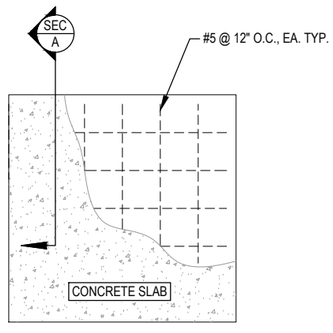
1. ULTIMATE COMPRESSIVE STRENGTH OF CONCRETE AT 28 DAYS SHALL BE 3000 PSI, UNLESS OTHERWISE SPECIFIED.
2. REINFORCING BARS SHALL BE DEFORMED BARS CONFORMING TO ASTM A615 "DEFORMED AND PLAIN BILLET STEEL BARS FOR CONCRETE REINFORCEMENT," LATEST EDITION, GRADE 60.
3. LAP LENGTH FOR SPLICES SHALL NOT BE LESS THAN CLASS B SPLICE, UNLESS OTHERWISE SPECIFIED. WELDING OF REINFORCEMENT WILL NOT BE PERMITTED.
4. CONTRACTOR MAY USE EARTH FORMS FOR UNEXPOSED CONCRETE WHERE SOIL IS FIRM AND STABLE. EARTH FORMS SHALL BE TRENCHED NEATLY AND ACCURATELY. SIDES OF FOUNDATIONS, WHERE EARTH SLOUGHS, SHALL BE FORMED. EARTH FORMS SHALL BE TAMPED FIRM, AND CLEANED OF ALL DEBRIS AND LOOSE MATERIAL, BEFORE DEPOSITING CONCRETE.
5. STRUCTURAL FILL USED FOR SITE GRADING SHALL BE FREE FROM TOP SOIL, ORGANIC CONTAMINATED SOIL, AND ROCK FRAGMENTS HAVING A MAXIMUM DIMENSION GREATER THAN 3 INCHES. MATERIAL SHALL BE CLEAN AND SHALL BE SUBJECT TO THE FOLLOWING RESTRICTIONS.

   SILT CLAYS OR SANDY CLAY
   PLASTICITY INDEX 10 TO 24
   LIQUID LIMIT <45

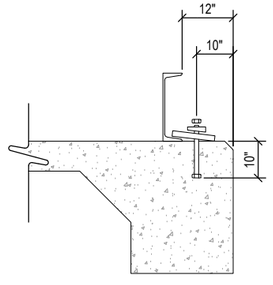
   CLAYEY SANDS OR SLIGHTLY CLAYEY SILTY SANDS
   PLASTICITY INDEX 3 TO 15
   LIQUID LIMIT <35
6. MINIMUM CONCRETE COVER FOR REINFORCEMENT SHALL BE 3 INCHES FOR CONCRETE CAST AGAINST AND PERMANENTLY EXPOSED EARTH AND 1-1/2 INCHES FOR TOP BARS ON SIDEWALK AND SHELTER FOUNDATIONS.
7. VAPOR BARRIER SHALL BE VAPORBLOCK 10, OR APPROVED EQUAL.
8. CRUSHED ROCK AND GEOTEXTILE FABRIC IN THE COMPOUND AREA SHALL MEET THE REQUIREMENTS OF DETAIL 3 ON DWG C-5 AND ALL APPLICABLE GRADING NOTES.
9. IN INSTANCES WHERE ROCK IS ENCOUNTERED AT LESS THAN 2'-0", CONCRETE MAY BEAR ON THE ROCK.
10. PAINT SHEAR PLATES WITH COLD GALV.



SECTION A



FOUNDATION PLAN



STANDARD TIE-DOWN DETAIL

NOTES:

1. TIEDOWN HARDWARE:
   - 1.1. CLAMP PLATE, 3/8"x3"x4" GALV. STEEL
   - 1.2. 1/2" BEVEL WASHER
   - 1.3. ANCHOR BOLT- 1/2-10x12" HEX HEAD
   - 1.4. 1/2"-10 HEAVY HEX NUT BY OTHERS.

PROJECT INFORMATION:

MARION COUNTY HOUSE MOUNTAIN

11.1 MILES SOUTHEAST OF DRAKES CROSSING, OR

	DATE	RELEASE
	07-26-24	SITE SKETCH
	02-12-25	PRELIMINARY ZONING DRAWINGS
	05-22-25	PRELIMINARY CONSTRUCTION DRAWINGS
	09-23-25	FINAL CONSTRUCTION DRAWINGS
	09-30-25	REV. FCD FOR PROPANE TANK UPDATE
	10-15-25	REV. FCD FOR SITE CONFIGURATION

REVISION 1, 10/15/2025

DRAWING INFORMATION:
THIS DRAWING IS COPYRIGHTED AND IS THE SOLE PROPERTY OF THE OWNER. IT IS PRODUCED SOLELY FOR USE BY THE OWNER AND ITS AFFILIATES. REPRODUCTION OR USE OF THIS DRAWING AND/OR THE INFORMATION CONTAINED IN IT IS FORBIDDEN WITHOUT THE WRITTEN PERMISSION OF THE OWNER.

PLANS PREPARED BY:

Cushing
Civil Engineers

12725 SW MILLIKAN WAY
SUITE 300
BEAVERTON, OR 97005
(503) 387-5331
www.cushingcivilengineers.com

LICENSURE:

REGISTERED PROFESSIONAL ENGINEER
83233
OREGON
JUNE 7, 2012
KENNY McMANAWAY

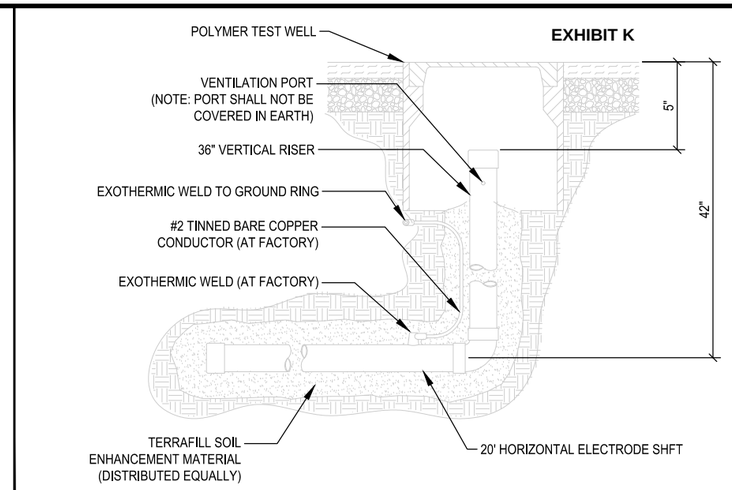
RENEWAL DATE 12/31/26

SHEET TITLE:

GENERATOR SHELTER FOUNDATION PLAN

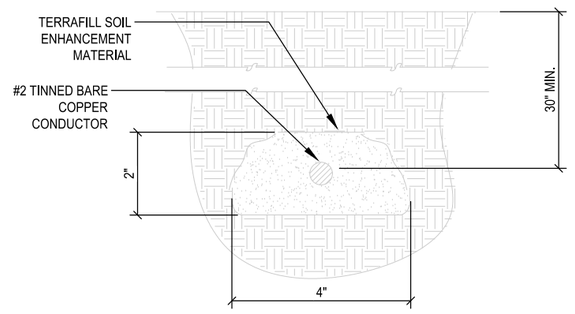
SHEET NUMBER:

C-8



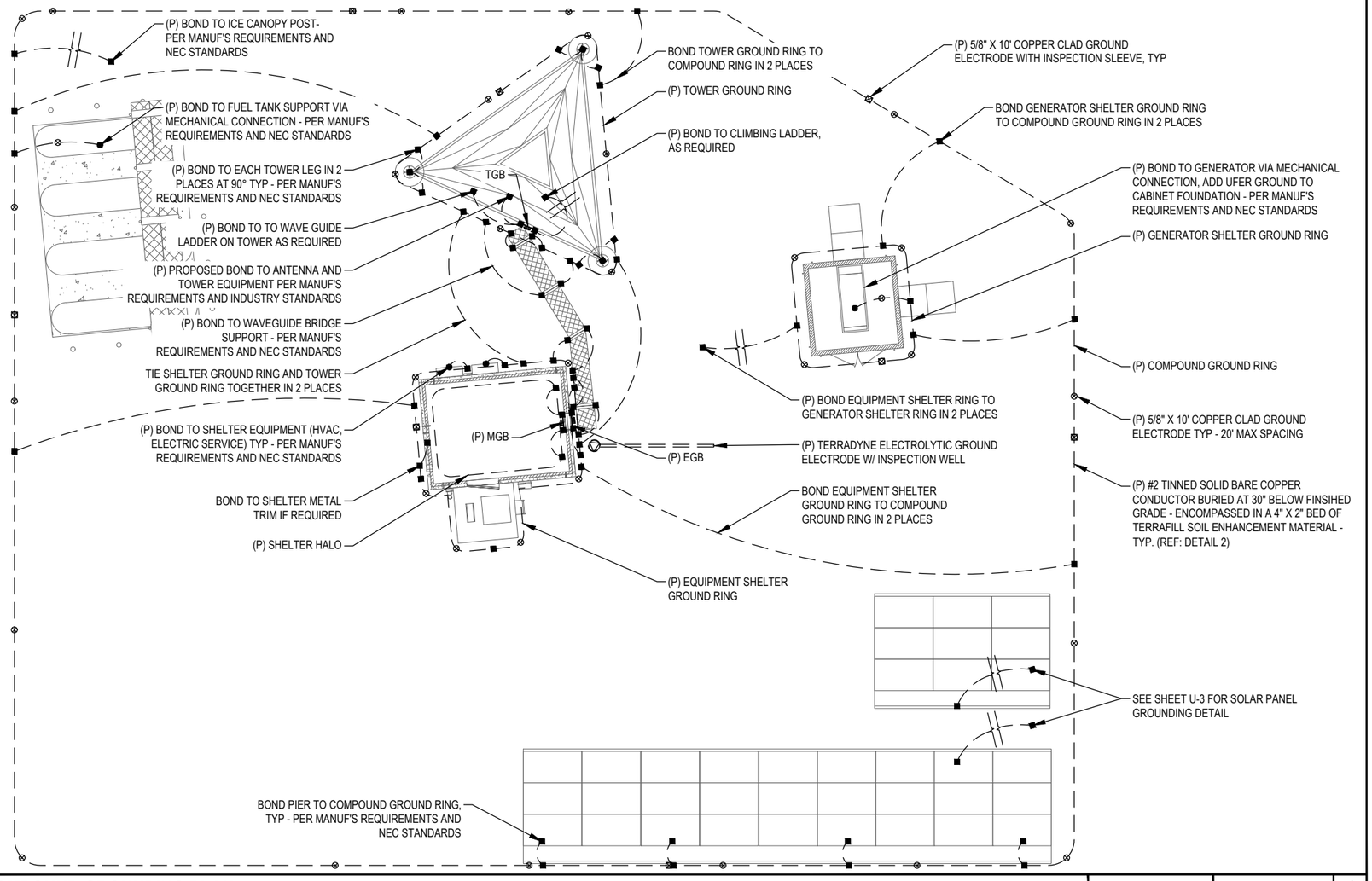
TERRADYNE ELECTROLYTIC GROUND ELECTRODE

SCALE: NTS | 3



SOIL ENHANCEMENT DETAIL

SCALE: NTS | 2



SITE COMPOUND GROUNDING PLAN

11X17 SCALE: 1" = 14' | 22X34 SCALE: 1" = 7' | 1

GENERAL NOTES:

1. ALL INSTALLATIONS ARE TO BE FIELD VERIFIED.
2. GROUND CONDUCTORS ARE TO BE BURIED AT A MINIMUM 30" BELOW GRADE OR 6" BELOW FREEZE LINE, WHICHEVER IS GREATER.
3. ALL BELOW GRADE GROUNDING CONDUCTORS ARE TO BE ENCOMPASSED IN A 2" X 4" BED OF SOIL ENHANCEMENT MATERIAL.
4. BONDS TO FENCE POSTS ARE TO BE MADE AT 12" ABOVE GRADE WHERE APPLICABLE.
5. NO CONDUCTOR SHALL HAVE A BEND IN RADIUS OF LESS THAN 12" AND SHALL NOT EXCEED 90 DEGREES.
6. TERRADYNE ELECTROLYTIC GROUND ELECTRODES ARE NOT TO SHARE THE SAME TRENCH AS GROUNDING CONDUCTOR, NOR RUN IN A PARALLEL PATH TO THE CONDUCTOR.
7. ALL GROUND SYSTEMS ARE TO BE MADE COMMON.
8. ALL BONDS ARE TO BE COATED WITH ANTI-OXIDATION COMPOUND.
9. WHERE STANDARD GROUND ELECTRODES ARE UNABLE TO BE DRIVEN, 12" X 12" X 1/8" COPPER GROUND PLATES SHALL BE INSTALLED 30" BELOW FINISHED GRADE & ENCOMPASSED IN 50LBS OF TERRAFILL SOIL ENHANCEMENT MATERIAL.

LEGEND:

- TERRADYNE TG-100L-H36-2T-36-4F-P SERIES ELECTRODE W/ INSPECTION WELL
- EXOTHERMIC WELD
- MECHANICAL CONNECTION
- 5/8" X 10' COPPER CLAD GROUND ELECTRODE
- 5/8" X 10' COPPER CLAD GROUND ELECTRODE WITH INSPECTION SLEEVE
- #2 TINNED SOLID COPPER CONDUCTOR

Marion County OREGON

PROJECT INFORMATION:

MARION COUNTY
HOUSE MOUNTAIN

11.1 MILES SOUTHEAST OF
DRAKES CROSSING, OR

	DATE	RELEASE
	07-26-24	SITE SKETCH
	02-12-25	PRELIMINARY ZONING DRAWINGS
	05-22-25	PRELIMINARY CONSTRUCTION DRAWINGS
	09-23-25	FINAL CONSTRUCTION DRAWINGS
	09-30-25	REV. FCD FOR PROPANE TANK UPDATE
	10-15-25	REV. FCD FOR SITE CONFIGURATION

REVISION 1, 10/15/2025

DRAWING INFORMATION:
THIS DRAWING IS COPYRIGHTED AND IS THE SOLE PROPERTY OF THE OWNER. IT IS PRODUCED SOLELY FOR USE BY THE OWNER AND ITS AFFILIATES. REPRODUCTION OR USE OF THIS DRAWING AND/OR THE INFORMATION CONTAINED IN IT IS FORBIDDEN WITHOUT THE WRITTEN PERMISSION OF THE OWNER.

PLANS PREPARED BY:

cushing Civil Engineers

Cushing Civil Engineers

12725 SW MILLIKAN WAY
SUITE 300
BEAVERTON, OR 97005
(503) 387-5331
www.cushingcivilengineers.com

LICENSURE:

REGISTERED PROFESSIONAL ENGINEER
83233
OREGON
JUNE 7, 2012
KENNY McMANAWAY

RENEWAL DATE 12/31/26

SHEET TITLE:

SITE GROUNDING PLAN & DETAILS

SHEET NUMBER:

E-1

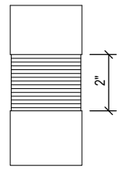


FIGURE 1

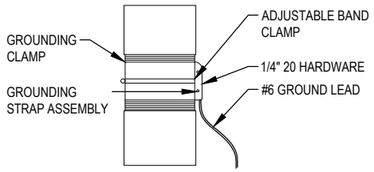


FIGURE 2

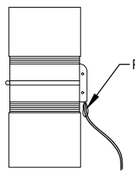


FIGURE 3

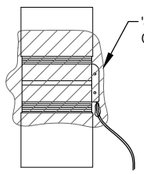


FIGURE 4

EXHIBIT K

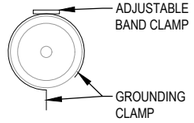


FIGURE 5

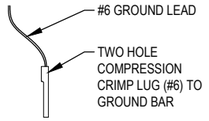
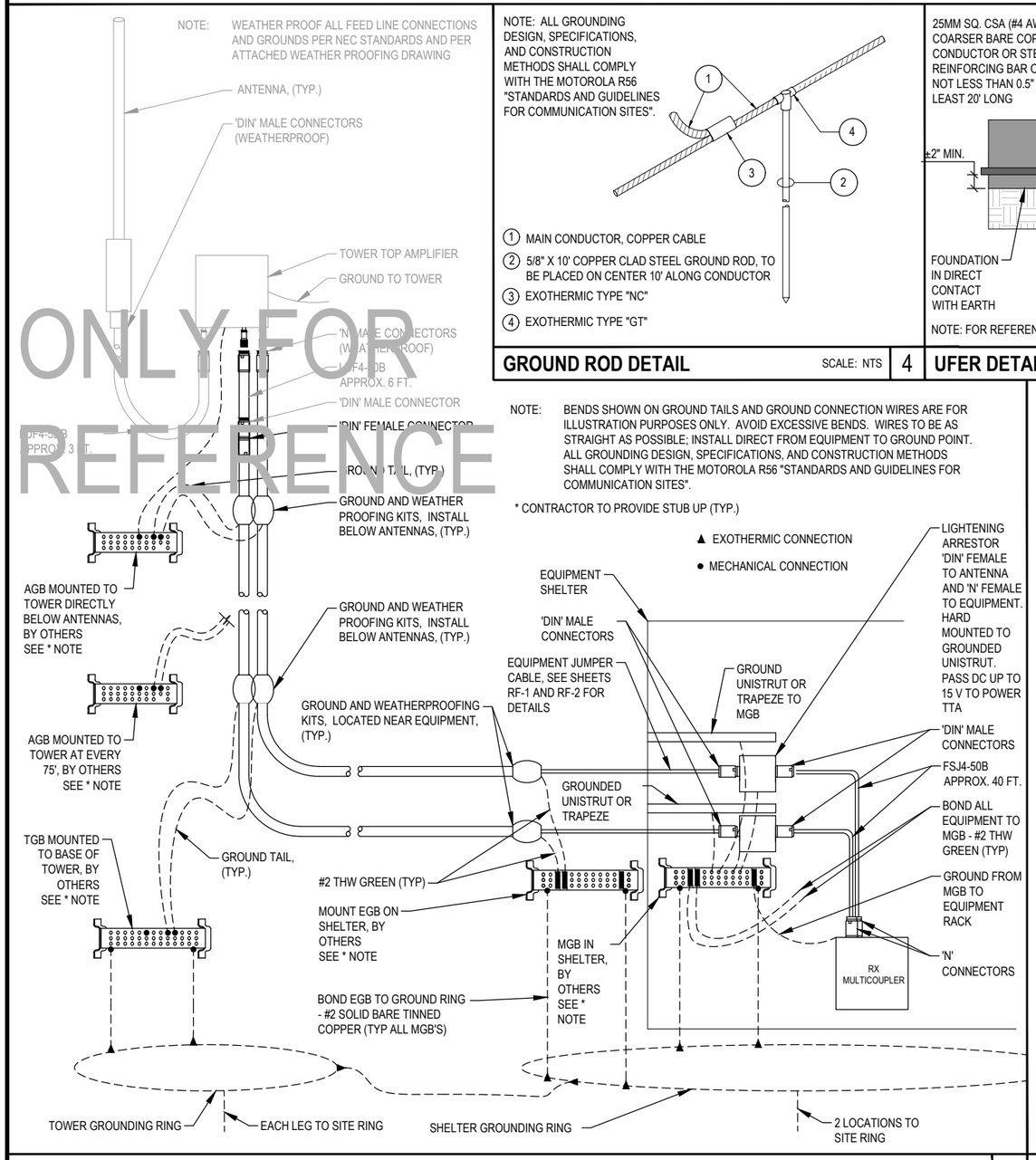


FIGURE 6

NOTE: NOT GC

FEED LINE CABLE GROUNDING

SCALE: NTS | 2



ONLY FOR REFERENCE

STANDARD RX GROUNDING SCHEMATICS

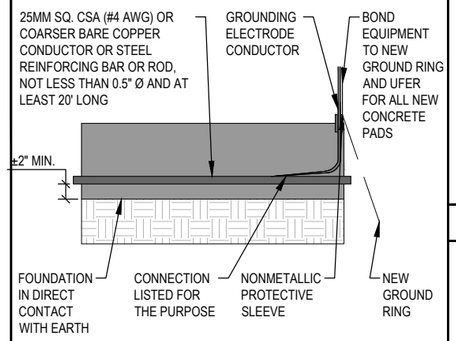
SCALE: NTS | 1

NOTE: ALL GROUNDING DESIGN, SPECIFICATIONS, AND CONSTRUCTION METHODS SHALL COMPLY WITH THE MOTOROLA R56 "STANDARDS AND GUIDELINES FOR COMMUNICATION SITES".

1. MAIN CONDUCTOR, COPPER CABLE
2. 5/8" X 10' COPPER CLAD STEEL GROUND ROD, TO BE PLACED ON CENTER 10' ALONG CONDUCTOR
3. EXOTHERMIC TYPE "NC"
4. EXOTHERMIC TYPE "GT"

GROUND ROD DETAIL

SCALE: NTS | 4



NOTE: FOR REFERENCE ONLY

UFER DETAIL

SCALE: NTS | 5

NOTE: BENDS SHOWN ON GROUND TAILS AND GROUND CONNECTION WIRES ARE FOR ILLUSTRATION PURPOSES ONLY. AVOID EXCESSIVE BENDS. WIRES TO BE AS STRAIGHT AS POSSIBLE; INSTALL DIRECT FROM EQUIPMENT TO GROUND POINT. ALL GROUNDING DESIGN, SPECIFICATIONS, AND CONSTRUCTION METHODS SHALL COMPLY WITH THE MOTOROLA R56 "STANDARDS AND GUIDELINES FOR COMMUNICATION SITES".

* CONTRACTOR TO PROVIDE STUB UP (TYP.)

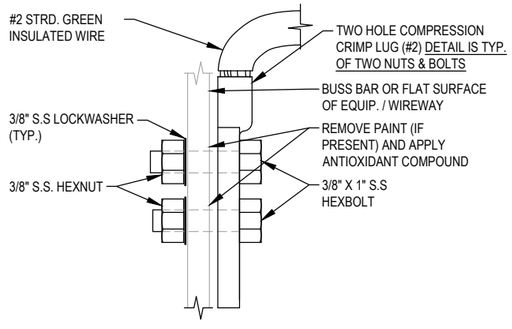
NOTES
1. TYP. FOR ALL GROUND WIRES FOR ELECT. AND OTHER EQUIPMENT.

2. THE ENTIRE LUG AND AREA TO BE SPRAYED WITH CLEAR LACQUER OR COLD GALVANIZING SPRAY.

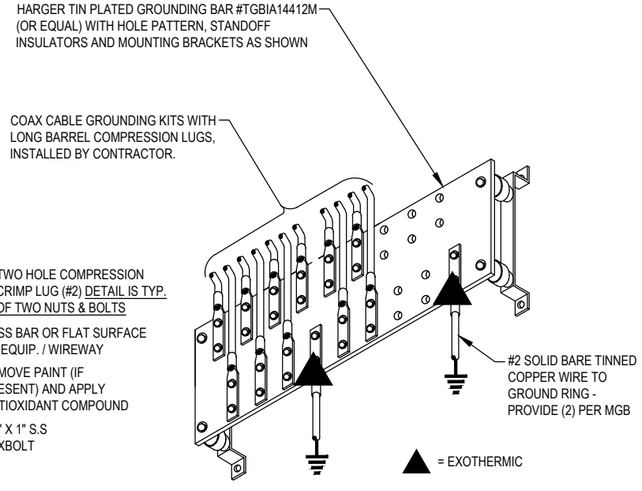
3. GROUND LEADS TO BE EXOTHERMIC WELDED TO GROUND RING.

4. AGB IS BONDED TO TOWER.

GENERAL NOTES
ALL ANTENNAS, LINES AND RELATED INSTALLATION HARDWARE TO BE PROVIDED BY THE LAND MOBILE COMMUNICATIONS PROVIDER.



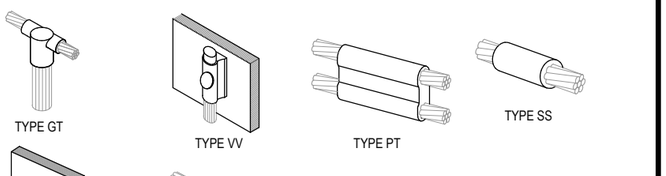
MGB (AT BASE OF TOWER AND EQUIPMENT)



AGB (AT ANTENNAS)

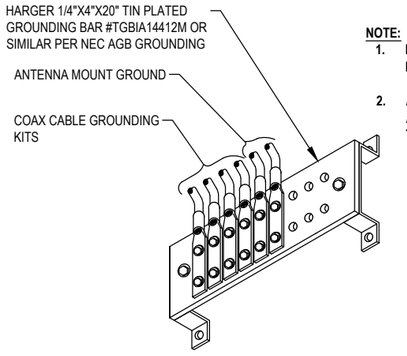
GROUND BAR DETAILS

SCALE: NTS | 6



TYPICAL EXOTHERMIC CONNECTION DETAILS

SCALE: NTS | 3



NOTE:
1. **DO NOT BOND AIR TERMINAL OR LIGHTNING ROD TO AGB**
2. **AGB GROUND BAR TO BE PLATED. AGB TO BE BONDED DIRECTLY TO TOWER.**

PROJECT INFORMATION:

MARION COUNTY HOUSE MOUNTAIN

11.1 MILES SOUTHEAST OF DRAKES CROSSING, OR

	DATE	RELEASE
	07-26-24	SITE SKETCH
	02-12-25	PRELIMINARY ZONING DRAWINGS
	05-22-25	PRELIMINARY CONSTRUCTION DRAWINGS
	09-23-25	FINAL CONSTRUCTION DRAWINGS
	09-30-25	REV. FCD FOR PROPANE TANK UPDATE
	10-15-25	REV. FCD FOR SITE CONFIGURATION

REVISION 1, 10/15/2025

DRAWING INFORMATION:
THIS DRAWING IS COPYRIGHTED AND IS THE SOLE PROPERTY OF THE OWNER. IT IS PRODUCED SOLELY FOR USE BY THE OWNER AND ITS AFFILIATES. REPRODUCTION OR USE OF THIS DRAWING AND/OR THE INFORMATION CONTAINED IN IT IS FORBIDDEN WITHOUT THE WRITTEN PERMISSION OF THE OWNER.

PLANS PREPARED BY:

Cushing
Civil Engineers

12725 SW MILLIKAN WAY
SUITE 300
BEAVERTON, OR 97005
(503) 387-5331
www.cushingcivilengineers.com

LICENSURE:

REGISTERED PROFESSIONAL ENGINEER 83233 OREGON JUNE 7, 2012 KENNY McMANAWAY

RENEWAL DATE 12/31/26

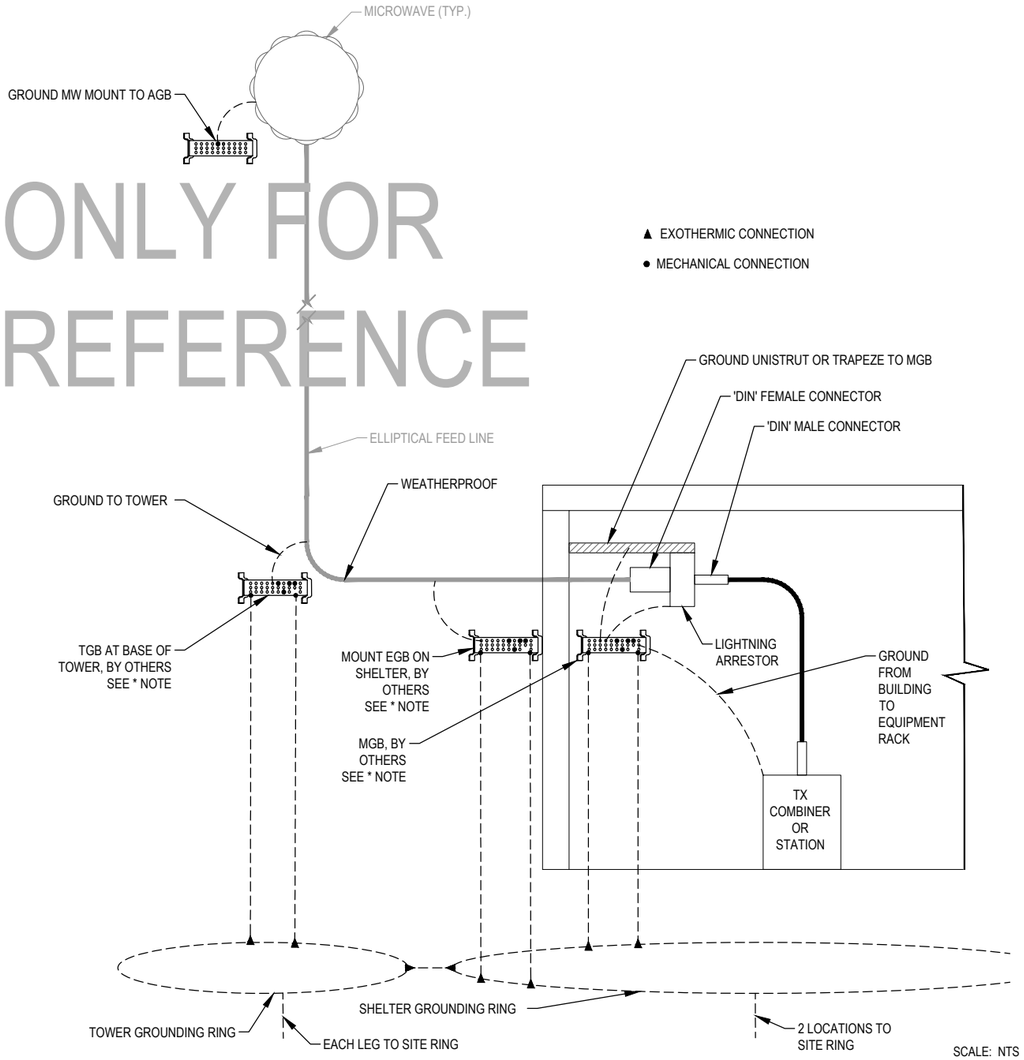
SHEET TITLE:

GROUNDING DETAILS I

SHEET NUMBER:

E-2

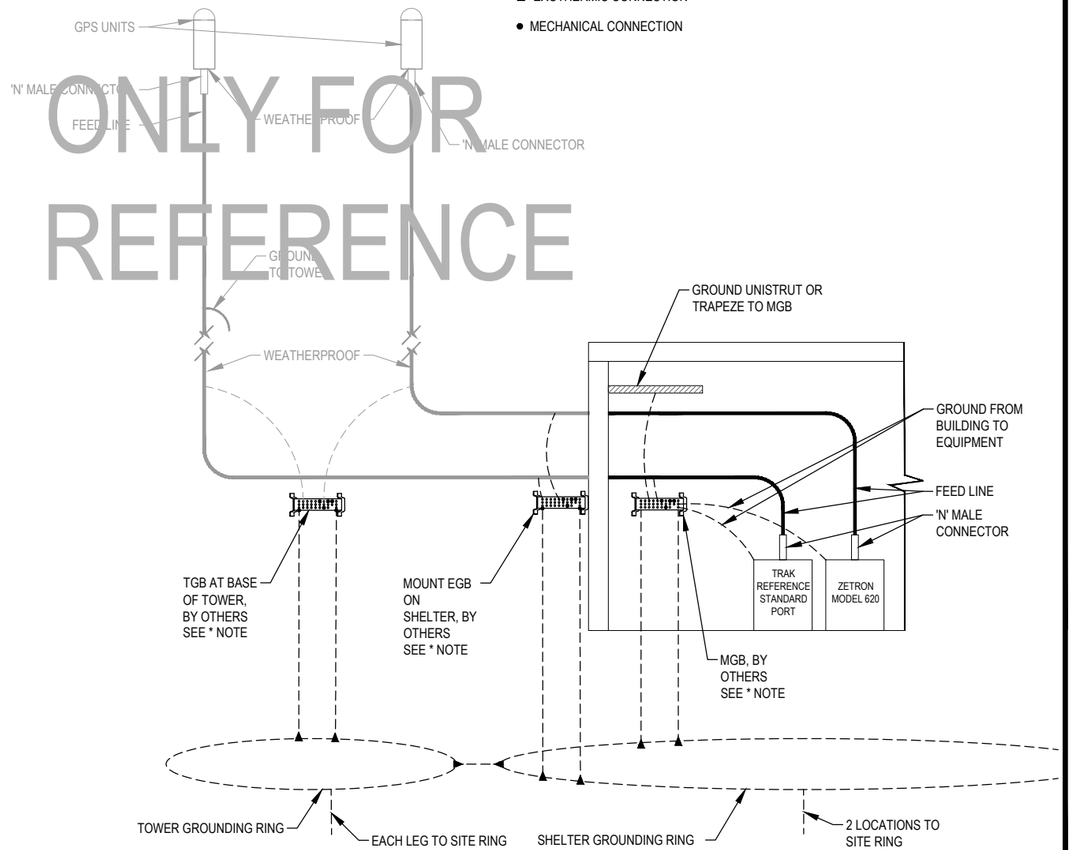
EXHIBIT K



ONLY FOR REFERENCE

TYPICAL MICROWAVE ANTENNA GROUNDING SCHEMATICS | 1

NOTE:
TOWER INFO SHOWN FOR CONCEPTUAL USE ONLY. SEE TOWER STRUCTURAL REPORT BY OTHERS.



ONLY FOR REFERENCE

TYPICAL GPS ANTENNA GROUNDING SCHEMATICS SCALE: NTS | 2

Marion County
OREGON

PROJECT INFORMATION:

MARION COUNTY
HOUSE MOUNTAIN

11.1 MILES SOUTHEAST OF
DRAKES CROSSING, OR

	DATE	RELEASE
	07-26-24	SITE SKETCH
	02-12-25	PRELIMINARY ZONING DRAWINGS
	05-22-25	PRELIMINARY CONSTRUCTION DRAWINGS
	09-23-25	FINAL CONSTRUCTION DRAWINGS
	09-30-25	REV. FCD FOR PROPANE TANK UPDATE
	10-15-25	REV. FCD FOR SITE CONFIGURATION
		REVISION 1, 10/15/2025

DRAWING INFORMATION:

THIS DRAWING IS COPYRIGHTED AND IS THE SOLE PROPERTY OF THE OWNER. IT IS PRODUCED SOLELY FOR USE BY THE OWNER AND ITS AFFILIATES. REPRODUCTION OR USE OF THIS DRAWING AND/OR THE INFORMATION CONTAINED IN IT IS FORBIDDEN WITHOUT THE WRITTEN PERMISSION OF THE OWNER.

PLANS PREPARED BY:

cushing Civil Engineers

Cushing Civil Engineers
12725 SW MILLIKAN WAY
SUITE 300
BEAVERTON, OR 97005
(503) 387-5331
www.cushingcivilengineers.com

LICENSURE:

REGISTERED PROFESSIONAL ENGINEER
83233
OREGON
JUNE 7, 2012
KENNY McMANAWAY

RENEWAL DATE 12/31/26

SHEET TITLE:

GROUNDING DETAILS II

SHEET NUMBER:

E-3

SITE INFORMATION	
SITE NAME	**HOUSE MOUNTAIN**

LOCATION INFORMATION			
COUNTY	MARION COUNTY		
STREET ADDRESS	11.1 MILES SOUTHEAST OF DRAKES CROSSING		
CITY	--	STATE	OR
ZIP CODE	--		
LATITUDE (DEC.)/(DEG)	44.841210 / 44° 50'28.4" N		
LONGITUDE (DEC.)/(DEG)	-122.483040 / 122°28'58.9" W		

TOWER INFORMATION			
STRUCTURE	SELF-SUPPORTING	TOWER MANUFACTURER	SABRE
TOWER OWNER	MCPW	SERIAL/MODEL #	-
GROUND ELEVATION	±3,955'	# OF APPURTENANCE	-
# OF LEGS	3	HIGHEST POINT W/ ANT	-
TOWER HEIGHT W/O ANT	180'		

EXHIBIT K

#	Description	Part Number	Length (ft)	Leg/Face	Status	Base Height (ft)	Centerline Height (ft)	Top Height (ft)	Antenna Azimuth	Mount Azimuth	Mount	Transmission Line Size/Type
1	P25 RX Antenna	CC807-09	10.3	B	New	179	184	189	-		Standard	1/2" to TTA
2	TTA	NPD3633A-TTA	1.0	B	New	176	177	177	-		Standard	7/8"
3	Microwave - SCC	VHLP4-11W	4.0	C	New	15	17	19	259.31	259.31	Standard w/ tieback	EW90
4	Microwave - APW	VHLP2-18	2.0	B	New	49	50	51	157.44	157.44	Standard w/ tieback	EWP180-180
5	VHF AS-IP TX Antenna	SV227-5F2SNM	4.0	A	New	78	80	82	90	90	Standard	
6	VHF AS-IP RX Antenna	DS1F06F36U-D	21.9	A	New	94	105	116	-	90	Standoff	
7	Microwave-1	Drum with ice shield	3	C	Existing	21	22	24	~270	~270	Standard	
8	Omni-1		2	A	Existing	39	40	41			Standoff	
9	Omni-2		2	A	Existing	24	25	26			Standoff	
10	Dipole-1	2 element	10	C	Existing	30	35	40			Standoff	
11	Yagi		1	C	Existing	30	30	31			Standoff	
12	Dipole-2	4 element	3	C	Existing	61	62	64			Standoff	
13	Dipole-3	2 element	5	A	Existing	60	62	65			Standoff	
14	Dipole-4	4 element	3	B	Existing	61	62	64			Standoff	
15	Omni-3		2	C	Existing	42	43	44			Standoff	

= estimated value based on survey documentation and photos

NOTE:

INFORMATION BASED ON TAIT COMMUNICATIONS' DOCUMENT DATED 08/11/2025 PROVIDED BY MARION COUNTY.

PROVISIONAL

tait communications

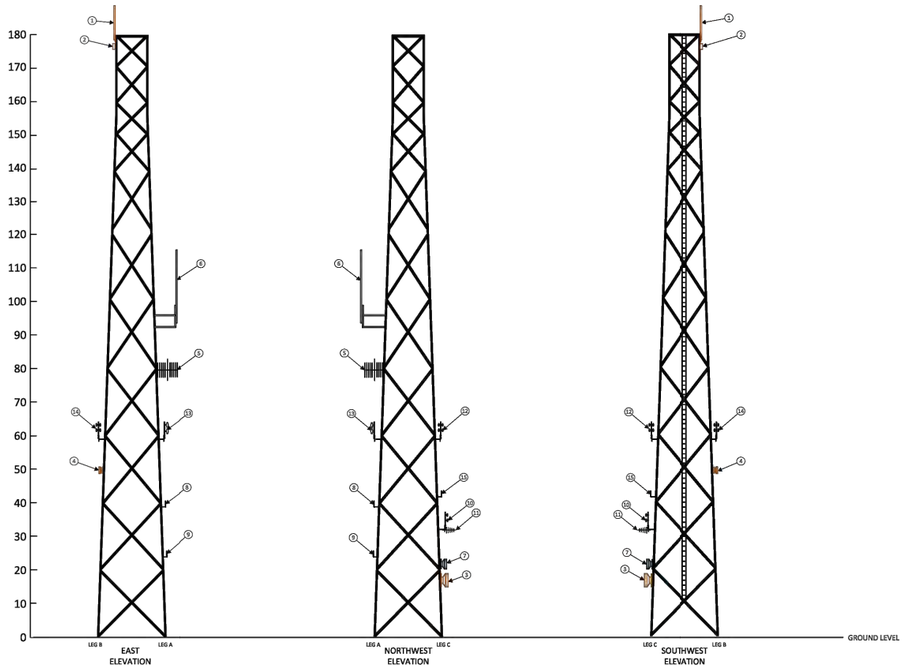
Marion County, OR
700 MHz
P25 Phase II

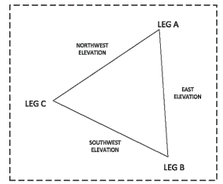
Date	8/11/2025
Drawn	RCA
Checked	-

FILE: I:\marion county or_house mtn v3.vsd

House Mtn
Appurtenance Chart

PRELIMINARY – PENDING SITE CIVILS





NOTES
1. Dipole antennas from old tower already located at 65' centerline on legs A and B. Item 5 will need to be placed at 80'.

PROVISIONAL

tait communications

Marion County, OR
700 MHz
P25 Phase II

Date	8/11/2025
Drawn	RCA
Checked	-

FILE: I:\marion county or_house mtn v3.vsd

House Mtn
Tower Plan

Marion County OREGON

PROJECT INFORMATION:

MARION COUNTY
HOUSE MOUNTAIN

11.1 MILES SOUTHEAST OF
DRAKES CROSSING, OR

	DATE	RELEASE
	07-26-24	SITE SKETCH
	02-12-25	PRELIMINARY ZONING DRAWINGS
	05-22-25	PRELIMINARY CONSTRUCTION DRAWINGS
	09-23-25	FINAL CONSTRUCTION DRAWINGS
	09-30-25	REV. FCD FOR PROPANE TANK UPDATE
	10-15-25	REV. FCD FOR SITE CONFIGURATION

REVISION 1, 10/15/2025

DRAWING INFORMATION:
THIS DRAWING IS COPYRIGHTED AND IS THE SOLE PROPERTY OF THE OWNER. IT IS PRODUCED SOLELY FOR USE BY THE OWNER AND ITS AFFILIATES. REPRODUCTION OR USE OF THIS DRAWING AND/OR THE INFORMATION CONTAINED IN IT IS FORBIDDEN WITHOUT THE WRITTEN PERMISSION OF THE OWNER.

PLANS PREPARED BY:

cushing Civil Engineers

Cushing
Civil Engineers

12725 SW MILLIKAN WAY
SUITE 300
BEAVERTON, OR 97005
(503) 387-5331
www.cushingcivilengineers.com

LICENSURE:

REGISTERED PROFESSIONAL ENGINEER
83233
OREGON
JUNE 7, 2012
KENNY McMANAWAY

RENEWAL DATE 12/31/26

SHEET TITLE:

RF TOWER APPURTENANCES I

SHEET NUMBER:

RF-1.0

EXHIBIT K

VHLPX4-11W/A

Base Product



1.2 m | 4 ft ValuLine® High Performance Low Profile Antenna, dual-polarized, 10.125–11.700 GHz

Product Classification

Product Type	Microwave antenna
Product Brand	ValuLine®

General Specifications

Antenna Type	VHLPX - ValuLine® High Performance Low Profile Antenna, dual-polarized
Polarization	Dual
Side Struts, Included	1 inboard
Side Struts, Optional	1 inboard

Dimensions

Diameter, nominal	1.2 m | 4 ft

Electrical Specifications

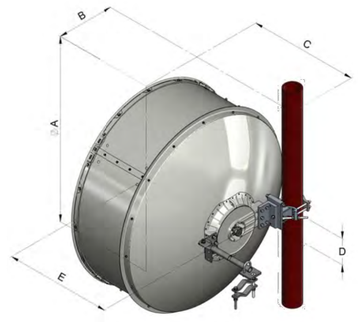
Operating Frequency Band	10.125 – 11.700 GHz
Gain, Low Band	40.2 dBi
Gain, Mid Band	40.7 dBi
Gain, Top Band	41 dBi
Boresite Cross Polarization Discrimination (XPD)	30 dB
Front-to-Back Ratio	66 dB
Beamwidth, Horizontal	1.6 °
Beamwidth, Vertical	1.6 °
Return Loss	17.7 dB
VSWR	1.3
Radiation Pattern Envelope Reference (RPE)	7185A
Electrical Compliance	Brazil Anatel Class 2 | Canada SRSP 310.5 | Canada SRSP 310.7 Part A | Canada SRSP 310.7 Part B | ETSI 302 217 Class

©2024 CommScope, Inc. All rights reserved. CommScope and the CommScope logo are registered trademarks of CommScope and/or its affiliates in the U.S. and other countries. For additional trademark information see https://www.commscope.com/trademarks. All product names, trademarks and registered trademarks are property of their respective owners. Revised: September 1, 2023

COMMSCOPE®

VHLPX4-11W/A

Antenna Dimensions and Mounting Information



Dimensions in inches (mm)					
Antenna size, ft (m)	A	B	C	D	E
4 (1.2)	50.8 (1291)	16 (407)	30.2 (767)	7.2 (183)	29.5 (748)

Wind Forces at Wind Velocity Survival Rating

Axial Force (FA)	5326 N | 1,197.333 lbf
Side Force (FS)	2638 N | 593.046 lbf
Twisting Moment (MT)	2162 N-m | 19,135.312 in lb
Force on Inboard Strut Side	2862 N | 643.403 lbf
Zcg without Ice	43 mm | 1.693 in
Zcg with 1/2 in (12 mm) Radial Ice	284 mm | 11.181 in
Weight with 1/2 in (12 mm) Radial Ice	74 kg | 163.142 lb

©2024 CommScope, Inc. All rights reserved. CommScope and the CommScope logo are registered trademarks of CommScope and/or its affiliates in the U.S. and other countries. For additional trademark information see https://www.commscope.com/trademarks. All product names, trademarks and registered trademarks are property of their respective owners. Revised: September 1, 2023

COMMSCOPE®

NOTE: MODEL SHOWN IS PRELIMINARY AND SUBJECT TO CHANGE UPON FINAL RF CONFIGURATION.

Marion County OREGON

PROJECT INFORMATION:

MARION COUNTY
HOUSE MOUNTAIN

11.1 MILES SOUTHEAST OF
DRAKES CROSSING, OR

	DATE	RELEASE
	07-26-24	SITE SKETCH
	02-12-25	PRELIMINARY ZONING DRAWINGS
	05-22-25	PRELIMINARY CONSTRUCTION DRAWINGS
	09-23-25	FINAL CONSTRUCTION DRAWINGS
	09-30-25	REV. FCD FOR PROPANE TANK UPDATE
	10-15-25	REV. FCD FOR SITE CONFIGURATION
		REVISION 1, 10/15/2025

DRAWING INFORMATION:

THIS DRAWING IS COPYRIGHTED AND IS THE SOLE PROPERTY OF THE OWNER. IT IS PRODUCED SOLELY FOR USE BY THE OWNER AND ITS AFFILIATES. REPRODUCTION OR USE OF THIS DRAWING AND/OR THE INFORMATION CONTAINED IN IT IS FORBIDDEN WITHOUT THE WRITTEN PERMISSION OF THE OWNER.

PLANS PREPARED BY:

cushing Civil Engineers

Cushing
Civil Engineers

12725 SW MILLIKAN WAY
SUITE 300
BEAVERTON, OR 97005
(503) 387-5331
www.cushingcivilengineers.com

LICENSURE:

REGISTERED PROFESSIONAL ENGINEER
83233
OREGON
JUNE 7, 2012
KENNY McMANAWAY

RENEWAL DATE 12/31/26

SHEET TITLE:

RF TOWER APPURTENANCES II

SHEET NUMBER:

RF-1.1

EXHIBIT K

VHLP2-18/D

Base Product



0.6m | 2 ft ValuLine® High Performance Antenna, single polarized, 17.700 – 19.700 GHz

Product Classification

Product Type	Microwave antenna
Product Brand	ValuLine®

General Specifications

Antenna Type	VHLP - ValuLine® High Performance Low Profile Antenna, single-polarized
Polarization	Single
Side Struts, Included	0
Side Struts, Optional	0

Dimensions

Diameter, nominal	0.6 m | 2 ft

Electrical Specifications

Operating Frequency Band	17.700 – 19.700 GHz
Gain, Low Band	38.6 dBi
Gain, Mid Band	39 dBi
Gain, Top Band	39.4 dBi
Boresite Cross Polarization Discrimination (XPD)	30 dB
Front-to-Back Ratio	67 dB
Beamwidth, Horizontal	2.1 °
Beamwidth, Vertical	2.1 °
Return Loss	17.7 dB
VSWR	1.3
Radiation Pattern Envelope Reference (RPE)	7204D
Electrical Compliance	ACMA FX03_18a | Brazil Anatel Class 3 | Canada SRSP 317.8 Part A | ETSI 302 217 Class 3 | US FCC Part 101A

©2025 ANDREW, an Amphenol company. All rights reserved. Amphenol and ANDREW are registered trademarks of Amphenol and/or its affiliates in the U.S. and other countries. All product names, trademarks and registered trademarks are property of their respective owners.
Revised: March 12, 2025

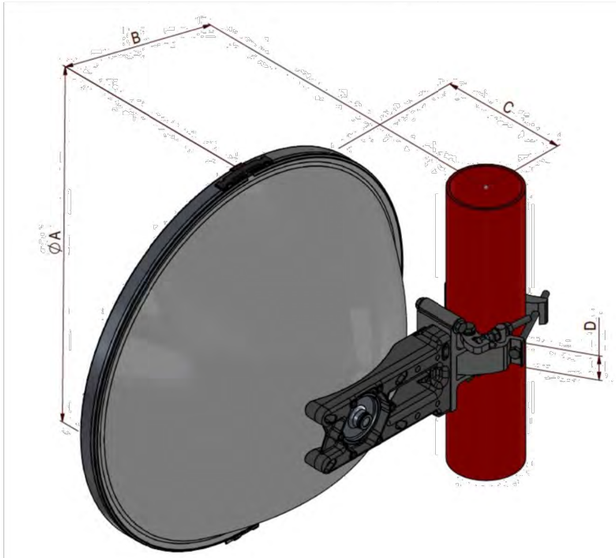
ANDREW® an Amphenol company

VHLP2-18/D

Mechanical Specifications

Compatible Mounting Pipe Diameter	48 mm–120 mm | 1.9 in–4.7 in
Fine Azimuth Adjustment Range	±15°
Fine Elevation Adjustment Range	±15°
Wind Speed, operational	201 km/h | 124.896 mph
Wind Speed, survival	252 km/h | 156.585 mph

Antenna Dimensions and Mounting Information



Dimensions in Inches (mm)				
Antenna Size, ft (m)	A	B	C	D
2 (0.6)	25.9 (660)	12.2 (310)	8.9 (228)	1.8 (45)

Wind Forces at Wind Velocity Survival Rating

Axial Force (FA)	1400 N | 314.733 lbf

©2025 ANDREW, an Amphenol company. All rights reserved. Amphenol and ANDREW are registered trademarks of Amphenol and/or its affiliates in the U.S. and other countries. All product names, trademarks and registered trademarks are property of their respective owners.
Revised: March 12, 2025

ANDREW® an Amphenol company

NOTE: MODEL SHOWN IS PRELIMINARY AND SUBJECT TO CHANGE UPON FINAL RF CONFIGURATION.

Marion County OREGON

PROJECT INFORMATION:

MARION COUNTY
HOUSE MOUNTAIN

11.1 MILES SOUTHEAST OF
DRAKES CROSSING, OR

	DATE	RELEASE
	07-26-24	SITE SKETCH
	02-12-25	PRELIMINARY ZONING DRAWINGS
	05-22-25	PRELIMINARY CONSTRUCTION DRAWINGS
	09-23-25	FINAL CONSTRUCTION DRAWINGS
	09-30-25	REV. FCD FOR PROPANE TANK UPDATE
	10-15-25	REV. FCD FOR SITE CONFIGURATION
		REVISION 1, 10/15/2025

DRAWING INFORMATION:
THIS DRAWING IS COPYRIGHTED AND IS THE SOLE PROPERTY OF THE OWNER. IT IS PRODUCED SOLELY FOR USE BY THE OWNER AND ITS AFFILIATES. REPRODUCTION OR USE OF THIS DRAWING AND/OR THE INFORMATION CONTAINED IN IT IS FORBIDDEN WITHOUT THE WRITTEN PERMISSION OF THE OWNER.

PLANS PREPARED BY:

cushing Civil Engineers

Cushing
Civil Engineers

12725 SW MILLIKAN WAY
SUITE 300
BEAVERTON, OR 97005
(503) 387-5331
www.cushingcivilengineers.com

LICENSURE:

REGISTERED PROFESSIONAL ENGINEER
83233
OREGON
JUNE 7, 2012
KENNY McMANAWAY

RENEWAL DATE 12/31/26

SHEET TITLE:

RF TOWER APPURTENANCES III

SHEET NUMBER:

RF-1.2

EXHIBIT K

800MHz Corporate Collinear Antennas

748-870MHz

CC807 Series

RFI TECHNOLOGY SOLUTIONS

These industry leading, full featured corporate collinear arrays allow site operators to combine, with complete integrity, a large number of communications services into a single, low profile antenna solution.

The corporate feed design employed by RFI maintains superior pattern control, allowing gain to be maximised with zero tilt variation over a very broad bandwidth, comparable to that only previously available in exposed dipole array configurations. This is achieved in the preferred form factor of a fully enclosed fibreglass radome, providing a reduction in wind loading, ice loading and tower loading in comparison.

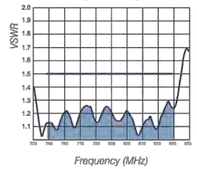
The CC807 series have been designed with an exceptional power rating of 500W across the band as well as a Peak Instantaneous Power (PIP) rating of 25kW to cater for the peak voltage levels present in large multi-carrier combining environments. RFI's refined design processes and proven construction methods achieve a PIM rating of –150dBc, further ensuring performance is maintained for the service life of the antenna.

Features:

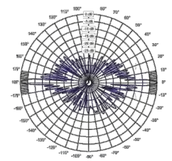
- 500W Continuous Power rating
- -150dBc Passive Intermodulation (PIM) rating, 100% PIM tested
- 25 kW Peak Instantaneous Power (PIP) rating
- DC grounding on all elements for the ultimate in lightning protection and dissipation of static noise.
- Light weight dipole construction using RFI's patented flexi-PCB architecture, maintains a low centre of gravity reducing tip deflection and sway
- Field invertible (excluding tilt models)
- Preset downtilt variations of 2 and 4 degrees available, see note (1)



Typical VSWR Response (CC807-12)



CC807-12 - E Plane



Electrical Specifications

Model Number	CC807-09-P	CC807-12-P
Nominal Gain *dBd (dBi)*	9.0 (11.1)	11.5 (13.6)
Frequency *MHz*	746-870	
Tuned Bandwidth *MHz*	Full	
VSWR *(Return Loss)*	1.5:1	
Nominal Impedance Ω	50	
Downtilt°	0 Std 2, 4 (1)	
Vertical Beamwidth°	8	4
Horizontal Beamwidth°	Omni +/- 0.5dB	
Input Power W	500	
Passive IM 3rd order (2x20W) *dBc*	-150	
Peak Instantaneous Power *kW*	25	

Mechanical

Model Number		CC807-09-P	CC807-12-P
Construction		Sky blue fibreglass radome	
Radome Diameter mm (inches)		76 (3.0)	
Length mm (inches)		3135 (123.4)	6235 (245.5)
Weight *kg (lbs)*		14 (30.9)	25.5 (56.2)
Termination		Integrated 4.3-10 Female	
Mountaing Area mm (inches)		750 x 90 (30 x 3.5) diameter Ecofilm™ plated aluminium	
Suggested Clamps		3 x UC-114	
Shipping Dimensions *mm (inches)*	H	115 (4.5)	
	W	115 (4.5)	
	L	3335 (131.3)	6435 (253.3)
Shipping Weight *kg (lbs)*		20.0 (44.1)	36.5 (80.5)
Projected area *cm² (ft²)*	No Ice	2597 (2.8)	5559 (6.0)
	With Ice	3192 (3.4)	7037 (7.6)
Lateral Thrust @160km/h *N* (100 mph lbs)		308 (69)	659 (148)
Wind Gust Rating *km/h (mph)*	No Ice	>240 (150)	
Torque @ 160km/h *Nm* (100mph ft-lbs)		413 (305)	1823 (1345)

(1) To order pre-set downtilt versions available, simply add a -T2 or -T4 towards the end of the part number to denote downtilt model required. For eg. CC807-12-T2-P to order CC807-12-P with 2deg of downtilt. Please note: Models with downtilt are NOT field invertible. . Eg. CC807-12-T2-P

Asia Pacific | EMEA | Americas

Copyright RF Industries Pty Ltd 2020. Subject to change without notice.

rfi.com.au

NOTE: MODEL SHOWN IS PRELIMINARY AND SUBJECT TO CHANGE UPON FINAL RF CONFIGURATION.

Marion County OREGON

PROJECT INFORMATION:

MARION COUNTY HOUSE MOUNTAIN

11.1 MILES SOUTHEAST OF DRAKES CROSSING, OR

	DATE	RELEASE
	07-26-24	SITE SKETCH
	02-12-25	PRELIMINARY ZONING DRAWINGS
	05-22-25	PRELIMINARY CONSTRUCTION DRAWINGS
	09-23-25	FINAL CONSTRUCTION DRAWINGS
	09-30-25	REV. FCD FOR PROPANE TANK UPDATE
	10-15-25	REV. FCD FOR SITE CONFIGURATION

REVISION 1, 10/15/2025

DRAWING INFORMATION:

THIS DRAWING IS COPYRIGHTED AND IS THE SOLE PROPERTY OF THE OWNER. IT IS PRODUCED SOLELY FOR USE BY THE OWNER AND ITS AFFILIATES. REPRODUCTION OR USE OF THIS DRAWING AND/OR THE INFORMATION CONTAINED IN IT IS FORBIDDEN WITHOUT THE WRITTEN PERMISSION OF THE OWNER.

PLANS PREPARED BY:

cushing Civil Engineers

Cushing Civil Engineers

12725 SW MILLIKAN WAY
SUITE 300
BEAVERTON, OR 97005
(503) 387-5331
www.cushingcivilengineers.com

LICENSURE:

REGISTERED PROFESSIONAL ENGINEER
83233
OREGON
JUNE 7, 2012
KENNY McMANAWAY

RENEWAL DATE 12/31/26

SHEET TITLE:

RF TOWER APPURTENANCES IV

SHEET NUMBER:

RF-1.3

EXHIBIT K

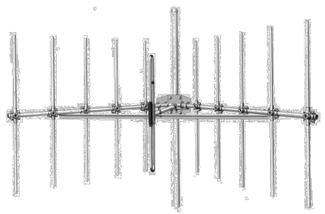
Antennas
Low Band, Aviation, and VHF Antennas
SV227 Series

SV227-SF2SNM — Corner reflector directive, 7 dBd, 148-174 MHz

Also referred as: SRL227*2

- Folded dipole feed permits operation in severe conditions
- High power and heavy duty models available
- VSWR will not exceed 2.0:1 even with 0.5 in. of radial ice

Excellent broadband high gain corner reflector for use int 138-174 MHz frequency range. Its folded dipole feed permits operation under severe weather and ice conditions without significant change in pattern or VSWR. Even with 0.5 in of radial ice, the antenna VSWR will not exceed 2.0:1. Higher power and/or heavy-duty models are available.



www.sinctech.com

Region	United States	Europe, Middle East and Africa	Caribbean and Latin America	Canada and rest of the world
Telephone	USA: 1 800 263 3275	International: +44 (0) 1487 84 28 19	International: +1 905 726 7676	Canada: 1 800 263 3275 International: +1 905 727 0165
E-mail	salesusa@sinctech.com	salesuk@sinctech.com	salesla@sinctech.com	salescan@sinctech.com

Sinclair's commitment to product leadership may result in improvement or change to this product
Copyright © Sinclair Technologies

Antennas
Low Band, Aviation, and VHF Antennas
SV227 Series

Electrical Specifications

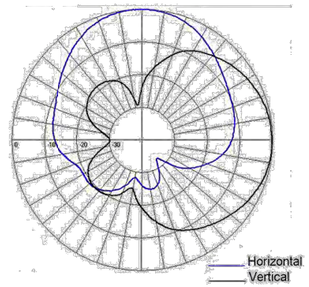
Frequency Range	MHz	148 to 174
Bandwidth	MHz	26
Connector		N-Male
Gain (nominal)	dBd (dBi)	7 (9.1)
Input VSWR (max)		1.5:1
Polarization		vertical or horizontal
Impedance	Ω	50
Pattern		Directional
Horizontal beamwidth (typ)	degrees	67
Vertical beamwidth (typ)	degrees	75
Average Power Input (max)	W	250
Lightning protection		DC ground
Front-to-back ratio (typ)	dB	30

Mechanical Specifications

Depth	in (mm)	49 (1245)
Length/ Height	in (mm)	48 (1219)
Width	in (mm)	69.3 (1760)
Radiating element material		aluminum
Weight	lbs (kg)	28.3 (12.85)
Weight iced	lbs (kg)	101 (45.85)
Mounting Hardware (Standard)		Clamp004
Shipping dimensions	in (mm)	120x15x6 (3048x381x152)

Environmental Specifications

Temperature range	°F (°C)	-40 to +140 (-40 to +60)
Wind Loading Area (Flat Plate Equivalent)	ft² (m²)	5.3 (0.49)
Wind Loading Area (1/2" ice)	ft² (m²)	9.2 (0.85)
Rated wind velocity (no ice)	mph (km/h)	135 (217)
Rated wind velocity (1/2" radial ice)	mph (km/h)	95 (153)
Lateral thrust (100 mph No Ice)	lbs (N)	202 (898.5)



www.sinctech.com

Region	United States	Europe, Middle East and Africa	Caribbean and Latin America	Canada and rest of the world
Telephone	USA: 1 800 263 3275	International: +44 (0) 1487 84 28 19	International: +1 905 726 7676	Canada: 1 800 263 3275 International: +1 905 727 0165
E-mail	salesusa@sinctech.com	salesuk@sinctech.com	salesla@sinctech.com	salescan@sinctech.com

Product Specification Sheet SV227-SF2SNM Issue: 3 Dated: 08-10-13
EPR 015217 Dated: 30-09-13
Customer Tech Manual 005404

Sinclair's commitment to product leadership may result in improvement or change to this product
Copyright © Sinclair Technologies

NOTE: MODEL SHOWN IS PRELIMINARY AND SUBJECT TO CHANGE UPON FINAL RF CONFIGURATION.

Marion County OREGON

PROJECT INFORMATION:

MARION COUNTY HOUSE MOUNTAIN

11.1 MILES SOUTHEAST OF DRAKES CROSSING, OR

	DATE	RELEASE
	07-26-24	SITE SKETCH
	02-12-25	PRELIMINARY ZONING DRAWINGS
	05-22-25	PRELIMINARY CONSTRUCTION DRAWINGS
	09-23-25	FINAL CONSTRUCTION DRAWINGS
	09-30-25	REV. FCD FOR PROPANE TANK UPDATE
	10-15-25	REV. FCD FOR SITE CONFIGURATION

REVISION 1, 10/15/2025

DRAWING INFORMATION:
THIS DRAWING IS COPYRIGHTED AND IS THE SOLE PROPERTY OF THE OWNER. IT IS PRODUCED SOLELY FOR USE BY THE OWNER AND ITS AFFILIATES. REPRODUCTION OR USE OF THIS DRAWING AND/OR THE INFORMATION CONTAINED IN IT IS FORBIDDEN WITHOUT THE WRITTEN PERMISSION OF THE OWNER.

PLANS PREPARED BY:

cushing Civil Engineers

Cushing
Civil Engineers

12725 SW MILLIKAN WAY
SUITE 300
BEAVERTON, OR 97005
(503) 387-5331
www.cushingcivilengineers.com

LICENSURE:

REGISTERED PROFESSIONAL ENGINEER
83233
OREGON
JUNE 7, 2012
KENNY McMANAWAY

RENEWAL DATE 12/31/26

SHEET TITLE:

RF TOWER APPURTENANCES V

SHEET NUMBER:

RF-1.4

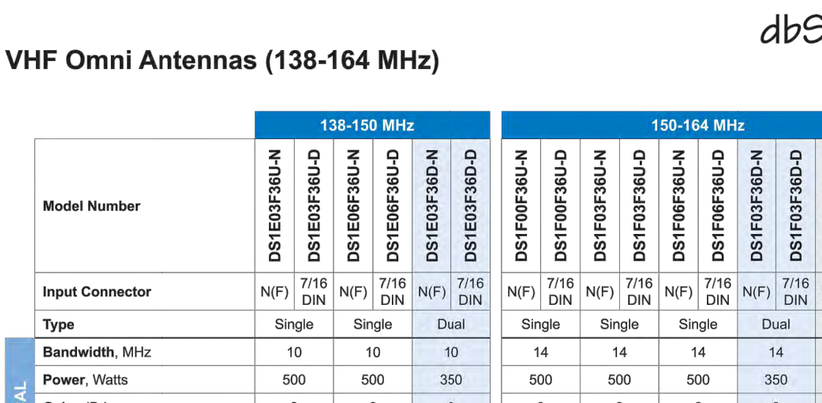
EXHIBIT K

dbSpectra

VHF Omni Antennas (138-164 MHz)

		138-150 MHz						150-164 MHz									
	Model Number	DS1E03F36U-N	DS1E03F36U-D	DS1E06F36U-N	DS1E06F36U-D	DS1E03F36D-N	DS1E03F36D-D	DS1F00F36U-N	DS1F00F36U-D	DS1F03F36U-N	DS1F03F36U-D	DS1F06F36U-N	DS1F06F36U-D	DS1F03F36D-N	DS1F03F36D-D	DS1F06F36U3N	DS1F06F36U3D
	Input Connector	N(F)	7/16 DIN	N(F)	7/16 DIN	N(F)	7/16 DIN	N(F)	7/16 DIN	N(F)	7/16 DIN	N(F)	7/16 DIN	N(F)	7/16 DIN	N(F)	7/16 DIN
	Type	Single		Single		Dual		Single		Single		Single		Dual		Beamtilt	
ELECTRICAL	**Bandwidth**, MHz	10		10		10		14		14		14		14		14	
ELECTRICAL	**Power**, Watts	500		500		350		500		500		500		350		500	
ELECTRICAL	**Gain**, dBd	3		6		3		0		3		6		3		6	
ELECTRICAL	**Horizontal Beamwidth**, degrees	360		360		360		360		360		360		360		360	
ELECTRICAL	**Vertical Beamwidth**, degrees	30		16		30		60		30		16		30		16	
ELECTRICAL	**Beam Tilt**, degrees	0		0		0		0		0		0		0		3 Down	
ELECTRICAL	**Isolation (minimum)**, dB	N/A		N/A		30		N/A		N/A		N/A		30		N/A	
MECHANICAL	**Number of Connectors**	1		1		2		1		1		1		2		1	
MECHANICAL	**Flat Plate Area**, ft²	2.47		3.79		4.02		1.00		2.09		3.63		3.69		3.63	
MECHANICAL	**Lateral Windload Thrust**, lbf	104		159		169		41		88		152		155		152	
MECHANICAL	**Wind Speed Rating without ice**, mph	175		150		150		250		190		150		150		150	
MECHANICAL	**Mounting Hardware** included	DSH3V3N		DSH3V3N		DSH3V3N		DSH2V3R		DSH3V3N		DSH3V3N		DSH3V3N		DSH3V3N	
DIMENSIONS	**Length**, ft(m)	14.9 (4.5)		22.9 (7)		24.3 (7.4)		5.9(1.8)		12.6 (3.8)		21.9 (6.7)		22.3 (6.8)		21.9 (6.7)	
DIMENSIONS	**Radome O.D.**, in(cm)	3 (7.6)		3 (7.6)		3 (7.6)		3 (7.6)		3 (7.6)		3 (7.6)		3 (7.6)		3 (7.6)	
DIMENSIONS	**Mast O.D.**, in(cm)	2.5 (6.4)		2.5 (6.4)		2.5 (6.4)		2.5 (6.4)		2.5 (6.4)		2.5 (6.4)		2.5 (6.4)		2.5 (6.4)	
DIMENSIONS	**Net Weight** w/o bracket, lb(kg)	43 (19.5)		65 (29.5)		70 (31.8)		25 (11)		37 (16.8)		60 (27.2)		63 (28.6)		60 (27.2)	
DIMENSIONS	**Shipping Weight**, lb(kg)	73 (33.1)		95 (43.1)		100 (45.4)		33 (15)		67 (30.4)		90 (40.8)		93 (42.2)		90 (40.8)	

VERTICAL PATTERNS

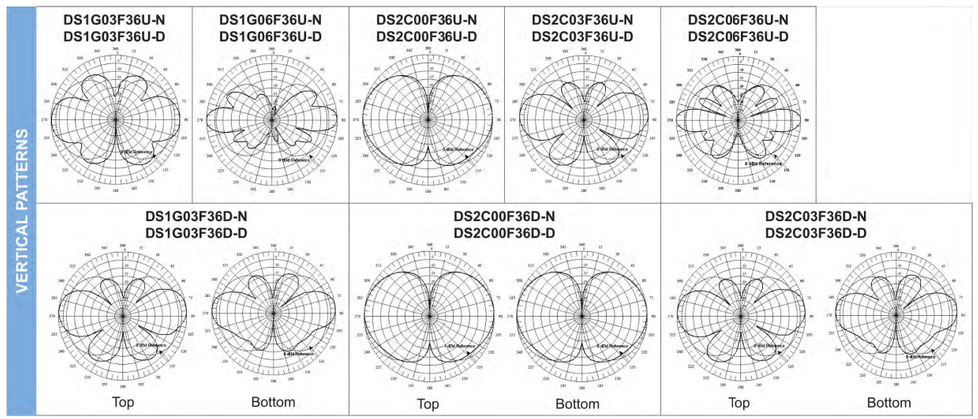


dbSpectra

VHF Omni Antennas (160-222 MHz)

		160-174 MHz						217-222 MHz									
	Model Number	DS1G03F36U-N	DS1G03F36U-D	DS1G06F36U-N	DS1G06F36U-D	DS1G03F36D-N	DS1G03F36D-D	DS2C00F36U-N	DS2C00F36U-D	DS2C03F36U-N	DS2C03F36U-D	DS2C06F36U-N	DS2C06F36U-D	DS2C00F36D-N	DS2C00F36D-D	DS2C03F36D-N	DS2C03F36D-D
	Input Connector	N(F)	7/16 DIN	N(F)	7/16 DIN	N(F)	7/16 DIN	N(F)	7/16 DIN	N(F)	7/16 DIN	N(F)	7/16 DIN	N(F)	7/16 DIN	N(F)	7/16 DIN
	Type	Single		Single		Dual		Single		Single		Single		Dual		Dual	
ELECTRICAL	**Bandwidth**, MHz	14		14		14		5		5		5		5		5	
ELECTRICAL	**Power**, Watts	500		500		350		500		500		500		350		350	
ELECTRICAL	**Gain**, dBd	3		6		3		0		3		6		0		3	
ELECTRICAL	**Horizontal Beamwidth**, degrees	360		360		360		360		360		360		360		360	
ELECTRICAL	**Vertical Beamwidth**, degrees	30		16		30		60		30		16		60		30	
ELECTRICAL	**Beam Tilt**, degrees	0		0		0		0		0		0		0		0	
ELECTRICAL	**Isolation (minimum)**, dB	N/A		N/A		30		N/A		N/A		N/A		30		30	
MECHANICAL	**Number of Connectors**	1		1		2		1		1		1		2		2	
MECHANICAL	**Flat Plate Area**, ft²	2.10		3.63		3.69		1.09		1.47		2.58		2.09		3.08	
MECHANICAL	**Lateral Windload Thrust**lbf	88		152		155		46		62		109		88		129	
MECHANICAL	**Wind Speed Rating without ice**, mph	190		150		150		250		225		175		190		160	
MECHANICAL	**Mounting Hardware** included	DSH3V3R		DSH3V3N		DSH3V3N		DSH2V3R		DSH2V3R		DSH3V3N		DSH3V3R		DSH3V3N	
DIMENSIONS	**Length**, ft(m)	12.7 (3.9)		21.9 (6.7)		22.3 (6.8)		6.6 (2.0)		8.9 (2.7)		15.6 (4.8)		12.6 (3.8)		18.6 (5.7)	
DIMENSIONS	**Radome O.D.**, in(cm)	3 (7.6)		3 (7.6)		3 (7.6)		3 (7.6)		3 (7.6)		3 (7.6)		3 (7.6)		3 (7.6)	
DIMENSIONS	**Mast O.D.**, in(cm)	2.5 (6.4)		2.5 (6.4)		2.5 (6.4)		2.5 (6.4)		2.5 (6.4)		2.5 (6.4)		2.5 (6.4)		2.5 (6.4)	
DIMENSIONS	**Net Weight** w/o bracket, lb(kg)	37 (16.8)		60 (27.2)		63 (28.6)		19 (8.6)		26 (11.8)		47 (21.3)		40 (18.1)		70 (31.8)	
DIMENSIONS	**Shipping Weight**, lb(kg)	67 (30.4)		90 (40.8)		93 (42.2)		39 (17.7)		56 (25.4)		77 (34.9)		70 (31.8)		100 (45.4)	

VERTICAL PATTERNS



NOTE: MODEL SHOWN IS PRELIMINARY AND SUBJECT TO CHANGE UPON FINAL RF CONFIGURATION.

Marion County OREGON

PROJECT INFORMATION:

MARION COUNTY
HOUSE MOUNTAIN

11.1 MILES SOUTHEAST OF
DRAKES CROSSING, OR

	DATE	RELEASE
	07-26-24	SITE SKETCH
	02-12-25	PRELIMINARY ZONING DRAWINGS
	05-22-25	PRELIMINARY CONSTRUCTION DRAWINGS
	09-23-25	FINAL CONSTRUCTION DRAWINGS
	09-30-25	REV. FCD FOR PROPANE TANK UPDATE
	10-15-25	REV. FCD FOR SITE CONFIGURATION

REVISION 1, 10/15/2025

DRAWING INFORMATION:
THIS DRAWING IS COPYRIGHTED AND IS THE SOLE PROPERTY OF THE OWNER. IT IS PRODUCED SOLELY FOR USE BY THE OWNER AND ITS AFFILIATES. REPRODUCTION OR USE OF THIS DRAWING AND/OR THE INFORMATION CONTAINED IN IT IS FORBIDDEN WITHOUT THE WRITTEN PERMISSION OF THE OWNER.

PLANS PREPARED BY:

cushing Civil Engineers

Cushing
Civil Engineers
12725 SW MILLIKAN WAY
SUITE 300
BEAVERTON, OR 97005
(503) 387-5331
www.cushingcivilengineers.com

LICENSURE:

REGISTERED PROFESSIONAL ENGINEER
83233
OREGON
JUNE 7, 2012
KENNY McMANAWAY

RENEWAL DATE 12/31/26

SHEET TITLE:

RF TOWER APPURTENANCES VI

SHEET NUMBER:

RF-1.5

EXHIBIT K

IRONRIDGE
28357 INDUSTRIAL BLVD., HAYWARD, CA 94545

Project Details

Name	House Mountain Rev 2 array	**Date**	10/14/2025
Location	Elkhorn Woods, OR 97358	**ASCE code**	7.22
Total modules	48	**Wind speed**	110 mph
Module	Waaree WSMD-P-405 (36mm)	**Snow load**	60 psf
Dimensions	Dimensions: 75.75" x 40.87" x 1.38" (1924.0mm x 1038.0mm x 35.0mm)	**Wind exposure**	C
Total watts	19,440	**Piers**	38
Inter sub-array spacing	813.0"		

NOTE: 36 PANELS TO BE INSTALLED (BOTTOM ROW PANELS NOT TO BE INSTALLED TO MAXIMIZE GROUND CLEARANCE FOR SNOW)

TOTAL WATTS: 14,580 WITH BOTTOM ROW PANEL REMOVAL

Calculated using solar azimuth of -42.9° and solar elevation of 9.37° at 9AM (America/Los_Angeles) on the winter solstice.



Substructure & Foundation

Tilt	45°	**South facing grade**	0°
Pipe/tubing diameter	3"	**Soil class**	2 - 5
Foundation type	Ground screws	**Screw length**	81" (2050mm)
Freeze thaw depth	None entered	**Hex head set screws / Screw**	3

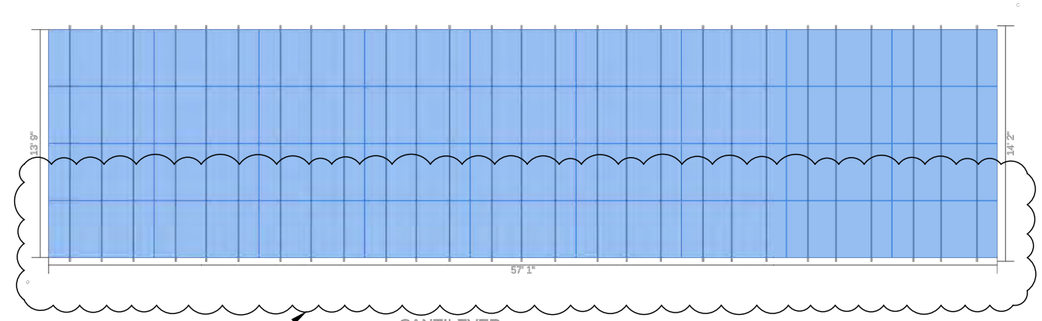
House Mountain Rev 2 array (#1522958)
ground based

IRONRIDGE
28357 INDUSTRIAL BLVD., HAYWARD, CA 94545

Sub array #1

** IronRidge engineering requires a 3rd rail for each column in this array due to the project parameters and site conditions.*

Rows	4	**Columns**	9	**# Arrays**	1
Area	57' 1" (EW) × 13' 11" (NS)	**Rail type**	XR1000	**Diagonal bracing**	no
E/W spacing	4' 4"	**Rail cantilever**	1' 9"	**Pipe cantilever**	7"
Piers/array	28	**Total south piers**	14 (3' 11")	**Total north piers**	14 (11' 5")
Total cross pipes	2 (57' 1")	**Total pipe length**	329' 5"		
Shear	1,138 lbs	**Moment**	2,845 ft-lbs	**Uplift**	-444 lbs



NOTE: BOTTOM ROW PANELS NOT TO BE INSTALLED TO MAXIMIZE GROUND CLEARANCE FOR SNOW

Marion County OREGON

PROJECT INFORMATION:

MARION COUNTY HOUSE MOUNTAIN

11.1 MILES SOUTHEAST OF DRAKES CROSSING, OR

	DATE	RELEASE
	07-26-24	SITE SKETCH
	02-12-25	PRELIMINARY ZONING DRAWINGS
	05-22-25	PRELIMINARY CONSTRUCTION DRAWINGS
	09-23-25	FINAL CONSTRUCTION DRAWINGS
	09-30-25	REV. FCD FOR PROPANE TANK UPDATE
	10-15-25	REV. FCD FOR SITE CONFIGURATION

REVISION 1, 10/15/2025

DRAWING INFORMATION:

THIS DRAWING IS COPYRIGHTED AND IS THE SOLE PROPERTY OF THE OWNER. IT IS PRODUCED SOLELY FOR USE BY THE OWNER AND ITS AFFILIATES. REPRODUCTION OR USE OF THIS DRAWING AND/OR THE INFORMATION CONTAINED IN IT IS FORBIDDEN WITHOUT THE WRITTEN PERMISSION OF THE OWNER.

PLANS PREPARED BY:

cushing Civil Engineers

Cushing
Civil Engineers

12725 SW MILLIKAN WAY
SUITE 300
BEAVERTON, OR 97005
(503) 387-5331
www.cushingcivilengineers.com

LICENSURE:

REGISTERED PROFESSIONAL ENGINEER
83233
OREGON
JUNE 7, 2012
KENNY McMANAWAY

RENEWAL DATE 12/31/26

SHEET TITLE:

SOLAR PV ARRAY DETAILS I

SHEET NUMBER:

U-1

IRONRIDGE
28357 INDUSTRIAL BLVD., HAYWARD, CA 94545

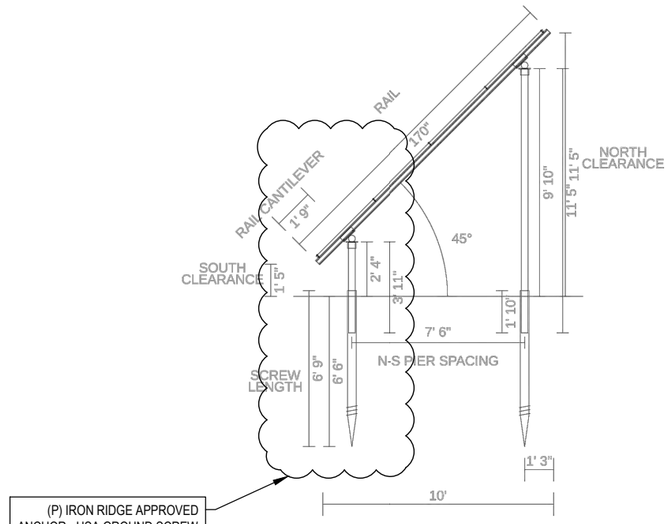


EXHIBIT K

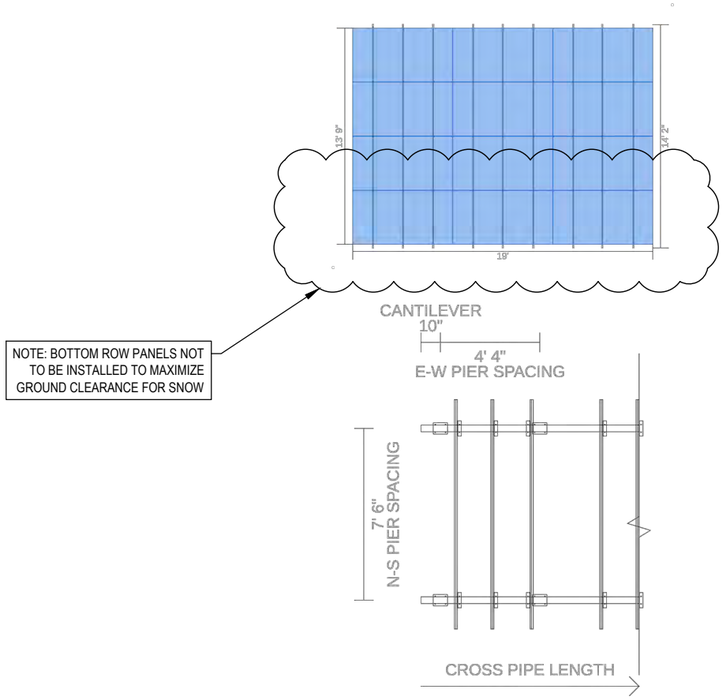
House Mountain Rev 2 array (#1522958)
ground based

IRONRIDGE
28357 INDUSTRIAL BLVD., HAYWARD, CA 94545

Sub array #2

** IronRidge engineering requires a 3rd rail for each column in this array due to the project parameters and site conditions.*

Rows	4	**Columns**	3	**# Arrays**	1
Area	19' (EW) × 13' 11" (NS)	**Rail type**	XR1000	**Diagonal bracing**	no
E/W spacing	4' 4"	**Rail cantilever**	1' 9"	**Pipe cantilever**	10"
Piers/array	10	**Total south piers**	5 (3' 11")	**Total north piers**	5 (11' 5")
Total cross pipes	2 (19')	**Total pipe length**	114' 11"		
Shear	1,138 lbs	**Moment**	2,845 ft-lbs	**Uplift**	-444 lbs



Marion County
OREGON

PROJECT INFORMATION:

MARION COUNTY HOUSE MOUNTAIN

11.1 MILES SOUTHEAST OF DRAKES CROSSING, OR

	DATE	RELEASE
	07-26-24	SITE SKETCH
	02-12-25	PRELIMINARY ZONING DRAWINGS
	05-22-25	PRELIMINARY CONSTRUCTION DRAWINGS
	09-23-25	FINAL CONSTRUCTION DRAWINGS
	09-30-25	REV. FCD FOR PROPANE TANK UPDATE
	10-15-25	REV. FCD FOR SITE CONFIGURATION

REVISION 1, 10/15/2025

DRAWING INFORMATION:

THIS DRAWING IS COPYRIGHTED AND IS THE SOLE PROPERTY OF THE OWNER. IT IS PRODUCED SOLELY FOR USE BY THE OWNER AND ITS AFFILIATES. REPRODUCTION OR USE OF THIS DRAWING AND/OR THE INFORMATION CONTAINED IN IT IS FORBIDDEN WITHOUT THE WRITTEN PERMISSION OF THE OWNER.

PLANS PREPARED BY:

cushing
Civil Engineers

Cushing
Civil Engineers

12725 SW MILLIKAN WAY
SUITE 300
BEAVERTON, OR 97005
(503) 387-5331
www.cushingcivilengineers.com

LICENSURE:

REGISTERED PROFESSIONAL ENGINEER
83233
OREGON
JUNE 7, 2012
KENNY McMANAWAY

RENEWAL DATE 12/31/26

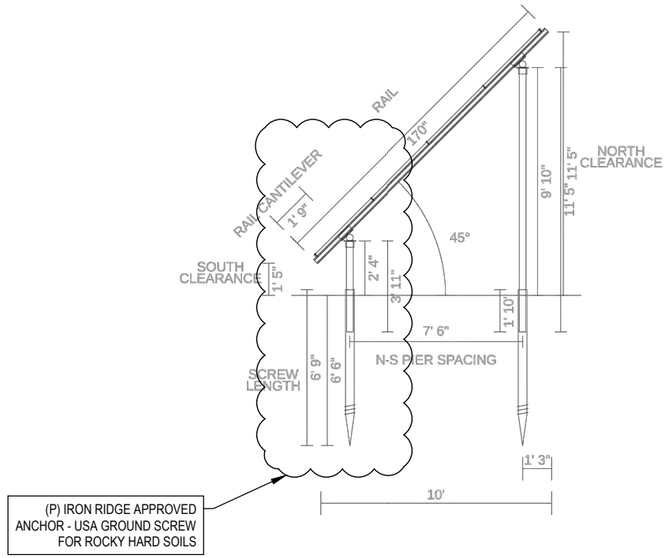
SHEET TITLE:

SOLAR PV ARRAY DETAILS II

SHEET NUMBER:

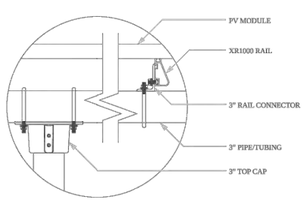
U-2

IRONRIDGE
28357 INDUSTRIAL BLVD., HAYWARD, CA 94545

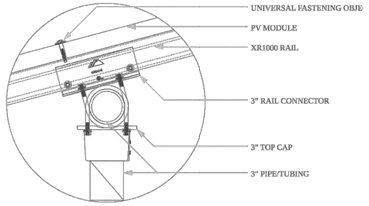


Pipe Fitting Detail

XR1000 Rail

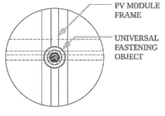


Front View

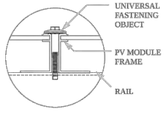


Side View

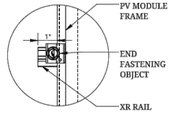
Clamp Detail



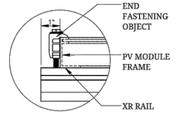
Mid Clamp, Plan



Mid Clamp, Front



End Clamp, Plan



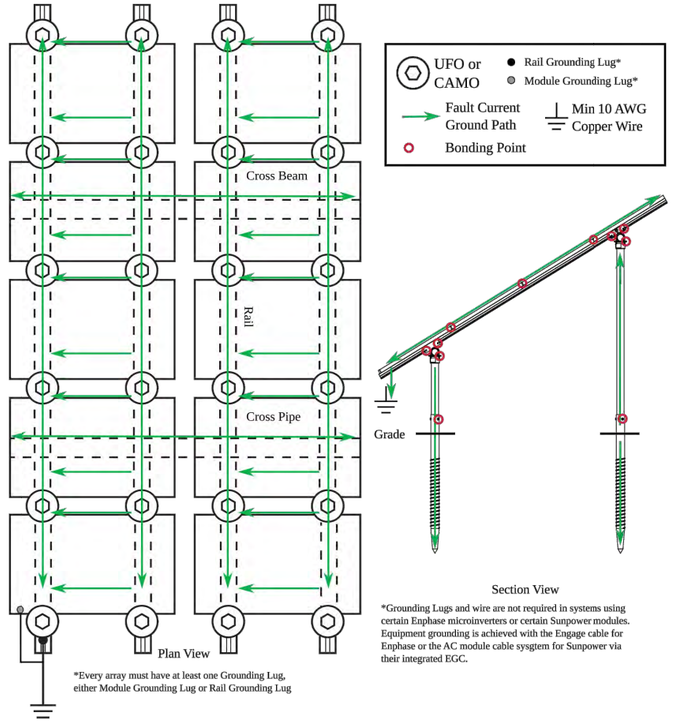
End Clamp, Front

EXHIBIT K

House Mountain Rev 2 array (#1522959)
ground based

IRONRIDGE
28357 INDUSTRIAL BLVD., HAYWARD, CA 94545

Grounding Diagram



Plan View

*Every array must have at least one Grounding Lug, either Module Grounding Lug or Rail Grounding Lug

Section View

*Grounding Lugs and wire are not required in systems using certain Enphase microinverters or certain Sunpower modules. Equipment grounding is achieved with the Engage cable for Enphase or the AC module cable sysgtem for Sunpower via their integrated EGC.

Bill of Materials

Part	Spares	Qty
Rails		
XR-1000-170M XR-1000, 170" (14' 2") Mill	0	36
Clamps & Grounding		
UFO-CL-01-A1 Universal Module Clamp, Clear	0	108
UFO-END-01-A1 End Fastening Object (End Clamp, 30-40mm), Mill	0	72
XR-LUG-04-A1 End Grounding Lug, Low Profile	0	2
Substructure		
70-0300-SGA SGA Top Cap at 3"	0	38
GM-BRC3-01-M1 Ground Mount Bonded Rail Connector - 3"	0	72
GM-HSHW-01-M1 Hex Head Set Screw	0	114

Last updated by Rob Howe on 10/14/25 09:04 AM

Marion County OREGON

PROJECT INFORMATION:

MARION COUNTY HOUSE MOUNTAIN

11.1 MILES SOUTHEAST OF DRAKES CROSSING, OR

	DATE	RELEASE
	07-26-24	SITE SKETCH
	02-12-25	PRELIMINARY ZONING DRAWINGS
	05-22-25	PRELIMINARY CONSTRUCTION DRAWINGS
	09-23-25	FINAL CONSTRUCTION DRAWINGS
	09-30-25	REV. FCD FOR PROPANE TANK UPDATE
	10-15-25	REV. FCD FOR SITE CONFIGURATION

REVISION 1, 10/15/2025

DRAWING INFORMATION:
THIS DRAWING IS COPYRIGHTED AND IS THE SOLE PROPERTY OF THE OWNER. IT IS PRODUCED SOLELY FOR USE BY THE OWNER AND ITS AFFILIATES. REPRODUCTION OR USE OF THIS DRAWING AND/OR THE INFORMATION CONTAINED IN IT IS FORBIDDEN WITHOUT THE WRITTEN PERMISSION OF THE OWNER.

PLANS PREPARED BY:

cushing Civil Engineers

Cushing Civil Engineers
12725 SW MILLIKAN WAY
SUITE 300
BEAVERTON, OR 97005
(503) 387-5331
www.cushingcivilengineers.com

LICENSURE:

REGISTERED PROFESSIONAL ENGINEER
83233
OREGON
JUNE 7, 2012
KENNY McMANAWAY

RENEWAL DATE 12/31/26

SHEET TITLE:

SOLAR PV ARRAY DETAILS III

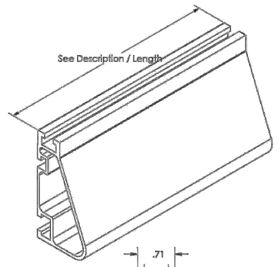
SHEET NUMBER:

U-3

EXHIBIT K

Cut Sheet

IRONRIDGE XR1000® Rail



Rail Section Properties	
Property	Value
Total Cross-Sectional Area	0.807 in²
Section Modulus (X-axis)	0.530 in³
Moment of Inertia (X-axis)	0.843 in⁴
Moment of Inertia (Y-axis)	0.182 in⁴
Torsional Constant	0.436 in⁴
Polar Moment of Inertia	0.330 in⁴

Part Number	Finish	Description / Length	Material	Weight
XR-1000-170M	Mill	XR1000, Rail 170" (14' 2" Feet)	6000-Series Aluminum	14.30 lbs.
XR-1000-210M	Mill	XR1000, Rail 210" (17' 6" Feet)		17.88 lbs.

v1.10

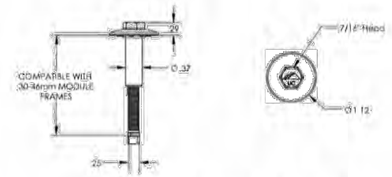
Cut Sheet

IRONRIDGE Universal Fastening Object®

Only for installation and use with IronRidge products in accord with written instructions see ironridge.com/UFO



ITEM NO.	DESCRIPTION
UFO-CL-01-A1	UNIVERSAL MODULE CLAMP, CLEAR
UFO-CL-01-B1	UNIVERSAL MODULE CLAMP, BLACK

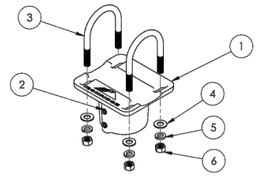


Property	Value
Material	300 Series Stainless Steel
Finish	Clear and Black

v1.00

Cut Sheet

IRONRIDGE Top Cap

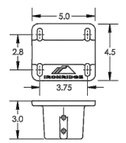


Item Number	Component	Qty in Kit
1	CAP, FLAT CSTG, ALUM	1
2	SET SCREW, CONE POINT, 3/8-16 X 3/4 LONG	2
3	UBOLT, CUSTOM SGA PIPE	2
4	WASHER, FLAT 3/8 GALV	4
5	WASHER, LOCK 3/8 GALV	4
6	NUT, HEX 3/8-16 GALV	4

Part Number	Description
70-0200-SGA	SGA Top Cap at 2", Mill
70-0300-SGA	SGA Top Cap at 3", Mill

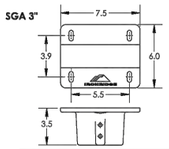
1) Cap, Flat CSTG, Alum

SGA 2"



Property	Value
Material	ALMAG 535
Finish	Clear

SGA 3"

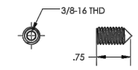


Property	Value
Material	ALMAG 535
Finish	Clear

v1.0

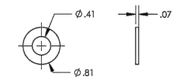
Cut Sheet

2) Set Screw, Cone Point



Property	Value
Material	Steel
Finish	Zinc Plated

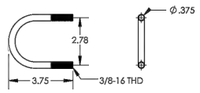
4) Washer, Flat 3/8 Galv



Property	Value
Material	Steel
Finish	Hot-Dip Galvanized

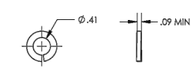
3) U-bolt, Custom SGA Pipe

SGA 2"



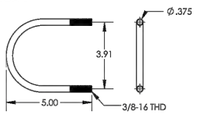
Property	Value
Material	Steel
Finish	Hot-Dip Galvanized

5) Washer, Lock 3/8 Galv



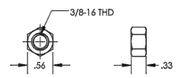
Property	Value
Material	Steel
Finish	Hot-Dip Galvanized

SGA 3"



Property	Value
Material	Steel
Finish	Hot-Dip Galvanized

6) Nut, Hex 3/8-16 Galv

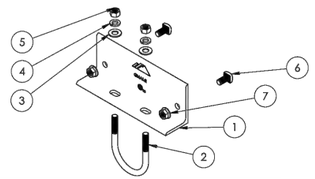


Property	Value
Material	Steel
Finish	Hot-Dip Galvanized

v1.0

Cut Sheet

IRONRIDGE Bonded Rail Connector

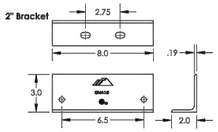


Item Number	Component	Qty in Kit
1	RAIL, 2" PIPE ATTACHING BRKT	1
2	UBOLT, CUSTOM SGA PIPE	1
3	WASHER, FLAT 3/8 GALV	2
4	WASHER, LOCK 3/8 GALV	2
5	NUT, HEX 3/8-16 GALV	2
6	BOLT, BOND 3/8-16 X .75 LG SQ HEAD	2
7	NUT, FLANGE HEX 3/8-16 SS	2

Part Number	Description
GM-BRC-002	GROUND MOUNT BONDED RAIL CONNECTOR - 2"
GM-BRC-003	GROUND MOUNT BONDED RAIL CONNECTOR - 3"

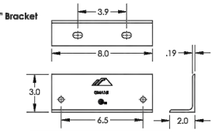
1) Rail, Pipe Attaching Bracket

2" Bracket



Property	Value
Material	Aluminum
Finish	Mill

3" Bracket



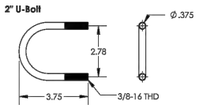
Property	Value
Material	Aluminum
Finish	Mill

v1.0

Cut Sheet

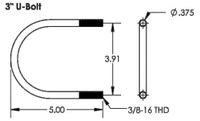
2) U-bolt, Custom SGA Pipe

2" U-Bolt



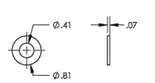
Property	Value
Material	Steel
Finish	Hot-Dip Galvanized

3" U-Bolt



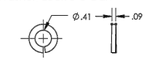
Property	Value
Material	Steel
Finish	Hot-Dip Galvanized

3) Washer, Flat 3/8 Galv



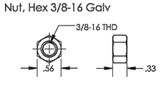
Property	Value
Material	Steel
Finish	Hot-Dip Galvanized

4) Washer, Lock 3/8 Galv



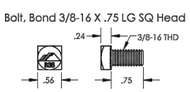
Property	Value
Material	Steel
Finish	Hot-Dip Galvanized

5) Nut, Hex 3/8-16 Galv



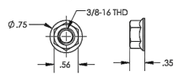
Property	Value
Material	Steel
Finish	Hot-Dip Galvanized

6) Bolt, Bond 3/8-16 X .75 LG SQ Head



Property	Value
Material	Stainless Steel
Finish	Clear

7) Nut, Flange Hex 3/8-16 SS



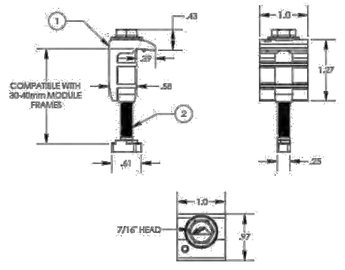
Property	Value
Material	Stainless Steel
Finish	Clear

v1.0

IRONRIDGE End Fastening Object



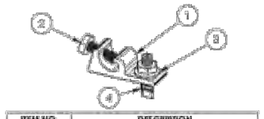
PART NO.	DESCRIPTION
UFO-END-01-B1	END FASTENING OBJECT (END CLAMP, 30-40mm), BLACK



ITEM NO.	MATERIAL	FINISH
1	6000 SERIES ALUMINUM	MILL OR BLACK
2	300 SERIES STAINLESS STEEL	CLEAR AND BLACK

v1.10

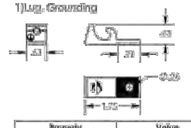
IRONRIDGE Grounding Lug



ITEM NO.	DESCRIPTION
1	LUG, GROUNDING, LAY-IN + LOW PROFILE
2	BOLT, 1/4-28 X .750" HEX CS SST
3	NUT, FLANGE HEX 1/4-20 SST
4	BOLT, T CSTM 1/4-20 X 1.156" LOCK SS

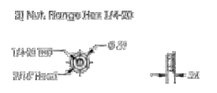
Part Number	Description	Wire Size Range (AWG)
XR-LUG-04-A1	GROUNDING LUG, LOW PROFILE	4-10

1) Lug, Grounding



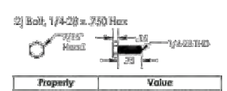
Property	Value
Material	Tin Plated Aluminum
Finish	Clear/Matte

3) Nut, Flange Hex 1/4-20



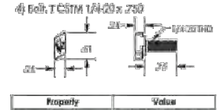
Property	Value
Material	300 Series Stainless Steel
Finish	Clear

2) Bolt, 1/4-28 x .750 Hex



Property	Value
Material	300 Series Stainless Steel
Finish	Clear

4) Bolt, T CSTM 1/4-20 x .750



Property	Value
Material	300 Series Stainless Steel
Finish	Clear

v1.20

Marion County OREGON

PROJECT INFORMATION:

MARION COUNTY HOUSE MOUNTAIN

11.1 MILES SOUTHEAST OF DRAKES CROSSING, OR

	DATE	RELEASE
	07-26-24	SITE SKETCH
	02-12-25	PRELIMINARY ZONING DRAWINGS
	05-22-25	PRELIMINARY CONSTRUCTION DRAWINGS
	09-23-25	FINAL CONSTRUCTION DRAWINGS
	09-30-25	REV. FCD FOR PROPANE TANK UPDATE
	10-15-25	REV. FCD FOR SITE CONFIGURATION

REVISION 1, 10/15/2025

DRAWING INFORMATION:

THIS DRAWING IS COPYRIGHTED AND IS THE SOLE PROPERTY OF THE OWNER. IT IS PRODUCED SOLELY FOR USE BY THE OWNER AND ITS AFFILIATES. REPRODUCTION OR USE OF THIS DRAWING AND/OR THE INFORMATION CONTAINED IN IT IS FORBIDDEN WITHOUT THE WRITTEN PERMISSION OF THE OWNER.

PLANS PREPARED BY:

cushing Civil Engineers

Cushing Civil Engineers

12725 SW MILLIKAN WAY
SUITE 300
BEAVERTON, OR 97005
(503) 387-5331
www.cushingcivilengineers.com

LICENSURE:

REGISTERED PROFESSIONAL ENGINEER 83233 OREGON JUNE 7, 2012 KENNY McMANAWAY

RENEWAL DATE 12/31/26

SHEET TITLE:

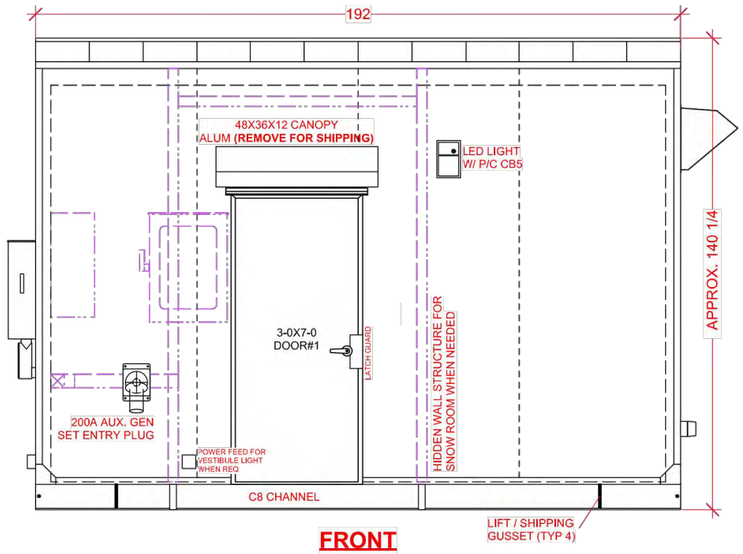
SOLAR PV ARRAY DETAILS IV

SHEET NUMBER:

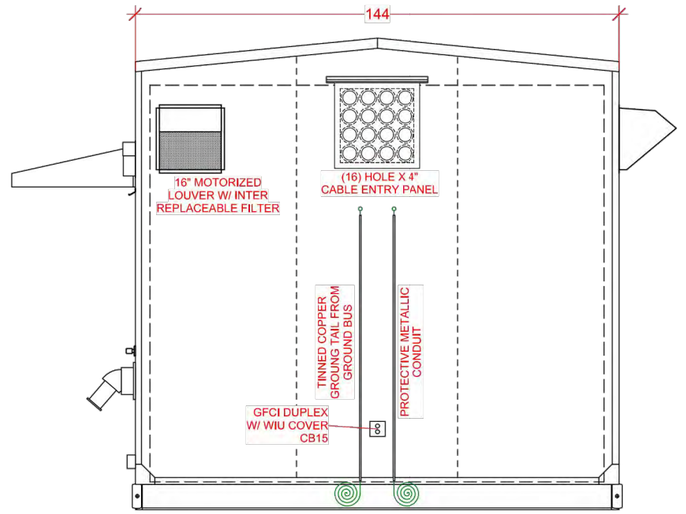
U-4

NOTE:
INFORMATION BASED ON SHELTER ONE PREFABRICATED EQUIPMENT SHELTER DRAWINGS. REFER TO STATE OF OREGON BUILDING CODES DIVISION FOR STATE INSIGNIA.

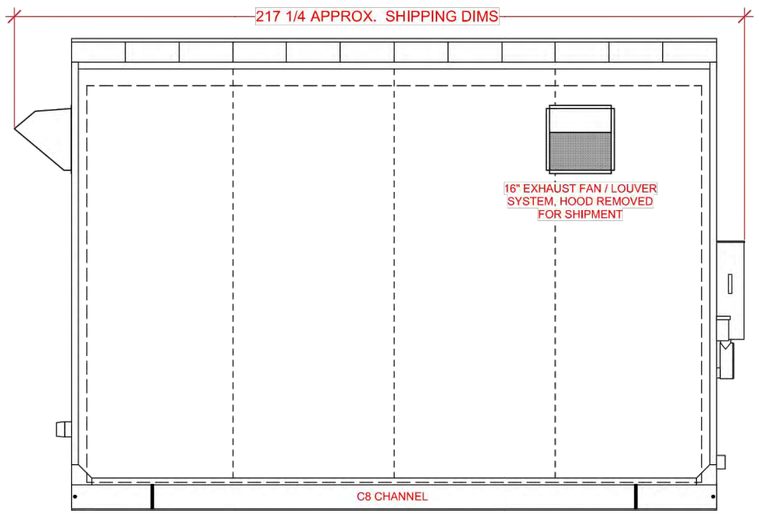
EXHIBIT K



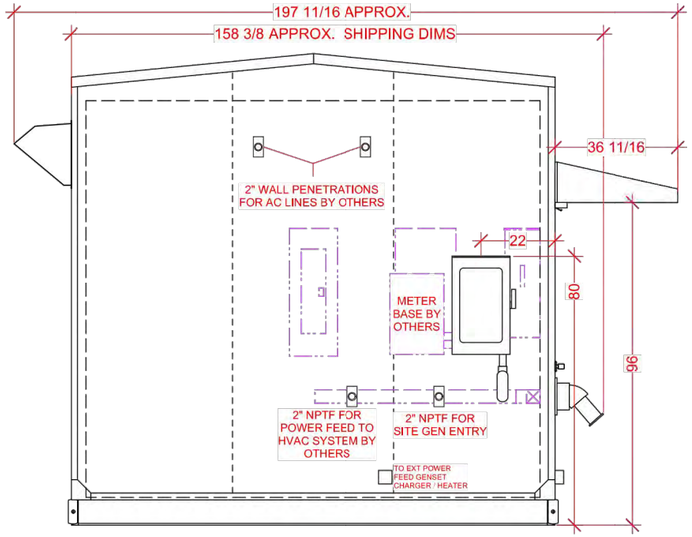
FRONT



RIGHT

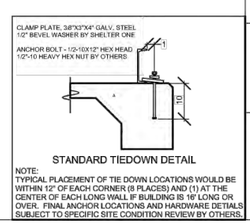


REAR



LEFT

NOTES:
1. SHELTER IS DESIGNED FOR A SLAB TYPE FOUNDATION.
2. EXTERIOR CLADDING TO BE 24 GA. PREFINISHED STEEL, COLOR - (TBD).
3. EXTERIOR TRIM TO BE MATCHING 24GA STEEL TRIM
4. SKID TO BE EPOXY PAINTED COLOR - (TBD).
5. 24GA PRE-FINISHED STEEL STANDING SEAM ROOF SYSTE - COLOR - (TBD)



STANDARD TIEDOWN DETAIL

NOTE:
TYPICAL PLACEMENT OF TIE DOWN LOCATIONS WOULD BE WITHIN 12" OF EACH CORNER (8 PLACES) AND (1) AT THE CENTER OF EACH LONG WALL IF BUILDING IS 16' LONG OR OVER. FINAL ANCHOR LOCATIONS AND HARDWARE DETIALS SUBJECT TO SPECIFIC SITE CONDITION REVIEW BY OTHERS.

SEAL

APPROVED:

DATE:

NOTICE: THIS DOCUMENT CONTAINS PROPRIETARY INFORMATION THAT IS THE SOLE PROPERTY OF SHELTER ONE AND SHOULD BE TREATED AS SUCH. NO ONE MAY COPY, REPRODUCE, TRANSMIT OR DISTRIBUTE THIS DOCUMENT IN ANY PART WITHOUT THE EXPRESSED WRITTEN PERMISSION OF SHELTER ONE OR IT'S DESIGNATED AGENTS.

SHELTER ONE

Headquarters & Manufacturing
5887 Monument Drive
Grants Pass, OR 97526
541/479-4622
F:541/479-5289
www.shelter1.com

PROJECT INFORMATION

25027 MARION COUNTY OR 12X16

FILENAME
25027 Marion County OR 12x16.vwx

DRAWN BY:	DATE:
NJY	7/24/25
CHECKED BY:	DATE:

DWG NO: 25027

SCALE: 1:40

TITLE:
EXTERIOR ELEVATIONS

SHEET	REV.
A1	

Marion County OREGON

PROJECT INFORMATION:

MARION COUNTY HOUSE MOUNTAIN

11.1 MILES SOUTHEAST OF DRAKES CROSSING, OR

	DATE	RELEASE
	07-26-24	SITE SKETCH
	02-12-25	PRELIMINARY ZONING DRAWINGS
	05-22-25	PRELIMINARY CONSTRUCTION DRAWINGS
	09-23-25	FINAL CONSTRUCTION DRAWINGS
	09-30-25	REV. FCD FOR PROPANE TANK UPDATE
	10-15-25	REV. FCD FOR SITE CONFIGURATION

REVISION 1, 10/15/2025

DRAWING INFORMATION:
THIS DRAWING IS COPYRIGHTED AND IS THE SOLE PROPERTY OF THE OWNER. IT IS PRODUCED SOLELY FOR USE BY THE OWNER AND ITS AFFILIATES. REPRODUCTION OR USE OF THIS DRAWING AND/OR THE INFORMATION CONTAINED IN IT IS FORBIDDEN WITHOUT THE WRITTEN PERMISSION OF THE OWNER.

PLANS PREPARED BY:

cushing Civil Engineers

Cushing Civil Engineers
12725 SW MILLIKAN WAY
SUITE 300
BEAVERTON, OR 97005
(503) 387-5331
www.cushingcivilengineers.com

LICENSURE:

REGISTERED PROFESSIONAL ENGINEER
83233
OREGON
JUNE 7, 2012
KENNY McMANAWAY

RENEWAL DATE 12/31/26

SHEET TITLE:

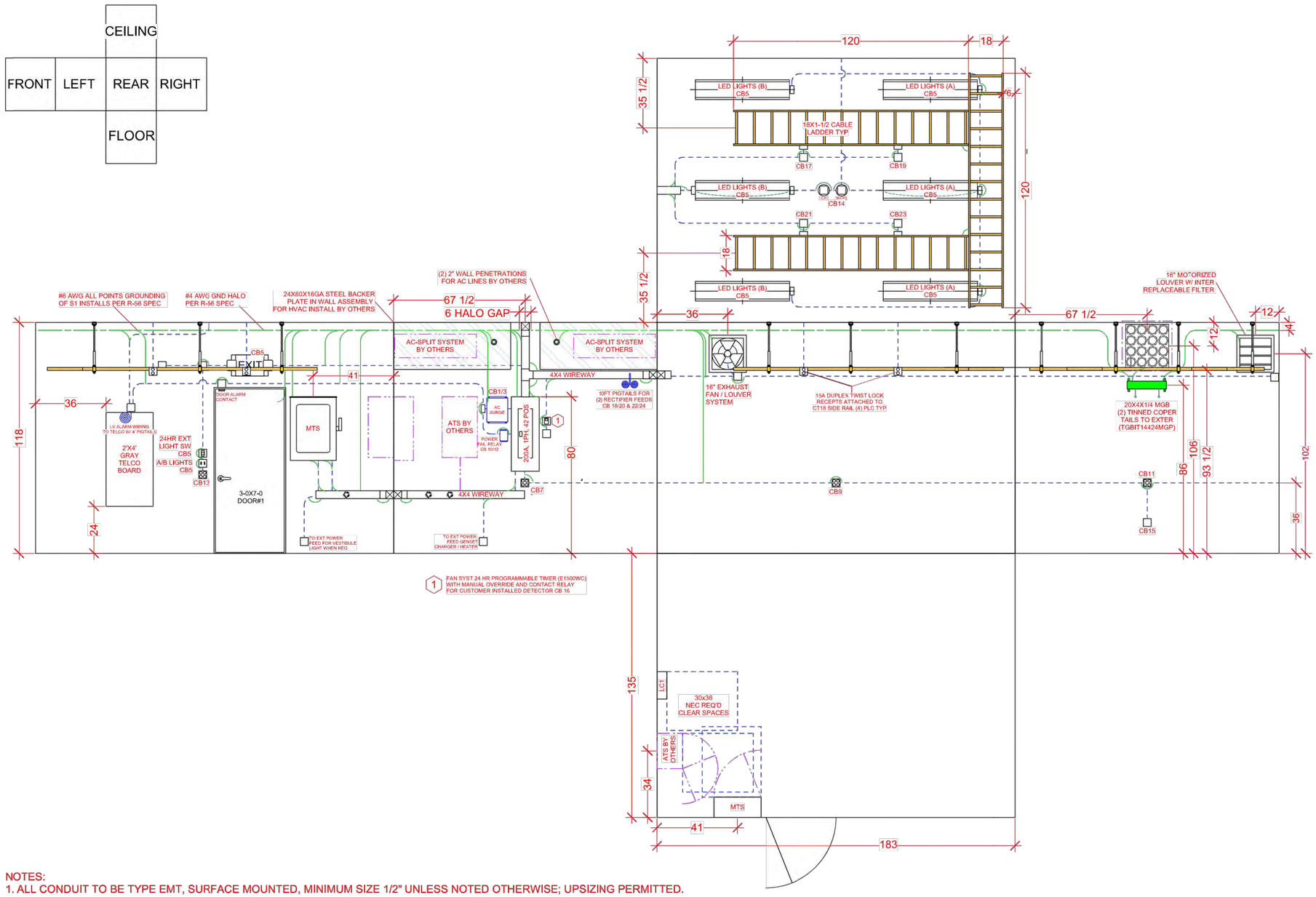
EQUIPMENT SHELTER EXTERIOR ELEVATIONS

SHEET NUMBER:

SH-1

NOTE:
INFORMATION BASED ON SHELTER ONE PREFABRICATED EQUIPMENT SHELTER DRAWINGS. REFER TO STATE OF OREGON BUILDING CODES DIVISION FOR STATE INSIGNIA.

EXHIBIT K



NOTES:
1. ALL CONDUIT TO BE TYPE EMT, SURFACE MOUNTED, MINIMUM SIZE 1/2" UNLESS NOTED OTHERWISE; UPSIZING PERMITTED.
2. CONDUIT LOCATIONS INDICATED BY DASHED LINES ARE SUGGESTED AND MAY BE MODIFIED (+ or - 3").
3. DIRECTIONS ARE ARBITRARY FOR SHOP ORIENTATION ONLY AND DO NOT RELATE TO ACTUAL SITE DIRECTIONS.
4. INTERIOR CLADDING TO BE FRP, COLOR - (STANDARD WHITE).
5. FLOORING TO BE .COMMERCIAL GRADE VINYL TILE OVER 1/4" STEEL FLOOR PLATE.
6. GROUNDING HALO AND ALL POINTS GROUNDING TO MEET R-56 STANDARDS

SEAL

APPROVED:

DATE:

NOTICE: THIS DOCUMENT CONTAINS PROPRIETARY INFORMATION THAT IS THE SOLE PROPERTY OF SHELTER ONE AND SHOULD BE TREATED AS SUCH. NO ONE MAY COPY, REPRODUCE, TRANSMIT OR DISTRIBUTE THIS DOCUMENT IN ANY PART WITHOUT THE EXPRESSED WRITTEN PERMISSION OF SHELTER ONE OR IT'S DESIGNATED AGENTS.

SHELTER ONE

Headquarters & Manufacturing
5887 Monument Drive
Grants Pass, OR 97526
541/479-4622
F:541/479-5289
www.shelter1.com

PROJECT INFORMATION

25027 MARION COUNTY OR 12X16

FILENAME
25027 Marion County OR 12x16.vwx

DRAWN BY:	DATE:
NJY	7/24/25
CHECKED BY:	DATE:

DWG NO: 25027

SCALE: 1:50

TITLE: INTERIOR ELEVATIONS

SHEET A2 | REV.

Marion County OREGON

PROJECT INFORMATION:

MARION COUNTY HOUSE MOUNTAIN

11.1 MILES SOUTHEAST OF DRAKES CROSSING, OR

	DATE	RELEASE
	07-26-24	SITE SKETCH
	02-12-25	PRELIMINARY ZONING DRAWINGS
	05-22-25	PRELIMINARY CONSTRUCTION DRAWINGS
	09-23-25	FINAL CONSTRUCTION DRAWINGS
	09-30-25	REV. FCD FOR PROPANE TANK UPDATE
	10-15-25	REV. FCD FOR SITE CONFIGURATION

REVISION 1, 10/15/2025

DRAWING INFORMATION:
THIS DRAWING IS COPYRIGHTED AND IS THE SOLE PROPERTY OF THE OWNER. IT IS PRODUCED SOLELY FOR USE BY THE OWNER AND ITS AFFILIATES. REPRODUCTION OR USE OF THIS DRAWING AND/OR THE INFORMATION CONTAINED IN IT IS FORBIDDEN WITHOUT THE WRITTEN PERMISSION OF THE OWNER.

PLANS PREPARED BY:

cushing Civil Engineers

Cushing
Civil Engineers
12725 SW MILLIKAN WAY
SUITE 300
BEAVERTON, OR 97005
(503) 387-5331
www.cushingcivilengineers.com

LICENSURE:

REGISTERED PROFESSIONAL ENGINEER 83233 OREGON JUNE 7, 2012 KENNY McMANAWAY

RENEWAL DATE 12/31/26

SHEET TITLE:

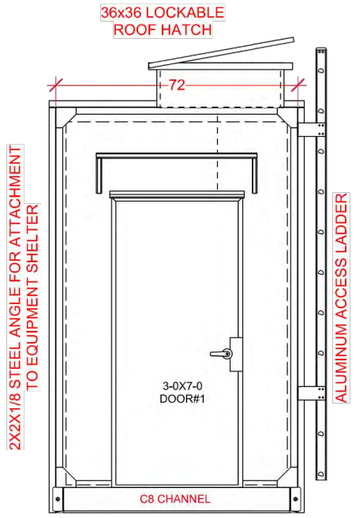
EQUIPMENT SHELTER INTERIOR ELEVATIONS

SHEET NUMBER:

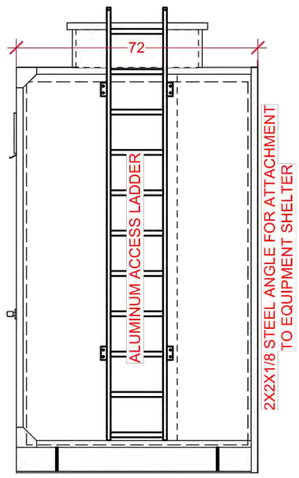
SH-2

NOTE:
INFORMATION BASED ON SHELTER ONE PREFABRICATED EQUIPMENT SHELTER DRAWINGS. REFER TO STATE OF OREGON BUILDING CODES DIVISION FOR STATE INSIGNIA.

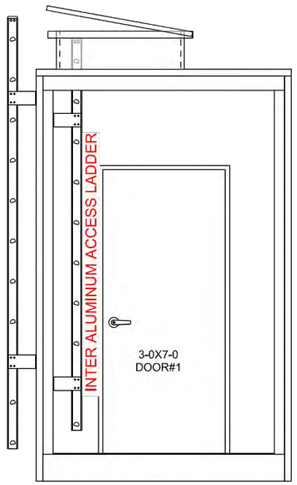
EXHIBIT K



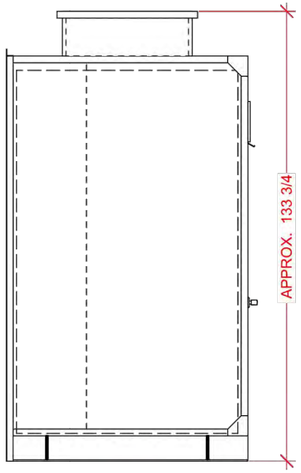
FRONT



RIGHT

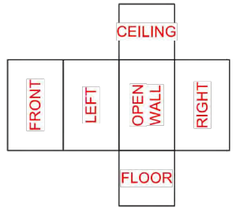


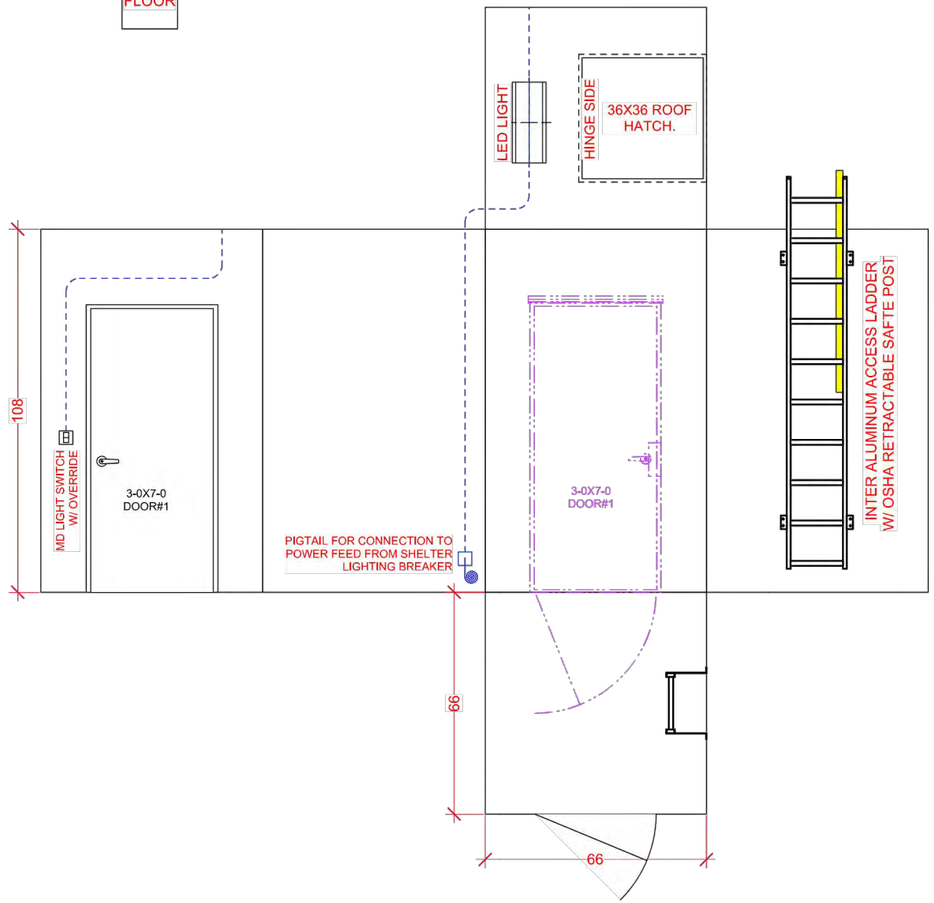
REAR



LEFT

NOTES:
1. SHELTER IS DESIGNED FOR A SLAB TYPE FOUNDATION.
2. EXTERIOR CLADDING TO BE 24 GA. PREFINISHED STEEL, COLOR - (TBD).
3. EXTERIOR TRIM TO BE MATCHING 24GA STEEL TRIM
4. SKID TO BE EPOXY PAINTED COLOR - (TBD).
5. WHITE DURO-LAST ROOFING SYSTEM W/ SLIP RESISTANT WAL STRIPS





NOTES:
1. ALL CONDUIT TO BE TYPE EMT, SURFACE MOUNTED, MINIMUM SIZE 1/2" UNLESS NOTED OTHERWISE; UPSIZING PERMITTED.
2. CONDUIT LOCATIONS INDICATED BY DASHED LINES ARE SUGGESTED AND MAY BE MODIFIED (+ or - 3").
3. DIRECTIONS ARE ARBITRARY FOR SHOP ORIENTATION ONLY AND DO NOT RELATE TO ACTUAL SITE DIRECTIONS.
4. INTERIOR CLADDING TO BE FRP, COLOR - (STANDARD WHITE).
5. FLOORING TO BE .COMMERCIAL GRADE VINYL TILE OVER 1/4" STEEL FLOOR PLATE.

SEAL

NOTICE: THIS DOCUMENT CONTAINS PROPRIETARY INFORMATION THAT IS THE SOLE PROPERTY OF SHELTER ONE AND SHOULD BE TREATED AS SUCH. NO ONE MAY COPY, REPRODUCE, TRANSMIT OR DISTRIBUTE THIS DOCUMENT IN ANY PART WITHOUT THE EXPRESSED WRITTEN PERMISSION OF SHELTER ONE OR IT'S DESIGNATED AGENTS.

SHELTER ONE

Headquarters & Manufacturing
5887 Monument Drive
Grants Pass, OR 97526
541/479-4622
F:541/479-5289
www.shelter1.com

PROJECT INFORMATION

25027 MARION COUNTY OR 12X16

FILENAME
25027 Marion County OR 12x16.vwx

DRAWN BY:	DATE:
NJY	7/24/25
CHECKED BY:	DATE:

DWG NO: 25027

SCALE: 1:40

TITLE:
HIGH SNOW ENTRY

SHEET A1.1

REV.

Marion County OREGON

PROJECT INFORMATION:

MARION COUNTY
HOUSE MOUNTAIN

11.1 MILES SOUTHEAST OF DRAKES CROSSING, OR

	DATE	RELEASE
	07-26-24	SITE SKETCH
	02-12-25	PRELIMINARY ZONING DRAWINGS
	05-22-25	PRELIMINARY CONSTRUCTION DRAWINGS
	09-23-25	FINAL CONSTRUCTION DRAWINGS
	09-30-25	REV. FCD FOR PROPANE TANK UPDATE
	10-15-25	REV. FCD FOR SITE CONFIGURATION

REVISION 1, 10/15/2025

DRAWING INFORMATION:
THIS DRAWING IS COPYRIGHTED AND IS THE SOLE PROPERTY OF THE OWNER. IT IS PRODUCED SOLELY FOR USE BY THE OWNER AND ITS AFFILIATES. REPRODUCTION OR USE OF THIS DRAWING AND/OR THE INFORMATION CONTAINED IN IT IS FORBIDDEN WITHOUT THE WRITTEN PERMISSION OF THE OWNER.

PLANS PREPARED BY:

cushing Civil Engineers

Cushing Civil Engineers
12725 SW MILLIKAN WAY
SUITE 300
BEAVERTON, OR 97005
(503) 387-5331
www.cushingcivilengineers.com

LICENSURE:

REGISTERED PROFESSIONAL ENGINEER 83233 OREGON JUNE 7, 2012 KENNY McMANAWAY

RENEWAL DATE 12/31/26

SHEET TITLE:

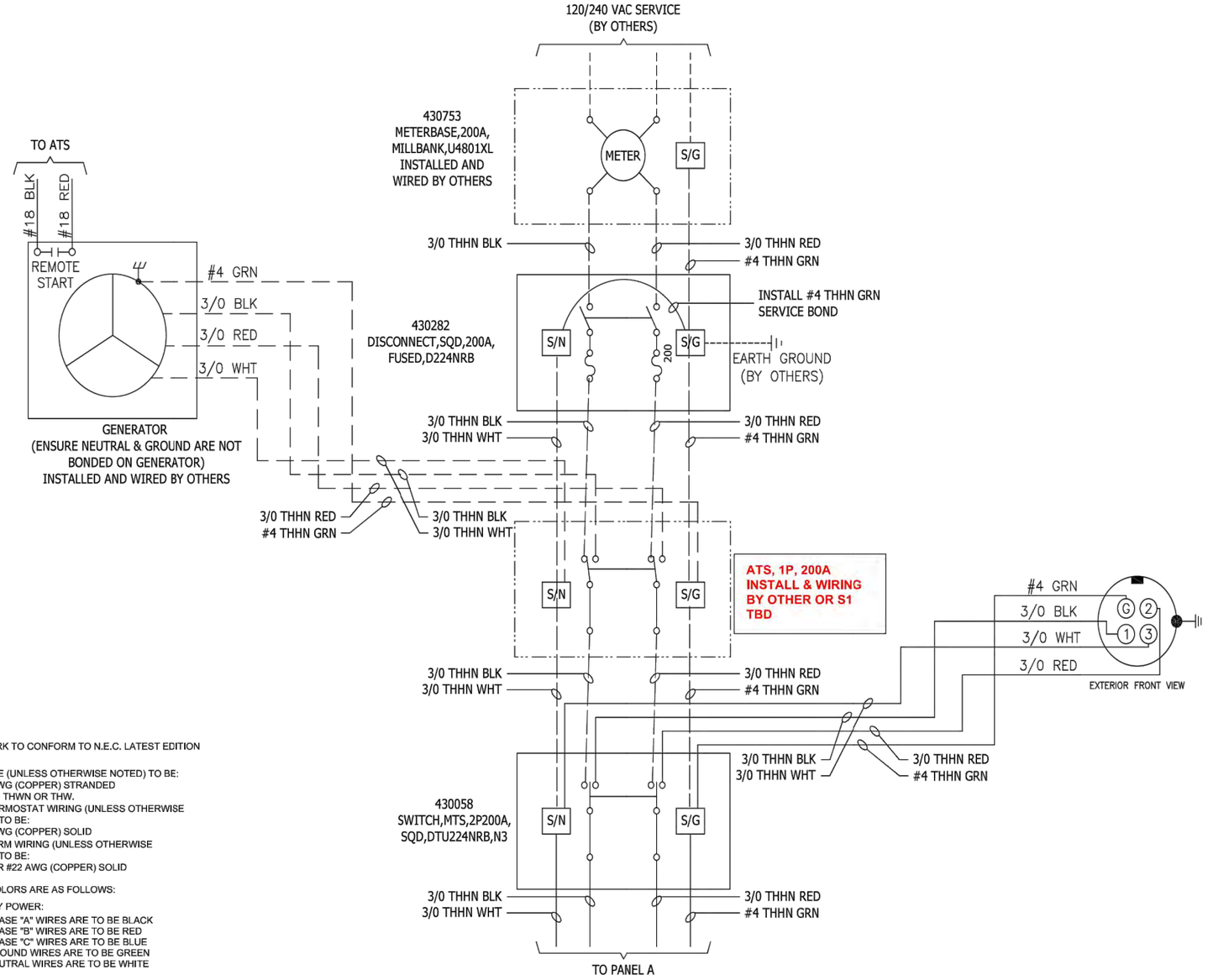
HIGH SNOW ENTRY VESTIBULE

SHEET NUMBER:

SH-3

NOTE:
INFORMATION BASED ON SHELTER ONE PREFABRICATED EQUIPMENT SHELTER DRAWINGS. REFER TO STATE OF OREGON BUILDING CODES DIVISION FOR STATE INSIGNIA.

EXHIBIT K



NOTES:

1. ALL WORK TO CONFORM TO N.E.C. LATEST EDITION
2. ALL WIRE (UNLESS OTHERWISE NOTED) TO BE:
   * #12 AWG (COPPER) STRANDED
   * THHN, THWN OR THW.
   ALL THERMOSTAT WIRING (UNLESS OTHERWISE NOTED) TO BE:
   * #18 AWG (COPPER) SOLID
   ALL ALARM WIRING (UNLESS OTHERWISE NOTED) TO BE:
   * #18 OR #22 AWG (COPPER) SOLID
3. WIRE COLORS ARE AS FOLLOWS:
   PRIMARY POWER:
   * ALL PHASE "A" WIRES ARE TO BE BLACK
   * ALL PHASE "B" WIRES ARE TO BE RED
   * ALL PHASE "C" WIRES ARE TO BE BLUE
   * ALL GROUND WIRES ARE TO BE GREEN
   * ALL NEUTRAL WIRES ARE TO BE WHITE
4. ALL CIRCUITS TO HAVE AN EQUIPMENT GROUNDING CONDUCTOR
5. ----- DASHED LINES DENOTE FIELD WORK.
6. NEUTRAL AND GROUND ARE TO BE BONDED AS REQUIRED
7. NO TAPS, SPLICES, OR JOINTS ARE TO BE MADE WITHIN WIREWAYS.

COPPER WIRE SIZE

BREAKER SIZE	MINIMUM WIRE SIZE
15A	12 AWG
20A	12 AWG
30A	10 AWG
40A	8 AWG
50A	8 AWG
60A	6 AWG
70A	4 AWG
80A	4 AWG
90A	3 AWG
100A	3 AWG
125A	1 AWG
150A	1/0
200A	3/0

SERVICE ENTRY GROUND WIRE SIZE

ENTRY WIRE SIZE	GROUND WIRE SIZE
2 AWG OR SMALLER	8 AWG
1 AWG OR 1/0	6 AWG
2/0 OR 3/0	4 AWG

SEAL

APPROVED:

DATE:

NOTICE: THIS DOCUMENT CONTAINS PROPRIETARY INFORMATION THAT IS THE SOLE PROPERTY OF SHELTER ONE AND SHOULD BE TREATED AS SUCH. NO ONE MAY COPY, REPRODUCE, TRANSMIT OR DISTRIBUTE THIS DOCUMENT IN ANY PART WITHOUT THE EXPRESSED WRITTEN PERMISSION OF SHELTER ONE OR IT'S DESIGNATED AGENTS.

SHELTER ONE®

Headquarters & Manufacturing
5887 Monument Drive
Grants Pass, OR 97526
541/479-4622
F:541/479-5289
www.shelter1.com

PROJECT INFORMATION

25027 MARION COUNTY OR 12X16

FILENAME
25027 Marion County OR 12x16.vwx

DRAWN BY:	DATE:
NJY	7/24/25
CHECKED BY:	DATE:

DWG NO: 25027

SCALE: NOT TO SCALE

TITLE:
POWER LINE DRAWING

SHEET	REV.
E1	

Marion County OREGON

PROJECT INFORMATION:

MARION COUNTY
HOUSE MOUNTAIN

11.1 MILES SOUTHEAST OF
DRAKES CROSSING, OR

	DATE	RELEASE
	07-26-24	SITE SKETCH
	02-12-25	PRELIMINARY ZONING DRAWINGS
	05-22-25	PRELIMINARY CONSTRUCTION DRAWINGS
	09-23-25	FINAL CONSTRUCTION DRAWINGS
	09-30-25	REV. FCD FOR PROPANE TANK UPDATE
	10-15-25	REV. FCD FOR SITE CONFIGURATION

REVISION 1, 10/15/2025

DRAWING INFORMATION:
THIS DRAWING IS COPYRIGHTED AND IS THE SOLE PROPERTY OF THE OWNER. IT IS PRODUCED SOLELY FOR USE BY THE OWNER AND ITS AFFILIATES. REPRODUCTION OR USE OF THIS DRAWING AND/OR THE INFORMATION CONTAINED IN IT IS FORBIDDEN WITHOUT THE WRITTEN PERMISSION OF THE OWNER.

PLANS PREPARED BY:

cushing Civil Engineers

Cushing Civil Engineers
12725 SW MILLIKAN WAY
SUITE 300
BEAVERTON, OR 97005
(503) 387-5331
www.cushingcivilengineers.com

LICENSURE:

REGISTERED PROFESSIONAL ENGINEER
83233
OREGON
JUNE 7, 2012
KENNY McMANAWAY

RENEWAL DATE 12/31/26

SHEET TITLE:

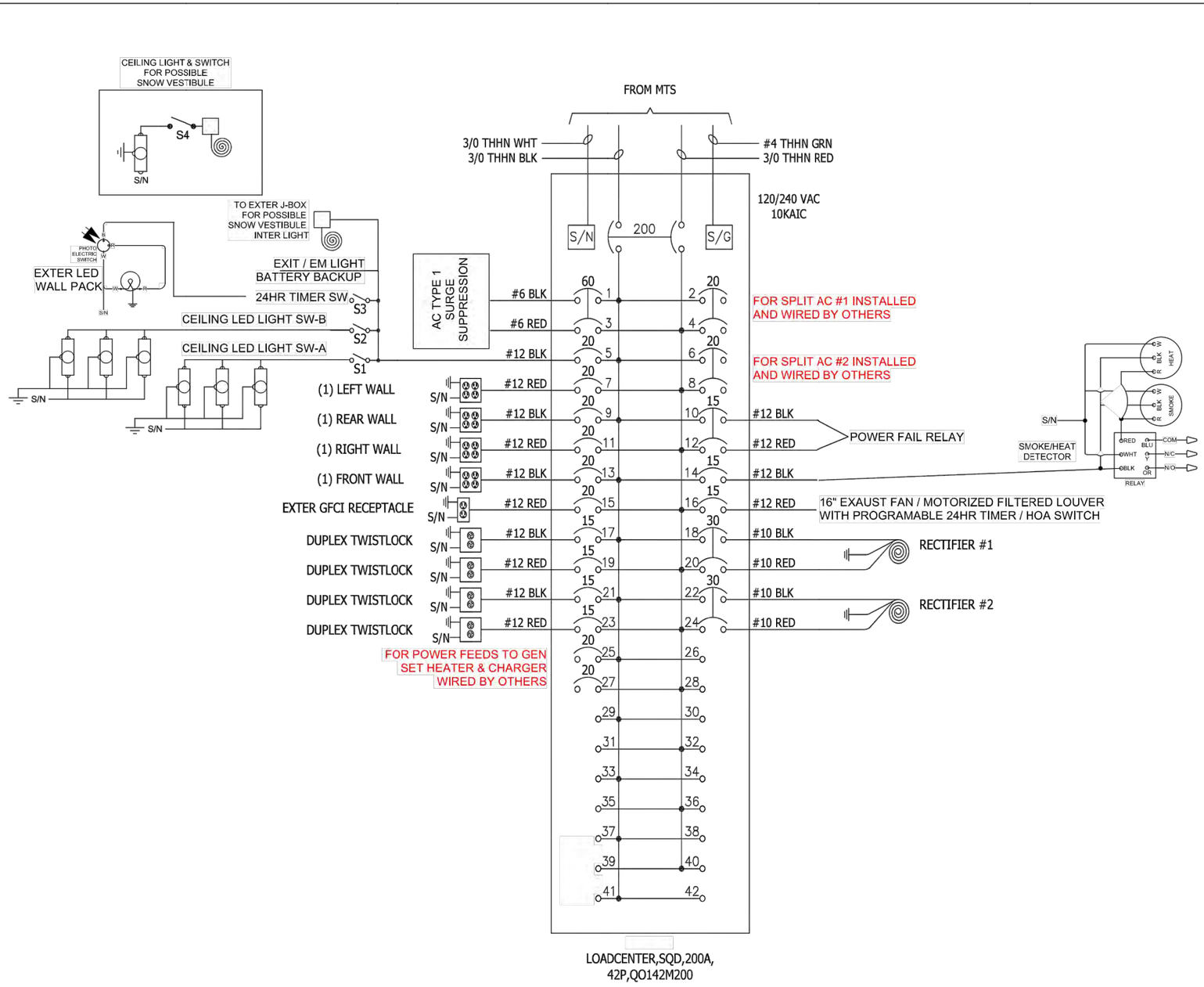
ELECTRICAL ONE-LINE DRAWING

SHEET NUMBER:

SH-4

NOTE:
INFORMATION BASED ON SHELTER ONE PREFABRICATED EQUIPMENT SHELTER DRAWINGS. REFER TO STATE OF OREGON BUILDING CODES DIVISION FOR STATE INSIGNIA.

EXHIBIT K



SEAL

APPROVED:

DATE:

NOTICE: THIS DOCUMENT CONTAINS PROPRIETARY INFORMATION THAT IS THE SOLE PROPERTY OF SHELTER ONE AND SHOULD BE TREATED AS SUCH. NO ONE MAY COPY, REPRODUCE, TRANSMIT OR DISTRIBUTE THIS DOCUMENT IN ANY PART WITHOUT THE EXPRESSED WRITTEN PERMISSION OF SHELTER ONE OR IT'S DESIGNATED AGENTS.

SHELTER ONE®

Headquarters & Manufacturing
5887 Monument Drive
Grants Pass, OR 97526
541/479-4622
F:541/479-5289
www.shelter1.com

PROJECT INFORMATION

25027 MARION COUNTY OR 12X16

FILENAME
25027 Marion County OR 12x16.vwx

DRAWN BY:	DATE:
NJY	7/24/25
CHECKED BY:	DATE:

DWG NO: 25027

SCALE: NOT TO SCALE

TITLE:
PANEL SCHEDULE

SHEET	REV.
E2	

Marion County OREGON

PROJECT INFORMATION:

MARION COUNTY HOUSE MOUNTAIN

11.1 MILES SOUTHEAST OF DRAKES CROSSING, OR

	DATE	RELEASE
	07-26-24	SITE SKETCH
	02-12-25	PRELIMINARY ZONING DRAWINGS
	05-22-25	PRELIMINARY CONSTRUCTION DRAWINGS
	09-23-25	FINAL CONSTRUCTION DRAWINGS
	09-30-25	REV. FCD FOR PROPANE TANK UPDATE
	10-15-25	REV. FCD FOR SITE CONFIGURATION

REVISION 1, 10/15/2025

DRAWING INFORMATION:
THIS DRAWING IS COPYRIGHTED AND IS THE SOLE PROPERTY OF THE OWNER. IT IS PRODUCED SOLELY FOR USE BY THE OWNER AND ITS AFFILIATES. REPRODUCTION OR USE OF THIS DRAWING AND/OR THE INFORMATION CONTAINED IN IT IS FORBIDDEN WITHOUT THE WRITTEN PERMISSION OF THE OWNER.

PLANS PREPARED BY:

cushing Civil Engineers

Cushing
Civil Engineers
12725 SW MILLIKAN WAY
SUITE 300
BEAVERTON, OR 97005
(503) 387-5331
www.cushingcivilengineers.com

LICENSURE:

REGISTERED PROFESSIONAL ENGINEER
83233
OREGON
JUNE 7, 2012
KENNY McMANAWAY

RENEWAL DATE 12/31/26

SHEET TITLE:

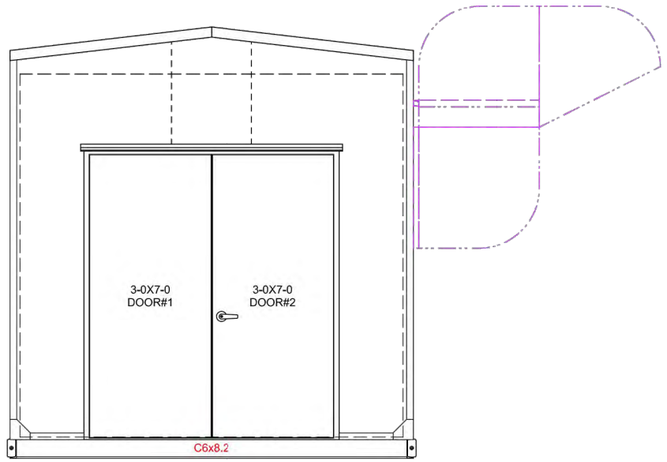
ELECTRICAL PANEL SCHEDULE

SHEET NUMBER:

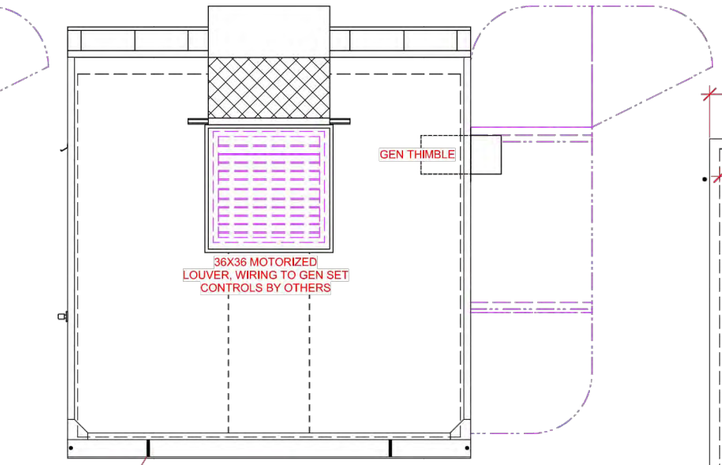
SH-5

NOTE:
INFORMATION BASED ON SHELTER ONE PREFABRICATED EQUIPMENT SHELTER DRAWINGS. REFER TO STATE OF OREGON BUILDING CODES DIVISION FOR STATE INSIGNIA.

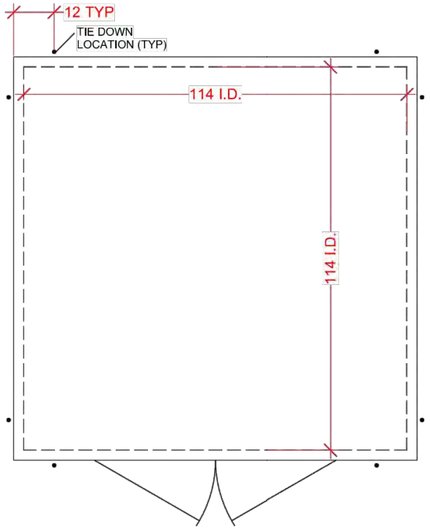
EXHIBIT K



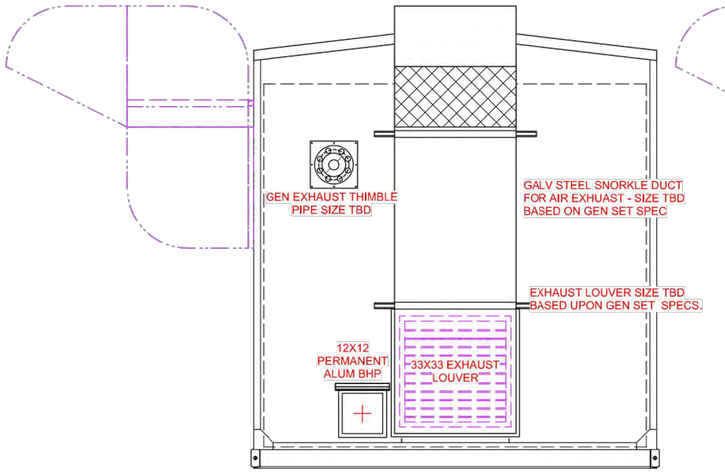
FRONT



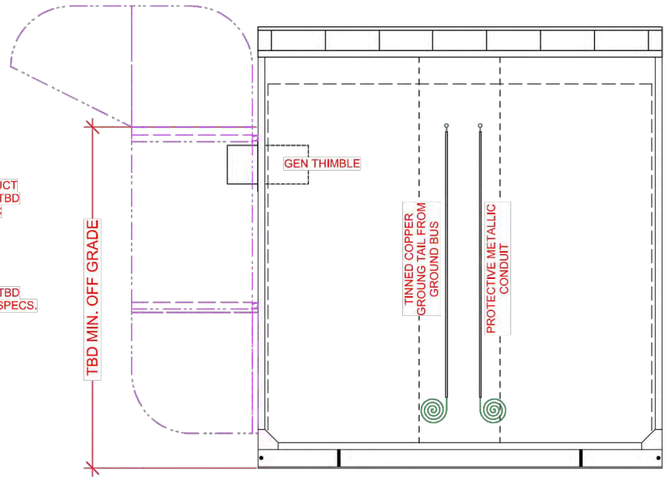
RIGHT



FRONT
ROOF PLAN VIEW



REAR



LEFT

NOTES:
1. SHELTER IS DESIGNED FOR A SLAB TYPE FOUNDATION.
2. EXTERIOR CLADDING TO BE 24 GA. PREFINISHED STEEL, COLOR - (TBD).
3. EXTERIOR TRIM TO BE MATCHING 24GA STEEL TRIM
4. SKID TO BE EPOXY PAINTED COLOR - (TBD).
5. 24GA PRE-FINISHED STEEL STANDING SEAM ROOF SYSTE - COLOR - (TBD)

SEAL

NOTICE: THIS DOCUMENT CONTAINS PROPRIETARY INFORMATION THAT IS THE SOLE PROPERTY OF SHELTER ONE AND SHOULD BE TREATED AS SUCH. NO ONE MAY COPY, REPRODUCE, TRANSMIT OR DISTRIBUTE THIS DOCUMENT IN ANY PART WITHOUT THE EXPRESSED WRITTEN PERMISSION OF SHELTER ONE OR IT'S DESIGNATED AGENTS.

SHELTER ONE

Headquarters & Manufacturing
5887 Monument Drive
Grants Pass, OR 97526
541/479-4622
F:541/479-5289
www.shelter1.com

PROJECT INFORMATION

MARION COUNTY GENERATOR SHELTER C10109

FILENAME	25026 Marion County Gen Shelter.vwx
DRAWN BY: NJY	DATE: 7/25/25
CHECKED BY:	DATE:
DWG NO:	25026
SCALE:	1:40
TITLE:	EXTERIOR ELEVATIONS
SHEET	A1
REV.	

Marion County OREGON

PROJECT INFORMATION:

MARION COUNTY HOUSE MOUNTAIN

11.1 MILES SOUTHEAST OF DRAKES CROSSING, OR

	DATE	RELEASE
	07-26-24	SITE SKETCH
	02-12-25	PRELIMINARY ZONING DRAWINGS
	05-22-25	PRELIMINARY CONSTRUCTION DRAWINGS
	09-23-25	FINAL CONSTRUCTION DRAWINGS
	09-30-25	REV. FCD FOR PROPANE TANK UPDATE
	10-15-25	REV. FCD FOR SITE CONFIGURATION

REVISION 1, 10/15/2025

DRAWING INFORMATION:
THIS DRAWING IS COPYRIGHTED AND IS THE SOLE PROPERTY OF THE OWNER. IT IS PRODUCED SOLELY FOR USE BY THE OWNER AND ITS AFFILIATES. REPRODUCTION OR USE OF THIS DRAWING AND/OR THE INFORMATION CONTAINED IN IT IS FORBIDDEN WITHOUT THE WRITTEN PERMISSION OF THE OWNER.

PLANS PREPARED BY:

cushing Civil Engineers

Cushing Civil Engineers
12725 SW MILLIKAN WAY
SUITE 300
BEAVERTON, OR 97005
(503) 387-5331
www.cushingcivilengineers.com

LICENSURE:

REGISTERED PROFESSIONAL ENGINEER 83233 OREGON JUNE 7, 2012 KENNY McMANAWAY

RENEWAL DATE 12/31/26

SHEET TITLE:

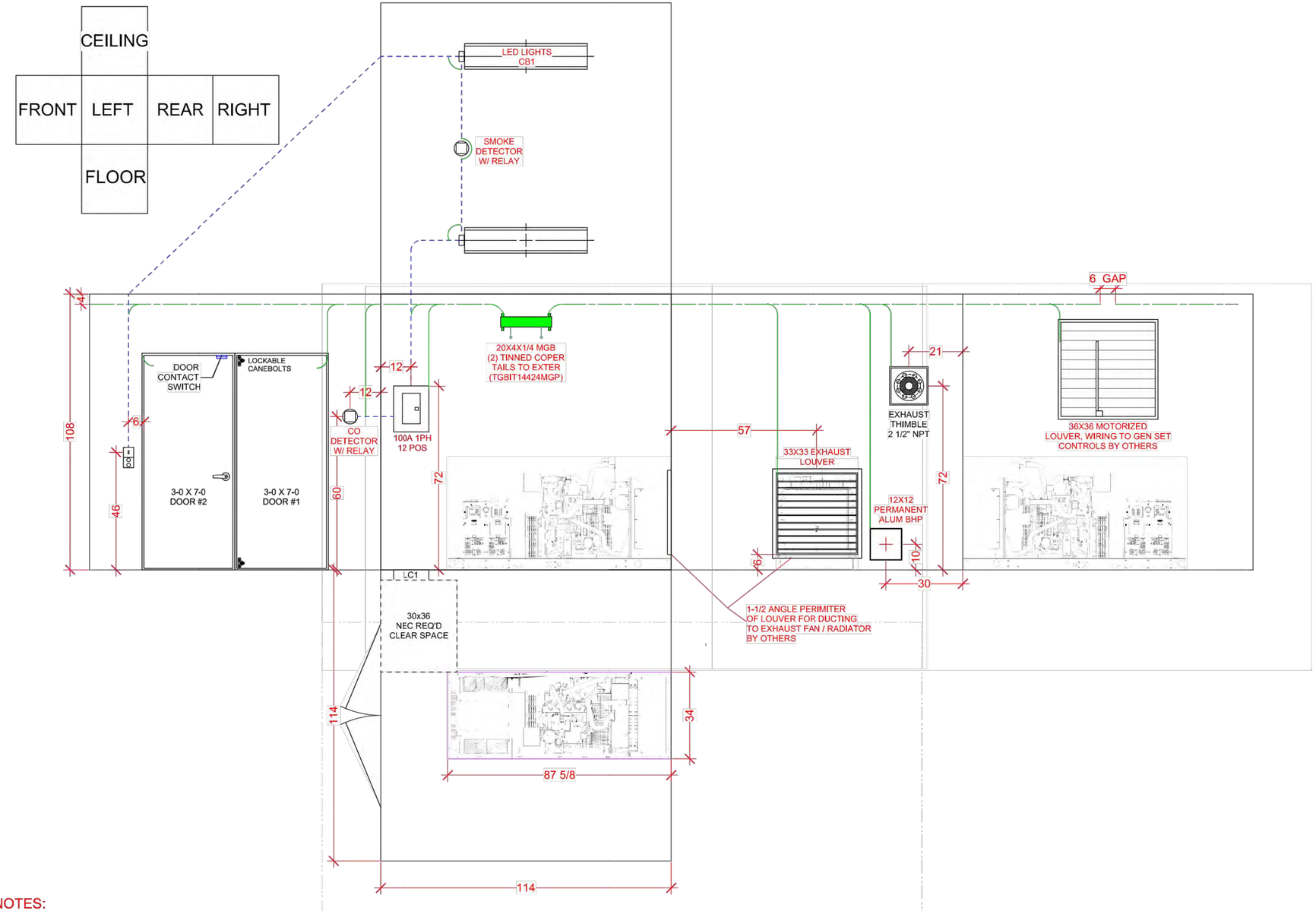
GENERATOR SHELTER EXTERIOR ELEVATIONS

SHEET NUMBER:

SH-6

NOTE:
INFORMATION BASED ON SHELTER ONE PREFABRICATED EQUIPMENT SHELTER DRAWINGS. REFER TO STATE OF OREGON BUILDING CODES DIVISION FOR STATE INSIGNIA.

EXHIBIT K



NOTES:
1. ALL CONDUIT TO BE TYPE EMT, SURFACE MOUNTED, MINIMUM SIZE 1/2" UNLESS NOTED OTHERWISE; UPSIZING PERMITTED.
2. CONDUIT LOCATIONS INDICATED BY DASHED LINES ARE SUGGESTED AND MAY BE MODIFIED UPON APPROVAL.
3. DIRECTIONS ARE ARBITRARY FOR SHOP ORIENTATION ONLY AND DO NOT RELATE TO ACTUAL SITE DIRECTIONS.
4. INTERIOR CLADDING TO BE FRP, COLOR - (WHITE).
5. FLOORING TO BE COMMERCIAL VINYL TILE OVER 1/4" STEEL FLAT FLOOR PLATE.

SEAL

NOTICE: THIS DOCUMENT CONTAINS PROPRIETARY INFORMATION THAT IS THE SOLE PROPERTY OF SHELTER ONE AND SHOULD BE TREATED AS SUCH. NO ONE MAY COPY, REPRODUCE, TRANSMIT OR DISTRIBUTE THIS DOCUMENT IN ANY PART WITHOUT THE EXPRESSED WRITTEN PERMISSION OF SHELTER ONE OR IT'S DESIGNATED AGENTS.

SHELTER ONE

Headquarters & Manufacturing
5887 Monument Drive
Grants Pass, OR 97526
541/479-4622
F:541/479-5289
www.shelter1.com

PROJECT INFORMATION

MARION COUNTY GENERATOR SHELTER C10109

FILENAME	25026 Marion County Gen Shelter.vwx
DRAWN BY: NJY	DATE: 7/25/25
CHECKED BY:	DATE:
DWG NO:	25026
SCALE:	1:40
TITLE:	INTERIOR ELEVATIONS
SHEET: A2	REV.

Marion County OREGON

PROJECT INFORMATION:

MARION COUNTY HOUSE MOUNTAIN

11.1 MILES SOUTHEAST OF DRAKES CROSSING, OR

	DATE	RELEASE
	07-26-24	SITE SKETCH
	02-12-25	PRELIMINARY ZONING DRAWINGS
	05-22-25	PRELIMINARY CONSTRUCTION DRAWINGS
	09-23-25	FINAL CONSTRUCTION DRAWINGS
	09-30-25	REV. FCD FOR PROPANE TANK UPDATE
	10-15-25	REV. FCD FOR SITE CONFIGURATION

REVISION 1, 10/15/2025

DRAWING INFORMATION:
THIS DRAWING IS COPYRIGHTED AND IS THE SOLE PROPERTY OF THE OWNER. IT IS PRODUCED SOLELY FOR USE BY THE OWNER AND ITS AFFILIATES. REPRODUCTION OR USE OF THIS DRAWING AND/OR THE INFORMATION CONTAINED IN IT IS FORBIDDEN WITHOUT THE WRITTEN PERMISSION OF THE OWNER.

PLANS PREPARED BY:

cushing Civil Engineers

Cushing
Civil Engineers
12725 SW MILLIKAN WAY
SUITE 300
BEAVERTON, OR 97005
(503) 387-5331
www.cushingcivilengineers.com

LICENSURE:

REGISTERED PROFESSIONAL ENGINEER 83233 OREGON JUNE 7, 2012 KENNY McMANAWAY

RENEWAL DATE 12/31/26

SHEET TITLE:

GENERATOR SHELTER EXTERIOR ELEVATIONS

SHEET NUMBER:

SH-7

EXHIBIT K

SITE NAME:

LOWER PROSPECT

3950 COLE RD S, SALEM, OR 97306

SHEET INDEX

CONSTRUCTION SUBMITTAL:

T-1	COVER SHEET
V-1	EXISTING CONDITIONS (SURVEY)
V-2	EXISTING CONDITIONS (SURVEY)
G-1	GENERAL NOTES
ER-1	GRADING & EROSION CONTROL PLAN
ER-2	GRADING & EROSION CONTROL DETAILS
C-1	OVERALL SITE PLAN
C-2	ENLARGED SITE PLAN
C-3	ELEVATIONS
C-4	SHELTER UPGRADE PLAN
C-5	SHELTER SECTIONS
C-6	COMPOUND DETAILS
C-7	GENERATOR & PROPANE TANK DETAILS
C-8	HVAC DETAILS
E-1	SITE GROUNDING PLAN & DETAILS
E-2	GROUNDING DETAILS I
E-3	GROUNDING DETAILS II
RF-1.0	RF TOWER APPURTENANCES I
RF-1.1	RF TOWER APPURTENANCES II
RF-1.2	RF TOWER APPURTENANCES III
RF-1.3	RF TOWER APPURTENANCES IV
RF-1.4	RF TOWER APPURTENANCES V

PROJECT INFORMATION

PROPERTY OWNER:
BH LAND LLC
PO BOX 357
INDEPENDENCE, OR 97351
CONTACT:
NAME
PHONE

TOWER OWNER:
MARION COUNTY PUBLIC WORKS
5155 SILVERTON RD NE
SALEM, OR 97305
CONTACT:
BRIAN NICHOLAS
(503) 588-7943
bnicholas@co.marion.or.us

COUNTY:
MARION

JURISDICTION:
MARION COUNTY

ZONING:
SA (SPECIAL AGRICULTURE)

NEPA FCC:
REPORT BY BLACK MOUNTAIN
DATED 08/23/2025

PARCEL NUMBER(S) & AREA:
ACCOUNT #: 533736
TAXLOT #: 083W30CB00400
19,166.4 SQ FEET±
0.44 ACRES±

PROJECT AREA:
TOTAL COMPOUND AREA - 4,372 SQ FEET
ACCESS DRIVE AND PARKING - EXISTING
TOTAL - 4,372 SQ FEET ±

PROJECT LOCATION:
*LAT: N 44° 50'47.59" (44.846553)
*LONG: W 123°06'39.81" (-123.111058)
*GROUND ELEVATION (ASML) = 1,006.4'±

*INFORMATION OBTAINED FROM SURVEY

UTILITY PROVIDERS:
TELCO PROVIDER: N/A
POWER PROVIDER: PORTLAND GENERAL ELECTRIC

GENERAL INFORMATION:
1. TRAFFIC IS UNAFFECTED
2. SIGNAGE AT SITE IS PROPOSED
3. SITE IS UNMANNED AND HANDICAP ACCESS IS NOT REQUIRED

CODE INFORMATION:
1. IBC-2018 INTERNATIONAL BUILDING CODE
2. NEC-2017 NATIONAL ELECTRIC CODE
3. 2019 OREGON STRUCTURAL SPECIALTY CODE
4. 2017 NFPA 58 CODE
5. OCCUPANCY GROUP: U
6. CONSTRUCTION TYPE: II-B

PROJECT INFORMATION CONTINUED

APPLICANT:
MARION COUNTY PUBLIC WORKS
5155 SILVERTON RD NE
SALEM, OR 97305
CONTACT:
BRIAN NICHOLAS
(503) 588-7943
bnicholas@co.marion.or.us

PROJECT MANAGER:
PATRICK HOOVER
(971) 295-0152
phoover@rtspnw.com

CONSTRUCTION MANAGER:
PATRICK HOOVER
(971) 295-0152
phoover@rtspnw.com

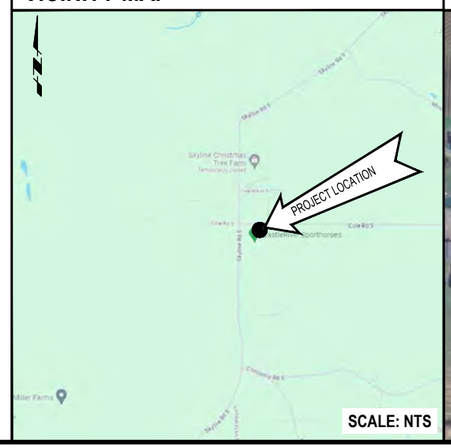
ZONING CONTACT:
CUSHING CIVIL ENGINEERS
12725 SW MILLIKAN WAY, STE 300
BEAVERTON, OR 97005
CONTACT:
ROB HOWE
(503) 387-5331
rob@cushingcivilengineers.com

ENGINEER OF RECORD:
CUSHING CIVIL ENGINEERS
12725 SW MILLIKAN WAY, STE 300
BEAVERTON, OR 97005
CONTACT:
KENNY MCMANAWAY
(503) 387-5331
kenny@cushingcivilengineers.com

SURVEYOR:
ORION GEOMATICS
1724 23RD AVE
FOREST GROVE, OR 97116
CONTACT:
JOHN PUTNAM
(503) 359-1688
jputnam@oriongeomatics.com

GEOTECH:
BLACK MOUNTAIN CONSULTING LLC
22566 SW WASHINGTON STE #206
SHERWOOD, OR 97140
CONTACT:
TAMMY STEMPEL
(503) 625-2517
tammys@blkmountain.com

VICINITY MAP



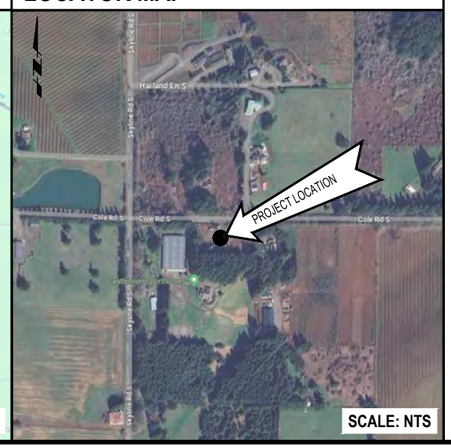
DRIVING DIRECTIONS

FROM MARION COUNTY PUBLIC WORKS BUILDING:

1. HEAD SOUTHEAST TOWARD OR-213 S
   233 FT
2. TURN RIGHT ONTO OR-213 S
   0.2 MI
3. TURN LEFT ONTO CORDON RD NE
   5.3 MI
4. CONTINUE ONTO KUEBLER BLVD
   5.8 MI
5. TURN LEFT ONTO SKYLINE RD S
   1.2 MI
6. CONTINUE STRAIGHT TO STAY ON SKYLINE RD S
   2.2 MI
7. TURN LEFT ONTO COLE RD S. DESTINATION WILL BE ON THE RIGHT.
   423 FT

EST. TIME: 30 MINS.
EST. MILEAGE: 14.8 MI

LOCATOR MAP



PROJECT DESCRIPTION

1. PROPOSED MODIFICATION OF AN EXISTING PUBLIC SAFETY COMMUNICATIONS FACILITY FOR MARION COUNTY, OREGON.
2. PROPOSED REPLACEMENT OF EXISTING 140'-0" SELF-SUPPORT TOWER W/ NEW 180'-0" SELF-SUPPORT TOWER
3. PROPOSED INSTALLATION OF THE FOLLOWING EQUIPMENT ON A NEW 180'-0" SELF-SUPPORT TOWER:
   * NEW & EXISTING ANTENNAS W/ ASSOCIATED ANCILLARY EQUIPMENT
4. PROPOSED INSTALLATION OF THE FOLLOWING EQUIPMENT WITHIN EXISTING GROUND SPACE:
   * (1) ICE-BRIDGE (REPLACE EXISTING)
   * (1) GENERATOR (REPLACE EXISTING)
   * (1) 1000 GAL. PROPANE TANK (REPLACE EXISTING)
   * EXISTING SHELTER UPGRADE

PROJECT INFORMATION:

MARION COUNTY
LOWER PROSPECT

3950 COLE RD S
SALEM, OR 97306

	DATE	RELEASE
	07-17-24	SITE SKETCH
	11-06-24	PRELIMINARY ZONING DRAWINGS
	12-20-24	PRELIMINARY CONSTRUCTION DRAWINGS
	02-27-25	CLIENT COMMENTS
	08-20-25	PRELIMINARY CONSTRUCTION DRAWINGS
	09-19-25	FINAL CONSTRUCTION DRAWINGS

DRAWING INFORMATION:
THIS DRAWING IS COPYRIGHTED AND IS THE SOLE PROPERTY OF THE OWNER. IT IS PRODUCED SOLELY FOR USE BY THE OWNER AND ITS AFFILIATES. REPRODUCTION OR USE OF THIS DRAWING AND/OR THE INFORMATION CONTAINED IN IT IS FORBIDDEN WITHOUT THE WRITTEN PERMISSION OF THE OWNER.

PLANS PREPARED BY:

Cushing
Civil Engineers

Cushing
Civil Engineers
12725 SW MILLIKAN WAY
SUITE 300
BEAVERTON, OR 97005
(503) 387-5331
www.cushingcivilengineers.com

LICENSURE:

REGISTERED PROFESSIONAL ENGINEER
83233
OREGON
JUNE 7, 2012
KENNY McMANAWAY

RENEWAL DATE 12/31/26

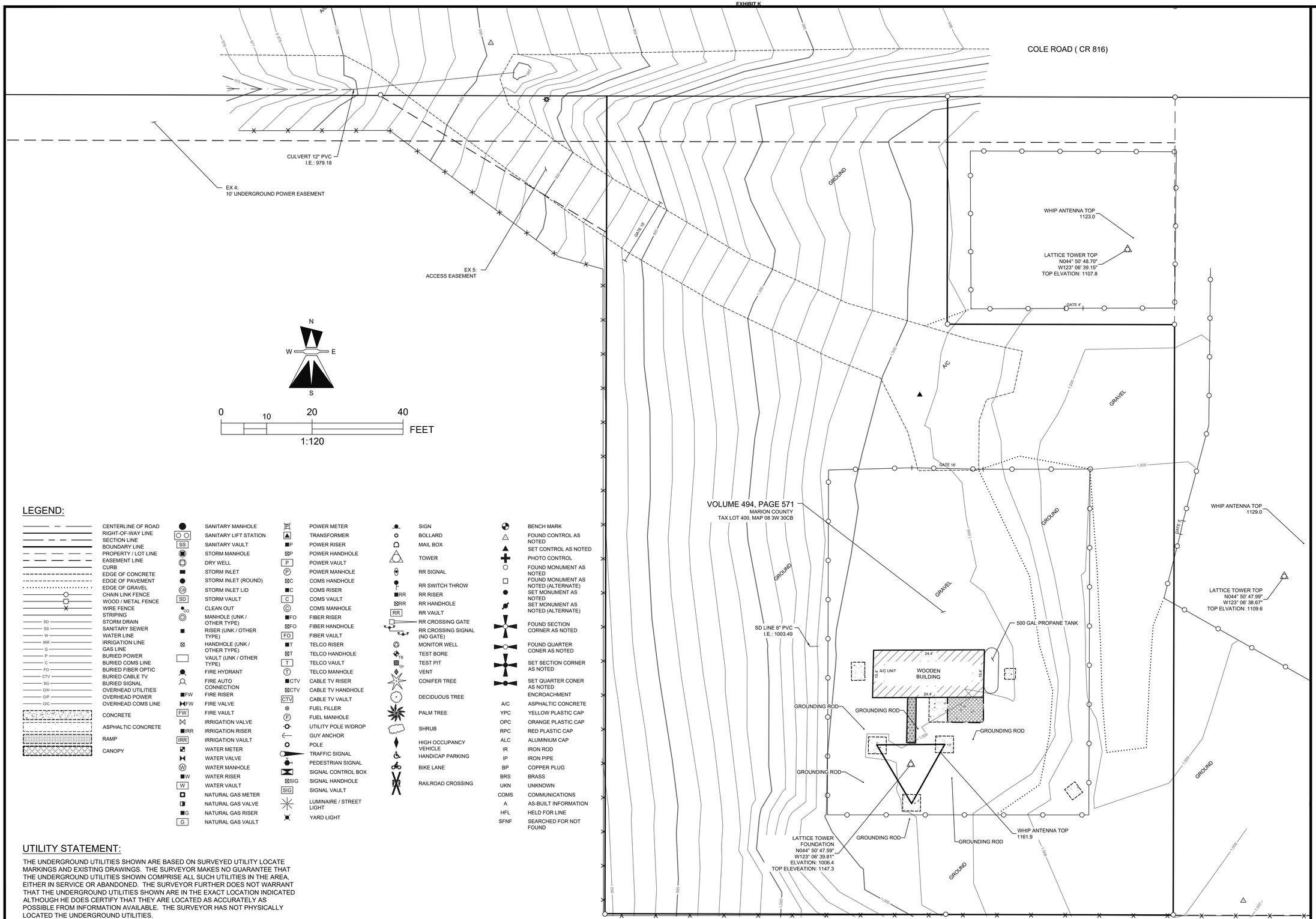
SHEET TITLE:

COVER SHEET

SHEET NUMBER:

T-1

EXHIBIT K



N
W E
S

0 10 20 40 FEET

1:120

LEGEND:

- CENTERLINE OF ROAD
- RIGHT-OF-WAY LINE
- SECTION LINE
- BOUNDARY LINE
- EASEMENT LINE
- PROPERTY / LOT LINE
- CURB
- EDGE OF CONCRETE
- EDGE OF PAVEMENT
- EDGE OF GRAVEL
- CHAIN LINK FENCE
- WOOD / METAL FENCE
- WIRE FENCE
- STRIPING
- STORM DRAIN
- SANITARY SEWER
- WATER LINE
- IRRIGATION LINE
- GAS LINE
- BURIED POWER
- BURIED COMS LINE
- BURIED FIBER OPTIC
- BURIED CABLE TV
- BURIED SIGNAL
- OVERHEAD UTILITIES
- OVERHEAD POWER
- OVERHEAD COMS LINE
- CONCRETE
- ASPHALTIC CONCRETE
- RAMP
- CANOPY

- SANITARY MANHOLE
- SANITARY LIFT STATION
- SANITARY VAULT
- STORM MANHOLE
- DRY WELL
- STORM INLET
- STORM INLET (ROUND)
- STORM INLET LID
- STORM VAULT
- CLEAN OUT
- MANHOLE (UNK / OTHER TYPE)
- RISER (UNK / OTHER TYPE)
- HANDHOLE (UNK / OTHER TYPE)
- VAULT (UNK / OTHER TYPE)
- FIRE HYDRANT
- FIRE AUTO CONNECTION
- FIRE RISER
- FIRE VALVE
- FIRE VAULT
- IRRIGATION VALVE
- IRRIGATION RISER
- IRRIGATION VAULT
- WATER METER
- WATER VALVE
- WATER MANHOLE
- WATER RISER
- WATER VAULT
- NATURAL GAS METER
- NATURAL GAS VALVE
- NATURAL GAS RISER
- NATURAL GAS VAULT

- POWER METER
- TRANSFORMER
- POWER RISER
- POWER HANDHOLE
- POWER VAULT
- POWER MANHOLE
- COMS HANDHOLE
- COMS RISER
- COMS VAULT
- COMS MANHOLE
- FIBER RISER
- FIBER HANDHOLE
- FIBER VAULT
- TELCO RISER
- TELCO HANDHOLE
- TELCO VAULT
- TELCO MANHOLE
- CABLE TV RISER
- CABLE TV HANDHOLE
- CABLE TV VAULT
- FUEL FILLER
- FUEL MANHOLE
- UTILITY POLE W/DROP
- GUY ANCHOR
- POLE
- TRAFFIC SIGNAL
- PEDESTRIAN SIGNAL
- SIGNAL CONTROL BOX
- SIGNAL HANDHOLE
- SIGNAL VAULT
- LUMINAIRE / STREET LIGHT
- YARD LIGHT

- SIGN
- BOLLARD
- MAIL BOX
- TOWER
- RR SIGNAL
- RR SWITCH THROW
- RR RISER
- RR HANDHOLE
- RR VAULT
- RR CROSSING GATE
- RR CROSSING SIGNAL (NO GATE)
- MONITOR WELL
- TEST BORE
- TEST PIT
- VENT
- CONIFER TREE
- DECIDUOUS TREE
- PALM TREE
- SHRUB
- HIGH OCCUPANCY VEHICLE
- HANDICAP PARKING
- BIKE LANE
- RAILROAD CROSSING

- BENCH MARK
- FOUND CONTROL AS NOTED
- SET CONTROL AS NOTED
- PHOTO CONTROL
- FOUND MONUMENT AS NOTED
- FOUND MONUMENT AS NOTED (ALTERNATE)
- SET MONUMENT AS NOTED
- SET MONUMENT AS NOTED (ALTERNATE)
- FOUND SECTION CORNER AS NOTED
- FOUND QUARTER CONER AS NOTED
- SET SECTION CORNER AS NOTED
- SET QUARTER CONER AS NOTED
- ENCROACHMENT

A/C	ASPHALTIC CONCRETE
YPC	YELLOW PLASTIC CAP
OPC	ORANGE PLASTIC CAP
RPC	RED PLASTIC CAP
ALC	ALUMINIUM CAP
IR	IRON ROD
IP	IRON PIPE
BP	COPPER PLUG
BRS	BRASS
UKN	UNKNOWN
COMS	COMMUNICATIONS
A	AS-BUILT INFORMATION
HFL	HELD FOR LINE
SFNF	SEARCHED FOR NOT FOUND

UTILITY STATEMENT:

THE UNDERGROUND UTILITIES SHOWN ARE BASED ON SURVEYED UTILITY LOCATE MARKINGS AND EXISTING DRAWINGS. THE SURVEYOR MAKES NO GUARANTEE THAT THE UNDERGROUND UTILITIES SHOWN COMPRISE ALL SUCH UTILITIES IN THE AREA, EITHER IN SERVICE OR ABANDONED. THE SURVEYOR FURTHER DOES NOT WARRANT THAT THE UNDERGROUND UTILITIES SHOWN ARE IN THE EXACT LOCATION INDICATED ALTHOUGH HE DOES CERTIFY THAT THEY ARE LOCATED AS ACCURATELY AS POSSIBLE FROM INFORMATION AVAILABLE. THE SURVEYOR HAS NOT PHYSICALLY LOCATED THE UNDERGROUND UTILITIES.

SECTION 30, T08S, R03W, W.M

11X17 SCALE: 1" = 20' | 22X34 SCALE: 1" = 10' | 1

Marion County
OREGON

PROJECT INFORMATION:

MARION COUNTY
LOWER PROSPECT

3950 COLE RD S
SALEM, OR 97306

	DATE	RELEASE
0	04/##/2025	INITIAL SURVEY RELEASE

DRAWING INFORMATION:

THIS DRAWING IS COPYRIGHTED AND IS THE SOLE PROPERTY OF THE OWNER. IT IS PRODUCED SOLELY FOR USE BY THE OWNER AND ITS AFFILIATES. REPRODUCTION OR USE OF THIS DRAWING AND/OR THE INFORMATION CONTAINED IN IT IS FORBIDDEN WITHOUT THE WRITTEN PERMISSION OF THE OWNER.

PLANS PREPARED BY:

cushing Civil Engineers

Cushing Civil Engineers
12725 SW MILLIKAN WAY
SUITE 300
BEAVERTON, OR 97005
(503) 387-5331
www.cushing-engr.com

LICENSURE:

orion GEOMATICS
Because the world is a spatial place™
1724 23rd Avenue | Forest Grove OR 97116
T: 503.359.1688 | www.oriongeomatics.com

REGISTERED
PROFESSIONAL
LAND SURVEYOR

DIGITAL SIGNATURE

OREGON
JULY 10, 1994
JOHN D. PUTNAM
2676

RENEWS: 12-31-26
DIGITALLY SIGNED 04/10/2025

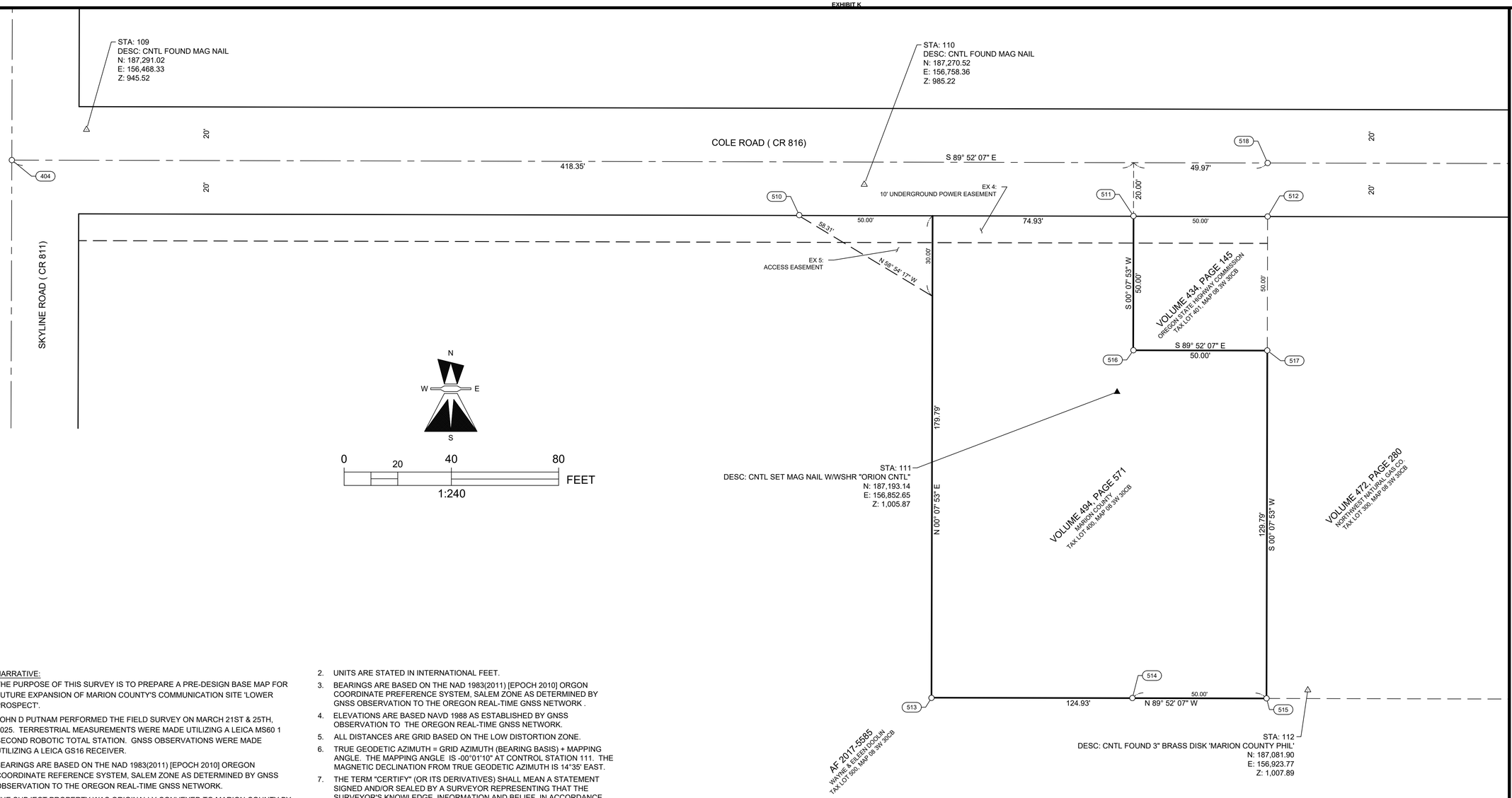
SHEET TITLE:

EXISTING CONDITIONS

SHEET NUMBER:

V-1

EXHIBIT K



NARRATIVE:

THE PURPOSE OF THIS SURVEY IS TO PREPARE A PRE-DESIGN BASE MAP FOR FUTURE EXPANSION OF MARION COUNTY'S COMMUNICATION SITE 'LOWER PROSPECT'.

JOHN D PUTNAM PERFORMED THE FIELD SURVEY ON MARCH 21ST & 25TH, 2025. TERRESTRIAL MEASUREMENTS WERE MADE UTILIZING A LEICA MS60 1 SECOND ROBOTIC TOTAL STATION. GNSS OBSERVATIONS WERE MADE UTILIZING A LEICA GS16 RECEIVER.

BEARINGS ARE BASED ON THE NAD 1983(2011) [EPOCH 2010] OREGON COORDINATE REFERENCE SYSTEM, SALEM ZONE AS DETERMINED BY GNSS OBSERVATION TO THE OREGON REAL-TIME GNSS NETWORK.

THE SUBJECT PROPERTY WAS ORIGINALLY CONVEYED TO MARION COUNTY BY WARRANTY DEED RECORDED ON NOVEMBER 5, 1956 AS VOLUME 494, PAGE 571. MONUMENT '404' WAS HELD AS THE EAST ONE-QUARTER CORNER OF SECTION 30, TOWNSHIP 8 SOUTH, RANGE 3 WEST, WILLAMETTE MERIDIAN. THE CENTERLINE OF COLE ROAD (COUNTY ROAD 816) WAS ESTABLISHED BY HOLDING MONUMENTS '404' AND '518'.

THE MOST EASTERN LINE WAS ESTABLISHED BY HOLDING A LINE PERPENDICULAR TO THE CENTERLINE OF COLE ROAD THROUGHT FOUND MONUMENTS '518', '512' '517' AND '515'. THE SOUTHERN LINE WAS ESTABLISHED BY HOLDING A LINE PARALLEL TO THE CENTERLINE OF COLE ROAD THROUGH FOUND MONUMENTS '513', '514' AND '515'. THE WESTERN LINE WAS ESTABLISHED PERPENDICULAR TO THE CENTERLINE OF COLE ROAD HOLDING MONUMENT '513'. THE MOST EASTERLY NORTHERN LINE WAS ESTABLISHED PARALLEL TO THE CENTERLINE OF COLE ROAD THROUGH MONUMENTS '516' AND '517'. THE MOST WESTERLY EASTERN WAS ESTABLISHED PERPENDICULAR TO THE CENTERLINE OF COLE ROAD THROUGH MONUMENTS '511' AND '516'. THE VESTING DESCRIPTION CALLS FOR FOUND MONUMENTS '516', '517', '515' AND '513' AS SHOWN THE 1956 RECORD OF SURVEY FOR MARION COUNTY FILED AS MCSR 15099.

THE ADJACENT TOWER SITES ACCESS COLE ROAD THROUGH THE SUBJECT PROPERTY.

FALLINGS SHOWN ARE FROM THE TRUE POINT.

NOTES:

1. FIELD SURVEY AND MAPPING PERFORMED ON MARCH 21ST AND 24TH, 2025 BY J. PUTNAM UTILIZING A LEICA MS60 ROBOTIC TOTAL STATION AND LEICA GS18 GNSS RECEIVERS.
2. UNITS ARE STATED IN INTERNATIONAL FEET.
3. BEARINGS ARE BASED ON THE NAD 1983(2011) [EPOCH 2010] ORGON COORDINATE PREFERENCE SYSTEM, SALEM ZONE AS DETERMINED BY GNSS OBSERVATION TO THE OREGON REAL-TIME GNSS NETWORK .
4. ELEVATIONS ARE BASED NAVD 1988 AS ESTABLISHED BY GNSS OBSERVATION TO THE OREGON REAL-TIME GNSS NETWORK.
5. ALL DISTANCES ARE GRID BASED ON THE LOW DISTORTION ZONE.
6. TRUE GEODETIC AZIMUTH = GRID AZIMUTH (BEARING BASIS) + MAPPING ANGLE. THE MAPPING ANGLE IS -00°01'10" AT CONTROL STATION 111. THE MAGNETIC DECLINATION FROM TRUE GEODETIC AZIMUTH IS 14°35' EAST.
7. THE TERM "CERTIFY" (OR ITS DERIVATIVES) SHALL MEAN A STATEMENT SIGNED AND/OR SEALED BY A SURVEYOR REPRESENTING THAT THE SURVEYOR'S KNOWLEDGE, INFORMATION AND BELIEF, IN ACCORDANCE WITH COMMONLY ACCEPTED PROCEDURES CONSISTENT WITH APPLICABLE STANDARDS OF PRACTICE, AND IS NOT A GUARANTY OR WARRANTY, EITHER EXPRESSED OR IMPLIED.
8. THIS SURVEY SHOWS ONLY THOSE DEDICATIONS AND EASEMENTS CONTAINED IN THE SUPPLIED TITLE SEARCH. IT IS POSSIBLE THAT OTHER RECORDED OR UNRECORDED INSTRUMENTS EFFECTING THIS PROPERTY MAY EXIST.
9. ORION GEOMATICS MAKES NO WARRANTIES AS TO MATTERS OF UNWRITTEN TITLE SUCH AS ADVERSE POSSESSION, ACQUIESCENCE, ESTOPPLE, ETC.
10. ALL STATEMENTS WITHIN THE CERTIFICATION, AND OTHER REFERENCES LOCATED ELSEWHERE HEREON, RELATED TO: UTILITIES, IMPROVEMENTS, STRUCTURES, BUILDINGS, PARTY WALLS, EASEMENTS, SERVITUDES, AND ENCROACHMENTS; ARE BASED SOLELY ON ABOVE GROUND, VISIBLE EVIDENCE, UNLESS ANOTHER SOURCE OF INFORMATION IS SPECIFICALLY REFERENCED HEREON.
11. NO UTILITIES WERE MARKED PRIOR TO SURVEY. [TABLE 'A' ITEM 11]

REFERENCES:

-RECORDS OF SURVEY:

R1) MCSR 15099
R2) MCSR 25353
R3) MCSR 27552
R4) MCSR 27580
R5) MCSR 35423
R6) REMON BOOK 4409 PAGE 112C

-DEEDS;

VOLUME 434, PAGE 145
VOLUME 472, PAGE 280
VOLUME 494, PAGE 571

SURVEY RELATED SPECIAL EXCEPTIONS:

AMERITITLE STATUS OF RECORD TITLE NO. 676949AM DATED MARCH 28, 2025

1 - 3. NOT SURVEY RELATED

4. AN EASEMENT INCLUDING THE TERMS AND PROVISIONS THEREOF, AFFECTING THE PORTION OF THE LAND AND FOR THE PURPOSES STATED THEREIN AS SET FORTH IN INSTRUMENT:
GRANTED TO: STATE OF OREGON, BY AND THROUGH ITS STATE HIGHWAY COMMISSION
RECORDED: NOVEMBER 15, 1951
INSTRUMENT NO.: VOLUME: 434, PAGE: 145

SURVEYOR'S NOTE: PLOTTED HEREON.

5. AN EASEMENT INCLUDING THE TERMS AND PROVISIONS THEREOF, AFFECTING THE PORTION OF THE LAND AND FOR THE PURPOSES STATED THEREIN AS SET FORTH IN INSTRUMENT:
RECORDED: NOVEMBER 5, 1956
INSTRUMENT NO.: VOLUME: 494, PAGE: 571

SURVEYOR'S NOTE: PLOTTED HEREON.

MONUMENT TABLE

MONUMENT	DESCRIPTION	FALLING	RECORD
404	FOUND 3" BR DISK IN BURRIED MON BOX (VISITED 08/15/1999)	HELD	REMON BOOK 4099, PAGE 112C
510	FOUND 1" IP	S 61°02'08" E, 0.30'	MCSR 15099
511	FOUND 5/8" IR	N 00°07'53" E, 0.11'	FIRST REFERENCED MCSR 15099
512	FOUND 5/8" IR	HELD	FIRST REFERENCED MCSR 15099
513	FOUND 1" IP	HELD	MCSR 15099
514	FOUND 1" IP	HELD	FIRST REFERENCED MCSR 15099
515	FOUND 1-1/4" IP	HELD	FIRST REFERENCED MCSR 15099
516	FOUND 5/8" IR	HELD	FIRST REFERENCED MCSR 15099
517	FOUND 5/8" IR DOWN 1.00'	HELD	FIRST REFERENCED MCSR 15099
518	FOUND 1" IP DOWN 0.5' (VISITED 08/15/1999)	HELD	FIRST REFERENCED MCSR 15099

SECTION 30, T08S, R03W, W.M

11X17 SCALE: 1" = 40' | 22X34 SCALE: 1" = 20' | 1

Marion County OREGON

PROJECT INFORMATION:

MARION COUNTY LOWER PROSPECT

3950 COLE RD S
SALEM, OR 97306

	DATE	RELEASE
0	04/10/2025	INITIAL SURVEY RELEASE

DRAWING INFORMATION:

THIS DRAWING IS COPYRIGHTED AND IS THE SOLE PROPERTY OF THE OWNER. IT IS PRODUCED SOLELY FOR USE BY THE OWNER AND ITS AFFILIATES. REPRODUCTION OR USE OF THIS DRAWING AND/OR THE INFORMATION CONTAINED IN IT IS FORBIDDEN WITHOUT THE WRITTEN PERMISSION OF THE OWNER.

PLANS PREPARED BY:

cushing Civil Engineers

Cushing Civil Engineers

12725 SW MILLIKAN WAY
SUITE 300
BEAVERTON, OR 97005
(503) 387-5331
www.cushing-engr.com

LICENSURE:

orion GEOMATICS
Because the world is a spatial place™
1724 23rd Avenue | Forest Grove OR 97116
T: 503.359.1688 | www.oriongeomatics.com

REGISTERED
PROFESSIONAL
LAND SURVEYOR

DIGITAL SIGNATURE

OREGON
JULY 10, 1996
JOHN D. PUTNAM
2676

RENEWS: 12-31-26
DIGITALLY SIGNED 04/10/2025

SHEET TITLE:

EXISTING CONDITIONS

SHEET NUMBER:

V-2

EXHIBIT K

GENERAL NOTES:

1. DRAWINGS ARE NOT TO BE SCALED, WRITTEN DIMENSIONS TAKE PRECEDENCE, THIS SET OF DOCUMENTS IS INTENDED TO BE USED FOR DIAGRAMMATIC PURPOSED ONLY, UNLESS NOTED OTHERWISE. THE GENERAL CONTRACTOR'S SCOPE OF WORK SHALL INCLUDE FURNISHING ALL MATERIALS, EQUIPMENT, LABOR AND ANY REQUIREMENTS DEEMED NECESSARY TO COMPLETE INSTALLATION AS DESCRIBED IN THE DRAWINGS AND OWNER'S PROJECT MANUAL.
2. THE CONTRACTOR IS RESPONSIBLE FOR ALL DIMENSIONS AND STANDARDIZED DETAILS THAT REQUIRE MODIFICATIONS DUE TO ACTUAL FIELD CONDITIONS AND REQUIREMENTS MUST BE SUBMITTED TO AND APPROVED BY OWNERS REPRESENTATIVE PRIOR TO START OF WORK.
3. PRIOR TO THE SUBMISSION OF BIDS, CONTRACTORS INVOLVED SHALL VISIT THE JOB SITE TO FAMILIARIZE THEMSELVES WITH ALL CONDITIONS AFFECTING THE PROPOSED PROJECT. CONTRACTORS SHALL VISIT THE CONSTRUCTION SITE WITH THE CONSTRUCTION/CONTRACT DOCUMENTS TO VERIFY FIELD CONDITIONS AND CONFIRM THAT THE PROJECT WILL BE ACCOMPLISHED AS SHOWN. PRIOR TO PROCEEDING WITH CONSTRUCTION, ANY ERRORS, OMISSIONS, OR DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT/ENGINEER VERBALLY AND IN WRITING.
4. THE GENERAL CONTRACTOR SHALL RECEIVE WRITTEN AUTHORIZATION TO PROCEED WITH CONSTRUCTION PRIOR TO STARTING WORK ON ANY ITEM NOT CLEARLY DEFINED BY THE CONSTRUCTION DRAWINGS/CONTRACT DOCUMENTS.
5. THE CONTRACTOR SHALL SUPERVISE AND DIRECT THE PROJECT DESCRIBED IN THE CONTRACT DOCUMENTS. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR ALL CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES, SAFETY, AND PROCEDURES FOR COORDINATING ALL PORTIONS OF THE WORK UNDER THE CONTRACT.
6. THE CONTRACTOR SHALL INSTALL ALL EQUIPMENT AND MATERIALS ACCORDING TO MANUFACTURER'S/VENDOR'S SPECIFICATIONS UNLESS NOTED OTHERWISE OR WHERE LOCAL CODES OR ORDINANCES TAKE PRECEDENCE.
7. ALL WORK PERFORMED ON THE PROJECT AND MATERIALS INSTALLED SHALL BE IN STRICT ACCORDANCE WITH ALL APPLICABLE CODES, REGULATIONS, AND ORDINANCES. CONTRACTOR SHALL GIVE ALL NOTICES AND COMPLY WITH ALL LAWS, ORDINANCES, RULES, REGULATIONS AND LAWFUL ORDERS OF ANY PUBLIC AUTHORITY, MUNICIPAL AND UTILITY COMPANY SPECIFICATIONS, AND LOCAL AND STATE JURISDICTIONAL CODES BEARING ON THE PERFORMANCE OF THE WORK.
8. THE CONTRACTOR SHALL PROVIDE, AT THE PROJECT SITE, A FULL SET OF CONSTRUCTION DOCUMENTS UPDATED WITH THE LATEST REVISIONS INVOLVED WITH THE PROJECT. THIS SET IS A VALID CONTRACT DOCUMENT ONLY IF THE TITLE SHEET IS STAMPED IN RED INK "FOR CONSTRUCTION" AND EACH SUCCESSIVE SHEET BEARS THE ARCHITECT'S/ENGINEER'S SIGNED WET STAMP.
9. THE CONTRACTOR IS RESPONSIBLE FOR ADEQUATELY BRACING AND PROTECTING ALL WORK DURING CONSTRUCTION AGAINST DAMAGE, BREAKAGE, COLLAPSE, ETC. ACCORDING TO APPLICABLE CODES, STANDARDS, AND GOOD CONSTRUCTION PRACTICES. THE STRUCTURAL COMPONENTS OF ADJACENT CONSTRUCTION OR FACILITIES ARE NOT TO BE ALTERED BY THE CONSTRUCTION PROJECT UNLESS NOTED OTHERWISE.
10. THE CONTRACTOR SHALL MEET ALL OSHA REQUIREMENTS FOR ALL INSTALLATIONS.
11. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL DAMAGES TO THE EXISTING CONSTRUCTION AND REPAIR ALL DAMAGES TO EQUAL OR BETTER NEW CONSTRUCTION. THE CONTRACTOR SHALL NOTIFY THE PROJECT MANAGER OF ANY DAMAGE TO THE BUILDING SITE OR ANY ADJACENT STRUCTURES AROUND THE PROJECT. THE OWNERS REPRESENTATIVE SHALL BE SOLE AND FINAL JUDGE AS TO THE QUALITY OF THE REPAIRED CONSTRUCTION. ANY ADDITIONAL MODIFICATIONS WHICH MUST BE MADE SHALL BE MADE AT THE CONTRACTOR'S EXPENSE.
12. WHERE NEW PAVING, CONCRETE SIDEWALKS OR PATHS MEET EXISTING CONSTRUCTION, THE CONTRACTOR SHALL MATCH THE EXISTING PITCH, GRADE, AND ELEVATION SO THE ENTIRE STRUCTURE SHALL HAVE A SMOOTH TRANSITION.
13. THE CONTRACTOR SHALL MODIFY THE EXISTING FLOORS, WALL, CEILING, OR OTHER CONSTRUCTION AS REQUIRED TO GAIN ACCESS TO AREAS FOR ALL MECHANICAL, PLUMBING, ELECTRICAL, OR STRUCTURAL MODIFICATIONS. WHERE THE EXISTING CONSTRUCTION DOORS, PARTITIONS, CEILING, ETC., ARE TO BE REMOVED, MODIFIED, OR REARRANGED OR WHERE THE EXPOSED OR HIDDEN MECHANICAL, ELECTRICAL, SYSTEMS ARE ADDED OR MODIFIED, THE GENERAL CONTRACTOR SHALL REPAIR, PATCH AND MATCH ALL EXISTING CONSTRUCTION AND FINISHES OF ALL FLOORS WALLS AND CEILINGS. WHERE CONCRETE MASONRY CONSTRUCTION IS MODIFIED, THE CONTRACTOR SHALL TOOTH IN ALL NEW CONSTRUCTION TO MATCH THE EXISTING BOND. WHERE CONCRETE CONSTRUCTION IS MODIFIED, THE CONTRACTOR SHALL VERIFY THE EXACT DETAILS TO BE USED FOR CONSTRUCTION. ALL WORK SHALL BE COVERED UNDER THE GENERAL CONTRACT.
14. IF CONTRACTOR OR SUBCONTRACTOR FIND IT NECESSARY TO DEVIATE FROM ORIGINAL APPROVED PLANS, THEN IT IS THE CONTRACTOR'S AND THE SUBCONTRACTOR'S RESPONSIBILITY TO PROVIDE THE PROJECT MANAGER WITH 4 COPIES OF THE PROPOSED CHANGES FOR HIS APPROVAL BEFORE PROCEEDING WITH THE WORK. IN ADDITION THE CONTRACTOR AND SUBCONTRACTORS SHALL BE RESPONSIBLE FOR PROCURING ALL NECESSARY APPROVALS FROM THE BUILDING AUTHORITIES FOR THE PROPOSED CHANGES BEFORE PROCEEDING WITH THE WORK. THE CONTRACTOR AND SUBCONTRACTORS SHALL BE RESPONSIBLE FOR PROCURING ALL NECESSARY INSPECTIONS AND APPROVALS FROM BUILDING AUTHORITIES DURING THE EXECUTION OF THE WORK.
15. CONTRACTOR TO PROVIDE A PORTABLE FIRE EXTINGUISHER WITH A RATING OF NOT LESS THAN 2-A OR 2-A10BC WITHIN 75 FEET TRAVEL DISTANCE TO ALL PORTIONS OF PROJECT AREA DURING CONSTRUCTION.
16. THIS IS AN ESSENTIAL FACILITY THEREFORE SHALL STRICTLY MEET ALL APPLICABLE CODE AND JURISDICTIONAL REQUIREMENTS.

GENERAL NOTES CONTINUED:

17. THE CONTRACTOR SHALL PERFORM WORK DURING SITE/PROPERTY OWNER'S PREFERRED HOURS TO AVOID DISTURBING NORMAL BUSINESS.
18. SEAL ALL PENETRATIONS THROUGH FIRE-RATED AREAS WITH U.L. LISTED OR FIRE MARSHAL APPROVED MATERIALS AS APPLICABLE TO THIS FACILITY AND OR PROJECT SITE.
19. CONTRACTOR SHALL BE RESPONSIBLE FOR UTILITY LOCATES, SCHEDULING, COORDINATING SPECIAL AND BUILDING DEPARTMENT INSPECTIONS.
21. ROUTING OF ALL CONDUITS, CABLES, CABLE TRAYS ETC ARE INDICATED AS PROPOSED LOCATION ONLY. CONFIRM THE EXACT LOCATION AND ROUTING WITH THE ON SITE PROJECT MANAGER PRIOR TO STARTING WORK.

CONCRETE NOTES:

1. ALL CONCRETE WORK SHALL BE IN ACCORDANCE WITH THE ACI 301, ACI 318 AND THE SPECIFICATION CAST-IN-PLACE CONCRETE.
2. ALL CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 3000 PSI AT 28 DAYS (UNO).
3. REINFORCING STEEL SHALL CONFORM TO ASTM A 615, GRADE 60, DEFORMED UNLESS NOTED OTHERWISE. WELDED WIRE FABRIC SHALL CONFORM TO ASTM A 185 WELDED STEEL WIRE FABRIC UNLESS NOTED OTHERWISE. SPLICES CLASS "B" AND ALL HOOKS SHALL BE STANDARD (UNO).
4. THE FOLLOWING MINIMUM CONCRETE COVER SHALL BE PROVIDED FOR REINFORCING STEEL UNLESS SHOWN OTHERWISE ON DRAWINGS: CONCRETE CAST AGAINST EARTH - 3 IN.
   CONCRETE EXPOSED TO EARTH OR WEATHER:
   #6 AND LARGER .....2 IN.
   #5 AND SMALLER & WWF .....1-1/2 IN.
5. A 1/2" TROWELED RADIUS SHALL BE PROVIDED AT ALL EXPOSED EDGES OF CONCRETE (UNO). HOLES TO RECEIVE EXPANSION/WEDGE ANCHORS SHALL BE 1/8" LARGER IN DIAMETER THAN THE ANCHOR BOLT, DOWEL OR ROD AND SHALL CONFORM TO MFR RECOMMENDATION FOR EMBEDMENT DEPTH OR AS SHOWN ON THE DRAWINGS. AVOID CUTTING EXISTING REBAR WHEN DRILLING HOLES IN THE ELEVATED SLAB.
6. INSTALLATION OF CONCRETE EXPANSION AND WEDGE ANCHOR, SHALL BE PER MANUFACTURER'S WRITTEN RECOMMENDED PROCEDURES.
7. FLOAT SURFACE SHALL BE A SMOOTH FINISH. SURFACE SHALL BE FREE OF ALL OBVIOUS DEPRESSIONS. SURFACE SHALL BE SLOPED AT 2% TO PROMOTE DRAINAGE AWAY FROM EQUIPMENT.

SITE WORK NOTES:

1. RUBBISH, STUMPS, DEBRIS, STICKS, STONES AND OTHER REFUSE SHALL BE REMOVED FROM THE SITE AND DISPOSED OF LEGALLY UNLESS OTHERWISE REQUIRED TO BE LEFT AS DEFINED BY LAND/PROPERTY OWNER.
2. THE SITE SHALL BE GRADED TO CAUSE SURFACE WATER TO FLOW AWAY FROM THE EQUIPMENT, EQUIPMENT SHELTER, GENERATOR, FUEL TANK, TOWER AREAS, AND ADJACENT BUILDINGS, ETC.
3. NO FILL OR EMBANKMENT MATERIAL SHALL BE PLACED ON FROZEN GROUND. FROZEN MATERIALS, SNOW OR ICE SHALL NOT BE PLACED IN ANY FILL OR EMBANKMENT.
4. THE SUBGRADE SHALL BE COMPACTED AND BROUGHT TO A SMOOTH UNIFORM GRADE PRIOR TO THE CRUSHED STONE APPLICATION. FABRIC USE AS REQUIRED.
5. ALL APPLICABLE LOCATES SHALL BE PERFORMED PRIOR TO TO ANY EXCAVATION OR SITE GRADING. ALL EXISTING ACTIVE SEWER, WATER, GAS, ELECTRIC, AND OTHER UTILITIES WHERE ENCOUNTERED IN THE WORK, SHALL BE PROTECTED AT ALL TIMES, AND WHERE REQUIRED FOR THE PROPER EXECUTION OF THE WORK, SHALL BE RELOCATED AS DIRECTED BY ENGINEERS. EXTREME CAUTION SHOULD BE USED BY THE CONTRACTOR WHEN EXCAVATING OR PIER DRILLING AROUND OR NEAR UTILITIES. CONTRACTOR SHALL PROVIDE SAFETY TRAINING FOR THE WORKING CREW.
6. ALL EXISTING INACTIVE SEWER, WATER, GAS, ELECTRIC AND OTHER UTILITIES, WHICH INTERFERE WITH THE EXECUTION OF THE WORK, SHALL BE REMOVED AND SHALL BE CAPPED, PLUGGED OR OTHERWISE DISCONTINUED AT POINTS WHICH WILL NOT INTERFERE WITH THE EXECUTION OF THE WORK, SUBJECT TO THE APPROVAL OF ENGINEERING.
7. THE AREAS OF THE PROPERTY DISTURBED BY THE WORK AND NOT COVERED BY THE BUILDING, DRIVEWAY OR CRUSHED STONE, SHALL BE GRADED TO A UNIFORM SLOPE, FERTILIZED, SEEDED, AND COVERED WITH MULCH AS SPECIFIED IN THE SPECIFICATION LANDSCAPE WORK..
8. BEDDING MATERIAL FOR UTILITY LINES, CULVERTS AND PIPING: CLEAN SAND, MEDIUM TP COARSE, SUB ROUNDED NATURAL RIVER OR BANK SAND, WASHED, FREE OF SILT OR CLAY, LOAM, FRIABLE OR SOLUBLE MATERIALS, AND ORGANIC MATTER; GRADED IN ACCORDANCE WITH THE FOLLOWING GRAIN SIZE DISTRIBUTION:

SIEVE SIZE	PERCENT PASSING
	100
NO. 4 MESH	60-90
NO. 8 MESH	0-45
NO. 16 MESH	0-25
NO. 100 MESH	0-2
NO. 200 MESH	0-2

9. BMP'S FOR TEMPORARY EROSION/SEDIMENTATION CONTROL SHALL BE IMPLEMENTED PER LOCAL, CITY OR COUNTY GUIDELINES AND PER PLAN IF APPLICABLE.

SITE WORK NOTES CONTINUED:

10. ALL SITE DESIGN AND CONSTRUCTION MUST COMPLY WITH INDUSTRY STANDARDS AND BE ALIGNED WITH BMP GUIDELINES AS TECHNICALLY APPLICABLE. EACH SITE MUST BE PM APPROVED BEFORE IT SHALL BE CONSIDERED COMPLETE AND ACCEPTED.
11. IF INADVERTENT DISCOVERIES OF NATIVE AMERICAN CULTURAL MATERIALS OR HUMAN REMAINS ARE MADE DURING CONSTRUCTION, ALL WORK SHOULD CEASE AND POTENTIALLY AFFECTED TRIBES, AS WELL AS THE STATE HISTORIC PRESERVATION OFFICE, SHOULD BE NOTIFIED IMMEDIATELY.

TOWER/POLE NOTES:

1. ALL ANTENNAS, LINES AND RELATED INSTALLATION HARDWARE TO BE PROVIDED BY THE LAND MOBILE COMMUNICATIONS PROVIDER.
2. ALL HARDWARE (NUTS AND BOLTS) BE TIGHTENED AND TORQUED IN ACCORDANCE WITH THE TOWER MANUFACTURER'S AND STRUCTURAL ENGINEER'S SPECIFICATIONS.
3. VERIFICATION THAT THE TOWER/POLE CAN SUPPORT THE PROPOSED ANTENNA LOADING IS TO BE DONE BY OTHERS.
4. PROVIDE SUPPORTS FOR THE ANTENNA COAX CABLES TO THE ELEVATION OF ALL INITIAL AND FUTURE ANTENNAS. ANTENNA COAX CABLES ARE TO BE SUPPORTED AND RESTRAINED AT THE CENTERS SUITABLE TO THE MANUFACTURER'S REQUIREMENTS.

ATTENTION (OREGON SITES ONLY):

CALL 1-800-332-2344 48 HOURS BEFORE YOU DIG. OREGON LAW REQUIRES YOU TO FOLLOW OAR 952-001-0010 THRU 952-001-0090. COPIES ARE AVAILABLE AT THE OREGON UTILITY NOTIFICATION CENTER 503-232-1987

DESIGN LOADS:

ROOF SNOW LOAD DATA -	GROUND SNOW LOAD:	109 PSF*
	FLAT-ROOF SNOW LOAD:	N/A
	SNOW EXPOSURE FACTOR:	N/A
	SNOW LOAD IMPORTANCE FACTOR:	N/A
	THERMAL FACTOR:	N/A
WIND DESIGN DATA -	ULTIMATE DESIGN WIND SPEED:	107 MPH*
	RISK CATEGORY:	IV
	WIND EXPOSURE:	C*
	INTERNAL PRESSURE COEFFICIENT:	N/A
	DESIGN WIND PRESSURES;	
	WIND LOAD HORIZONTAL (MWFRS):	N/A
	WIND LOAD (UPLIFT) (MWFRS):	N/A
EARTHQUAKE DESIGN DATA -	RISK CATEGORY:	IV
	SEISMIC IMPORTANCE FACTOR:	N/A
	MAPPED SPECTRAL RESPONSE ACCEL-ERATION PARAMETERS;	
	S_S	0.99
	S_1	0.41
	SITE CLASS:	DE
	DESIGN SPECTRAL RESPONSE ACCEL-ERATION PARAMETERS;	
	S_{DS}	0.91
	S_{D1}	0.76
	SEISMIC DESIGN CATEGORY:	D
SYSTEM:	BASIC SEISMIC FORCE-RESISTING BEARING WALL	
	DESIGN BASE SHEAR:	N/A
	SEISMIC RESPONSE COEFFICIENT:	N/A
	RESPONSE MODIFICATION COEFFICIENT:	N/A
	ANALYSIS PROCEDURE USED:	N/A
GEOTECHNICAL INFORMATION -	ALLOWABLE BEARING CAPACITY:	2,000 PSF

REFER TO GEOTECH REPORT BY BLACK MOUNTAIN CONSULTING DATED APRIL 7, 2025.

*INFORMATION OBTAINED FROM ASCE 7 HAZARD TOOL

SYMBOLS LEGEND

1 REVISION
1 KEY NOTE DETAIL
3 / C-4 REFERENCE ELEVATION
A / C-3 SECTION REFERENCE
ELEVATION DATUM POINT

CHAINLINK FENCE
CEDAR FENCE
PROPANE — LPG — LPG — LPG — LPG —
UNDERGROUND POWER — P — P — P —
OVERHEAD POWER — OHP — OHP — OHP — OHP — OHP —

TELCO — T — T — T —
POWER/TELCO — T/P — T/P — T/P —
GAS — G — G — G — G — G — G —
WATER — W — W —
COAX — COAX — COAX —
CENTERLINE
EASEMENT
PROPERTY LINE
SUBJECT PROPERTY LINE

ABBREVIATIONS LEGEND

A/C	AIR CONDITIONING
ADJ	ADJUSTABLE
AFF	ABOVE FINISH FLOOR
AGL	ABOVE GRADE LEVEL
APPROX	APPROXIMATELY
ASTM	AMERICAN SOCIETY FOR TESTING & MATERIALS
AWG	AMERICAN WIRE GAUGE
BLDG	BUILDING
BLK	BLOCK
BMR	BASE MOBILE RADIO
B/S	BUILDING STANDARD
CLG	CEILING
CLR	CLEAR
CONC	CONCRETE
CONST	CONSTRUCTION
CONT	CONTINUOUS
DBL	DOUBLE
DIA, Ø	DIAMETER
DIAG	DIAGONAL
DIM	DIMENSION
DN	DOWN
DTL, DETL	DETAIL
DWG	DRAWING
E	EAST
EA	EACH
EL, ELEV	ELEVATION
ELECT	ELECTRICAL
EQ	EQUAL
EQUIP	EQUIPMENT
E.W.	EACH WAY
EX	EXISTING
EXT	EXTERIOR
FIN	FINISH
FLUOR	FLUORESCENT
FLR	FLOOR
FT	FOOT
GA	GAUGE
GALV	GALVANIZE(D)
GC	GENERAL CONTRACTOR
GRND	GROUND
GWB	GYPSUM WALL BOARD
GYP BD	GYPSUM BOARD
HARD'WD	HARDWOOD
HORIZ	HORIZONTAL
HR	HOUR
HT	HEIGHT
HVAC	HEATING, VENTING AND AIR CONDITIONING
I.D.	INSIDE DIA.
IN	INCH
INFO	INFORMATION
INSUL	INSULATION
INT	INTERIOR
LB(S)	POUND(S)
LNA	ANTENNA AMPLIFIER
MAX	MAXIMUM
MECH	MECHANICAL
MET, MTL	METAL
MFR	MANUFACTURER
MGR	MANAGER
MIN	MINIMUM
MISC	MISCELLANEOUS
N	NORTH
NA	NOT APPLICABLE
NIC	NOT IN CONTRACT
NTS	NOT TO SCALE
OC, o/c	ON CENTER
OD	OUTSIDE DIAMETER
OPG	OPENING
OPP	OPPOSITE
OHP	OVERHEAD POWER
UGP	UNDRGRND POWER
OHT	OVERHEAD TELCO
UGT	UNDRGRND TELCO
PR	PAIR
PROJ	PROJECT
PROP	PROPERTY
P	PROPOSED
PT	PRESSURE TREATED
REQ'D	REQUIRED
RM	ROOM
R.O.	ROUGH OPENING
S	SOUTH
SHT	SHEET
SIM	SIMILAR
SPEC	SPECIFICATION
SQ	SQUARE
SS	STAINLESS STEEL
STL	STEEL
STRUCT	STRUCTURAL
SUSP	SUSPENDED
S.V.	SHEET VINYL
THRU	THROUGH
TNND	TINNED
T.O.C.	TOP OF CONCRETE
T.O.M.	TOP OF MASONRY
TYP	TYPICAL
U.N.O.	UNLESS NOTED OTHERWISE
VERT	VERTICAL
VIF	VERIFY IN FIELD
VT	VINYL TILE
W	WEST
W/	WITH
WIN	WINDOW
W/O	WITHOUT
WP	WATERPROOF
∠	ANGLE
&	AND
℄	CENTER LINE
ℙ	PROPERTY LINE
@	AT
#	NUMBER

Marion County OREGON

PROJECT INFORMATION:

MARION COUNTY LOWER PROSPECT

3950 COLE RD S
SALEM, OR 97306

	DATE	RELEASE
	07-17-24	SITE SKETCH
	11-06-24	PRELIMINARY ZONING DRAWINGS
	12-20-24	PRELIMINARY CONSTRUCTION DRAWINGS
	02-27-25	CLIENT COMMENTS
	08-20-25	PRELIMINARY CONSTRUCTION DRAWINGS
	09-19-25	FINAL CONSTRUCTION DRAWINGS

DRAWING INFORMATION:
THIS DRAWING IS COPYRIGHTED AND IS THE SOLE PROPERTY OF THE OWNER. IT IS PRODUCED SOLELY FOR USE BY THE OWNER AND ITS AFFILIATES. REPRODUCTION OR USE OF THIS DRAWING AND/OR THE INFORMATION CONTAINED IN IT IS FORBIDDEN WITHOUT THE WRITTEN PERMISSION OF THE OWNER.

PLANS PREPARED BY:

cushing Civil Engineers

Cushing
Civil Engineers
12725 SW MILLIKAN WAY
SUITE 300
BEAVERTON, OR 97005
(503) 387-5331
www.cushingcivilengineers.com

LICENSURE:

REGISTERED PROFESSIONAL ENGINEER 83233 OREGON JUNE 7, 2012 KENNY McMANAWAY

RENEWAL DATE 12/31/26

SHEET TITLE:

GENERAL NOTES

SHEET NUMBER:

G-1

EROSION CONTROL NOTES:

1. OWNER OR DESIGNATED PERSON SHALL BE RESPONSIBLE FOR PROPER INSTALLATION AND MAINTENANCE OF ALL EROSION AND SEDIMENT CONTROL MEASURES, IN ACCORDANCE WITH LOCAL, STATE, AND FEDERAL REGULATIONS.
2. THE IMPLEMENTATION OF THESE ESC PLANS AND CONSTRUCTION, MAINTENANCE, REPLACEMENT, AND UPGRADING OF THESE ESC FACILITIES IS THE RESPONSIBILITY OF THE CONTRACTOR UNTIL ALL CONSTRUCTION IS COMPLETED AND APPROVED BY THE LOCAL JURISDICTION, AND VEGETATION/LANDSCAPING IS ESTABLISHED. THE DEVELOPER SHALL BE RESPONSIBLE FOR MAINTENANCE AFTER THE PROJECT IS APPROVED UNTIL THE LOTS ARE SOLD.
3. THE BOUNDARIES OF THE CLEARING LIMITS SHOWN ON THIS PLAN SHALL BE CLEARLY MARKED IN THE FIELD PRIOR TO CONSTRUCTION. DURING THE CONSTRUCTION PERIOD, NO DISTURBANCE BEYOND THE CLEARING LIMITS SHALL BE PERMITTED. THE MARKINGS SHALL BE MAINTAINED BY THE APPLICANT/CONTRACTOR FOR THE DURATION OF CONSTRUCTION.
4. THE ESC FACILITIES SHOWN ON THIS PLAN MUST BE CONSTRUCTED IN CONJUNCTION WITH ALL CLEARING AND GRADING ACTIVITIES, AND IN SUCH A MANNER AS TO INSURE THAT SEDIMENT AND SEDIMENT LADEN WATER DOES NOT ENTER THE DRAINAGE SYSTEM, ROADWAYS, OR VIOLATE APPLICABLE WATER STANDARDS.
5. THE ESC FACILITIES SHOWN ON THIS PLAN ARE MINIMUM REQUIREMENTS FOR ANTICIPATED SITE CONDITIONS. DURING CONSTRUCTION PERIODS, THESE ESC FACILITIES SHALL BE UPGRADED AS NEEDED FOR UNEXPECTED STORM EVENTS AND TO ENSURE THAT SEDIMENT AND SEDIMENT LADEN WATER DOES NOT LEAVE THE SITE.
6. THE ESC FACILITIES SHALL BE INSPECTED DAILY BY THE APPLICANT/CONTRACTOR AND MAINTAINED AS NECESSARY TO ENSURE THEIR CONTINUED FUNCTIONING.
7. AT NO TIME SHALL SEDIMENT BE ALLOWED TO ACCUMULATE MORE THAN 1/3 THE BARRIER HEIGHT. ALL CATCH BASINS AND CONVEYANCE LINES SHALL BE CLEANED PRIOR TO PAVING. THE CLEANING OPERATIONS SHALL NOT FLUSH SEDIMENT-LADEN WATER INTO THE DOWNSTREAM SYSTEM.
8. STABILIZED GRAVEL ENTRANCES SHALL BE INSTALLED AT THE BEGINNING OF CONSTRUCTION AND MAINTAINED FOR THE DURATION OF THE PROJECT. ADDITIONAL MEASURES MAY BE REQUIRED TO INSURE THAT ALL PAVED AREAS ARE KEPT CLEAN FOR THE DURATION OF THE PROJECT.
9. STORM DRAIN INLETS, BASINS, AND AREA DRAINS SHALL BE PROTECTED UNTIL PAVEMENT SURFACES ARE COMPLETED AND/OR VEGETATION IS RE-ESTABLISHED.
10. PAVEMENT SURFACES AND VEGETATION ARE TO BE PLACED AS RAPIDLY AS POSSIBLE.
11. SEEDING SHALL BE PERFORMED NO LATER THAN SEPTEMBER 1 FOR EACH PHASE OF CONSTRUCTION.
12. IF THERE ARE EXPOSED SOILS OR SOILS NOT FULLY ESTABLISHED FROM OCTOBER 1ST THROUGH APRIL 30TH, THE WET WEATHER EROSION PREVENTION MEASURES WILL BE IN EFFECT. SEE THE EROSION PREVENTION AND SEDIMENT CONTROL PLANNING AND DESIGN MANUAL (CHAPTER 4) FOR REQUIREMENTS.
13. NO EXPOSED, BARE SOILS SHALL REMAIN UNSTABILIZED FOR MORE THAN TWO DAYS DURING THE PERIOD OCTOBER 1 THROUGH APRIL 30 OR FOR MORE THAN SEVEN DAYS DURING THE PERIOD OF MAY 1 THROUGH SEPTEMBER 30. ALL DISTURBED SOIL SURFACES SHALL BE STABILIZED BY A SUITABLE APPLICATION OF "BEST MANAGEMENT PRACTICES".
14. WHERE FEASIBLE, NO MORE THAN 500 FEET OF TRENCH SHALL BE OPEN AT ONE TIME. EXCAVATED MATERIAL SHALL BE PLACED ON THE UPHIL SIDE OF TRENCHES PROVIDED IT DOES NOT CONFLICT WITH SAFETY REQUIREMENTS.
15. THE DEVELOPER SHALL REMOVE ESC MEASURES WHEN VEGETATION IS FULLY ESTABLISHED.

GENERAL NOTES

SCALE: NTS | 4

UNADJUSTED CUT/ FILL QUANTITIES

STRIPPING ORGANICS FOR COMPOUND;
CUT = 0 CU. YD.

STRIPPING FOR ACCESS ROAD AND PARKING;
CUT = 0 CU. YD.

PROPOSED COMPOUND AREA;
CUT = 0 CU. YD.
FILL = ±3 CU. YD.

PROPOSED ACCESS ROAD AND PARKING;
CUT = 0 CU. YD.
FILL = 0 CU. YD.

PROPOSED TOWER FOUNDATION, (3) PIERS;
EXCAVATION = ±42 CU. YD.

APPROX. TOTAL AREA OF DISTURBANCE OF PROPOSED GRADING = 0 SQ. FT.

REFER TO GEO-TECHNICAL ENGINEERING EVALUATION BY BLACK MOUNTAIN DATED APRIL 7, 2025

CUT/ FILL QUANTITIES

SCALE: NTS | 3

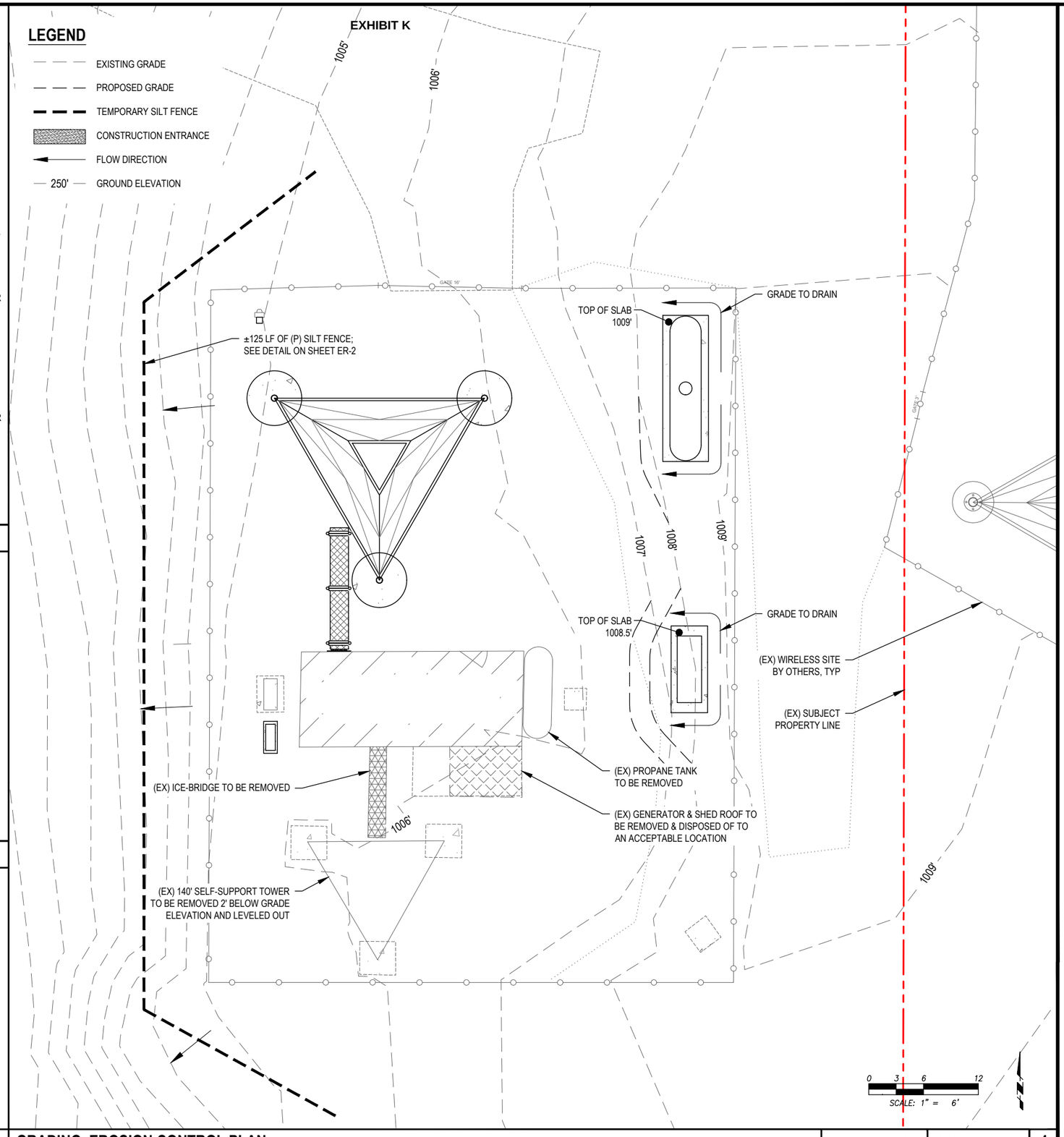
NOT USED

SCALE: NTS | 2

EXHIBIT K

LEGEND

- EXISTING GRADE
- PROPOSED GRADE
- TEMPORARY SILT FENCE
- CONSTRUCTION ENTRANCE
- FLOW DIRECTION
- 250' GROUND ELEVATION



GRADING, EROSION CONTROL PLAN

11X17 SCALE: 1" = 12' | 22X34 SCALE: 1" = 6' | 1

Marion County OREGON

PROJECT INFORMATION:

MARION COUNTY
LOWER PROSPECT

3950 COLE RD S
SALEM, OR 97306

	DATE	RELEASE
	07-17-24	SITE SKETCH
	11-06-24	PRELIMINARY ZONING DRAWINGS
	12-20-24	PRELIMINARY CONSTRUCTION DRAWINGS
	02-27-25	CLIENT COMMENTS
	08-20-25	PRELIMINARY CONSTRUCTION DRAWINGS
	09-19-25	FINAL CONSTRUCTION DRAWINGS

DRAWING INFORMATION:

THIS DRAWING IS COPYRIGHTED AND IS THE SOLE PROPERTY OF THE OWNER. IT IS PRODUCED SOLELY FOR USE BY THE OWNER AND ITS AFFILIATES. REPRODUCTION OR USE OF THIS DRAWING AND/OR THE INFORMATION CONTAINED IN IT IS FORBIDDEN WITHOUT THE WRITTEN PERMISSION OF THE OWNER.

PLANS PREPARED BY:

cushing Civil Engineers

Cushing Civil Engineers

12725 SW MILLIKAN WAY
SUITE 300
BEAVERTON, OR 97005
(503) 387-5331
www.cushingcivilengineers.com

LICENSURE:

REGISTERED PROFESSIONAL ENGINEER
83233
OREGON
JUNE 7, 2012
KENNY McMANAWAY

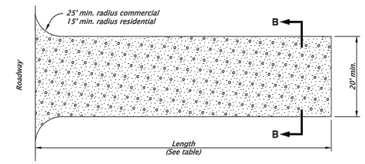
RENEWAL DATE 12/31/26

SHEET TITLE:

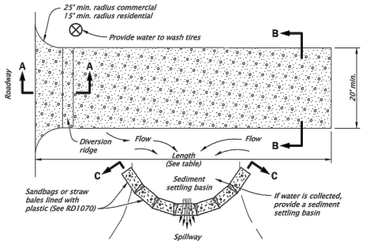
GRADING & EROSION CONTROL PLAN

SHEET NUMBER:

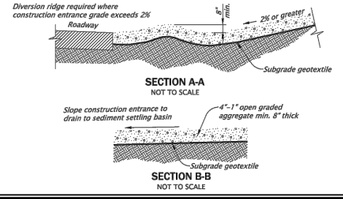
ER-1



CONSTRUCTION ENTRANCE - TYPE 1
NOT TO SCALE

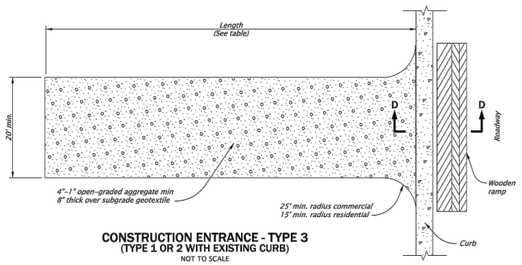


CONSTRUCTION ENTRANCE - TYPE 2
NOT TO SCALE

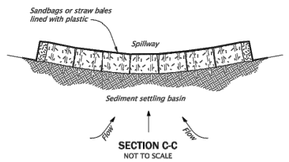


SECTION A-A
NOT TO SCALE

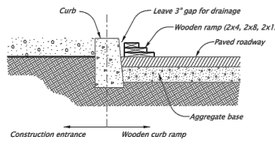
SECTION B-B
NOT TO SCALE



CONSTRUCTION ENTRANCE - TYPE 3
(TYPE 1 OR 2 WITH EXISTING CURB)
NOT TO SCALE



SECTION C-C
NOT TO SCALE



WOODEN CURB RAMP SECTION D-D
NOT TO SCALE

NOTES:
1. The Type 1 entrance is a simple entrance without a diversion ridge or settling basin.
2. The wooden ramp may be used on either Type 1 or Type 2 entrances in situations where there is curb and the curb is not removed for the construction entrance.

CONSTRUCTION ENTRANCE TABLE MINIMUM LENGTH	
Length (FT)	Area Of Exposed Soil (Acre)
20	0.25
50	0.25 < A < 1.0
100	A > 1.0

The selection and use of this Standard Drawing, while designed in accordance with generally accepted engineering principles and practices, is the sole responsibility of the user and should not be used without first consulting a Registered Professional Engineer.

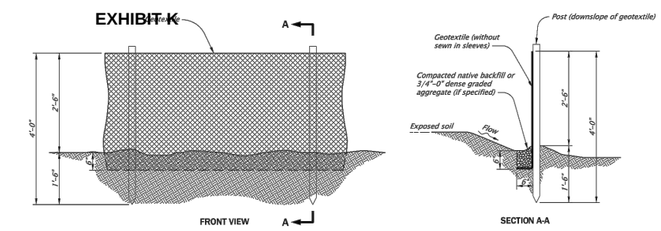
All materials shall be in accordance with the current Oregon Standard Specifications.
OREGON STANDARD DRAWINGS
CONSTRUCTION ENTRANCES
2021

DATE	REVISION DESCRIPTION
01-2021	REMOVED CALC BOOK NUMBERS

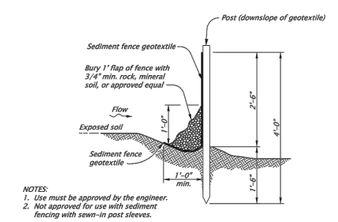
CALC BOOK NO. N/A | SDR DATE 20-JAN-2021 | **RD1000**

GRAVEL CONSTRUCTION ENTRANCE

SCALE: NTS | 1

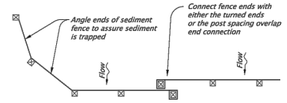


SEDIMENT FENCE AND GEOTEXTILE BURY DETAIL - TYPE 1
NOT TO SCALE

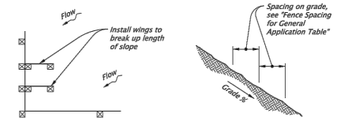


NOTES:
1. Use must be approved by the engineer.
2. Not approved for use with sediment fencing with sewn-in post sleeves.

ALTERNATE SEDIMENT FENCE WITHOUT TRENCHING - TYPE 2
NOT TO SCALE



PLAN VIEW

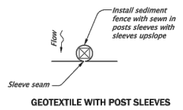


TERMINATION AT CORNER OR PROPERTY LINE

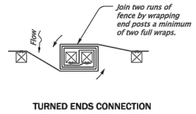
GENERAL NOTES:
1. Use 2"x2" wood fence posts.
2. Posts to be installed on downhill side of sediment fence geotextile. Position posts to prevent separation from geotextile.
3. Compact filter fabric trench backfill and soil on uphill side of fence.
4. Locate fence no closer than three feet to the toe of a slope.
5. Wing spacing shall comply with "Fence Spacing for General Application Table".

FENCE SPACING FOR GENERAL APPLICATION TABLE	
INSTALL PARALLEL ALONG CONTOURS AS FOLLOWS	
GRADE	MAXIMUM SPACING ON GRADE
Grade < 10%	300'
10% ≤ Grade < 15%	150'
15% ≤ Grade < 20%	100'
20% ≤ Grade < 30%	50'
30% ≤ Grade	25'

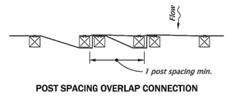
POST SPACING TABLE	
6'	Sediment Fence with Geotextile elongation less than 50%
4'	Sediment Fence with Geotextile elongation 50% or more



GEOTEXTILE WITH POST SLEEVES



TURNED ENDS CONNECTION



POST SPACING OVERLAP CONNECTION

GEOTEXTILE END CONNECTIONS
NOT TO SCALE

The selection and use of this Standard Drawing, while designed in accordance with generally accepted engineering principles and practices, is the sole responsibility of the user and should not be used without first consulting a Registered Professional Engineer.

All materials shall be in accordance with the current Oregon Standard Specifications.
OREGON STANDARD DRAWINGS
SEDIMENT FENCE
2021

DATE	REVISION DESCRIPTION
01-2021	REMOVED CALC BOOK NUMBERS

CALC BOOK NO. N/A | SDR DATE 20-JAN-2021 | **RD1040**

TEMPORARY SEDIMENT FENCE

SCALE: NTS | 2

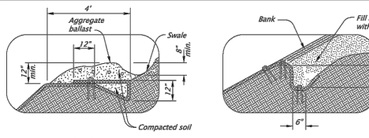


FIGURE A1:
TOP OF BANK ANCHOR TRENCH, H>3' AND TERMINAL SLOPE
NOT TO SCALE

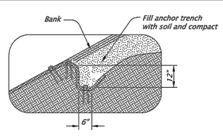


FIGURE A2:
TOP OF BANK ANCHOR TRENCH, H<3'
NOT TO SCALE

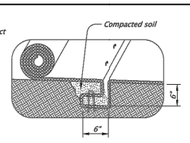


FIGURE A3:
CHANNEL CHECK SLOT
NOT TO SCALE

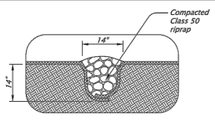


FIGURE A4:
CHANNEL CHECK SLOT WITH ROCK BACKFILL
NOT TO SCALE

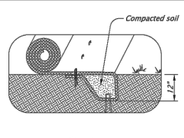
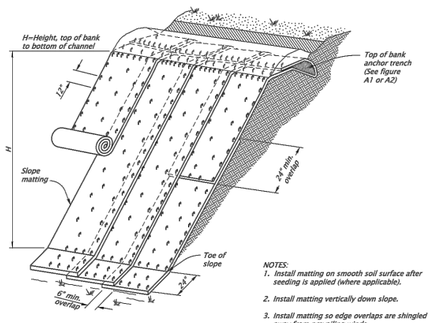
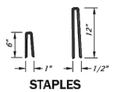


FIGURE A5:
INITIAL CHANNEL ANCHOR TRENCH
NOT TO SCALE

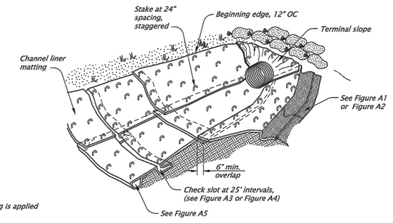


SLOPE MATTING ISOMETRIC VIEW
NOT TO SCALE

NOTES:
1. Install matting on smooth soil surface after seeding is applied (where applicable).
2. Install matting vertically down slope.
3. Install matting so edge overlaps are shingled away from prevailing winds.
4. Place fastener at 12" OC on matting edges
5. Overlap upper mat over lower mat, and fasten.
6. Stagger alternate rows of fasteners placed at 24" OC
7. Extend mat 24" beyond toe of slope; fold mat back under 4" and fasten.
8. Matting Types A through E: Furnish fully biodegradable product. Matting with plastic or photodegradable components will not be accepted.



STAPLES
NOT TO SCALE



CHANNEL MATTING ISOMETRIC VIEW
NOT TO SCALE

NOTES:
1. Install matting on smooth soil surface after seeding is applied (where applicable).
2. Install channel liner matting, in the direction of water flow. Anchor upstream end of mat with check slot for culvert outfalls, place mat under pipe 12" minimum upstream from pipe outlet.
3. Construct check slots across channel bottom at 25' spacing and at the end of each mat (Fig. A3 or A4).
4. Overlap side channel liner matting edges 6" over the center channel liner matting and fasten edges 12" OC. Continue overlap and stapling pattern for each additional side channel liner mat.
5. Lap upstream matting end 12" over beginning edge of downstream matting. Fasten 12" OC
6. Anchor top edge of side channel matting in trench and fasten 12" OC (Fig. A2).
7. Fasten matting interior at 24" OC with staggered spacing.
8. Construct initial anchor trench at downstream end of matting and terminal slope anchor at upstream end.
9. Matting Types A through E: Furnish fully biodegradable product. Matting with plastic or photodegradable components will not be accepted.

The selection and use of this Standard Drawing, while designed in accordance with generally accepted engineering principles and practices, is the sole responsibility of the user and should not be used without first consulting a Registered Professional Engineer.

All materials shall be in accordance with the current Oregon Standard Specifications.
OREGON STANDARD DRAWINGS
SLOPE AND CHANNEL MATTING
2021

DATE	REVISION DESCRIPTION
01-2021	REMOVED CALC BOOK NUMBERS

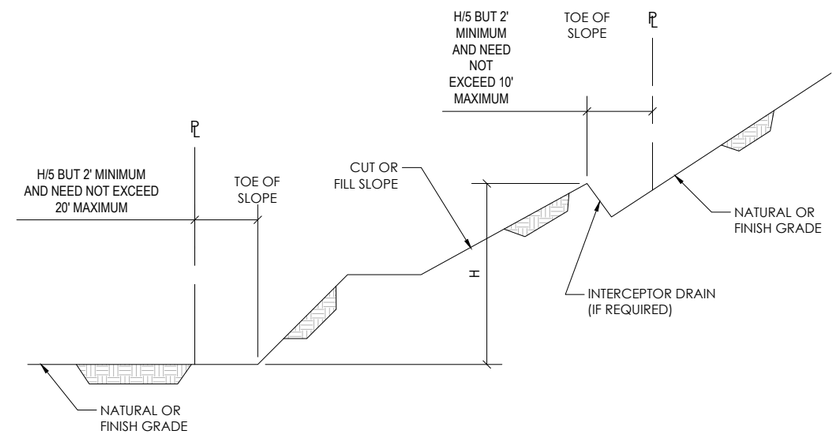
CALC BOOK NO. N/A | SDR DATE 20-JAN-2021 | **RD1055**

PLASTIC SHEETING

SCALE: NTS | 3

SEDIMENT FENCE NOTES:

1. THE FILTER FABRIC FENCE SHALL BE INSTALLED TO FOLLOW THE CONTOURS WHERE FEASIBLE. THE FENCE POSTS SHALL BE SPACED A MAXIMUM OF 6' APART AND DRIVEN SECURELY INTO THE GROUND A MINIMUM OF 24".
2. THE FILTER FABRIC SHALL BE PURCHASED IN A CONTINUOUS ROLL CUT TO THE LENGTH OF THE BARRIER TO AVOID USE OF JOINTS. WHEN JOINTS ARE NECESSARY, FILTER CLOTH SHALL BE SPLICED TOGETHER ONLY AT A SUPPORT POST, WITH A MINIMUM 6" OVERLAP, AND BOTH ENDS SECURELY FASTENED TO THE POST, OR OVERLAP 2" X 2" POSTS AND ATTACH AS SHOWN ON DETAIL SHEET 4-3A OF THE EROSION CONTROL MANUAL.
3. THE FILTER FABRIC SHALL HAVE A MINIMUM VERTICAL BURIAL OF 6". ALL EXCAVATED MATERIAL FROM FILTER FABRIC INSTALLATION SHALL BE BACKFILLED AND COMPACTED ALONG THE ENTIRE DISTURBED AREA.
4. STANDARD OR HEAVY-DUTY FILTER FABRIC FENCES SHALL HAVE MANUFACTURED STITCHED LOOPS FOR 2" X 2" POST INSTALLATION. STITCHED LOOPS SHALL BE INSTALLED ON THE UP HILLSIDE OF THE SLOPED AREA.
5. FILTER FABRIC FENCES SHALL BE REMOVED WHEN THEY HAVE SERVED THEIR USEFUL PURPOSE, BUT NOT BEFORE THE UPSLOPE AREA HAS BEEN PERMANENTLY PROTECTED AND STABILIZED.
6. FILTER FABRIC FENCES SHALL BE INSPECTED BY APPLICANT/CONTRACTOR IMMEDIATELY AFTER EACH RAINFALL AND AT LEAST DAILY DURING PROLONGED RAINFALL. ANY REQUIRED REPAIRS SHALL BE MADE IMMEDIATELY.



SETBACKS AND DRAINAGE DIMENSIONS

SCALE: NTS | 4

Marion County
OREGON

PROJECT INFORMATION:

MARION COUNTY
LOWER PROSPECT

3950 COLE RD S
SALEM, OR 97306

	DATE	RELEASE
	07-17-24	SITE SKETCH
	11-06-24	PRELIMINARY ZONING DRAWINGS
	12-20-24	PRELIMINARY CONSTRUCTION DRAWINGS
	02-27-25	CLIENT COMMENTS
	08-20-25	PRELIMINARY CONSTRUCTION DRAWINGS
	09-19-25	FINAL CONSTRUCTION DRAWINGS

DRAWING INFORMATION:
THIS DRAWING IS COPYRIGHTED AND IS THE SOLE PROPERTY OF THE OWNER. IT IS PRODUCED SOLELY FOR USE BY THE OWNER AND ITS AFFILIATES. REPRODUCTION OR USE OF THIS DRAWING AND/OR THE INFORMATION CONTAINED IN IT IS FORBIDDEN WITHOUT THE WRITTEN PERMISSION OF THE OWNER.

PLANS PREPARED BY:

cushing
Civil Engineers

Cushing
Civil Engineers
12725 SW MILLIKAN WAY
SUITE 300
BEAVERTON, OR 97005
(503) 387-5331
www.cushingcivilengineers.com

LICENSURE:

REGISTERED PROFESSIONAL ENGINEER
83233
OREGON
JUNE 7, 2012
KENNY McMANAWAY

RENEWAL DATE 12/31/26

SHEET TITLE:

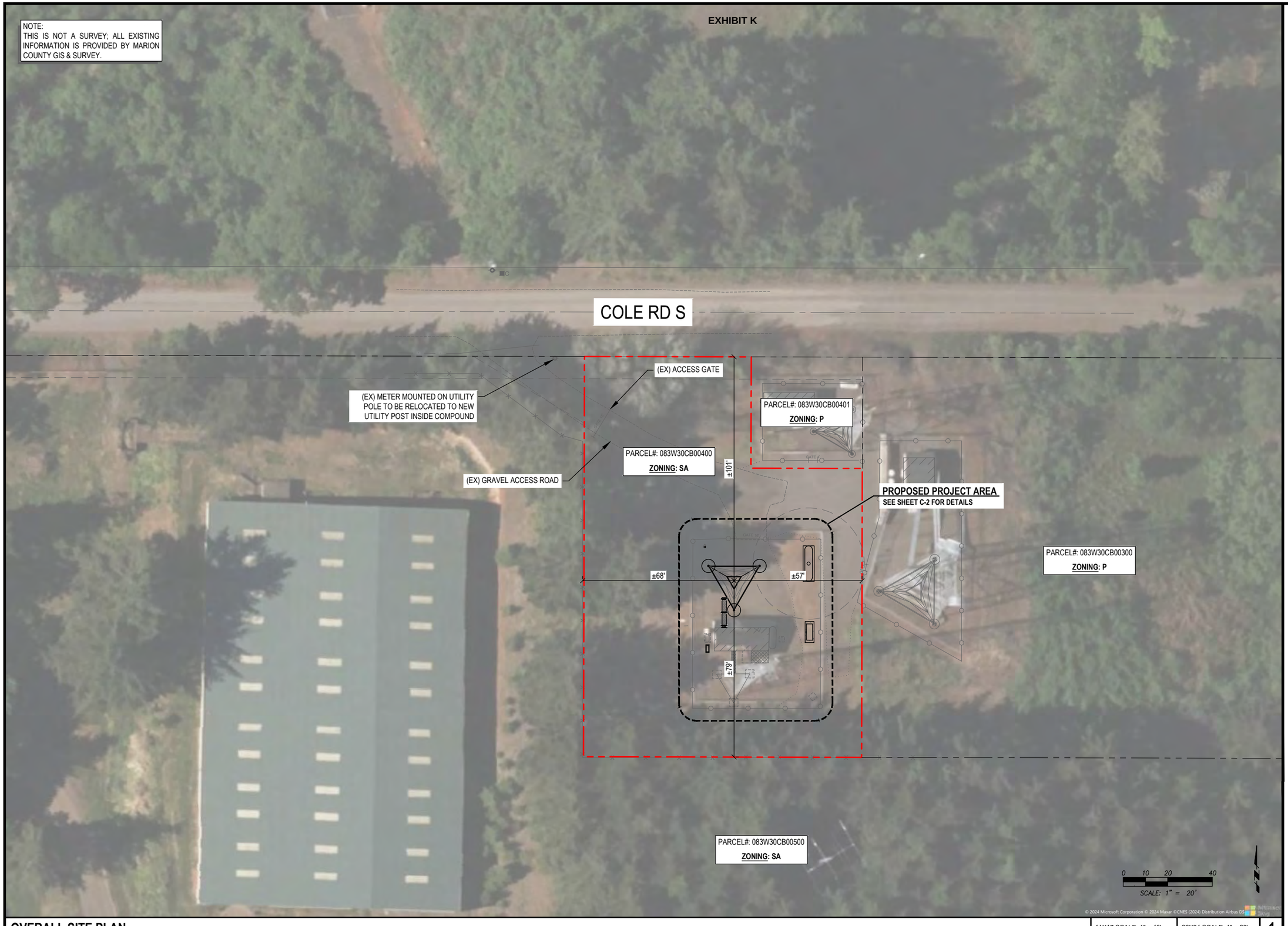
GRADING & EROSION CONTROL DETAILS

SHEET NUMBER:

ER-2

EXHIBIT K

NOTE:
THIS IS NOT A SURVEY; ALL EXISTING INFORMATION IS PROVIDED BY MARION COUNTY GIS & SURVEY.



OVERALL SITE PLAN | 11X17 SCALE: 1" = 40' | 22X34 SCALE: 1" = 20' | 1

Marion County
OREGON

PROJECT INFORMATION:

MARION COUNTY
LOWER PROSPECT

3950 COLE RD S
SALEM, OR 97306

	DATE	RELEASE
	07-17-24	SITE SKETCH
	11-06-24	PRELIMINARY ZONING DRAWINGS
	12-20-24	PRELIMINARY CONSTRUCTION DRAWINGS
	02-27-25	CLIENT COMMENTS
	08-20-25	PRELIMINARY CONSTRUCTION DRAWINGS
	09-19-25	FINAL CONSTRUCTION DRAWINGS

DRAWING INFORMATION:
THIS DRAWING IS COPYRIGHTED AND IS THE SOLE PROPERTY OF THE OWNER. IT IS PRODUCED SOLELY FOR USE BY THE OWNER AND ITS AFFILIATES. REPRODUCTION OR USE OF THIS DRAWING AND/OR THE INFORMATION CONTAINED IN IT IS FORBIDDEN WITHOUT THE WRITTEN PERMISSION OF THE OWNER.

PLANS PREPARED BY:

cushing Civil Engineers

Cushing Civil Engineers
12725 SW MILLIKAN WAY
SUITE 300
BEAVERTON, OR 97005
(503) 387-5331
www.cushingcivilengineers.com

LICENSURE:

REGISTERED PROFESSIONAL ENGINEER
83233
OREGON
JUNE 7, 2012
KENNY McMANAWAY

RENEWAL DATE 12/31/26

SHEET TITLE:

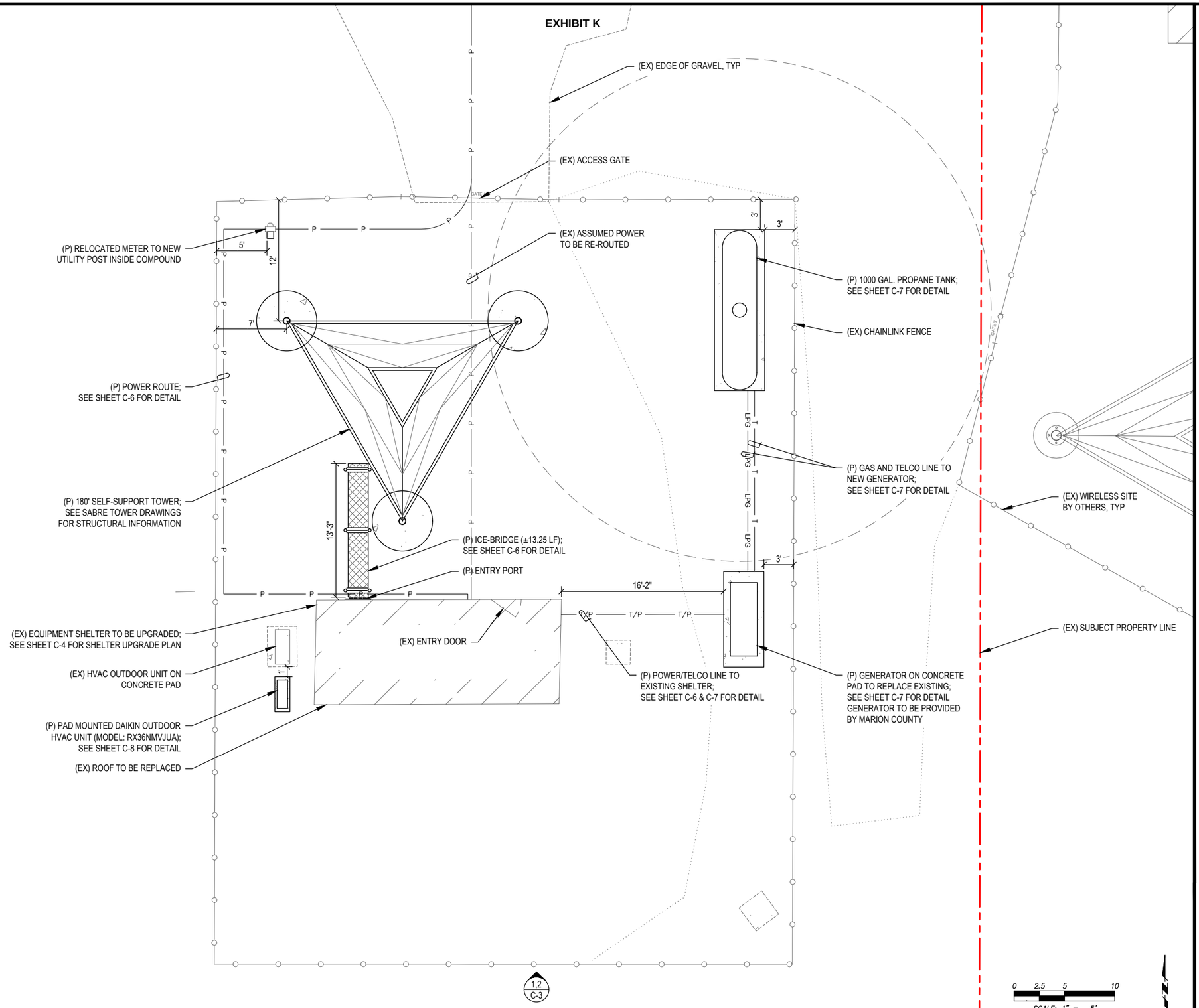
OVERALL SITE PLAN

SHEET NUMBER:

C-1

NOTES:
1. TOWER INFO SHOWN FOR CONCEPTUAL USE ONLY. SEE TOWER STRUCTURAL DESIGN BY OTHERS.
2. THIS IS NOT A SURVEY ALL EXISTING INFORMATION IS PROVIDED BY SURVEY, GIS & SITE WALK NOTES.
3. PROPOSED AND EXISTING ANTENNAS NOT SHOWN FOR CLARITY.

EXHIBIT K



PROJECT INFORMATION:

MARION COUNTY
LOWER PROSPECT

3950 COLE RD S
SALEM, OR 97306

	DATE	RELEASE
	07-17-24	SITE SKETCH
	11-06-24	PRELIMINARY ZONING DRAWINGS
	12-20-24	PRELIMINARY CONSTRUCTION DRAWINGS
	02-27-25	CLIENT COMMENTS
	08-20-25	PRELIMINARY CONSTRUCTION DRAWINGS
	09-19-25	FINAL CONSTRUCTION DRAWINGS

DRAWING INFORMATION:
THIS DRAWING IS COPYRIGHTED AND IS THE SOLE PROPERTY OF THE OWNER. IT IS PRODUCED SOLELY FOR USE BY THE OWNER AND ITS AFFILIATES. REPRODUCTION OR USE OF THIS DRAWING AND/OR THE INFORMATION CONTAINED IN IT IS FORBIDDEN WITHOUT THE WRITTEN PERMISSION OF THE OWNER.

PLANS PREPARED BY:

Cushing
Civil Engineers
12725 SW MILLIKAN WAY
SUITE 300
BEAVERTON, OR 97005
(503) 387-5331
www.cushingcivilengineers.com

LICENSURE:

REGISTERED PROFESSIONAL ENGINEER 83233 OREGON JUNE 7, 2012 KENNY McMANAWAY

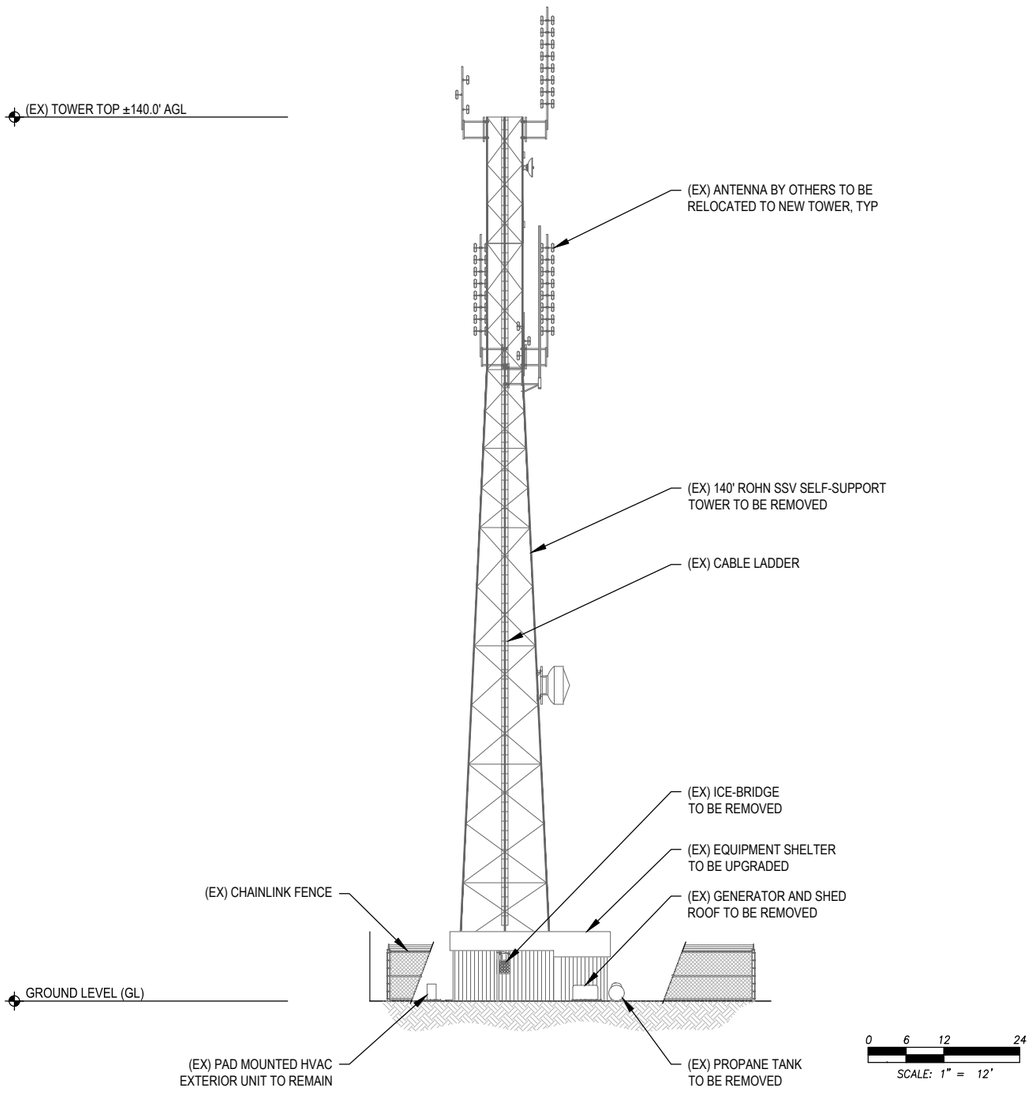
RENEWAL DATE 12/31/26

SHEET TITLE:

ENLARGED SITE PLAN

SHEET NUMBER:

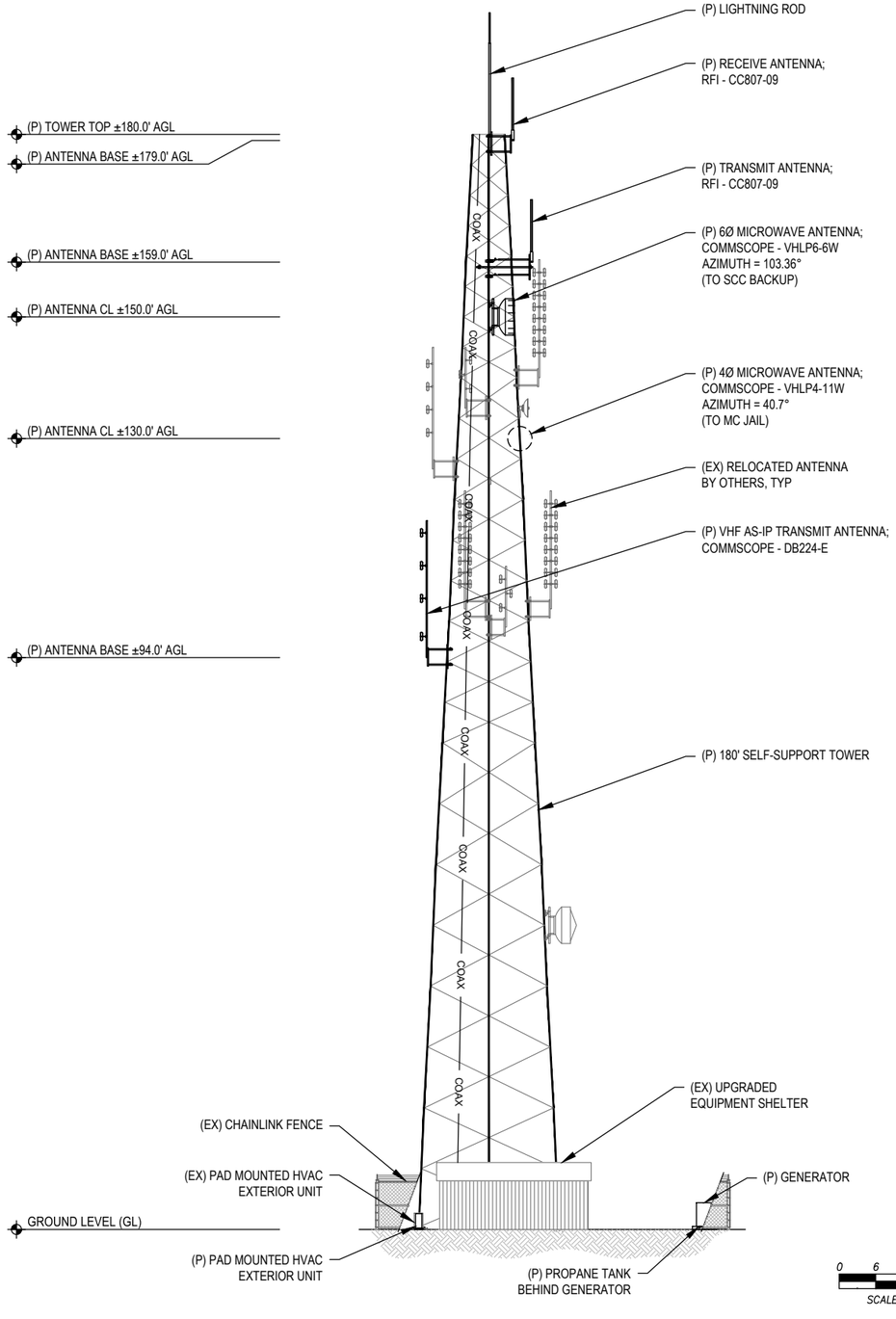
C-2



EXISTING SOUTH ELEVATION | 11X17 SCALE: 1" = 24' | 22X34 SCALE: 1" = 12' | 1

EXHIBIT K

NOTES:
1. TOWER INFO SHOWN FOR CONCEPTUAL USE ONLY. SEE SABRE TOWER STRUCTURAL REPORT FOR DETAIL.
2. TOWER SHALL BE PAINTED WITH A DULL, NON-REFLECTIVE GRAY COLOR.
3. LOADING INFORMATION PROVIDED BY TAIT COMMUNICATIONS.



PROPOSED SOUTH ELEVATION | 11X17 SCALE: 1" = 24' | 22X34 SCALE: 1" = 12' | 2

Marion County OREGON

PROJECT INFORMATION:

MARION COUNTY LOWER PROSPECT

3950 COLE RD S
SALEM, OR 97306

	DATE	RELEASE
	07-17-24	SITE SKETCH
	11-06-24	PRELIMINARY ZONING DRAWINGS
	12-20-24	PRELIMINARY CONSTRUCTION DRAWINGS
	02-27-25	CLIENT COMMENTS
	08-20-25	PRELIMINARY CONSTRUCTION DRAWINGS
	09-19-25	FINAL CONSTRUCTION DRAWINGS

DRAWING INFORMATION:

THIS DRAWING IS COPYRIGHTED AND IS THE SOLE PROPERTY OF THE OWNER. IT IS PRODUCED SOLELY FOR USE BY THE OWNER AND ITS AFFILIATES. REPRODUCTION OR USE OF THIS DRAWING AND/OR THE INFORMATION CONTAINED IN IT IS FORBIDDEN WITHOUT THE WRITTEN PERMISSION OF THE OWNER.

PLANS PREPARED BY:

cushing Civil Engineers

Cushing
Civil Engineers
12725 SW MILLIKAN WAY
SUITE 300
BEAVERTON, OR 97005
(503) 387-5331
www.cushingcivilengineers.com

LICENSURE:

REGISTERED PROFESSIONAL ENGINEER 83233 OREGON JUNE 7, 2012 KENNY McMANAWAY

RENEWAL DATE 12/31/26

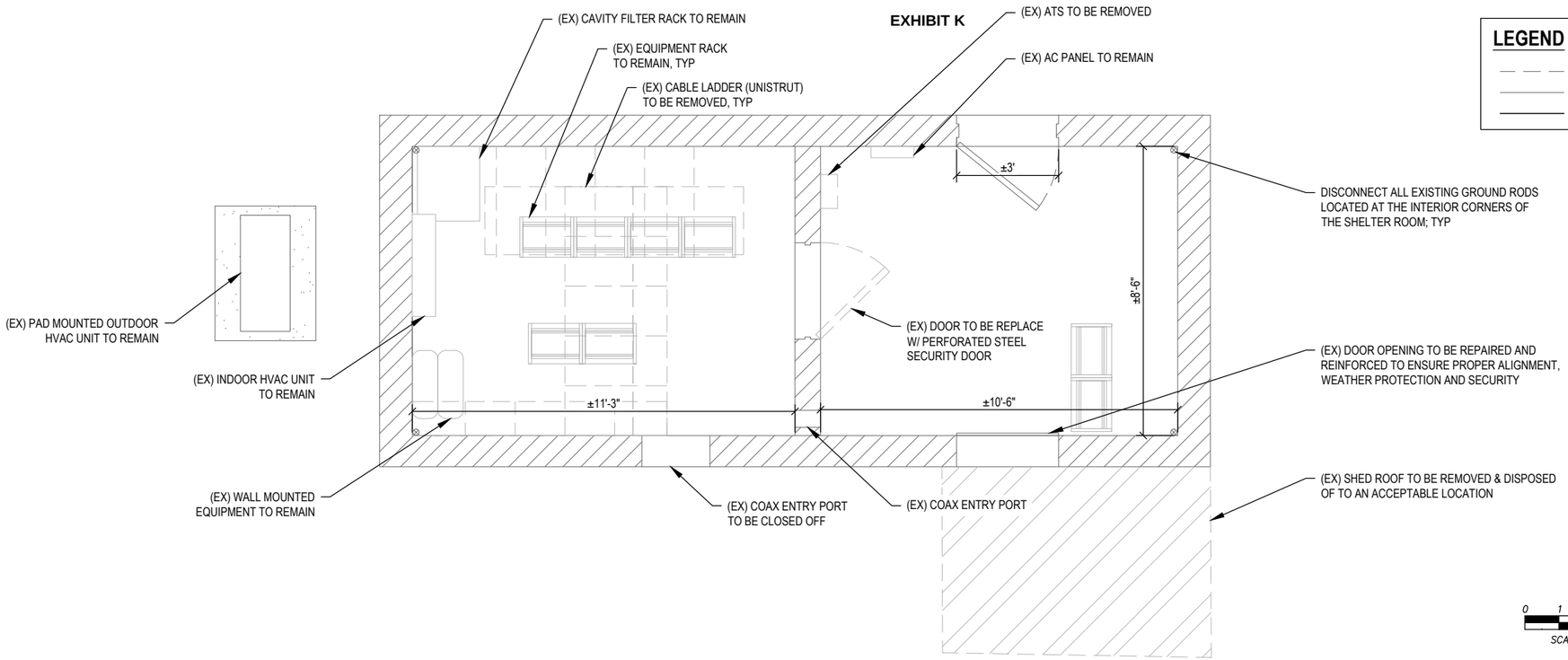
SHEET TITLE:

ELEVATIONS

SHEET NUMBER:

C-3

EXHIBIT K



LEGEND

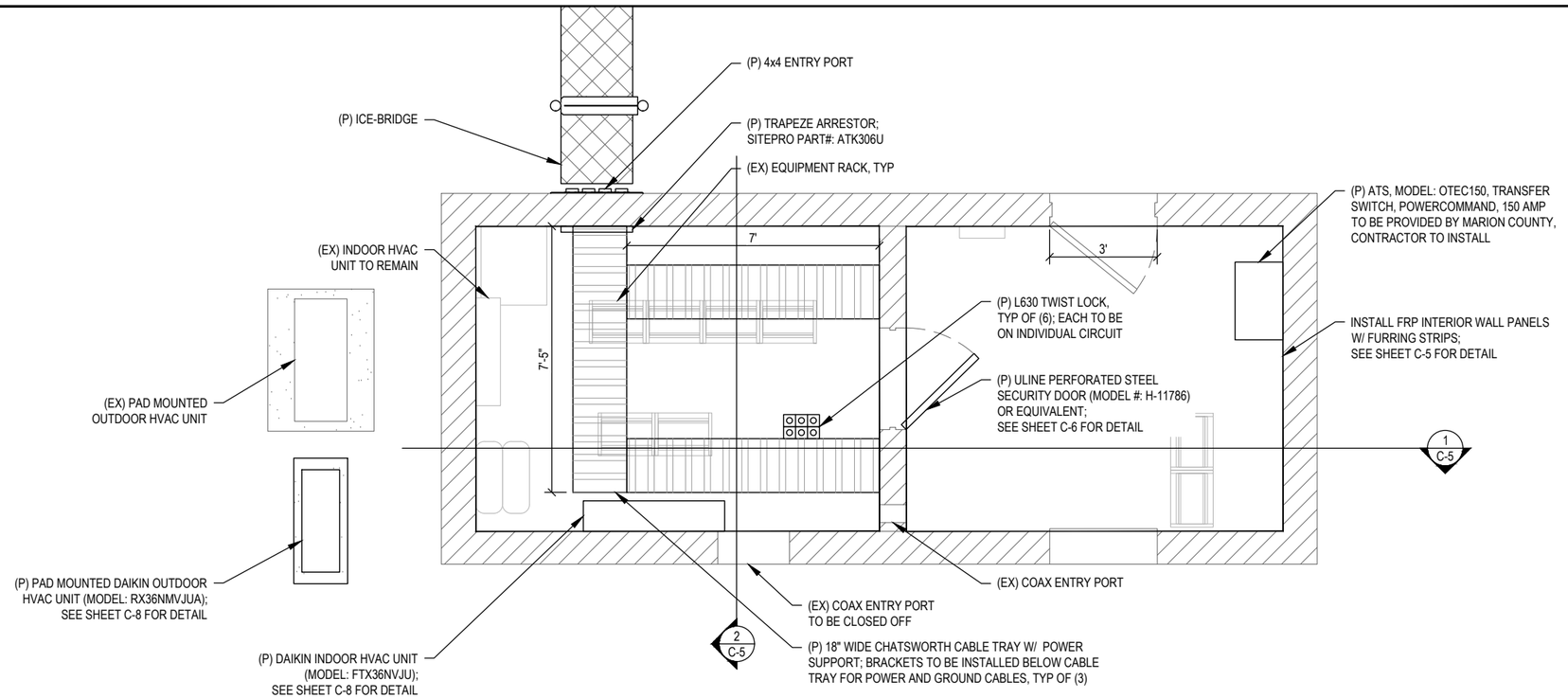
- EQUIPMENT TO BE REMOVED
- EQUIPMENT TO REMAIN
- PROPOSED EQUIPMENT

0 1 2 4
SCALE: 1" = 2'

N

EXISTING FLOOR PLAN

11X17 SCALE: 1" = 4' | 22X34 SCALE: 1" = 2' | 1



0 1 2 4
SCALE: 1" = 2'

N

PROPOSED FLOOR PLAN

11X17 SCALE: 1" = 4' | 22X34 SCALE: 1" = 2' | 2

Marion County OREGON

PROJECT INFORMATION:

MARION COUNTY LOWER PROSPECT

3950 COLE RD S
SALEM, OR 97306

	DATE	RELEASE
	07-17-24	SITE SKETCH
	11-06-24	PRELIMINARY ZONING DRAWINGS
	12-20-24	PRELIMINARY CONSTRUCTION DRAWINGS
	02-27-25	CLIENT COMMENTS
	08-20-25	PRELIMINARY CONSTRUCTION DRAWINGS
	09-19-25	FINAL CONSTRUCTION DRAWINGS

DRAWING INFORMATION:

THIS DRAWING IS COPYRIGHTED AND IS THE SOLE PROPERTY OF THE OWNER. IT IS PRODUCED SOLELY FOR USE BY THE OWNER AND ITS AFFILIATES. REPRODUCTION OR USE OF THIS DRAWING AND/OR THE INFORMATION CONTAINED IN IT IS FORBIDDEN WITHOUT THE WRITTEN PERMISSION OF THE OWNER.

PLANS PREPARED BY:

cushing Civil Engineers

Cushing Civil Engineers
12725 SW MILLIKAN WAY
SUITE 300
BEAVERTON, OR 97005
(503) 387-5331
www.cushingcivilengineers.com

LICENSURE:

REGISTERED PROFESSIONAL ENGINEER
83233
OREGON
JUNE 7, 2012
KENNY McMANAWAY

RENEWAL DATE 12/31/26

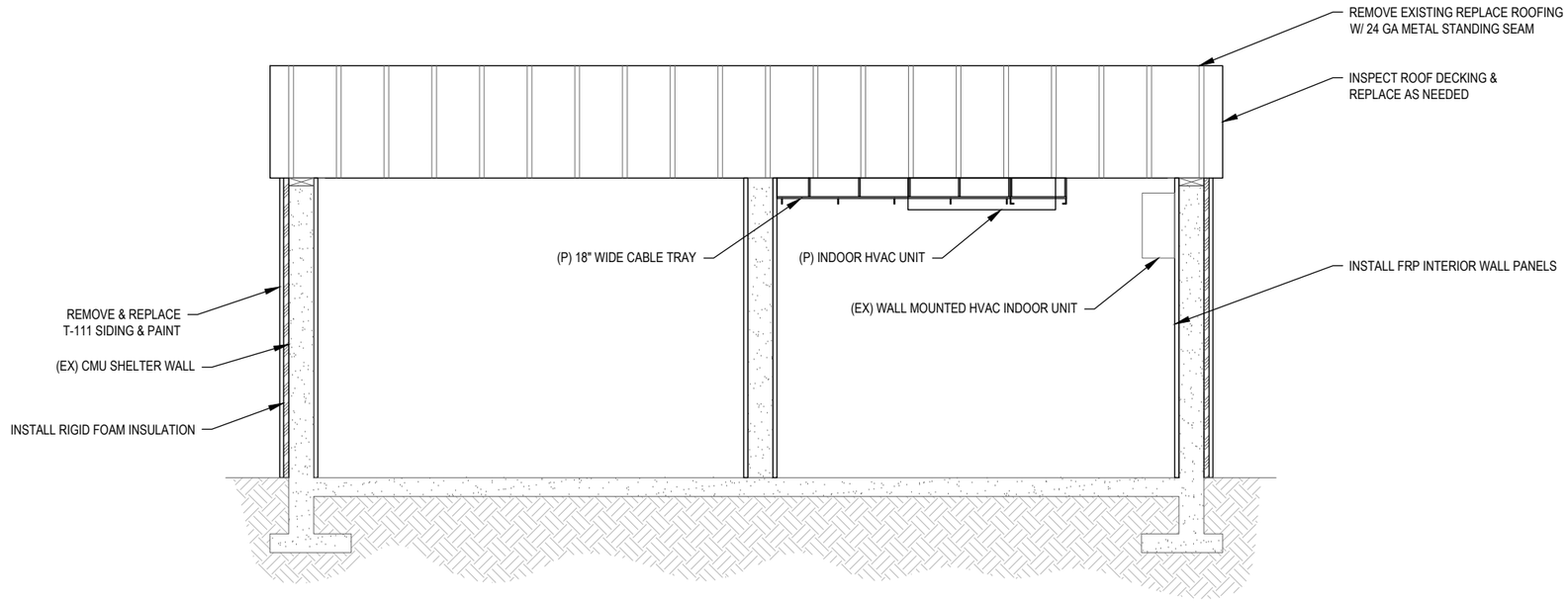
SHEET TITLE:

SHELTER UPGRADE PLAN

SHEET NUMBER:

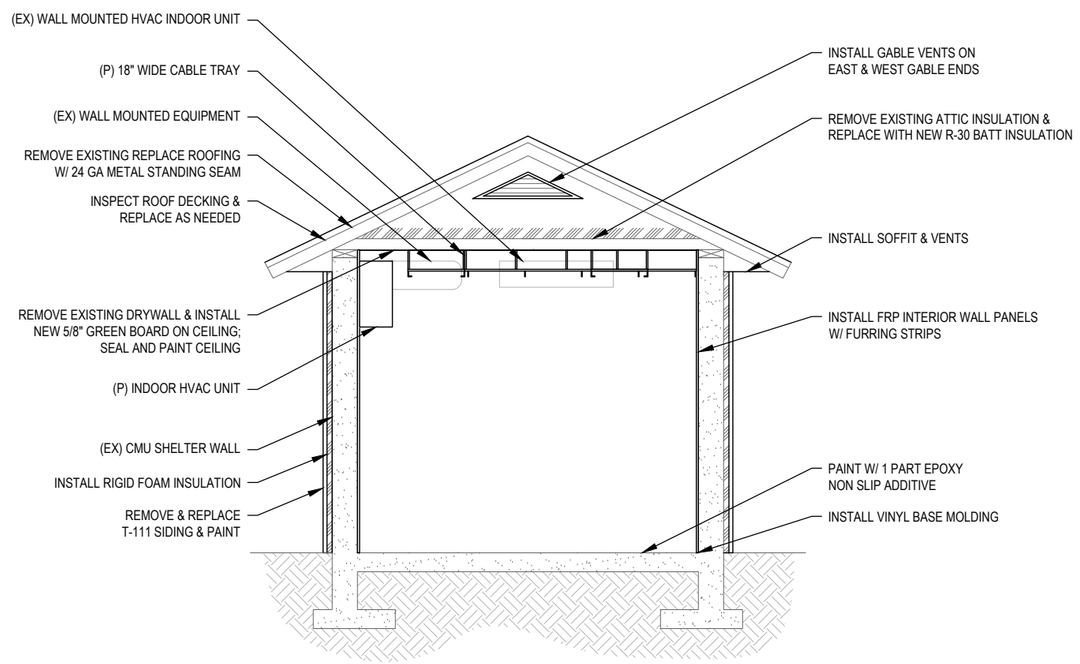
C-4

EXHIBIT K



WALL SECTION W/ INTERNAL VIEW LOOKING SOUTH

SCALE: NTS | 1



WALL SECTION W/ INTERNAL VIEW LOOKING WEST

SCALE: NTS | 2

Marion County
OREGON

PROJECT INFORMATION:

MARION COUNTY
LOWER PROSPECT

3950 COLE RD S
SALEM, OR 97306

	DATE	RELEASE
	07-17-24	SITE SKETCH
	11-06-24	PRELIMINARY ZONING DRAWINGS
	12-20-24	PRELIMINARY CONSTRUCTION DRAWINGS
	02-27-25	CLIENT COMMENTS
	08-20-25	PRELIMINARY CONSTRUCTION DRAWINGS
	09-19-25	FINAL CONSTRUCTION DRAWINGS

DRAWING INFORMATION:

THIS DRAWING IS COPYRIGHTED AND IS THE SOLE PROPERTY OF THE OWNER. IT IS PRODUCED SOLELY FOR USE BY THE OWNER AND ITS AFFILIATES. REPRODUCTION OR USE OF THIS DRAWING AND/OR THE INFORMATION CONTAINED IN IT IS FORBIDDEN WITHOUT THE WRITTEN PERMISSION OF THE OWNER.

PLANS PREPARED BY:

cushing
Civil Engineers

Cushing
Civil Engineers

12725 SW MILLIKAN WAY
SUITE 300
BEAVERTON, OR 97005
(503) 387-5331
www.cushingcivilengineers.com

LICENSURE:

REGISTERED PROFESSIONAL ENGINEER
83233
OREGON
JUNE 7, 2012
KENNY McMANAWAY

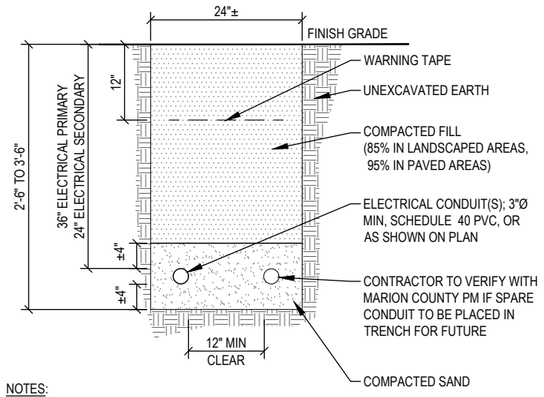
RENEWAL DATE 12/31/26

SHEET TITLE:

SHELTER SECTIONS

SHEET NUMBER:

C-5



NOTES:
1. EXCAVATE TO REQUIRED DEPTH.
2. VERIFY ALL TRENCHING REQUIREMENTS PER LOCAL UTILITIES.
3. CONTRACTOR TO PROVIDE (1) 300 POUND NYLON PULL CORD AND CONDUCTORS AS REQUIRED PER CONDUIT.

POWER LINE TRENCH

SCALE: NTS | 1

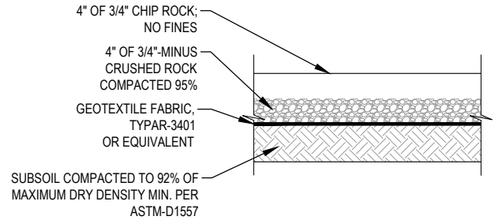
EXHIBIT K



NOTE: ULINE PERFORATED STEEL SECURITY DOOR (MODEL #: H-11786)

PERFORATED SECURITY DOOR

SCALE: NTS | 2



NOTE: STRIP ALL ORGANICS

COMPOUND ROCK SECTION DETAIL

SCALE: NTS | 3



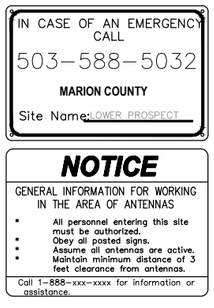
SIGN NOTES:
1. SIGN MATERIAL: 18GA ALUMINUM
2. LETTERING COLOR = BLACK
3. BACKGROUND COLOR = WHITE / RED



SIGN NOTES:
1. SIGN MATERIAL: 18GA ALUMINUM
2. LETTERING COLOR = BLACK / WHITE
3. BACKGROUND COLOR = WHITE / BLUE

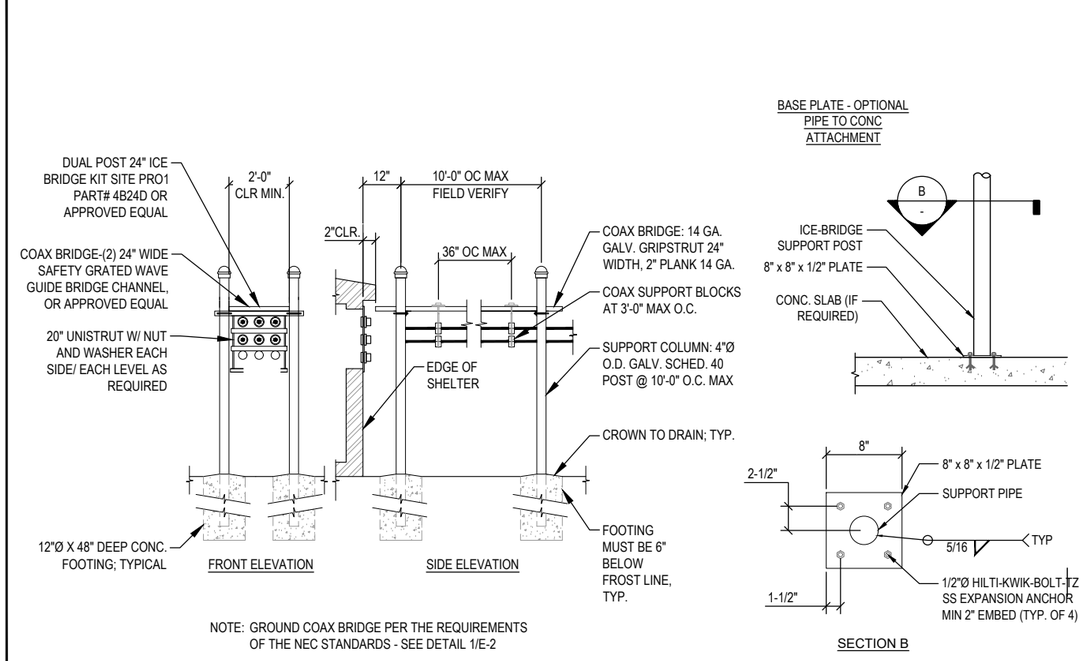


SIGN NOTES:
1. SIGN MATERIAL: 18GA ALUMINUM
2. LETTERING COLOR = BLACK
3. BACKGROUND COLOR = YELLOW



SIGN DETAILS

SCALE: NTS | 4



NOTE: GROUND COAX BRIDGE PER THE REQUIREMENTS OF THE NEC STANDARDS - SEE DETAIL 1/E-2

ICE BRIDGE DETAIL

SCALE: NTS | 5

Marion County OREGON

PROJECT INFORMATION:

MARION COUNTY
LOWER PROSPECT

3950 COLE RD S
SALEM, OR 97306

	DATE	RELEASE
	07-17-24	SITE SKETCH
	11-06-24	PRELIMINARY ZONING DRAWINGS
	12-20-24	PRELIMINARY CONSTRUCTION DRAWINGS
	02-27-25	CLIENT COMMENTS
	08-20-25	PRELIMINARY CONSTRUCTION DRAWINGS
	09-19-25	FINAL CONSTRUCTION DRAWINGS

DRAWING INFORMATION:

THIS DRAWING IS COPYRIGHTED AND IS THE SOLE PROPERTY OF THE OWNER. IT IS PRODUCED SOLELY FOR USE BY THE OWNER AND ITS AFFILIATES. REPRODUCTION OR USE OF THIS DRAWING AND/OR THE INFORMATION CONTAINED IN IT IS FORBIDDEN WITHOUT THE WRITTEN PERMISSION OF THE OWNER.

PLANS PREPARED BY:

cushing Civil Engineers

Cushing Civil Engineers
12725 SW MILLIKAN WAY
SUITE 300
BEAVERTON, OR 97005
(503) 387-5331
www.cushingcivilengineers.com

LICENSURE:

REGISTERED PROFESSIONAL ENGINEER 83233 OREGON JUNE 7, 2012 KENNY McMANAWAY

RENEWAL DATE 12/31/26

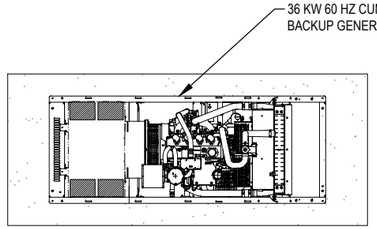
SHEET TITLE:

COMPOUND DETAILS

SHEET NUMBER:

C-6

EXHIBIT K

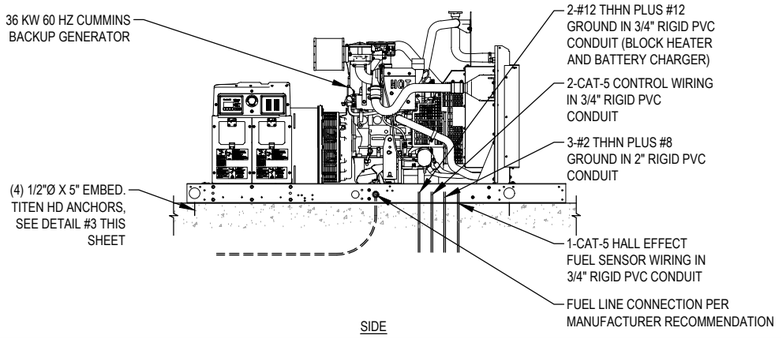


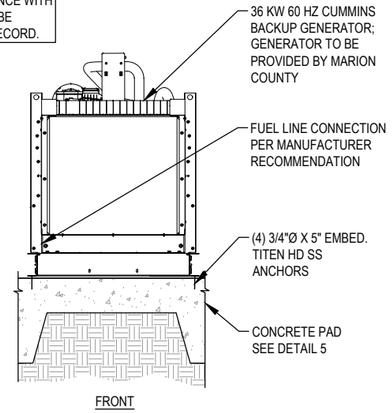
NOTE: SEE GENERATOR SPEC SHEET FOR DIMENSIONS AND WEIGHTS

GENERATOR PLAN

SCALE: NTS | 1

NOTE: DOCUMENTATION FOR THE GENERATOR IS TO BE PROVIDED BY THE SUPPLIER CERTIFYING THAT ALL HAZARDOUS CONTENTS WILL REMAIN CONTAINED FOLLOWING THE DESIGN EARTHQUAKE FOR THIS SITE. CERTIFICATION OF CONTAINMENT IS TO BE PROVIDED BY 1) ANALYSIS, 2) APPROVED SHAKE TABLE TESTING IN ACCORDANCE WITH SECTION 13.2.5 OF ASCE 7, OR 3) EXPERIENCE DATA IN ACCORDANCE WITH ASCE 7 SECTION 13.2.6. EVIDENCE DEMONSTRATING COMPLIANCE OF THIS REQUIREMENT SHALL BE SUBMITTED TO THE LOCAL JURISDICTION AFTER REVIEW AND APPROVAL BY THE ENGINEER OF RECORD.





GENERATOR ELEVATION

SCALE: NTS | 2

NOT USED

SCALE: NTS | 3

1. CONTRACTOR TO VERIFY AND CONFIRM ALL DIMENSIONS AND CONDITIONS AND NOTIFY ENGINEER OF RECORD OF ANY DISCREPANCIES PRIOR TO START OF WORK.
2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR STRUCTURAL STABILITY DURING CONSTRUCTION. THE STRUCTURE SHOWN ON THE DRAWINGS HAS BEEN DESIGNED FOR STABILITY UNDER THE FINAL CONFIGURATION ONLY.
3. CODE: 2018 INTERNATIONAL BUILDING CODE (IBC).
4. THE FOOTINGS HAVE BEEN DESIGNED FOR AN ALLOWABLE SOIL BEARING PRESSURE OF 1,500 PSF.
5. CONCRETE: FOOTINGS, F'C = 3,000 PSI MINIMUM COMPRESSIVE STRENGTH AT 28 DAYS.
6. REINFORCING STEEL: FY = 60,000 PSI
7. STRUCTURAL AND MISCELLANEOUS STEEL SHALL BE IN ACCORDANCE WITH AISC SPECIFICATION FOR THE DESIGN, FABRICATION AND ERECTION OF STRUCTURAL STEEL FOR BUILDINGS AND SHALL BE ASTM A-36 U.O.N. ALL BOLTS HOLES SHALL BE PUNCHED OR DRILLED; BURNING OF HOLES SHALL NOT BE PERMITTED. ALL STRUCTURAL STEEL SHALL HAVE ONE SHOP COAT OF PAINT.
   ALL MATERIALS SHALL CONFORM TO THE FOLLOWING STANDARDS:

PIPE:	A53 GR. B (MIN. FY = 35 KSI)
SHAPES:	ASTM A36/ ASTM A572 GR. 50
WIDE FLANGE:	ASTM A992
TUBES:	A500 GR. B, FY = 46 KSI
PLATES:	A36
WELDS:	E70XX ELECTRODES
STRUCTURAL BOLTS:	ASTM A325N
NON-STRUCTURAL BOLTS:	SAE J429 GR. 5 / F1554-36
U-BOLTS:	ASTM A36
THREADED ROD:	ASTM A307

SPECIAL INSPECTION BY OWNERS TESTING AGENCY
SPECIAL INSPECTIONS AND TESTING SHALL BE PERFORMED BY AN APPROVED AGENCY IN ACCORDANCE WITH INTERNATIONAL BUILDING CODE (IBC) CHAPTER 17 SECTIONS 1703 AND SECTIONS 1704, AND WITH THE STATEMENT OF SPECIAL INSPECTIONS AS REQUIRED BY IBC SECTIONS 1704.2.3 AND 1705 FOR BUILIDNG STRUCTURAL ELEMENTS SUMMARIZED AS FOLLOWS:
1. STRUCTURAL STEEL CONSTRUCTION PER IBC SECTIONS 1705.3 AND TABLE 1705.3 INCLUDING MATERIAL IDENTIFICATION, AND SHOP WELDING.

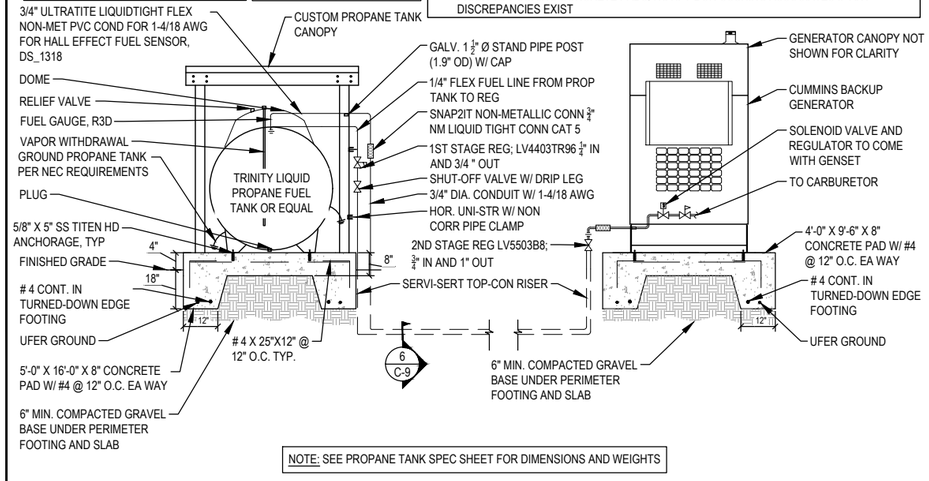
GENERAL NOTES

SCALE: NTS | 4

NOTES:
1. PROPANE TANK REGISTERED WITH NATIONAL BOARD AND COMPLIES AND INSTALLED PER NFPA 58 CODE
2. PROPANE TANK INSTALLED AT LEAST 10 FT FROM EXTERNAL SOURCE OF IGNITION

LEGEND
- SHUT-OFF VALVE
- UNION
- PRESSURE REGULATOR
- SOLENOID VALVE
- FLEXIBLE CONNECTION

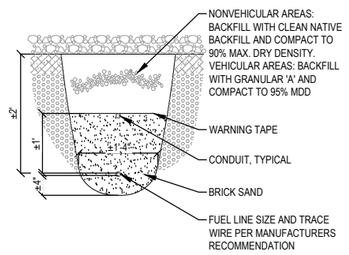
NOTES:
1. GROUND SYSTEM SHOULD COMPLY WITH INDUSTRY STANDARDS
2. CONFIRM CONNECTIONS PROVIDED WITH FUEL TANK
3. USE GASEOUS LP VAPOR WITHDRAWAL SYSTEM
4. TO CODE OFFICIAL, PAD IS FOR EQUIPMENT ONLY (NO BUILDINGS)
5. CONTRACTOR IS TO VERIFY THAT ALL PROPOSED ANCHORS WILL PROVIDE ADEQUATE FIT PRIOR TO POURING CONCRETE PADS, NOTIFY DON CUSHING ASSOCIATES IF ANY DISCREPANCIES EXIST



NOTE: SEE PROPANE TANK SPEC SHEET FOR DIMENSIONS AND WEIGHTS

GENERATOR FUEL SYSTEM ELEVATION

SCALE: NTS | 5



TRENCH SECTION

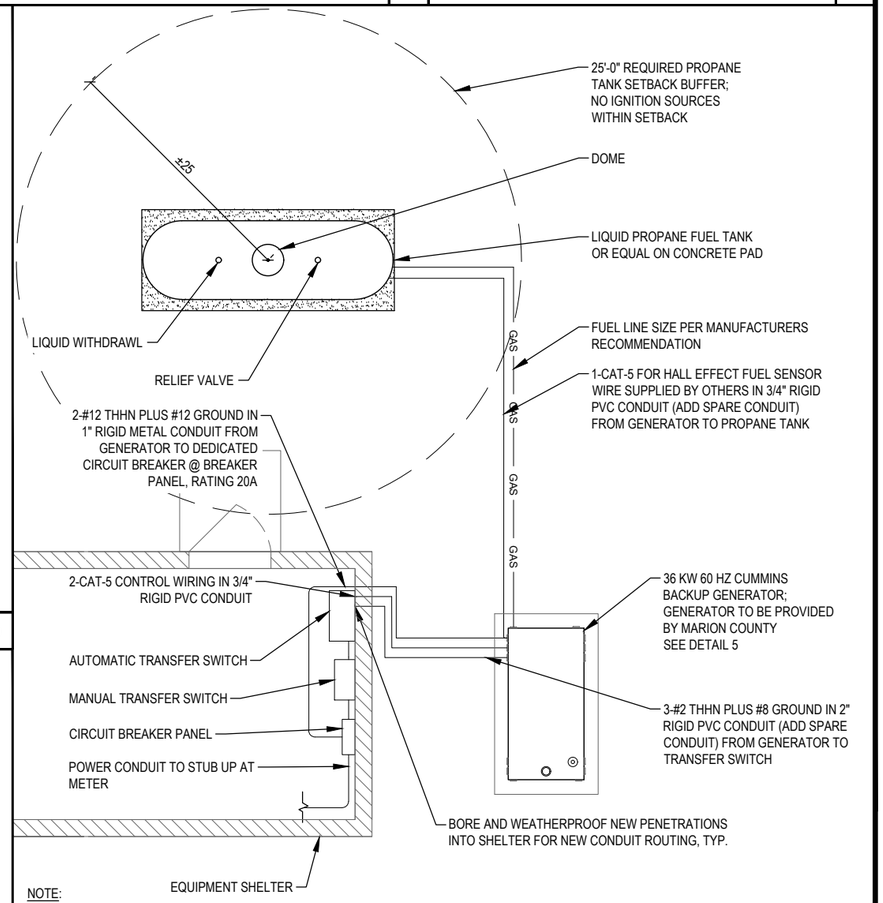
SCALE: NTS | 6

NOT USED

SCALE: NTS | 7

NOT USED

SCALE: NTS | 8



NOTE:

ALL CONDUIT INSIDE THE BUILDING MUST BE METAL AND BE GROUNDED PER R-56 STANDARDS.

INTERIOR SHELTER LAYOUT IS FOR REFERENCE ONLY.

THIS GENERATOR & PROPANE LAYOUT IS FOR INFORMATION ONLY AND IS PRESENTED AS A GUIDELINE. VERIFY SITE CONDITIONS AND LAYOUT PRIOR TO INSTALLATION OF ALL EQUIPMENT. INSTALL ALL EQUIPMENT PER MANUFACTURER'S INSTRUCTIONS.

TYPICAL GENERATOR LAYOUT

SCALE: NTS | 9

Marion County OREGON

PROJECT INFORMATION:

MARION COUNTY LOWER PROSPECT

3950 COLE RD S
SALEM, OR 97306

	DATE	RELEASE
	07-17-24	SITE SKETCH
	11-06-24	PRELIMINARY ZONING DRAWINGS
	12-20-24	PRELIMINARY CONSTRUCTION DRAWINGS
	02-27-25	CLIENT COMMENTS
	08-20-25	PRELIMINARY CONSTRUCTION DRAWINGS
	09-19-25	FINAL CONSTRUCTION DRAWINGS

DRAWING INFORMATION:
THIS DRAWING IS COPYRIGHTED AND IS THE SOLE PROPERTY OF THE OWNER. IT IS PRODUCED SOLELY FOR USE BY THE OWNER AND ITS AFFILIATES. REPRODUCTION OR USE OF THIS DRAWING AND/OR THE INFORMATION CONTAINED IN IT IS FORBIDDEN WITHOUT THE WRITTEN PERMISSION OF THE OWNER.

PLANS PREPARED BY:

cushing Civil Engineers

Cushing
Civil Engineers
12725 SW MILLIKAN WAY
SUITE 300
BEAVERTON, OR 97005
(503) 387-5331
www.cushingcivilengineers.com

LICENSURE:

REGISTERED PROFESSIONAL ENGINEER 83233 OREGON JUNE 7, 2012 KENNY McMANAWAY

RENEWAL DATE 12/31/26

SHEET TITLE:

GENERATOR & PROPANE TANK DETAILS

SHEET NUMBER:

C-7

EXHIBIT K

Job Name:	
Tag#	

Submittal Data Sheet

FTX36NVJU / RX36NMVJUA

3-Ton Wall Mounted Heat Pump System



Complete warranty details available from your local dealer or at www.daikincomfort.com. Warranty registration not required to receive the 10-Year parts limited warranty for residential or commercial installations.

Efficiency

Cooling		Heating	
SEER	15.9	HSPF	9.2
EER	9.10	COP	2.78

Performance

Cooling (Btu/hr)	
Rated (Min/Max)	34,400 (10,200 / 34,400)
Sensible @ AHRI	22,160
Standard Operating Range	50°F – 115°F
Extended Operating Range*	-4°F – 115°F

Rated Cooling Conditions: Indoor: 80°F DB/67°F WB; Outdoor: 95°F DB/75°F WB

***With field settings and wind baffle**

Heating (Btu/hr)	
1:@ 47° Rated (Min/Max)	36,000 (10,200 / 36,000)
2: @ 17° Rated	22,800
3: @ 5°	15,740
Operating Range	5 – 65°F

1: Rated Heating Conditions: Indoor: 70°F DB/60°F WB; Outdoor: 47°F DB/43°F WB

2: Rated Heating Conditions: Indoor: 70°F DB/60°F WB; Outdoor: 17°F DB/15°F WB

3: Heating Conditions: Indoor: 70°F DB/60°F WB; Outdoor: 5°F DB/5°F WB

Indoor Specifications

	Cooling		Heating	
	H	M	H	M
Airflow Rate (cfm)	915	742	960	791
	L	SL	L	SL
	572	512	629	544
Sound (dBA) H / M / L / SL	54 / 47 / 40 / 37		53 / 46 / 38 / 35	
Dimensions (H × W × D) (in)	13-3/8 × 47-1/4 × 10-3/16			
Weight (Lbs)	38			

Outdoor Specifications

Compressor	Hermetically Sealed Swing Type			
Refrigerant	R-410A			
Factory Charge (Lbs)	3.64			
Refrigerant Oil	PVE (FVC50K)			
Airflow Rate (cfm)	Cooling		Heating	
	H	2,811	H	2,352
Sound Pressure Level (dBA)	59			
Dimensions (H × W × D) (in)	28-15/16 × 34-1/4 × 12-5/8			
Weight (Lbs)	133			

Electrical

	208/60/1	230/60/1
System MCA	19.8	19.8
System MFA	20	20
Compressor RLA	18.25	18.25
Outdoor fan motor FLA	.83	.83
Outdoor fan motor W	123	123
Indoor fan motor FLA	.37	.37
Indoor fan motor W	64	64

MFA: Max. fuse amps **MCA:** Min. circuit amps (A) **FLA:** Full load amps (A)
RLA: Rated load amps (A) **W:** Fan motor rated output (W)

Piping

Liquid (in)	1/4
Gas (in)	5/8
Drain (in)	5/8
Max. Interunit Piping Length (ft)	98.4
Max. Interunit Height Difference (ft)	65.625
Chargeless (ft)	32.8
Additional Charge of Refrigerant (oz/ft)	.32

Marion County OREGON

PROJECT INFORMATION:

MARION COUNTY
LOWER PROSPECT

3950 COLE RD S
SALEM, OR 97306

	DATE	RELEASE
	07-17-24	SITE SKETCH
	11-06-24	PRELIMINARY ZONING DRAWINGS
	12-20-24	PRELIMINARY CONSTRUCTION DRAWINGS
	02-27-25	CLIENT COMMENTS
	08-20-25	PRELIMINARY CONSTRUCTION DRAWINGS
	09-19-25	FINAL CONSTRUCTION DRAWINGS

DRAWING INFORMATION:
THIS DRAWING IS COPYRIGHTED AND IS THE SOLE PROPERTY OF THE OWNER. IT IS PRODUCED SOLELY FOR USE BY THE OWNER AND ITS AFFILIATES. REPRODUCTION OR USE OF THIS DRAWING AND/OR THE INFORMATION CONTAINED IN IT IS FORBIDDEN WITHOUT THE WRITTEN PERMISSION OF THE OWNER.

PLANS PREPARED BY:
cushing Civil Engineers
Cushing
Civil Engineers
12725 SW MILLIKAN WAY
SUITE 300
BEAVERTON, OR 97005
(503) 387-5331
www.cushingcivilengineers.com

LICENSURE:

REGISTERED PROFESSIONAL ENGINEER 83233 OREGON JUNE 7, 2012 KENNY McMANAWAY

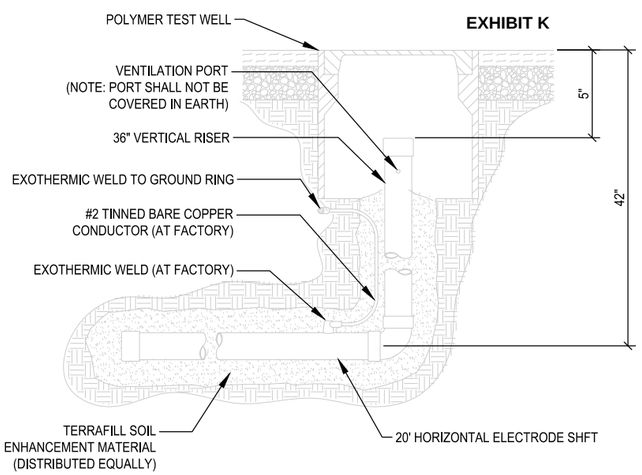
RENEWAL DATE 12/31/26

SHEET TITLE:

HVAC DETAILS

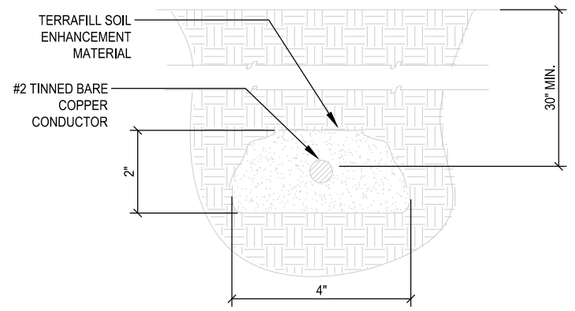
SHEET NUMBER:

C-8



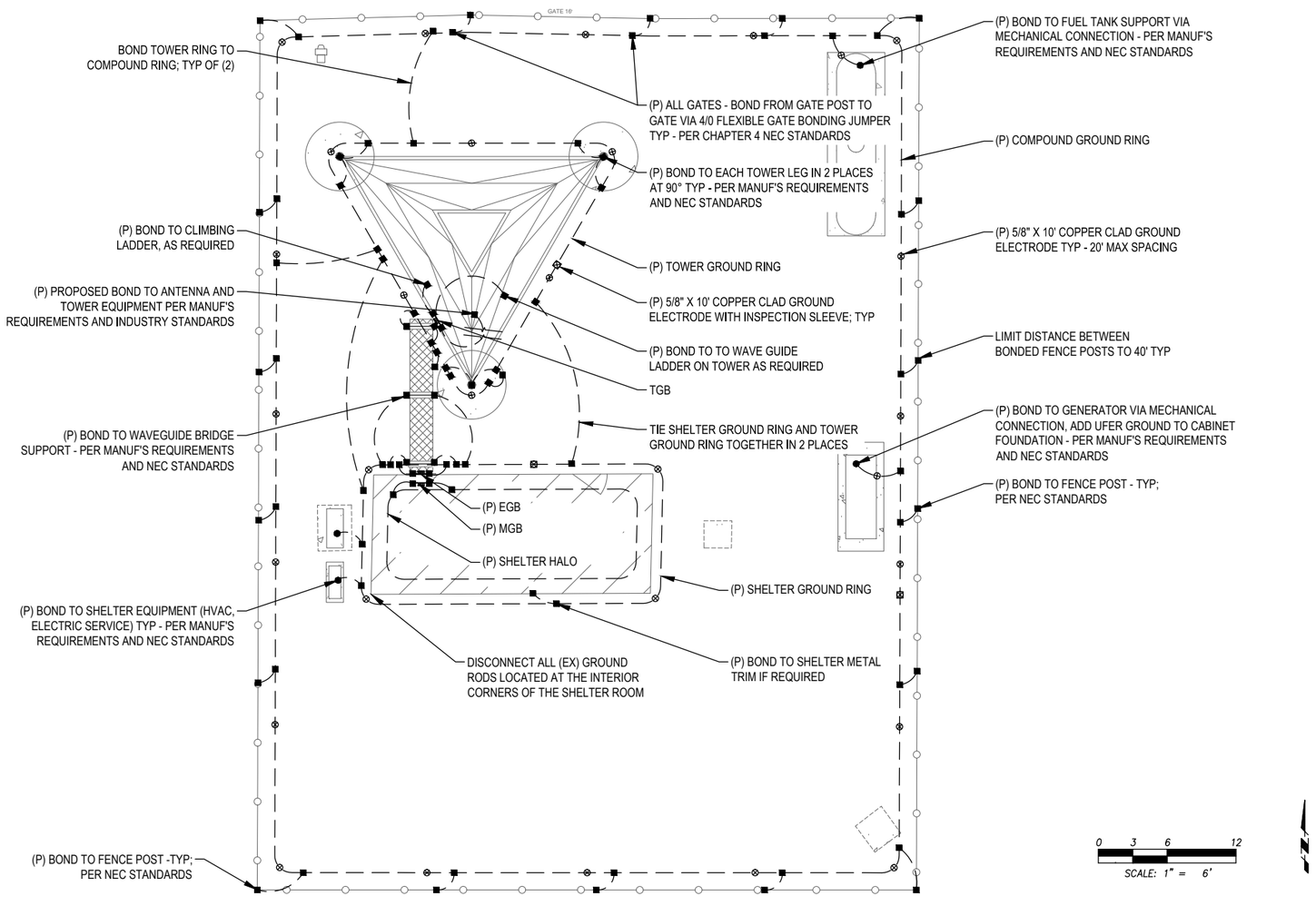
TERRADYNE ELECTROLYTIC GROUND ELECTRODE

SCALE: NTS | 3



SOIL ENHANCEMENT DETAIL

SCALE: NTS | 2



SITE COMPOUND GROUNDING PLAN

11X17 SCALE: 1" = 12' | 22X34 SCALE: 1" = 6' | 1

GENERAL NOTES:

1. ALL INSTALLATIONS ARE TO BE FIELD VERIFIED.
2. GROUND CONDUCTORS ARE TO BE BURIED AT A MINIMUM 30" BELOW GRADE OR 6" BELOW FREEZE LINE, WHICHEVER IS GREATER.
3. ALL BELOW GRADE GROUNDING CONDUCTORS ARE TO BE ENCOMPASSED IN A 2" X 4" BED OF SOIL ENHANCEMENT MATERIAL.
4. BONDS TO FENCE POSTS ARE TO BE MADE AT 12" ABOVE GRADE WHERE APPLICABLE.
5. NO CONDUCTOR SHALL HAVE A BEND IN RADIUS OF LESS THAN 12" AND SHALL NOT EXCEED 90 DEGREES.
6. TERRADYNE ELECTROLYTIC GROUND ELECTRODES ARE NOT TO SHARE THE SAME TRENCH AS GROUNDING CONDUCTOR, NOR RUN IN A PARALLEL PATH TO THE CONDUCTOR.
7. ALL GROUND SYSTEMS ARE TO BE MADE COMMON.
8. ALL BONDS ARE TO BE COATED WITH ANTI-OXIDATION COMPOUND.
9. WHERE STANDARD GROUND ELECTRODES ARE UNABLE TO BE DRIVEN, 12" X 12" X 1/8" COPPER GROUND PLATES SHALL BE INSTALLED 30" BELOW FINISHED GRADE & ENCOMPASSED IN 50LBS OF TERRAFILL SOIL ENHANCEMENT MATERIAL.

LEGEND:

- TERRADYNE TG-100L-H36-2T-36-4F-P SERIES ELECTRODE W/ INSPECTION WELL
- EXOTHERMIC WELD
- MECHANICAL CONNECTION
- 5/8" X 10' COPPER CLAD GROUND ELECTRODE
- 5/8" X 10' COPPER CLAD GROUND ELECTRODE WITH INSPECTION SLEEVE
- #2 TINNED SOLID COPPER CONDUCTOR

Marion County OREGON

PROJECT INFORMATION:

MARION COUNTY
LOWER PROSPECT

3950 COLE RD S
SALEM, OR 97306

	DATE	RELEASE
	07-17-24	SITE SKETCH
	11-06-24	PRELIMINARY ZONING DRAWINGS
	12-20-24	PRELIMINARY CONSTRUCTION DRAWINGS
	02-27-25	CLIENT COMMENTS
	08-20-25	PRELIMINARY CONSTRUCTION DRAWINGS
	09-19-25	FINAL CONSTRUCTION DRAWINGS

DRAWING INFORMATION:
THIS DRAWING IS COPYRIGHTED AND IS THE SOLE PROPERTY OF THE OWNER. IT IS PRODUCED SOLELY FOR USE BY THE OWNER AND ITS AFFILIATES. REPRODUCTION OR USE OF THIS DRAWING AND/OR THE INFORMATION CONTAINED IN IT IS FORBIDDEN WITHOUT THE WRITTEN PERMISSION OF THE OWNER.

PLANS PREPARED BY:

cushing Civil Engineers

Cushing Civil Engineers
12725 SW MILLIKAN WAY
SUITE 300
BEAVERTON, OR 97005
(503) 387-5331
www.cushingcivilengineers.com

LICENSURE:



RENEWAL DATE 12/31/26

SHEET TITLE:

SITE GROUNDING PLAN & DETAILS

SHEET NUMBER:

E-1

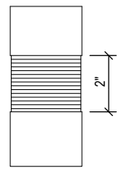


FIGURE 1

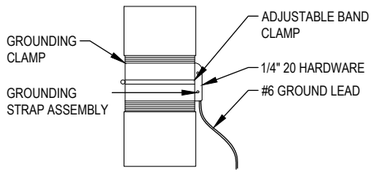


FIGURE 2

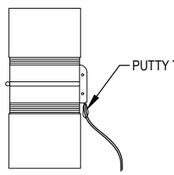


FIGURE 3

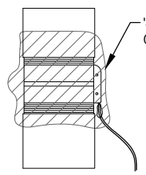


FIGURE 4

EXHIBIT K

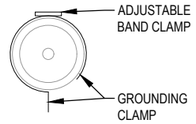


FIGURE 5

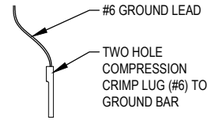
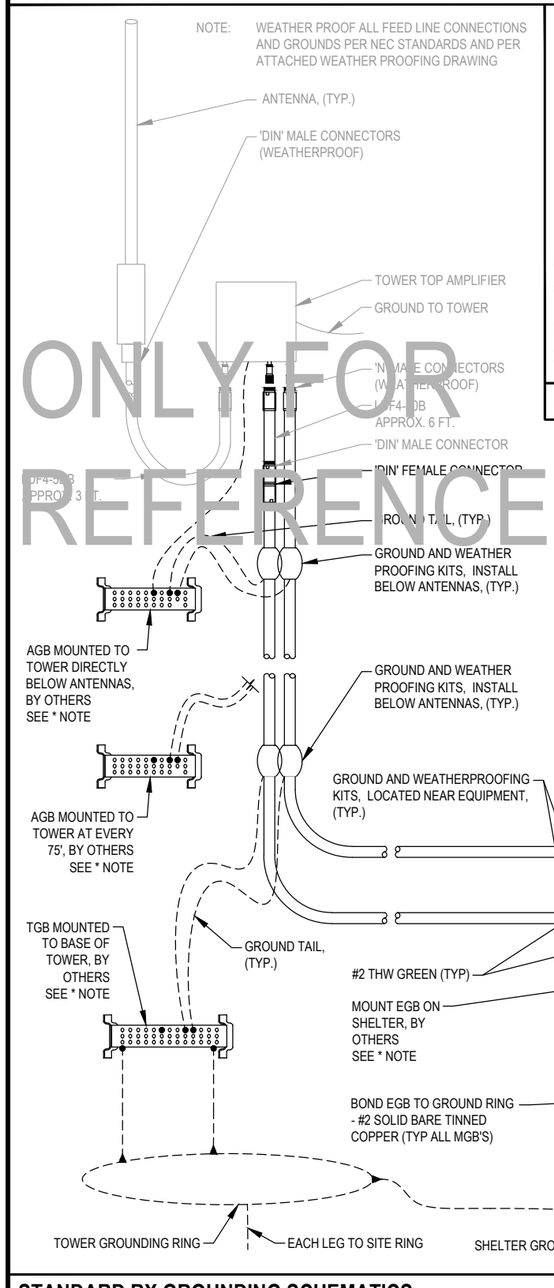


FIGURE 6

NOTE: NOT GC

FEED LINE CABLE GROUNDING

SCALE: NTS | 2

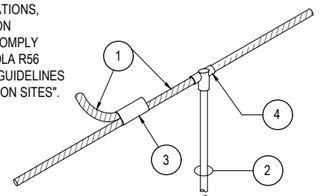


ONLY FOR REFERENCE

STANDARD RX GROUNDING SCHEMATICS

SCALE: NTS | 1

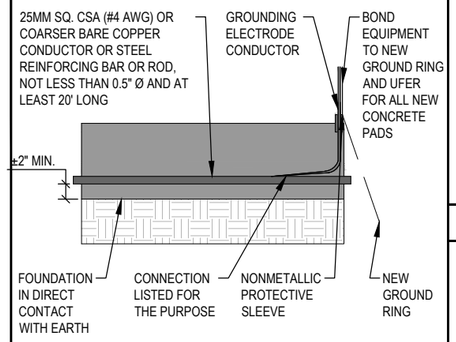
NOTE: ALL GROUNDING DESIGN, SPECIFICATIONS, AND CONSTRUCTION METHODS SHALL COMPLY WITH THE MOTOROLA R56 "STANDARDS AND GUIDELINES FOR COMMUNICATION SITES".



1. MAIN CONDUCTOR, COPPER CABLE
2. 5/8" X 10' COPPER CLAD STEEL GROUND ROD, TO BE PLACED ON CENTER 10' ALONG CONDUCTOR
3. EXOTHERMIC TYPE "NC"
4. EXOTHERMIC TYPE "GT"

GROUND ROD DETAIL

SCALE: NTS | 4



NOTE: FOR REFERENCE ONLY

UFER DETAIL

SCALE: NTS | 5

NOTE: BENDS SHOWN ON GROUND TAILS AND GROUND CONNECTION WIRES ARE FOR ILLUSTRATION PURPOSES ONLY. AVOID EXCESSIVE BENDS. WIRES TO BE AS STRAIGHT AS POSSIBLE; INSTALL DIRECT FROM EQUIPMENT TO GROUND POINT. ALL GROUNDING DESIGN, SPECIFICATIONS, AND CONSTRUCTION METHODS SHALL COMPLY WITH THE MOTOROLA R56 "STANDARDS AND GUIDELINES FOR COMMUNICATION SITES".

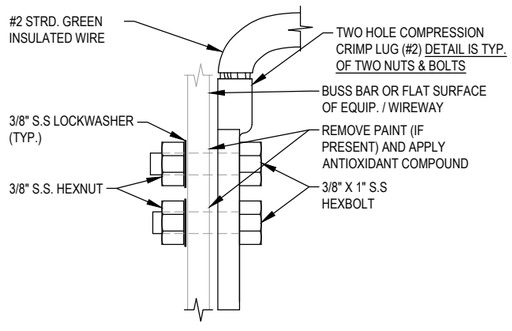
NOTES
1. TYP. FOR ALL GROUND WIRES FOR ELECT. AND OTHER EQUIPMENT.

2. THE ENTIRE LUG AND AREA TO BE SPRAYED WITH CLEAR LACQUER OR COLD GALVANIZING SPRAY.

3. GROUND LEADS TO BE EXOTHERMIC WELDED TO GROUND RING.

4. AGB IS BONDED TO TOWER.

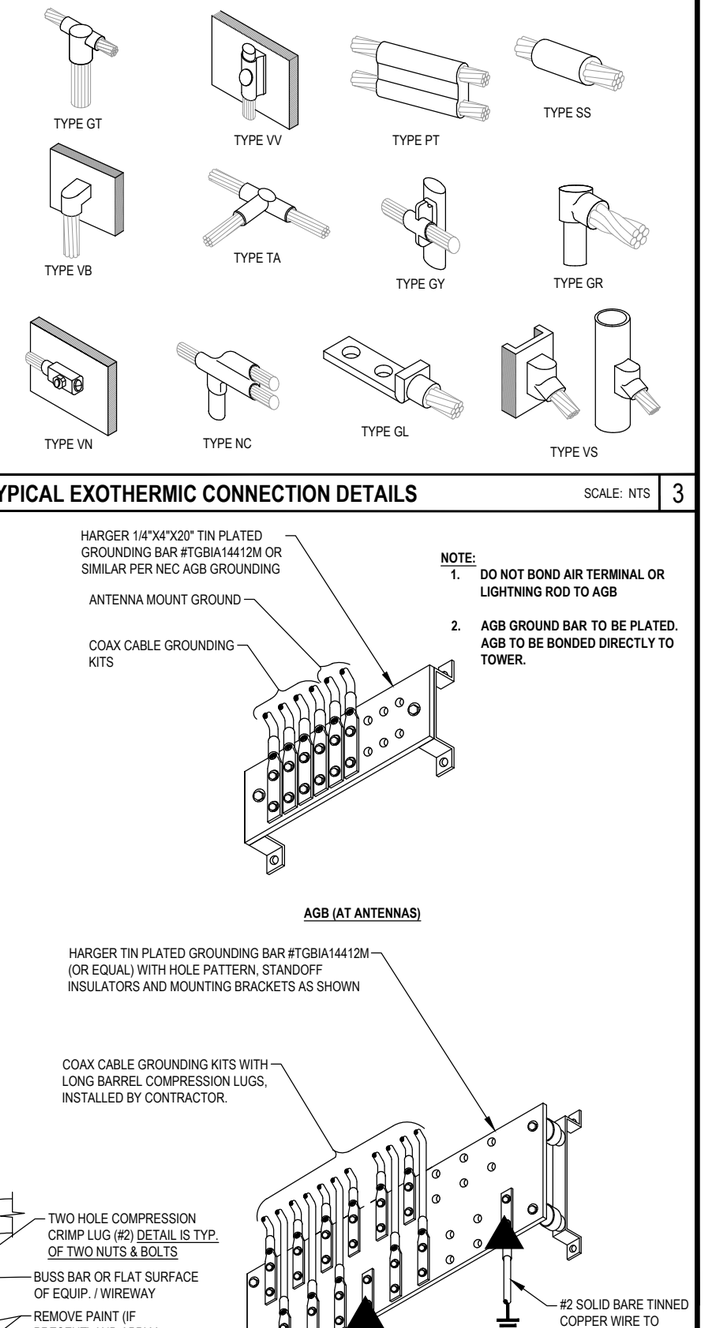
GENERAL NOTES
ALL ANTENNAS, LINES AND RELATED INSTALLATION HARDWARE TO BE PROVIDED BY THE LAND MOBILE COMMUNICATIONS PROVIDER.



MGB (AT BASE OF TOWER AND EQUIPMENT)

GROUND BAR DETAILS

SCALE: NTS | 6

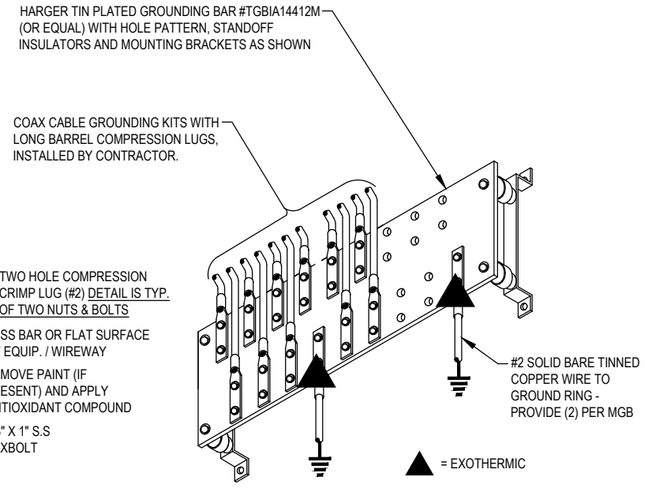


TYPICAL EXOTHERMIC CONNECTION DETAILS

SCALE: NTS | 3

NOTE:
1. **DO NOT BOND AIR TERMINAL OR LIGHTNING ROD TO AGB**
2. **AGB GROUND BAR TO BE PLATED. AGB TO BE BONDED DIRECTLY TO TOWER.**

AGB (AT ANTENNAS)



Marion County OREGON

PROJECT INFORMATION:

MARION COUNTY LOWER PROSPECT

3950 COLE RD S
SALEM, OR 97306

	DATE	RELEASE
	07-17-24	SITE SKETCH
	11-06-24	PRELIMINARY ZONING DRAWINGS
	12-20-24	PRELIMINARY CONSTRUCTION DRAWINGS
	02-27-25	CLIENT COMMENTS
	08-20-25	PRELIMINARY CONSTRUCTION DRAWINGS
	09-19-25	FINAL CONSTRUCTION DRAWINGS

DRAWING INFORMATION:
THIS DRAWING IS COPYRIGHTED AND IS THE SOLE PROPERTY OF THE OWNER. IT IS PRODUCED SOLELY FOR USE BY THE OWNER AND ITS AFFILIATES. REPRODUCTION OR USE OF THIS DRAWING AND/OR THE INFORMATION CONTAINED IN IT IS FORBIDDEN WITHOUT THE WRITTEN PERMISSION OF THE OWNER.

PLANS PREPARED BY:

Cushing Civil Engineers

Cushing Civil Engineers
12725 SW MILLIKAN WAY
SUITE 300
BEAVERTON, OR 97005
(503) 387-5331
www.cushingcivilengineers.com

LICENSURE:

REGISTERED PROFESSIONAL ENGINEER 83233 OREGON JUNE 7, 2012 KENNY McMANAWAY

RENEWAL DATE 12/31/26

SHEET TITLE:

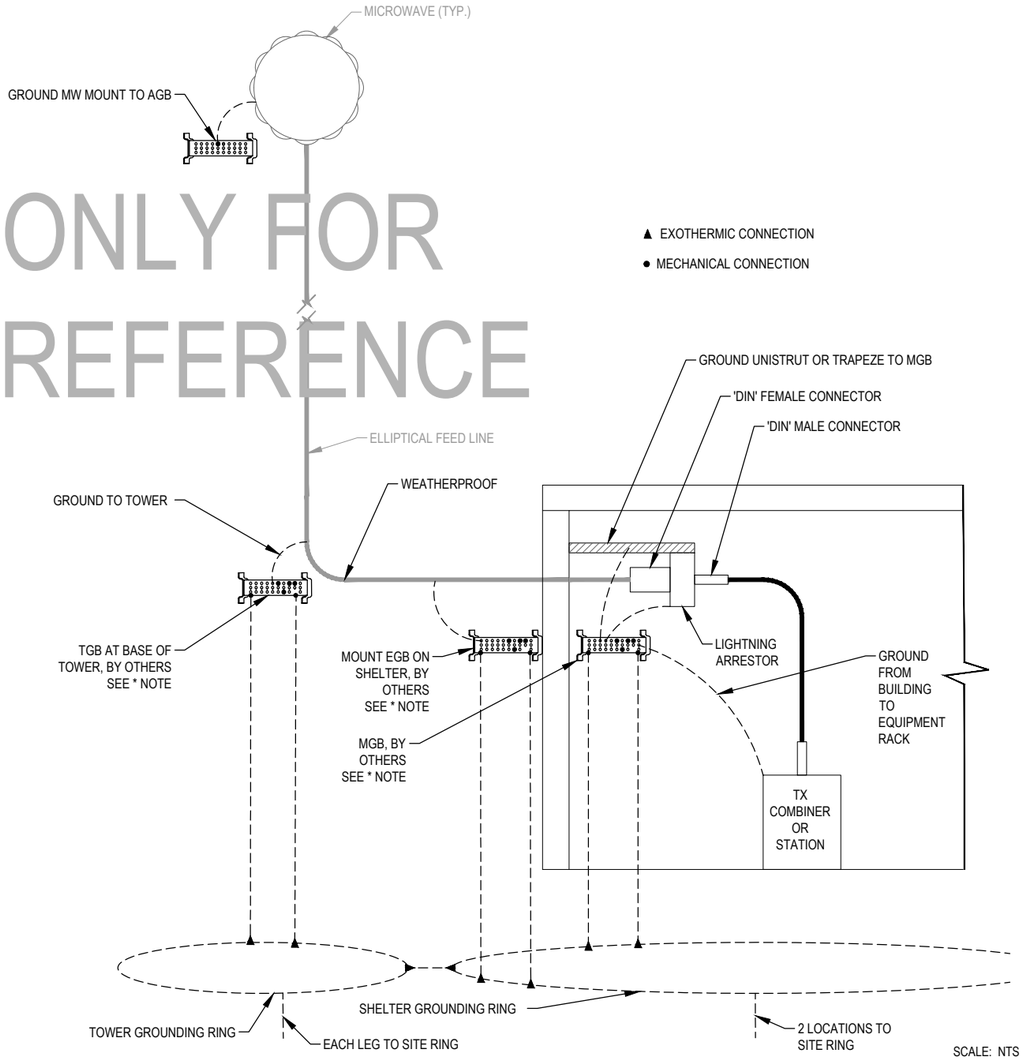
GROUNDING DETAILS I

SHEET NUMBER:

E-2

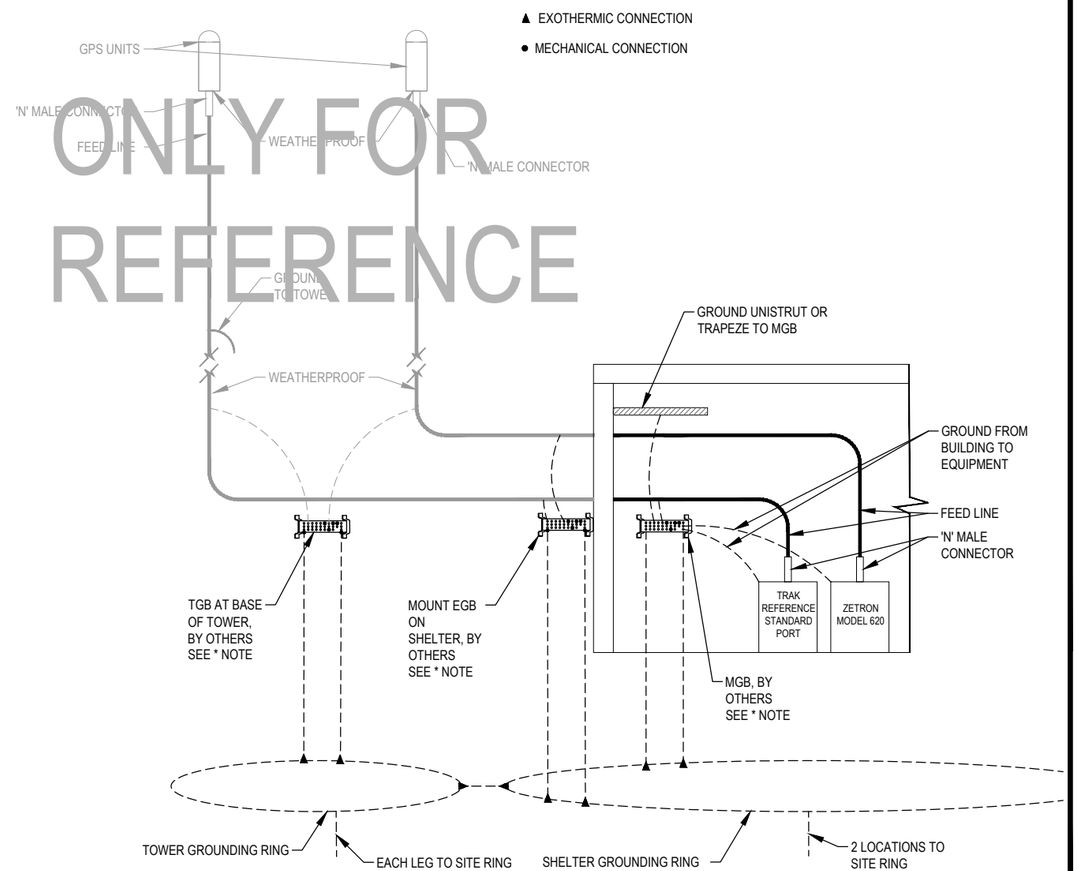
EXHIBIT K

NOTE:
TOWER INFO SHOWN FOR CONCEPTUAL USE ONLY. SEE TOWER STRUCTURAL REPORT BY OTHERS.



SCALE: NTS

TYPICAL MICROWAVE ANTENNA GROUNDING SCHEMATICS | 1



SCALE: NTS

TYPICAL GPS ANTENNA GROUNDING SCHEMATICS | 2

Marion County
OREGON

PROJECT INFORMATION:

MARION COUNTY
LOWER PROSPECT

3950 COLE RD S
SALEM, OR 97306

	DATE	RELEASE
	07-17-24	SITE SKETCH
	11-06-24	PRELIMINARY ZONING DRAWINGS
	12-20-24	PRELIMINARY CONSTRUCTION DRAWINGS
	02-27-25	CLIENT COMMENTS
	08-20-25	PRELIMINARY CONSTRUCTION DRAWINGS
	09-19-25	FINAL CONSTRUCTION DRAWINGS

DRAWING INFORMATION:
THIS DRAWING IS COPYRIGHTED AND IS THE SOLE PROPERTY OF THE OWNER. IT IS PRODUCED SOLELY FOR USE BY THE OWNER AND ITS AFFILIATES. REPRODUCTION OR USE OF THIS DRAWING AND/OR THE INFORMATION CONTAINED IN IT IS FORBIDDEN WITHOUT THE WRITTEN PERMISSION OF THE OWNER.

PLANS PREPARED BY:

cushing Civil Engineers

Cushing Civil Engineers
12725 SW MILLIKAN WAY
SUITE 300
BEAVERTON, OR 97005
(503) 387-5331
www.cushingcivilengineers.com

LICENSURE:

REGISTERED PROFESSIONAL ENGINEER
83233
OREGON
JUNE 7, 2012
KENNY McMANAWAY

RENEWAL DATE 12/31/26

SHEET TITLE:

GROUNDING DETAILS II

SHEET NUMBER:

E-3

SITE INFORMATION	
SITE NAME	**LOWER PROSPECT**

LOCATION INFORMATION			
COUNTY	MARION COUNTY		
STREET ADDRESS	3950 COLE RD S		
CITY	SALEM	STATE	OR
ZIP CODE	97306		
LATITUDE (DEC.)/(DEG)	44.846553 / 44° 50'47.59" N		
LONGITUDE (DEC.)/(DEG)	-123.111058 / 123°06'39.81" W		

TOWER INFORMATION			
STRUCTURE	SELF-SUPPORTING TOWER	TOWER MANUFACTURER	SABRE
TOWER OWNER	MARION COUNTY	SERIAL/MODEL #	-
GROUND ELEVATION	±1006.4'	# OF APPURTENANCE	-
# OF LEGS	3	HIGHEST POINT W/ ANT	-
TOWER HEIGHT W/O ANT	180'		

EXHIBIT K

#	Description	Part Number	Length (ft)	Leg/Face	Status	Base Height (ft)	Centerline Height (ft)	Tip Height (ft)	Antenna Azimuth	Mount Azimuth	Mount	Transmission Line Size/Type
1	P25 TX Antenna	CC807-09	10.3	B	New	159	164	169	165	90	Site-Pro P5A-6 (6' standoff)	7/8"
2	P25 RX Antenna	CC807-09	10.3	B	New	179	184	189	-	90	Standard	1/2" to TTA
3	TTA	NPD3633A-TTA	1.0	B	New	176	177	177	-	-	Standard	7/8"
4	Microwave - SCC Backup	VHLP6-6W	6.0	B	New	147	150	153	103.36	103.36	Standard w/ tieback	EW63
5	Microwave - MC Jail	VHLP4-11W	4.0	A	New	128	130	132	40.7	40.7	Standard w/ tieback	EW90
6	Dipole-1	16 element	20	B	Existing	102	112	122			Standoff	
7	Dipole-2	2 element	10	B	Existing	99	104	109			Standoff	
8	Dipole-3	16 element	20	A	Existing	102	112	122			Standoff	
9	Dipole-4	2 element	10	B	Existing	135	140	145			Standoff	
10	Dipole-5	16 element	20	A	Existing	140	150	160			Standoff	
11	VHF AS-IP RX Antenna	4 element	20	C	Existing	125	135	145			Standoff	
12	Microwave-1	RFS	6	A	Existing	47	50	53			Standard	
13	Microwave-2		3	A	Existing	134	135	137			Standard	
14	VHF AS-IP TX Antenna	DB224-E	22.5	C	New	94	105	116	-	-	Standoff	

= estimated value based on survey documentation and photos
= **information pending**

NOTE:

INFORMATION BASED ON TAIT COMMUNICATIONS' DOCUMENT DATED 08/12/2025 PROVIDED BY MARION COUNTY.

PROVISIONAL

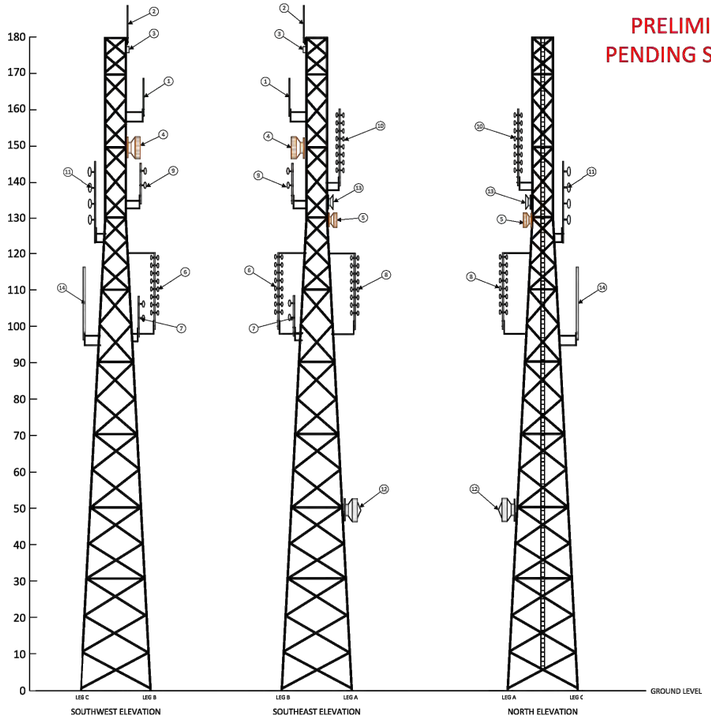
tait communications

Marion County, OR
700 MHz
P25 Phase II

Date	8/12/2025
Drawn	RCA
Checked	-

FILE: \marion county or_lower prospect.vsd

Lower Prospect Appurtenance Chart



Notes

1. To make room for new microwave antennas, antennas 9 and 13 must be moved from their original locations. If antennas are being moved from the old tower to the new tower, then the heights must be adjusted. Item 9 will have to move from 145' centerline to 140'. Item 13 will have move from 132' centerline to 135' centerline.

PROVISIONAL

tait communications

Marion County, OR
700 MHz
P25 Phase II

Date	8/12/2025
Drawn	RCA
Checked	-

FILE: \marion county or_lower prospect.vsd

Lower Prospect Tower Plan

Marion County OREGON

PROJECT INFORMATION:

MARION COUNTY
LOWER PROSPECT

3950 COLE RD S
SALEM, OR 97306

	DATE	RELEASE
	07-17-24	SITE SKETCH
	11-06-24	PRELIMINARY ZONING DRAWINGS
	12-20-24	PRELIMINARY CONSTRUCTION DRAWINGS
	02-27-25	CLIENT COMMENTS
	08-20-25	PRELIMINARY CONSTRUCTION DRAWINGS
	09-19-25	FINAL CONSTRUCTION DRAWINGS

DRAWING INFORMATION:

THIS DRAWING IS COPYRIGHTED AND IS THE SOLE PROPERTY OF THE OWNER. IT IS PRODUCED SOLELY FOR USE BY THE OWNER AND ITS AFFILIATES. REPRODUCTION OR USE OF THIS DRAWING AND/OR THE INFORMATION CONTAINED IN IT IS FORBIDDEN WITHOUT THE WRITTEN PERMISSION OF THE OWNER.

PLANS PREPARED BY:

cushing Civil Engineers

Cushing Civil Engineers

12725 SW MILLIKAN WAY
SUITE 300
BEAVERTON, OR 97005
(503) 387-5331
www.cushingcivilengineers.com

LICENSURE:

REGISTERED PROFESSIONAL ENGINEER 83233 OREGON JUNE 7, 2012 KENNY McMANAWAY

RENEWAL DATE 12/31/26

SHEET TITLE:

RF TOWER APPURTENANCES I

SHEET NUMBER:

RF-1.0

EXHIBIT K

VHLPX4-11W/A

Base Product



1.2 m | 4 ft ValuLine® High Performance Low Profile Antenna, dual-polarized, 10.125–11.700 GHz

Product Classification

Product Type	Microwave antenna
Product Brand	ValuLine®

General Specifications

Antenna Type	VHLPX - ValuLine® High Performance Low Profile Antenna, dual-polarized
Polarization	Dual
Side Struts, Included	1 inboard
Side Struts, Optional	1 inboard

Dimensions

Diameter, nominal	1.2 m | 4 ft

Electrical Specifications

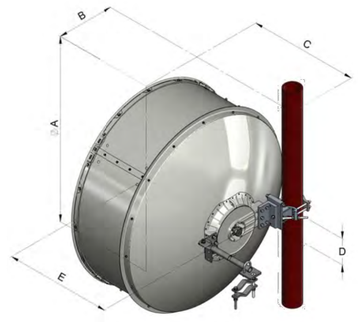
Operating Frequency Band	10.125 – 11.700 GHz
Gain, Low Band	40.2 dBi
Gain, Mid Band	40.7 dBi
Gain, Top Band	41 dBi
Boresite Cross Polarization Discrimination (XPD)	30 dB
Front-to-Back Ratio	66 dB
Beamwidth, Horizontal	1.6 °
Beamwidth, Vertical	1.6 °
Return Loss	17.7 dB
VSWR	1.3
Radiation Pattern Envelope Reference (RPE)	7185A
Electrical Compliance	Brazil Anatel Class 2 | Canada SRSP 310.5 | Canada SRSP 310.7 Part A | Canada SRSP 310.7 Part B | ETSI 302 217 Class

©2024 CommScope, Inc. All rights reserved. CommScope and the CommScope logo are registered trademarks of CommScope and/or its affiliates in the U.S. and other countries. For additional trademark information see https://www.commscope.com/trademarks. All product names, trademarks and registered trademarks are property of their respective owners. Revised: September 1, 2023

COMMSCOPE®

VHLPX4-11W/A

Antenna Dimensions and Mounting Information



Dimensions in inches (mm)					
Antenna size, ft (m)	A	B	C	D	E
4 (1.2)	50.8 (1291)	16 (407)	30.2 (767)	7.2 (183)	29.5 (748)

Wind Forces at Wind Velocity Survival Rating

Axial Force (FA)	5326 N | 1,197.333 lbf
Side Force (FS)	2638 N | 593.046 lbf
Twisting Moment (MT)	2162 N-m | 19,135.312 in lb
Force on Inboard Strut Side	2862 N | 643.403 lbf
Zcg without Ice	43 mm | 1.693 in
Zcg with 1/2 in (12 mm) Radial Ice	284 mm | 11.181 in
Weight with 1/2 in (12 mm) Radial Ice	74 kg | 163.142 lb

©2024 CommScope, Inc. All rights reserved. CommScope and the CommScope logo are registered trademarks of CommScope and/or its affiliates in the U.S. and other countries. For additional trademark information see https://www.commscope.com/trademarks. All product names, trademarks and registered trademarks are property of their respective owners. Revised: September 1, 2023

COMMSCOPE®

NOTE: MODEL SHOWN IS PRELIMINARY AND SUBJECT TO CHANGE UPON FINAL RF CONFIGURATION.

Marion County OREGON

PROJECT INFORMATION:

MARION COUNTY
LOWER PROSPECT

3950 COLE RD S
SALEM, OR 97306

	DATE	RELEASE
	07-17-24	SITE SKETCH
	11-06-24	PRELIMINARY ZONING DRAWINGS
	12-20-24	PRELIMINARY CONSTRUCTION DRAWINGS
	02-27-25	CLIENT COMMENTS
	08-20-25	PRELIMINARY CONSTRUCTION DRAWINGS
	09-19-25	FINAL CONSTRUCTION DRAWINGS

DRAWING INFORMATION:

THIS DRAWING IS COPYRIGHTED AND IS THE SOLE PROPERTY OF THE OWNER. IT IS PRODUCED SOLELY FOR USE BY THE OWNER AND ITS AFFILIATES. REPRODUCTION OR USE OF THIS DRAWING AND/OR THE INFORMATION CONTAINED IN IT IS FORBIDDEN WITHOUT THE WRITTEN PERMISSION OF THE OWNER.

PLANS PREPARED BY:

cushing Civil Engineers

Cushing
Civil Engineers

12725 SW MILLIKAN WAY
SUITE 300
BEAVERTON, OR 97005
(503) 387-5331
www.cushingcivilengineers.com

LICENSURE:

REGISTERED PROFESSIONAL ENGINEER
83233
OREGON
JUNE 7, 2012
KENNY McMANAWAY

RENEWAL DATE 12/31/26

SHEET TITLE:

RF TOWER APPURTENANCES II

SHEET NUMBER:

RF-1.1

EXHIBIT K

VHLPX6-6W/B

Base Product



1.8 m | 6 ft ValuLine® High Performance Low Profile Antenna, dual-polarized, 5.925–7.125 GHz

Product Classification

Product Type	Microwave antenna
Product Brand	ValuLine®

General Specifications

Antenna Type	VHLPX - ValuLine® High Performance Low Profile Antenna, dual-polarized
Polarization	Dual
Side Struts, Included	1
Side Struts, Optional	1 inboard

Dimensions

Diameter, nominal	1.8 m | 6 ft

Electrical Specifications

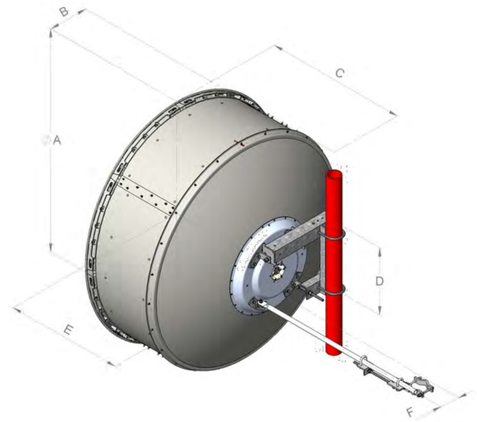
Operating Frequency Band	5.925 – 7.125 GHz
Gain, Low Band	38.5 dBi
Gain, Mid Band	39.3 dBi
Gain, Top Band	40.1 dBi
Boresite Cross Polarization Discrimination (XPD)	30 dB
Front-to-Back Ratio	66 dB
Beamwidth, Horizontal	1.8 °
Beamwidth, Vertical	1.8 °
Return Loss	17.7 dB
VSWR	1.3
Radiation Pattern Envelope Reference (RPE)	7139B
Electrical Compliance	Brazil Anatel Class 3 | Canada SRSP 305.9 Part A | Canada SRSP 306.4 Part A | ETSI 302 217 Class 3 | US FCC Part 101A

©2024 CommScope, Inc. All rights reserved. CommScope and the CommScope logo are registered trademarks of CommScope and/or its affiliates in the U.S. and other countries. For additional trademark information see https://www.commscope.com/trademarks. All product names, trademarks and registered trademarks are property of their respective owners. Revised: September 1, 2023

COMMSCOPE®

VHLPX6-6W/B

Antenna Dimensions and Mounting Information



Dimensions in inches (mm)						
Antenna size, ft (m)	A	B	C	D	E	F
6 (1.8)	74.8 (1899)	13.4 (340)	47.5 (1206)	22.4 (570)	39.4 (1001)	6.9 (174)

Wind Forces at Wind Velocity Survival Rating

Axial Force (FA)	10670 N | 2,398.712 lbf
Angle α for MT Max	-120 °
Side Force (FS)	5286 N | 1,188.34 lbf
Twisting Moment (MT)	4752 N-m | 42,058.742 in lb
Zcg without Ice	363 mm | 14.291 in
Zcg with 1/2 in (12 mm) Radial Ice	543 mm | 21.378 in
Weight with 1/2 in (12 mm) Radial Ice	234 kg | 515.881 lb

©2024 CommScope, Inc. All rights reserved. CommScope and the CommScope logo are registered trademarks of CommScope and/or its affiliates in the U.S. and other countries. For additional trademark information see https://www.commscope.com/trademarks. All product names, trademarks and registered trademarks are property of their respective owners. Revised: September 1, 2023

COMMSCOPE®

NOTE: MODEL SHOWN IS PRELIMINARY AND SUBJECT TO CHANGE UPON FINAL RF CONFIGURATION.

Marion County OREGON

PROJECT INFORMATION:

MARION COUNTY
LOWER PROSPECT

3950 COLE RD S
SALEM, OR 97306

	DATE	RELEASE
	07-17-24	SITE SKETCH
	11-06-24	PRELIMINARY ZONING DRAWINGS
	12-20-24	PRELIMINARY CONSTRUCTION DRAWINGS
	02-27-25	CLIENT COMMENTS
	08-20-25	PRELIMINARY CONSTRUCTION DRAWINGS
	09-19-25	FINAL CONSTRUCTION DRAWINGS

DRAWING INFORMATION:

THIS DRAWING IS COPYRIGHTED AND IS THE SOLE PROPERTY OF THE OWNER. IT IS PRODUCED SOLELY FOR USE BY THE OWNER AND ITS AFFILIATES. REPRODUCTION OR USE OF THIS DRAWING AND/OR THE INFORMATION CONTAINED IN IT IS FORBIDDEN WITHOUT THE WRITTEN PERMISSION OF THE OWNER.

PLANS PREPARED BY:

cushing Civil Engineers

Cushing
Civil Engineers

12725 SW MILLIKAN WAY
SUITE 300
BEAVERTON, OR 97005
(503) 387-5331
www.cushingcivilengineers.com

LICENSURE:

REGISTERED PROFESSIONAL ENGINEER
83233
OREGON
JUNE 7, 2012
KENNY McMANAWAY

RENEWAL DATE 12/31/26

SHEET TITLE:

RF TOWER APPURTENANCES III

SHEET NUMBER:

RF-1.2

EXHIBIT K

800MHz Corporate Collinear Antennas

748-870MHz

CC807 Series

These industry leading, full featured corporate collinear arrays allow site operators to combine, with complete integrity, a large number of communications services into a single, low profile antenna solution.

The corporate feed design employed by RFI maintains superior pattern control, allowing gain to be maximised with zero tilt variation over a very broad bandwidth, comparable to that only previously available in exposed dipole array configurations. This is achieved in the preferred form factor of a fully enclosed fibreglass radome, providing a reduction in wind loading, ice loading and tower loading in comparison.

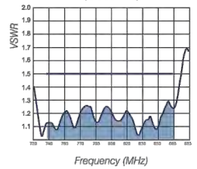
The CC807 series have been designed with an exceptional power rating of 500W across the band as well as a Peak Instantaneous Power (PIP) rating of 25kW to cater for the peak voltage levels present in large multi-carrier combining environments. RFI's refined design processes and proven construction methods achieve a PIM rating of –150dBc, further ensuring performance is maintained for the service life of the antenna.

Features:

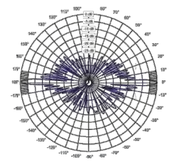
- 500W Continuous Power rating
- -150dBc Passive Intermodulation (PIM) rating, 100% PIM tested
- 25 kW Peak Instantaneous Power (PIP) rating
- DC grounding on all elements for the ultimate in lightning protection and dissipation of static noise.
- Light weight dipole construction using RFI's patented flexi-PCB architecture, maintains a low centre of gravity reducing tip deflection and sway
- Field invertible (excluding tilt models)
- Preset downtilt variations of 2 and 4 degrees available, see note (1)



Typical VSWR Response (CC807-12)



CC807-12 - E Plane



Electrical Specifications

Model Number	CC807-09-P	CC807-12-P
Nominal Gain *dBd (dBi)*	9.0 (11.1)	11.5 (13.6)
Frequency *MHz*	746-870	
Tuned Bandwidth *MHz*	Full	
VSWR *(Return Loss)*	1.5:1	
Nominal Impedance Ω	50	
Downtilt°	0 Std 2, 4 (1)	
Vertical Beamwidth°	8	4
Horizontal Beamwidth°	Omni +/- 0.5dB	
Input Power W	500	
Passive IM 3rd order (2x20W) *dBc*	-150	
Peak Instantaneous Power *kW*	25	

Mechanical

Model Number		CC807-09-P	CC807-12-P
Construction		Sky blue fibreglass radome	
Radome Diameter mm (inches)		76 (3.0)	
Length mm (inches)		3135 (123.4)	6235 (245.5)
Weight *kg (lbs)*		14 (30.9)	25.5 (56.2)
Termination		Integrated 4.3-10 Female	
Mountaing Area mm (inches)		750 x 90 (30 x 3.5) diameter Ecofilm™ plated aluminium	
Suggested Clamps		3 x UC-114	
Shipping Dimensions *mm (inches)*	H	115 (4.5)	
	W	115 (4.5)	
	L	3335 (131.3)	6435 (253.3)
Shipping Weight *kg (lbs)*		20.0 (44.1)	36.5 (80.5)
Projected area *cm² (ft²)*	No Ice	2597 (2.8)	5559 (6.0)
	With Ice	3192 (3.4)	7037 (7.6)
Lateral Thrust @160km/h *N* (100 mph lbs)		308 (69)	659 (148)
Wind Gust Rating *km/h (mph)*	No Ice	>240 (150)	
Torque @ 160km/h *Nm* (100mph ft-lbs)		413 (305)	1823 (1345)

(1) To order pre-set downtilt versions available, simply add a -T2 or -T4 towards the end of the part number to denote downtilt model required. For eg. CC807-12-T2-P to order CC807-12-P with 2deg of downtilt. Please note: Models with downtilt are NOT field invertible. . Eg. CC807-12-T2-P

Asia Pacific | EMEA | Americas

Copyright RF Industries Pty Ltd 2020. Subject to change without notice.

rfi.com.au

NOTE: MODEL SHOWN IS PRELIMINARY AND SUBJECT TO CHANGE UPON FINAL RF CONFIGURATION.

Marion County OREGON

PROJECT INFORMATION:

MARION COUNTY LOWER PROSPECT

3950 COLE RD S
SALEM, OR 97306

	DATE	RELEASE
	07-17-24	SITE SKETCH
	11-06-24	PRELIMINARY ZONING DRAWINGS
	12-20-24	PRELIMINARY CONSTRUCTION DRAWINGS
	02-27-25	CLIENT COMMENTS
	08-20-25	PRELIMINARY CONSTRUCTION DRAWINGS
	09-19-25	FINAL CONSTRUCTION DRAWINGS

DRAWING INFORMATION:

THIS DRAWING IS COPYRIGHTED AND IS THE SOLE PROPERTY OF THE OWNER. IT IS PRODUCED SOLELY FOR USE BY THE OWNER AND ITS AFFILIATES. REPRODUCTION OR USE OF THIS DRAWING AND/OR THE INFORMATION CONTAINED IN IT IS FORBIDDEN WITHOUT THE WRITTEN PERMISSION OF THE OWNER.

PLANS PREPARED BY:

cushing Civil Engineers

Cushing Civil Engineers

12725 SW MILLIKAN WAY
SUITE 300
BEAVERTON, OR 97005
(503) 387-5331
www.cushingcivilengineers.com

LICENSURE:

REGISTERED PROFESSIONAL ENGINEER
83233
OREGON
JUNE 7, 2012
KENNY McMANAWAY

RENEWAL DATE 12/31/26

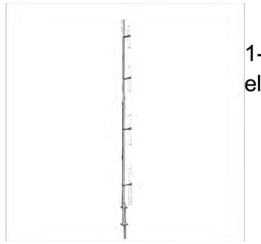
SHEET TITLE:

RF TOWER APPURTENANCES IV

SHEET NUMBER:

RF-1.3

DB224-E



1-port omni exposed dipole antenna, 138–150 MHz, 360° HPBW, fixed electrical tilt

- Broad response
- Two-piece mast for ease of shipping

General Specifications

Antenna Type	Omni
Band	Single band
Color	Silver
Grounding Type	RF connector inner conductor and body grounded to reflector and mounting bracket
Performance Note	Outdoor usage
Radiator Material	Aluminum
RF Connector Interface	N Male
RF Connector Location	Bottom
RF Connector Quantity, low band	1
RF Connector Quantity, total	1

Dimensions

Length	6858 mm | 270 in
Net Weight, without mounting kit	17.2 kg | 37.919 lb

Electrical Specifications

Impedance	50 ohm
Operating Frequency Band	138 – 150 MHz
Polarization	Vertical

Electrical Specifications

Frequency Band, MHz	**138–150**
Gain, dBi	8.1
Beamwidth, Horizontal, degrees	360
Beamwidth, Vertical, degrees	16
Beam Tilt, degrees	0
VSWR | Return loss, dB	1.5 | 14.0
Input Power per Port, maximum, watts	500

©2021 CommScope, Inc. All rights reserved. All trademarks identified by ® or ™ are registered trademarks, respectively, of CommScope. All specifications are subject to change without notice. See www.commscope.com for the most current information. Revised: September 14, 2021

COMMSCOPE®

DB224-E

Mechanical Specifications

Wind Loading @ Velocity, maximum	560.5 N @ 100 mph (126.0 lbf @ 100 mph)
Wind Speed, maximum	130 km/h | 80.778 mph

Regulatory Compliance/Certifications

Agency	Classification
ISO 9001:2015	Designed, manufactured and/or distributed under this quality management system

ISO 9001:2015

Included Products

DB365-OS	–	Pipe Mounting Kit that consists of two clamps for mounting antennas to round members 1.25 - 3.5 in (35 - 89 mm) OD round members.

* Footnotes

Performance Note	Severe environmental conditions may degrade optimum performance

©2021 CommScope, Inc. All rights reserved. All trademarks identified by ® or ™ are registered trademarks, respectively, of CommScope. All specifications are subject to change without notice. See www.commscope.com for the most current information. Revised: September 14, 2021

COMMSCOPE®

NOTE: MODEL SHOWN IS PRELIMINARY AND SUBJECT TO CHANGE UPON FINAL RF CONFIGURATION.

Marion County OREGON

PROJECT INFORMATION:

MARION COUNTY
LOWER PROSPECT

3950 COLE RD S
SALEM, OR 97306

	DATE	RELEASE
	07-17-24	SITE SKETCH
	11-06-24	PRELIMINARY ZONING DRAWINGS
	12-20-24	PRELIMINARY CONSTRUCTION DRAWINGS
	02-27-25	CLIENT COMMENTS
	08-20-25	PRELIMINARY CONSTRUCTION DRAWINGS
	09-19-25	FINAL CONSTRUCTION DRAWINGS

DRAWING INFORMATION:
THIS DRAWING IS COPYRIGHTED AND IS THE SOLE PROPERTY OF THE OWNER. IT IS PRODUCED SOLELY FOR USE BY THE OWNER AND ITS AFFILIATES. REPRODUCTION OR USE OF THIS DRAWING AND/OR THE INFORMATION CONTAINED IN IT IS FORBIDDEN WITHOUT THE WRITTEN PERMISSION OF THE OWNER.

PLANS PREPARED BY:

cushing Civil Engineers

Cushing
Civil Engineers

12725 SW MILLIKAN WAY
SUITE 300
BEAVERTON, OR 97005
(503) 387-5331
www.cushingcivilengineers.com

LICENSURE:

REGISTERED PROFESSIONAL ENGINEER
83233
OREGON
JUNE 7, 2012
KENNY McMANAWAY

RENEWAL DATE 12/31/26

SHEET TITLE:

RF TOWER APPURTENANCES V

SHEET NUMBER:

RF-1.4

EXHIBIT K

SITE NAME:

MCCULLY MOUNTAIN

40505 N MCCULLY MOUNTAIN ROAD, LYONS, OR 97358

SHEET INDEX

CONSTRUCTION SUBMITTAL:

T-1	COVER SHEET
V-1	EXISTING CONDITIONS (SURVEY)
V-2	EXISTING CONDITIONS (SURVEY)
G-1	GENERAL NOTES
ER-1	GRADING & EROSION CONTROL PLAN
ER-2	GRADING & EROSION CONTROL DETAILS
C-1	OVERALL SITE PLAN
C-2	ENLARGED SITE PLAN
C-3	ELEVATIONS
C-4	COMPOUND DETAILS I
C-5	COMPOUND DETAILS II
C-6	GENERATOR & PROPANE TANK DETAILS
C-7	HVAC DETAILS
C-8	EQUIPMENT SHELTER FOUNDATION PLAN
E-1	SITE GROUNDING PLAN & DETAILS
E-2	GROUNDING DETAILS I
E-3	GROUNDING DETAILS II
RF-1.0	RF TOWER APPURTENANCES I
RF-1.1	RF TOWER APPURTENANCES II
RF-1.2	RF TOWER APPURTENANCES III
RF-1.3	RF TOWER APPURTENANCES IV
RF-1.4	RF TOWER APPURTENANCES V

SHELTER ONE PREFABRICATED SHELTER DRAWINGS (REFER TO STATE OF OREGON BUILDING CODES DIVISION FOR STATE INSIGNIA):

SH-1	EQUIPMENT SHELTER EXTERIOR ELEVATIONS
SH-2	EQUIPMENT SHELTER INTERIOR ELEVATIONS
SH-3	ELECTRICAL ONE LINE DRAWING
SH-4	ELECTRICAL PANEL SCHEDULE

PROJECT INFORMATION

PROPERTY OWNER:
FRERES TIMBER INC
PO BOX 276
LYONS, OR 97358
CONTACT:
NAME
PHONE

TOWER OWNER:
MARION COUNTY PUBLIC WORKS
5155 SILVERTON RD NE
SALEM, OR 97305
CONTACT:
BRIAN NICHOLAS
(503) 588-7943
bnicholas@co.marion.or.us

COUNTY:
LINN

JURISDICTION:
LINN COUNTY

ZONING:
F/F (FARM/FOREST)

NEPA FCC:
REPORT BY BLACK MOUNTAIN
DATED 09/08/2025

PARCEL NUMBER(S) & AREA:
ACCOUNT #: 945148
TAXLOT #: 09S01E25-00-00202
6,696,478.8 SQ FEET±
153.73 ACRES±

PROJECT AREA:
TOTAL COMPOUND AREA - 3,600 SQ FEET
ACCESS DRIVE AND PARKING - 1,392 SQ FEET ±
TOTAL - 4,992 SQ FEET ±

PROJECT LOCATION:
*LAT: N 44° 45'48.80" (44.763556)
*LONG: W 122°37'55.97" (-122.632214)
*GROUND ELEVATION (ASML) = 1,701'±

*INFORMATION OBTAINED FROM GOOGLE EARTH

UTILITY PROVIDERS:
TELCO PROVIDER: N/A
POWER PROVIDER: CONSUMERS POWER INC.

GENERAL INFORMATION:
1. TRAFFIC IS UNAFFECTED
2. SIGNAGE AT SITE IS PROPOSED
3. SITE IS UNMANNED AND HANDICAP ACCESS IS NOT REQUIRED

CODE INFORMATION:
1. IBC-2018 INTERNATIONAL BUILDING CODE
2. NEC-2017 NATIONAL ELECTRIC CODE
3. 2019 OREGON STRUCTURAL SPECIALTY CODE
4. 2017 NFPA 58 CODE
5. OCCUPANCY GROUP: U
6. CONSTRUCTION TYPE: II-B

PROJECT INFORMATION CONTINUED

APPLICANT:
MARION COUNTY PUBLIC WORKS
5155 SILVERTON RD NE
SALEM, OR 97305
CONTACT:
BRIAN NICHOLAS
(503) 588-7943
bnicholas@co.marion.or.us

PROJECT MANAGER:
PATRICK HOOVER
(971) 295-0152
phoover@rtspnw.com

CONSTRUCTION MANAGER:
PATRICK HOOVER
(971) 295-0152
phoover@rtspnw.com

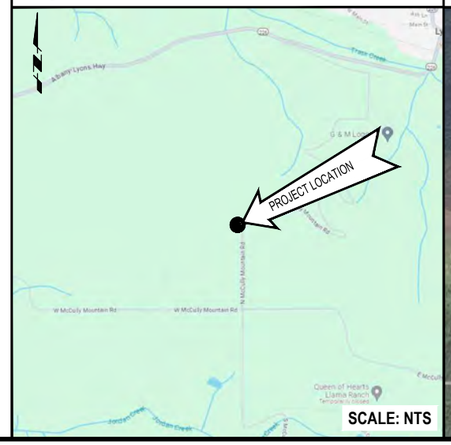
ZONING CONTACT:
CUSHING CIVIL ENGINEERS
12725 SW MILLIKAN WAY, STE 300
BEAVERTON, OR 97005
CONTACT:
ROB HOWE
(503) 387-5331
rob@cushingcivilengineers.com

ENGINEER OF RECORD:
CUSHING CIVIL ENGINEERS
12725 SW MILLIKAN WAY, STE 300
BEAVERTON, OR 97005
CONTACT:
KENNY MCMANAWAY
(503) 387-5331
kenny@cushingcivilengineers.com

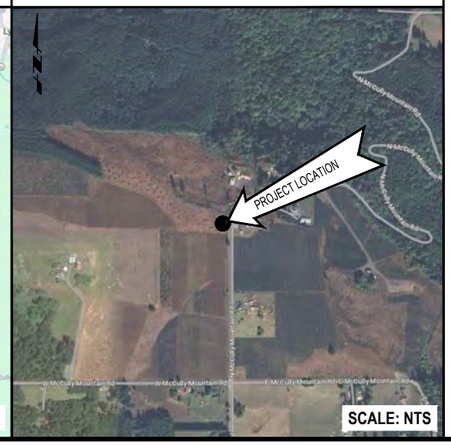
SURVEYOR:
ORION GEOMATICS
1724 23RD AVE
FOREST GROVE, OR 97116
CONTACT:
JOHN PUTNAM
(503) 359-1688
jputnam@oriongeomatics.com

GEOTECH:
BLACK MOUNTAIN CONSULTING LLC
22566 SW WASHINGTON STE #206
SHERWOOD, OR 97140
CONTACT:
TAMMY STEMPEL
(503) 625-2517
tammys@blkmountain.com

VICINITY MAP



LOCATOR MAP



DRIVING DIRECTIONS

FROM MARION COUNTY PUBLIC WORKS BUILDING:

1. HEAD SOUTHEAST TOWARD OR-213 S (305 FT) & TURN RIGHT ONTO OR-213 S (0.2 MI)
   0.2 MI
2. TURN LEFT ONTO CORDON RD NE (4.1 MI) & SHARP LEFT ONTO MACLEAY RD SE (0.2 MI)
   4.3 MI
3. TURN RIGHT ONTO CULVERT DR SE (1.0 MI) & TURN RIGHT ONTO DEER PARK DR SE (0.6 MI)
   1.6 MI
4. MERGE ONTO OR-22 E/N SANTIAM HWY SE
   18 MIN (1.6 MI)
5. TURN RIGHT ONTO OR-226 W/5TH ST
   1.3 MI
6. TURN RIGHT ONTO OR-226 W/6TH ST. CONTINUE TO FOLLOW OR-226 W.
   2.5 MI
7. TURN LEFT ONTO W MCCULLY MOUNTAIN RD
   2.5 MI
8. TURN LEFT ONTO N MCCULLY MOUNTAIN RD. DESTINATION WILL BE ON THE LEFT.
   0.3 MI

EST. TIME: 39 MINS.
EST. MILEAGE: 31.1 MI

PROJECT DESCRIPTION

1. PROPOSED INSTALLATION OF A NEW PUBLIC SAFETY COMMUNICATIONS FACILITY FOR MARION COUNTY, OREGON.
2. PROPOSED INSTALLATION OF THE FOLLOWING EQUIPMENT ON A NEW 180' SELF-SUPPORT TOWER:
   * ANTENNAS W/ ASSOCIATED ANCILLARY EQUIPMENT
3. PROPOSED INSTALLATION OF THE FOLLOWING EQUIPMENT WITHIN GROUND:
   * (1) 1000 GAL. PROPANE TANK
   * (1) GENERATOR
   * (1) 12'x16' EQUIPMENT SHELTER
   * (1) 60'x60' CHAINLINK FENCED COMPOUND

PROJECT INFORMATION:

MARION COUNTY
MCCULLY MOUNTAIN

40505 N MCCULLY MOUNTAIN ROAD
LYONS, OR 97358

	DATE	RELEASE
	06-18-25	SITE SKETCH
	07-14-25	PRELIMINARY ZONING DRAWINGS
	08-07-25	PRELIMINARY CONSTRUCTION DRAWINGS
	09-17-25	FINAL CONSTRUCTION DRAWINGS

DRAWING INFORMATION:
THIS DRAWING IS COPYRIGHTED AND IS THE SOLE PROPERTY OF THE OWNER. IT IS PRODUCED SOLELY FOR USE BY THE OWNER AND ITS AFFILIATES. REPRODUCTION OR USE OF THIS DRAWING AND/OR THE INFORMATION CONTAINED IN IT IS FORBIDDEN WITHOUT THE WRITTEN PERMISSION OF THE OWNER.

PLANS PREPARED BY:

Cushing
Civil Engineers

12725 SW MILLIKAN WAY
SUITE 300
BEAVERTON, OR 97005
(503) 387-5331
www.cushingcivilengineers.com

LICENSURE:

REGISTERED PROFESSIONAL ENGINEER
83233
OREGON
JUNE 7, 2012
KENNY McMANAWAY

RENEWAL DATE 12/31/26

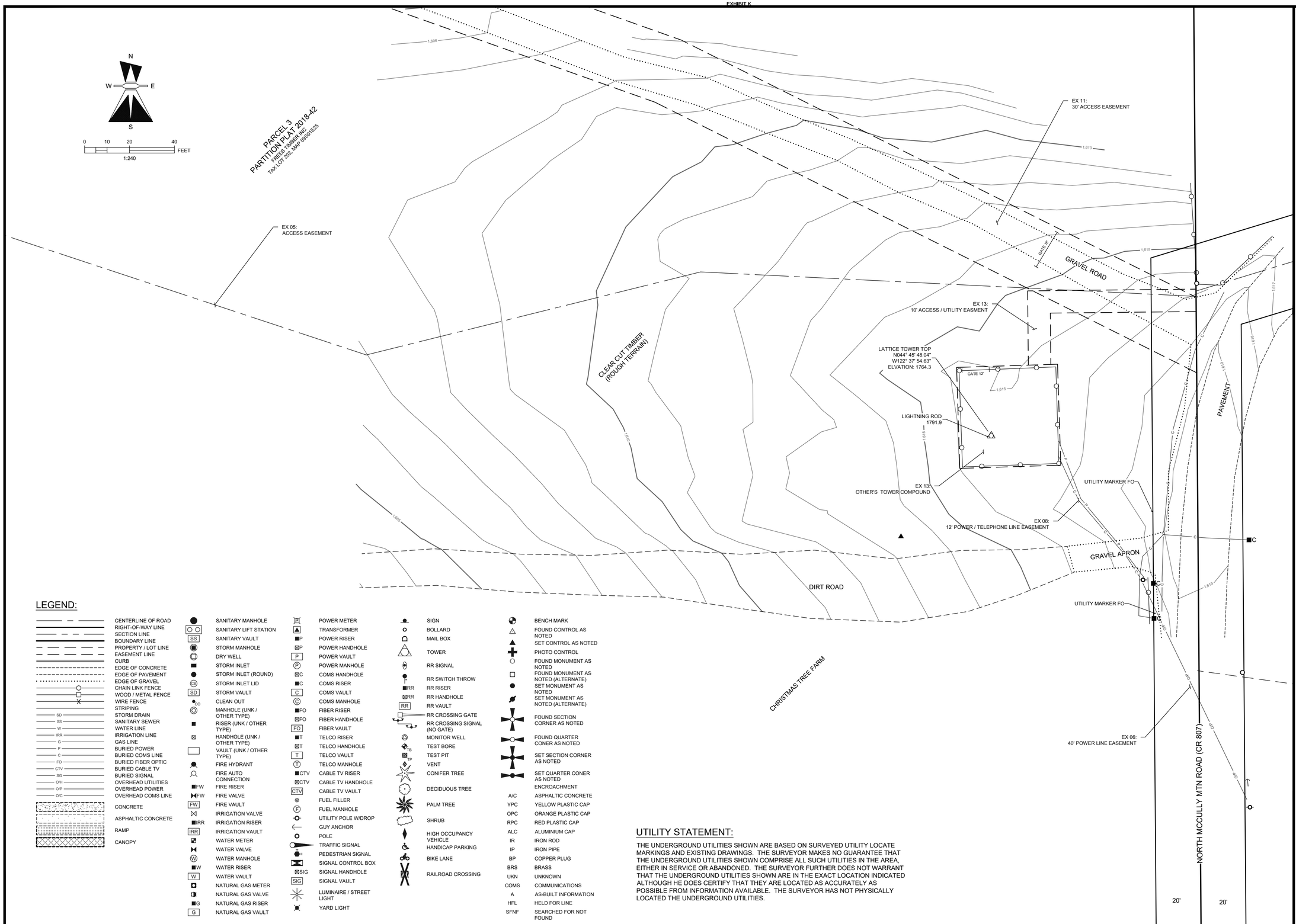
SHEET TITLE:

COVER SHEET

SHEET NUMBER:

T-1

EXHIBIT K



LEGEND:

- CENTERLINE OF ROAD
- RIGHT-OF-WAY LINE
- SECTION LINE
- BOUNDARY LINE
- PROPERTY / LOT LINE
- EASEMENT LINE
- CURB
- EDGE OF CONCRETE
- EDGE OF PAVEMENT
- EDGE OF GRAVEL
- CHAIN LINK FENCE
- WOOD / METAL FENCE
- WIRE FENCE
- STRIPING
- SD — STORM DRAIN
- SS — SANITARY SEWER
- W — WATER LINE
- IRR — IRRIGATION LINE
- G — GAS LINE
- P — BURIED POWER
- C — BURIED COMS LINE
- FO — BURIED FIBER OPTIC
- CTV — BURIED CABLE TV
- SG — BURIED SIGNAL
- O/H — OVERHEAD UTILITIES
- O/P — OVERHEAD POWER
- O/C — OVERHEAD COMS LINE
- CONCRETE
- ASPHALTIC CONCRETE
- RAMP
- CANOPY

- SANITARY MANHOLE
- SANITARY LIFT STATION
- SS — SANITARY VAULT
- STORM MANHOLE
- DRY WELL
- STORM INLET
- STORM INLET (ROUND)
- CB — STORM INLET LID
- SD — STORM VAULT
- CO — CLEAN OUT
- MANHOLE (UNK / OTHER TYPE)
- RISER (UNK / OTHER TYPE)
- HANDHOLE (UNK / OTHER TYPE)
- VAULT (UNK / OTHER TYPE)
- FIRE HYDRANT
- FIRE AUTO CONNECTION
- FW — FIRE RISER
- FW — FIRE VALVE
- FW — FIRE VAULT
- IRRIGATION VALVE
- IRR — IRRIGATION RISER
- IRR — IRRIGATION VAULT
- WATER METER
- WATER VALVE
- W — WATER MANHOLE
- W — WATER RISER
- W — WATER VAULT
- NATURAL GAS METER
- NATURAL GAS VALVE
- G — NATURAL GAS RISER
- G — NATURAL GAS VAULT

- POWER METER
- TRANSFORMER
- P — POWER RISER
- P — POWER HANDHOLE
- P — POWER VAULT
- P — POWER MANHOLE
- C — COMS HANDHOLE
- C — COMS RISER
- C — COMS VAULT
- C — COMS MANHOLE
- FO — FIBER RISER
- FO — FIBER HANDHOLE
- FO — FIBER VAULT
- T — TELCO RISER
- T — TELCO HANDHOLE
- T — TELCO VAULT
- T — TELCO MANHOLE
- CTV — CABLE TV RISER
- CTV — CABLE TV HANDHOLE
- CTV — CABLE TV VAULT
- FUEL FILLER
- F — FUEL MANHOLE
- UTILITY POLE W/DROP
- GUY ANCHOR
- POLE
- TRAFFIC SIGNAL
- PEDESTRIAN SIGNAL
- SIGNAL CONTROL BOX
- SIG — SIGNAL HANDHOLE
- SIG — SIGNAL VAULT
- LUMINAIRE / STREET LIGHT
- YARD LIGHT

- SIGN
- BOLLARD
- MAIL BOX
- TOWER
- RR SIGNAL
- RR SWITCH THROW
- RR — RR RISER
- RR — RR HANDHOLE
- RR — RR VAULT
- RR CROSSING GATE
- RR CROSSING SIGNAL (NO GATE)
- MONITOR WELL
- TB — TEST BORE
- TP — TEST PIT
- VENT
- CONIFER TREE
- DECIDUOUS TREE
- PALM TREE
- SHRUB
- HIGH OCCUPANCY VEHICLE
- HANDICAP PARKING
- BIKE LANE
- RR — RAILROAD CROSSING

- BENCH MARK
- FOUND CONTROL AS NOTED
- SET CONTROL AS NOTED
- PHOTO CONTROL
- FOUND MONUMENT AS NOTED
- FOUND MONUMENT AS NOTED (ALTERNATE)
- SET MONUMENT AS NOTED
- SET MONUMENT AS NOTED (ALTERNATE)
- FOUND SECTION CORNER AS NOTED
- FOUND QUARTER CONER AS NOTED
- SET SECTION CORNER AS NOTED
- SET QUARTER CONER AS NOTED
- ENCROACHMENT

A/C	ASPHALTIC CONCRETE
YPC	YELLOW PLASTIC CAP
OPC	ORANGE PLASTIC CAP
RPC	RED PLASTIC CAP
ALC	ALUMINIUM CAP
IR	IRON ROD
IP	IRON PIPE
BP	COPPER PLUG
BRS	BRASS
UKN	UNKNOWN
COMS	COMMUNICATIONS
A	AS-BUILT INFORMATION
HFL	HELD FOR LINE
SFNF	SEARCHED FOR NOT FOUND

UTILITY STATEMENT:

THE UNDERGROUND UTILITIES SHOWN ARE BASED ON SURVEYED UTILITY LOCATE MARKINGS AND EXISTING DRAWINGS. THE SURVEYOR MAKES NO GUARANTEE THAT THE UNDERGROUND UTILITIES SHOWN COMPRISE ALL SUCH UTILITIES IN THE AREA, EITHER IN SERVICE OR ABANDONED. THE SURVEYOR FURTHER DOES NOT WARRANT THAT THE UNDERGROUND UTILITIES SHOWN ARE IN THE EXACT LOCATION INDICATED ALTHOUGH HE DOES CERTIFY THAT THEY ARE LOCATED AS ACCURATELY AS POSSIBLE FROM INFORMATION AVAILABLE. THE SURVEYOR HAS NOT PHYSICALLY LOCATED THE UNDERGROUND UTILITIES.

SECTION 25, T09S, R01E, W.M

11X17 SCALE: 1" = 40' | 22X34 SCALE: 1" = 20' | 1

Marion County OREGON

PROJECT INFORMATION:

MARION COUNTY
MCCULLY MOUNTIAN

40505 N MCCULLY MOUNTAIN ROAD
LYONS, OR 97358

	DATE	RELEASE
0	07/18/2025	INITIAL SURVEY RELEASE

DRAWING INFORMATION:

THIS DRAWING IS COPYRIGHTED AND IS THE SOLE PROPERTY OF THE OWNER. IT IS PRODUCED SOLELY FOR USE BY THE OWNER AND ITS AFFILIATES. REPRODUCTION OR USE OF THIS DRAWING AND/OR THE INFORMATION CONTAINED IN IT IS FORBIDDEN WITHOUT THE WRITTEN PERMISSION OF THE OWNER.

PLANS PREPARED BY:

cushing Civil Engineers

Cushing Civil Engineers

12725 SW MILLIKAN WAY
SUITE 300
BEAVERTON, OR 97005
(503) 387-5331
www.cushing-engr.com

LICENSURE:

orion GEOMATICS
Because the world is a spatial place™
1724 23rd Avenue | Forest Grove OR 97116
T: 503.359.1688 | www.oriongeomatics.com

REGISTERED
PROFESSIONAL
LAND SURVEYOR

DIGITAL SIGNATURE

OREGON
JULY 19, 1994
JOHN D. PUTNAM
2676

RENEWS: 12-31-26
DIGITALLY SIGNED 07/18/2025

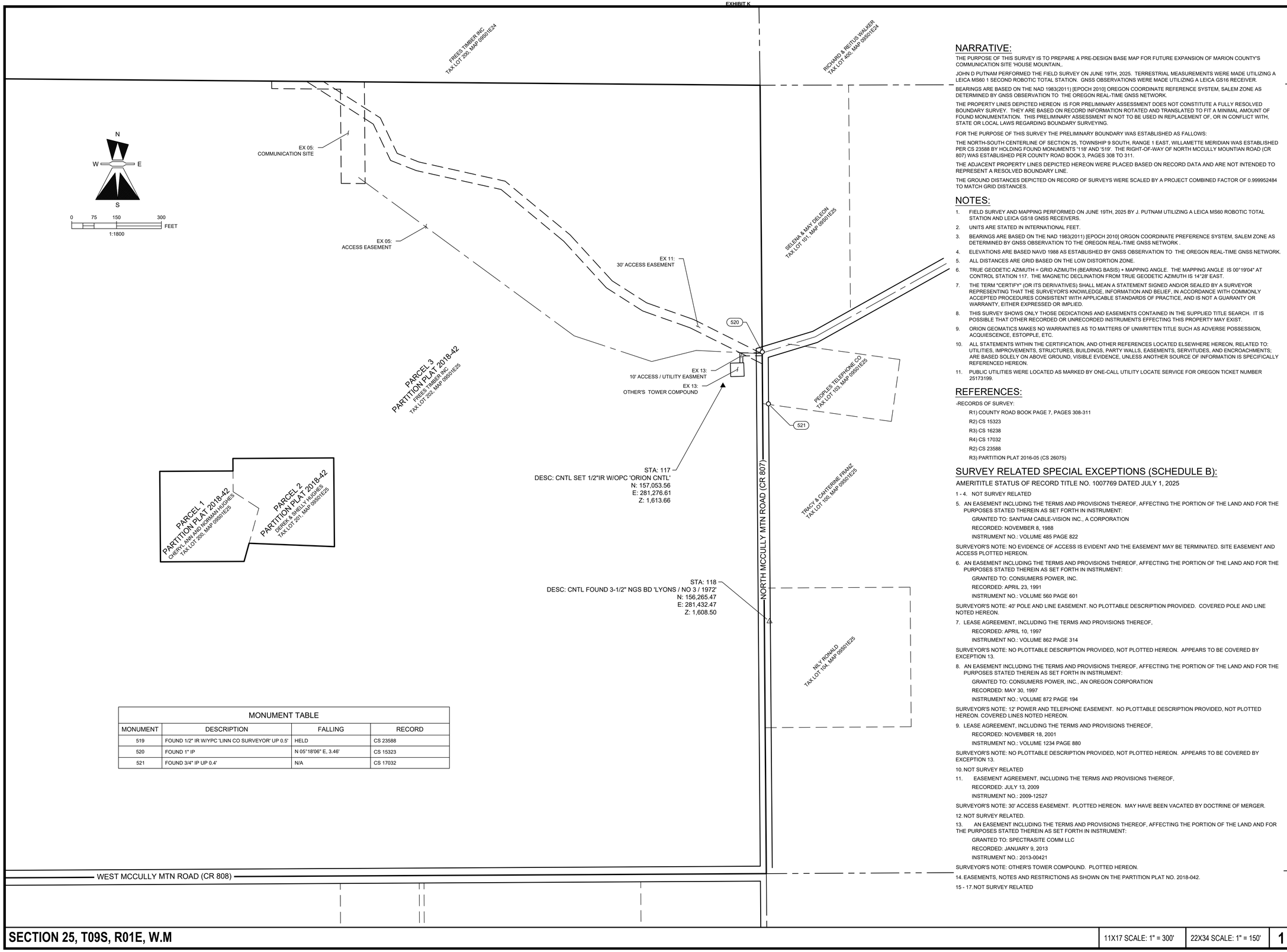
SHEET TITLE:

EXISTING CONDITIONS

SHEET NUMBER:

V-1

EXHIBIT K



MONUMENT TABLE			
MONUMENT	DESCRIPTION	FALLING	RECORD
519	FOUND 1/2" IR W/YPC 'LINN CO SURVEYOR' UP 0.5'	HELD	CS 23588
520	FOUND 1" IP	N 05°18'06" E, 3.46'	CS 15323
521	FOUND 3/4" IP UP 0.4'	N/A	CS 17032

NARRATIVE:

THE PURPOSE OF THIS SURVEY IS TO PREPARE A PRE-DESIGN BASE MAP FOR FUTURE EXPANSION OF MARION COUNTY'S COMMUNICATION SITE 'HOUSE MOUNTAIN,.

JOHN D PUTNAM PERFORMED THE FIELD SURVEY ON JUNE 19TH, 2025. TERRESTRIAL MEASUREMENTS WERE MADE UTILIZING A LEICA MS60 1 SECOND ROBOTIC TOTAL STATION. GNSS OBSERVATIONS WERE MADE UTILIZING A LEICA GS16 RECEIVER.

BEARINGS ARE BASED ON THE NAD 1983(2011) [EPOCH 2010] OREGON COORDINATE REFERENCE SYSTEM, SALEM ZONE AS DETERMINED BY GNSS OBSERVATION TO THE OREGON REAL-TIME GNSS NETWORK.

THE PROPERTY LINES DEPICTED HEREON IS FOR PRELIMINARY ASSESSMENT DOES NOT CONSTITUTE A FULLY RESOLVED BOUNDARY SURVEY. THEY ARE BASED ON RECORD INFORMATION ROTATED AND TRANSLATED TO FIT A MINIMAL AMOUNT OF FOUND MONUMENTATION. THIS PRELIMINARY ASSESSMENT IN NOT TO BE USED IN REPLACEMENT OF, OR IN CONFLICT WITH, STATE OR LOCAL LAWS REGARDING BOUNDARY SURVEYING.

FOR THE PURPOSE OF THIS SURVEY THE PRELIMINARY BOUNDARY WAS ESTABLISHED AS FALLOWS:

THE NORTH-SOUTH CENTERLINE OF SECTION 25, TOWNSHIP 9 SOUTH, RANGE 1 EAST, WILLAMETTE MERIDIAN WAS ESTABLISHED PER CS 23588 BY HOLDING FOUND MONUMENTS "118' AND "519'. THE RIGHT-OF-WAY OF NORTH MCCULLY MOUNTIAN ROAD (CR 807) WAS ESTABLISHED PER COUNTY ROAD BOOK 3, PAGES 308 TO 311.

THE ADJACENT PROPERTY LINES DEPICTED HEREON WERE PLACED BASED ON RECORD DATA AND ARE NOT INTENDED TO REPRESENT A RESOLVED BOUNDARY LINE.

THE GROUND DISTANCES DEPICTED ON RECORD OF SURVEYS WERE SCALED BY A PROJECT COMBINED FACTOR OF 0.999952484 TO MATCH GRID DISTANCES.

NOTES:

1. FIELD SURVEY AND MAPPING PERFORMED ON JUNE 19TH, 2025 BY J. PUTNAM UTILIZING A LEICA MS60 ROBOTIC TOTAL STATION AND LEICA GS18 GNSS RECEIVERS.
2. UNITS ARE STATED IN INTERNATIONAL FEET.
3. BEARINGS ARE BASED ON THE NAD 1983(2011) [EPOCH 2010] ORGON COORDINATE PREFERENCE SYSTEM, SALEM ZONE AS DETERMINED BY GNSS OBSERVATION TO THE OREGON REAL-TIME GNSS NETWORK .
4. ELEVATIONS ARE BASED NAVD 1988 AS ESTABLISHED BY GNSS OBSERVATION TO THE OREGON REAL-TIME GNSS NETWORK.
5. ALL DISTANCES ARE GRID BASED ON THE LOW DISTORTION ZONE.
6. TRUE GEODETIC AZIMUTH = GRID AZIMUTH (BEARING BASIS) + MAPPING ANGLE. THE MAPPING ANGLE IS 00°19'04" AT CONTROL STATION 117. THE MAGNETIC DECLINATION FROM TRUE GEODETIC AZIMUTH IS 14°28' EAST.
7. THE TERM "CERTIFY" (OR ITS DERIVATIVES) SHALL MEAN A STATEMENT SIGNED AND/OR SEALED BY A SURVEYOR REPRESENTING THAT THE SURVEYOR'S KNOWLEDGE, INFORMATION AND BELIEF, IN ACCORDANCE WITH COMMONLY ACCEPTED PROCEDURES CONSISTENT WITH APPLICABLE STANDARDS OF PRACTICE, AND IS NOT A GUARANTY OR WARRANTY, EITHER EXPRESSED OR IMPLIED.
8. THIS SURVEY SHOWS ONLY THOSE DEDICATIONS AND EASEMENTS CONTAINED IN THE SUPPLIED TITLE SEARCH. IT IS POSSIBLE THAT OTHER RECORDED OR UNRECORDED INSTRUMENTS EFFECTING THIS PROPERTY MAY EXIST.
9. ORION GEOMATICS MAKES NO WARRANTIES AS TO MATTERS OF UNWRITTEN TITLE SUCH AS ADVERSE POSSESSION, ACQUIESCENCE, ESTOPPLE, ETC.
10. ALL STATEMENTS WITHIN THE CERTIFICATION, AND OTHER REFERENCES LOCATED ELSEWHERE HEREON, RELATED TO: UTILITIES, IMPROVEMENTS, STRUCTURES, BUILDINGS, PARTY WALLS, EASEMENTS, SERVITUDES, AND ENCROACHMENTS; ARE BASED SOLELY ON ABOVE GROUND, VISIBLE EVIDENCE, UNLESS ANOTHER SOURCE OF INFORMATION IS SPECIFICALLY REFERENCED HEREON.
11. PUBLIC UTILITIES WERE LOCATED AS MARKED BY ONE-CALL UTILITY LOCATE SERVICE FOR OREGON TICKET NUMBER 25173199.

REFERENCES:

-RECORDS OF SURVEY:

R1) COUNTY ROAD BOOK PAGE 7, PAGES 308-311

R2) CS 15323

R3) CS 16238

R4) CS 17032

R2) CS 23588

R3) PARTITION PLAT 2016-05 (CS 26075)

SURVEY RELATED SPECIAL EXCEPTIONS (SCHEDULE B):

AMERITITLE STATUS OF RECORD TITLE NO. 1007769 DATED JULY 1, 2025

1 - 4. NOT SURVEY RELATED

5. AN EASEMENT INCLUDING THE TERMS AND PROVISIONS THEREOF, AFFECTING THE PORTION OF THE LAND AND FOR THE PURPOSES STATED THEREIN AS SET FORTH IN INSTRUMENT:
   GRANTED TO: SANTIAM CABLE-VISION INC., A CORPORATION
   RECORDED: NOVEMBER 8, 1988
   INSTRUMENT NO.: VOLUME 485 PAGE 822

SURVEYOR'S NOTE: NO EVIDENCE OF ACCESS IS EVIDENT AND THE EASEMENT MAY BE TERMINATED. SITE EASEMENT AND ACCESS PLOTTED HEREON.

6. AN EASEMENT INCLUDING THE TERMS AND PROVISIONS THEREOF, AFFECTING THE PORTION OF THE LAND AND FOR THE PURPOSES STATED THEREIN AS SET FORTH IN INSTRUMENT:
   GRANTED TO: CONSUMERS POWER, INC.
   RECORDED: APRIL 23, 1991
   INSTRUMENT NO.: VOLUME 560 PAGE 601

SURVEYOR'S NOTE: 40' POLE AND LINE EASEMENT. NO PLOTTABLE DESCRIPTION PROVIDED. COVERED POLE AND LINE NOTED HEREON.

7. LEASE AGREEMENT, INCLUDING THE TERMS AND PROVISIONS THEREOF,
   RECORDED: APRIL 10, 1997
   INSTRUMENT NO.: VOLUME 862 PAGE 314

SURVEYOR'S NOTE: NO PLOTTABLE DESCRIPTION PROVIDED, NOT PLOTTED HEREON. APPEARS TO BE COVERED BY EXCEPTION 13.

8. AN EASEMENT INCLUDING THE TERMS AND PROVISIONS THEREOF, AFFECTING THE PORTION OF THE LAND AND FOR THE PURPOSES STATED THEREIN AS SET FORTH IN INSTRUMENT:
   GRANTED TO: CONSUMERS POWER, INC., AN OREGON CORPORATION
   RECORDED: MAY 30, 1997
   INSTRUMENT NO.: VOLUME 872 PAGE 194

SURVEYOR'S NOTE: 12' POWER AND TELEPHONE EASEMENT. NO PLOTTABLE DESCRIPTION PROVIDED, NOT PLOTTED HEREON. COVERED LINES NOTED HEREON.

9. LEASE AGREEMENT, INCLUDING THE TERMS AND PROVISIONS THEREOF,
   RECORDED: NOVEMBER 18, 2001
   INSTRUMENT NO.: VOLUME 1234 PAGE 880

SURVEYOR'S NOTE: NO PLOTTABLE DESCRIPTION PROVIDED, NOT PLOTTED HEREON. APPEARS TO BE COVERED BY EXCEPTION 13.

10. NOT SURVEY RELATED

11. EASEMENT AGREEMENT, INCLUDING THE TERMS AND PROVISIONS THEREOF,
   RECORDED: JULY 13, 2009
   INSTRUMENT NO.: 2009-12527

SURVEYOR'S NOTE: 30' ACCESS EASEMENT. PLOTTED HEREON. MAY HAVE BEEN VACATED BY DOCTRINE OF MERGER.

12. NOT SURVEY RELATED.

13. AN EASEMENT INCLUDING THE TERMS AND PROVISIONS THEREOF, AFFECTING THE PORTION OF THE LAND AND FOR THE PURPOSES STATED THEREIN AS SET FORTH IN INSTRUMENT:
   GRANTED TO: SPECTRASITE COMM LLC
   RECORDED: JANUARY 9, 2013
   INSTRUMENT NO.: 2013-00421

SURVEYOR'S NOTE: OTHER'S TOWER COMPOUND. PLOTTED HEREON.

14. EASEMENTS, NOTES AND RESTRICTIONS AS SHOWN ON THE PARTITION PLAT NO. 2018-042.

15 - 17. NOT SURVEY RELATED

SECTION 25, T09S, R01E, W.M

11X17 SCALE: 1" = 300' | 22X34 SCALE: 1" = 150' | 1

Marion County OREGON

PROJECT INFORMATION:

MARION COUNTY MCCULLY MOUNTIAN

40505 N MCCULLY MOUNTAIN ROAD
LYONS, OR 97358

	DATE	RELEASE
0	07/18/2025	INITIAL SURVEY RELEASE

DRAWING INFORMATION:
THIS DRAWING IS COPYRIGHTED AND IS THE SOLE PROPERTY OF THE OWNER. IT IS PRODUCED SOLELY FOR USE BY THE OWNER AND ITS AFFILIATES. REPRODUCTION OR USE OF THIS DRAWING AND/OR THE INFORMATION CONTAINED IN IT IS FORBIDDEN WITHOUT THE WRITTEN PERMISSION OF THE OWNER.

PLANS PREPARED BY:

cushing Civil Engineers

Cushing Civil Engineers
12725 SW MILLIKAN WAY
SUITE 300
BEAVERTON, OR 97005
(503) 387-5331
www.cushing-engr.com

LICENSURE:

orion GEOMATICS
Because the world is a spatial place™
1724 23rd Avenue | Forest Grove OR 97116
T: 503.359.1688 | www.oriongeomatics.com

REGISTERED
PROFESSIONAL
LAND SURVEYOR

DIGITAL SIGNATURE

OREGON
JULY 19, 1994
JOHN D. PUTNAM
2676

RENEWS: 12-31-26
DIGITALLY SIGNED 07/18/2025

SHEET TITLE:

EXISTING CONDITIONS

SHEET NUMBER:

V-2

EXHIBIT K

GENERAL NOTES:

1. DRAWINGS ARE NOT TO BE SCALED, WRITTEN DIMENSIONS TAKE PRECEDENCE, THIS SET OF DOCUMENTS IS INTENDED TO BE USED FOR DIAGRAMMATIC PURPOSED ONLY, UNLESS NOTED OTHERWISE. THE GENERAL CONTRACTOR'S SCOPE OF WORK SHALL INCLUDE FURNISHING ALL MATERIALS, EQUIPMENT, LABOR AND ANY REQUIREMENTS DEEMED NECESSARY TO COMPLETE INSTALLATION AS DESCRIBED IN THE DRAWINGS AND OWNER'S PROJECT MANUAL.
2. THE CONTRACTOR IS RESPONSIBLE FOR ALL DIMENSIONS AND STANDARDIZED DETAILS THAT REQUIRE MODIFICATIONS DUE TO ACTUAL FIELD CONDITIONS AND REQUIREMENTS MUST BE SUBMITTED TO AND APPROVED BY OWNERS REPRESENTATIVE PRIOR TO START OF WORK.
3. PRIOR TO THE SUBMISSION OF BIDS, CONTRACTORS INVOLVED SHALL VISIT THE JOB SITE TO FAMILIARIZE THEMSELVES WITH ALL CONDITIONS AFFECTING THE PROPOSED PROJECT. CONTRACTORS SHALL VISIT THE CONSTRUCTION SITE WITH THE CONSTRUCTION/CONTRACT DOCUMENTS TO VERIFY FIELD CONDITIONS AND CONFIRM THAT THE PROJECT WILL BE ACCOMPLISHED AS SHOWN. PRIOR TO PROCEEDING WITH CONSTRUCTION, ANY ERRORS, OMISSIONS, OR DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT/ENGINEER VERBALLY AND IN WRITING.
4. THE GENERAL CONTRACTOR SHALL RECEIVE WRITTEN AUTHORIZATION TO PROCEED WITH CONSTRUCTION PRIOR TO STARTING WORK ON ANY ITEM NOT CLEARLY DEFINED BY THE CONSTRUCTION DRAWINGS/CONTRACT DOCUMENTS.
5. THE CONTRACTOR SHALL SUPERVISE AND DIRECT THE PROJECT DESCRIBED IN THE CONTRACT DOCUMENTS. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR ALL CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES, SAFETY, AND PROCEDURES FOR COORDINATING ALL PORTIONS OF THE WORK UNDER THE CONTRACT.
6. THE CONTRACTOR SHALL INSTALL ALL EQUIPMENT AND MATERIALS ACCORDING TO MANUFACTURER'S/VENDOR'S SPECIFICATIONS UNLESS NOTED OTHERWISE OR WHERE LOCAL CODES OR ORDINANCES TAKE PRECEDENCE.
7. ALL WORK PERFORMED ON THE PROJECT AND MATERIALS INSTALLED SHALL BE IN STRICT ACCORDANCE WITH ALL APPLICABLE CODES, REGULATIONS, AND ORDINANCES. CONTRACTOR SHALL GIVE ALL NOTICES AND COMPLY WITH ALL LAWS, ORDINANCES, RULES, REGULATIONS AND LAWFUL ORDERS OF ANY PUBLIC AUTHORITY, MUNICIPAL AND UTILITY COMPANY SPECIFICATIONS, AND LOCAL AND STATE JURISDICTIONAL CODES BEARING ON THE PERFORMANCE OF THE WORK.
8. THE CONTRACTOR SHALL PROVIDE, AT THE PROJECT SITE, A FULL SET OF CONSTRUCTION DOCUMENTS UPDATED WITH THE LATEST REVISIONS INVOLVED WITH THE PROJECT. THIS SET IS A VALID CONTRACT DOCUMENT ONLY IF THE TITLE SHEET IS STAMPED IN RED INK "FOR CONSTRUCTION" AND EACH SUCCESSIVE SHEET BEARS THE ARCHITECT'S/ENGINEER'S SIGNED WET STAMP.
9. THE CONTRACTOR IS RESPONSIBLE FOR ADEQUATELY BRACING AND PROTECTING ALL WORK DURING CONSTRUCTION AGAINST DAMAGE, BREAKAGE, COLLAPSE, ETC. ACCORDING TO APPLICABLE CODES, STANDARDS, AND GOOD CONSTRUCTION PRACTICES. THE STRUCTURAL COMPONENTS OF ADJACENT CONSTRUCTION OR FACILITIES ARE NOT TO BE ALTERED BY THE CONSTRUCTION PROJECT UNLESS NOTED OTHERWISE.
10. THE CONTRACTOR SHALL MEET ALL OSHA REQUIREMENTS FOR ALL INSTALLATIONS.
11. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL DAMAGES TO THE EXISTING CONSTRUCTION AND REPAIR ALL DAMAGES TO EQUAL OR BETTER NEW CONSTRUCTION. THE CONTRACTOR SHALL NOTIFY THE PROJECT MANAGER OF ANY DAMAGE TO THE BUILDING SITE OR ANY ADJACENT STRUCTURES AROUND THE PROJECT. THE OWNERS REPRESENTATIVE SHALL BE SOLE AND FINAL JUDGE AS TO THE QUALITY OF THE REPAIRED CONSTRUCTION. ANY ADDITIONAL MODIFICATIONS WHICH MUST BE MADE SHALL BE MADE AT THE CONTRACTOR'S EXPENSE.
12. WHERE NEW PAVING, CONCRETE SIDEWALKS OR PATHS MEET EXISTING CONSTRUCTION, THE CONTRACTOR SHALL MATCH THE EXISTING PITCH, GRADE, AND ELEVATION SO THE ENTIRE STRUCTURE SHALL HAVE A SMOOTH TRANSITION.
13. THE CONTRACTOR SHALL MODIFY THE EXISTING FLOORS, WALL, CEILING, OR OTHER CONSTRUCTION AS REQUIRED TO GAIN ACCESS TO AREAS FOR ALL MECHANICAL, PLUMBING, ELECTRICAL, OR STRUCTURAL MODIFICATIONS. WHERE THE EXISTING CONSTRUCTION DOORS, PARTITIONS, CEILING, ETC., ARE TO BE REMOVED, MODIFIED, OR REARRANGED OR WHERE THE EXPOSED OR HIDDEN MECHANICAL, ELECTRICAL, SYSTEMS ARE ADDED OR MODIFIED, THE GENERAL CONTRACTOR SHALL REPAIR, PATCH AND MATCH ALL EXISTING CONSTRUCTION AND FINISHES OF ALL FLOORS WALLS AND CEILINGS. WHERE CONCRETE MASONRY CONSTRUCTION IS MODIFIED, THE CONTRACTOR SHALL TOOTH IN ALL NEW CONSTRUCTION TO MATCH THE EXISTING BOND. WHERE CONCRETE CONSTRUCTION IS MODIFIED, THE CONTRACTOR SHALL VERIFY THE EXACT DETAILS TO BE USED FOR CONSTRUCTION. ALL WORK SHALL BE COVERED UNDER THE GENERAL CONTRACT.
14. IF CONTRACTOR OR SUBCONTRACTOR FIND IT NECESSARY TO DEVIATE FROM ORIGINAL APPROVED PLANS, THEN IT IS THE CONTRACTOR'S AND THE SUBCONTRACTOR'S RESPONSIBILITY TO PROVIDE THE PROJECT MANAGER WITH 4 COPIES OF THE PROPOSED CHANGES FOR HIS APPROVAL BEFORE PROCEEDING WITH THE WORK. IN ADDITION THE CONTRACTOR AND SUBCONTRACTORS SHALL BE RESPONSIBLE FOR PROCURING ALL NECESSARY APPROVALS FROM THE BUILDING AUTHORITIES FOR THE PROPOSED CHANGES BEFORE PROCEEDING WITH THE WORK. THE CONTRACTOR AND SUBCONTRACTORS SHALL BE RESPONSIBLE FOR PROCURING ALL NECESSARY INSPECTIONS AND APPROVALS FROM BUILDING AUTHORITIES DURING THE EXECUTION OF THE WORK.
15. CONTRACTOR TO PROVIDE A PORTABLE FIRE EXTINGUISHER WITH A RATING OF NOT LESS THAN 2-A OR 2-A10BC WITHIN 75 FEET TRAVEL DISTANCE TO ALL PORTIONS OF PROJECT AREA DURING CONSTRUCTION.
16. THIS IS AN ESSENTIAL FACILITY THEREFORE SHALL STRICTLY MEET ALL APPLICABLE CODE AND JURISDICTIONAL REQUIREMENTS.

GENERAL NOTES CONTINUED:

17. THE CONTRACTOR SHALL PERFORM WORK DURING SITE/PROPERTY OWNER'S PREFERRED HOURS TO AVOID DISTURBING NORMAL BUSINESS.
18. SEAL ALL PENETRATIONS THROUGH FIRE-RATED AREAS WITH U.L. LISTED OR FIRE MARSHAL APPROVED MATERIALS AS APPLICABLE TO THIS FACILITY AND OR PROJECT SITE.
19. CONTRACTOR SHALL BE RESPONSIBLE FOR UTILITY LOCATES, SCHEDULING, COORDINATING SPECIAL AND BUILDING DEPARTMENT INSPECTIONS.
21. ROUTING OF ALL CONDUITS, CABLES, CABLE TRAYS ETC ARE INDICATED AS PROPOSED LOCATION ONLY. CONFIRM THE EXACT LOCATION AND ROUTING WITH THE ON SITE PROJECT MANAGER PRIOR TO STARTING WORK.

CONCRETE NOTES:

1. ALL CONCRETE WORK SHALL BE IN ACCORDANCE WITH THE ACI 301, ACI 318 AND THE SPECIFICATION CAST-IN-PLACE CONCRETE.
2. ALL CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 3000 PSI AT 28 DAYS (UNO).
3. REINFORCING STEEL SHALL CONFORM TO ASTM A 615, GRADE 60, DEFORMED UNLESS NOTED OTHERWISE. WELDED WIRE FABRIC SHALL CONFORM TO ASTM A 185 WELDED STEEL WIRE FABRIC UNLESS NOTED OTHERWISE. SPLICES CLASS "B" AND ALL HOOKS SHALL BE STANDARD (UNO).
4. THE FOLLOWING MINIMUM CONCRETE COVER SHALL BE PROVIDED FOR REINFORCING STEEL UNLESS SHOWN OTHERWISE ON DRAWINGS: CONCRETE CAST AGAINST EARTH - 3 IN.
   CONCRETE EXPOSED TO EARTH OR WEATHER:
   #6 AND LARGER .....2 IN.
   #5 AND SMALLER & WWF .....1-1/2 IN.
5. A 1/2" TROWELED RADIUS SHALL BE PROVIDED AT ALL EXPOSED EDGES OF CONCRETE (UNO). HOLES TO RECEIVE EXPANSION/WEDGE ANCHORS SHALL BE 1/8" LARGER IN DIAMETER THAN THE ANCHOR BOLT, DOWEL OR ROD AND SHALL CONFORM TO MFR RECOMMENDATION FOR EMBEDMENT DEPTH OR AS SHOWN ON THE DRAWINGS. AVOID CUTTING EXISTING REBAR WHEN DRILLING HOLES IN THE ELEVATED SLAB.
6. INSTALLATION OF CONCRETE EXPANSION AND WEDGE ANCHOR, SHALL BE PER MANUFACTURER'S WRITTEN RECOMMENDED PROCEDURES.
7. FLOAT SURFACE SHALL BE A SMOOTH FINISH. SURFACE SHALL BE FREE OF ALL OBVIOUS DEPRESSIONS. SURFACE SHALL BE SLOPED AT 2% TO PROMOTE DRAINAGE AWAY FROM EQUIPMENT.

SITE WORK NOTES:

1. RUBBISH, STUMPS, DEBRIS, STICKS, STONES AND OTHER REFUSE SHALL BE REMOVED FROM THE SITE AND DISPOSED OF LEGALLY UNLESS OTHERWISE REQUIRED TO BE LEFT AS DEFINED BY LAND/PROPERTY OWNER.
2. THE SITE SHALL BE GRADED TO CAUSE SURFACE WATER TO FLOW AWAY FROM THE EQUIPMENT, EQUIPMENT SHELTER, GENERATOR, FUEL TANK, TOWER AREAS, AND ADJACENT BUILDINGS, ETC.
3. NO FILL OR EMBANKMENT MATERIAL SHALL BE PLACED ON FROZEN GROUND. FROZEN MATERIALS, SNOW OR ICE SHALL NOT BE PLACED IN ANY FILL OR EMBANKMENT.
4. THE SUBGRADE SHALL BE COMPACTED AND BROUGHT TO A SMOOTH UNIFORM GRADE PRIOR TO THE CRUSHED STONE APPLICATION. FABRIC USE AS REQUIRED.
5. ALL APPLICABLE LOCATES SHALL BE PERFORMED PRIOR TO TO ANY EXCAVATION OR SITE GRADING. ALL EXISTING ACTIVE SEWER, WATER, GAS, ELECTRIC, AND OTHER UTILITIES WHERE ENCOUNTERED IN THE WORK, SHALL BE PROTECTED AT ALL TIMES, AND WHERE REQUIRED FOR THE PROPER EXECUTION OF THE WORK, SHALL BE RELOCATED AS DIRECTED BY ENGINEERS. EXTREME CAUTION SHOULD BE USED BY THE CONTRACTOR WHEN EXCAVATING OR PIER DRILLING AROUND OR NEAR UTILITIES. CONTRACTOR SHALL PROVIDE SAFETY TRAINING FOR THE WORKING CREW.
6. ALL EXISTING INACTIVE SEWER, WATER, GAS, ELECTRIC AND OTHER UTILITIES, WHICH INTERFERE WITH THE EXECUTION OF THE WORK, SHALL BE REMOVED AND SHALL BE CAPPED, PLUGGED OR OTHERWISE DISCONTINUED AT POINTS WHICH WILL NOT INTERFERE WITH THE EXECUTION OF THE WORK, SUBJECT TO THE APPROVAL OF ENGINEERING.
7. THE AREAS OF THE PROPERTY DISTURBED BY THE WORK AND NOT COVERED BY THE BUILDING, DRIVEWAY OR CRUSHED STONE, SHALL BE GRADED TO A UNIFORM SLOPE, FERTILIZED, SEEDED, AND COVERED WITH MULCH AS SPECIFIED IN THE SPECIFICATION LANDSCAPE WORK..
8. BEDDING MATERIAL FOR UTILITY LINES, CULVERTS AND PIPING: CLEAN SAND, MEDIUM TP COARSE, SUB ROUNDED NATURAL RIVER OR BANK SAND, WASHED, FREE OF SILT OR CLAY, LOAM, FRIABLE OR SOLUBLE MATERIALS, AND ORGANIC MATTER; GRADED IN ACCORDANCE WITH THE FOLLOWING GRAIN SIZE DISTRIBUTION:

SIEVE SIZE	PERCENT PASSING
	100
NO. 4 MESH	60-90
NO. 8 MESH	0-45
NO. 16 MESH	0-25
NO. 100 MESH	0-2
NO. 200 MESH	0-2

9. BMP'S FOR TEMPORARY EROSION/SEDIMENTATION CONTROL SHALL BE IMPLEMENTED PER LOCAL, CITY OR COUNTY GUIDELINES AND PER PLAN IF APPLICABLE.

SITE WORK NOTES CONTINUED:

10. ALL SITE DESIGN AND CONSTRUCTION MUST COMPLY WITH INDUSTRY STANDARDS AND BE ALIGNED WITH BMP GUIDELINES AS TECHNICALLY APPLICABLE. EACH SITE MUST BE PM APPROVED BEFORE IT SHALL BE CONSIDERED COMPLETE AND ACCEPTED.
11. IF INADVERTENT DISCOVERIES OF NATIVE AMERICAN CULTURAL MATERIALS OR HUMAN REMAINS ARE MADE DURING CONSTRUCTION, ALL WORK SHOULD CEASE AND POTENTIALLY AFFECTED TRIBES, AS WELL AS THE STATE HISTORIC PRESERVATION OFFICE, SHOULD BE NOTIFIED IMMEDIATELY.

TOWER/POLE NOTES:

1. ALL ANTENNAS, LINES AND RELATED INSTALLATION HARDWARE TO BE PROVIDED BY THE LAND MOBILE COMMUNICATIONS PROVIDER.
2. ALL HARDWARE (NUTS AND BOLTS) BE TIGHTENED AND TORQUED IN ACCORDANCE WITH THE TOWER MANUFACTURER'S AND STRUCTURAL ENGINEER'S SPECIFICATIONS.
3. VERIFICATION THAT THE TOWER/POLE CAN SUPPORT THE PROPOSED ANTENNA LOADING IS TO BE DONE BY OTHERS.
4. PROVIDE SUPPORTS FOR THE ANTENNA COAX CABLES TO THE ELEVATION OF ALL INITIAL AND FUTURE ANTENNAS. ANTENNA COAX CABLES ARE TO BE SUPPORTED AND RESTRAINED AT THE CENTERS SUITABLE TO THE MANUFACTURER'S REQUIREMENTS.

ATTENTION (OREGON SITES ONLY):

CALL 1-800-332-2344 48 HOURS BEFORE YOU DIG. OREGON LAW REQUIRES YOU TO FOLLOW OAR 952-001-0010 THRU 952-001-0090. COPIES ARE AVAILABLE AT THE OREGON UTILITY NOTIFICATION CENTER 503-232-1987

DESIGN LOADS:

ROOF SNOW LOAD DATA -	GROUND SNOW LOAD:	147 PSF*
	FLAT-ROOF SNOW LOAD:	N/A
	SNOW EXPOSURE FACTOR:	N/A
	SNOW LOAD IMPORTANCE FACTOR:	N/A
	THERMAL FACTOR:	N/A
WIND DESIGN DATA -	ULTIMATE DESIGN WIND SPEED:	107 MPH*
	RISK CATEGORY:	IV
	WIND EXPOSURE:	C*
	INTERNAL PRESSURE COEFFICIENT:	N/A
	DESIGN WIND PRESSURES;	
	WIND LOAD HORIZONTAL (MWFRS):	N/A
	WIND LOAD (UPLIFT) (MWFRS):	N/A
EARTHQUAKE DESIGN DATA -	RISK CATEGORY:	IV
	SEISMIC IMPORTANCE FACTOR:	N/A
	MAPPED SPECTRAL RESPONSE ACCEL-ERATION PARAMETERS;	
	S_S	0.75
	S_1	0.30
	SITE CLASS:	C
	DESIGN SPECTRAL RESPONSE ACCEL-ERATION PARAMETERS;	
	S_{DS}	0.57
	S_{D1}	0.28
	SEISMIC DESIGN CATEGORY:	D
SYSTEM:	BASIC SEISMIC FORCE-RESISTING BEARING WALL	
	DESIGN BASE SHEAR:	N/A
	SEISMIC RESPONSE COEFFICIENT:	N/A
	RESPONSE MODIFICATION COEFFICIENT:	N/A
	ANALYSIS PROCEDURE USED:	N/A
GEOTECHNICAL INFORMATION -	ALLOWABLE BEARING CAPACITY:	2,000 PSF

REFER TO GEOTECH REPORT BY BLACK MOUNTAIN DATED APRIL 26, 2025.

*INFORMATION OBTAINED FROM ASCE 7 HAZARD TOOL

SYMBOLS LEGEND

1 REVISION
1 KEY NOTE DETAIL
3 / C-4 REFERENCE ELEVATION
A / C-3 SECTION REFERENCE
ELEVATION DATUM POINT

CHAINLINK FENCE
CEDAR FENCE
PROPANE — LPG
UNDERGROUND POWER — P
OVERHEAD POWER — OHP

TELCO — T
POWER/TELCO — T/P
GAS — G
WATER — W
COAX — COAX
CENTERLINE
EASEMENT
PROPERTY LINE
SUBJECT PROPERTY LINE

ABBREVIATIONS LEGEND

A/C	AIR CONDITIONING
ADJ	ADJUSTABLE
AFF	ABOVE FINISH FLOOR
AGL	ABOVE GRADE LEVEL
APPROX	APPROXIMATELY
ASTM	AMERICAN SOCIETY FOR TESTING & MATERIALS
AWG	AMERICAN WIRE GAUGE
BLDG	BUILDING
BLK	BLOCK
BMR	BASE MOBILE RADIO
B/S	BUILDING STANDARD
CLG	CEILING
CLR	CLEAR
CONC	CONCRETE
CONST	CONSTRUCTION
CONT	CONTINUOUS
DBL	DOUBLE
DIA, Ø	DIAMETER
DIAG	DIAGONAL
DIM	DIMENSION
DN	DOWN
DTL, DETL	DETAIL
DWG	DRAWING
E	EAST
EA	EACH
EL, ELEV	ELEVATION
ELECT	ELECTRICAL
EQ	EQUAL
EQUIP	EQUIPMENT
E.W.	EACH WAY
EX	EXISTING
EXT	EXTERIOR
FIN	FINISH
FLUOR	FLUORESCENT
FLR	FLOOR
FT	FOOT
GA	GAUGE
GALV	GALVANIZE(D)
GC	GENERAL CONTRACTOR
GRND	GROUND
GWB	GYPSUM WALL BOARD
GYP BD	GYPSUM BOARD
HARD'WD	HARDWOOD
HORIZ	HORIZONTAL
HR	HOUR
HT	HEIGHT
HVAC	HEATING, VENTING AND AIR CONDITIONING
I.D.	INSIDE DIA.
IN	INCH
INFO	INFORMATION
INSUL	INSULATION
INT	INTERIOR
LB(S)	POUND(S)
LNA	ANTENNA AMPLIFIER
MAX	MAXIMUM
MECH	MECHANICAL
MET, MTL	METAL
MFR	MANUFACTURER
MGR	MANAGER
MIN	MINIMUM
MISC	MISCELLANEOUS
N	NORTH
NA	NOT APPLICABLE
NIC	NOT IN CONTRACT
NTS	NOT TO SCALE
OC, o/c	ON CENTER
OD	OUTSIDE DIAMETER
OPG	OPENING
OPP	OPPOSITE
OHP	OVERHEAD POWER
UGP	UNDRGRND POWER
OHT	OVERHEAD TELCO
UGT	UNDRGRND TELCO
PR	PAIR
PROJ	PROJECT
PROP	PROPERTY
P	PROPOSED
PT	PRESSURE TREATED
REQ'D	REQUIRED
RM	ROOM
R.O.	ROUGH OPENING
S	SOUTH
SHT	SHEET
SIM	SIMILAR
SPEC	SPECIFICATION
SQ	SQUARE
SS	STAINLESS STEEL
STL	STEEL
STRUCT	STRUCTURAL
SUSP	SUSPENDED
S.V.	SHEET VINYL
THRU	THROUGH
TNND	TINNED
T.O.C.	TOP OF CONCRETE
T.O.M.	TOP OF MASONRY
TYP	TYPICAL
U.N.O.	UNLESS NOTED OTHERWISE
VERT	VERTICAL
VIF	VERIFY IN FIELD
VT	VINYL TILE
W	WEST
W/	WITH
WIN	WINDOW
W/O	WITHOUT
WP	WATERPROOF
∠	ANGLE
&	AND
℄	CENTER LINE
ℙ	PROPERTY LINE
@	AT
#	NUMBER

Marion County OREGON

PROJECT INFORMATION:

MARION COUNTY MCCULLY MOUNTAIN

40505 N MCCULLY MOUNTAIN ROAD
LYONS, OR 97358

	DATE	RELEASE
	06-18-25	SITE SKETCH
	07-14-25	PRELIMINARY ZONING DRAWINGS
	08-07-25	PRELIMINARY CONSTRUCTION DRAWINGS
	09-17-25	FINAL CONSTRUCTION DRAWINGS

DRAWING INFORMATION:
THIS DRAWING IS COPYRIGHTED AND IS THE SOLE PROPERTY OF THE OWNER. IT IS PRODUCED SOLELY FOR USE BY THE OWNER AND ITS AFFILIATES. REPRODUCTION OR USE OF THIS DRAWING AND/OR THE INFORMATION CONTAINED IN IT IS FORBIDDEN WITHOUT THE WRITTEN PERMISSION OF THE OWNER.

PLANS PREPARED BY:

cushing Civil Engineers

Cushing
Civil Engineers
12725 SW MILLIKAN WAY
SUITE 300
BEAVERTON, OR 97005
(503) 387-5331
www.cushingcivilengineers.com

LICENSURE:

REGISTERED PROFESSIONAL ENGINEER 83233 OREGON JUNE 7, 2012 KENNY McMANAWAY

RENEWAL DATE 12/31/26

SHEET TITLE:

GENERAL NOTES

SHEET NUMBER:

G-1

EROSION CONTROL NOTES:

1. OWNER OR DESIGNATED PERSON SHALL BE RESPONSIBLE FOR PROPER INSTALLATION AND MAINTENANCE OF ALL EROSION AND SEDIMENT CONTROL MEASURES, IN ACCORDANCE WITH LOCAL, STATE, AND FEDERAL REGULATIONS.
2. THE IMPLEMENTATION OF THESE ESC PLANS AND CONSTRUCTION, MAINTENANCE, REPLACEMENT, AND UPGRADING OF THESE ESC FACILITIES IS THE RESPONSIBILITY OF THE CONTRACTOR UNTIL ALL CONSTRUCTION IS COMPLETED AND APPROVED BY THE LOCAL JURISDICTION, AND VEGETATION/LANDSCAPING IS ESTABLISHED. THE DEVELOPER SHALL BE RESPONSIBLE FOR MAINTENANCE AFTER THE PROJECT IS APPROVED UNTIL THE LOTS ARE SOLD.
3. THE BOUNDARIES OF THE CLEARING LIMITS SHOWN ON THIS PLAN SHALL BE CLEARLY MARKED IN THE FIELD PRIOR TO CONSTRUCTION. DURING THE CONSTRUCTION PERIOD, NO DISTURBANCE BEYOND THE CLEARING LIMITS SHALL BE PERMITTED. THE MARKINGS SHALL BE MAINTAINED BY THE APPLICANT/CONTRACTOR FOR THE DURATION OF CONSTRUCTION.
4. THE ESC FACILITIES SHOWN ON THIS PLAN MUST BE CONSTRUCTED IN CONJUNCTION WITH ALL CLEARING AND GRADING ACTIVITIES, AND IN SUCH A MANNER AS TO INSURE THAT SEDIMENT AND SEDIMENT LADEN WATER DOES NOT ENTER THE DRAINAGE SYSTEM, ROADWAYS, OR VIOLATE APPLICABLE WATER STANDARDS.
5. THE ESC FACILITIES SHOWN ON THIS PLAN ARE MINIMUM REQUIREMENTS FOR ANTICIPATED SITE CONDITIONS. DURING CONSTRUCTION PERIODS, THESE ESC FACILITIES SHALL BE UPGRADED AS NEEDED FOR UNEXPECTED STORM EVENTS AND TO ENSURE THAT SEDIMENT AND SEDIMENT LADEN WATER DOES NOT LEAVE THE SITE.
6. THE ESC FACILITIES SHALL BE INSPECTED DAILY BY THE APPLICANT/CONTRACTOR AND MAINTAINED AS NECESSARY TO ENSURE THEIR CONTINUED FUNCTIONING.
7. AT NO TIME SHALL SEDIMENT BE ALLOWED TO ACCUMULATE MORE THAN 1/3 THE BARRIER HEIGHT. ALL CATCH BASINS AND CONVEYANCE LINES SHALL BE CLEANED PRIOR TO PAVING. THE CLEANING OPERATIONS SHALL NOT FLUSH SEDIMENT-LADEN WATER INTO THE DOWNSTREAM SYSTEM.
8. STABILIZED GRAVEL ENTRANCES SHALL BE INSTALLED AT THE BEGINNING OF CONSTRUCTION AND MAINTAINED FOR THE DURATION OF THE PROJECT. ADDITIONAL MEASURES MAY BE REQUIRED TO INSURE THAT ALL PAVED AREAS ARE KEPT CLEAN FOR THE DURATION OF THE PROJECT.
9. STORM DRAIN INLETS, BASINS, AND AREA DRAINS SHALL BE PROTECTED UNTIL PAVEMENT SURFACES ARE COMPLETED AND/OR VEGETATION IS RE-ESTABLISHED.
10. PAVEMENT SURFACES AND VEGETATION ARE TO BE PLACED AS RAPIDLY AS POSSIBLE.
11. SEEDING SHALL BE PERFORMED NO LATER THAN SEPTEMBER 1 FOR EACH PHASE OF CONSTRUCTION.
12. IF THERE ARE EXPOSED SOILS OR SOILS NOT FULLY ESTABLISHED FROM OCTOBER 1ST THROUGH APRIL 30TH, THE WET WEATHER EROSION PREVENTION MEASURES WILL BE IN EFFECT. SEE THE EROSION PREVENTION AND SEDIMENT CONTROL PLANNING AND DESIGN MANUAL (CHAPTER 4) FOR REQUIREMENTS.
13. NO EXPOSED, BARE SOILS SHALL REMAIN UNSTABILIZED FOR MORE THAN TWO DAYS DURING THE PERIOD OCTOBER 1 THROUGH APRIL 30 OR FOR MORE THAN SEVEN DAYS DURING THE PERIOD OF MAY 1 THROUGH SEPTEMBER 30. ALL DISTURBED SOIL SURFACES SHALL BE STABILIZED BY A SUITABLE APPLICATION OF "BEST MANAGEMENT PRACTICES".
14. WHERE FEASIBLE, NO MORE THAN 500 FEET OF TRENCH SHALL BE OPEN AT ONE TIME. EXCAVATED MATERIAL SHALL BE PLACED ON THE UPHIL SIDE OF TRENCHES PROVIDED IT DOES NOT CONFLICT WITH SAFETY REQUIREMENTS.
15. THE DEVELOPER SHALL REMOVE ESC MEASURES WHEN VEGETATION IS FULLY ESTABLISHED.

GENERAL NOTES

SCALE: NTS | 4

UNADJUSTED CUT/ FILL QUANTITIES

STRIPPING ORGANICS FOR COMPOUND;
CUT = ±133 CU. YD.

STRIPPING FOR ACCESS ROAD AND PARKING;
CUT = ±52 CU. YD.

PROPOSED COMPOUND AREA;
CUT = ±6 CU. YD.
FILL = ±3 CU. YD.

PROPOSED ACCESS ROAD AND PARKING;
CUT = MATCH EXISTING
FILL = CU. YD.

PROPOSED TOWER FOUNDATION;
EXCAVATION = ±107 CU. YD.

APPROX. TOTAL AREA OF DISTURBANCE OF PROPOSED GRADING = 3,600 SQ. FT.

REFER TO GEO-TECHNICAL ENGINEERING EVALUATION BY BLACK MOUNTAIN DATED APRIL 26, 2025.

CUT/ FILL QUANTITIES

SCALE: NTS | 3

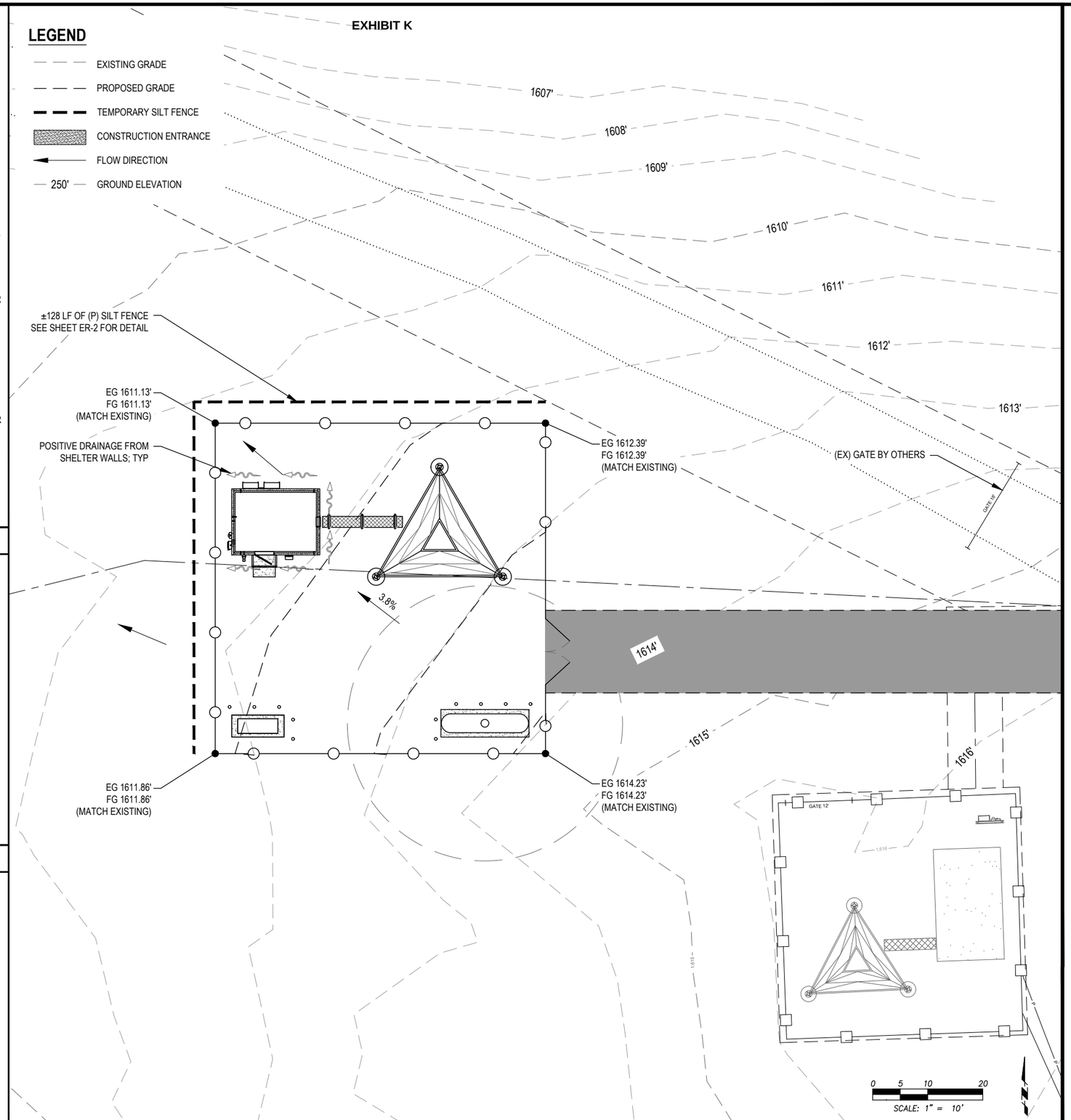
NOT USED

SCALE: NTS | 2

EXHIBIT K

LEGEND

- EXISTING GRADE
- PROPOSED GRADE
- TEMPORARY SILT FENCE
- CONSTRUCTION ENTRANCE
- FLOW DIRECTION
- 250' GROUND ELEVATION



GRADING & EROSION CONTROL PLAN

11X17 SCALE: 1" = 20' | 22X34 SCALE: 1" = 10' | 1

Marion County OREGON

PROJECT INFORMATION:

MARION COUNTY MCCULLY MOUNTAIN

40505 N MCCULLY MOUNTAIN ROAD
LYONS, OR 97358

	DATE	RELEASE
	06-18-25	SITE SKETCH
	07-14-25	PRELIMINARY ZONING DRAWINGS
	08-07-25	PRELIMINARY CONSTRUCTION DRAWINGS
	09-17-25	FINAL CONSTRUCTION DRAWINGS

DRAWING INFORMATION:
THIS DRAWING IS COPYRIGHTED AND IS THE SOLE PROPERTY OF THE OWNER. IT IS PRODUCED SOLELY FOR USE BY THE OWNER AND ITS AFFILIATES. REPRODUCTION OR USE OF THIS DRAWING AND/OR THE INFORMATION CONTAINED IN IT IS FORBIDDEN WITHOUT THE WRITTEN PERMISSION OF THE OWNER.

PLANS PREPARED BY:

cushing Civil Engineers

Cushing Civil Engineers
12725 SW MILLIKAN WAY
SUITE 300
BEAVERTON, OR 97005
(503) 387-5331
www.cushingcivilengineers.com

LICENSURE:

REGISTERED PROFESSIONAL ENGINEER 83233 OREGON JUNE 7, 2012 KENNY McMANAWAY

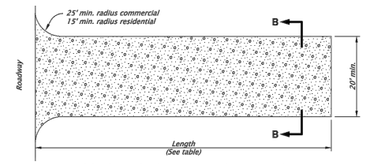
RENEWAL DATE 12/31/26

SHEET TITLE:

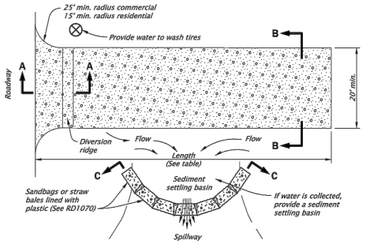
GRADING & EROSION CONTROL PLAN

SHEET NUMBER:

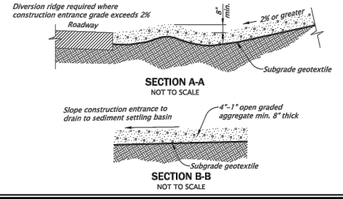
ER-1



CONSTRUCTION ENTRANCE - TYPE 1
NOT TO SCALE

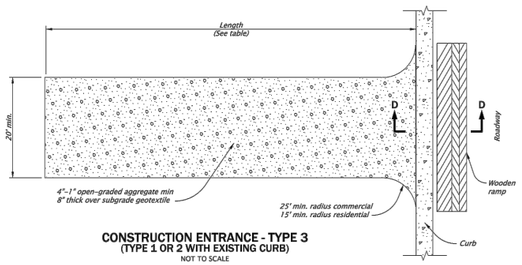


CONSTRUCTION ENTRANCE - TYPE 2
NOT TO SCALE

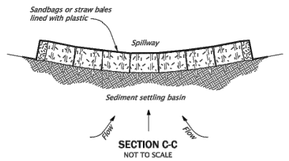


SECTION A-A
NOT TO SCALE

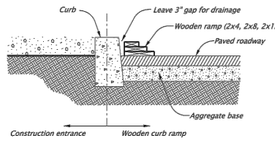
SECTION B-B
NOT TO SCALE



CONSTRUCTION ENTRANCE - TYPE 3
(TYPE 1 OR 2 WITH EXISTING CURB)
NOT TO SCALE



SECTION C-C
NOT TO SCALE



WOODEN CURB RAMP SECTION D-D
NOT TO SCALE

NOTES:
1. The Type 1 entrance is a simple entrance without a diversion ridge or settling basin.
2. The wooden ramp may be used on either Type 1 or Type 2 entrances in situations where there is curb and the curb is not removed for the construction entrance.

CONSTRUCTION ENTRANCE TABLE MINIMUM LENGTH	
Length (FT)	Area Of Exposed Soil (Acre)
20	0.25
50	0.25 < A < 1.0
100	A > 1.0

The selection and use of this Standard Drawing, while designed in accordance with generally accepted engineering principles and practices, is the sole responsibility of the user and should not be used without first consulting a Registered Professional Engineer.

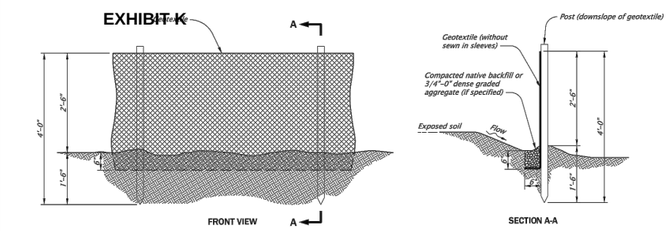
All materials shall be in accordance with the current Oregon Standard Specifications.
OREGON STANDARD DRAWINGS
CONSTRUCTION ENTRANCES
2021

DATE	REVISION DESCRIPTION
01-2021	REMOVED CALC BOOK NUMBERS

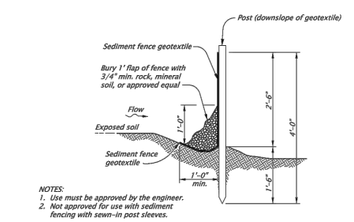
CALC BOOK NO. N/A — SDR DATE 20-JAN-2021 — **RD1000**

GRAVEL CONSTRUCTION ENTRANCE

SCALE: NTS | 1

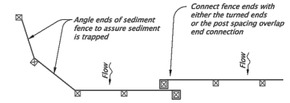


SEDIMENT FENCE AND GEOTEXTILE BURY DETAIL - TYPE 1
NOT TO SCALE

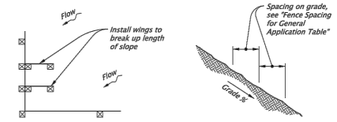


NOTES:
1. Use must be approved by the engineer.
2. Not approved for use with sediment fencing with sewn-in post sleeves.

ALTERNATE SEDIMENT FENCE WITHOUT TRENCHING - TYPE 2
NOT TO SCALE



PLAN VIEW

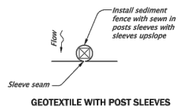


TERMINATION AT CORNER OR PROPERTY LINE

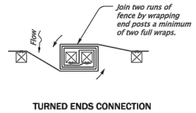
GENERAL NOTES:
1. Use 2"x2" wood fence posts.
2. Posts to be installed on downhill side of sediment fence geotextile. Position posts to prevent separation from geotextile.
3. Compact filter fabric trench backfill and soil on uphill side of fence.
4. Locate fence no closer than three feet to the toe of a slope.
5. Wing spacing shall comply with "Fence Spacing for General Application Table".

FENCE SPACING FOR GENERAL APPLICATION TABLE	
INSTALL PARALLEL ALONG CONTOURS AS FOLLOWS	
GRADE	MAXIMUM SPACING ON GRADE
Grade < 10%	300'
10% ≤ Grade < 15%	150'
15% ≤ Grade < 20%	100'
20% ≤ Grade < 30%	50'
30% ≤ Grade	25'

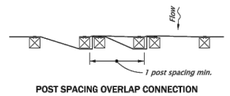
POST SPACING TABLE	
6'	Sediment Fence with Geotextile elongation less than 50%
4'	Sediment Fence with Geotextile elongation 50% or more



GEOTEXTILE WITH POST SLEEVES



TURNED ENDS CONNECTION



POST SPACING OVERLAP CONNECTION

GEOTEXTILE END CONNECTIONS
NOT TO SCALE

The selection and use of this Standard Drawing, while designed in accordance with generally accepted engineering principles and practices, is the sole responsibility of the user and should not be used without first consulting a Registered Professional Engineer.

All materials shall be in accordance with the current Oregon Standard Specifications.
OREGON STANDARD DRAWINGS
SEDIMENT FENCE
2021

DATE	REVISION DESCRIPTION
01-2021	REMOVED CALC BOOK NUMBERS

CALC BOOK NO. N/A — SDR DATE 20-JAN-2021 — **RD1040**

TEMPORARY SEDIMENT FENCE

SCALE: NTS | 2

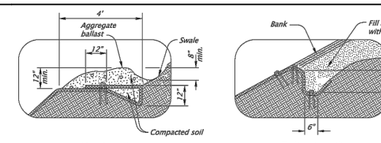


FIGURE A1:
TOP OF BANK ANCHOR TRENCH, H>3' AND TERMINAL SLOPE
NOT TO SCALE

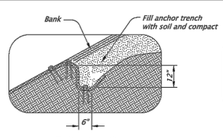


FIGURE A2:
TOP OF BANK ANCHOR TRENCH, H<3'
NOT TO SCALE

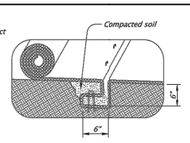


FIGURE A3:
CHANNEL CHECK SLOT
NOT TO SCALE

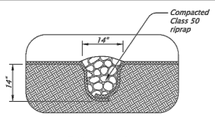


FIGURE A4:
CHANNEL CHECK SLOT WITH ROCK BACKFILL
NOT TO SCALE

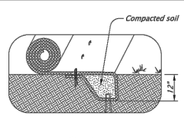
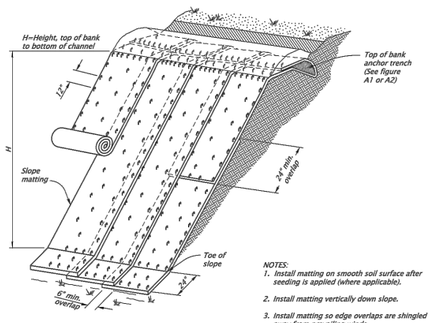
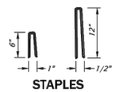


FIGURE A5:
INITIAL CHANNEL ANCHOR TRENCH
NOT TO SCALE

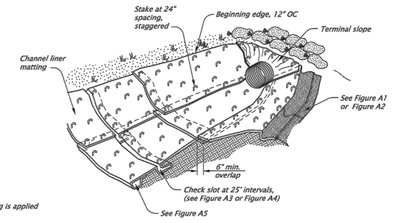


SLOPE MATTING ISOMETRIC VIEW
NOT TO SCALE

NOTES:
1. Install matting on smooth soil surface after seeding is applied (where applicable).
2. Install matting vertically down slope.
3. Install matting so edge overlaps are shingled away from prevailing winds.
4. Place fastener at 12" OC on matting edges
5. Overlap upper mat over lower mat, and fasten.
6. Stagger alternate rows of fasteners placed at 24" OC
7. Extend mat 24" beyond toe of slope; fold mat back under 4" and fasten.
8. Matting Types A through E: Furnish fully biodegradable product. Matting with plastic or photodegradable components will not be accepted.



STAPLES
NOT TO SCALE



CHANNEL MATTING ISOMETRIC VIEW
NOT TO SCALE

NOTES:
1. Install matting on smooth soil surface after seeding is applied (where applicable).
2. Install channel liner matting, in the direction of water flow. Anchor upstream end of mat with check slot for culvert outfalls, place mat under pipe 12" minimum upstream from pipe outlet.
3. Construct check slots across channel bottom at 25' spacing and at the end of each mat (Fig. A3 or A4).
4. Overlap side channel liner matting edges 6" over the center channel liner matting and fasten edges 12" OC. Continue overlap and stapling pattern for each additional side channel liner mat.
5. Lap upstream matting end 12" over beginning edge of downstream matting. Fasten 12" OC
6. Anchor top edge of side channel matting in trench and fasten 12" OC (Fig. A2).
7. Fasten matting interior at 24" OC with staggered spacing.
8. Construct initial anchor trench at downstream end of matting and terminal slope anchor at upstream end.
9. Matting Types A through E: Furnish fully biodegradable product. Matting with plastic or photodegradable components will not be accepted.

The selection and use of this Standard Drawing, while designed in accordance with generally accepted engineering principles and practices, is the sole responsibility of the user and should not be used without first consulting a Registered Professional Engineer.

All materials shall be in accordance with the current Oregon Standard Specifications.
OREGON STANDARD DRAWINGS
SLOPE AND CHANNEL MATTING
2021

DATE	REVISION DESCRIPTION
01-2021	REMOVED CALC BOOK NUMBERS

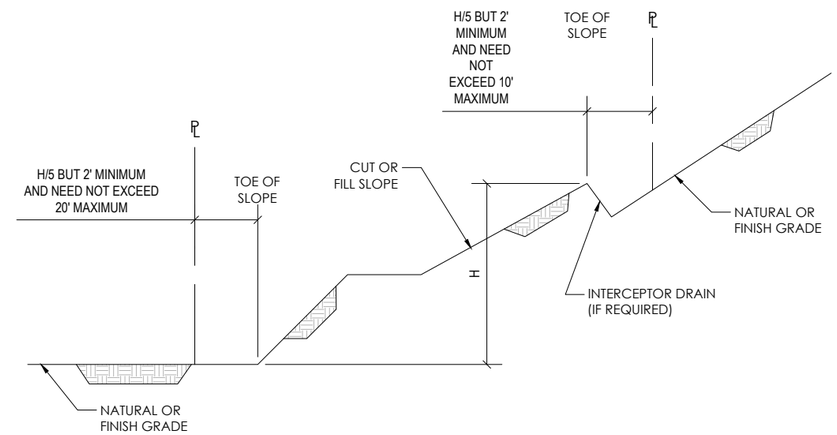
CALC BOOK NO. N/A — SDR DATE 20-JAN-2021 — **RD1055**

PLASTIC SHEETING

SCALE: NTS | 3

SEDIMENT FENCE NOTES:

1. THE FILTER FABRIC FENCE SHALL BE INSTALLED TO FOLLOW THE CONTOURS WHERE FEASIBLE. THE FENCE POSTS SHALL BE SPACED A MAXIMUM OF 6' APART AND DRIVEN SECURELY INTO THE GROUND A MINIMUM OF 24".
2. THE FILTER FABRIC SHALL BE PURCHASED IN A CONTINUOUS ROLL CUT TO THE LENGTH OF THE BARRIER TO AVOID USE OF JOINTS. WHEN JOINTS ARE NECESSARY, FILTER CLOTH SHALL BE SPLICED TOGETHER ONLY AT A SUPPORT POST, WITH A MINIMUM 6" OVERLAP, AND BOTH ENDS SECURELY FASTENED TO THE POST, OR OVERLAP 2" X 2" POSTS AND ATTACH AS SHOWN ON DETAIL SHEET 4-3A OF THE EROSION CONTROL MANUAL.
3. THE FILTER FABRIC SHALL HAVE A MINIMUM VERTICAL BURIAL OF 6". ALL EXCAVATED MATERIAL FROM FILTER FABRIC INSTALLATION SHALL BE BACKFILLED AND COMPACTED ALONG THE ENTIRE DISTURBED AREA.
4. STANDARD OR HEAVY-DUTY FILTER FABRIC FENCES SHALL HAVE MANUFACTURED STITCHED LOOPS FOR 2" X 2" POST INSTALLATION. STITCHED LOOPS SHALL BE INSTALLED ON THE UP HILLSIDE OF THE SLOPED AREA.
5. FILTER FABRIC FENCES SHALL BE REMOVED WHEN THEY HAVE SERVED THEIR USEFUL PURPOSE, BUT NOT BEFORE THE UPSLOPE AREA HAS BEEN PERMANENTLY PROTECTED AND STABILIZED.
6. FILTER FABRIC FENCES SHALL BE INSPECTED BY APPLICANT/CONTRACTOR IMMEDIATELY AFTER EACH RAINFALL AND AT LEAST DAILY DURING PROLONGED RAINFALL. ANY REQUIRED REPAIRS SHALL BE MADE IMMEDIATELY.



SETBACKS AND DRAINAGE DIMENSIONS

SCALE: NTS | 4

Marion County
OREGON

PROJECT INFORMATION:

MARION COUNTY MCCULLY MOUNTAIN

40505 N MCCULLY MOUNTAIN ROAD
LYONS, OR 97358

	DATE	RELEASE
	06-18-25	SITE SKETCH
	07-14-25	PRELIMINARY ZONING DRAWINGS
	08-07-25	PRELIMINARY CONSTRUCTION DRAWINGS
	09-17-25	FINAL CONSTRUCTION DRAWINGS

DRAWING INFORMATION:
THIS DRAWING IS COPYRIGHTED AND IS THE SOLE PROPERTY OF THE OWNER. IT IS PRODUCED SOLELY FOR USE BY THE OWNER AND ITS AFFILIATES. REPRODUCTION OR USE OF THIS DRAWING AND/OR THE INFORMATION CONTAINED IN IT IS FORBIDDEN WITHOUT THE WRITTEN PERMISSION OF THE OWNER.

PLANS PREPARED BY:

cushing
Civil Engineers

Cushing
Civil Engineers
12725 SW MILLIKAN WAY
SUITE 300
BEAVERTON, OR 97005
(503) 387-5331
www.cushingcivilengineers.com

LICENSURE:

REGISTERED PROFESSIONAL ENGINEER
83233
OREGON
JUNE 7, 2012
KENNY McMANAWAY

RENEWAL DATE 12/31/26

SHEET TITLE:

GRADING & EROSION CONTROL DETAILS

SHEET NUMBER:

ER-2

EXHIBIT K



OVERALL SITE PLAN | 11X17 SCALE: 1" = 300' | 22X34 SCALE: 1" = 150' | 1

Marion County
OREGON

PROJECT INFORMATION:

MARION COUNTY
MCCULLY MOUNTAIN

40505 N MCCULLY MOUNTAIN ROAD
LYONS, OR 97358

	DATE	RELEASE
	06-18-25	SITE SKETCH
	07-14-25	PRELIMINARY ZONING DRAWINGS
	08-07-25	PRELIMINARY CONSTRUCTION DRAWINGS
	09-17-25	FINAL CONSTRUCTION DRAWINGS

DRAWING INFORMATION:

THIS DRAWING IS COPYRIGHTED AND IS THE SOLE PROPERTY OF THE OWNER. IT IS PRODUCED SOLELY FOR USE BY THE OWNER AND ITS AFFILIATES. REPRODUCTION OR USE OF THIS DRAWING AND/OR THE INFORMATION CONTAINED IN IT IS FORBIDDEN WITHOUT THE WRITTEN PERMISSION OF THE OWNER.

PLANS PREPARED BY:

cushing
Civil Engineers

Cushing
Civil Engineers

12725 SW MILLIKAN WAY
SUITE 300
BEAVERTON, OR 97005
(503) 387-5331
www.cushingcivilengineers.com

LICENSURE:

REGISTERED PROFESSIONAL ENGINEER
83233
OREGON
JUNE 7, 2012
KENNY McMANAWAY

RENEWAL DATE 12/31/26

SHEET TITLE:

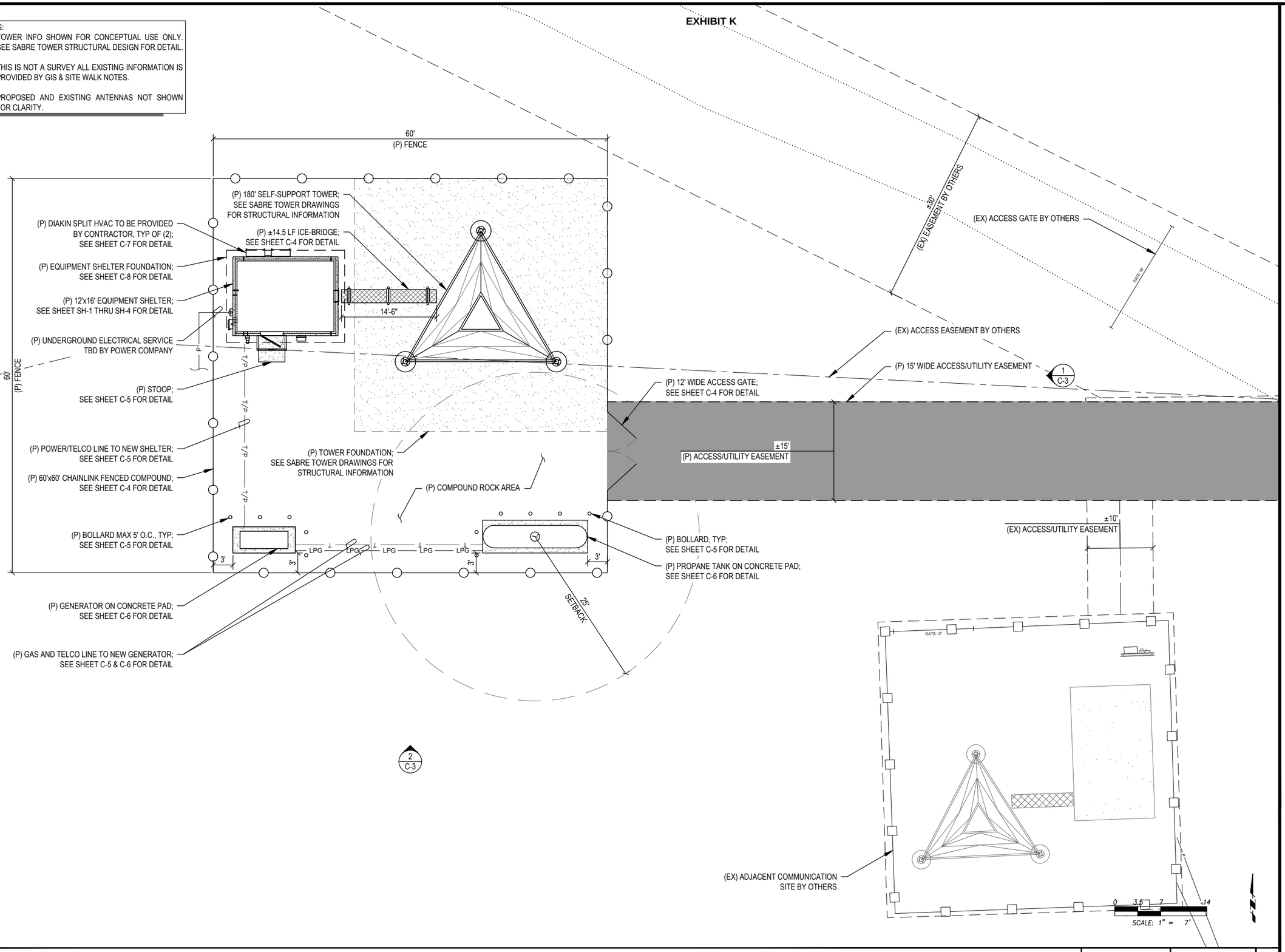
OVERALL SITE PLAN

SHEET NUMBER:

C-1

NOTES:
1. TOWER INFO SHOWN FOR CONCEPTUAL USE ONLY. SEE SABRE TOWER STRUCTURAL DESIGN FOR DETAIL.
2. THIS IS NOT A SURVEY ALL EXISTING INFORMATION IS PROVIDED BY GIS & SITE WALK NOTES.
3. PROPOSED AND EXISTING ANTENNAS NOT SHOWN FOR CLARITY.

EXHIBIT K



PROJECT INFORMATION:

MARION COUNTY MCCULLY MOUNTAIN

40505 N MCCULLY MOUNTAIN ROAD
LYONS, OR 97358

	DATE	RELEASE
	06-18-25	SITE SKETCH
	07-14-25	PRELIMINARY ZONING DRAWINGS
	08-07-25	PRELIMINARY CONSTRUCTION DRAWINGS
	09-17-25	FINAL CONSTRUCTION DRAWINGS

DRAWING INFORMATION:
THIS DRAWING IS COPYRIGHTED AND IS THE SOLE PROPERTY OF THE OWNER. IT IS PRODUCED SOLELY FOR USE BY THE OWNER AND ITS AFFILIATES. REPRODUCTION OR USE OF THIS DRAWING AND/OR THE INFORMATION CONTAINED IN IT IS FORBIDDEN WITHOUT THE WRITTEN PERMISSION OF THE OWNER.

PLANS PREPARED BY:

Cushing
Civil Engineers
12725 SW MILLIKAN WAY
SUITE 300
BEAVERTON, OR 97005
(503) 387-5331
www.cushingcivilengineers.com

LICENSURE:

REGISTERED PROFESSIONAL ENGINEER 83233 OREGON JUNE 7, 2012 KENNY McMANAWAY

RENEWAL DATE 12/31/26

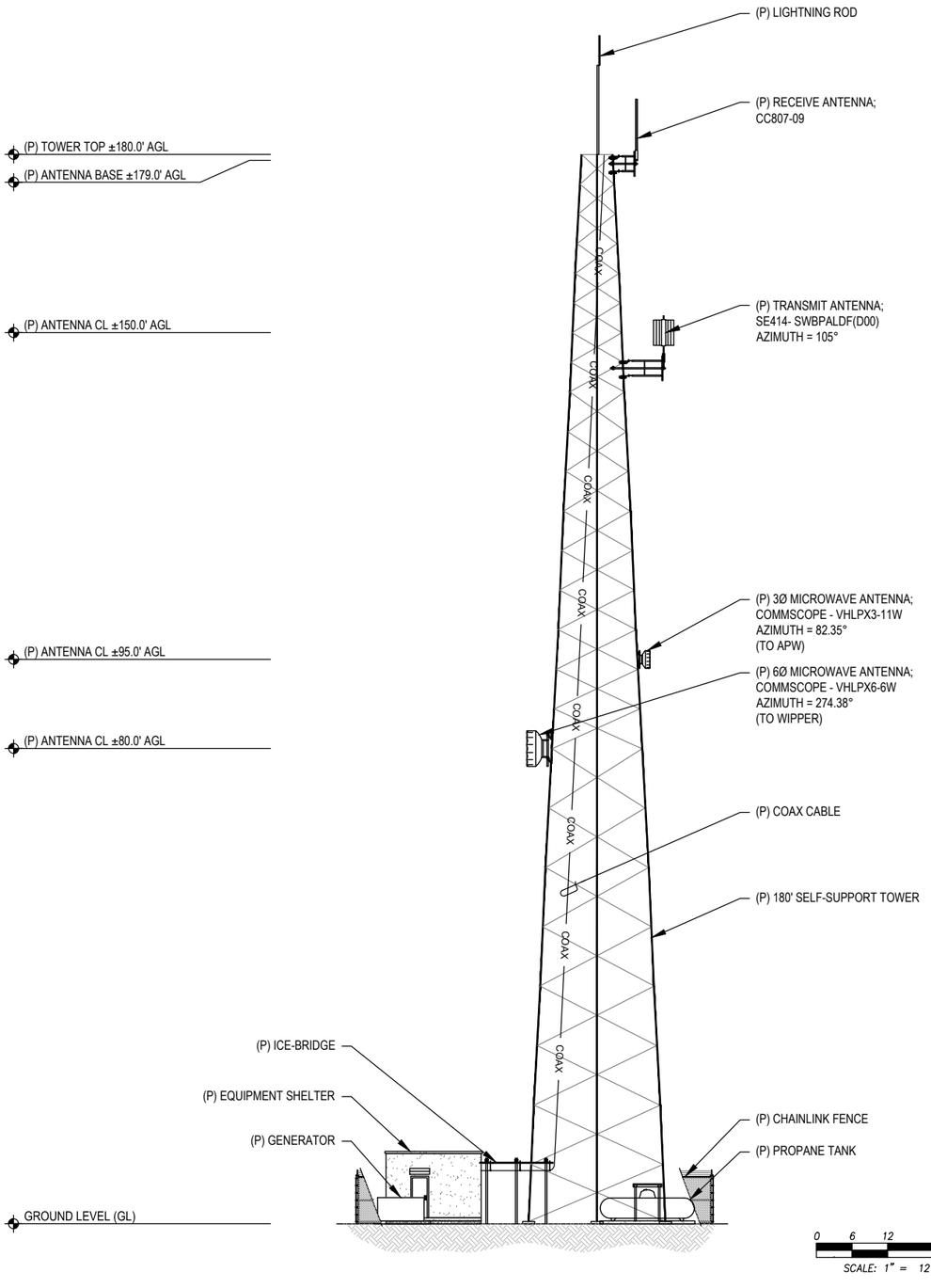
SHEET TITLE:

ENLARGED SITE PLAN

SHEET NUMBER:

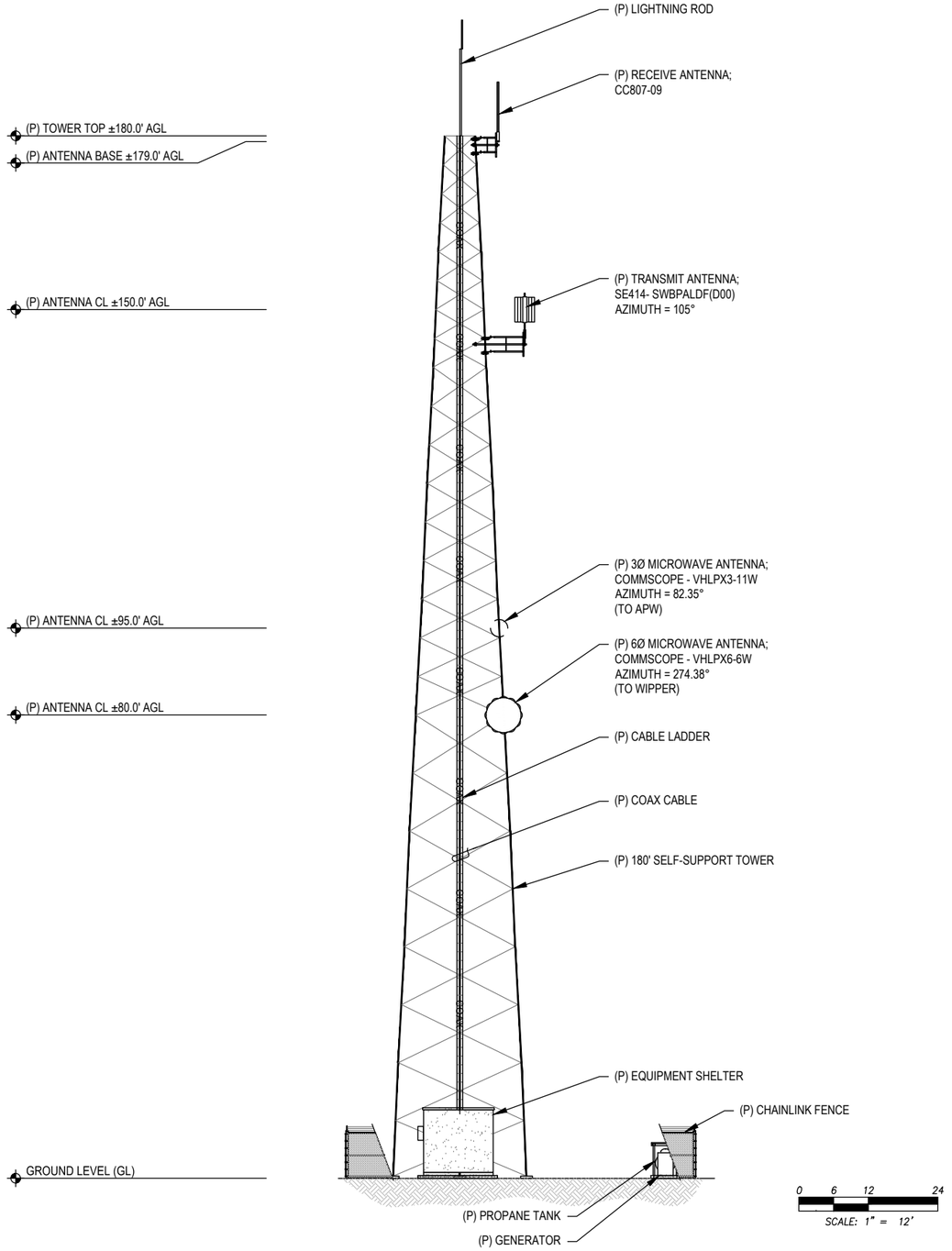
C-2

EXHIBIT K



PROPOSED SOUTH ELEVATION | 11X17 SCALE: 1" = 24' | 22X34 SCALE: 1" = 12' | 1

NOTES:
1. TOWER INFO SHOWN FOR CONCEPTUAL USE ONLY. SEE SABRE TOWER STRUCTURAL REPORT FOR DETAIL.
2. TOWER SHALL BE PAINTED WITH A DULL, NON-REFLECTIVE GRAY COLOR.
3. LOADING INFORMATION PROVIDED BY TAIT COMMUNICATIONS.



PROPOSED WEST ELEVATION | 11X17 SCALE: 1" = 24' | 22X34 SCALE: 1" = 12' | 2

Marion County OREGON

PROJECT INFORMATION:

MARION COUNTY MCCULLY MOUNTAIN

40505 N MCCULLY MOUNTAIN ROAD
LYONS, OR 97358

	DATE	RELEASE
	06-18-25	SITE SKETCH
	07-14-25	PRELIMINARY ZONING DRAWINGS
	08-07-25	PRELIMINARY CONSTRUCTION DRAWINGS
	09-17-25	FINAL CONSTRUCTION DRAWINGS

DRAWING INFORMATION:

THIS DRAWING IS COPYRIGHTED AND IS THE SOLE PROPERTY OF THE OWNER. IT IS PRODUCED SOLELY FOR USE BY THE OWNER AND ITS AFFILIATES. REPRODUCTION OR USE OF THIS DRAWING AND/OR THE INFORMATION CONTAINED IN IT IS FORBIDDEN WITHOUT THE WRITTEN PERMISSION OF THE OWNER.

PLANS PREPARED BY:

cushing Civil Engineers

Cushing Civil Engineers

12725 SW MILLIKAN WAY
SUITE 300
BEAVERTON, OR 97005
(503) 387-5331
www.cushingcivilengineers.com

LICENSURE:

REGISTERED PROFESSIONAL ENGINEER 83233 OREGON JUNE 7, 2012 KENNY McMANAWAY

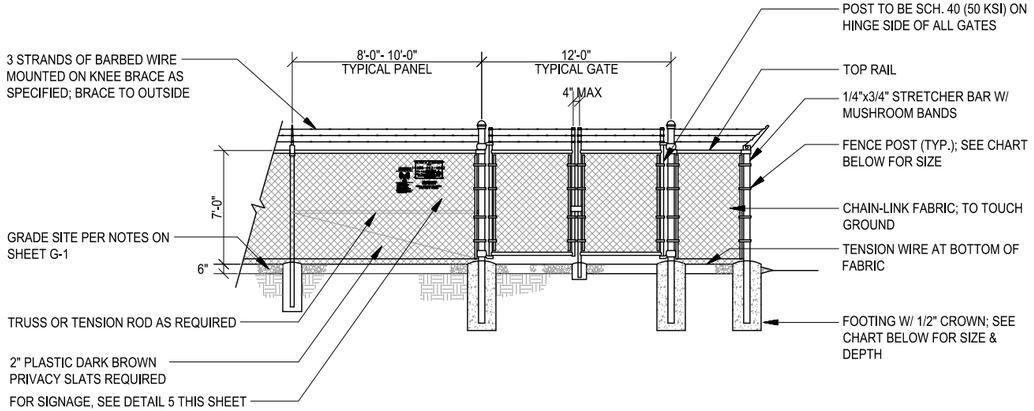
RENEWAL DATE 12/31/26

SHEET TITLE:

ELEVATIONS

SHEET NUMBER:

C-3



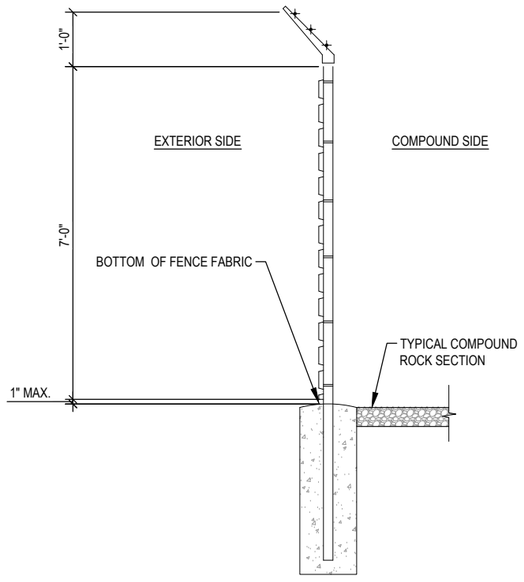
FENCE & GATE NOTES:

1. GATE FRAME-1-7/8" OD, TOP & BRACE RAIL-1-5/8" OD, SCH. 40 (50 KSI) ASTM-F1083.
2. FABRIC: 9 GA. CORE WIRE SIZE 2" MESH FABRIC; FABRIC TO TOUCH GRAVEL BASE.
3. TIE WIRE: MINIMUM 11 GA. GALVANIZED STEEL.
4. BARBED WIRE: 12" (3) STRAND.
5. GATE LATCH: SEE DETAIL 3 THIS SHEET; VERIFY WITH PROPERTY OWNER.

8' HIGH GATE/FENCE			
POST TYPE	POST DIAMETER	FOOTING SIZE	NOTES:
LINE POST	3.5"Ø	12"Øx33"	1. ALL POSTS: SCH. 40 (50 KSI) ASTM-F1083 2. ALL FENCING TO BE ENGINEERED BY FENCING MANUFACTURER & APPROVED BY PROJ. MGR. FENCE MANUFACTURER IS TO VERIFY ADEQUACY OF TABULATED POST & FOOTING SIZES
CORNER POST	4"Ø	16"Øx48"	
GATE POST	4"Ø	16"Øx48"	

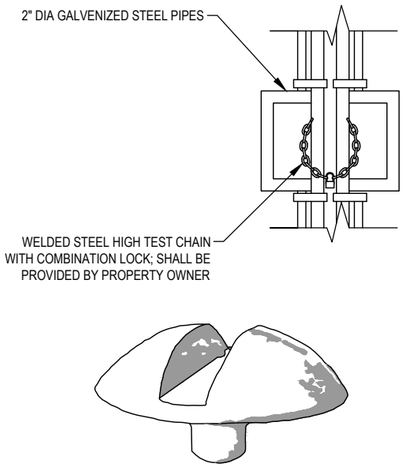
TYPICAL FENCE ELEVATION

SCALE: NTS | 1



TYPICAL FENCE SECTION

SCALE: NTS | 2



CONCRETE MUSHROOM GATE STOP INSTALLED ABOVE THE FINAL GRAVELED GRADE (INSTALL PER MANUFACTURER'S INSTRUCTIONS)

GATE LOCK & CENTER STOP

SCALE: NTS | 3

FENCING NOTES:

EXHIBIT K

1. GATE POST, CORNER, END, OR PULL POST 4" NOMNIAL (4" O.D.) SCHEDULE 40 (50 KSI) PIPE, FOR GATE WIDTHS UP TO 6 FEET OR 12 FEET FOR DOUBLE SWING GATE PER ASTM-F1083.
2. LINE POST: 2-3/8" O.D. 3.65 LBS/LIN FT. ASTM-F1083.
3. TOP RAIL AND BRACE RAIL: 1-1/2" (1.9" O.D.) PIPE 2.72 LBS/LIN FT PER ASTM-F1083. INSTALL BRACE AT ALL CORNER LOCATIONS AND ADJACENT TO GATES.
4. GATE FRAME: 1-1/2" (1.9 O.D.) 2.72 LBS/LIN FT. ASTM-F1083.
5. FABRIC SHALL BE TWO-INCH CHAINLINK MESH NO. 9 GAUGE (0.148") WIRE. THE FABRIC SHALL HAVE A KNUCKLED FINISH FOR THE TOP SELVAGES. FABRIC SHALL CONFORM TO ASTM A-392 CLASS 1.
6. TIE WIRE: MINIMUM 11Ga. GALVANIZED STEEL. PROVIDE A SINGLE WRAP OF FABRIC, TIE AT POSTS, RAILS, AND AT TENSION WIRE BY HOG RINGS. MAXIMUM SPACING 24" O.C.
7. TENSION WIRE: MINIMUM 7 Ga. GALVANIZED STEEL.
8. U.N.O. BARBED WIRE: DOUBLE STRAND 12 Ga. 1/2" O.D. TWISTED WIRE TO MATCH W/ FABRIC, 14 Ga. 4PT. BARBS SPACED ON APPROX. 5" CENTERS.
9. U.N.O. BARBED WIRE GATE GUARDS SHALL BE FITTED WITH DOME CAPS.
10. U.N.O. BARBED WIRE SUPPORT ARMS SHALL BE PRESSED STEEL COMPLETE WITH SET BOLT AND LOCK WIRE IN THE ARM.
11. PROVIDE TWO 6 FOOT WIDE OUT SWINGING GATES, (UNLESS NOTED OTHERWISE). NO PERSONNEL GATES ARE REQUIRED (UNLESS AS DIRECTED BY THE PROPERTY OWNER). GATES SHALL BE ABLE TO LOCK.
12. U.N.O. GATE POSTS SHALL BE EXTENDED 12 INCHES, INCLUDING DOME CAP, TO PROVIDE FOR ATTACHMENT OF BARBED WIRE.
13. GATE FRAMES SHALL HAVE A FULL-HEIGHT VERTICAL BRACE, AND A FULL-WIDTH HORIZONTAL BRACE, SECURED IN PLACE BY USE OF GATE BRACE CLAMPS.
14. GATE HINGES SHALL BE MERCHANTS METAL MODEL 64386 HINGE ADAPTOR WITH MODEL 6409, 180-DEGREE ATTACHMENT OR APPROVED EQUAL.
15. GATE LATCH: 1-3/8" O.D. PLUNGER ROD W/ MUSHROOM TYPE CATCH.
16. A 6" X 1/2" DIAMETER EYEBOLT TO HOLD TENSION WIRE SHALL BE PLACED AT LINE POSTS.
17. STRETCHER BARS SHALL BE 3/16" OR HAVE EQUIVALENT CROSS-SECTIONAL AREA.
18. U.N.O. ALL POSTS EXCEPT GATE POSTS SHALL HAVE A COMBINATION CAP AND BARBED WIRE SUPPORTING ARM.
19. ALL CAPS SHALL BE MALLEABLE IRON, DOME OR ACORN SHAPED AS REQUIRED BY PIPE SIZE.
20. OTHER HARDWARE MAY INCLUDE BUT NOT BE LIMITED TO TIE CLIPS, BAND CLIPS AND TENSION BAND CLIPS.
21. U.N.O. WHERE THE USE OF CONCERTINA HAS BEEN SPECIFIED, 24" DIAMETER COIL. BARBED TAPE, STAINLESS STEEL, CYCLONE FENCE MODEL G8P TO TYPE III SHALL BE FURNISHED. IT SHALL BE SUPPORTED ABOVE THE TOP RAIL BY USE OF SIX (6) BARBED WIRE ARMS POSITIONED ATOP EACH LINE/CORNER POST.
22. U.N.O. ALL CHAINLINK FENCING COMPONENTS MUST BE HOT DIPPED GALVANIZED.
23. WHEN IN USE, PRIVACY SLATS TO BE A NEUTRAL COLOR.

GENERAL FENCE NOTES

SCALE: NTS | 4



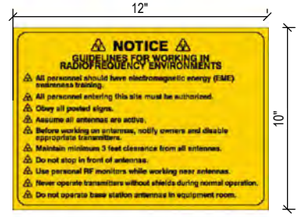
SIGN NOTES:

1. SIGN MATERIAL: 18GA ALUMINUM
2. LETTERING COLOR = BLACK
3. BACKGROUND COLOR = WHITE / RED



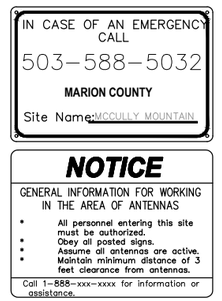
SIGN NOTES:

1. SIGN MATERIAL: 18GA ALUMINUM
2. LETTERING COLOR = BLACK / WHITE
3. BACKGROUND COLOR = WHITE / BLUE



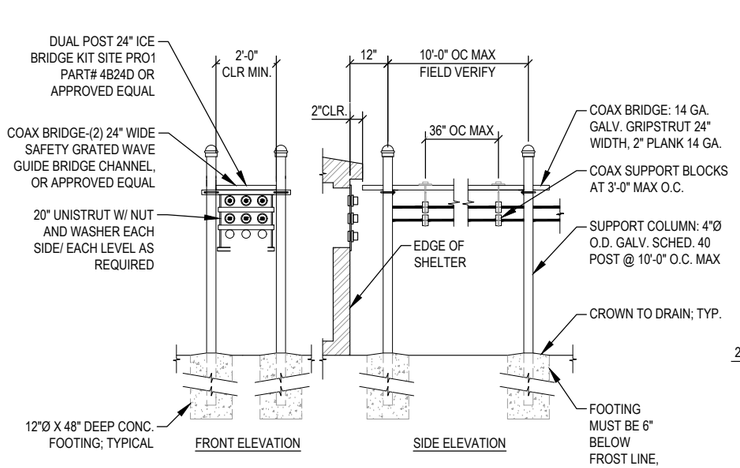
SIGN NOTES:

1. SIGN MATERIAL: 18GA ALUMINUM
2. LETTERING COLOR = BLACK
3. BACKGROUND COLOR = YELLOW

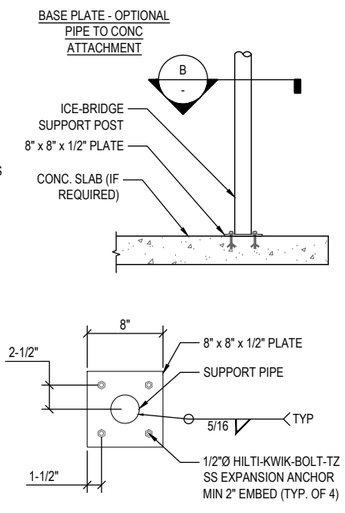


SIGN DETAILS

SCALE: NTS | 5



NOTE: GROUND COAX BRIDGE PER THE REQUIREMENTS OF THE NEC STANDARDS - SEE DETAIL 1/E-2



SECTION B

ICE BRIDGE DETAIL

SCALE: NTS | 6

Marion County OREGON

PROJECT INFORMATION:

MARION COUNTY MCCULLY MOUNTAIN

40505 N MCCULLY MOUNTAIN ROAD
LYONS, OR 97358

	DATE	RELEASE
	06-18-25	SITE SKETCH
	07-14-25	PRELIMINARY ZONING DRAWINGS
	08-07-25	PRELIMINARY CONSTRUCTION DRAWINGS
	09-17-25	FINAL CONSTRUCTION DRAWINGS

DRAWING INFORMATION:
THIS DRAWING IS COPYRIGHTED AND IS THE SOLE PROPERTY OF THE OWNER. IT IS PRODUCED SOLELY FOR USE BY THE OWNER AND ITS AFFILIATES. REPRODUCTION OR USE OF THIS DRAWING AND/OR THE INFORMATION CONTAINED IN IT IS FORBIDDEN WITHOUT THE WRITTEN PERMISSION OF THE OWNER.

PLANS PREPARED BY:

cushing Civil Engineers

Cushing Civil Engineers
12725 SW MILLIKAN WAY
SUITE 300
BEAVERTON, OR 97005
(503) 387-5331
www.cushingcivilengineers.com

LICENSURE:

REGISTERED PROFESSIONAL ENGINEER 83233 OREGON JUNE 7, 2012 KENNY McMANAWAY

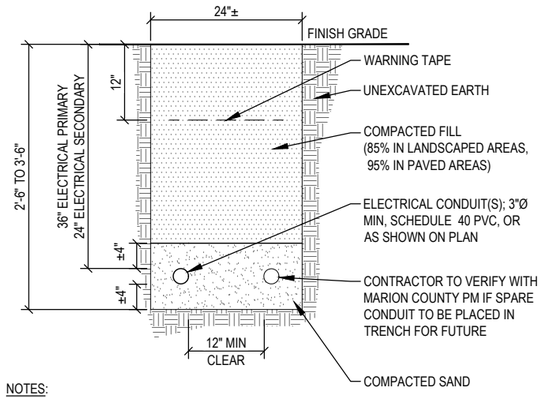
RENEWAL DATE 12/31/26

SHEET TITLE:

COMPOUND DETAILS I

SHEET NUMBER:

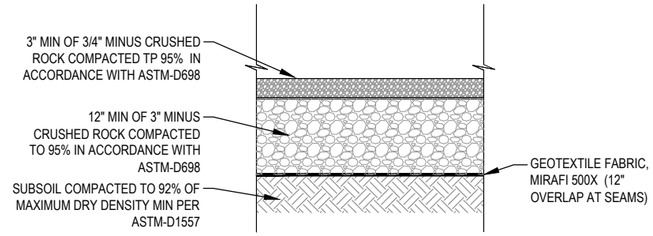
C-4



NOTES:
1. EXCAVATE TO REQUIRED DEPTH.
2. VERIFY ALL TRENCHING REQUIREMENTS PER LOCAL UTILITIES.
3. CONTRACTOR TO PROVIDE (1) 300 POUND NYLON PULL CORD AND CONDUCTORS AS REQUIRED PER CONDUIT.

POWER LINE TRENCH — SCALE: NTS — 1

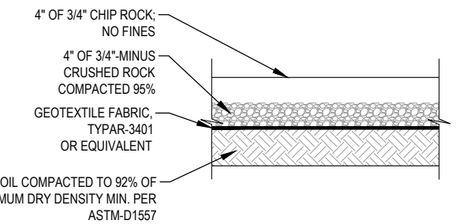
EXHIBIT K



NOTES:

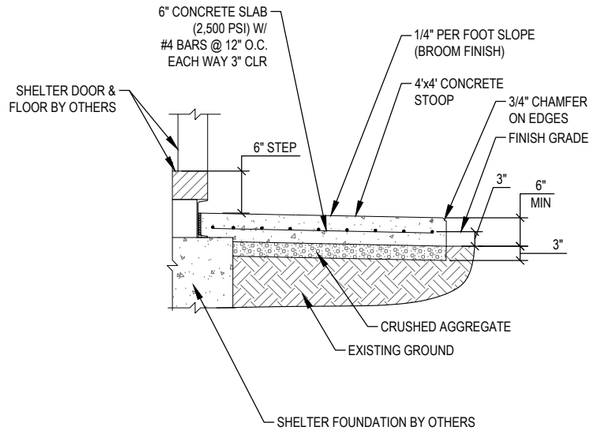
1. CONTRACTOR SHALL STRIP SUPERFICIAL, SOFT, WET, ORGANIC OR DELETERIOUS SOILS TO EXPOSE FIRM AND UNYIELDING SOIL (BETWEEN 6" & 12"). IF STRIPPING IS REQUIRED DEEPER THAN 12", CONTRACTOR SHALL CONTACT THE SITE CONSTRUCTION MANGER TO DETERMINE THE APPROPRIATE STRIPPING DEPTH AT THE TIME OF CONSTRUCTION.
2. MATERIAL AND INSTALLATION SHALL CONFORM TO CURRENT ODOT/APWA STANDARD SPECIFICATIONS AND MANUFACTURERS RECOMMENDATIONS.

GRAVEL ROAD SECTION DETAIL — SCALE: NTS — 2

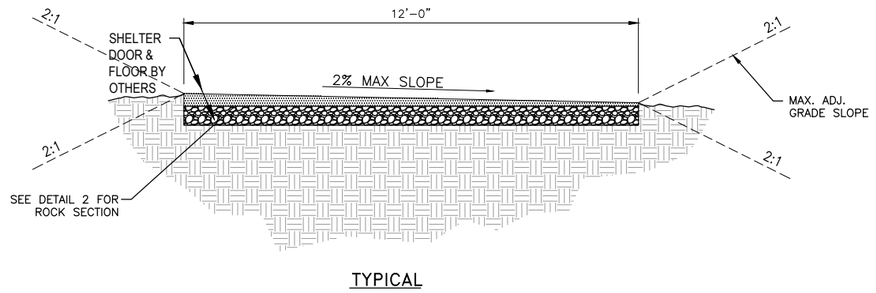


NOTE: STRIP ALL ORGANICS

COMPOUND ROCK SECTION DETAIL — SCALE: NTS — 3



STOOP SECTION DETAIL — SCALE: NTS — 4

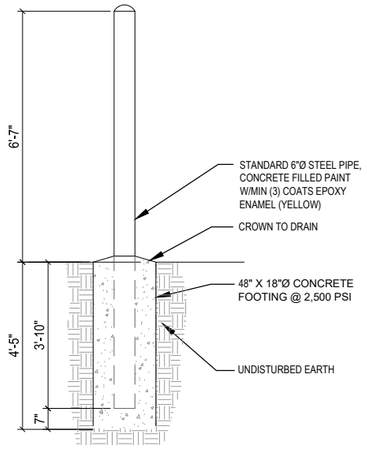


TYPICAL

NOTE:

CONTRACTOR SHALL STRIP SUPERFICIAL, SOFT, WET, ORGANIC OR DELETERIOUS SOILS TO EXPOSE FIRM AND UNYIELDING SOIL (MIN. 6"). IF STRIPPING IS REQUIRED DEEPER THAN 6", CONTRACTOR SHALL CONTACT THE SITE CONSTRUCTION MANAGER TO DETERMINE THE APPROPRIATE STRIPPING DEPTH AT THE TIME OF CONSTRUCTION.

ACCESS ROAD SECTION DETAIL — SCALE: NTS — 5



BOLLARD DETAIL — SCALE: NTS — 6

Marion County OREGON

PROJECT INFORMATION:

MARION COUNTY MCCULLY MOUNTAIN

40505 N MCCULLY MOUNTAIN ROAD
LYONS, OR 97358

	DATE	RELEASE
	06-18-25	SITE SKETCH
	07-14-25	PRELIMINARY ZONING DRAWINGS
	08-07-25	PRELIMINARY CONSTRUCTION DRAWINGS
	09-17-25	FINAL CONSTRUCTION DRAWINGS

DRAWING INFORMATION:
THIS DRAWING IS COPYRIGHTED AND IS THE SOLE PROPERTY OF THE OWNER. IT IS PRODUCED SOLELY FOR USE BY THE OWNER AND ITS AFFILIATES. REPRODUCTION OR USE OF THIS DRAWING AND/OR THE INFORMATION CONTAINED IN IT IS FORBIDDEN WITHOUT THE WRITTEN PERMISSION OF THE OWNER.

PLANS PREPARED BY:

cushing Civil Engineers

Cushing
Civil Engineers
12725 SW MILLIKAN WAY
SUITE 300
BEAVERTON, OR 97005
(503) 387-5331
www.cushingcivilengineers.com

LICENSURE:

REGISTERED PROFESSIONAL ENGINEER
83233
OREGON
JUNE 7, 2012
KENNY McMANAWAY

RENEWAL DATE 12/31/26

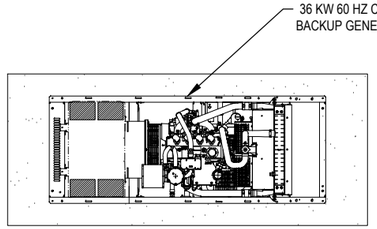
SHEET TITLE:

COMPOUND DETAILS II

SHEET NUMBER:

C-5

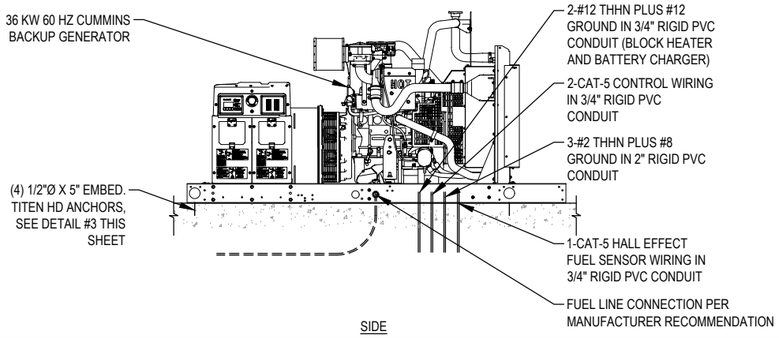
EXHIBIT K



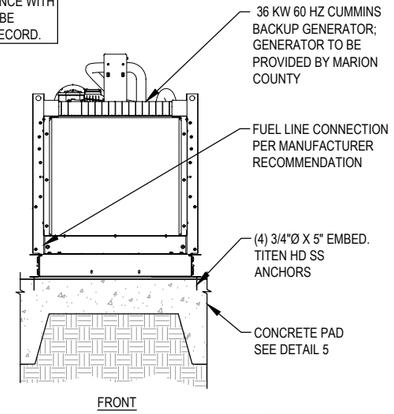
NOTE: SEE GENERATOR SPEC SHEET FOR DIMENSIONS AND WEIGHTS

GENERATOR PLAN

SCALE: NTS | 1



NOTE: DOCUMENTATION FOR THE GENERATOR IS TO BE PROVIDED BY THE SUPPLIER CERTIFYING THAT ALL HAZARDOUS CONTENTS WILL REMAIN CONTAINED FOLLOWING THE DESIGN EARTHQUAKE FOR THIS SITE. CERTIFICATION OF CONTAINMENT IS TO BE PROVIDED BY 1) ANALYSIS, 2) APPROVED SHAKE TABLE TESTING IN ACCORDANCE WITH SECTION 13.2.5 OF ASCE 7, OR 3) EXPERIENCE DATA IN ACCORDANCE WITH ASCE 7 SECTION 13.2.6. EVIDENCE DEMONSTRATING COMPLIANCE OF THIS REQUIREMENT SHALL BE SUBMITTED TO THE LOCAL JURISDICTION AFTER REVIEW AND APPROVAL BY THE ENGINEER OF RECORD.



GENERATOR ELEVATION

SCALE: NTS | 2

NOT USED

SCALE: NTS | 3

1. CONTRACTOR TO VERIFY AND CONFIRM ALL DIMENSIONS AND CONDITIONS AND NOTIFY ENGINEER OF RECORD OF ANY DISCREPANCIES PRIOR TO START OF WORK.
2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR STRUCTURAL STABILITY DURING CONSTRUCTION. THE STRUCTURE SHOWN ON THE DRAWINGS HAS BEEN DESIGNED FOR STABILITY UNDER THE FINAL CONFIGURATION ONLY.
3. CODE: 2018 INTERNATIONAL BUILDING CODE (IBC).
4. THE FOOTINGS HAVE BEEN DESIGNED FOR AN ALLOWABLE SOIL BEARING PRESSURE OF 1,500 PSF.
5. CONCRETE: FOOTINGS, F'C = 3,000 PSI MINIMUM COMPRESSIVE STRENGTH AT 28 DAYS.
6. REINFORCING STEEL: F'Y = 60,000 PSI
7. STRUCTURAL AND MISCELLANEOUS STEEL SHALL BE IN ACCORDANCE WITH AISC SPECIFICATION FOR THE DESIGN, FABRICATION AND ERECTION OF STRUCTURAL STEEL FOR BUILDINGS AND SHALL BE ASTM A-36 U.O.N. ALL BOLTS HOLES SHALL BE PUNCHED OR DRILLED; BURNING OF HOLES SHALL NOT BE PERMITTED. ALL STRUCTURAL STEEL SHALL HAVE ONE SHOP COAT OF PAINT.
   ALL MATERIALS SHALL CONFORM TO THE FOLLOWING STANDARDS:

PIPE:	A53 GR. B (MIN. FY = 35 KSI)
SHAPES:	ASTM A36/ ASTM A572 GR. 50
WIDE FLANGE:	ASTM A992
TUBES:	A500 GR. B, FY = 46 KSI
PLATES:	A36
WELDS:	E70XX ELECTRODES
STRUCTURAL BOLTS:	ASTM A325N
NON-STRUCTURAL BOLTS:	SAE J429 GR. 5 / F1554-36
U-BOLTS:	ASTM A36
THREADED ROD:	ASTM A307

SPECIAL INSPECTION BY OWNERS TESTING AGENCY
SPECIAL INSPECTIONS AND TESTING SHALL BE PERFORMED BY AN APPROVED AGENCY IN ACCORDANCE WITH INTERNATIONAL BUILDING CODE (IBC) CHAPTER 17 SECTIONS 1703 AND SECTIONS 1704, AND WITH THE STATEMENT OF SPECIAL INSPECTIONS AS REQUIRED BY IBC SECTIONS 1704.2.3 AND 1705 FOR BUILIDNG STRUCTURAL ELEMENTS SUMMARIZED AS FOLLOWS:

1. STRUCTURAL STEEL CONSTRUCTION PER IBC SECTIONS 1705.3 AND TABLE 1705.3 INCLUDING MATERIAL IDENTIFICATION, AND SHOP WELDING.

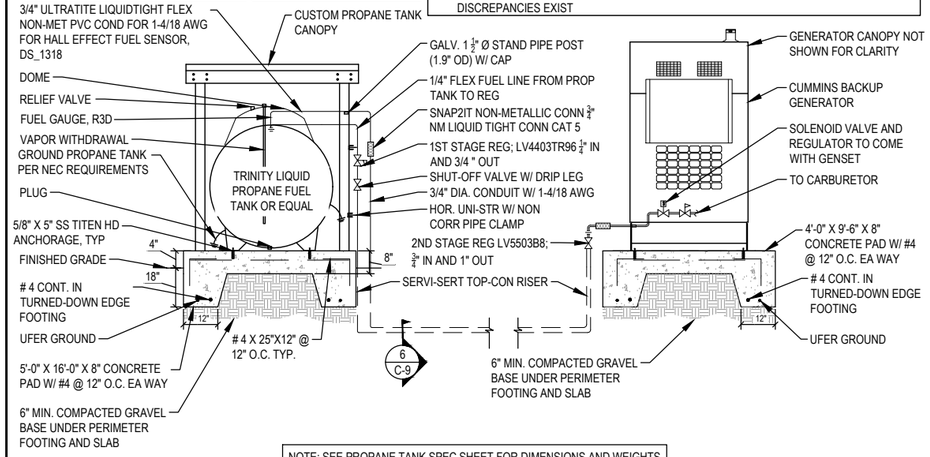
GENERAL NOTES

SCALE: NTS | 4

NOTES:
1. PROPANE TANK REGISTERED WITH NATIONAL BOARD AND COMPLIES AND INSTALLED PER NFPA 58 CODE
2. PROPANE TANK INSTALLED AT LEAST 10 FT FROM EXTERNAL SOURCE OF IGNITION

LEGEND
- SHUT-OFF VALVE
- UNION
- PRESSURE REGULATOR
- SOLENOID VALVE
- FLEXIBLE CONNECTION

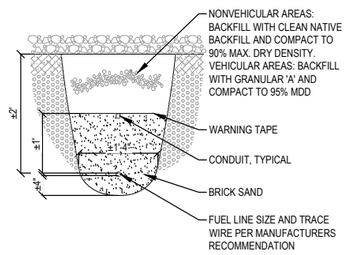
NOTES:
1. GROUND SYSTEM SHOULD COMPLY WITH INDUSTRY STANDARDS
2. CONFIRM CONNECTIONS PROVIDED WITH FUEL TANK
3. USE GASEOUS LP VAPOR WITHDRAWAL SYSTEM
4. TO CODE OFFICIAL, PAD IS FOR EQUIPMENT ONLY (NO BUILDINGS)
5. CONTRACTOR IS TO VERIFY THAT ALL PROPOSED ANCHORS WILL PROVIDE ADEQUATE FIT PRIOR TO POURING CONCRETE PADS, NOTIFY DON CUSHING ASSOCIATES IF ANY DISCREPANCIES EXIST



NOTE: SEE PROPANE TANK SPEC SHEET FOR DIMENSIONS AND WEIGHTS

GENERATOR FUEL SYSTEM ELEVATION

SCALE: NTS | 5



TRENCH SECTION

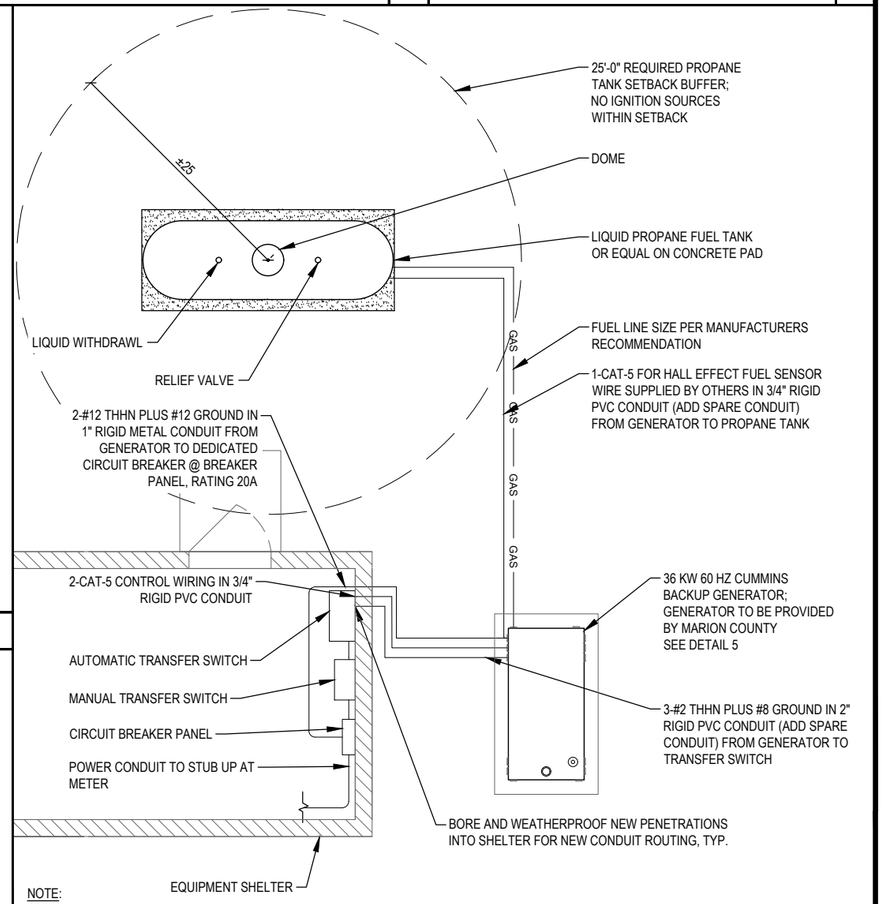
SCALE: NTS | 6

NOT USED

SCALE: NTS | 7

NOT USED

SCALE: NTS | 8



NOTE:

ALL CONDUIT INSIDE THE BUILDING MUST BE METAL AND BE GROUNDED PER R-56 STANDARDS.

INTERIOR SHELTER LAYOUT IS FOR REFERENCE ONLY.

THIS GENERATOR & PROPANE LAYOUT IS FOR INFORMATION ONLY AND IS PRESENTED AS A GUIDELINE. VERIFY SITE CONDITIONS AND LAYOUT PRIOR TO INSTALLATION OF ALL EQUIPMENT. INSTALL ALL EQUIPMENT PER MANUFACTURER'S INSTRUCTIONS.

TYPICAL GENERATOR LAYOUT

SCALE: NTS | 9

Marion County
OREGON

PROJECT INFORMATION:

MARION COUNTY
MCCULLY MOUNTAIN

40505 N MCCULLY MOUNTAIN ROAD
LYONS, OR 97358

	DATE	RELEASE
	06-18-25	SITE SKETCH
	07-14-25	PRELIMINARY ZONING DRAWINGS
	08-07-25	PRELIMINARY CONSTRUCTION DRAWINGS
	09-17-25	FINAL CONSTRUCTION DRAWINGS

DRAWING INFORMATION:
THIS DRAWING IS COPYRIGHTED AND IS THE SOLE PROPERTY OF THE OWNER. IT IS PRODUCED SOLELY FOR USE BY THE OWNER AND ITS AFFILIATES. REPRODUCTION OR USE OF THIS DRAWING AND/OR THE INFORMATION CONTAINED IN IT IS FORBIDDEN WITHOUT THE WRITTEN PERMISSION OF THE OWNER.

PLANS PREPARED BY:

cushing Civil Engineers

Cushing Civil Engineers
12725 SW MILLIKAN WAY
SUITE 300
BEAVERTON, OR 97005
(503) 387-5331
www.cushingcivilengineers.com

LICENSURE:

REGISTERED PROFESSIONAL ENGINEER
83233
OREGON
JUNE 7, 2012
KENNY McMANAWAY

RENEWAL DATE 12/31/26

SHEET TITLE:

GENERATOR & PROPANE TANK DETAILS

SHEET NUMBER:

C-6

EXHIBIT K

Job Name:	
Tag#	

Submittal Data Sheet — FTX36NVJU / RX36NMVJUA

3-Ton Wall Mounted Heat Pump System





Complete warranty details available from your local dealer or at www.daikincomfort.com. Warranty registration not required to receive the 10-Year parts limited warranty for residential or commercial installations.

Efficiency

Cooling		Heating	
SEER	15.9	HSPF	9.2
EER	9.10	COP	2.78

Performance

Cooling (Btu/hr)	
Rated (Min/Max)	34,400 (10,200 / 34,400)
Sensible @ AHRI	22,160
Standard Operating Range	50°F – 115°F
Extended Operating Range*	-4°F – 115°F

Rated Cooling Conditions: Indoor: 80°F DB/67°F WB; Outdoor: 95°F DB/75°F WB

***With field settings and wind baffle**

Heating (Btu/hr)	
1:@ 47° Rated (Min/Max)	36,000 (10,200 / 36,000)
2: @ 17° Rated	22,800
3: @ 5°	15,740
Operating Range	5 – 65°F

1: Rated Heating Conditions: Indoor: 70°F DB/60°F WB; Outdoor: 47°F DB/43°F WB

2: Rated Heating Conditions: Indoor: 70°F DB/60°F WB; Outdoor: 17°F DB/15°F WB

3: Heating Conditions: Indoor: 70°F DB/60°F WB; Outdoor: 5°F DB/5°F WB

Indoor Specifications

	Cooling		Heating	
Airflow Rate (cfm)	H	M	H	M
	915	742	960	791
	L	SL	L	SL
	572	512	629	544
Sound (dBA) H / M / L / SL	54 / 47 / 40 / 37		53 / 46 / 38 / 35	
Dimensions (H × W × D) (in)	13-3/8 × 47-1/4 × 10-3/16			
Weight (Lbs)	38			

Outdoor Specifications

Compressor	Hermetically Sealed Swing Type			
Refrigerant	R-410A			
Factory Charge (Lbs)	3.64			
Refrigerant Oil	PVE (FVC50K)			
Airflow Rate (cfm)	Cooling		Heating	
	H	2,811	H	2,352
Sound Pressure Level (dBA)	59			
Dimensions (H × W × D) (in)	28-15/16 × 34-1/4 × 12-5/8			
Weight (Lbs)	133			

Electrical

	208/60/1	230/60/1
System MCA	19.8	19.8
System MFA	20	20
Compressor RLA	18.25	18.25
Outdoor fan motor FLA	.83	.83
Outdoor fan motor W	123	123
Indoor fan motor FLA	.37	.37
Indoor fan motor W	64	64

MFA: Max. fuse amps **MCA:** Min. circuit amps (A) **FLA:** Full load amps (A)
RLA: Rated load amps (A) **W:** Fan motor rated output (W)

Piping

Liquid (in)	1/4
Gas (in)	5/8
Drain (in)	5/8
Max. Interunit Piping Length (ft)	98.4
Max. Interunit Height Difference (ft)	65.625
Chargeless (ft)	32.8
Additional Charge of Refrigerant (oz/ft)	.32

Daikin North America LLC 5151 San Felipe, Suite 500 Houston, TX 77056

(Daikin's products are subject to continuous improvements. Daikin reserves the right to modify product design, specifications and information in this data sheet without notice and without incurring any obligations)

Submittal Revision Date: October 2021

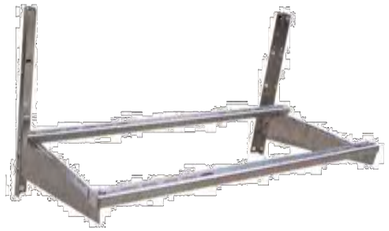
DAIKIN HEAT PUMP - FTX36NVJU / RX36NMVJUA SCALE: NTS | 1

hotspot energy

Optional Exterior Wall Mount For Air Conditioner Condensing Unit

Used to mount the outdoor air conditioning unit on an exterior wall to protect unit from snowdrift, flood, or for installation convenience.

Use Only All Stainless Steel





Above mounting hardware images for reference only. Products available through online sellers such as Lowes, Home Depot, Amazon. Not provided by HotSpot Energy.

Copyright 2023 HotSpot Energy INC

CONDENSING UNIT WALL MOUNT SCALE: NTS | 2

Marion County OREGON

PROJECT INFORMATION:

MARION COUNTY MCCULLY MOUNTAIN

40505 N MCCULLY MOUNTAIN ROAD
LYONS, OR 97358

	DATE	RELEASE
	06-18-25	SITE SKETCH
	07-14-25	PRELIMINARY ZONING DRAWINGS
	08-07-25	PRELIMINARY CONSTRUCTION DRAWINGS
	09-17-25	FINAL CONSTRUCTION DRAWINGS

DRAWING INFORMATION:
THIS DRAWING IS COPYRIGHTED AND IS THE SOLE PROPERTY OF THE OWNER. IT IS PRODUCED SOLELY FOR USE BY THE OWNER AND ITS AFFILIATES. REPRODUCTION OR USE OF THIS DRAWING AND/OR THE INFORMATION CONTAINED IN IT IS FORBIDDEN WITHOUT THE WRITTEN PERMISSION OF THE OWNER.

PLANS PREPARED BY:

cushing Civil Engineers

Cushing
Civil Engineers

12725 SW MILLIKAN WAY
SUITE 300
BEAVERTON, OR 97005
(503) 387-5331
www.cushingcivilengineers.com

LICENSURE:

REGISTERED PROFESSIONAL ENGINEER 83233 OREGON JUNE 7, 2012 KENNY McMANAWAY

RENEWAL DATE 12/31/26

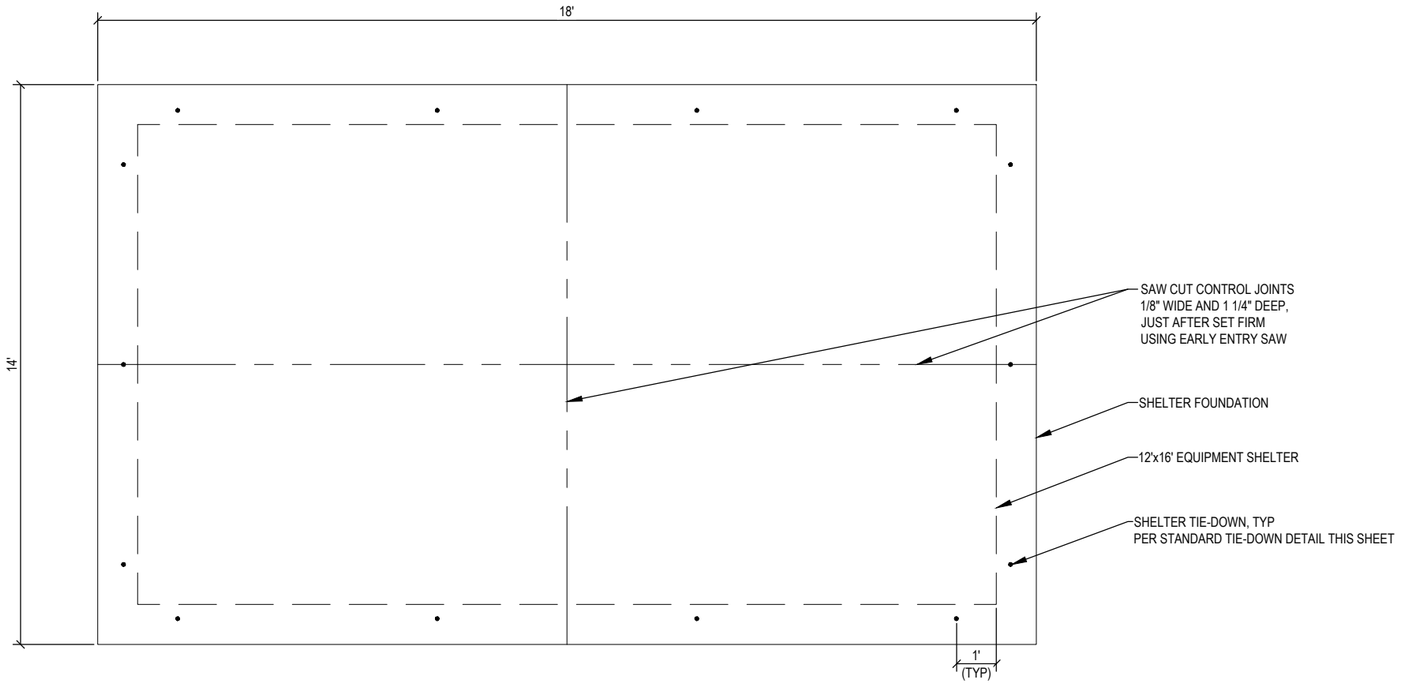
SHEET TITLE:

HVAC DETAILS

SHEET NUMBER:

C-7

EXHIBIT K

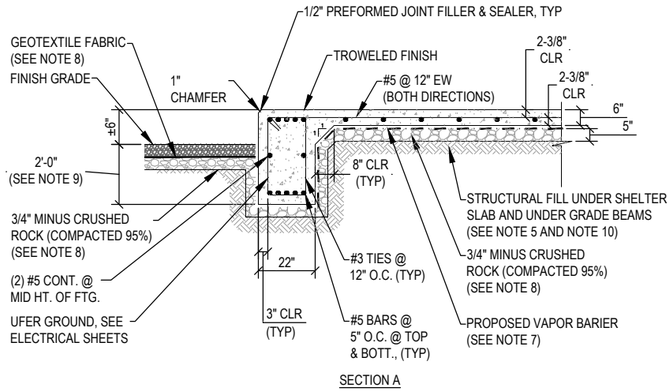


NOTES:

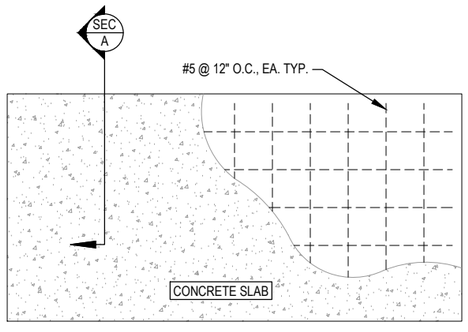
1. ULTIMATE COMPRESSIVE STRENGTH OF CONCRETE AT 28 DAYS SHALL BE 3000 PSI, UNLESS OTHERWISE SPECIFIED.
2. REINFORCING BARS SHALL BE DEFORMED BARS CONFORMING TO ASTM A615 "DEFORMED AND PLAIN BILLET STEEL BARS FOR CONCRETE REINFORCEMENT," LATEST EDITION, GRADE 60.
3. LAP LENGTH FOR SPLICES SHALL NOT BE LESS THAN CLASS B SPLICE, UNLESS OTHERWISE SPECIFIED. WELDING OF REINFORCEMENT WILL NOT BE PERMITTED.
4. CONTRACTOR MAY USE EARTH FORMS FOR UNEXPOSED CONCRETE WHERE SOIL IS FIRM AND STABLE. EARTH FORMS SHALL BE TRENCHED NEATLY AND ACCURATELY. SIDES OF FOUNDATIONS, WHERE EARTH SLOUGHS, SHALL BE FORMED. EARTH FORMS SHALL BE TAMPED FIRM, AND CLEANED OF ALL DEBRIS AND LOOSE MATERIAL, BEFORE DEPOSITING CONCRETE.
5. STRUCTURAL FILL USED FOR SITE GRADING SHALL BE FREE FROM TOP SOIL, ORGANIC CONTAMINATED SOIL, AND ROCK FRAGMENTS HAVING A MAXIMUM DIMENSION GREATER THAN 3 INCHES. MATERIAL SHALL BE CLEAN AND SHALL BE SUBJECT TO THE FOLLOWING RESTRICTIONS.

   SILT CLAYS OR SANDY CLAY
   PLASTICITY INDEX 10 TO 24
   LIQUID LIMIT <45

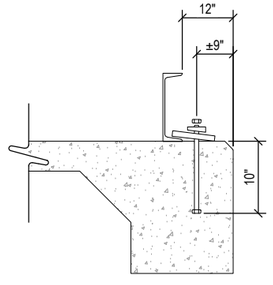
   CLAYEY SANDS OR SLIGHTLY CLAYEY SILTY SANDS
   PLASTICITY INDEX 3 TO 15
   LIQUID LIMIT <35
6. MINIMUM CONCRETE COVER FOR REINFORCEMENT SHALL BE 3 INCHES FOR CONCRETE CAST AGAINST AND PERMANENTLY EXPOSED EARTH AND 1-1/2 INCHES FOR TOP BARS ON SIDEWALK AND SHELTER FOUNDATIONS.
7. VAPOR BARRIER SHALL BE VAPORBLOCK 10, OR APPROVED EQUAL.
8. CRUSHED ROCK AND GEOTEXTILE FABRIC IN THE COMPOUND AREA SHALL MEET THE REQUIREMENTS OF DETAIL 3 ON DWG C-5 AND ALL APPLICABLE GRADING NOTES.
9. IN INSTANCES WHERE ROCK IS ENCOUNTERED AT LESS THAN 2'-0", CONCRETE MAY BEAR ON THE ROCK.
10. PAINT SHEAR PLATES WITH COLD GALV.



SECTION A



FOUNDATION PLAN



STANDARD TIE-DOWN DETAIL

NOTES:

1. TIEDOWN HARDWARE:
   - 1.1. CLAMP PLATE, 3/8"x3"x4" GALV. STEEL
   - 1.2. 1/2" BEVEL WASHER
   - 1.3. ANCHOR BOLT- 1/2-10x12" HEX HEAD
   - 1.4. 1/2"-10 HEAVY HEX NUT BY OTHERS.

Marion County
OREGON

PROJECT INFORMATION:

MARION COUNTY MCCULLY MOUNTAIN

40505 N MCCULLY MOUNTAIN ROAD
LYONS, OR 97358

	DATE	RELEASE
	06-18-25	SITE SKETCH
	07-14-25	PRELIMINARY ZONING DRAWINGS
	08-07-25	PRELIMINARY CONSTRUCTION DRAWINGS
	09-17-25	FINAL CONSTRUCTION DRAWINGS

DRAWING INFORMATION:

THIS DRAWING IS COPYRIGHTED AND IS THE SOLE PROPERTY OF THE OWNER. IT IS PRODUCED SOLELY FOR USE BY THE OWNER AND ITS AFFILIATES. REPRODUCTION OR USE OF THIS DRAWING AND/OR THE INFORMATION CONTAINED IN IT IS FORBIDDEN WITHOUT THE WRITTEN PERMISSION OF THE OWNER.

PLANS PREPARED BY:

cushing
Civil Engineers

Cushing
Civil Engineers

12725 SW MILLIKAN WAY
SUITE 300
BEAVERTON, OR 97005
(503) 387-5331
www.cushingcivilengineers.com

LICENSURE:

REGISTERED PROFESSIONAL ENGINEER
83233
OREGON
JUNE 7, 2012
KENNY McMANAWAY

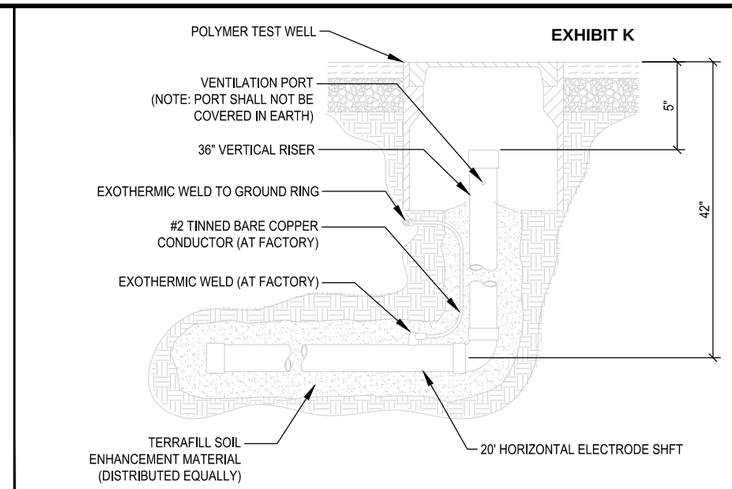
RENEWAL DATE 12/31/26

SHEET TITLE:

EQUIPMENT SHELTER FOUNDATION PLAN

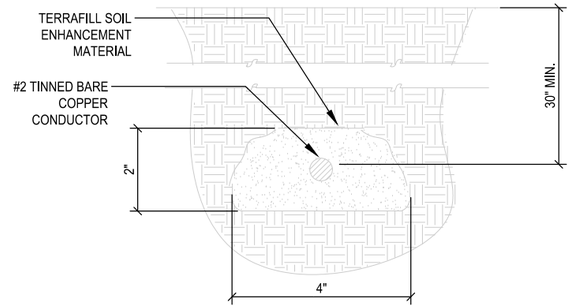
SHEET NUMBER:

C-8



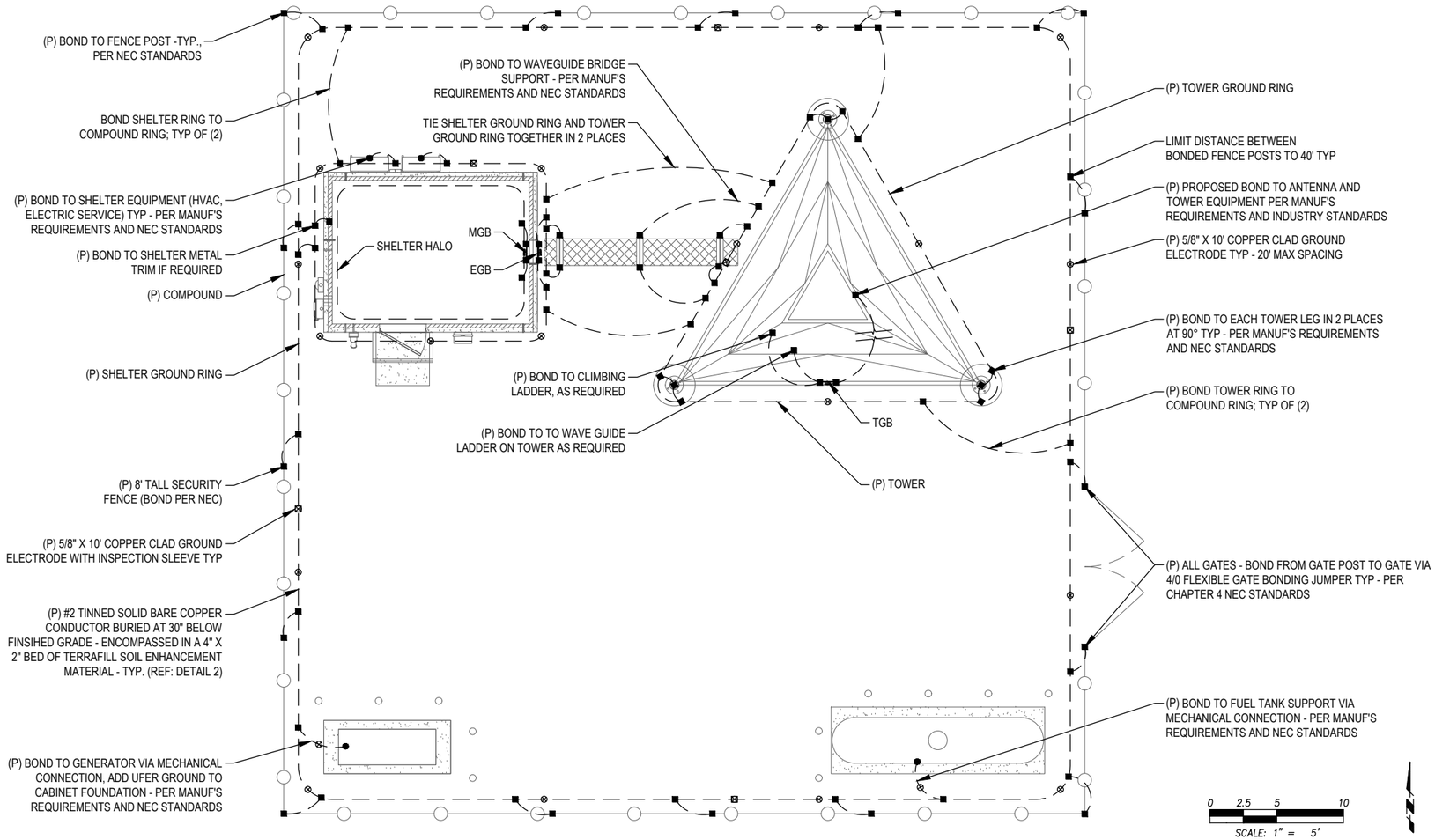
TERRADYNE ELECTROLYTIC GROUND ELECTRODE

SCALE: NTS | 3



SOIL ENHANCEMENT DETAIL

SCALE: NTS | 2



SITE COMPOUND GROUNDING PLAN

11X17 SCALE: 1" = 10' | 22X34 SCALE: 1" = 5' | 1

GENERAL NOTES:

1. ALL INSTALLATIONS ARE TO BE FIELD VERIFIED.
2. GROUND CONDUCTORS ARE TO BE BURIED AT A MINIMUM 30" BELOW GRADE OR 6" BELOW FREEZE LINE, WHICHEVER IS GREATER.
3. ALL BELOW GRADE GROUNDING CONDUCTORS ARE TO BE ENCOMPASSED IN A 2" X 4" BED OF SOIL ENHANCEMENT MATERIAL.
4. BONDS TO FENCE POSTS ARE TO BE MADE AT 12" ABOVE GRADE WHERE APPLICABLE.
5. NO CONDUCTOR SHALL HAVE A BEND IN RADIUS OF LESS THAN 12" AND SHALL NOT EXCEED 90 DEGREES.
6. TERRADYNE ELECTROLYTIC GROUND ELECTRODES ARE NOT TO SHARE THE SAME TRENCH AS GROUNDING CONDUCTOR, NOR RUN IN A PARALLEL PATH TO THE CONDUCTOR.
7. ALL GROUND SYSTEMS ARE TO BE MADE COMMON.
8. ALL BONDS ARE TO BE COATED WITH ANTI-OXIDATION COMPOUND.
9. WHERE STANDARD GROUND ELECTRODES ARE UNABLE TO BE DRIVEN, 12" X 12" X 1/8" COPPER GROUND PLATES SHALL BE INSTALLED 30" BELOW FINISHED GRADE & ENCOMPASSED IN 50LBS OF TERRAFILL SOIL ENHANCEMENT MATERIAL.

LEGEND:

- TERRADYNE TG-100L-H36-2T-36-4F-P SERIES ELECTRODE W/ INSPECTION WELL
- EXOTHERMIC WELD
- MECHANICAL CONNECTION
- 5/8" X 10' COPPER CLAD GROUND ELECTRODE
- 5/8" X 10' COPPER CLAD GROUND ELECTRODE WITH INSPECTION SLEEVE
- #2 TINNED SOLID COPPER CONDUCTOR

Marion County OREGON

PROJECT INFORMATION:

MARION COUNTY MCCULLY MOUNTAIN

40505 N MCCULLY MOUNTAIN ROAD
LYONS, OR 97358

	DATE	RELEASE
	06-18-25	SITE SKETCH
	07-14-25	PRELIMINARY ZONING DRAWINGS
	08-07-25	PRELIMINARY CONSTRUCTION DRAWINGS
	09-17-25	FINAL CONSTRUCTION DRAWINGS

DRAWING INFORMATION:
THIS DRAWING IS COPYRIGHTED AND IS THE SOLE PROPERTY OF THE OWNER. IT IS PRODUCED SOLELY FOR USE BY THE OWNER AND ITS AFFILIATES. REPRODUCTION OR USE OF THIS DRAWING AND/OR THE INFORMATION CONTAINED IN IT IS FORBIDDEN WITHOUT THE WRITTEN PERMISSION OF THE OWNER.

PLANS PREPARED BY:

cushing Civil Engineers

Cushing Civil Engineers
12725 SW MILLIKAN WAY
SUITE 300
BEAVERTON, OR 97005
(503) 387-5331
www.cushingcivilengineers.com

LICENSURE:

REGISTERED PROFESSIONAL ENGINEER
83233
OREGON
JUNE 7, 2012
KENNY McMANAWAY

RENEWAL DATE 12/31/26

SHEET TITLE:

SITE GROUNDING PLAN & DETAILS

SHEET NUMBER:

E-1

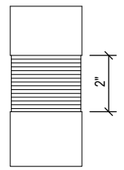


FIGURE 1

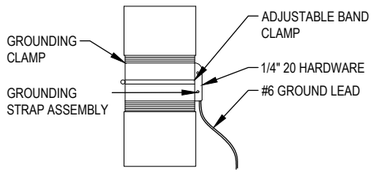


FIGURE 2

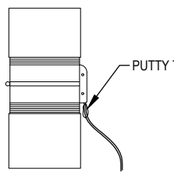


FIGURE 3

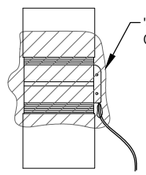


FIGURE 4

EXHIBIT K

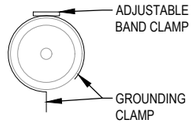


FIGURE 5

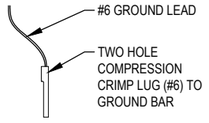
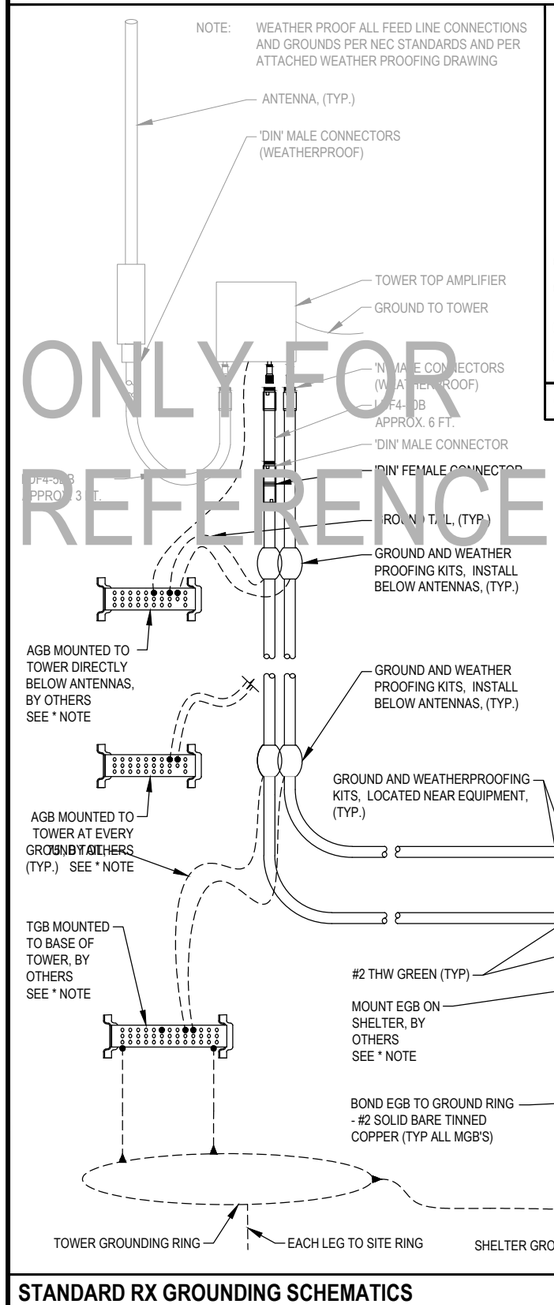


FIGURE 6

NOTE: NOT GC

FEED LINE CABLE GROUNDING

SCALE: NTS | 2

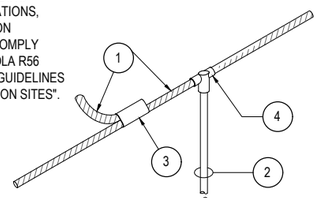


ONLY FOR REFERENCE

STANDARD RX GROUNDING SCHEMATICS

SCALE: NTS | 1

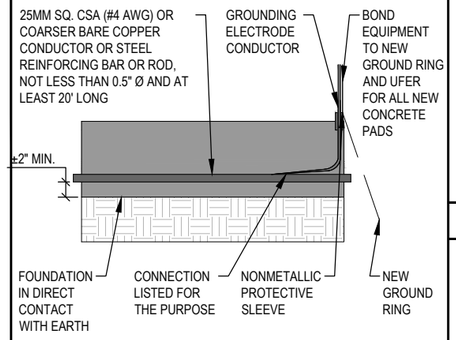
NOTE: ALL GROUNDING DESIGN, SPECIFICATIONS, AND CONSTRUCTION METHODS SHALL COMPLY WITH THE MOTOROLA R56 "STANDARDS AND GUIDELINES FOR COMMUNICATION SITES".



1. MAIN CONDUCTOR, COPPER CABLE
2. 5/8" X 10' COPPER CLAD STEEL GROUND ROD, TO BE PLACED ON CENTER 10' ALONG CONDUCTOR
3. EXOTHERMIC TYPE "NC"
4. EXOTHERMIC TYPE "GT"

GROUND ROD DETAIL

SCALE: NTS | 4



NOTE: FOR REFERENCE ONLY

UFER DETAIL

SCALE: NTS | 5

NOTE: BENDS SHOWN ON GROUND TAILS AND GROUND CONNECTION WIRES ARE FOR ILLUSTRATION PURPOSES ONLY. AVOID EXCESSIVE BENDS. WIRES TO BE AS STRAIGHT AS POSSIBLE; INSTALL DIRECT FROM EQUIPMENT TO GROUND POINT. ALL GROUNDING DESIGN, SPECIFICATIONS, AND CONSTRUCTION METHODS SHALL COMPLY WITH THE MOTOROLA R56 "STANDARDS AND GUIDELINES FOR COMMUNICATION SITES".

NOTES
1. TYP. FOR ALL GROUND WIRES FOR ELECT. AND OTHER EQUIPMENT.

2. THE ENTIRE LUG AND AREA TO BE SPRAYED WITH CLEAR LACQUER OR COLD GALVANIZING SPRAY.

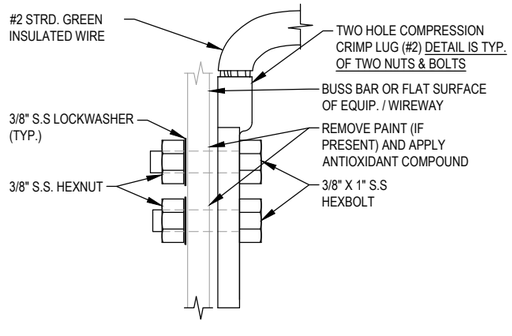
3. GROUND LEADS TO BE EXOTHERMIC WELDED TO GROUND RING.

4. AGB IS BONDED TO TOWER.

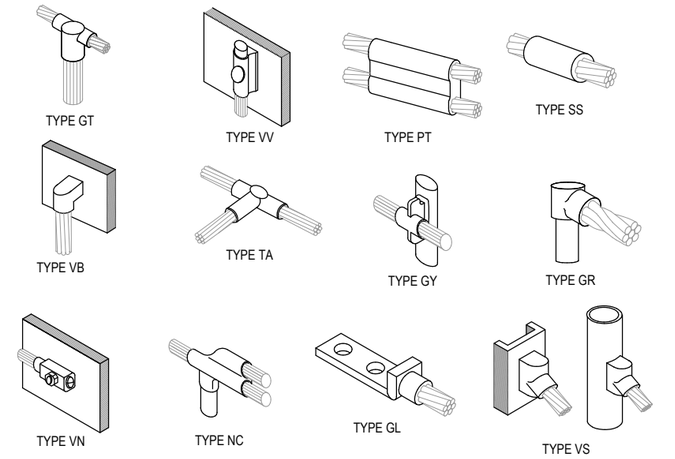
GENERAL NOTES
ALL ANTENNAS, LINES AND RELATED INSTALLATION HARDWARE TO BE PROVIDED BY THE LAND MOBILE COMMUNICATIONS PROVIDER.

GROUND BAR DETAILS

SCALE: NTS | 6

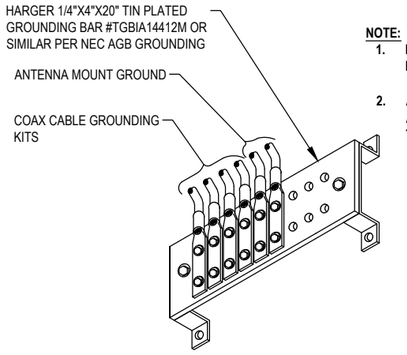


MGB (AT BASE OF TOWER AND EQUIPMENT)



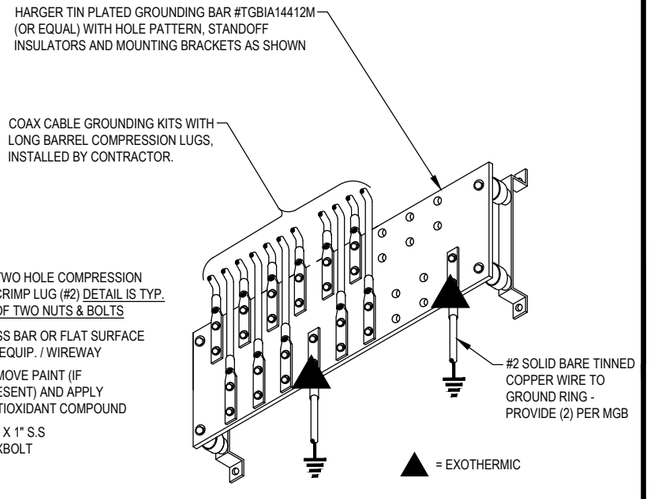
TYPICAL EXOTHERMIC CONNECTION DETAILS

SCALE: NTS | 3



NOTE:
1. **DO NOT BOND AIR TERMINAL OR LIGHTNING ROD TO AGB**
2. **AGB GROUND BAR TO BE PLATED. AGB TO BE BONDED DIRECTLY TO TOWER.**

AGB (AT ANTENNAS)



Marion County OREGON

PROJECT INFORMATION:

MARION COUNTY
MCCULLY MOUNTAIN

40505 N MCCULLY MOUNTAIN ROAD
LYONS, OR 97358

	DATE	RELEASE
	06-18-25	SITE SKETCH
	07-14-25	PRELIMINARY ZONING DRAWINGS
	08-07-25	PRELIMINARY CONSTRUCTION DRAWINGS
	09-17-25	FINAL CONSTRUCTION DRAWINGS

DRAWING INFORMATION:
THIS DRAWING IS COPYRIGHTED AND IS THE SOLE PROPERTY OF THE OWNER. IT IS PRODUCED SOLELY FOR USE BY THE OWNER AND ITS AFFILIATES. REPRODUCTION OR USE OF THIS DRAWING AND/OR THE INFORMATION CONTAINED IN IT IS FORBIDDEN WITHOUT THE WRITTEN PERMISSION OF THE OWNER.

PLANS PREPARED BY:

cushing Civil Engineers

Cushing Civil Engineers

12725 SW MILLIKAN WAY
SUITE 300
BEAVERTON, OR 97005
(503) 387-5331
www.cushingcivilengineers.com

LICENSURE:

REGISTERED PROFESSIONAL ENGINEER 83233 OREGON JUNE 7, 2012 KENNY McMANAWAY

RENEWAL DATE 12/31/26

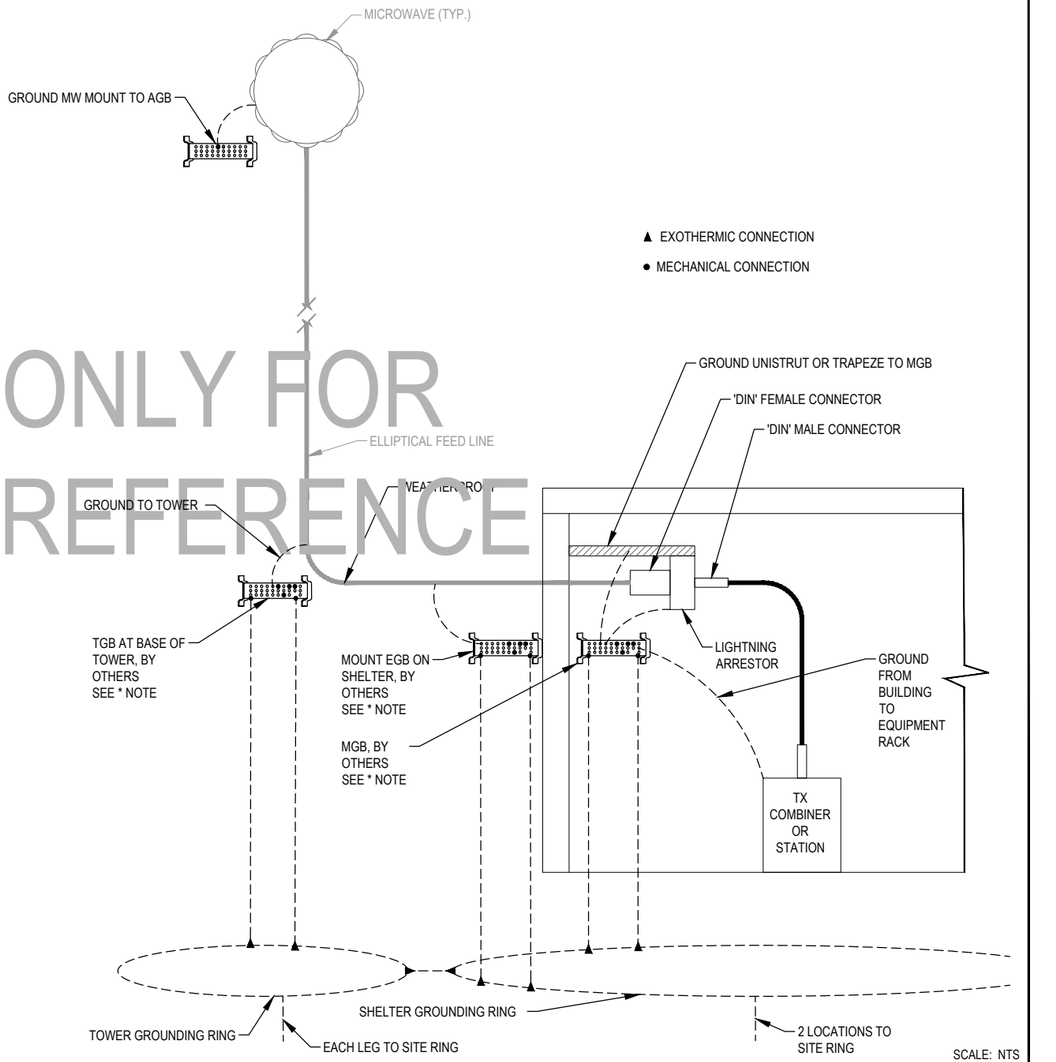
SHEET TITLE:

GROUNDING DETAILS I

SHEET NUMBER:

E-2

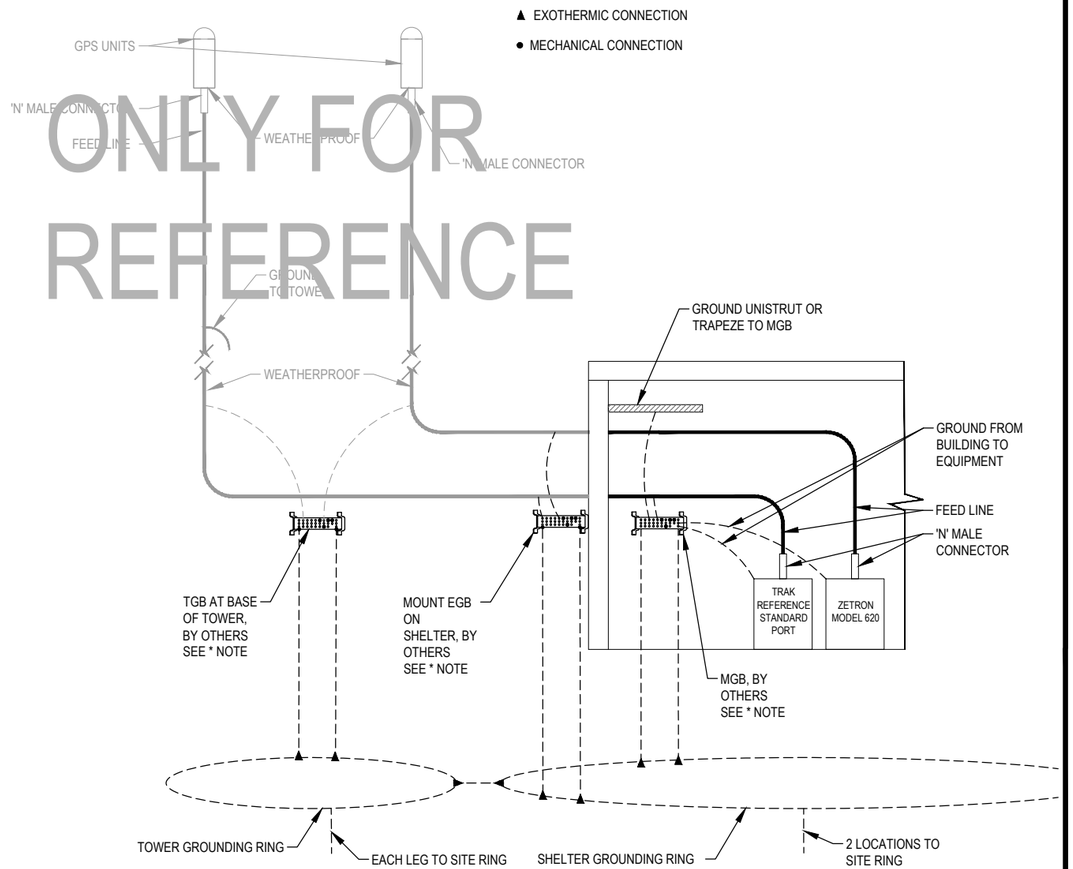
EXHIBIT K



ONLY FOR REFERENCE

TYPICAL MICROWAVE ANTENNA GROUNDING SCHEMATICS 1

NOTE:
TOWER INFO SHOWN FOR CONCEPTUAL USE ONLY. SEE TOWER STRUCTURAL REPORT BY OTHERS.



ONLY FOR REFERENCE

TYPICAL GPS ANTENNA GROUNDING SCHEMATICS SCALE: NTS 2

Marion County
OREGON

PROJECT INFORMATION:

MARION COUNTY
MCCULLY MOUNTAIN

40505 N MCCULLY MOUNTAIN ROAD
LYONS, OR 97358

	DATE	RELEASE
	06-18-25	SITE SKETCH
	07-14-25	PRELIMINARY ZONING DRAWINGS
	08-07-25	PRELIMINARY CONSTRUCTION DRAWINGS
	09-17-25	FINAL CONSTRUCTION DRAWINGS

DRAWING INFORMATION:
THIS DRAWING IS COPYRIGHTED AND IS THE SOLE PROPERTY OF THE OWNER. IT IS PRODUCED SOLELY FOR USE BY THE OWNER AND ITS AFFILIATES. REPRODUCTION OR USE OF THIS DRAWING AND/OR THE INFORMATION CONTAINED IN IT IS FORBIDDEN WITHOUT THE WRITTEN PERMISSION OF THE OWNER.

PLANS PREPARED BY:

cushing Civil Engineers

Cushing Civil Engineers
12725 SW MILLIKAN WAY
SUITE 300
BEAVERTON, OR 97005
(503) 387-5331
www.cushingcivilengineers.com

LICENSURE:

REGISTERED PROFESSIONAL ENGINEER
83233
OREGON
JUNE 7, 2012
KENNY McMANAWAY

RENEWAL DATE 12/31/26

SHEET TITLE:

GROUNDING DETAILS II

SHEET NUMBER:

E-3

SITE INFORMATION	
SITE NAME	**MCCULLY MOUNTAIN**

LOCATION INFORMATION			
COUNTY	MARION COUNTY		
STREET ADDRESS	40505 N MCCULLY MOUNTAIN ROAD		
CITY	LYONS	STATE	OR
ZIP CODE	97358		
LATITUDE (DEC.)/(DEG)	44.763556 / 44° 45'48.80" N		
LONGITUDE (DEC.)/(DEG)	-122.632214 / 122°37'55.97" W		

TOWER INFORMATION			
STRUCTURE	SELF-SUPPORTING TOWER	TOWER MANUFACTURER	SABRE
TOWER OWNER	MARION COUNTY	SERIAL/MODEL #	-
GROUND ELEVATION	±1,701'	# OF APPURTENANCE	-
# OF LEGS	3	HIGHEST POINT W/ ANT	-
TOWER HEIGHT W/O ANT	180'		

EXHIBIT K

#	Description	Part Number	Length (ft)	Leg/Face	Status	Base Height (ft)	Centerline Height (ft)	Tip Height (ft)	Antenna Azimuth	Mount Azimuth	Mount	Transmission Line Size /Type
1	P25 TX Antenna	SE414-SWBPALDF(D00)	4.4	B	New	148	150	152	105		Site-Pro PSA-6 (6' standoff)	7/8"
2	P25 RX Antenna	CC807-09	10.3	B	New	165	170	175	-		Standard	1/2" to TTA
3	TTA	NPD3633A-TTA	1.0	B	New	162	163	163	-		Standard	7/8"
4	Microwave - Wipper	VHLP6-6W	6.0	C	New	77	80	83	274.38	274.38	Standard w/ tieback	EW63
5	Microwave - APW	VHLP3-11W	3.0	B	New	94	95	97	82.35	82.35	Standard w/ tieback	EW90
6	Omni-1		15	NE	Existing	179	186	194			Standard	
7	Omni-2		15	S	Existing	179	186	194			Standard	
8	Omni-3		15	NW	Existing	179	186	194			Standard	
9	Lightning Rod		20	Center	Existing	180	190	200			Candelabra	

= estimated value based on survey documentation and photos

NOTE:

INFORMATION BASED ON TAIT COMMUNICATIONS' DOCUMENT DATED 08/12/2025 PROVIDED BY MARION COUNTY.

PROVISIONAL

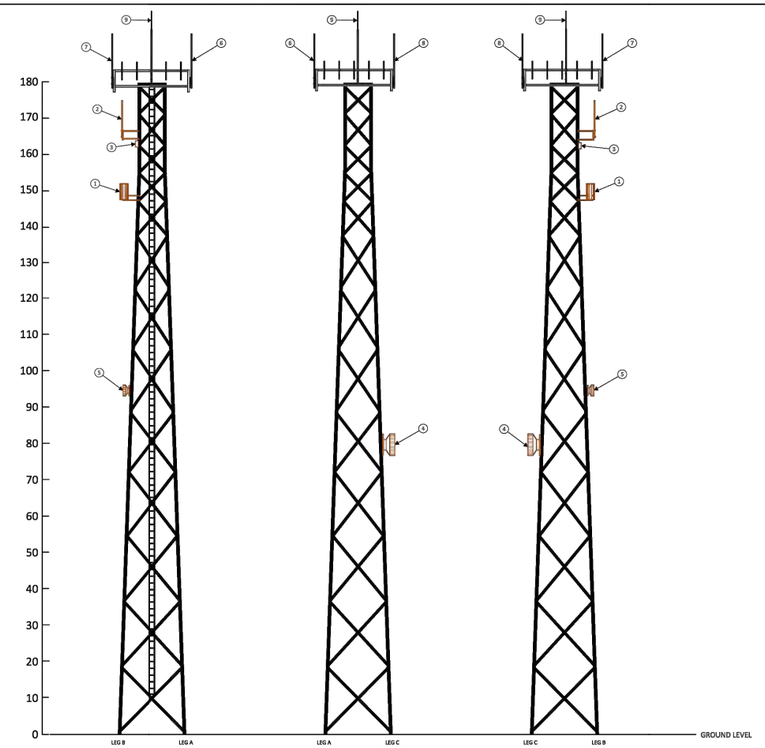
tait communications

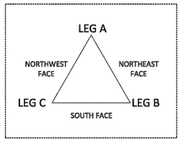
Marion County, OR
700 MHz
P25 Phase II

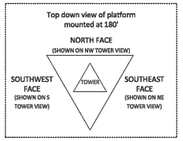
Date	8/12/2025
Drawn	RCA
Checked	-

FILE: t:\marion county or_mccully.vsd

McCully
Appurtenance Chart







PROVISIONAL

tait communications

Marion County, OR
700 MHz
P25 Phase II

Date	8/12/2025
Drawn	RCA
Checked	-

FILE: t:\marion county or_mccully.vsd

McCully
Tower Plan B

Marion County OREGON

PROJECT INFORMATION:

MARION COUNTY
MCCULLY MOUNTAIN

40505 N MCCULLY MOUNTAIN ROAD
LYONS, OR 97358

	DATE	RELEASE
	06-18-25	SITE SKETCH
	07-14-25	PRELIMINARY ZONING DRAWINGS
	08-07-25	PRELIMINARY CONSTRUCTION DRAWINGS
	09-17-25	FINAL CONSTRUCTION DRAWINGS

DRAWING INFORMATION:

THIS DRAWING IS COPYRIGHTED AND IS THE SOLE PROPERTY OF THE OWNER. IT IS PRODUCED SOLELY FOR USE BY THE OWNER AND ITS AFFILIATES. REPRODUCTION OR USE OF THIS DRAWING AND/OR THE INFORMATION CONTAINED IN IT IS FORBIDDEN WITHOUT THE WRITTEN PERMISSION OF THE OWNER.

PLANS PREPARED BY:

cushing Civil Engineers

Cushing
Civil Engineers

12725 SW MILLIKAN WAY
SUITE 300
BEAVERTON, OR 97005
(503) 387-5331
www.cushingcivilengineers.com

LICENSURE:

REGISTERED PROFESSIONAL ENGINEER
83233
OREGON
JUNE 7, 2012
KENNY McMANAWAY

RENEWAL DATE 12/31/26

SHEET TITLE:

RF TOWER APPURTENANCES I

SHEET NUMBER:

RF-1.0

EXHIBIT K

VHLPX3-11W/A

Base Product



0.9m | 3 ft ValuLine® High Performance Low Profile Antenna, dual-polarized, 10.125–11.700 GHz

Product Classification

Product Type	Microwave antenna
Product Brand	ValuLine®

General Specifications

Antenna Type	VHLPX - ValuLine® High Performance Low Profile Antenna, dual-polarized
Polarization	Dual
Side Struts, Included	0
Side Struts, Optional	1 inboard

Dimensions

Diameter, nominal	0.9 m | 3 ft

Electrical Specifications

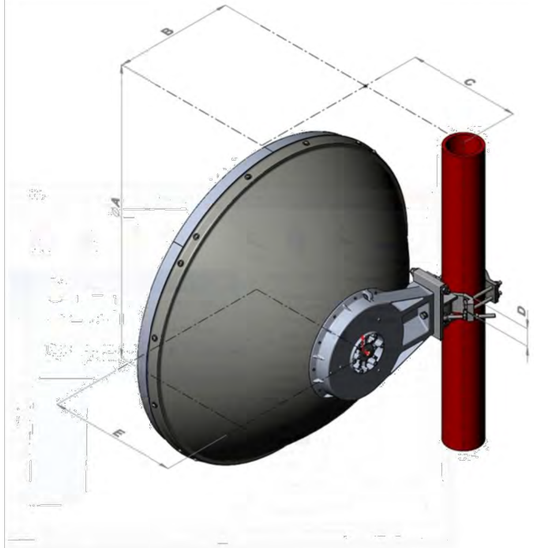
Operating Frequency Band	10.125 – 11.700 GHz
Gain, Low Band	37.8 dBi
Gain, Mid Band	38.4 dBi
Gain, Top Band	39 dBi
Boresite Cross Polarization Discrimination (XPD)	30 dB
Front-to-Back Ratio	64 dB
Beamwidth, Horizontal	2 °
Beamwidth, Vertical	2 °
Return Loss	17.7 dB
VSWR	1.3
Radiation Pattern Envelope Reference (RPE)	7177A | 7178A
Electrical Compliance	Brazil Anatel Class 2 | Canada SRSP 310.5 | ETSI 302 217 Class 3 | US FCC Part 101A @ 10.55–10.7 GHz | US FCC Part 101A @

©2024 CommScope, Inc. All rights reserved. CommScope and the CommScope logo are registered trademarks of CommScope and/or its affiliates in the U.S. and other countries. For additional trademark information see https://www.commscope.com/trademarks. All product names, trademarks and registered trademarks are property of their respective owners. Revised: September 1, 2023

COMMSCOPE®

VHLPX3-11W/A

Antenna Dimensions and Mounting Information



Dimension in Inches (mm)					
Antenna size, ft (m)	A	B	C	D	E
3 (1.0)	39.3 (999)	16 (407)	15.2 (387)	2.4 (60)	17.2 (437)

Wind Forces at Wind Velocity Survival Rating

Axial Force (FA)	2903 N | 652.621 lbf
Angle α for MT Max	0 °
Side Force (FS)	1439 N | 323.5 lbf
Twisting Moment (MT)	1179 N-m | 10,435.029 in lb
Zcg without Ice	135 mm | 5.315 in
Zcg with 1/2 in (12 mm) Radial Ice	84 mm | 3.307 in
Weight with 1/2 in (12 mm) Radial Ice	46 kg | 101.413 lb

©2024 CommScope, Inc. All rights reserved. CommScope and the CommScope logo are registered trademarks of CommScope and/or its affiliates in the U.S. and other countries. For additional trademark information see https://www.commscope.com/trademarks. All product names, trademarks and registered trademarks are property of their respective owners. Revised: September 1, 2023

COMMSCOPE®

NOTE: MODEL SHOWN IS PRELIMINARY AND SUBJECT TO CHANGE UPON FINAL RF CONFIGURATION.

Marion County OREGON

PROJECT INFORMATION:

MARION COUNTY
MCCULLY MOUNTAIN

40505 N MCCULLY MOUNTAIN ROAD
LYONS, OR 97358

	DATE	RELEASE
	06-18-25	SITE SKETCH
	07-14-25	PRELIMINARY ZONING DRAWINGS
	08-07-25	PRELIMINARY CONSTRUCTION DRAWINGS
	09-17-25	FINAL CONSTRUCTION DRAWINGS

DRAWING INFORMATION:
THIS DRAWING IS COPYRIGHTED AND IS THE SOLE PROPERTY OF THE OWNER. IT IS PRODUCED SOLELY FOR USE BY THE OWNER AND ITS AFFILIATES. REPRODUCTION OR USE OF THIS DRAWING AND/OR THE INFORMATION CONTAINED IN IT IS FORBIDDEN WITHOUT THE WRITTEN PERMISSION OF THE OWNER.

PLANS PREPARED BY:

Cushing
Civil Engineers

Cushing
Civil Engineers

12725 SW MILLIKAN WAY
SUITE 300
BEAVERTON, OR 97005
(503) 387-5331
www.cushingcivilengineers.com

LICENSURE:

REGISTERED PROFESSIONAL ENGINEER
83233
OREGON
JUNE 7, 2012
KENNY McMANAWAY

RENEWAL DATE 12/31/26

SHEET TITLE:

RF TOWER APPURTENANCES II

SHEET NUMBER:

RF-1.1

EXHIBIT K

VHLPX6-6W/B

Base Product



1.8 m | 6 ft ValuLine® High Performance Low Profile Antenna, dual-polarized, 5.925–7.125 GHz

Product Classification

Product Type	Microwave antenna
Product Brand	ValuLine®

General Specifications

Antenna Type	VHLPX - ValuLine® High Performance Low Profile Antenna, dual-polarized
Polarization	Dual
Side Struts, Included	1
Side Struts, Optional	1 inboard

Dimensions

Diameter, nominal	1.8 m | 6 ft

Electrical Specifications

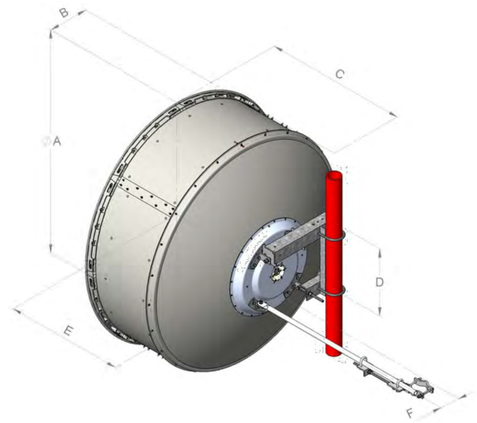
Operating Frequency Band	5.925 – 7.125 GHz
Gain, Low Band	38.5 dBi
Gain, Mid Band	39.3 dBi
Gain, Top Band	40.1 dBi
Boresite Cross Polarization Discrimination (XPD)	30 dB
Front-to-Back Ratio	66 dB
Beamwidth, Horizontal	1.8 °
Beamwidth, Vertical	1.8 °
Return Loss	17.7 dB
VSWR	1.3
Radiation Pattern Envelope Reference (RPE)	7139B
Electrical Compliance	Brazil Anatel Class 3 | Canada SRSP 305.9 Part A | Canada SRSP 306.4 Part A | ETSI 302 217 Class 3 | US FCC Part 101A

©2024 CommScope, Inc. All rights reserved. CommScope and the CommScope logo are registered trademarks of CommScope and/or its affiliates in the U.S. and other countries. For additional trademark information see https://www.commscope.com/trademarks. All product names, trademarks and registered trademarks are property of their respective owners. Revised: September 1, 2023

COMMSCOPE®

VHLPX6-6W/B

Antenna Dimensions and Mounting Information



Dimensions in inches (mm)						
Antenna size, ft (m)	A	B	C	D	E	F
6 (1.8)	74.8 (1899)	13.4 (340)	47.5 (1206)	22.4 (570)	39.4 (1001)	6.9 (174)

Wind Forces at Wind Velocity Survival Rating

Axial Force (FA)	10670 N | 2,398.712 lbf
Angle α for MT Max	-120 °
Side Force (FS)	5286 N | 1,188.34 lbf
Twisting Moment (MT)	4752 N-m | 42,058.742 in lb
Zcg without Ice	363 mm | 14.291 in
Zcg with 1/2 in (12 mm) Radial Ice	543 mm | 21.378 in
Weight with 1/2 in (12 mm) Radial Ice	234 kg | 515.881 lb

©2024 CommScope, Inc. All rights reserved. CommScope and the CommScope logo are registered trademarks of CommScope and/or its affiliates in the U.S. and other countries. For additional trademark information see https://www.commscope.com/trademarks. All product names, trademarks and registered trademarks are property of their respective owners. Revised: September 1, 2023

COMMSCOPE®

NOTE: MODEL SHOWN IS PRELIMINARY AND SUBJECT TO CHANGE UPON FINAL RF CONFIGURATION.

Marion County OREGON

PROJECT INFORMATION:

MARION COUNTY
MCCULLY MOUNTAIN

40505 N MCCULLY MOUNTAIN ROAD
LYONS, OR 97358

	DATE	RELEASE
	06-18-25	SITE SKETCH
	07-14-25	PRELIMINARY ZONING DRAWINGS
	08-07-25	PRELIMINARY CONSTRUCTION DRAWINGS
	09-17-25	FINAL CONSTRUCTION DRAWINGS

DRAWING INFORMATION:

THIS DRAWING IS COPYRIGHTED AND IS THE SOLE PROPERTY OF THE OWNER. IT IS PRODUCED SOLELY FOR USE BY THE OWNER AND ITS AFFILIATES. REPRODUCTION OR USE OF THIS DRAWING AND/OR THE INFORMATION CONTAINED IN IT IS FORBIDDEN WITHOUT THE WRITTEN PERMISSION OF THE OWNER.

PLANS PREPARED BY:

cushing Civil Engineers

Cushing
Civil Engineers

12725 SW MILLIKAN WAY
SUITE 300
BEAVERTON, OR 97005
(503) 387-5331
www.cushingcivilengineers.com

LICENSURE:

REGISTERED PROFESSIONAL ENGINEER
83233
OREGON
JUNE 7, 2012
KENNY McMANAWAY

RENEWAL DATE 12/31/26

SHEET TITLE:

RF TOWER APPURTENANCES III

SHEET NUMBER:

RF-1.2

EXHIBIT K

Antennas
700-1000 MHz Antennas
SE414-WBAL - PIM Certified Series

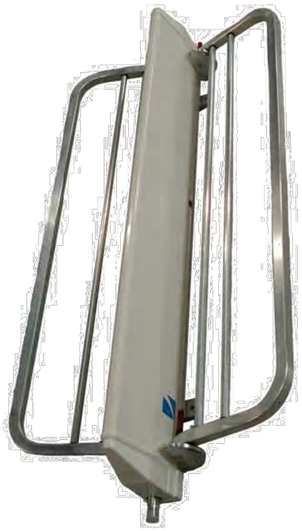
SE414-SWBPALDF(D00) Enclosed dipole, 8-11.5 dBd, adj. beamwidth, Low PIM, 746-960MHz

- Wide band design covers whole 746-960 MHz band, PIP rated
- Horizontal beamwidth can be adjusted (60º/90º/105º/130º/160º)
- Gain depends on horizontal beamwidth setting (11.5/10/9/8.5/8 dBd)
- 0-10º electrical downtilt available

One wideband antenna for your 700, 800, 900 MHz systems. Sinclair's SE414-WBL series of enclosed dipole arrays offer excellent intermodulation performance covering 746-960 MHz in a single antenna. These highly versatile antennas are particularly well suited to communication systems where a specific coverage pattern is required. These include cellular systems, trunked radio, paging, and data transmission, where predictable and highly reliable performance is a must.

The SE414-WBAL series come with field adjustable reflectors that provide horizontal beamwidths between 60 and 160 degrees. The creative design and construction permits excellent pattern control and greater efficiency.

This antenna shall be mounted in an upright position.
Clamps for mechanical downtilt can be ordered separately.
Electrical downtilt is available upon request.



Antenna may not appear exactly as picture.

www.sinctech.com

Region	United States	Europe, Middle East and Africa	Caribbean and Latin America	Canada and rest of the world
Telephone	USA: 1 800 263 3275	International: +44 (0) 1487 84 28 19	International: +1 905 726 7676	Canada: 1 800 263 3275 International: +1 905 727 0165
E-mail	salesusa@sinctech.com	salesuk@sinctech.com	salesla@sinctech.com	salescan@sinctech.com

Product Specification Sheet SE414-SWBPALDF(D00) Issue: 2 Dated: 24-07-17
EPR 018751 Dated: 16-12-15
Customer Tech Manual 005044

Sinclair's commitment to product leadership may result in improvement or change to this product
Copyright © Sinclair Technologies

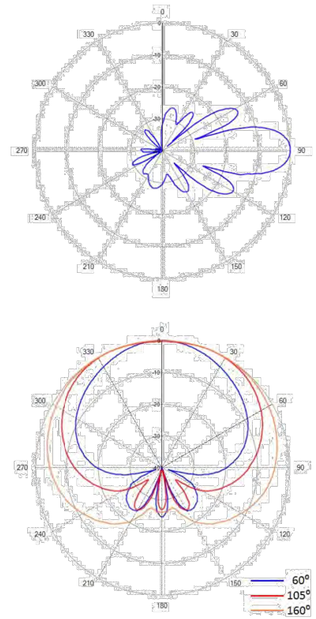
Antennas
700-1000 MHz Antennas
SE414-WBAL - PIM Certified Series

Electrical Specifications			
Frequency Range	MHz	746 to 960	
Bandwidth	MHz	214	
Connector		7/16 DIN-Female	
Gain (nominal)	dBd (dBi)	11.5 (13.6)	*1
Input VSWR (max)		1.5:1	
Polarization		vertical	
Impedance	Ω	50	
Pattern		Directional and Adjustable	
Horizontal beamwidth (typ)	degrees	60	*2
Vertical beamwidth (typ)	degrees	20	
Average Power Input (max)	W	500	
Passive intermod. (2x20W, 3rd ord.)	dBc	-150	*3
PIP(KW, max)		25	
Lightning protection		DC ground	
Electrical tilt (available)		0 to 10 degrees	
Front-to-back ratio (min)	dB	20	

Mechanical Specifications			
Width	in (mm)	25 (635)	*4
Depth	in (mm)	8.5 (216)	*5
Length/ Height	in (mm)	53 (1346)	
Base pipe diameter	in (mm)	2.88 (73)	*6
Base pipe mounting length	in (mm)	30.5 (775)	
Radiating element material		prntd circuit bd	
Weight	lbs (kg)	19.5 (8.85)	
Mounting Hardware (Included)		#130 clamp	
Mounting configurations		upright	
Actual shipping weight	lbs (kg)	24.5 (11.12)	
Shipping dimensions	in (mm)	58x14x17 (1473x356x432)	

Environmental Specifications		
Temperature range	°F (°C)	-40 to +140 (-40 to +60)
Wind Loading Area (Flat Plate Equivalent)	ft² (m²)	4.8 (0.45)
Wind Loading Area (1/2" ice)	ft² (m²)	5.7 (0.53)
Rated wind velocity (no ice)	mph (km/h)	155 (250)
Rated wind velocity (1/2" radial ice)	mph (km/h)	140 (225)
Lateral Thrust (100 mph No Ice)	lbs (N)	180 (800.6)
Torsional moment (100 mph No Ice)	ft-lbs (Nm)	93 (125.6)

Notes
*1 : Dependant on reflector setting 10/9/8.5/8 dBd
*2 : 90/105/130/160
*3 : Measured in the receive band: 2 - 20W carriers
*4 : 90° beamwidth configuration, clamp not included in measurement
*5 : 90° beamwidth configuration, clamp not included in measurement
*6 : Ref. clamp maximum



www.sinctech.com

Region	United States	Europe, Middle East and Africa	Caribbean and Latin America	Canada and rest of the world
Telephone	USA: 1 800 263 3275	International: +44 (0) 1487 84 28 19	International: +1 905 726 7676	Canada: 1 800 263 3275 International: +1 905 727 0165
E-mail	salesusa@sinctech.com	salesuk@sinctech.com	salesla@sinctech.com	salescan@sinctech.com

Product Specification Sheet SE414-SWBPALDF(D00) Issue: 2 Dated: 24-07-17
EPR 018751 Dated: 16-12-15
Customer Tech Manual 005044

Sinclair's commitment to product leadership may result in improvement or change to this product
Copyright © Sinclair Technologies

NOTE: MODEL SHOWN IS PRELIMINARY AND SUBJECT TO CHANGE UPON FINAL RF CONFIGURATION.

Marion County
OREGON

PROJECT INFORMATION:

MARION COUNTY
MCCULLY MOUNTAIN

40505 N MCCULLY MOUNTAIN ROAD
LYONS, OR 97358

	DATE	RELEASE
	06-18-25	SITE SKETCH
	07-14-25	PRELIMINARY ZONING DRAWINGS
	08-07-25	PRELIMINARY CONSTRUCTION DRAWINGS
	09-17-25	FINAL CONSTRUCTION DRAWINGS

DRAWING INFORMATION:
THIS DRAWING IS COPYRIGHTED AND IS THE SOLE PROPERTY OF THE OWNER. IT IS PRODUCED SOLELY FOR USE BY THE OWNER AND ITS AFFILIATES. REPRODUCTION OR USE OF THIS DRAWING AND/OR THE INFORMATION CONTAINED IN IT IS FORBIDDEN WITHOUT THE WRITTEN PERMISSION OF THE OWNER.

PLANS PREPARED BY:

cushing Civil Engineers

Cushing Civil Engineers
12725 SW MILLIKAN WAY
SUITE 300
BEAVERTON, OR 97005
(503) 387-5331
www.cushingcivilengineers.com

LICENSURE:

REGISTERED PROFESSIONAL ENGINEER
83233
OREGON
JUNE 7, 2012
KENNY McMANAWAY

RENEWAL DATE 12/31/26

SHEET TITLE:

RF TOWER APPURTENANCES IV

SHEET NUMBER:

RF-1.3

EXHIBIT K

800MHz Corporate Collinear Antennas

748-870MHz

CC807 Series

These industry leading, full featured corporate collinear arrays allow site operators to combine, with complete integrity, a large number of communications services into a single, low profile antenna solution.

The corporate feed design employed by RFI maintains superior pattern control, allowing gain to be maximised with zero tilt variation over a very broad bandwidth, comparable to that only previously available in exposed dipole array configurations. This is achieved in the preferred form factor of a fully enclosed fibreglass radome, providing a reduction in wind loading, ice loading and tower loading in comparison.

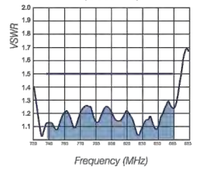
The CC807 series have been designed with an exceptional power rating of 500W across the band as well as a Peak Instantaneous Power (PIP) rating of 25kW to cater for the peak voltage levels present in large multi-carrier combining environments. RFI's refined design processes and proven construction methods achieve a PIM rating of –150dBc, further ensuring performance is maintained for the service life of the antenna.

Features:

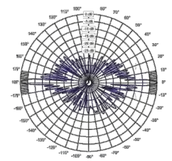
- 500W Continuous Power rating
- -150dBc Passive Intermodulation (PIM) rating, 100% PIM tested
- 25 kW Peak Instantaneous Power (PIP) rating
- DC grounding on all elements for the ultimate in lightning protection and dissipation of static noise.
- Light weight dipole construction using RFI's patented flexi-PCB architecture, maintains a low centre of gravity reducing tip deflection and sway
- Field invertible (excluding tilt models)
- Preset downtilt variations of 2 and 4 degrees available, see note (1)



Typical VSWR Response (CC807-12)



CC807-12 - E Plane



Electrical Specifications

Model Number	CC807-09-P	CC807-12-P
Nominal Gain *dBd (dBi)*	9.0 (11.1)	11.5 (13.6)
Frequency *MHz*	746-870	
Tuned Bandwidth *MHz*	Full	
VSWR *(Return Loss)*	1.5:1	
Nominal Impedance Ω	50	
Downtilt°	0 Std 2, 4 (1)	
Vertical Beamwidth°	8	4
Horizontal Beamwidth°	Omni +/- 0.5dB	
Input Power W	500	
Passive IM 3rd order (2x20W) *dBc*	-150	
Peak Instantaneous Power *kW*	25	

Mechanical

Model Number		CC807-09-P	CC807-12-P
Construction		Sky blue fibreglass radome	
Radome Diameter mm (inches)		76 (3.0)	
Length mm (inches)		3135 (123.4)	6235 (245.5)
Weight *kg (lbs)*		14 (30.9)	25.5 (56.2)
Termination		Integrated 4.3-10 Female	
Mountaing Area mm (inches)		750 x 90 (30 x 3.5) diameter Ecofilm™ plated aluminium	
Suggested Clamps		3 x UC-114	
Shipping Dimensions *mm (inches)*	H	115 (4.5)	
	W	115 (4.5)	
	L	3335 (131.3)	6435 (253.3)
Shipping Weight *kg (lbs)*		20.0 (44.1)	36.5 (80.5)
Projected area *cm² (ft²)*	No Ice	2597 (2.8)	5559 (6.0)
	With Ice	3192 (3.4)	7037 (7.6)
Lateral Thrust @160km/h *N* (100 mph lbs)		308 (69)	659 (148)
Wind Gust Rating *km/h (mph)*	No Ice	>240 (150)	
Torque @ 160km/h *Nm* (100mph ft-lbs)		413 (305)	1823 (1345)

(1) To order pre-set downtilt versions available, simply add a -T2 or -T4 towards the end of the part number to denote downtilt model required. For eg. CC807-12-T2-P to order CC807-12-P with 2deg of downtilt. Please note: Models with downtilt are NOT field invertible. . Eg. CC807-12-T2-P

Asia Pacific | EMEA | Americas

Copyright RF Industries Pty Ltd 2020. Subject to change without notice.

rfi.com.au

NOTE: MODEL SHOWN IS PRELIMINARY AND SUBJECT TO CHANGE UPON FINAL RF CONFIGURATION.

Marion County OREGON

PROJECT INFORMATION:

MARION COUNTY MCCULLY MOUNTAIN

40505 N MCCULLY MOUNTAIN ROAD
LYONS, OR 97358

	DATE	RELEASE
	06-18-25	SITE SKETCH
	07-14-25	PRELIMINARY ZONING DRAWINGS
	08-07-25	PRELIMINARY CONSTRUCTION DRAWINGS
	09-17-25	FINAL CONSTRUCTION DRAWINGS

DRAWING INFORMATION:

THIS DRAWING IS COPYRIGHTED AND IS THE SOLE PROPERTY OF THE OWNER. IT IS PRODUCED SOLELY FOR USE BY THE OWNER AND ITS AFFILIATES. REPRODUCTION OR USE OF THIS DRAWING AND/OR THE INFORMATION CONTAINED IN IT IS FORBIDDEN WITHOUT THE WRITTEN PERMISSION OF THE OWNER.

PLANS PREPARED BY:

cushing Civil Engineers

Cushing
Civil Engineers

12725 SW MILLIKAN WAY
SUITE 300
BEAVERTON, OR 97005
(503) 387-5331
www.cushingcivilengineers.com

LICENSURE:

REGISTERED PROFESSIONAL ENGINEER
83233
OREGON
JUNE 7, 2012
KENNY McMANAWAY

RENEWAL DATE 12/31/26

SHEET TITLE:

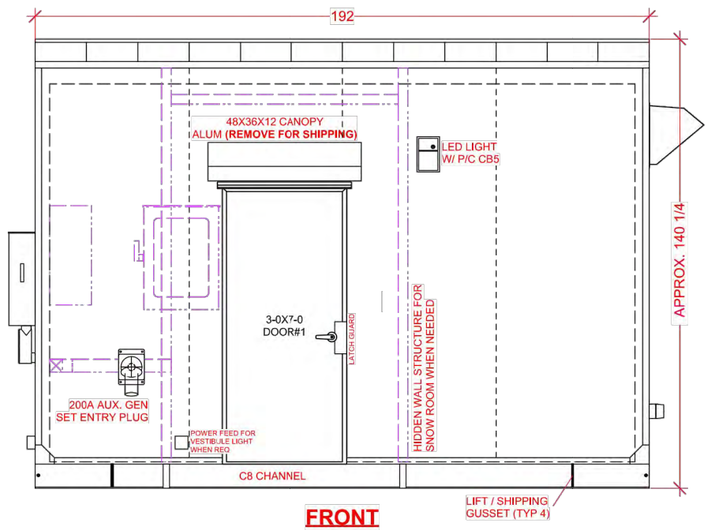
RF TOWER APPURTENANCES V

SHEET NUMBER:

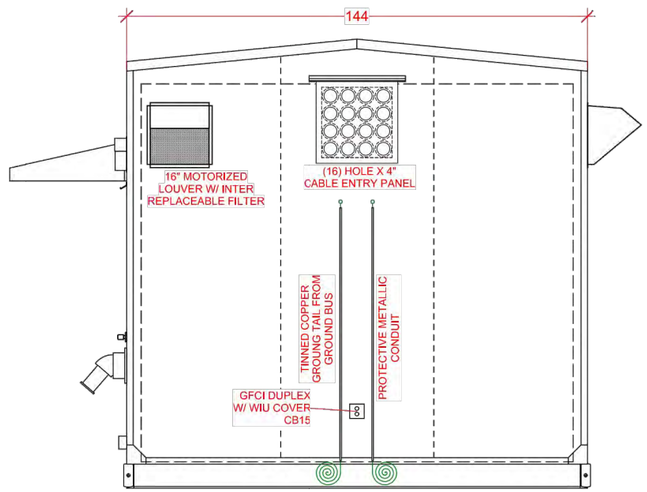
RF-1.4

NOTE:
INFORMATION BASED ON SHELTER ONE PREFABRICATED EQUIPMENT SHELTER DRAWINGS. REFER TO STATE OF OREGON BUILDING CODES DIVISION FOR STATE INSIGNIA.

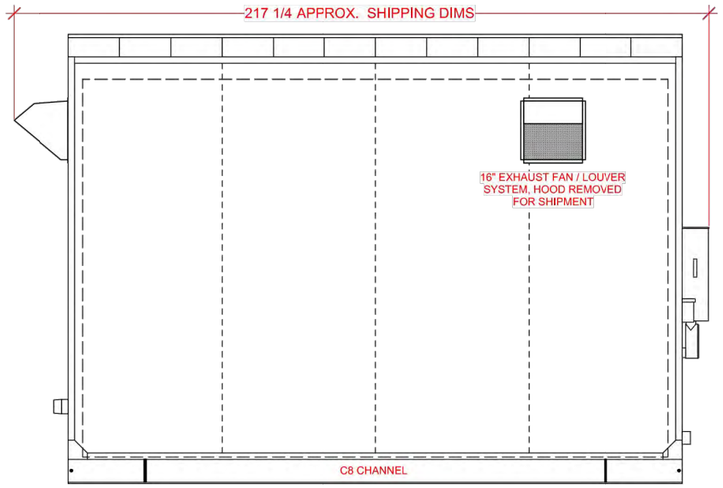
EXHIBIT K



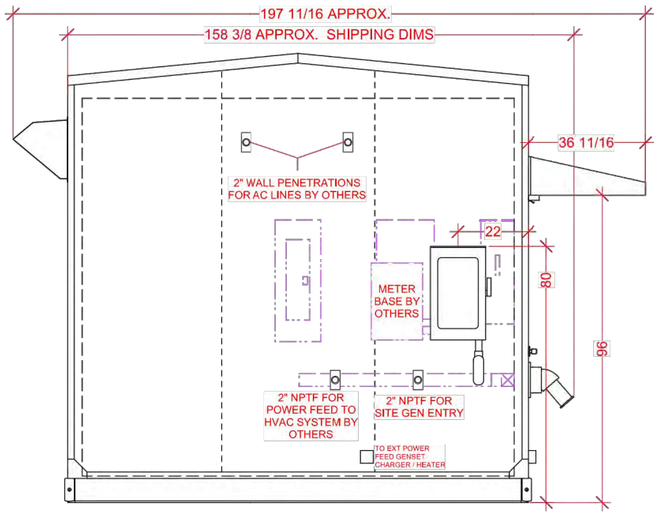
FRONT



RIGHT

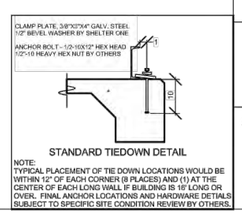


REAR



LEFT

NOTES:
1. SHELTER IS DESIGNED FOR A SLAB TYPE FOUNDATION.
2. EXTERIOR CLADDING TO BE 24 GA. PREFINISHED STEEL, COLOR - (TBD).
3. EXTERIOR TRIM TO BE MATCHING 24GA STEEL TRIM
4. SKID TO BE EPOXY PAINTED COLOR - (TBD).
5. 24GA PRE-FINISHED STEEL STANDING SEAM ROOF SYSTE - COLOR - (TBD)



SEAL

APPROVED:

DATE:

NOTICE: THIS DOCUMENT CONTAINS PROPRIETARY INFORMATION THAT IS THE SOLE PROPERTY OF SHELTER ONE AND SHOULD BE TREATED AS SUCH. NO ONE MAY COPY, REPRODUCE, TRANSMIT OR DISTRIBUTE THIS DOCUMENT IN ANY PART WITHOUT THE EXPRESSED WRITTEN PERMISSION OF SHELTER ONE OR IT'S DESIGNATED AGENTS.

SHELTER ONE

Headquarters & Manufacturing
5887 Monument Drive
Grants Pass, OR 97526
541/479-4622
F:541/479-5289
www.shelter1.com

PROJECT INFORMATION

25027 MARION COUNTY OR 12X16

FILENAME
25027 Marion County OR 12x16.vwx

DRAWN BY:	DATE:
NJY	7/24/25
CHECKED BY:	DATE:

DWG NO: 25027

SCALE: 1:40

TITLE:
EXTERIOR ELEVATIONS

SHEET A1 | REV.

Marion County OREGON

PROJECT INFORMATION:

MARION COUNTY MCCULLY MOUNTAIN

40505 N MCCULLY MOUNTAIN ROAD
LYONS, OR 97358

	DATE	RELEASE
	06-18-25	SITE SKETCH
	07-14-25	PRELIMINARY ZONING DRAWINGS
	08-07-25	PRELIMINARY CONSTRUCTION DRAWINGS
	09-17-25	FINAL CONSTRUCTION DRAWINGS

DRAWING INFORMATION:
THIS DRAWING IS COPYRIGHTED AND IS THE SOLE PROPERTY OF THE OWNER. IT IS PRODUCED SOLELY FOR USE BY THE OWNER AND ITS AFFILIATES. REPRODUCTION OR USE OF THIS DRAWING AND/OR THE INFORMATION CONTAINED IN IT IS FORBIDDEN WITHOUT THE WRITTEN PERMISSION OF THE OWNER.

PLANS PREPARED BY:

cushing Civil Engineers

Cushing Civil Engineers
12725 SW MILLIKAN WAY
SUITE 300
BEAVERTON, OR 97005
(503) 387-5331
www.cushingcivilengineers.com

LICENSURE:

REGISTERED PROFESSIONAL ENGINEER
83233
OREGON
JUNE 7, 2012
KENNY McMANAWAY

RENEWAL DATE 12/31/26

SHEET TITLE:

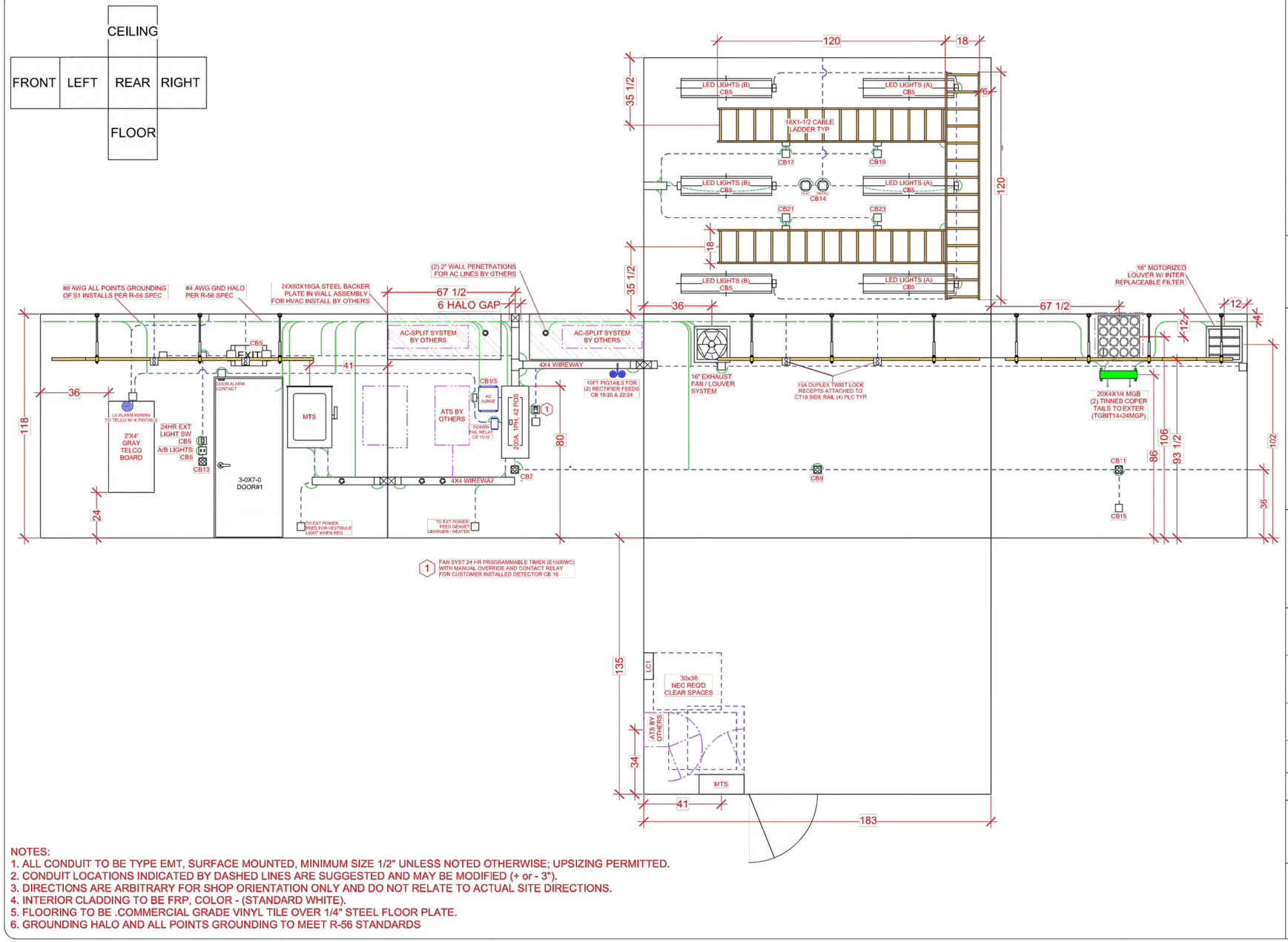
EQUIPMENT SHELTER EXTERIOR ELEVATIONS

SHEET NUMBER:

SH-1

NOTE:
INFORMATION BASED ON SHELTER ONE PREFABRICATED EQUIPMENT SHELTER DRAWINGS. REFER TO STATE OF OREGON BUILDING CODES DIVISION FOR STATE INSIGNIA.

EXHIBIT K



NOTES:
1. ALL CONDUIT TO BE TYPE EMT, SURFACE MOUNTED, MINIMUM SIZE 1/2" UNLESS NOTED OTHERWISE; UPSIZING PERMITTED.
2. CONDUIT LOCATIONS INDICATED BY DASHED LINES ARE SUGGESTED AND MAY BE MODIFIED (+ or - 3").
3. DIRECTIONS ARE ARBITRARY FOR SHOP ORIENTATION ONLY AND DO NOT RELATE TO ACTUAL SITE DIRECTIONS.
4. INTERIOR CLADDING TO BE FRP, COLOR - (STANDARD WHITE).
5. FLOORING TO BE .COMMERCIAL GRADE VINYL TILE OVER 1/4" STEEL FLOOR PLATE.
6. GROUNDING HALO AND ALL POINTS GROUNDING TO MEET R-56 STANDARDS

SEAL

APPROVED:

DATE:

NOTICE: THIS DOCUMENT CONTAINS PROPRIETARY INFORMATION THAT IS THE SOLE PROPERTY OF SHELTER ONE AND SHOULD BE TREATED AS SUCH. NO ONE MAY COPY, REPRODUCE, TRANSMIT OR DISTRIBUTE THIS DOCUMENT IN ANY PART WITHOUT THE EXPRESSED WRITTEN PERMISSION OF SHELTER ONE OR IT'S DESIGNATED AGENTS.

SHELTER ONE

Headquarters & Manufacturing
5887 Monument Drive
Grants Pass, OR 97526
541/479-4622
F:541/479-5289
www.shelter1.com

PROJECT INFORMATION

25027 MARION COUNTY OR 12X16

FILENAME
25027 Marion County OR 12x16.vwx

DRAWN BY:	DATE:
NJY	7/24/25
CHECKED BY:	DATE:

DWG NO: 25027

SCALE: 1:50

TITLE: INTERIOR ELEVATIONS

SHEET A2 | REV.

Marion County OREGON

PROJECT INFORMATION:

MARION COUNTY MCCULLY MOUNTAIN

40505 N MCCULLY MOUNTAIN ROAD
LYONS, OR 97358

	DATE	RELEASE
	06-18-25	SITE SKETCH
	07-14-25	PRELIMINARY ZONING DRAWINGS
	08-07-25	PRELIMINARY CONSTRUCTION DRAWINGS
	09-17-25	FINAL CONSTRUCTION DRAWINGS

DRAWING INFORMATION:
THIS DRAWING IS COPYRIGHTED AND IS THE SOLE PROPERTY OF THE OWNER. IT IS PRODUCED SOLELY FOR USE BY THE OWNER AND ITS AFFILIATES. REPRODUCTION OR USE OF THIS DRAWING AND/OR THE INFORMATION CONTAINED IN IT IS FORBIDDEN WITHOUT THE WRITTEN PERMISSION OF THE OWNER.

PLANS PREPARED BY:

cushing Civil Engineers

Cushing Civil Engineers
12725 SW MILLIKAN WAY
SUITE 300
BEAVERTON, OR 97005
(503) 387-5331
www.cushingcivilengineers.com

LICENSURE:

REGISTERED PROFESSIONAL ENGINEER 83233 OREGON JUNE 7, 2012 KENNY McMANAWAY

RENEWAL DATE 12/31/26

SHEET TITLE:

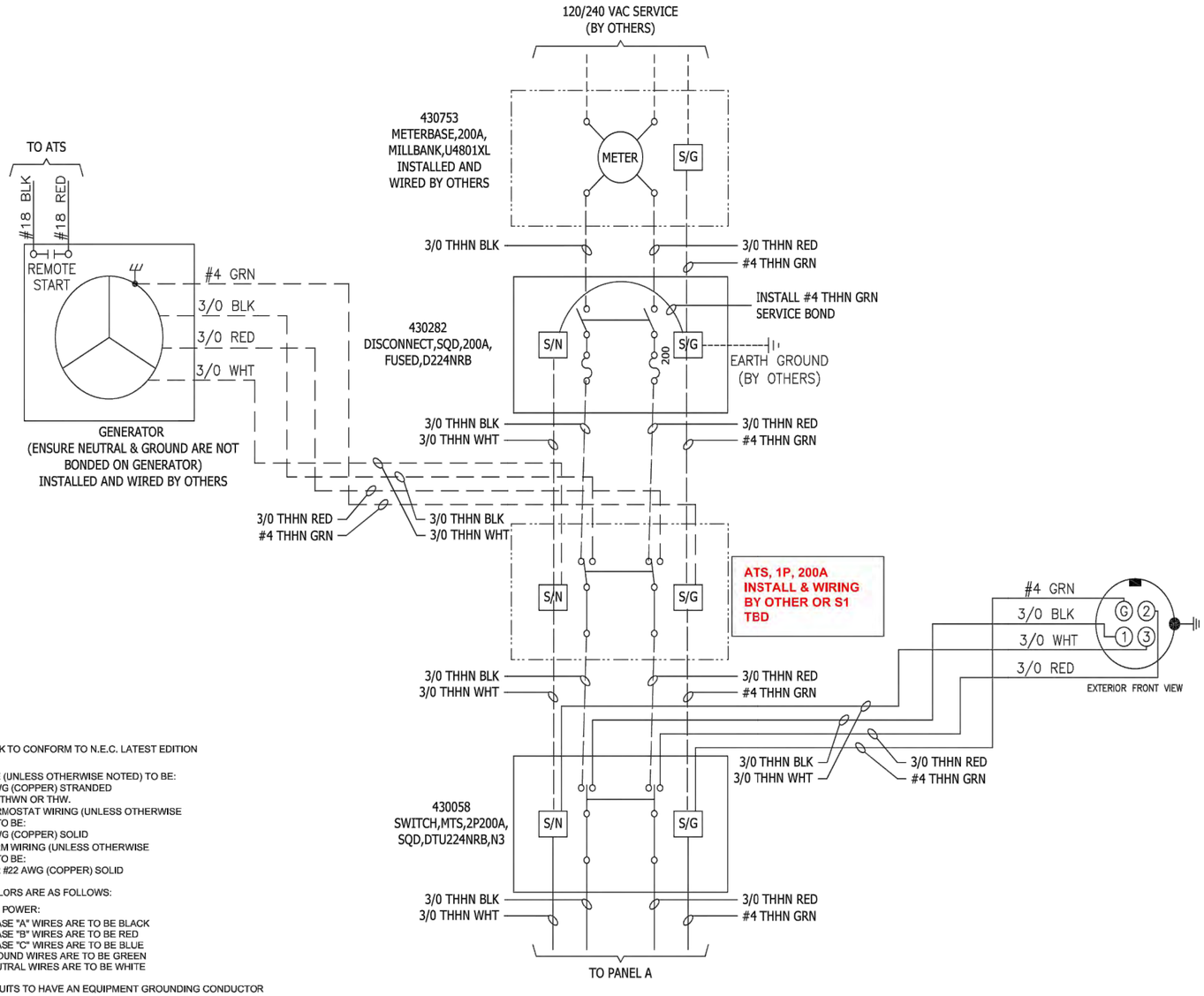
EQUIPMENT SHELTER INTERIOR ELEVATIONS

SHEET NUMBER:

SH-2

NOTE:
INFORMATION BASED ON SHELTER ONE PREFABRICATED EQUIPMENT SHELTER DRAWINGS. REFER TO STATE OF OREGON BUILDING CODES DIVISION FOR STATE INSIGNIA.

EXHIBIT K



NOTES:

1. ALL WORK TO CONFORM TO N.E.C. LATEST EDITION
2. ALL WIRE (UNLESS OTHERWISE NOTED) TO BE:
   * #12 AWG (COPPER) STRANDED
   * THHN, THWN OR THW.
   ALL THERMOSTAT WIRING (UNLESS OTHERWISE NOTED) TO BE:
   * #18 AWG (COPPER) SOLID
   ALL ALARM WIRING (UNLESS OTHERWISE NOTED) TO BE:
   * #18 OR #22 AWG (COPPER) SOLID
3. WIRE COLORS ARE AS FOLLOWS:
   PRIMARY POWER:
   * ALL PHASE "A" WIRES ARE TO BE BLACK
   * ALL PHASE "B" WIRES ARE TO BE RED
   * ALL PHASE "C" WIRES ARE TO BE BLUE
   * ALL GROUND WIRES ARE TO BE GREEN
   * ALL NEUTRAL WIRES ARE TO BE WHITE
4. ALL CIRCUITS TO HAVE AN EQUIPMENT GROUNDING CONDUCTOR
5. ----- DASHED LINES DENOTE FIELD WORK.
6. NEUTRAL AND GROUND ARE TO BE BONDED AS REQUIRED
7. NO TAPS, SPLICES, OR JOINTS ARE TO BE MADE WITHIN WIREWAYS.

COPPER WIRE SIZE

BREAKER SIZE	MINIMUM WIRE SIZE
15A	12 AWG
20A	12 AWG
30A	10 AWG
40A	8 AWG
50A	8 AWG
60A	6 AWG
70A	4 AWG
80A	4 AWG
90A	3 AWG
100A	3 AWG
125A	1 AWG
150A	1/0
200A	3/0

SERVICE ENTRY GROUND WIRE SIZE

ENTRY WIRE SIZE	GROUND WIRE SIZE
2 AWG OR SMALLER	8 AWG
1 AWG OR 1/0	6 AWG
2/0 OR 3/0	4 AWG

SEAL

APPROVED:

DATE:

NOTICE: THIS DOCUMENT CONTAINS PROPRIETARY INFORMATION THAT IS THE SOLE PROPERTY OF SHELTER ONE AND SHOULD BE TREATED AS SUCH. NO ONE MAY COPY, REPRODUCE, TRANSMIT OR DISTRIBUTE THIS DOCUMENT IN ANY PART WITHOUT THE EXPRESSED WRITTEN PERMISSION OF SHELTER ONE OR IT'S DESIGNATED AGENTS.

SHELTER ONE®

Headquarters & Manufacturing
5887 Monument Drive
Grants Pass, OR 97526
541/479-4622
F:541/479-5289
www.shelter1.com

PROJECT INFORMATION

25027 MARION COUNTY OR 12X16

FILENAME
25027 Marion County OR 12x16.vwx

DRAWN BY:	DATE:
NJY	7/24/25
CHECKED BY:	DATE:

DWG NO: 25027

SCALE: NOT TO SCALE

TITLE:
POWER LINE DRAWING

SHEET E1 | REV.

Marion County OREGON

PROJECT INFORMATION:

MARION COUNTY
MCCULLY MOUNTAIN

40505 N MCCULLY MOUNTAIN ROAD
LYONS, OR 97358

	DATE	RELEASE
	06-18-25	SITE SKETCH
	07-14-25	PRELIMINARY ZONING DRAWINGS
	08-07-25	PRELIMINARY CONSTRUCTION DRAWINGS
	09-17-25	FINAL CONSTRUCTION DRAWINGS

DRAWING INFORMATION:
THIS DRAWING IS COPYRIGHTED AND IS THE SOLE PROPERTY OF THE OWNER. IT IS PRODUCED SOLELY FOR USE BY THE OWNER AND ITS AFFILIATES. REPRODUCTION OR USE OF THIS DRAWING AND/OR THE INFORMATION CONTAINED IN IT IS FORBIDDEN WITHOUT THE WRITTEN PERMISSION OF THE OWNER.

PLANS PREPARED BY:

cushing Civil Engineers

Cushing
Civil Engineers
12725 SW MILLIKAN WAY
SUITE 300
BEAVERTON, OR 97005
(503) 387-5331
www.cushingcivilengineers.com

LICENSURE:

REGISTERED PROFESSIONAL ENGINEER
83233
OREGON
JUNE 7, 2012
KENNY McMANAWAY

RENEWAL DATE 12/31/26

SHEET TITLE:

ELECTRICAL ONE-LINE DRAWING

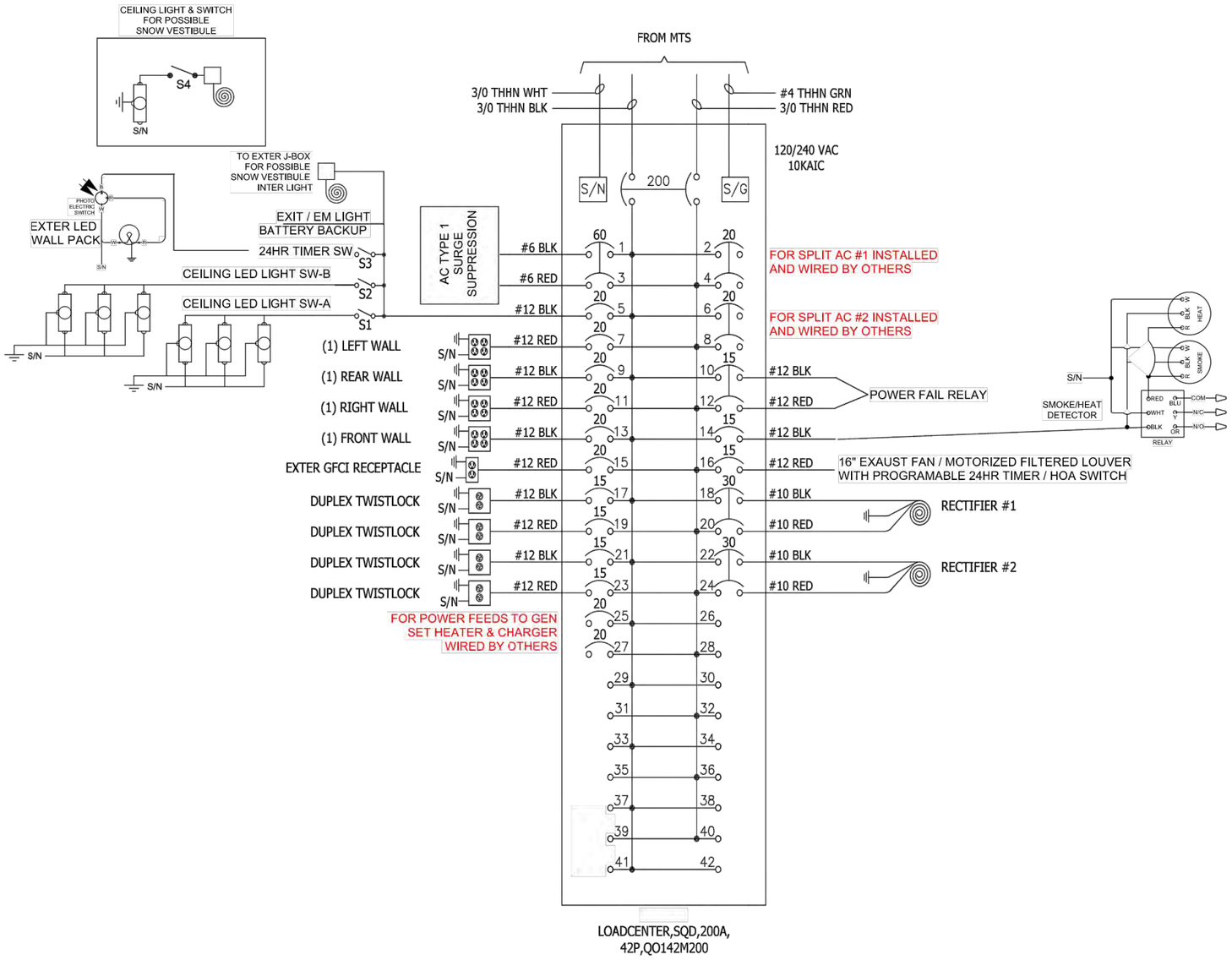
SHEET NUMBER:

SH-3

ONE-LINE DIAGRAM SCALE: NTS

NOTE:
INFORMATION BASED ON SHELTER ONE PREFABRICATED EQUIPMENT SHELTER DRAWINGS. REFER TO STATE OF OREGON BUILDING CODES DIVISION FOR STATE INSIGNIA.

EXHIBIT K



SEAL

APPROVED:

DATE:

NOTICE: THIS DOCUMENT CONTAINS PROPRIETARY INFORMATION THAT IS THE SOLE PROPERTY OF SHELTER ONE AND SHOULD BE TREATED AS SUCH. NO ONE MAY COPY, REPRODUCE, TRANSMIT OR DISTRIBUTE THIS DOCUMENT IN ANY PART WITHOUT THE EXPRESSED WRITTEN PERMISSION OF SHELTER ONE OR ITS DESIGNATED AGENTS.

SHELTER ONE

Headquarters & Manufacturing
5887 Monument Drive
Grants Pass, OR 97526
541/479-4622
F:541/479-5289
www.shelter1.com

PROJECT INFORMATION

25027 MARION COUNTY OR 12X16

FILENAME
25027 Marion County OR 12x16.vwx

DRAWN BY:	DATE:
NJY	7/24/25
CHECKED BY:	DATE:

DWG NO: 25027

SCALE: NOT TO SCALE

TITLE:
PANEL SCHEDULE

SHEET	REV.
E2	

Marion County OREGON

PROJECT INFORMATION:

MARION COUNTY MCCULLY MOUNTAIN

40505 N MCCULLY MOUNTAIN ROAD
LYONS, OR 97358

	DATE	RELEASE
	06-18-25	SITE SKETCH
	07-14-25	PRELIMINARY ZONING DRAWINGS
	08-07-25	PRELIMINARY CONSTRUCTION DRAWINGS
	09-17-25	FINAL CONSTRUCTION DRAWINGS

DRAWING INFORMATION:

THIS DRAWING IS COPYRIGHTED AND IS THE SOLE PROPERTY OF THE OWNER. IT IS PRODUCED SOLELY FOR USE BY THE OWNER AND ITS AFFILIATES. REPRODUCTION OR USE OF THIS DRAWING AND/OR THE INFORMATION CONTAINED IN IT IS FORBIDDEN WITHOUT THE WRITTEN PERMISSION OF THE OWNER.

PLANS PREPARED BY:

cushing Civil Engineers

Cushing
Civil Engineers
12725 SW MILLIKAN WAY
SUITE 300
BEAVERTON, OR 97005
(503) 387-5331
www.cushingcivilengineers.com

LICENSURE:

REGISTERED PROFESSIONAL ENGINEER 83233 OREGON JUNE 7, 2012 KENNY McMANAWAY

RENEWAL DATE 12/31/26

SHEET TITLE:

ELECTRICAL PANEL SCHEDULE

SHEET NUMBER:

SH-4

EXHIBIT K

SITE NAME:

METCOM911

1060 MT HOOD AVE, WOODBURN, OR 97071

SHEET INDEX

CONSTRUCTION SUBMITTAL:

T-1	COVER SHEET
EX-1	EXISTING CONDITIONS
G-1	GENERAL NOTES
ER-1	GRADING & EROSION CONTROL PLAN
ER-2	GRADING & EROSION CONTROL DETAILS
C-1	OVERALL SITE PLAN
C-2	ENLARGED SITE PLAN
C-3	ELEVATIONS
C-4	COMPOUND DETAILS
C-5	HVAC DETAILS
C-6	EQUIPMENT SHELTER FOUNDATION PLAN
E-1	SITE GROUNDING PLAN & DETAILS
E-2	GROUNDING DETAILS I
E-3	GROUNDING DETAILS II
RF-1.0	RF TOWER APPURTENANCES I
RF-1.1	RF TOWER APPURTENANCES II

SHELTER ONE PREFABRICATED SHELTER DRAWINGS (REFER TO STATE OF OREGON BUILDING CODES DIVISION FOR STATE INSIGNIA):

SH-1	EQUIPMENT SHELTER EXTERIOR ELEVATIONS
SH-2	EQUIPMENT SHELTER INTERIOR ELEVATIONS
SH-3	ELECTRICAL ONE-LINE DRAWING
SH-4	ELECTRICAL PANEL SCHEDULE

PROJECT INFORMATION

PROPERTY OWNER:
CITY OF WOODBURN
270 MONTGOMERY ST
WOODBURN, OR 97071

TOWER OWNER:
METCOM911
1060 MT HOOD AVE
WOODBURN, OR 97071

COUNTY:
MARION

JURISDICTION:
CITY OF WOODBURN

ZONING:
P/SP (SPECIAL AGRICULTURE)

PARCEL NUMBER(S) & AREA:
ACCOUNT #: 108697
TAXLOT #: 051W08CB04800
399,009.6 SQ FEET±
9.16 ACRES±

PROJECT AREA:
TOTAL COMPOUND AREA - 200 SQ FEET ±
ACCESS DRIVE AND PARKING - EXISTING
TOTAL - 200 SQ FEET ±

PROJECT LOCATION:
*LAT: N 45° 09'03.4" (45.150950)
*LONG: W 122°50'36.5" (-122.843472)
*GROUND ELEVATION (ASML) = 186'±

*INFORMATION OBTAINED FROM GOOGLE EARTH

UTILITY PROVIDERS:
TELCO PROVIDER: N/A
POWER PROVIDER: PORTLAND GENERAL ELECTRIC

GENERAL INFORMATION:
1. TRAFFIC IS UNAFFECTED
2. SIGNAGE AT SITE IS PROPOSED
3. SITE IS UNMANNED AND HANDICAP ACCESS IS NOT REQUIRED

CODE INFORMATION:
1. IBC-2018 INTERNATIONAL BUILDING CODE
2. NEC-2017 NATIONAL ELECTRIC CODE
3. 2019 OREGON STRUCTURAL SPECIALTY CODE
4. 2017 NFPA 58 CODE
5. OCCUPANCY GROUP: U
6. CONSTRUCTION TYPE: II-B

PROJECT INFORMATION CONTINUED

APPLICANT:
MARION COUNTY PUBLIC WORKS
5155 SILVERTON RD NE
SALEM, OR 97305
CONTACT:
BRIAN NICHOLAS
(503) 588-7943
bnicholas@co.marion.or.us

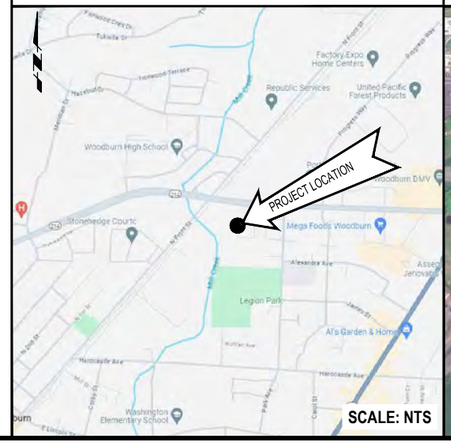
PROJECT MANAGER:
PATRICK HOOVER
(971) 295-0152
phoover@rtspnw.com

CONSTRUCTION MANAGER:
PATRICK HOOVER
(971) 295-0152
phoover@rtspnw.com

ZONING CONTACT:
CUSHING CIVIL ENGINEERS
12725 SW MILLIKAN WAY, STE 300
BEAVERTON, OR 97005
CONTACT:
ROB HOWE
(503) 387-5331
rob@cushingcivilengineers.com

ENGINEER OF RECORD:
CUSHING CIVIL ENGINEERS
12725 SW MILLIKAN WAY, STE 300
BEAVERTON, OR 97005
CONTACT:
KENNY MCMANAWAY
(503) 387-5331
kenny@cushingcivilengineers.com

VICINITY MAP



SCALE: NTS

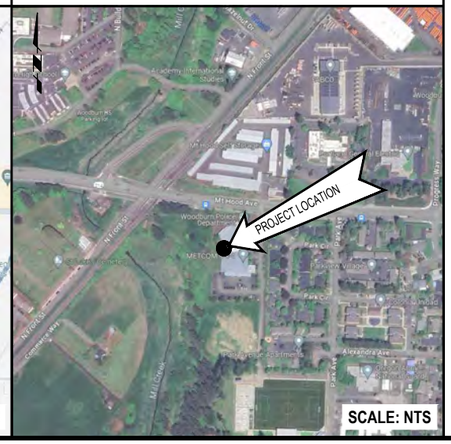
DRIVING DIRECTIONS

FROM MARION COUNTY PUBLIC WORKS BUILDING:

1. GET ON I-5 N IN SALEM FROM CORDON RD NE AND HAZELGREEN RD NE
   9 MIN (4.9 MI)
2. MERGE ONTO I-5 N
   10.9 MI
3. TAKE EXIT 271 FOR OR-214/OR-219 TOWARD WOODBURN/MOLALLA
   0.3 MI
4. TURN RIGHT ONTO OR-214 S/HILLSBORO-SILVERTON HWY NE. PASS BY DAIRY QUEEN GRILL & CHILL (ON THE RIGHT IN 0.2 MI)
   1.8 MI
5. TURN RIGHT AND TAKE ANOTHER RIGHT TURN. DESTINATION WILL BE ON THE RIGHT.
   262 FT

EST. TIME: 26 MINS.
EST. MILEAGE: 18.1 MI

LOCATOR MAP



SCALE: NTS

PROJECT DESCRIPTION

1. PROPOSED MODIFICATION OF AN EXISTING PUBLIC SAFETY COMMUNICATIONS FACILITY FOR MARION COUNTY, OREGON.
2. PROPOSED INSTALLATION OF THE FOLLOWING EQUIPMENT ON AN EXISTING 150' MONOPOLE TOWER:
   * ANTENNAS W/ ASSOCIATED ANCILLARY EQUIPMENT
3. PROPOSED INSTALLATION OF THE FOLLOWING EQUIPMENT WITHIN EXISTING GROUND SPACE:
   * (1) 10'x12' EQUIPMENT SHELTER
   * (1) ICE BRIDGE

Marion County OREGON

PROJECT INFORMATION:

MARION COUNTY
METCOM911

1060 MT HOOD AVE
WOODBURN, OR 97071

	DATE	RELEASE
	07-19-24	SITE SKETCH
	10-29-24	PRELIMINARY ZONING DRAWINGS
	09-25-25	PRELIMINARY CONSTRUCTION DRAWINGS
	10-13-25	FINAL CONSTRUCTION DRAWINGS

DRAWING INFORMATION:
THIS DRAWING IS COPYRIGHTED AND IS THE SOLE PROPERTY OF THE OWNER. IT IS PRODUCED SOLELY FOR USE BY THE OWNER AND ITS AFFILIATES. REPRODUCTION OR USE OF THIS DRAWING AND/OR THE INFORMATION CONTAINED IN IT IS FORBIDDEN WITHOUT THE WRITTEN PERMISSION OF THE OWNER.

PLANS PREPARED BY:

Cushing
Civil Engineers

Cushing
Civil Engineers

12725 SW MILLIKAN WAY
SUITE 300
BEAVERTON, OR 97005
(503) 387-5331
www.cushingcivilengineers.com

LICENSURE:

REGISTERED PROFESSIONAL ENGINEER
83233
OREGON
JUNE 7, 2012
KENNY McMANAWAY

RENEWAL DATE 12/31/26

SHEET TITLE:

COVER SHEET

SHEET NUMBER:

T-1

NOTE:
THIS IS NOT A SURVEY; ALL EXISTING INFORMATION IS PROVIDED BY GIS & SIDE WALK NOTES.

EXHIBIT K

(EX) ELECTRICAL/DATA ROOM INSIDE BUILDING

2
EX-1

(EX) ICE BRIDGE BY OTHERS TO REMAIN

(EX) 150'-0" MONOPOLE TOWER TO REMAIN

(EX) BUILDING, TYP

1060

0 6 12 24
SCALE: 1" = 12'

EXISTING CONDITIONS | 11X17 SCALE: 1" = 24' | 22X34 SCALE: 1" = 12' | 1



SITE PHOTO SCALE: NTS | 2

Marion County
OREGON

PROJECT INFORMATION:

MARION COUNTY METCOM911

1060 MT HOOD AVE
WOODBURN, OR 97071

	DATE	RELEASE
	07-19-24	SITE SKETCH
	10-29-24	PRELIMINARY ZONING DRAWINGS
	09-25-25	PRELIMINARY CONSTRUCTION DRAWINGS
	10-13-25	FINAL CONSTRUCTION DRAWINGS

DRAWING INFORMATION:

THIS DRAWING IS COPYRIGHTED AND IS THE SOLE PROPERTY OF THE OWNER. IT IS PRODUCED SOLELY FOR USE BY THE OWNER AND ITS AFFILIATES. REPRODUCTION OR USE OF THIS DRAWING AND/OR THE INFORMATION CONTAINED IN IT IS FORBIDDEN WITHOUT THE WRITTEN PERMISSION OF THE OWNER.

PLANS PREPARED BY:

cushing Civil Engineers

Cushing Civil Engineers
12725 SW MILLIKAN WAY
SUITE 300
BEAVERTON, OR 97005
(503) 387-5331
www.cushingcivilengineers.com

LICENSURE:

REGISTERED PROFESSIONAL ENGINEER
83233
OREGON
JUNE 7, 2012
KENNY McMANAWAY

RENEWAL DATE 12/31/26

SHEET TITLE:

EXISTING CONDITIONS

SHEET NUMBER:

EX-1

EXHIBIT K

GENERAL NOTES:

1. DRAWINGS ARE NOT TO BE SCALED, WRITTEN DIMENSIONS TAKE PRECEDENCE, THIS SET OF DOCUMENTS IS INTENDED TO BE USED FOR DIAGRAMMATIC PURPOSED ONLY, UNLESS NOTED OTHERWISE. THE GENERAL CONTRACTOR'S SCOPE OF WORK SHALL INCLUDE FURNISHING ALL MATERIALS, EQUIPMENT, LABOR AND ANY REQUIREMENTS DEEMED NECESSARY TO COMPLETE INSTALLATION AS DESCRIBED IN THE DRAWINGS AND OWNER'S PROJECT MANUAL.
2. THE CONTRACTOR IS RESPONSIBLE FOR ALL DIMENSIONS AND STANDARDIZED DETAILS THAT REQUIRE MODIFICATIONS DUE TO ACTUAL FIELD CONDITIONS AND REQUIREMENTS MUST BE SUBMITTED TO AND APPROVED BY OWNERS REPRESENTATIVE PRIOR TO START OF WORK.
3. PRIOR TO THE SUBMISSION OF BIDS, CONTRACTORS INVOLVED SHALL VISIT THE JOB SITE TO FAMILIARIZE THEMSELVES WITH ALL CONDITIONS AFFECTING THE PROPOSED PROJECT. CONTRACTORS SHALL VISIT THE CONSTRUCTION SITE WITH THE CONSTRUCTION/CONTRACT DOCUMENTS TO VERIFY FIELD CONDITIONS AND CONFIRM THAT THE PROJECT WILL BE ACCOMPLISHED AS SHOWN. PRIOR TO PROCEEDING WITH CONSTRUCTION, ANY ERRORS, OMISSIONS, OR DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT/ENGINEER VERBALLY AND IN WRITING.
4. THE GENERAL CONTRACTOR SHALL RECEIVE WRITTEN AUTHORIZATION TO PROCEED WITH CONSTRUCTION PRIOR TO STARTING WORK ON ANY ITEM NOT CLEARLY DEFINED BY THE CONSTRUCTION DRAWINGS/CONTRACT DOCUMENTS.
5. THE CONTRACTOR SHALL SUPERVISE AND DIRECT THE PROJECT DESCRIBED IN THE CONTRACT DOCUMENTS. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR ALL CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES, SAFETY, AND PROCEDURES FOR COORDINATING ALL PORTIONS OF THE WORK UNDER THE CONTRACT.
6. THE CONTRACTOR SHALL INSTALL ALL EQUIPMENT AND MATERIALS ACCORDING TO MANUFACTURER'S/VENDOR'S SPECIFICATIONS UNLESS NOTED OTHERWISE OR WHERE LOCAL CODES OR ORDINANCES TAKE PRECEDENCE.
7. ALL WORK PERFORMED ON THE PROJECT AND MATERIALS INSTALLED SHALL BE IN STRICT ACCORDANCE WITH ALL APPLICABLE CODES, REGULATIONS, AND ORDINANCES. CONTRACTOR SHALL GIVE ALL NOTICES AND COMPLY WITH ALL LAWS, ORDINANCES, RULES, REGULATIONS AND LAWFUL ORDERS OF ANY PUBLIC AUTHORITY, MUNICIPAL AND UTILITY COMPANY SPECIFICATIONS, AND LOCAL AND STATE JURISDICTIONAL CODES BEARING ON THE PERFORMANCE OF THE WORK.
8. THE CONTRACTOR SHALL PROVIDE, AT THE PROJECT SITE, A FULL SET OF CONSTRUCTION DOCUMENTS UPDATED WITH THE LATEST REVISIONS INVOLVED WITH THE PROJECT. THIS SET IS A VALID CONTRACT DOCUMENT ONLY IF THE TITLE SHEET IS STAMPED IN RED INK "FOR CONSTRUCTION" AND EACH SUCCESSIVE SHEET BEARS THE ARCHITECT'S/ENGINEER'S SIGNED WET STAMP.
9. THE CONTRACTOR IS RESPONSIBLE FOR ADEQUATELY BRACING AND PROTECTING ALL WORK DURING CONSTRUCTION AGAINST DAMAGE, BREAKAGE, COLLAPSE, ETC. ACCORDING TO APPLICABLE CODES, STANDARDS, AND GOOD CONSTRUCTION PRACTICES. THE STRUCTURAL COMPONENTS OF ADJACENT CONSTRUCTION OR FACILITIES ARE NOT TO BE ALTERED BY THE CONSTRUCTION PROJECT UNLESS NOTED OTHERWISE.
10. THE CONTRACTOR SHALL MEET ALL OSHA REQUIREMENTS FOR ALL INSTALLATIONS.
11. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL DAMAGES TO THE EXISTING CONSTRUCTION AND REPAIR ALL DAMAGES TO EQUAL OR BETTER NEW CONSTRUCTION. THE CONTRACTOR SHALL NOTIFY THE PROJECT MANAGER OF ANY DAMAGE TO THE BUILDING SITE OR ANY ADJACENT STRUCTURES AROUND THE PROJECT. THE OWNERS REPRESENTATIVE SHALL BE SOLE AND FINAL JUDGE AS TO THE QUALITY OF THE REPAIRED CONSTRUCTION. ANY ADDITIONAL MODIFICATIONS WHICH MUST BE MADE SHALL BE MADE AT THE CONTRACTOR'S EXPENSE.
12. WHERE NEW PAVING, CONCRETE SIDEWALKS OR PATHS MEET EXISTING CONSTRUCTION, THE CONTRACTOR SHALL MATCH THE EXISTING PITCH, GRADE, AND ELEVATION SO THE ENTIRE STRUCTURE SHALL HAVE A SMOOTH TRANSITION.
13. THE CONTRACTOR SHALL MODIFY THE EXISTING FLOORS, WALL, CEILING, OR OTHER CONSTRUCTION AS REQUIRED TO GAIN ACCESS TO AREAS FOR ALL MECHANICAL, PLUMBING, ELECTRICAL, OR STRUCTURAL MODIFICATIONS. WHERE THE EXISTING CONSTRUCTION DOORS, PARTITIONS, CEILING, ETC., ARE TO BE REMOVED, MODIFIED, OR REARRANGED OR WHERE THE EXPOSED OR HIDDEN MECHANICAL, ELECTRICAL, SYSTEMS ARE ADDED OR MODIFIED, THE GENERAL CONTRACTOR SHALL REPAIR, PATCH AND MATCH ALL EXISTING CONSTRUCTION AND FINISHES OF ALL FLOORS WALLS AND CEILINGS. WHERE CONCRETE MASONRY CONSTRUCTION IS MODIFIED, THE CONTRACTOR SHALL TOOTH IN ALL NEW CONSTRUCTION TO MATCH THE EXISTING BOND. WHERE CONCRETE CONSTRUCTION IS MODIFIED, THE CONTRACTOR SHALL VERIFY THE EXACT DETAILS TO BE USED FOR CONSTRUCTION. ALL WORK SHALL BE COVERED UNDER THE GENERAL CONTRACT.
14. IF CONTRACTOR OR SUBCONTRACTOR FIND IT NECESSARY TO DEVIATE FROM ORIGINAL APPROVED PLANS, THEN IT IS THE CONTRACTOR'S AND THE SUBCONTRACTOR'S RESPONSIBILITY TO PROVIDE THE PROJECT MANAGER WITH 4 COPIES OF THE PROPOSED CHANGES FOR HIS APPROVAL BEFORE PROCEEDING WITH THE WORK. IN ADDITION THE CONTRACTOR AND SUBCONTRACTORS SHALL BE RESPONSIBLE FOR PROCURING ALL NECESSARY APPROVALS FROM THE BUILDING AUTHORITIES FOR THE PROPOSED CHANGES BEFORE PROCEEDING WITH THE WORK. THE CONTRACTOR AND SUBCONTRACTORS SHALL BE RESPONSIBLE FOR PROCURING ALL NECESSARY INSPECTIONS AND APPROVALS FROM BUILDING AUTHORITIES DURING THE EXECUTION OF THE WORK.
15. CONTRACTOR TO PROVIDE A PORTABLE FIRE EXTINGUISHER WITH A RATING OF NOT LESS THAN 2-A OR 2-A10BC WITHIN 75 FEET TRAVEL DISTANCE TO ALL PORTIONS OF PROJECT AREA DURING CONSTRUCTION.
16. THIS IS AN ESSENTIAL FACILITY THEREFORE SHALL STRICTLY MEET ALL APPLICABLE CODE AND JURISDICTIONAL REQUIREMENTS.

GENERAL NOTES CONTINUED:

17. THE CONTRACTOR SHALL PERFORM WORK DURING SITE/PROPERTY OWNER'S PREFERRED HOURS TO AVOID DISTURBING NORMAL BUSINESS.
18. SEAL ALL PENETRATIONS THROUGH FIRE-RATED AREAS WITH U.L. LISTED OR FIRE MARSHAL APPROVED MATERIALS AS APPLICABLE TO THIS FACILITY AND OR PROJECT SITE.
19. CONTRACTOR SHALL BE RESPONSIBLE FOR UTILITY LOCATES, SCHEDULING, COORDINATING SPECIAL AND BUILDING DEPARTMENT INSPECTIONS.
21. ROUTING OF ALL CONDUITS, CABLES, CABLE TRAYS ETC ARE INDICATED AS PROPOSED LOCATION ONLY. CONFIRM THE EXACT LOCATION AND ROUTING WITH THE ON SITE PROJECT MANAGER PRIOR TO STARTING WORK.

CONCRETE NOTES:

1. ALL CONCRETE WORK SHALL BE IN ACCORDANCE WITH THE ACI 301, ACI 318 AND THE SPECIFICATION CAST-IN-PLACE CONCRETE.
2. ALL CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 3000 PSI AT 28 DAYS (UNO).
3. REINFORCING STEEL SHALL CONFORM TO ASTM A 615, GRADE 60, DEFORMED UNLESS NOTED OTHERWISE. WELDED WIRE FABRIC SHALL CONFORM TO ASTM A 185 WELDED STEEL WIRE FABRIC UNLESS NOTED OTHERWISE. SPLICES CLASS "B" AND ALL HOOKS SHALL BE STANDARD (UNO).
4. THE FOLLOWING MINIMUM CONCRETE COVER SHALL BE PROVIDED FOR REINFORCING STEEL UNLESS SHOWN OTHERWISE ON DRAWINGS: CONCRETE CAST AGAINST EARTH - 3 IN.
   CONCRETE EXPOSED TO EARTH OR WEATHER:
   #6 AND LARGER .....2 IN.
   #5 AND SMALLER & WWF .....1-1/2 IN.
5. A 1/2" TROWELED RADIUS SHALL BE PROVIDED AT ALL EXPOSED EDGES OF CONCRETE (UNO). HOLES TO RECEIVE EXPANSION/WEDGE ANCHORS SHALL BE 1/8" LARGER IN DIAMETER THAN THE ANCHOR BOLT, DOWEL OR ROD AND SHALL CONFORM TO MFR RECOMMENDATION FOR EMBEDMENT DEPTH OR AS SHOWN ON THE DRAWINGS. AVOID CUTTING EXISTING REBAR WHEN DRILLING HOLES IN THE ELEVATED SLAB.
6. INSTALLATION OF CONCRETE EXPANSION AND WEDGE ANCHOR, SHALL BE PER MANUFACTURER'S WRITTEN RECOMMENDED PROCEDURES.
7. FLOAT SURFACE SHALL BE A SMOOTH FINISH. SURFACE SHALL BE FREE OF ALL OBVIOUS DEPRESSIONS. SURFACE SHALL BE SLOPED AT 2% TO PROMOTE DRAINAGE AWAY FROM EQUIPMENT.

SITE WORK NOTES:

1. RUBBISH, STUMPS, DEBRIS, STICKS, STONES AND OTHER REFUSE SHALL BE REMOVED FROM THE SITE AND DISPOSED OF LEGALLY UNLESS OTHERWISE REQUIRED TO BE LEFT AS DEFINED BY LAND/PROPERTY OWNER.
2. THE SITE SHALL BE GRADED TO CAUSE SURFACE WATER TO FLOW AWAY FROM THE EQUIPMENT, EQUIPMENT SHELTER, GENERATOR, FUEL TANK, TOWER AREAS, AND ADJACENT BUILDINGS, ETC.
3. NO FILL OR EMBANKMENT MATERIAL SHALL BE PLACED ON FROZEN GROUND. FROZEN MATERIALS, SNOW OR ICE SHALL NOT BE PLACED IN ANY FILL OR EMBANKMENT.
4. THE SUBGRADE SHALL BE COMPACTED AND BROUGHT TO A SMOOTH UNIFORM GRADE PRIOR TO THE CRUSHED STONE APPLICATION. FABRIC USE AS REQUIRED.
5. ALL APPLICABLE LOCATES SHALL BE PERFORMED PRIOR TO TO ANY EXCAVATION OR SITE GRADING. ALL EXISTING ACTIVE SEWER, WATER, GAS, ELECTRIC, AND OTHER UTILITIES WHERE ENCOUNTERED IN THE WORK, SHALL BE PROTECTED AT ALL TIMES, AND WHERE REQUIRED FOR THE PROPER EXECUTION OF THE WORK, SHALL BE RELOCATED AS DIRECTED BY ENGINEERS. EXTREME CAUTION SHOULD BE USED BY THE CONTRACTOR WHEN EXCAVATING OR PIER DRILLING AROUND OR NEAR UTILITIES. CONTRACTOR SHALL PROVIDE SAFETY TRAINING FOR THE WORKING CREW.
6. ALL EXISTING INACTIVE SEWER, WATER, GAS, ELECTRIC AND OTHER UTILITIES, WHICH INTERFERE WITH THE EXECUTION OF THE WORK, SHALL BE REMOVED AND SHALL BE CAPPED, PLUGGED OR OTHERWISE DISCONTINUED AT POINTS WHICH WILL NOT INTERFERE WITH THE EXECUTION OF THE WORK, SUBJECT TO THE APPROVAL OF ENGINEERING.
7. THE AREAS OF THE PROPERTY DISTURBED BY THE WORK AND NOT COVERED BY THE BUILDING, DRIVEWAY OR CRUSHED STONE, SHALL BE GRADED TO A UNIFORM SLOPE, FERTILIZED, SEEDED, AND COVERED WITH MULCH AS SPECIFIED IN THE SPECIFICATION LANDSCAPE WORK..
8. BEDDING MATERIAL FOR UTILITY LINES, CULVERTS AND PIPING: CLEAN SAND, MEDIUM TP COARSE, SUB ROUNDED NATURAL RIVER OR BANK SAND, WASHED, FREE OF SILT OR CLAY, LOAM, FRIABLE OR SOLUBLE MATERIALS, AND ORGANIC MATTER; GRADED IN ACCORDANCE WITH THE FOLLOWING GRAIN SIZE DISTRIBUTION:

SIEVE SIZE	PERCENT PASSING
	100
NO. 4 MESH	60-90
NO. 8 MESH	0-45
NO. 16 MESH	0-25
NO. 100 MESH	0-2
NO. 200 MESH	0-2

9. BMP'S FOR TEMPORARY EROSION/SEDIMENTATION CONTROL SHALL BE IMPLEMENTED PER LOCAL, CITY OR COUNTY GUIDELINES AND PER PLAN IF APPLICABLE.

SITE WORK NOTES CONTINUED:

10. ALL SITE DESIGN AND CONSTRUCTION MUST COMPLY WITH INDUSTRY STANDARDS AND BE ALIGNED WITH BMP GUIDELINES AS TECHNICALLY APPLICABLE. EACH SITE MUST BE PM APPROVED BEFORE IT SHALL BE CONSIDERED COMPLETE AND ACCEPTED.
11. IF INADVERTENT DISCOVERIES OF NATIVE AMERICAN CULTURAL MATERIALS OR HUMAN REMAINS ARE MADE DURING CONSTRUCTION, ALL WORK SHOULD CEASE AND POTENTIALLY AFFECTED TRIBES, AS WELL AS THE STATE HISTORIC PRESERVATION OFFICE, SHOULD BE NOTIFIED IMMEDIATELY.

TOWER/POLE NOTES:

1. ALL ANTENNAS, LINES AND RELATED INSTALLATION HARDWARE TO BE PROVIDED BY THE LAND MOBILE COMMUNICATIONS PROVIDER.
2. ALL HARDWARE (NUTS AND BOLTS) BE TIGHTENED AND TORQUED IN ACCORDANCE WITH THE TOWER MANUFACTURER'S AND STRUCTURAL ENGINEER'S SPECIFICATIONS.
3. VERIFICATION THAT THE TOWER/POLE CAN SUPPORT THE PROPOSED ANTENNA LOADING IS TO BE DONE BY OTHERS.
4. PROVIDE SUPPORTS FOR THE ANTENNA COAX CABLES TO THE ELEVATION OF ALL INITIAL AND FUTURE ANTENNAS. ANTENNA COAX CABLES ARE TO BE SUPPORTED AND RESTRAINED AT THE CENTERS SUITABLE TO THE MANUFACTURER'S REQUIREMENTS.

ATTENTION (OREGON SITES ONLY):

CALL 1-800-332-2344 48 HOURS BEFORE YOU DIG. OREGON LAW REQUIRES YOU TO FOLLOW OAR 952-001-0010 THRU 952-001-0090. COPIES ARE AVAILABLE AT THE OREGON UTILITY NOTIFICATION CENTER 503-232-1987

DESIGN LOADS:

ROOF SNOW LOAD DATA -	GROUND SNOW LOAD:	66 PSF*
	FLAT-ROOF SNOW LOAD:	N/A
	SNOW EXPOSURE FACTOR:	N/A
	SNOW LOAD IMPORTANCE FACTOR:	N/A
	THERMAL FACTOR:	N/A
WIND DESIGN DATA -	ULTIMATE DESIGN WIND SPEED:	107 MPH*
	RISK CATEGORY:	IV
	WIND EXPOSURE:	C*
	INTERNAL PRESSURE COEFFICIENT:	N/A
	DESIGN WIND PRESSURES;	
	WIND LOAD HORIZONTAL (MWFRS):	N/A
	WIND LOAD (UPLIFT) (MWFRS):	N/A
EARTHQUAKE DESIGN DATA -	RISK CATEGORY:	IV
	SEISMIC IMPORTANCE FACTOR:	N/A
	MAPPED SPECTRAL RESPONSE ACCEL-ERATION PARAMETERS;	
	S_S	0.93*
	S_1	0.36*
	SITE CLASS:	D*
	DESIGN SPECTRAL RESPONSE ACCEL-ERATION PARAMETERS;	
	S_{DS}	0.77*
	S_{D1}	0.52*
	SEISMIC DESIGN CATEGORY:	D
	BASIC SEISMIC FORCE-RESISTING	
SYSTEM-	BEARING WALL	
	DESIGN BASE SHEAR:	N/A
	SEISMIC RESPONSE COEFFICIENT:	N/A
	RESPONSE MODIFICATION COEFFICIENT:	N/A
	ANALYSIS PROCEDURE USED:	N/A
GEOTECHNICAL INFORMATION -	ALLOWABLE BEARING CAPACITY:	N/A

*INFORMATION OBTAINED FROM ASCE 7 HAZARD TOOL

SYMBOLS LEGEND

1 REVISION
1 KEY NOTE DETAIL
3 / C-4 REFERENCE ELEVATION
A / C-3 SECTION REFERENCE
ELEVATION DATUM POINT

CHAINLINK FENCE
CEDAR FENCE
PROPANE — LPG
UNDERGROUND POWER — P
OVERHEAD POWER — OHP
TELCO — T
POWER/TELCO — T/P
GAS — G
WATER — W
COAX — COAX
CENTERLINE
EASEMENT
PROPERTY LINE
SUBJECT PROPERTY LINE

ABBREVIATIONS LEGEND

A/C	AIR CONDITIONING
ADJ	ADJUSTABLE
AFF	ABOVE FINISH FLOOR
AGL	ABOVE GRADE LEVEL
APPROX	APPROXIMATELY
ASTM	AMERICAN SOCIETY FOR TESTING & MATERIALS
AWG	AMERICAN WIRE GAUGE
BLDG	BUILDING
BLK	BLOCK
BMR	BASE MOBILE RADIO
B/S	BUILDING STANDARD
CLG	CEILING
CLR	CLEAR
CONC	CONCRETE
CONST	CONSTRUCTION
CONT	CONTINUOUS
DBL	DOUBLE
DIA, Ø	DIAMETER
DIAG	DIAGONAL
DIM	DIMENSION
DN	DOWN
DTL, DETL	DETAIL
DWG	DRAWING
E	EAST
EA	EACH
EL, ELEV	ELEVATION
ELECT	ELECTRICAL
EQ	EQUAL
EQUIP	EQUIPMENT
E.W.	EACH WAY
EX.	EXISTING
EXT	EXTERIOR
FIN	FINISH
FLUOR	FLUORESCENT
FLR	FLOOR
FT	FOOT
GA	GAUGE
GALV	GALVANIZE(D)
GC	GENERAL CONTRACTOR
GRND	GROUND
GWB	GYPSUM WALL BOARD
GYP BD	GYPSUM BOARD
HARD'WD	HARDWOOD
HORIZ	HORIZONTAL
HR	HOUR
HT	HEIGHT
HVAC	HEATING, VENTING AND AIR CONDITIONING
I.D.	INSIDE DIA.
IN	INCH
INFO	INFORMATION
INSUL	INSULATION
INT	INTERIOR
LB(S)	POUND(S)
LNA	ANTENNA AMPLIFIER
MAX	MAXIMUM
MECH	MECHANICAL
MET, MTL	METAL
MFR	MANUFACTURER
MGR	MANAGER
MIN	MINIMUM
MISC	MISCELLANEOUS
N	NORTH
NA	NOT APPLICABLE
NIC	NOT IN CONTRACT
NTS	NOT TO SCALE
OC, o/c	ON CENTER
OD	OUTSIDE DIAMETER
OPG	OPENING
OPP	OPPOSITE
OHP	OVERHEAD POWER
UGP	UNDRGRND POWER
OHT	OVERHEAD TELCO
UGT	UNDRGRND TELCO
PR	PAIR
PROJ	PROJECT
PROP	PROPERTY
P	PROPOSED
PT	PRESSURE TREATED
REQ'D	REQUIRED
RM	ROOM
R.O.	ROUGH OPENING
S	SOUTH
SHT	SHEET
SIM	SIMILAR
SPEC	SPECIFICATION
SQ	SQUARE
SS	STAINLESS STEEL
STL	STEEL
STRUCT	STRUCTURAL
SUSP	SUSPENDED
S.V.	SHEET VINYL
THRU	THROUGH
TNND	TINNED
T.O.C.	TOP OF CONCRETE
T.O.M.	TOP OF MASONRY
TYP	TYPICAL
U.N.O.	UNLESS NOTED OTHERWISE
VERT	VERTICAL
VIF	VERIFY IN FIELD
VT	VINYL TILE
W	WEST
W/	WITH
WIN	WINDOW
W/O	WITHOUT
WP	WATERPROOF
∠	ANGLE
&	AND
℄	CENTER LINE
ℙ	PROPERTY LINE
@	AT
#	NUMBER

Marion County OREGON

PROJECT INFORMATION:

MARION COUNTY METCOM911

1060 MT HOOD AVE
WOODBURN, OR 97071

	DATE	RELEASE
	07-19-24	SITE SKETCH
	10-29-24	PRELIMINARY ZONING DRAWINGS
	09-25-25	PRELIMINARY CONSTRUCTION DRAWINGS
	10-13-25	FINAL CONSTRUCTION DRAWINGS

DRAWING INFORMATION:

THIS DRAWING IS COPYRIGHTED AND IS THE SOLE PROPERTY OF THE OWNER. IT IS PRODUCED SOLELY FOR USE BY THE OWNER AND ITS AFFILIATES. REPRODUCTION OR USE OF THIS DRAWING AND/OR THE INFORMATION CONTAINED IN IT IS FORBIDDEN WITHOUT THE WRITTEN PERMISSION OF THE OWNER.

PLANS PREPARED BY:

cushing Civil Engineers

Cushing Civil Engineers
12725 SW MILLIKAN WAY
SUITE 300
BEAVERTON, OR 97005
(503) 387-5331
www.cushingcivilengineers.com

LICENSURE:

REGISTERED PROFESSIONAL ENGINEER 83233 OREGON JUNE 7, 2012 KENNY McMANAWAY

RENEWAL DATE 12/31/26

SHEET TITLE:

GENERAL NOTES

SHEET NUMBER:

G-1

EROSION CONTROL NOTES:

1. OWNER OR DESIGNATED PERSON SHALL BE RESPONSIBLE FOR PROPER INSTALLATION AND MAINTENANCE OF ALL EROSION AND SEDIMENT CONTROL MEASURES, IN ACCORDANCE WITH LOCAL, STATE, AND FEDERAL REGULATIONS.
2. THE IMPLEMENTATION OF THESE ESC PLANS AND CONSTRUCTION, MAINTENANCE, REPLACEMENT, AND UPGRADING OF THESE ESC FACILITIES IS THE RESPONSIBILITY OF THE CONTRACTOR UNTIL ALL CONSTRUCTION IS COMPLETED AND APPROVED BY THE LOCAL JURISDICTION, AND VEGETATION/LANDSCAPING IS ESTABLISHED. THE DEVELOPER SHALL BE RESPONSIBLE FOR MAINTENANCE AFTER THE PROJECT IS APPROVED UNTIL THE LOTS ARE SOLD.
3. THE BOUNDARIES OF THE CLEARING LIMITS SHOWN ON THIS PLAN SHALL BE CLEARLY MARKED IN THE FIELD PRIOR TO CONSTRUCTION. DURING THE CONSTRUCTION PERIOD, NO DISTURBANCE BEYOND THE CLEARING LIMITS SHALL BE PERMITTED. THE MARKINGS SHALL BE MAINTAINED BY THE APPLICANT/CONTRACTOR FOR THE DURATION OF CONSTRUCTION.
4. THE ESC FACILITIES SHOWN ON THIS PLAN MUST BE CONSTRUCTED IN CONJUNCTION WITH ALL CLEARING AND GRADING ACTIVITIES, AND IN SUCH A MANNER AS TO INSURE THAT SEDIMENT AND SEDIMENT LADEN WATER DOES NOT ENTER THE DRAINAGE SYSTEM, ROADWAYS, OR VIOLATE APPLICABLE WATER STANDARDS.
5. THE ESC FACILITIES SHOWN ON THIS PLAN ARE MINIMUM REQUIREMENTS FOR ANTICIPATED SITE CONDITIONS. DURING CONSTRUCTION PERIODS, THESE ESC FACILITIES SHALL BE UPGRADED AS NEEDED FOR UNEXPECTED STORM EVENTS AND TO ENSURE THAT SEDIMENT AND SEDIMENT LADEN WATER DOES NOT LEAVE THE SITE.
6. THE ESC FACILITIES SHALL BE INSPECTED DAILY BY THE APPLICANT/CONTRACTOR AND MAINTAINED AS NECESSARY TO ENSURE THEIR CONTINUED FUNCTIONING.
7. AT NO TIME SHALL SEDIMENT BE ALLOWED TO ACCUMULATE MORE THAN 1/3 THE BARRIER HEIGHT. ALL CATCH BASINS AND CONVEYANCE LINES SHALL BE CLEANED PRIOR TO PAVING. THE CLEANING OPERATIONS SHALL NOT FLUSH SEDIMENT-LADEN WATER INTO THE DOWNSTREAM SYSTEM.
8. STABILIZED GRAVEL ENTRANCES SHALL BE INSTALLED AT THE BEGINNING OF CONSTRUCTION AND MAINTAINED FOR THE DURATION OF THE PROJECT. ADDITIONAL MEASURES MAY BE REQUIRED TO INSURE THAT ALL PAVED AREAS ARE KEPT CLEAN FOR THE DURATION OF THE PROJECT.
9. STORM DRAIN INLETS, BASINS, AND AREA DRAINS SHALL BE PROTECTED UNTIL PAVEMENT SURFACES ARE COMPLETED AND/OR VEGETATION IS RE-ESTABLISHED.
10. PAVEMENT SURFACES AND VEGETATION ARE TO BE PLACED AS RAPIDLY AS POSSIBLE.
11. SEEDING SHALL BE PERFORMED NO LATER THAN SEPTEMBER 1 FOR EACH PHASE OF CONSTRUCTION.
12. IF THERE ARE EXPOSED SOILS OR SOILS NOT FULLY ESTABLISHED FROM OCTOBER 1ST THROUGH APRIL 30TH, THE WET WEATHER EROSION PREVENTION MEASURES WILL BE IN EFFECT. SEE THE EROSION PREVENTION AND SEDIMENT CONTROL PLANNING AND DESIGN MANUAL (CHAPTER 4) FOR REQUIREMENTS.
13. NO EXPOSED, BARE SOILS SHALL REMAIN UNSTABILIZED FOR MORE THAN TWO DAYS DURING THE PERIOD OCTOBER 1 THROUGH APRIL 30 OR FOR MORE THAN SEVEN DAYS DURING THE PERIOD OF MAY 1 THROUGH SEPTEMBER 30. ALL DISTURBED SOIL SURFACES SHALL BE STABILIZED BY A SUITABLE APPLICATION OF "BEST MANAGEMENT PRACTICES".
14. WHERE FEASIBLE, NO MORE THAN 500 FEET OF TRENCH SHALL BE OPEN AT ONE TIME. EXCAVATED MATERIAL SHALL BE PLACED ON THE UPHIL SIDE OF TRENCHES PROVIDED IT DOES NOT CONFLICT WITH SAFETY REQUIREMENTS.
15. THE DEVELOPER SHALL REMOVE ESC MEASURES WHEN VEGETATION IS FULLY ESTABLISHED.

GENERAL NOTES

SCALE: NTS | 4

UNADJUSTED CUT/ FILL QUANTITIES

STRIPPING ORGANICS FOR COMPOUND;
CUT = 0 CU. YD.

STRIPPING FOR ACCESS ROAD AND PARKING;
CUT = 0 CU. YD.

PROPOSED COMPOUND AREA;
CUT = 0 CU. YD.
FILL = 0 CU. YD.

PROPOSED ACCESS ROAD AND PARKING;
CUT = 0 CU. YD.
FILL = 0 CU. YD.

PROPOSED TOWER FOUNDATION;
EXCAVATION = EXISTING

APPROX. TOTAL AREA OF DISTURBANCE OF PROPOSED GRADING = EXISTING

CUT/ FILL QUANTITIES

SCALE: NTS | 3

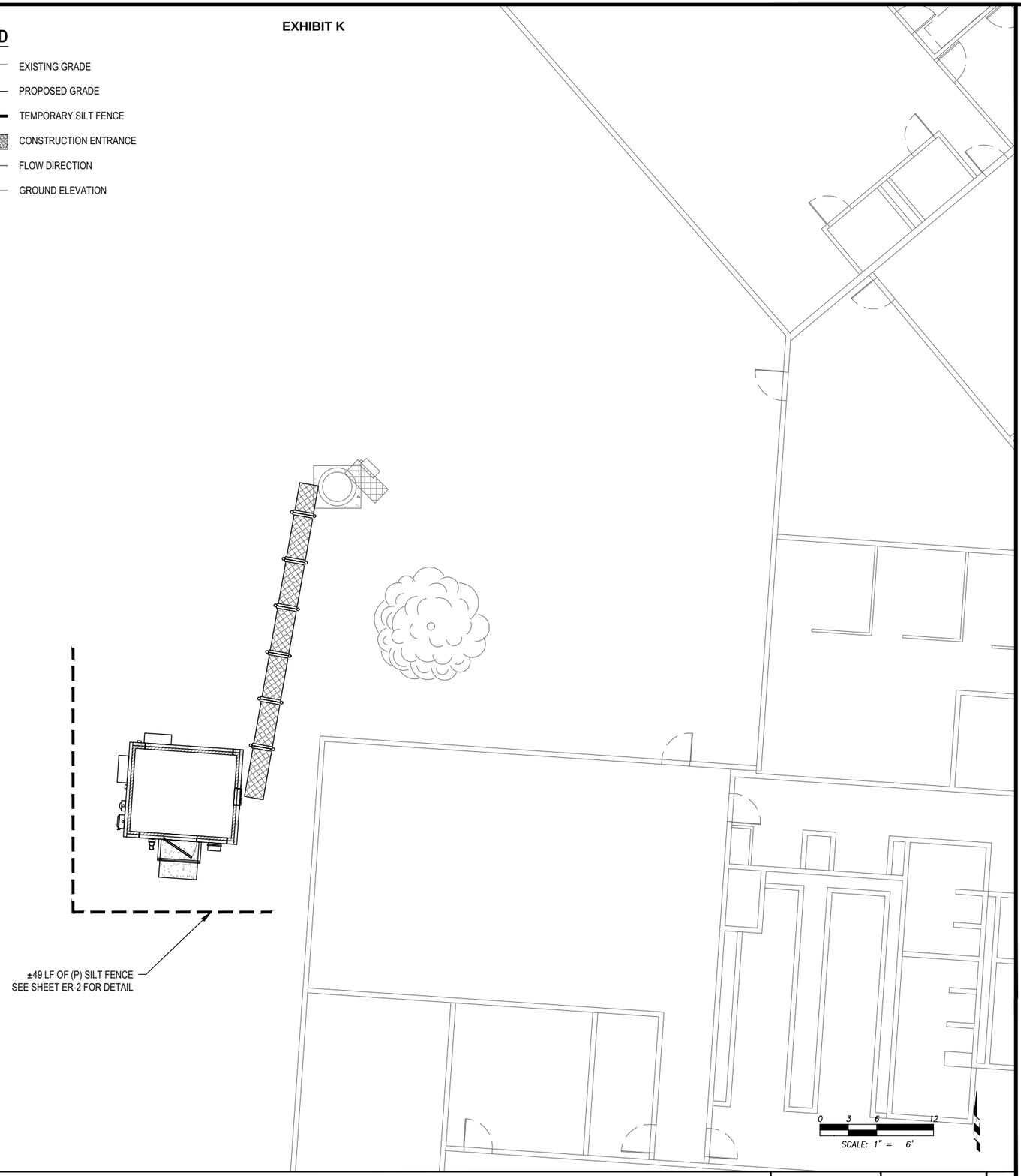
NOT USED

SCALE: NTS | 2

LEGEND

- EXISTING GRADE
- PROPOSED GRADE
- TEMPORARY SILT FENCE
- CONSTRUCTION ENTRANCE
- FLOW DIRECTION
- 250' GROUND ELEVATION

EXHIBIT K



GRADING & EROSION CONTROL PLAN

11X17 SCALE: 1" = 12' | 22X34 SCALE: 1" = 6' | 1

Marion County OREGON

PROJECT INFORMATION:

MARION COUNTY METCOM911

1060 MT HOOD AVE
WOODBURN, OR 97071

	DATE	RELEASE
	07-19-24	SITE SKETCH
	10-29-24	PRELIMINARY ZONING DRAWINGS
	09-25-25	PRELIMINARY CONSTRUCTION DRAWINGS
	10-13-25	FINAL CONSTRUCTION DRAWINGS

DRAWING INFORMATION:
THIS DRAWING IS COPYRIGHTED AND IS THE SOLE PROPERTY OF THE OWNER. IT IS PRODUCED SOLELY FOR USE BY THE OWNER AND ITS AFFILIATES. REPRODUCTION OR USE OF THIS DRAWING AND/OR THE INFORMATION CONTAINED IN IT IS FORBIDDEN WITHOUT THE WRITTEN PERMISSION OF THE OWNER.

PLANS PREPARED BY:

cushing Civil Engineers

Cushing
Civil Engineers

12725 SW MILLIKAN WAY
SUITE 300
BEAVERTON, OR 97005
(503) 387-5331
www.cushingcivilengineers.com

LICENSURE:

REGISTERED PROFESSIONAL ENGINEER 83233 OREGON JUNE 7, 2012 KENNY McMANAWAY

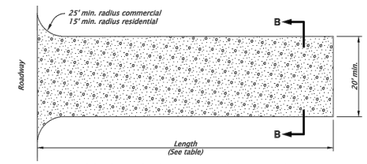
RENEWAL DATE 12/31/26

SHEET TITLE:

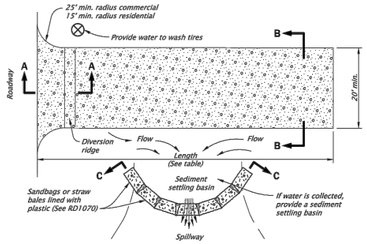
GRADING & EROSION CONTROL PLAN

SHEET NUMBER:

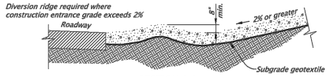
ER-1



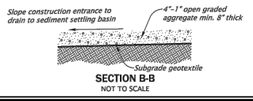
CONSTRUCTION ENTRANCE - TYPE 1
NOT TO SCALE



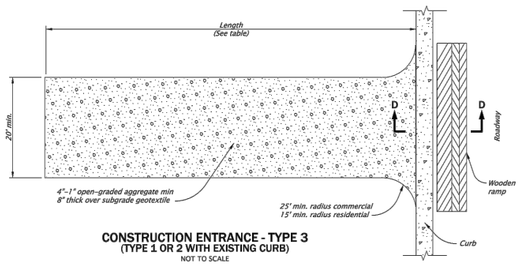
CONSTRUCTION ENTRANCE - TYPE 2
NOT TO SCALE



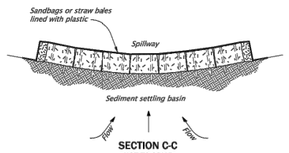
SECTION A-A
NOT TO SCALE



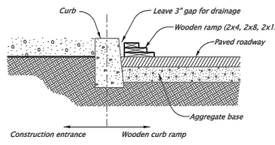
SECTION B-B
NOT TO SCALE



CONSTRUCTION ENTRANCE - TYPE 3
(TYPE 1 OR 2 WITH EXISTING CURB)
NOT TO SCALE



SECTION C-C
NOT TO SCALE



WOODEN CURB RAMP SECTION D-D
NOT TO SCALE

NOTES:
1. The Type 1 entrance is a simple entrance without a diversion ridge or settling basin.
2. The wooden ramp may be used on either Type 1 or Type 2 entrances in situations where there is curb and the curb is not removed for the construction entrance.

CONSTRUCTION ENTRANCE TABLE MINIMUM LENGTH	
Length (FT)	Area Of Exposed Soil (Acre)
20	0.25
50	0.25 < A < 1.0
100	A > 1.0

The selection and use of this Standard Drawing, while designed in accordance with generally accepted engineering principles and practices, is the sole responsibility of the user and should not be used without first consulting a Registered Professional Engineer.

All materials shall be in accordance with the current Oregon Standard Specifications.
OREGON STANDARD DRAWINGS
CONSTRUCTION ENTRANCES
2021

DATE	REVISION DESCRIPTION
01-2021	REMOVED CALC BOOK NUMBERS

CALC BOOK NO. N/A | SDR DATE 20-JAN-2021 | **RD1000**

GRAVEL CONSTRUCTION ENTRANCE

SCALE: NTS | 1

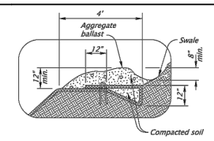


FIGURE A1:
TOP OF BANK ANCHOR TRENCH, H>3' AND TERMINAL SLOPE
NOT TO SCALE

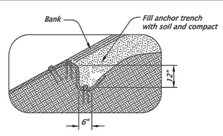


FIGURE A2:
TOP OF BANK ANCHOR TRENCH, H<3'
NOT TO SCALE

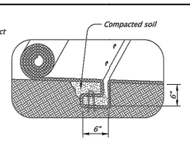


FIGURE A3:
CHANNEL CHECK SLOT
NOT TO SCALE

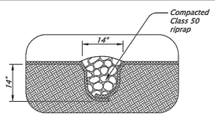


FIGURE A4:
CHANNEL CHECK SLOT WITH ROCK BACKFILL
NOT TO SCALE

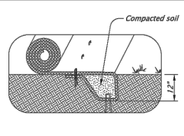
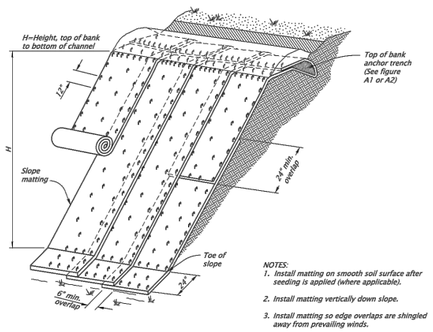
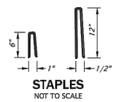


FIGURE A5:
INITIAL CHANNEL ANCHOR TRENCH
NOT TO SCALE

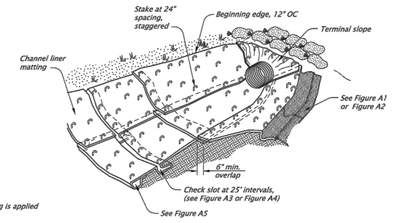


SLOPE MATTING ISOMETRIC VIEW
NOT TO SCALE

NOTES:
1. Install matting on smooth soil surface after seeding is applied (where applicable).
2. Install matting vertically down slope.
3. Install matting so edge overlaps are shingled away from prevailing winds.
4. Place fastener at 12" OC on matting edges
5. Overlap upper mat over lower mat, and fasten.
6. Stagger alternate rows of fasteners placed at 24" OC
7. Extend mat 24" beyond toe of slope; fold mat back under 4" and fasten.
8. Matting Types A through E: Furnish fully biodegradable product. Matting with plastic or photodegradable components will not be accepted.



STAPLES
NOT TO SCALE



CHANNEL MATTING ISOMETRIC VIEW
NOT TO SCALE

NOTES:
1. Install matting on smooth soil surface after seeding is applied (where applicable).
2. Install channel liner matting, in the direction of water flow. Anchor upstream end of mat with check slot for culvert outfalls, place mat under pipe 12" minimum upstream from pipe outlet.
3. Construct check slots across channel bottom at 25' spacing and at the end of each mat (Fig. A3 or A4).
4. Overlap side channel liner matting edges 6" over the center channel liner matting and fasten edges 12" OC. Continue overlap and stapling pattern for each additional side channel liner mat.
5. Lap upstream matting end 12" over beginning edge of downstream matting. Fasten 12" OC
6. Anchor top edge of side channel matting in trench and fasten 12" OC (Fig. A2).
7. Fasten matting interior at 24" OC with staggered spacing.
8. Construct initial anchor trench at downstream end of matting and terminal slope anchor at upstream end.
9. Matting Types A through E: Furnish fully biodegradable product. Matting with plastic or photodegradable components will not be accepted.

The selection and use of this Standard Drawing, while designed in accordance with generally accepted engineering principles and practices, is the sole responsibility of the user and should not be used without first consulting a Registered Professional Engineer.

All materials shall be in accordance with the current Oregon Standard Specifications.
OREGON STANDARD DRAWINGS
SLOPE AND CHANNEL MATTING
2021

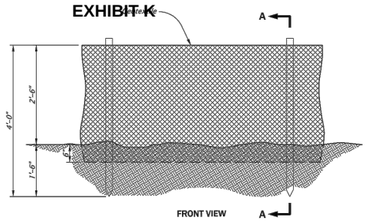
DATE	REVISION DESCRIPTION
01-2021	REMOVED CALC BOOK NUMBERS

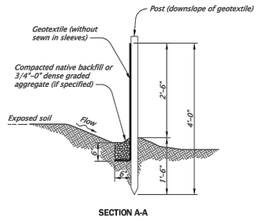
CALC BOOK NO. N/A | SDR DATE 20-JAN-2021 | **RD1055**

PLASTIC SHEETING

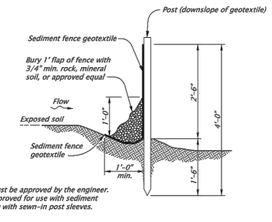
SCALE: NTS | 3

EXHIBIT K



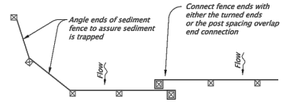


SEDIMENT FENCE AND GEOTEXTILE BURY DETAIL - TYPE 1
NOT TO SCALE

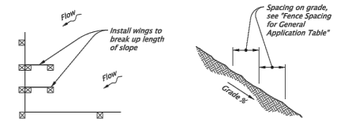


NOTES:
1. Use must be approved by the engineer.
2. Not approved for use with sediment fencing with sewn-in post sleeves.

ALTERNATE SEDIMENT FENCE WITHOUT TRENCHING - TYPE 2
NOT TO SCALE



PLAN VIEW

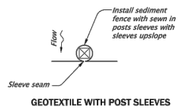


TERMINATION AT CORNER OR PROPERTY LINE

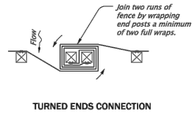
GENERAL NOTES:
1. Use 2"x2" wood fence posts.
2. Posts to be installed on downhill side of sediment fence geotextile. Position posts to prevent separation from geotextile.
3. Compact filter fabric trench backfill and soil on uphill side of fence.
4. Locate fence no closer than three feet to the toe of a slope.
5. Wing spacing shall comply with "Fence Spacing for General Application Table".

FENCE SPACING FOR GENERAL APPLICATION TABLE	
INSTALL PARALLEL ALONG CONTOURS AS FOLLOWS	
GRADE	MAXIMUM SPACING ON GRADE
Grade < 10%	300'
10% ≤ Grade < 15%	150'
15% ≤ Grade < 20%	100'
20% ≤ Grade < 30%	50'
30% ≤ Grade	25'

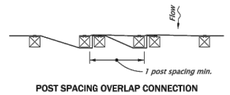
POST SPACING TABLE	
6'	Sediment Fence with Geotextile elongation less than 50%
4'	Sediment Fence with Geotextile elongation 50% or more



GEOTEXTILE WITH POST SLEEVES



TURNED ENDS CONNECTION



POST SPACING OVERLAP CONNECTION

GEOTEXTILE END CONNECTIONS
NOT TO SCALE

The selection and use of this Standard Drawing, while designed in accordance with generally accepted engineering principles and practices, is the sole responsibility of the user and should not be used without first consulting a Registered Professional Engineer.

All materials shall be in accordance with the current Oregon Standard Specifications.
OREGON STANDARD DRAWINGS
SEDIMENT FENCE
2021

DATE	REVISION DESCRIPTION
01-2021	REMOVED CALC BOOK NUMBERS

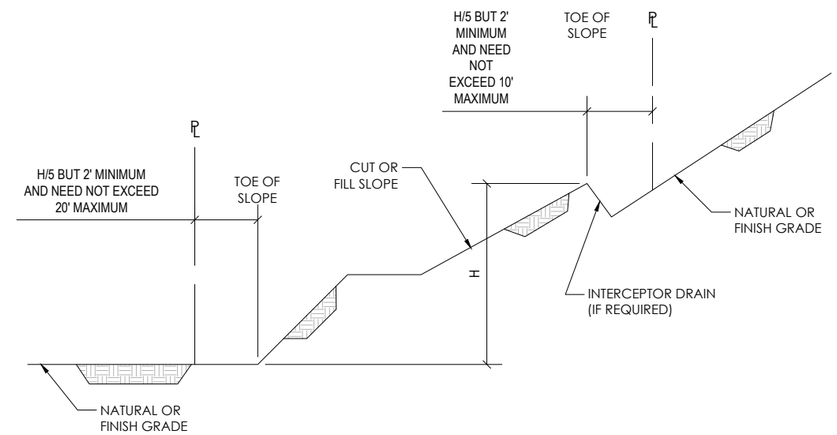
CALC BOOK NO. N/A | SDR DATE 20-JAN-2021 | **RD1040**

TEMPORARY SEDIMENT FENCE

SCALE: NTS | 2

SEDIMENT FENCE NOTES:

1. THE FILTER FABRIC FENCE SHALL BE INSTALLED TO FOLLOW THE CONTOURS WHERE FEASIBLE. THE FENCE POSTS SHALL BE SPACED A MAXIMUM OF 6' APART AND DRIVEN SECURELY INTO THE GROUND A MINIMUM OF 24".
2. THE FILTER FABRIC SHALL BE PURCHASED IN A CONTINUOUS ROLL CUT TO THE LENGTH OF THE BARRIER TO AVOID USE OF JOINTS. WHEN JOINTS ARE NECESSARY, FILTER CLOTH SHALL BE SPLICED TOGETHER ONLY AT A SUPPORT POST, WITH A MINIMUM 6" OVERLAP, AND BOTH ENDS SECURELY FASTENED TO THE POST, OR OVERLAP 2" X 2" POSTS AND ATTACH AS SHOWN ON DETAIL SHEET 4-3A OF THE EROSION CONTROL MANUAL.
3. THE FILTER FABRIC SHALL HAVE A MINIMUM VERTICAL BURIAL OF 6". ALL EXCAVATED MATERIAL FROM FILTER FABRIC INSTALLATION SHALL BE BACKFILLED AND COMPACTED ALONG THE ENTIRE DISTURBED AREA.
4. STANDARD OR HEAVY-DUTY FILTER FABRIC FENCES SHALL HAVE MANUFACTURED STITCHED LOOPS FOR 2" X 2" POST INSTALLATION. STITCHED LOOPS SHALL BE INSTALLED ON THE UP HILLSIDE OF THE SLOPED AREA.
5. FILTER FABRIC FENCES SHALL BE REMOVED WHEN THEY HAVE SERVED THEIR USEFUL PURPOSE, BUT NOT BEFORE THE UPSLOPE AREA HAS BEEN PERMANENTLY PROTECTED AND STABILIZED.
6. FILTER FABRIC FENCES SHALL BE INSPECTED BY APPLICANT/CONTRACTOR IMMEDIATELY AFTER EACH RAINFALL AND AT LEAST DAILY DURING PROLONGED RAINFALL. ANY REQUIRED REPAIRS SHALL BE MADE IMMEDIATELY.



SETBACKS AND DRAINAGE DIMENSIONS

SCALE: NTS | 4

Marion County
OREGON

PROJECT INFORMATION:

MARION COUNTY METCOM911

1060 MT HOOD AVE
WOODBURN, OR 97071

	DATE	RELEASE
	07-19-24	SITE SKETCH
	10-29-24	PRELIMINARY ZONING DRAWINGS
	09-25-25	PRELIMINARY CONSTRUCTION DRAWINGS
	10-13-25	FINAL CONSTRUCTION DRAWINGS

DRAWING INFORMATION:
THIS DRAWING IS COPYRIGHTED AND IS THE SOLE PROPERTY OF THE OWNER. IT IS PRODUCED SOLELY FOR USE BY THE OWNER AND ITS AFFILIATES. REPRODUCTION OR USE OF THIS DRAWING AND/OR THE INFORMATION CONTAINED IN IT IS FORBIDDEN WITHOUT THE WRITTEN PERMISSION OF THE OWNER.

PLANS PREPARED BY:

cushing
Civil Engineers

Cushing
Civil Engineers
12725 SW MILLIKAN WAY
SUITE 300
BEAVERTON, OR 97005
(503) 387-5331
www.cushingcivilengineers.com

LICENSURE:

REGISTERED PROFESSIONAL ENGINEER
83233
OREGON
JUNE 7, 2012
KENNY McMANAWAY

RENEWAL DATE 12/31/26

SHEET TITLE:

GRADING & EROSION CONTROL DETAILS

SHEET NUMBER:

ER-2

EXHIBIT K

NOTE:
THIS IS NOT A SURVEY; ALL EXISTING INFORMATION IS PROVIDED BY GIS & SIDE WALK NOTES.

MOUNT HOOD AVE

N FRONT ST

P/L-GIS

TAXLOT #: 051W08BC00601
ZONING: P/SP

PROPOSED PROJECT AREA
SEE SHEET C-2 FOR DETAILS

TAXLOT #: 051W08CB04800
ZONING: P/SP

ZONING: RM

TAXLOT #: 051W08CB04901
ZONING: IL

TAXLOT #: 051W08CB04500
ZONING: RM

TAXLOT #: 051W08CB04700
ZONING: P/SP

0 25 50 100
SCALE: 1" = 50'

© 2025 Microsoft Corporation © 2025 Maxar ©CNES (2025) Distribution Airbus DS

OVERALL SITE PLAN | 11X17 SCALE: 1" = 100' | 22X34 SCALE: 1" = 50' | 1

Marion County OREGON

PROJECT INFORMATION:

MARION COUNTY
METCOM911

1060 MT HOOD AVE
WOODBURN, OR 97071

	DATE	RELEASE
	07-19-24	SITE SKETCH
	10-29-24	PRELIMINARY ZONING DRAWINGS
	09-25-25	PRELIMINARY CONSTRUCTION DRAWINGS
	10-13-25	FINAL CONSTRUCTION DRAWINGS

DRAWING INFORMATION:

THIS DRAWING IS COPYRIGHTED AND IS THE SOLE PROPERTY OF THE OWNER. IT IS PRODUCED SOLELY FOR USE BY THE OWNER AND ITS AFFILIATES. REPRODUCTION OR USE OF THIS DRAWING AND/OR THE INFORMATION CONTAINED IN IT IS FORBIDDEN WITHOUT THE WRITTEN PERMISSION OF THE OWNER.

PLANS PREPARED BY:

cushing Civil Engineers

Cushing
Civil Engineers

12725 SW MILLIKAN WAY
SUITE 300
BEAVERTON, OR 97005
(503) 387-5331
www.cushingcivilengineers.com

LICENSURE:

REGISTERED PROFESSIONAL ENGINEER
83233
OREGON
JUNE 7, 2012
KENNY McMANAWAY

RENEWAL DATE 12/31/26

SHEET TITLE:

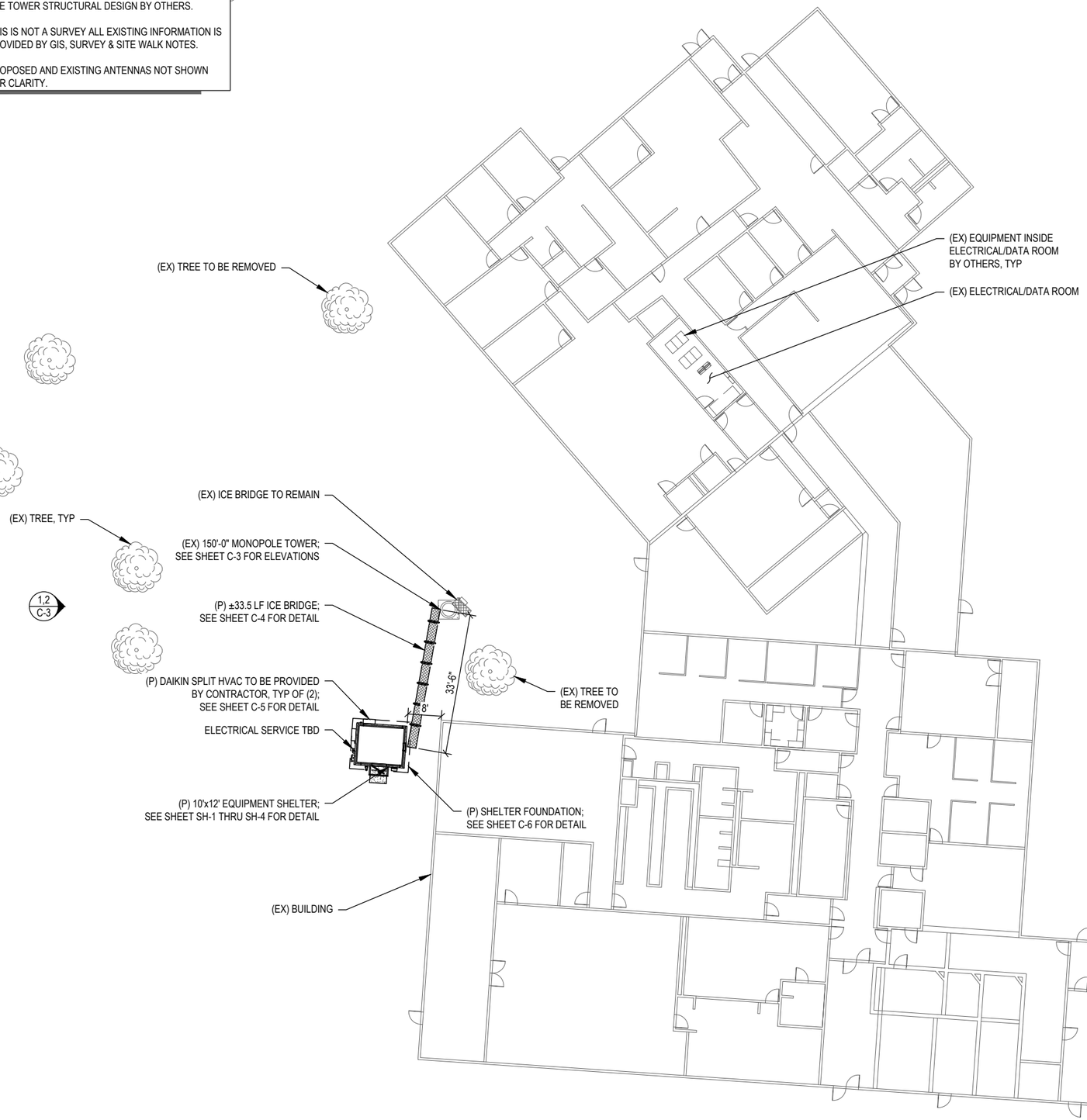
OVERALL SITE PLAN

SHEET NUMBER:

C-1

NOTES:
1. TOWER INFO SHOWN FOR CONCEPTUAL USE ONLY. SEE TOWER STRUCTURAL DESIGN BY OTHERS.
2. THIS IS NOT A SURVEY ALL EXISTING INFORMATION IS PROVIDED BY GIS, SURVEY & SITE WALK NOTES.
3. PROPOSED AND EXISTING ANTENNAS NOT SHOWN FOR CLARITY.

EXHIBIT K



Marion County OREGON

PROJECT INFORMATION:

MARION COUNTY METCOM911

1060 MT HOOD AVE
WOODBURN, OR 97071

	DATE	RELEASE
	07-19-24	SITE SKETCH
	10-29-24	PRELIMINARY ZONING DRAWINGS
	09-25-25	PRELIMINARY CONSTRUCTION DRAWINGS
	10-13-25	FINAL CONSTRUCTION DRAWINGS

DRAWING INFORMATION:
THIS DRAWING IS COPYRIGHTED AND IS THE SOLE PROPERTY OF THE OWNER. IT IS PRODUCED SOLELY FOR USE BY THE OWNER AND ITS AFFILIATES. REPRODUCTION OR USE OF THIS DRAWING AND/OR THE INFORMATION CONTAINED IN IT IS FORBIDDEN WITHOUT THE WRITTEN PERMISSION OF THE OWNER.

PLANS PREPARED BY:

cushing Civil Engineers

Cushing Civil Engineers
12725 SW MILLIKAN WAY
SUITE 300
BEAVERTON, OR 97005
(503) 387-5331
www.cushingcivilengineers.com

LICENSURE:

REGISTERED PROFESSIONAL ENGINEER 83233 OREGON JUNE 7, 2012 KENNY McMANAWAY

RENEWAL DATE 12/31/26

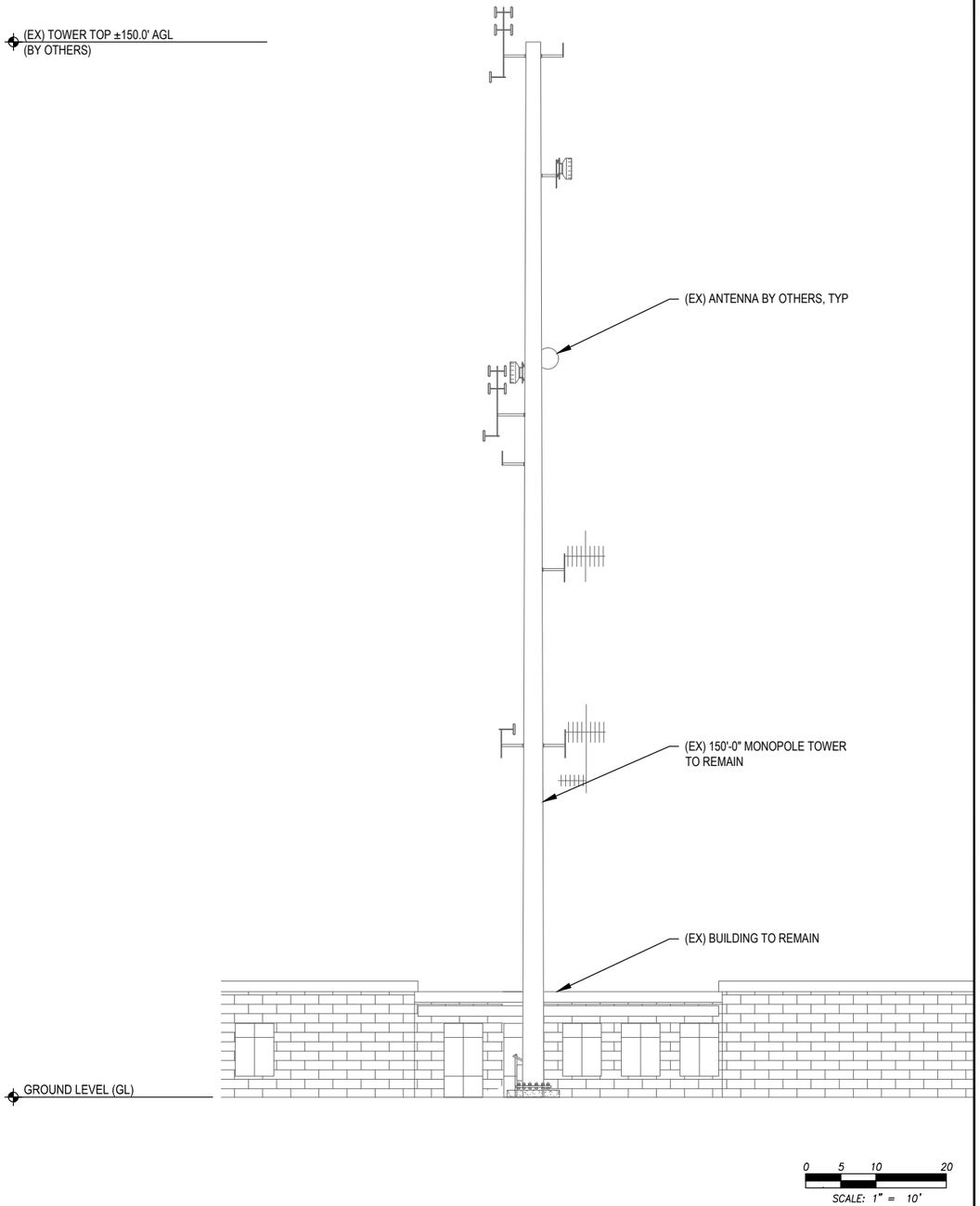
SHEET TITLE:

ENLARGED SITE PLAN

SHEET NUMBER:

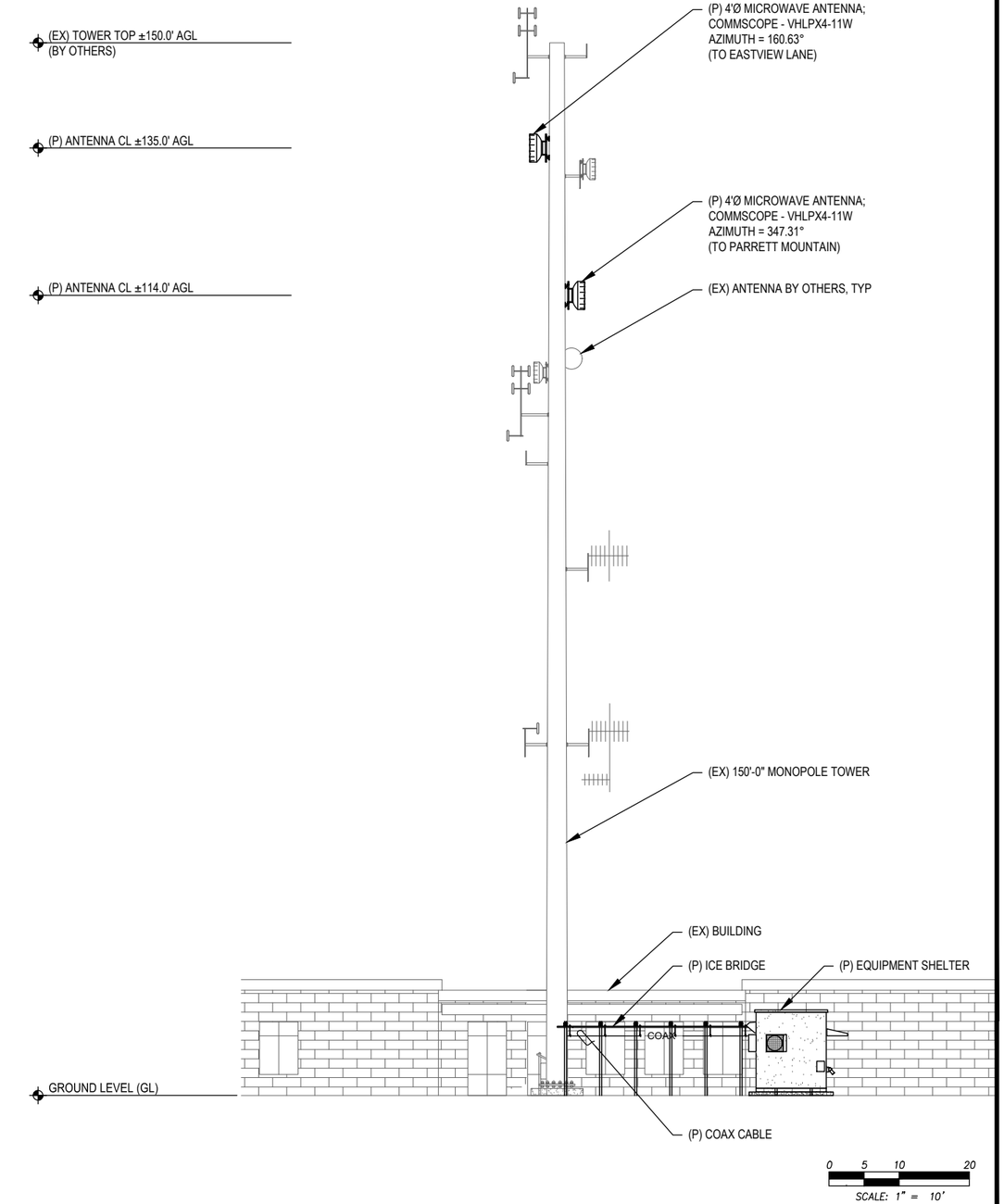
C-2

EXHIBIT K



EXISTING WEST ELEVATION | 11X17 SCALE: 1" = 20' | 22X34 SCALE: 1" = 10' | 1

NOTES:
1. TOWER INFO SHOWN FOR CONCEPTUAL USE ONLY. SEE TOWER STRUCTURAL REPORT FOR DETAIL.
2. LOADING INFORMATION PROVIDED BY TAIT COMMUNICATIONS.



PROPOSED WEST ELEVATION | 11X17 SCALE: 1" = 20' | 22X34 SCALE: 1" = 10' | 2

Marion County
OREGON

PROJECT INFORMATION:

MARION COUNTY METCOM911

1060 MT HOOD AVE
WOODBURN, OR 97071

	DATE	RELEASE
	07-19-24	SITE SKETCH
	10-29-24	PRELIMINARY ZONING DRAWINGS
	09-25-25	PRELIMINARY CONSTRUCTION DRAWINGS
	10-13-25	FINAL CONSTRUCTION DRAWINGS

DRAWING INFORMATION:

THIS DRAWING IS COPYRIGHTED AND IS THE SOLE PROPERTY OF THE OWNER. IT IS PRODUCED SOLELY FOR USE BY THE OWNER AND ITS AFFILIATES. REPRODUCTION OR USE OF THIS DRAWING AND/OR THE INFORMATION CONTAINED IN IT IS FORBIDDEN WITHOUT THE WRITTEN PERMISSION OF THE OWNER.

PLANS PREPARED BY:

cushing
Civil Engineers

Cushing
Civil Engineers

12725 SW MILLIKAN WAY
SUITE 300
BEAVERTON, OR 97005
(503) 387-5331
www.cushingcivilengineers.com

LICENSURE:

REGISTERED PROFESSIONAL ENGINEER
83233
OREGON
JUNE 7, 2012
KENNY McMANAWAY

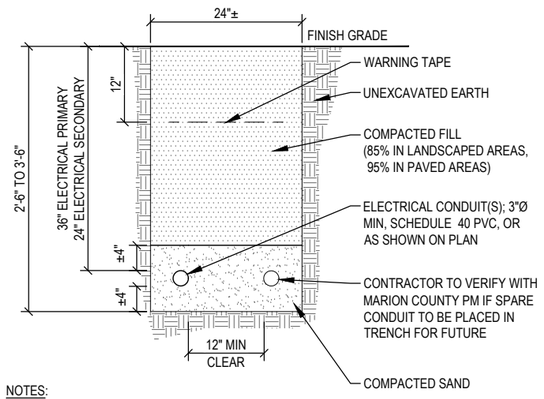
RENEWAL DATE 12/31/26

SHEET TITLE:

ELEVATIONS

SHEET NUMBER:

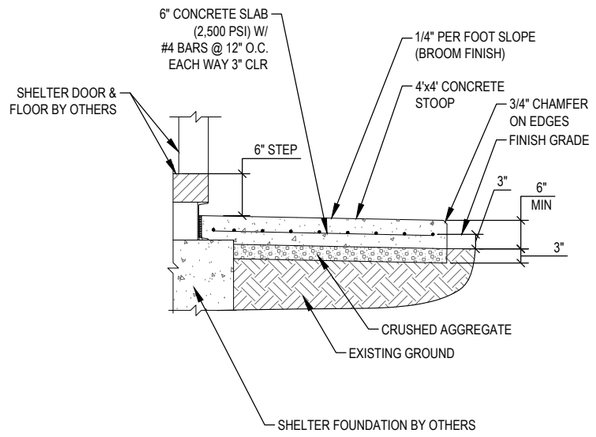
C-3



NOTES:
1. EXCAVATE TO REQUIRED DEPTH.
2. VERIFY ALL TRENCHING REQUIREMENTS PER LOCAL UTILITIES.
3. CONTRACTOR TO PROVIDE (1) 300 POUND NYLON PULL CORD AND CONDUCTORS AS REQUIRED PER CONDUIT.

POWER LINE TRENCH

SCALE: NTS | 1



STOOP SECTION DETAIL

SCALE: NTS | 2

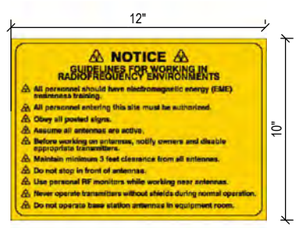
EXHIBIT K



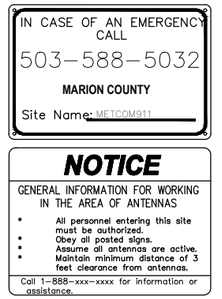
SIGN NOTES:
1. SIGN MATERIAL: 18GA ALUMINUM
2. LETTERING COLOR = BLACK
3. BACKGROUND COLOR = WHITE / RED



SIGN NOTES:
1. SIGN MATERIAL: 18GA ALUMINUM
2. LETTERING COLOR = BLACK / WHITE
3. BACKGROUND COLOR = WHITE / BLUE

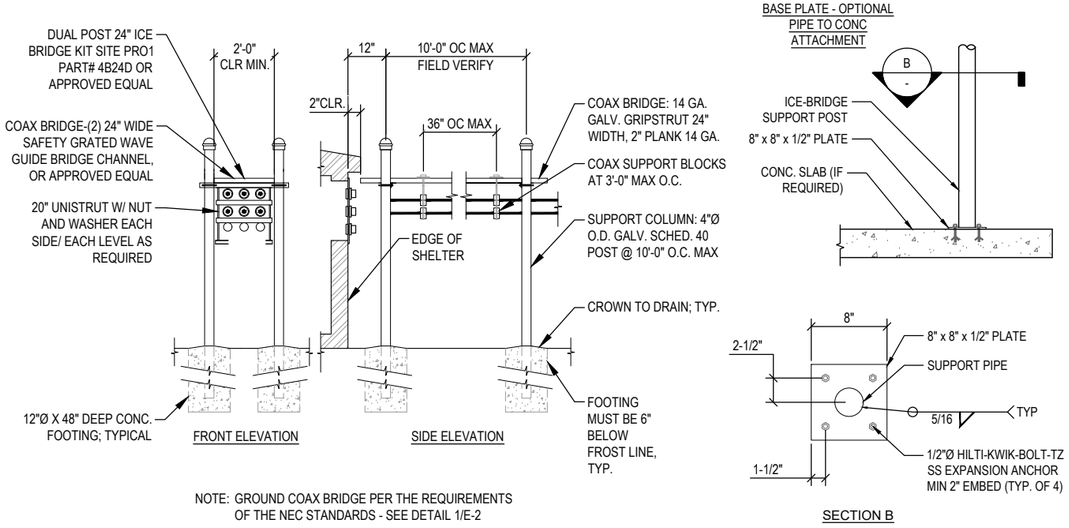


SIGN NOTES:
1. SIGN MATERIAL: 18GA ALUMINUM
2. LETTERING COLOR = BLACK
3. BACKGROUND COLOR = YELLOW



SIGN DETAILS

SCALE: NTS | 3



NOTE: GROUND COAX BRIDGE PER THE REQUIREMENTS OF THE NEC STANDARDS - SEE DETAIL 1/E-2

ICE BRIDGE DETAIL

SCALE: NTS | 4

Marion County OREGON

PROJECT INFORMATION:

MARION COUNTY METCOM911

1060 MT HOOD AVE
WOODBURN, OR 97071

	DATE	RELEASE
	07-19-24	SITE SKETCH
	10-29-24	PRELIMINARY ZONING DRAWINGS
	09-25-25	PRELIMINARY CONSTRUCTION DRAWINGS
	10-13-25	FINAL CONSTRUCTION DRAWINGS

DRAWING INFORMATION:

THIS DRAWING IS COPYRIGHTED AND IS THE SOLE PROPERTY OF THE OWNER. IT IS PRODUCED SOLELY FOR USE BY THE OWNER AND ITS AFFILIATES. REPRODUCTION OR USE OF THIS DRAWING AND/OR THE INFORMATION CONTAINED IN IT IS FORBIDDEN WITHOUT THE WRITTEN PERMISSION OF THE OWNER.

PLANS PREPARED BY:

cushing Civil Engineers

Cushing
Civil Engineers

12725 SW MILLIKAN WAY
SUITE 300
BEAVERTON, OR 97005
(503) 387-5331
www.cushingcivilengineers.com

LICENSURE:

REGISTERED PROFESSIONAL ENGINEER 83233 OREGON JUNE 7, 2012 KENNY McMANAWAY

RENEWAL DATE 12/31/26

SHEET TITLE:

COMPOUND DETAILS

SHEET NUMBER:

C-4

EXHIBIT K

Job Name:	
Tag#	

DAIKIN

Submittal Data Sheet — FTX36NVJU / RX36NMVJUA

3-Ton Wall Mounted Heat Pump System





10 YEAR PARTS LIMITED WARRANTY

Complete warranty details available from your local dealer or at www.daikincomfort.com. Warranty registration not required to receive the 10-Year parts limited warranty for residential or commercial installations.

Efficiency

Cooling		Heating	
SEER	15.9	HSPF	9.2
EER	9.10	COP	2.78

Performance

Cooling (Btu/hr)	
Rated (Min/Max)	34,400 (10,200 / 34,400)
Sensible @ AHRI	22,160
Standard Operating Range	50°F – 115°F
Extended Operating Range*	-4°F – 115°F

Rated Cooling Conditions: Indoor: 80°F DB/67°F WB; Outdoor: 95°F DB/75°F WB

***With field settings and wind baffle**

Heating (Btu/hr)	
1:@ 47° Rated (Min/Max)	36,000 (10,200 / 36,000)
2: @ 17° Rated	22,800
3: @ 5°	15,740
Operating Range	5 – 65°F

1: Rated Heating Conditions: Indoor: 70°F DB/60°F WB; Outdoor: 47°F DB/43°F WB

2: Rated Heating Conditions: Indoor: 70°F DB/60°F WB; Outdoor: 17°F DB/15°F WB

3: Heating Conditions: Indoor: 70°F DB/60°F WB; Outdoor: 5°F DB/5°F WB

Indoor Specifications

	Cooling		Heating	
Airflow Rate (cfm)	H	M	H	M
	915	742	960	791
	L	SL	L	SL
	572	512	629	544
Sound (dBA) H / M / L / SL	54 / 47 / 40 / 37		53 / 46 / 38 / 35	
Dimensions (H × W × D) (in)	13-3/8 × 47-1/4 × 10-3/16			
Weight (Lbs)	38			

Outdoor Specifications

Compressor	Hermetically Sealed Swing Type			
Refrigerant	R-410A			
Factory Charge (Lbs)	3.64			
Refrigerant Oil	PVE (FVC50K)			
Airflow Rate (cfm)	Cooling		Heating	
	H	2,811	H	2,352
Sound Pressure Level (dBA)	59			
Dimensions (H × W × D) (in)	28-15/16 × 34-1/4 × 12-5/8			
Weight (Lbs)	133			

Electrical

	208/60/1	230/60/1
System MCA	19.8	19.8
System MFA	20	20
Compressor RLA	18.25	18.25
Outdoor fan motor FLA	.83	.83
Outdoor fan motor W	123	123
Indoor fan motor FLA	.37	.37
Indoor fan motor W	64	64

MFA: Max. fuse amps **MCA:** Min. circuit amps (A) **FLA:** Full load amps (A)
RLA: Rated load amps (A) **W:** Fan motor rated output (W)

Piping

Liquid (in)	1/4
Gas (in)	5/8
Drain (in)	5/8
Max. Interunit Piping Length (ft)	98.4
Max. Interunit Height Difference (ft)	65.625
Chargeless (ft)	32.8
Additional Charge of Refrigerant (oz/ft)	.32

Daikin North America LLC 5151 San Felipe, Suite 500 Houston, TX 77056

(Daikin's products are subject to continuous improvements. Daikin reserves the right to modify product design, specifications and information in this data sheet without notice and without incurring any obligations)

Submittal Revision Date: October 2021

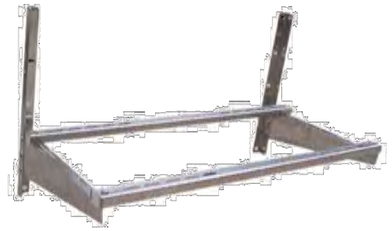
DAIKIN HEAT PUMP - FTX36NVJU / RX36NMVJUA SCALE: NTS | 1

hotspot energy

Optional Exterior Wall Mount For Air Conditioner Condensing Unit

Used to mount the outdoor air conditioning unit on an exterior wall to protect unit from snowdrift, flood, or for installation convenience.

Use Only All Stainless Steel





Above mounting hardware images for reference only. Products available through online sellers such as Lowes, Home Depot, Amazon. Not provided by HotSpot Energy.

Copyright 2023 HotSpot Energy INC

CONDENSING UNIT WALL MOUNT SCALE: NTS | 2

Marion County OREGON

PROJECT INFORMATION:

MARION COUNTY METCOM911

1060 MT HOOD AVE
WOODBURN, OR 97071

	DATE	RELEASE
	07-19-24	SITE SKETCH
	10-29-24	PRELIMINARY ZONING DRAWINGS
	09-25-25	PRELIMINARY CONSTRUCTION DRAWINGS
	10-13-25	FINAL CONSTRUCTION DRAWINGS

DRAWING INFORMATION:

THIS DRAWING IS COPYRIGHTED AND IS THE SOLE PROPERTY OF THE OWNER. IT IS PRODUCED SOLELY FOR USE BY THE OWNER AND ITS AFFILIATES. REPRODUCTION OR USE OF THIS DRAWING AND/OR THE INFORMATION CONTAINED IN IT IS FORBIDDEN WITHOUT THE WRITTEN PERMISSION OF THE OWNER.

PLANS PREPARED BY:

cushing Civil Engineers

Cushing
Civil Engineers

12725 SW MILLIKAN WAY
SUITE 300
BEAVERTON, OR 97005
(503) 387-5331
www.cushingcivilengineers.com

LICENSURE:

REGISTERED PROFESSIONAL ENGINEER 83233 OREGON JUNE 7, 2012 KENNY McMANAWAY

RENEWAL DATE 12/31/26

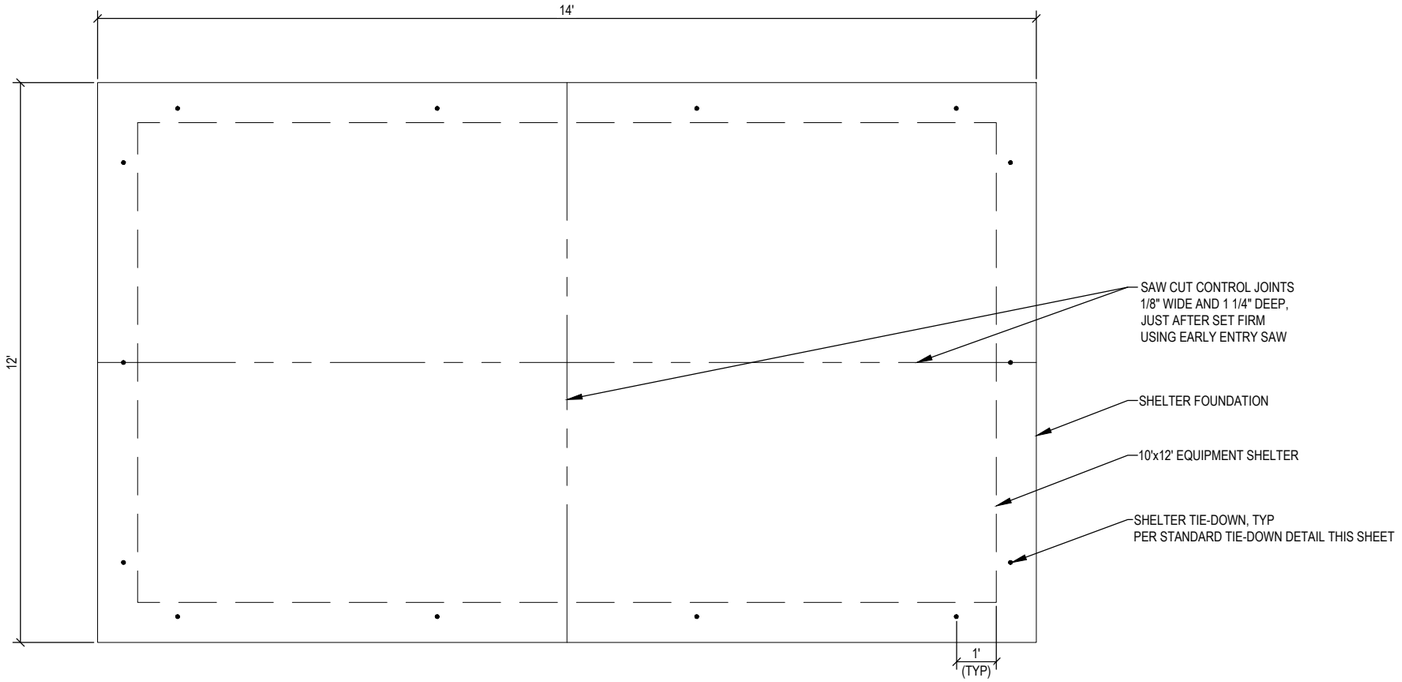
SHEET TITLE:

HVAC DETAILS

SHEET NUMBER:

C-5

EXHIBIT K

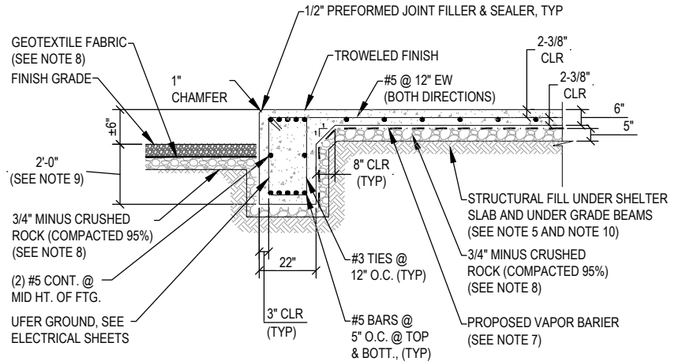


NOTES:

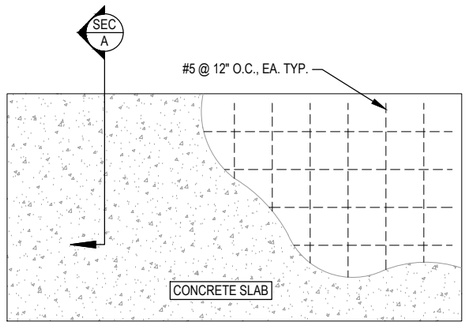
1. ULTIMATE COMPRESSIVE STRENGTH OF CONCRETE AT 28 DAYS SHALL BE 3000 PSI, UNLESS OTHERWISE SPECIFIED.
2. REINFORCING BARS SHALL BE DEFORMED BARS CONFORMING TO ASTM A615 "DEFORMED AND PLAIN BILLET STEEL BARS FOR CONCRETE REINFORCEMENT," LATEST EDITION, GRADE 60.
3. LAP LENGTH FOR SPLICES SHALL NOT BE LESS THAN CLASS B SPLICE, UNLESS OTHERWISE SPECIFIED. WELDING OF REINFORCEMENT WILL NOT BE PERMITTED.
4. CONTRACTOR MAY USE EARTH FORMS FOR UNEXPOSED CONCRETE WHERE SOIL IS FIRM AND STABLE. EARTH FORMS SHALL BE TRENCHED NEATLY AND ACCURATELY. SIDES OF FOUNDATIONS, WHERE EARTH SLOUGHS, SHALL BE FORMED. EARTH FORMS SHALL BE TAMPED FIRM, AND CLEANED OF ALL DEBRIS AND LOOSE MATERIAL, BEFORE DEPOSITING CONCRETE.
5. STRUCTURAL FILL USED FOR SITE GRADING SHALL BE FREE FROM TOP SOIL, ORGANIC CONTAMINATED SOIL, AND ROCK FRAGMENTS HAVING A MAXIMUM DIMENSION GREATER THAN 3 INCHES. MATERIAL SHALL BE CLEAN AND SHALL BE SUBJECT TO THE FOLLOWING RESTRICTIONS.

   SILT CLAYS OR SANDY CLAY
   PLASTICITY INDEX 10 TO 24
   LIQUID LIMIT <45

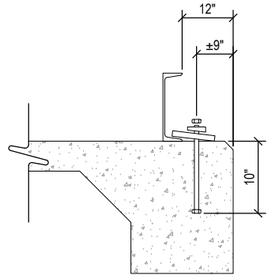
   CLAYEY SANDS OR SLIGHTLY CLAYEY SILTY SANDS
   PLASTICITY INDEX 3 TO 15
   LIQUID LIMIT <35
6. MINIMUM CONCRETE COVER FOR REINFORCEMENT SHALL BE 3 INCHES FOR CONCRETE CAST AGAINST AND PERMANENTLY EXPOSED EARTH AND 1-1/2 INCHES FOR TOP BARS ON SIDEWALK AND SHELTER FOUNDATIONS.
7. VAPOR BARRIER SHALL BE VAPORBLOCK 10, OR APPROVED EQUAL.
8. CRUSHED ROCK AND GEOTEXTILE FABRIC IN THE COMPOUND AREA SHALL MEET THE REQUIREMENTS OF DETAIL 3 ON DWG C-5 AND ALL APPLICABLE GRADING NOTES.
9. IN INSTANCES WHERE ROCK IS ENCOUNTERED AT LESS THAN 2'-0", CONCRETE MAY BEAR ON THE ROCK.
10. PAINT SHEAR PLATES WITH COLD GALV.



SECTION A



FOUNDATION PLAN



STANDARD TIE-DOWN DETAIL

NOTES:

1. TIEDOWN HARDWARE:
   - 1.1. CLAMP PLATE, 3/8"x3"x4" GALV. STEEL
   - 1.2. 1/2" BEVEL WASHER
   - 1.3. ANCHOR BOLT- 1/2-10x12" HEX HEAD
   - 1.4. 1/2"-10 HEAVY HEX NUT BY OTHERS.

EQUIPMENT SHELTER FOUNDATION PLAN

SCALE: NTS | 1

Marion County OREGON

PROJECT INFORMATION:

MARION COUNTY METCOM911

1060 MT HOOD AVE
WOODBURN, OR 97071

	DATE	RELEASE
	07-19-24	SITE SKETCH
	10-29-24	PRELIMINARY ZONING DRAWINGS
	09-25-25	PRELIMINARY CONSTRUCTION DRAWINGS
	10-13-25	FINAL CONSTRUCTION DRAWINGS

DRAWING INFORMATION:

THIS DRAWING IS COPYRIGHTED AND IS THE SOLE PROPERTY OF THE OWNER. IT IS PRODUCED SOLELY FOR USE BY THE OWNER AND ITS AFFILIATES. REPRODUCTION OR USE OF THIS DRAWING AND/OR THE INFORMATION CONTAINED IN IT IS FORBIDDEN WITHOUT THE WRITTEN PERMISSION OF THE OWNER.

PLANS PREPARED BY:

cushing Civil Engineers

Cushing
Civil Engineers

12725 SW MILLIKAN WAY
SUITE 300
BEAVERTON, OR 97005
(503) 387-5331
www.cushingcivilengineers.com

LICENSURE:

REGISTERED PROFESSIONAL ENGINEER
83233
OREGON
JUNE 7, 2012
KENNY McMANAWAY

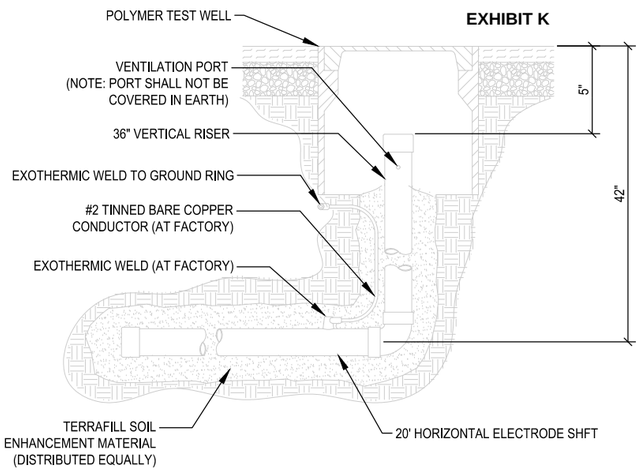
RENEWAL DATE 12/31/26

SHEET TITLE:

EQUIPMENT SHELTER FOUNDATION PLAN

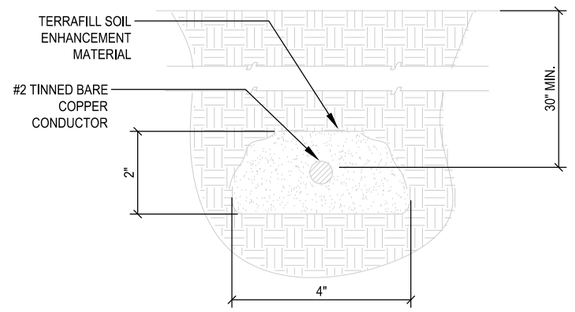
SHEET NUMBER:

C-6



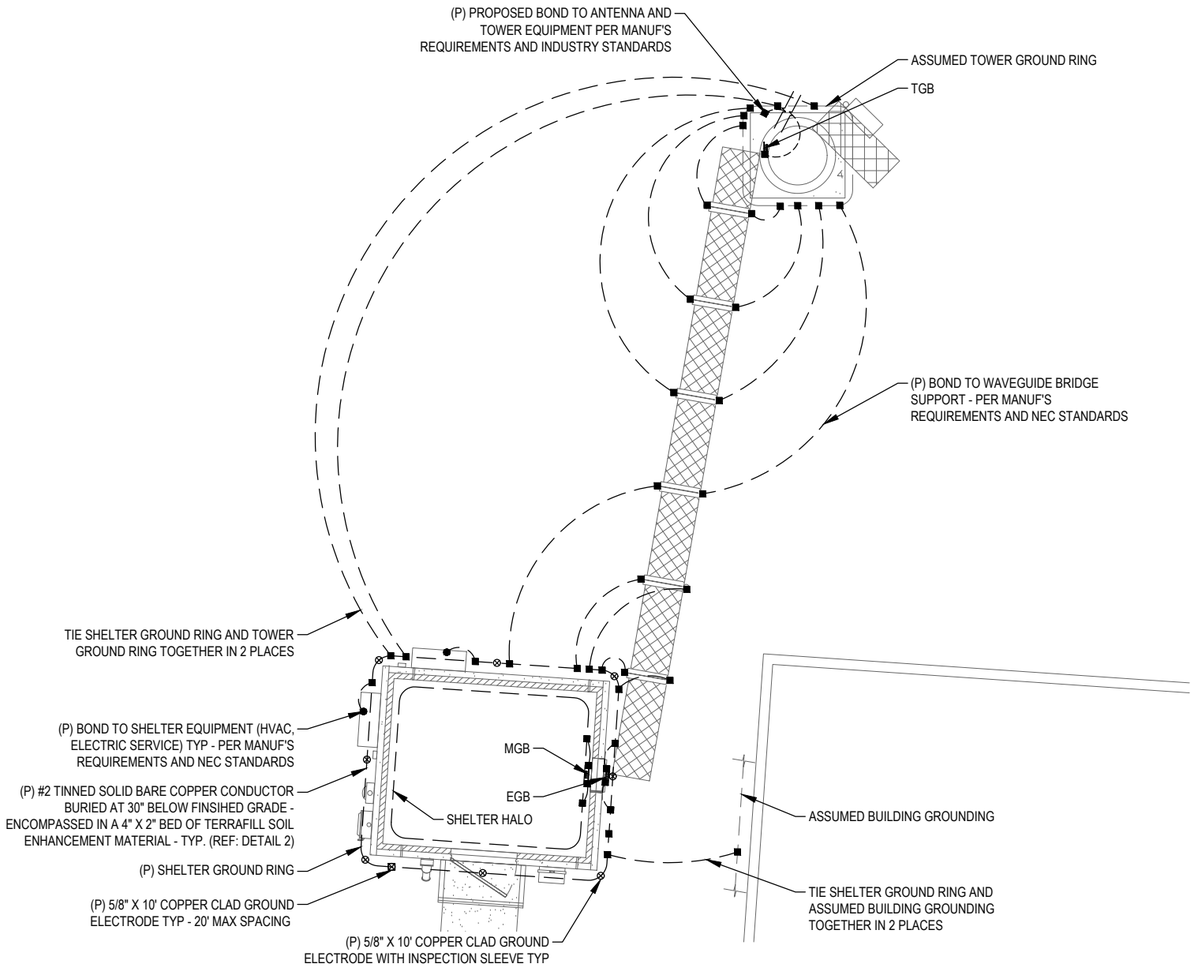
TERRADYNE ELECTROLYTIC GROUND ELECTRODE

SCALE: NTS | 3



SOIL ENHANCEMENT DETAIL

SCALE: NTS | 2



SITE COMPOUND GROUNDING PLAN

11X17 SCALE: 1" = 8' | 22X34 SCALE: 1" = 4' | 1

GENERAL NOTES:

1. ALL INSTALLATIONS ARE TO BE FIELD VERIFIED.
2. GROUND CONDUCTORS ARE TO BE BURIED AT A MINIMUM 30" BELOW GRADE OR 6" BELOW FREEZE LINE, WHICHEVER IS GREATER.
3. ALL BELOW GRADE GROUNDING CONDUCTORS ARE TO BE ENCOMPASSED IN A 2" X 4" BED OF SOIL ENHANCEMENT MATERIAL.
4. BONDS TO FENCE POSTS ARE TO BE MADE AT 12" ABOVE GRADE WHERE APPLICABLE.
5. NO CONDUCTOR SHALL HAVE A BEND IN RADIUS OF LESS THAN 12" AND SHALL NOT EXCEED 90 DEGREES.
6. TERRADYNE ELECTROLYTIC GROUND ELECTRODES ARE NOT TO SHARE THE SAME TRENCH AS GROUNDING CONDUCTOR, NOR RUN IN A PARALLEL PATH TO THE CONDUCTOR.
7. ALL GROUND SYSTEMS ARE TO BE MADE COMMON.
8. ALL BONDS ARE TO BE COATED WITH ANTI-OXIDATION COMPOUND.
9. WHERE STANDARD GROUND ELECTRODES ARE UNABLE TO BE DRIVEN, 12" X 12" X 1/8" COPPER GROUND PLATES SHALL BE INSTALLED 30" BELOW FINISHED GRADE & ENCOMPASSED IN 50LBS OF TERRAFILL SOIL ENHANCEMENT MATERIAL.

LEGEND:

- TERRADYNE TG-100L-H36-2T-36-4F-P SERIES ELECTRODE W/ INSPECTION WELL
- EXOTHERMIC WELD
- MECHANICAL CONNECTION
- 5/8" X 10' COPPER CLAD GROUND ELECTRODE
- 5/8" X 10' COPPER CLAD GROUND ELECTRODE WITH INSPECTION SLEEVE
- #2 TINNED SOLID COPPER CONDUCTOR

Marion County OREGON

PROJECT INFORMATION:

MARION COUNTY METCOM911

1060 MT HOOD AVE
WOODBURN, OR 97071

	DATE	RELEASE
	07-19-24	SITE SKETCH
	10-29-24	PRELIMINARY ZONING DRAWINGS
	09-25-25	PRELIMINARY CONSTRUCTION DRAWINGS
	10-13-25	FINAL CONSTRUCTION DRAWINGS

DRAWING INFORMATION:

THIS DRAWING IS COPYRIGHTED AND IS THE SOLE PROPERTY OF THE OWNER. IT IS PRODUCED SOLELY FOR USE BY THE OWNER AND ITS AFFILIATES. REPRODUCTION OR USE OF THIS DRAWING AND/OR THE INFORMATION CONTAINED IN IT IS FORBIDDEN WITHOUT THE WRITTEN PERMISSION OF THE OWNER.

PLANS PREPARED BY:

cushing Civil Engineers

Cushing Civil Engineers
12725 SW MILLIKAN WAY
SUITE 300
BEAVERTON, OR 97005
(503) 387-5331
www.cushingcivilengineers.com

LICENSURE:

REGISTERED PROFESSIONAL ENGINEER
83233
OREGON
JUNE 7, 2012
KENNY McMANAWAY

RENEWAL DATE 12/31/26

SHEET TITLE:

SITE GROUNDING PLAN & DETAILS

SHEET NUMBER:

E-1

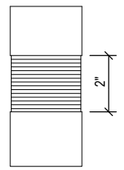


FIGURE 1

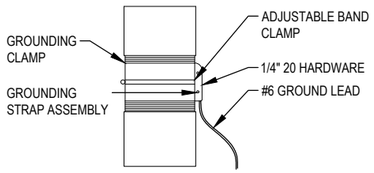


FIGURE 2

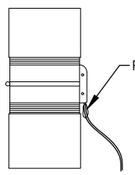


FIGURE 3

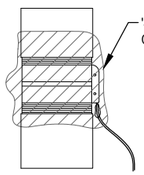


FIGURE 4

EXHIBIT K

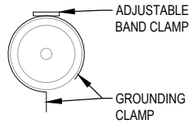


FIGURE 5

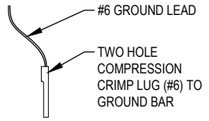
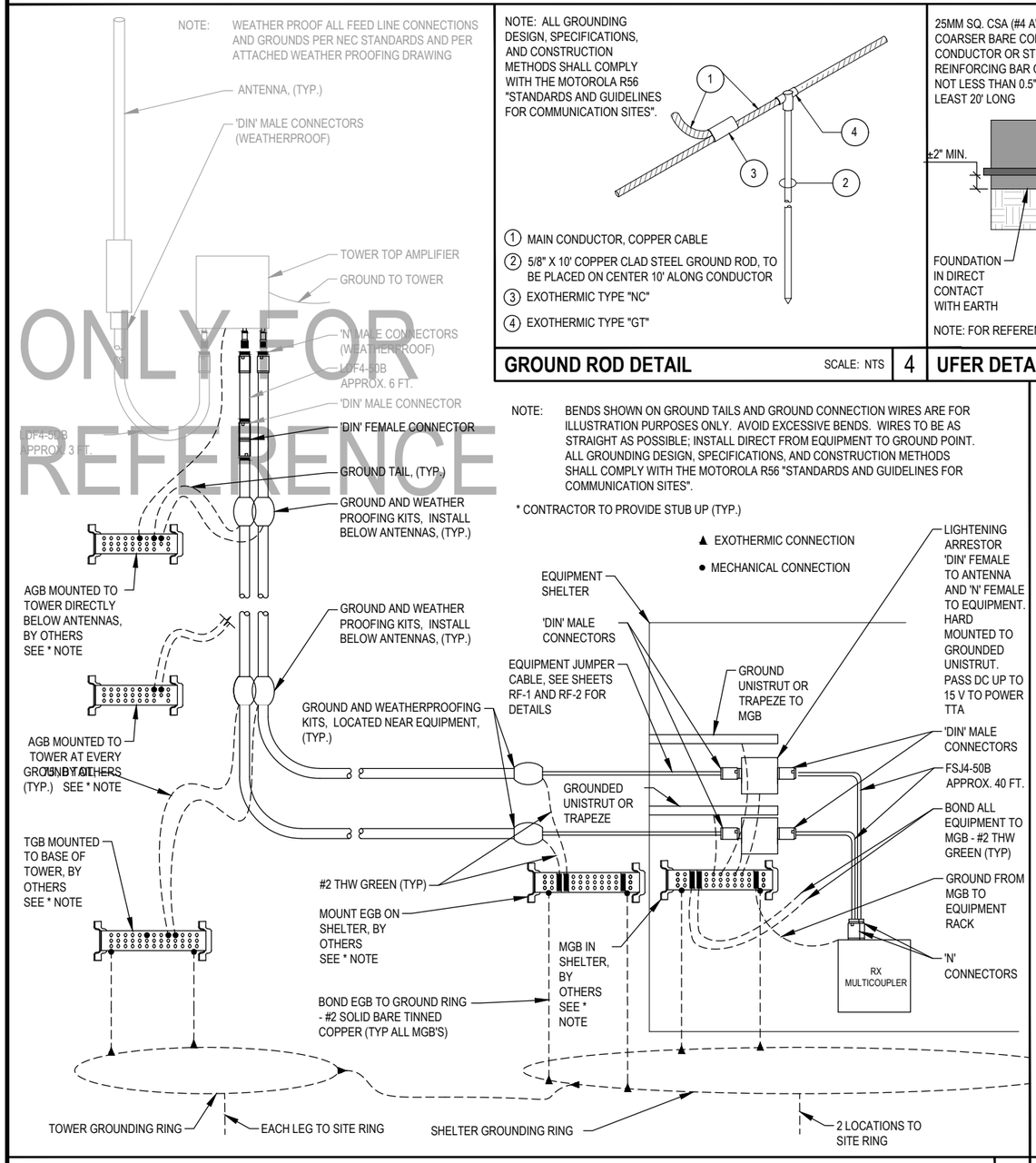


FIGURE 6

NOTE: NOT GC

FEED LINE CABLE GROUNDING

SCALE: NTS | 2



ONLY FOR REFERENCE

STANDARD RX GROUNDING SCHEMATICS

SCALE: NTS | 1

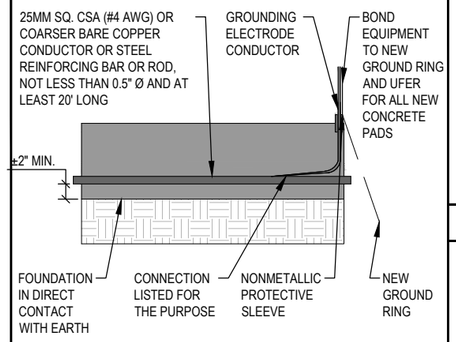
NOTE: BENDS SHOWN ON GROUND TAILS AND GROUND CONNECTION WIRES ARE FOR ILLUSTRATION PURPOSES ONLY. AVOID EXCESSIVE BENDS. WIRES TO BE AS STRAIGHT AS POSSIBLE; INSTALL DIRECT FROM EQUIPMENT TO GROUND POINT. ALL GROUNDING DESIGN, SPECIFICATIONS, AND CONSTRUCTION METHODS SHALL COMPLY WITH THE MOTOROLA R56 "STANDARDS AND GUIDELINES FOR COMMUNICATION SITES".

NOTE: ALL GROUNDING DESIGN, SPECIFICATIONS, AND CONSTRUCTION METHODS SHALL COMPLY WITH THE MOTOROLA R56 "STANDARDS AND GUIDELINES FOR COMMUNICATION SITES".

1. MAIN CONDUCTOR, COPPER CABLE
2. 5/8" X 10' COPPER CLAD STEEL GROUND ROD, TO BE PLACED ON CENTER 10' ALONG CONDUCTOR
3. EXOTHERMIC TYPE "NC"
4. EXOTHERMIC TYPE "GT"

GROUND ROD DETAIL

SCALE: NTS | 4



NOTE: FOR REFERENCE ONLY

UFER DETAIL

SCALE: NTS | 5

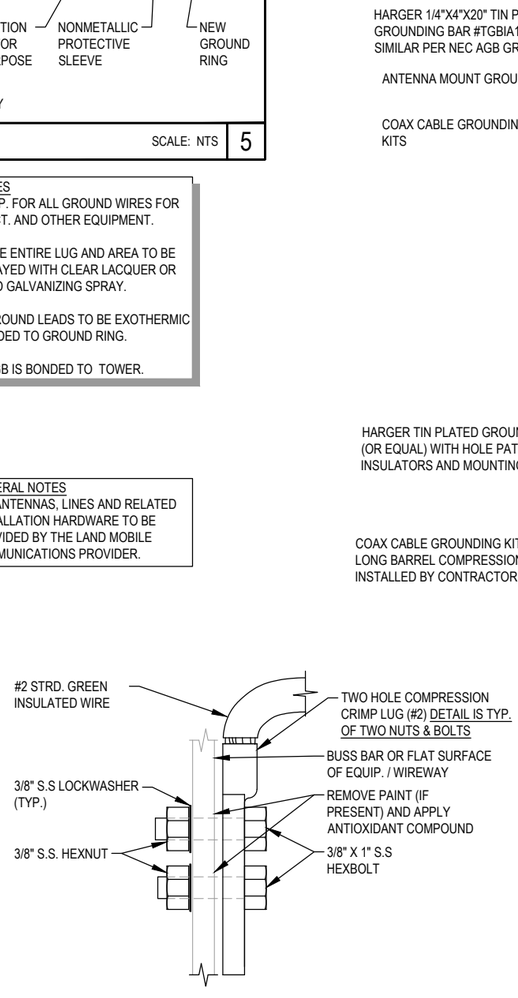
NOTES
1. TYP. FOR ALL GROUND WIRES FOR ELECT. AND OTHER EQUIPMENT.

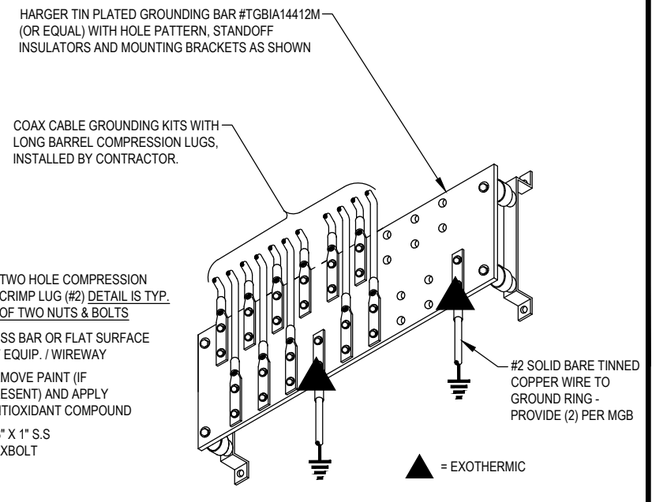
2. THE ENTIRE LUG AND AREA TO BE SPRAYED WITH CLEAR LACQUER OR COLD GALVANIZING SPRAY.

3. GROUND LEADS TO BE EXOTHERMIC WELDED TO GROUND RING.

4. AGB IS BONDED TO TOWER.

GENERAL NOTES
ALL ANTENNAS, LINES AND RELATED INSTALLATION HARDWARE TO BE PROVIDED BY THE LAND MOBILE COMMUNICATIONS PROVIDER.

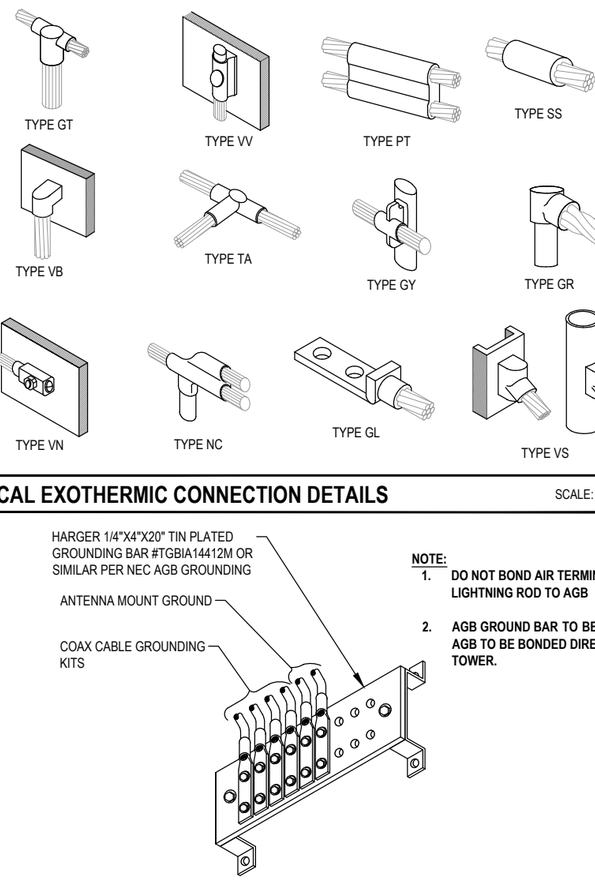




MGB (AT BASE OF TOWER AND EQUIPMENT)

GROUND BAR DETAILS

SCALE: NTS | 6



TYPICAL EXOTHERMIC CONNECTION DETAILS

SCALE: NTS | 3

NOTE:
1. **DO NOT BOND AIR TERMINAL OR LIGHTNING ROD TO AGB**
2. **AGB GROUND BAR TO BE PLATED. AGB TO BE BONDED DIRECTLY TO TOWER.**

AGB (AT ANTENNAS)

Marion County OREGON

PROJECT INFORMATION:

MARION COUNTY METCOM911

1060 MT HOOD AVE
WOODBURN, OR 97071

	DATE	RELEASE
	07-19-24	SITE SKETCH
	10-29-24	PRELIMINARY ZONING DRAWINGS
	09-25-25	PRELIMINARY CONSTRUCTION DRAWINGS
	10-13-25	FINAL CONSTRUCTION DRAWINGS

DRAWING INFORMATION:
THIS DRAWING IS COPYRIGHTED AND IS THE SOLE PROPERTY OF THE OWNER. IT IS PRODUCED SOLELY FOR USE BY THE OWNER AND ITS AFFILIATES. REPRODUCTION OR USE OF THIS DRAWING AND/OR THE INFORMATION CONTAINED IN IT IS FORBIDDEN WITHOUT THE WRITTEN PERMISSION OF THE OWNER.

PLANS PREPARED BY:

cushing Civil Engineers

Cushing Civil Engineers
12725 SW MILLIKAN WAY
SUITE 300
BEAVERTON, OR 97005
(503) 387-5331
www.cushingcivilengineers.com

LICENSURE:

REGISTERED PROFESSIONAL ENGINEER 83233 OREGON JUNE 7, 2012 KENNY McMANAWAY

RENEWAL DATE 12/31/26

SHEET TITLE:

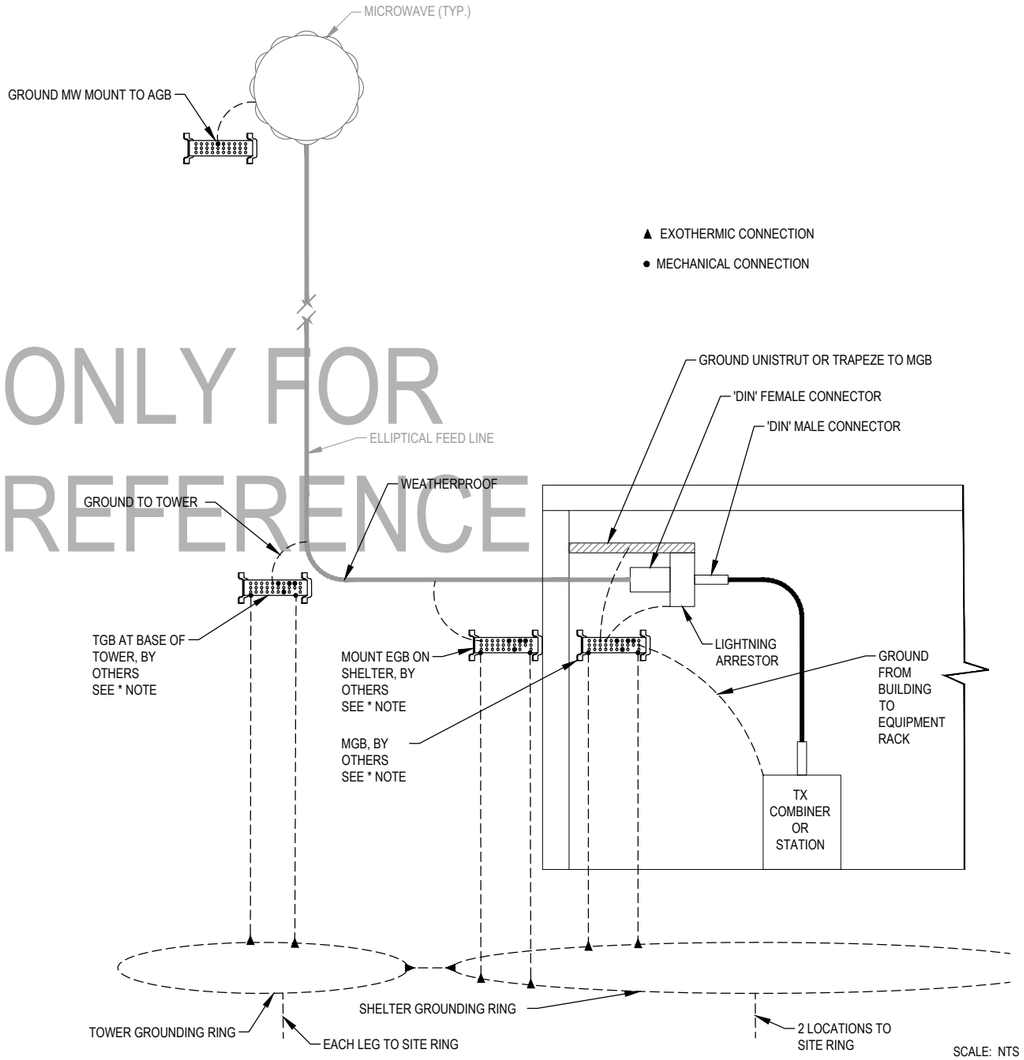
GROUNDING DETAILS I

SHEET NUMBER:

E-2

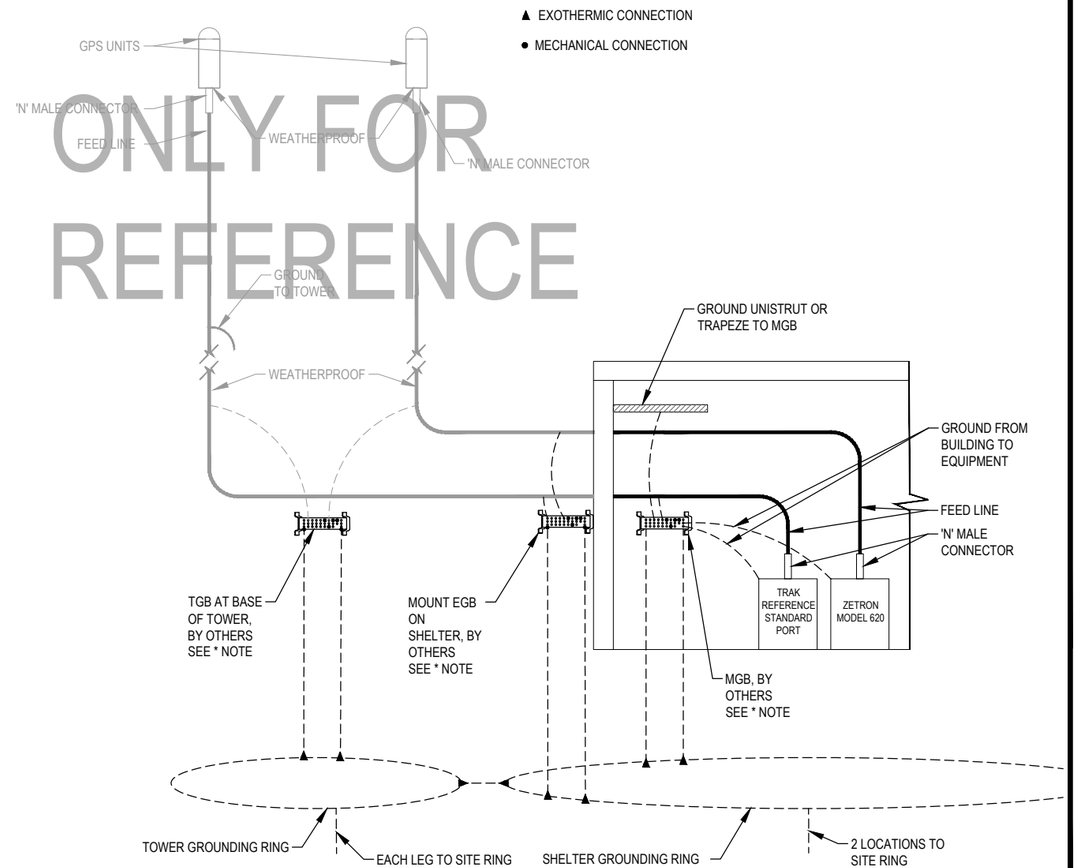
EXHIBIT K

NOTE:
TOWER INFO SHOWN FOR CONCEPTUAL USE ONLY. SEE TOWER STRUCTURAL REPORT BY OTHERS.



SCALE: NTS

TYPICAL MICROWAVE ANTENNA GROUNDING SCHEMATICS | 1



SCALE: NTS

TYPICAL GPS ANTENNA GROUNDING SCHEMATICS | 2

Marion County
OREGON

PROJECT INFORMATION:

MARION COUNTY METCOM911

1060 MT HOOD AVE
WOODBURN, OR 97071

	DATE	RELEASE
	07-19-24	SITE SKETCH
	10-29-24	PRELIMINARY ZONING DRAWINGS
	09-25-25	PRELIMINARY CONSTRUCTION DRAWINGS
	10-13-25	FINAL CONSTRUCTION DRAWINGS

DRAWING INFORMATION:

THIS DRAWING IS COPYRIGHTED AND IS THE SOLE PROPERTY OF THE OWNER. IT IS PRODUCED SOLELY FOR USE BY THE OWNER AND ITS AFFILIATES. REPRODUCTION OR USE OF THIS DRAWING AND/OR THE INFORMATION CONTAINED IN IT IS FORBIDDEN WITHOUT THE WRITTEN PERMISSION OF THE OWNER.

PLANS PREPARED BY:

cushing Civil Engineers

Cushing Civil Engineers
12725 SW MILLIKAN WAY
SUITE 300
BEAVERTON, OR 97005
(503) 387-5331
www.cushingcivilengineers.com

LICENSURE:

REGISTERED PROFESSIONAL ENGINEER
83233
OREGON
JUNE 7, 2012
KENNY McMANAWAY

RENEWAL DATE 12/31/26

SHEET TITLE:

GROUNDING DETAILS II

SHEET NUMBER:

E-3

SITE INFORMATION	
SITE NAME	**METCOM911**

LOCATION INFORMATION			
COUNTY	MARION COUNTY		
STREET ADDRESS	1060 MT HOOD AVE		
CITY	WOODBURN	STATE	OR
ZIP CODE	97071		
LATITUDE (DEC.)/(DEG)	45.150950 / 45° 09'03.4" N		
LONGITUDE (DEC.)/(DEG)	-122.843472 / 122°50'36.5" W		

TOWER INFORMATION			
STRUCTURE	MONOPOLE	TOWER MANUFACTURER	SABRE
TOWER OWNER	METCOM	SERIAL/MODEL #	07 07143
GROUND ELEVATION	±186'	# OF APPURTENANCE	-
# OF LEGS	-	HIGHEST POINT W/ ANT	-
TOWER HEIGHT W/O ANT	150'		

EXHIBIT K

#	Description	Part Number	Length (ft)	Leg/Face	Status	Base Height (ft)	Centerline Height(ft)	Tip Height (ft)	Antenna Azimuth	Mount Azimuth	Mount	Transmission Line Size/Type
1	Microwave - Parrett Mtn	VHLP4-11W	4.0	N	New	112	114	116	347.31	347.31	Standard w/ tieback	EW90
2	Microwave - Eastview Lane	VHLP4-11W	4.0	SE	New	133	135	137	160.61	160.61	Standard w/ tieback	EW90
3	Dipole-1	Corner reflector dipole	4.0	SW	Existing	48	50	52	S	SW	Standoff	
4	Yagi-1		1.0	SE	Existing	48	48	49	S	SE	Standard	
5	Dipole-2	1 element	2.0	NE	Existing	51	52	53	NW	NE	Standoff	
6	Yagi-2		1.0	SW	Existing	45	45	46	N	SW	Standoff	
7	Dipole-3	Corner reflector dipole	4.0	NE	Existing	73	75	77	SW	NE	Standoff	
8	Dipole-4	1 element	2.0	NE	Existing	97	98	99	N	NE	Standoff	
9	Microwave-1		3.0	NE	Existing	102	103	105	NE	NE	Standard	
10	Microwave-2		4.0	W	Existing	103	105	107	W	W	Standard	
11	Yagi-3		1.0	S	Existing	98	98	99	S	S	Standoff	
12	Dipole-5	1 element	2.0	SE	Existing	100	101	102	SE	SE	Standoff	
13	Microwave-3		3.0	W	Existing	131	132	134	SW	W	Standoff	
14	Omni-1		2.0	SW	Existing	149	150	151	SW	SW	Standoff	
15	Dipole-6	1 element	2.0	N	Existing	144	145	146	N	N	Standoff	
16	Dipole-7	4 element	5.0	NE	Existing	150	152	155	NE	NE	Standoff	
17	Omni-2		2.0	NE	Existing	89	90	91	NE	NE	Standoff	
18	Dipole-8	4 element	5.0	NE	Existing	99	101	104	NE	NE	Standoff	
19	Yagi-4		1.0	SE	Existing	43	43	44	W	SE	Standoff	

= estimated value based on survey documentation and photos

NOTE:

INFORMATION FROM TAIT COMMUNICATIONS' DOCUMENT DATED 08/13/2025 PROVIDED BY MARION COUNTY.

PROVISIONAL

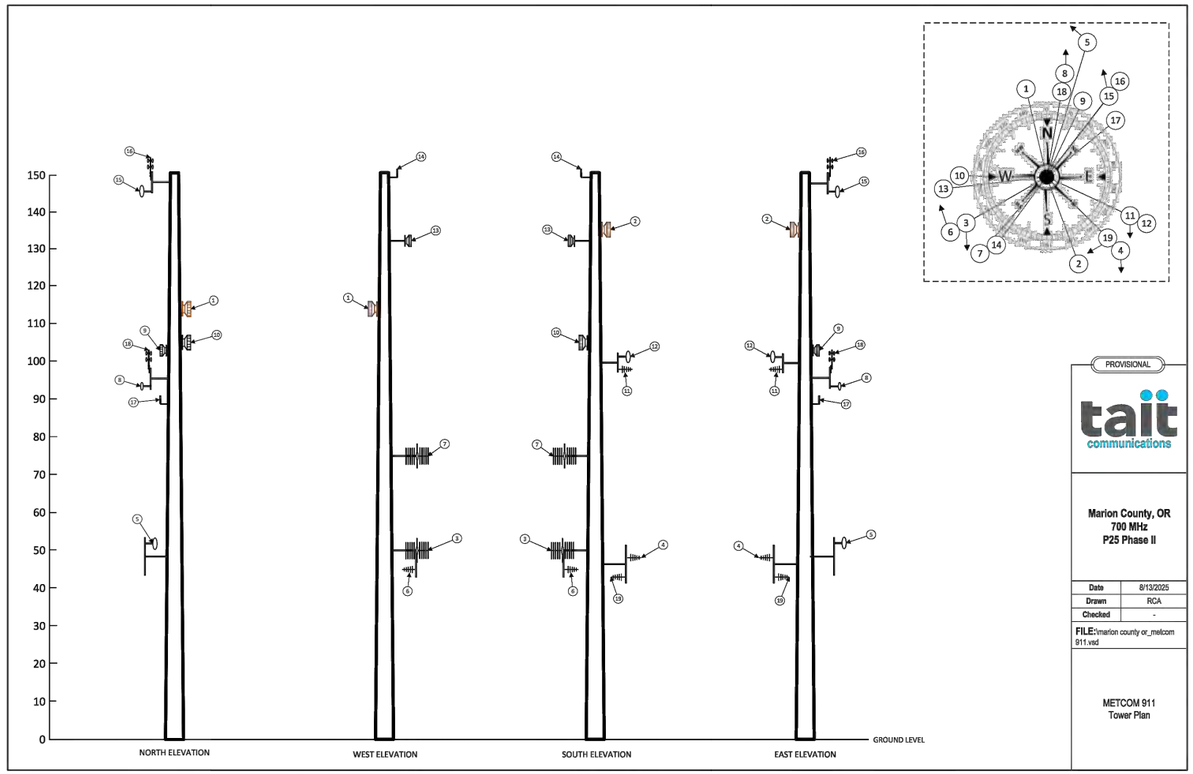
tait communications

Marion County, OR
700 MHz
P25 Phase II

Date	8/13/2025
Drawn	RCA
Checked	-

FILE:\marion county or_metcom 911.vsd

METCOM 911
Appurtenance Chart



PROVISIONAL

tait communications

Marion County, OR
700 MHz
P25 Phase II

Date	8/13/2025
Drawn	RCA
Checked	-

FILE:\marion county or_metcom 911.vsd

METCOM 911
Tower Plan

Marion County
OREGON

PROJECT INFORMATION:

MARION COUNTY
METCOM911

1060 MT HOOD AVE
WOODBURN, OR 97071

	DATE	RELEASE
	07-19-24	SITE SKETCH
	10-29-24	PRELIMINARY ZONING DRAWINGS
	09-25-25	PRELIMINARY CONSTRUCTION DRAWINGS
	10-13-25	FINAL CONSTRUCTION DRAWINGS

DRAWING INFORMATION:

THIS DRAWING IS COPYRIGHTED AND IS THE SOLE PROPERTY OF THE OWNER. IT IS PRODUCED SOLELY FOR USE BY THE OWNER AND ITS AFFILIATES. REPRODUCTION OR USE OF THIS DRAWING AND/OR THE INFORMATION CONTAINED IN IT IS FORBIDDEN WITHOUT THE WRITTEN PERMISSION OF THE OWNER.

PLANS PREPARED BY:

cushing Civil Engineers

Cushing
Civil Engineers

12725 SW MILLIKAN WAY
SUITE 300
BEAVERTON, OR 97005
(503) 387-5331
www.cushingcivilengineers.com

LICENSURE:

REGISTERED PROFESSIONAL ENGINEER
83233
OREGON
JUNE 7, 2012
KENNY McMANAWAY

RENEWAL DATE 12/31/26

SHEET TITLE:

RF TOWER APPURTENANCES I

SHEET NUMBER:

RF-1.0

EXHIBIT K

VHLPX4-11W/A

Base Product



1.2 m | 4 ft ValuLine® High Performance Low Profile Antenna, dual-polarized, 10.125–11.700 GHz

Product Classification

Product Type	Microwave antenna
Product Brand	ValuLine®

General Specifications

Antenna Type	VHLPX - ValuLine® High Performance Low Profile Antenna, dual-polarized
Polarization	Dual
Side Struts, Included	1 inboard
Side Struts, Optional	1 inboard

Dimensions

Diameter, nominal	1.2 m | 4 ft

Electrical Specifications

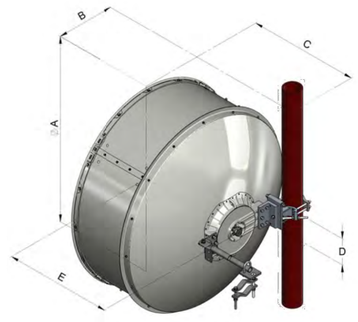
Operating Frequency Band	10.125 – 11.700 GHz
Gain, Low Band	40.2 dBi
Gain, Mid Band	40.7 dBi
Gain, Top Band	41 dBi
Boresite Cross Polarization Discrimination (XPD)	30 dB
Front-to-Back Ratio	66 dB
Beamwidth, Horizontal	1.6 °
Beamwidth, Vertical	1.6 °
Return Loss	17.7 dB
VSWR	1.3
Radiation Pattern Envelope Reference (RPE)	7185A
Electrical Compliance	Brazil Anatel Class 2 | Canada SRSP 310.5 | Canada SRSP 310.7 Part A | Canada SRSP 310.7 Part B | ETSI 302 217 Class

©2024 CommScope, Inc. All rights reserved. CommScope and the CommScope logo are registered trademarks of CommScope and/or its affiliates in the U.S. and other countries. For additional trademark information see https://www.commscope.com/trademarks. All product names, trademarks and registered trademarks are property of their respective owners. Revised: September 1, 2023

COMMSCOPE®

VHLPX4-11W/A

Antenna Dimensions and Mounting Information



Dimensions in inches (mm)					
Antenna size, ft (m)	A	B	C	D	E
4 (1.2)	50.8 (1291)	16 (407)	30.2 (767)	7.2 (183)	29.5 (748)

Wind Forces at Wind Velocity Survival Rating

Axial Force (FA)	5326 N | 1,197.333 lbf
Side Force (FS)	2638 N | 593.046 lbf
Twisting Moment (MT)	2162 N-m | 19,135.312 in lb
Force on Inboard Strut Side	2862 N | 643.403 lbf
Zcg without Ice	43 mm | 1.693 in
Zcg with 1/2 in (12 mm) Radial Ice	284 mm | 11.181 in
Weight with 1/2 in (12 mm) Radial Ice	74 kg | 163.142 lb

©2024 CommScope, Inc. All rights reserved. CommScope and the CommScope logo are registered trademarks of CommScope and/or its affiliates in the U.S. and other countries. For additional trademark information see https://www.commscope.com/trademarks. All product names, trademarks and registered trademarks are property of their respective owners. Revised: September 1, 2023

COMMSCOPE®

NOTE: MODEL SHOWN IS PRELIMINARY AND SUBJECT TO CHANGE UPON FINAL RF CONFIGURATION.

Marion County OREGON

PROJECT INFORMATION:

MARION COUNTY
METCOM911

1060 MT HOOD AVE
WOODBURN, OR 97071

	DATE	RELEASE
	07-19-24	SITE SKETCH
	10-29-24	PRELIMINARY ZONING DRAWINGS
	09-25-25	PRELIMINARY CONSTRUCTION DRAWINGS
	10-13-25	FINAL CONSTRUCTION DRAWINGS

DRAWING INFORMATION:

THIS DRAWING IS COPYRIGHTED AND IS THE SOLE PROPERTY OF THE OWNER. IT IS PRODUCED SOLELY FOR USE BY THE OWNER AND ITS AFFILIATES. REPRODUCTION OR USE OF THIS DRAWING AND/OR THE INFORMATION CONTAINED IN IT IS FORBIDDEN WITHOUT THE WRITTEN PERMISSION OF THE OWNER.

PLANS PREPARED BY:

cushing Civil Engineers

Cushing
Civil Engineers

12725 SW MILLIKAN WAY
SUITE 300
BEAVERTON, OR 97005
(503) 387-5331
www.cushingcivilengineers.com

LICENSURE:

REGISTERED PROFESSIONAL ENGINEER
83233
OREGON
JUNE 7, 2012
KENNY McMANAWAY

RENEWAL DATE 12/31/26

SHEET TITLE:

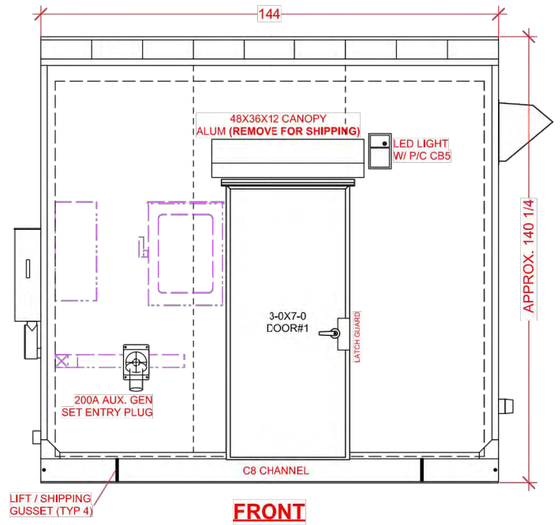
RF TOWER APPURTENANCES II

SHEET NUMBER:

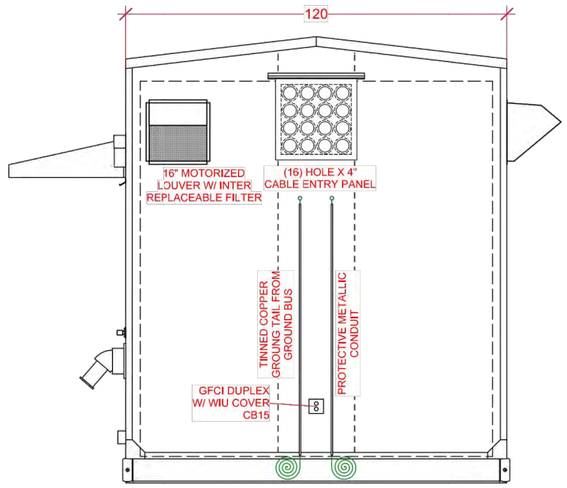
RF-1.1

NOTE:
INFORMATION BASED ON SHELTER ONE PREFABRICATED EQUIPMENT SHELTER DRAWINGS. REFER TO STATE OF OREGON BUILDING CODES DIVISION FOR STATE INSIGNIA.

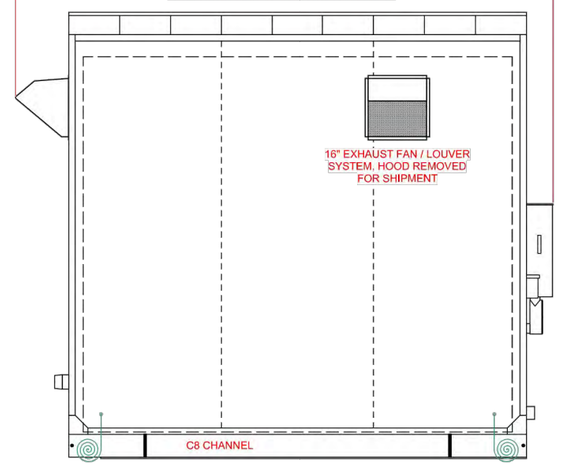
EXHIBIT K



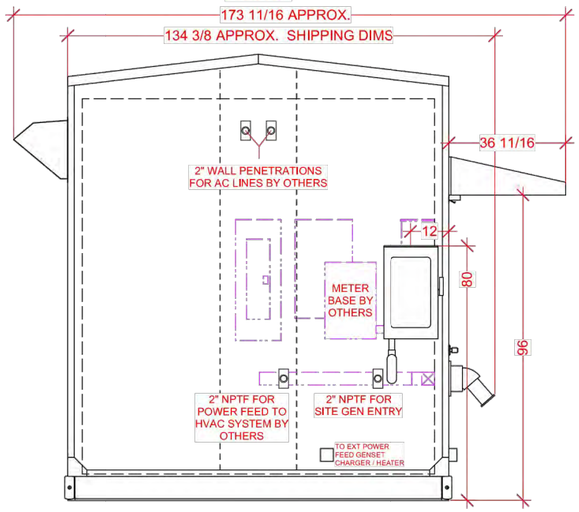
FRONT



RIGHT

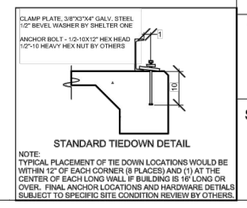


REAR



LEFT

NOTES:
1. SHELTER IS DESIGNED FOR A SLAB TYPE FOUNDATION.
2. EXTERIOR CLADDING TO BE 24 GA. PREFINISHED STEEL, COLOR - (TBD).
3. EXTERIOR TRIM TO BE MATCHING 24GA STEEL TRIM
4. SKID TO BE EPOXY PAINTED COLOR - (TBD).
5. 24GA PRE-FINISHED STEEL STANDING SEAM ROOF SYSTE - COLOR - (TBD)



STANDARD TIEDOWN DETAIL

NOTE:
TYPICAL PLACEMENT OF TIE DOWN LOCATIONS WOULD BE WITHIN 12" OF EACH CORNER (8 PLACES) AND (1) AT THE CENTER OF EACH LONG WALL IF BUILDING IS 16' LONG OR OVER. FINAL ANCHOR LOCATIONS AND HARDWARE DETAILS SUBJECT TO SPECIFIC SITE CONDITION REVIEW BY OTHERS.

SEAL

APPROVED:

DATE:

NOTICE: THIS DOCUMENT CONTAINS PROPRIETARY INFORMATION THAT IS THE SOLE PROPERTY OF SHELTER ONE AND SHOULD BE TREATED AS SUCH. NO ONE MAY COPY, REPRODUCE, TRANSMIT OR DISTRIBUTE THIS DOCUMENT IN ANY PART WITHOUT THE EXPRESSED WRITTEN PERMISSION OF SHELTER ONE OR IT'S DESIGNATED AGENTS.

SHELTER ONE®

Headquarters & Manufacturing
5887 Monument Drive
Grants Pass, OR 97526
541/479-4622
F:541/479-5289
www.shelter1.com

PROJECT INFORMATION

25028 MARION COUNTY OR 10x12

FILENAME
25028 Marion County OR 10x12.vwx

DRAWN BY:	DATE:
NJY	7/24/25
CHECKED BY:	DATE:

DWG NO: 25028

SCALE: 1:40

TITLE:
EXTERIOR ELEVATIONS

SHEET	REV.
A1	

Marion County OREGON

PROJECT INFORMATION:

MARION COUNTY METCOM911

1060 MT HOOD AVE
WOODBURN, OR 97071

	DATE	RELEASE
	07-19-24	SITE SKETCH
	10-29-24	PRELIMINARY ZONING DRAWINGS
	09-25-25	PRELIMINARY CONSTRUCTION DRAWINGS
	10-13-25	FINAL CONSTRUCTION DRAWINGS

DRAWING INFORMATION:
THIS DRAWING IS COPYRIGHTED AND IS THE SOLE PROPERTY OF THE OWNER. IT IS PRODUCED SOLELY FOR USE BY THE OWNER AND ITS AFFILIATES. REPRODUCTION OR USE OF THIS DRAWING AND/OR THE INFORMATION CONTAINED IN IT IS FORBIDDEN WITHOUT THE WRITTEN PERMISSION OF THE OWNER.

PLANS PREPARED BY:

cushing Civil Engineers

Cushing Civil Engineers
12725 SW MILLIKAN WAY
SUITE 300
BEAVERTON, OR 97005
(503) 387-5331
www.cushingcivilengineers.com

LICENSURE:

REGISTERED PROFESSIONAL ENGINEER 83233 OREGON JUNE 7, 2012 KENNY McMANAWAY

RENEWAL DATE 12/31/26

SHEET TITLE:

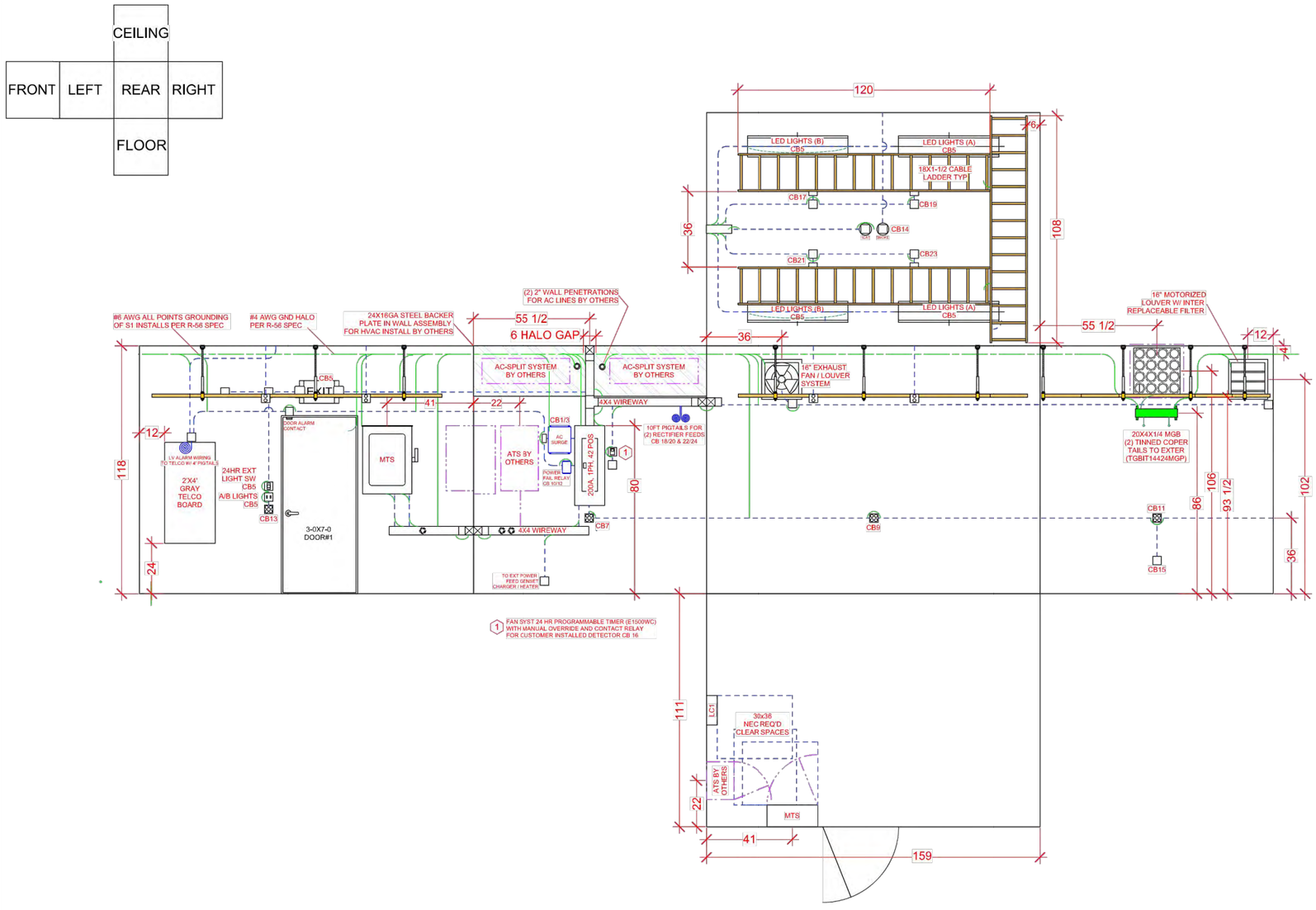
EQUIPMENT SHELTER EXTERIOR ELEVATIONS

SHEET NUMBER:

SH-1

NOTE:
INFORMATION BASED ON SHELTER ONE PREFABRICATED EQUIPMENT SHELTER DRAWINGS. REFER TO STATE OF OREGON BUILDING CODES DIVISION FOR STATE INSIGNIA.

EXHIBIT K



NOTES:
1. ALL CONDUIT TO BE TYPE EMT, SURFACE MOUNTED, MINIMUM SIZE 1/2" UNLESS NOTED OTHERWISE; UPSIZING PERMITTED.
2. CONDUIT LOCATIONS INDICATED BY DASHED LINES ARE SUGGESTED AND MAY BE MODIFIED (+ or - 3").
3. DIRECTIONS ARE ARBITRARY FOR SHOP ORIENTATION ONLY AND DO NOT RELATE TO ACTUAL SITE DIRECTIONS.
4. INTERIOR CLADDING TO BE FRP, COLOR - (STANDARD WHITE).
5. FLOORING TO BE .COMMERCIAL GRADE VINYL TILE OVER 1/4" STEEL FLOOR PLATE.
6. GROUNDING HALO AND ALL POINTS GROUNDING TO MEET R-56 STANDARDS

SEAL

APPROVED:

DATE:

NOTICE: THIS DOCUMENT CONTAINS PROPRIETARY INFORMATION THAT IS THE SOLE PROPERTY OF SHELTER ONE AND SHOULD BE TREATED AS SUCH. NO ONE MAY COPY, REPRODUCE, TRANSMIT OR DISTRIBUTE THIS DOCUMENT IN ANY PART WITHOUT THE EXPRESSED WRITTEN PERMISSION OF SHELTER ONE OR IT'S DESIGNATED AGENTS.

SHELTER ONE

Headquarters & Manufacturing
5887 Monument Drive
Grants Pass, OR 97526
541/479-4622
F:541/479-5289
www.shelter1.com

PROJECT INFORMATION

25028 MARION COUNTY OR 10x12

FILENAME
25027 Marion County OR 12x16.vwx

DRAWN BY:	DATE:
NJY	7/24/25
CHECKED BY:	DATE:

DWG NO: 25028

SCALE: 1:50

TITLE:
INTERIOR ELEVATIONS

SHEET A2 | REV.

Marion County OREGON

PROJECT INFORMATION:

MARION COUNTY METCOM911

1060 MT HOOD AVE
WOODBURN, OR 97071

	DATE	RELEASE
	07-19-24	SITE SKETCH
	10-29-24	PRELIMINARY ZONING DRAWINGS
	09-25-25	PRELIMINARY CONSTRUCTION DRAWINGS
	10-13-25	FINAL CONSTRUCTION DRAWINGS

DRAWING INFORMATION:
THIS DRAWING IS COPYRIGHTED AND IS THE SOLE PROPERTY OF THE OWNER. IT IS PRODUCED SOLELY FOR USE BY THE OWNER AND ITS AFFILIATES. REPRODUCTION OR USE OF THIS DRAWING AND/OR THE INFORMATION CONTAINED IN IT IS FORBIDDEN WITHOUT THE WRITTEN PERMISSION OF THE OWNER.

PLANS PREPARED BY:

cushing Civil Engineers

Cushing
Civil Engineers
12725 SW MILLIKAN WAY
SUITE 300
BEAVERTON, OR 97005
(503) 387-5331
www.cushingcivilengineers.com

LICENSURE:

REGISTERED PROFESSIONAL ENGINEER 83233 OREGON JUNE 7, 2012 KENNY McMANAWAY

RENEWAL DATE 12/31/26

SHEET TITLE:

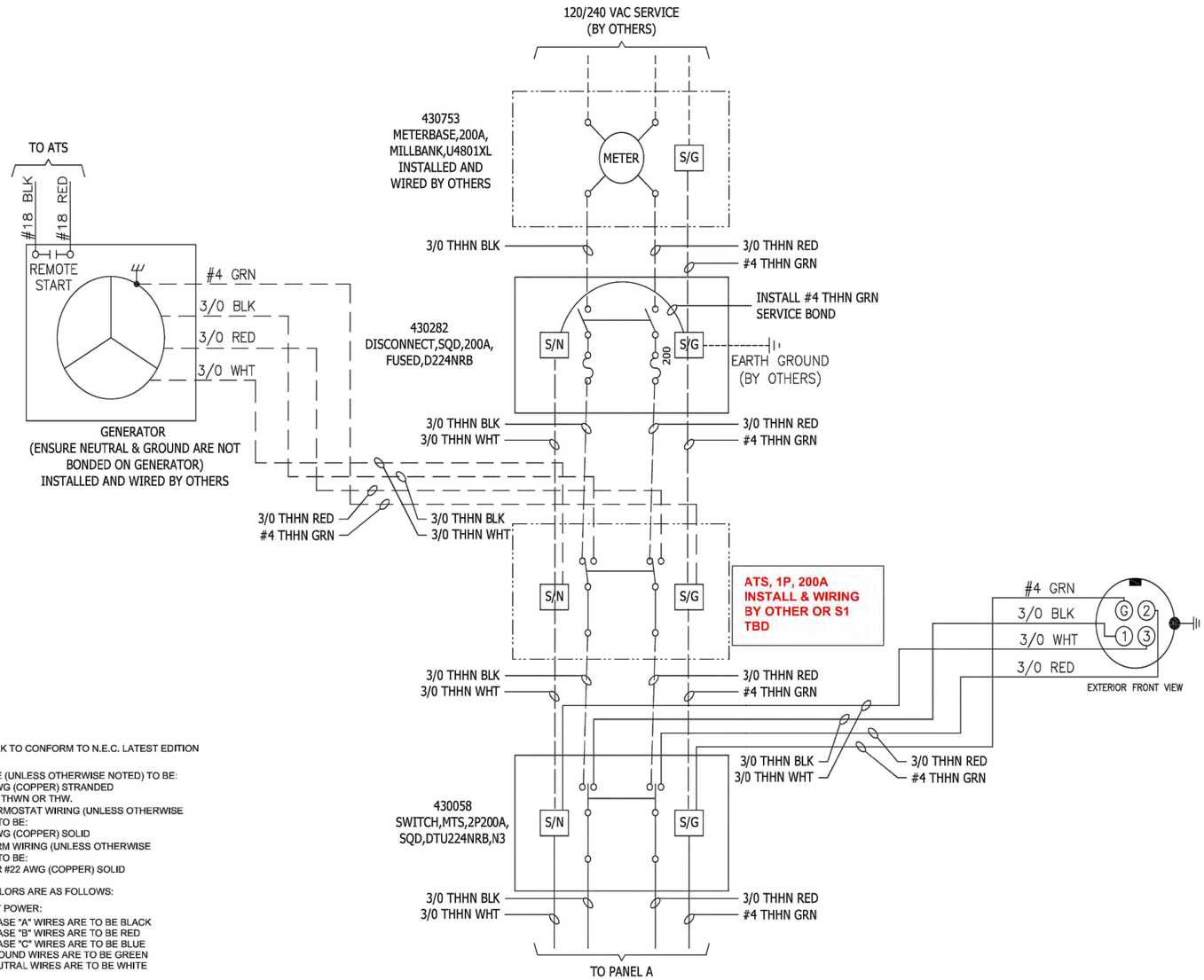
EQUIPMENT SHELTER INTERIOR ELEVATIONS

SHEET NUMBER:

SH-2

NOTE:
INFORMATION BASED ON SHELTER ONE PREFABRICATED EQUIPMENT SHELTER DRAWINGS. REFER TO STATE OF OREGON BUILDING CODES DIVISION FOR STATE INSIGNIA.

EXHIBIT K



COPPER WIRE SIZE

BREAKER SIZE	MINIMUM WIRE SIZE
15A	12 AWG
20A	12 AWG
30A	10 AWG
40A	8 AWG
50A	8 AWG
60A	6 AWG
70A	4 AWG
80A	4 AWG
90A	3 AWG
100A	3 AWG
125A	1 AWG
150A	1/0
200A	3/0

SERVICE ENTRY GROUND WIRE SIZE

ENTRY WIRE SIZE	GROUND WIRE SIZE
2 AWG OR SMALLER	8 AWG
1 AWG OR 1/0	6 AWG
2/0 OR 3/0	4 AWG

NOTES:

1. ALL WORK TO CONFORM TO N.E.C. LATEST EDITION
2. ALL WIRE (UNLESS OTHERWISE NOTED) TO BE:
   * #12 AWG (COPPER) STRANDED
   * THHN, THWN OR THW.
   ALL THERMOSTAT WIRING (UNLESS OTHERWISE NOTED) TO BE:
   * #18 AWG (COPPER) SOLID
   ALL ALARM WIRING (UNLESS OTHERWISE NOTED) TO BE:
   * #18 OR #22 AWG (COPPER) SOLID
3. WIRE COLORS ARE AS FOLLOWS:
   PRIMARY POWER:
   * ALL PHASE "A" WIRES ARE TO BE BLACK
   * ALL PHASE "B" WIRES ARE TO BE RED
   * ALL PHASE "C" WIRES ARE TO BE BLUE
   * ALL GROUND WIRES ARE TO BE GREEN
   * ALL NEUTRAL WIRES ARE TO BE WHITE
4. ALL CIRCUITS TO HAVE AN EQUIPMENT GROUNDING CONDUCTOR
5. ----- DASHED LINES DENOTE FIELD WORK.
6. NEUTRAL AND GROUND ARE TO BE BONDED AS REQUIRED
7. NO TAPS, SPLICES, OR JOINTS ARE TO BE MADE WITHIN WIREWAYS.

SEAL

APPROVED:

DATE:

NOTICE: THIS DOCUMENT CONTAINS PROPRIETARY INFORMATION THAT IS THE SOLE PROPERTY OF SHELTER ONE AND SHOULD BE TREATED AS SUCH. NO ONE MAY COPY, REPRODUCE, TRANSMIT OR DISTRIBUTE THIS DOCUMENT IN ANY PART WITHOUT THE EXPRESSED WRITTEN PERMISSION OF SHELTER ONE OR IT'S DESIGNATED AGENTS.

SHELTER ONE

Headquarters & Manufacturing
5887 Monument Drive
Grants Pass, OR 97526
541/479-4622
F:541/479-5289
www.shelter1.com

PROJECT INFORMATION

25028 MARION COUNTY OR 10x12

FILENAME
25027 Marion County OR 12x16.vwx

DRAWN BY:	DATE:
NJY	7/24/25
CHECKED BY:	DATE:

DWG NO: 25028

SCALE: NOT TO SCALE

TITLE: POWER LINE DRAWING

SHEET E1

REV.

Marion County OREGON

PROJECT INFORMATION:

MARION COUNTY METCOM911

1060 MT HOOD AVE
WOODBURN, OR 97071

	DATE	RELEASE
	07-19-24	SITE SKETCH
	10-29-24	PRELIMINARY ZONING DRAWINGS
	09-25-25	PRELIMINARY CONSTRUCTION DRAWINGS
	10-13-25	FINAL CONSTRUCTION DRAWINGS

DRAWING INFORMATION:

THIS DRAWING IS COPYRIGHTED AND IS THE SOLE PROPERTY OF THE OWNER. IT IS PRODUCED SOLELY FOR USE BY THE OWNER AND ITS AFFILIATES. REPRODUCTION OR USE OF THIS DRAWING AND/OR THE INFORMATION CONTAINED IN IT IS FORBIDDEN WITHOUT THE WRITTEN PERMISSION OF THE OWNER.

PLANS PREPARED BY:

cushing Civil Engineers

Cushing
Civil Engineers
12725 SW MILLIKAN WAY
SUITE 300
BEAVERTON, OR 97005
(503) 387-5331
www.cushingcivilengineers.com

LICENSURE:

REGISTERED PROFESSIONAL ENGINEER 83233 OREGON JUNE 7, 2012 KENNY McMANAWAY

RENEWAL DATE 12/31/26

SHEET TITLE:

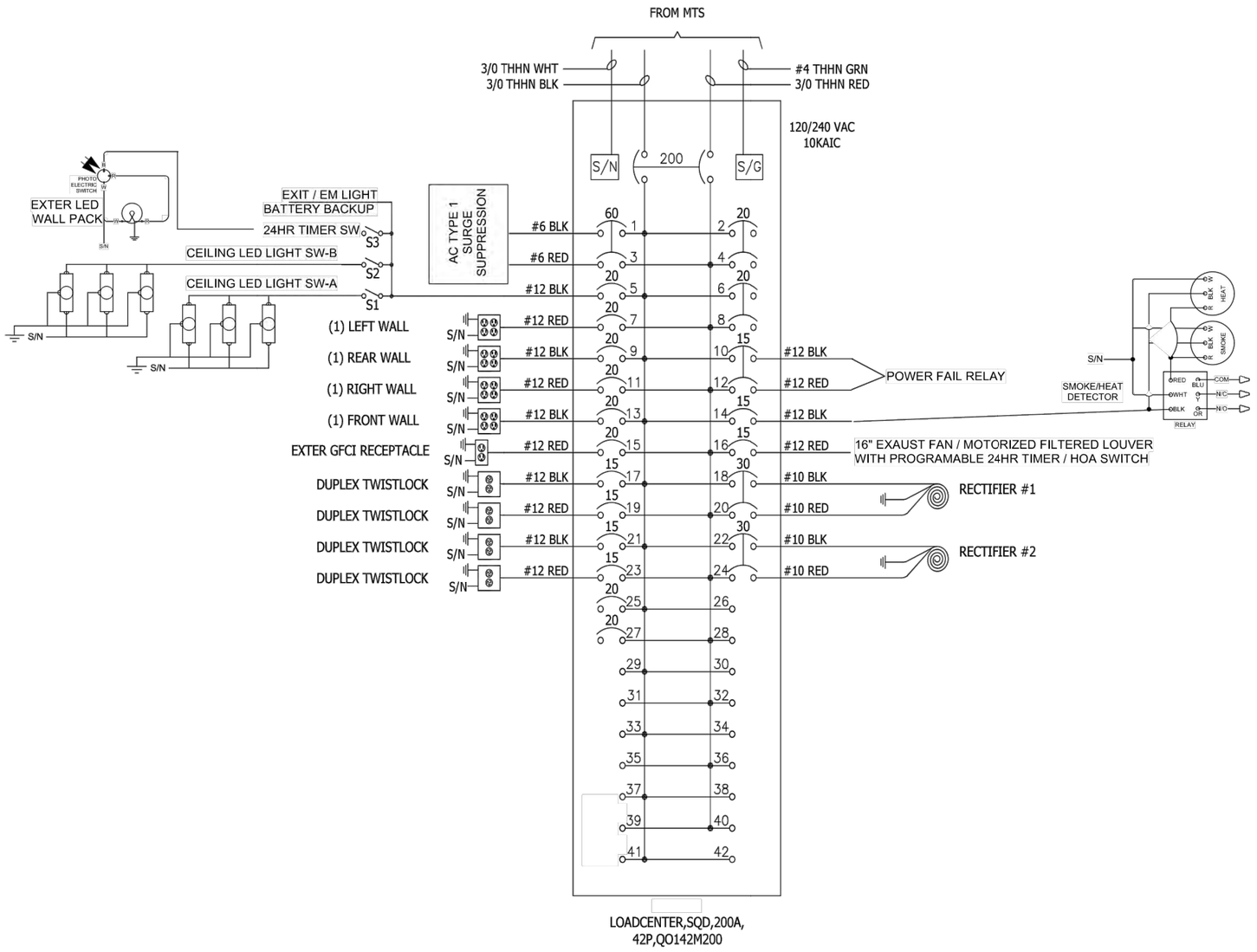
ELECTRICAL ONE-LINE DIAGRAM

SHEET NUMBER:

SH-3

NOTE:
INFORMATION BASED ON SHELTER ONE PREFABRICATED EQUIPMENT SHELTER DRAWINGS. REFER TO STATE OF OREGON BUILDING CODES DIVISION FOR STATE INSIGNIA.

EXHIBIT K



SEAL

APPROVED:

DATE:

NOTICE: THIS DOCUMENT CONTAINS PROPRIETARY INFORMATION THAT IS THE SOLE PROPERTY OF SHELTER ONE AND SHOULD BE TREATED AS SUCH. NO ONE MAY COPY, REPRODUCE, TRANSMIT OR DISTRIBUTE THIS DOCUMENT IN ANY PART WITHOUT THE EXPRESSED WRITTEN PERMISSION OF SHELTER ONE OR IT'S DESIGNATED AGENTS.

SHELTER ONE

Headquarters & Manufacturing
5887 Monument Drive
Grants Pass, OR 97526
541/479-4622
F:541/479-5289
www.shelter1.com

PROJECT INFORMATION

25028 MARION COUNTY OR 10x12

FILENAME
25027 Marion County OR 12x16.vwx

DRAWN BY:	DATE:
NJY	7/24/25
CHECKED BY:	DATE:

DWG NO: 25028

SCALE: NOT TO SCALE

TITLE:
PANEL SCHEDULE

SHEET E2 | REV.

Marion County OREGON

PROJECT INFORMATION:

MARION COUNTY METCOM911

1060 MT HOOD AVE
WOODBURN, OR 97071

	DATE	RELEASE
	07-19-24	SITE SKETCH
	10-29-24	PRELIMINARY ZONING DRAWINGS
	09-25-25	PRELIMINARY CONSTRUCTION DRAWINGS
	10-13-25	FINAL CONSTRUCTION DRAWINGS

DRAWING INFORMATION:
THIS DRAWING IS COPYRIGHTED AND IS THE SOLE PROPERTY OF THE OWNER. IT IS PRODUCED SOLELY FOR USE BY THE OWNER AND ITS AFFILIATES. REPRODUCTION OR USE OF THIS DRAWING AND/OR THE INFORMATION CONTAINED IN IT IS FORBIDDEN WITHOUT THE WRITTEN PERMISSION OF THE OWNER.

PLANS PREPARED BY:

cushing Civil Engineers

Cushing
Civil Engineers
12725 SW MILLIKAN WAY
SUITE 300
BEAVERTON, OR 97005
(503) 387-5331
www.cushingcivilengineers.com

LICENSURE:

REGISTERED PROFESSIONAL ENGINEER 83233 OREGON JUNE 7, 2012 KENNY McMANAWAY

RENEWAL DATE 12/31/26

SHEET TITLE:

ELECTRICAL PANEL SCHEDULE

SHEET NUMBER:

SH-4

EXHIBIT K

SITE NAME:

WIPPER

11545 SUMMIT LOOP SE, TURNER, OR 97392

SHEET INDEX

CONSTRUCTION SUBMITTAL:

T-1	COVER SHEET
V-1	EXISTING CONDITIONS (SURVEY)
V-2	EXISTING CONDITIONS (SURVEY)
G-1	GENERAL NOTES
ER-1	GRADING & EROSION CONTROL PLAN
ER-2	GRADING & EROSION CONTROL DETAILS
C-1	OVERALL SITE PLAN
C-2	ENLARGED SITE PLAN
C-3	ELEVATIONS
C-4	INTERIOR SHELTER PLANS
C-5	COMPOUND DETAILS I
C-6	COMPOUND DETAILS II
C-7	GENERATOR & PROPANE TANK DETAILS
E-1	SITE GROUNDING PLAN & DETAILS
E-2	GROUNDING DETAILS I
E-3	GROUNDING DETAILS II
RF-1.0	RF TOWER APPURTENANCES I
RF-1.1	RF TOWER APPURTENANCES II
RF-1.2	RF TOWER APPURTENANCES III
RF-1.3	RF TOWER APPURTENANCES IV

PROJECT INFORMATION

PROPERTY OWNER:
SANTIAM CANYON COMMUNICATION COUNCIL
C/O ROBBIE POIRIER
PO BOX 603
STAYTON, OR 97383

TOWER OWNER:
MARION COUNTY PUBLIC WORKS
5155 SILVERTON RD NE
SALEM, OR 97305
CONTACT:
BRIAN NICHOLAS
(503) 588-7943
bnicholas@co.marion.or.us

COUNTY:
MARION

JURISDICTION:
MARION COUNTY

ZONING:
SA (SPECIAL AGRICULTURE)

NEPA FCC:
REPORT BY BLACK MOUNTAIN
DATED 03/16/2025

PARCEL NUMBER(S) & AREA:
ACCOUNT #: 536317
TAXLOT #: 093W130001000
7,840.8 SQ FEET±
0.18 ACRES±

PROJECT AREA:
TOTAL COMPOUND AREA - 5,847 SQ FEET ±
ACCESS DRIVE AND PARKING - EXISTING
TOTAL - 5,847 SQ FEET ±

PROJECT LOCATION:
*LAT: N 44° 46'58.451" (44.782903)
*LONG: W 122°59'48.339" (-122.996761)
*GROUND ELEVATION (ASML) = 1,067'±

*INFORMATION OBTAINED FROM SURVEY

UTILITY PROVIDERS:
TELCO PROVIDER: N/A
POWER PROVIDER: PORTLAND GENERAL ELECTRIC

GENERAL INFORMATION:
1. TRAFFIC IS UNAFFECTED
2. SIGNAGE AT SITE IS PROPOSED
3. SITE IS UNMANNED AND HANDICAP ACCESS IS NOT REQUIRED

CODE INFORMATION:
1. IBC-2018 INTERNATIONAL BUILDING CODE
2. NEC-2017 NATIONAL ELECTRIC CODE
3. 2019 OREGON STRUCTURAL SPECIALTY CODE
4. 2017 NFPA 58 CODE
5. OCCUPANCY GROUP: U
6. CONSTRUCTION TYPE: II-B

PROJECT INFORMATION CONTINUED

APPLICANT:
MARION COUNTY PUBLIC WORKS
5155 SILVERTON RD NE
SALEM, OR 97305
CONTACT:
BRIAN NICHOLAS
(503) 588-7943
bnicholas@co.marion.or.us

PROJECT MANAGER:
PATRICK HOOVER
(971) 295-0152
phoover@rtspnw.com

CONSTRUCTION MANAGER:
PATRICK HOOVER
(971) 295-0152
phoover@rtspnw.com

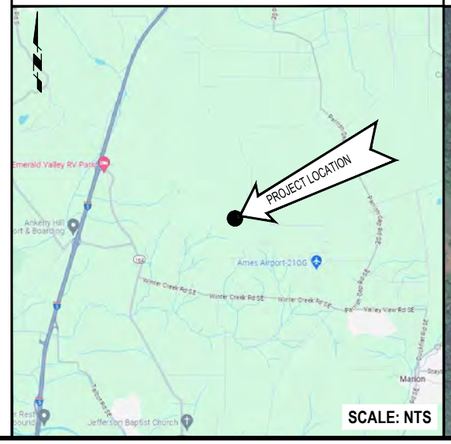
ZONING CONTACT:
CUSHING CIVIL ENGINEERS
12725 SW MILLIKAN WAY, STE 300
BEAVERTON, OR 97005
CONTACT:
ROB HOWE
(503) 387-5331
rob@cushingcivilengineers.com

ENGINEER OF RECORD:
CUSHING CIVIL ENGINEERS
12725 SW MILLIKAN WAY, STE 300
BEAVERTON, OR 97005
CONTACT:
KENNY MCMANAWAY
(503) 387-5331
kenny@cushingcivilengineers.com

SURVEYOR:
ORION GEOMATICS
1724 23RD AVE
FOREST GROVE, OR 97116
CONTACT:
JOHN PUTNAM
(503) 359-1688
jputnam@oriongeomatics.com

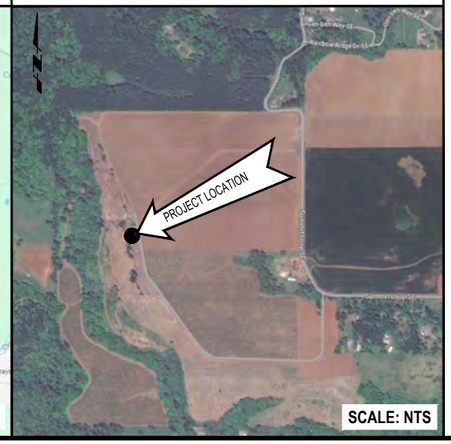
GEOTECH:
BLACK MOUNTAIN CONSULTING LLC
22566 SW WASHINGTON STE #206
SHERWOOD, OR 97140
CONTACT:
TAMMY STEMPEL
(503) 625-2517
tammys@blkmountain.com

VICINITY MAP



SCALE: NTS

LOCATOR MAP



SCALE: NTS

DRIVING DIRECTIONS

FROM MARION COUNTY PUBLIC WORKS BUILDING:

1. HEAD SOUTHEAST TOWARD OR-213 S
   282 FT
2. TURN RIGHT ONTO OR-213 S
   0.2 MI
3. TURN LEFT ONTO CORDON RD NE
   5.3 MI
4. CONTINUE ONTO KUEBLER RD
   5.3 MI
5. TURN LEFT ONTO TURNER RD SE
   3.3 MI
6. CONTINUE ONTO 3RD ST SE
   0.3 MI
7. TURN RIGHT ONTO CHICAGO ST SE
   0.2 MI
8. CHICAGO ST SE TURNS SLIGHTLY LEFT & BECOMES WIPPER RD SE
   1.3 MI
9. TURN RIGHT ONTO HENNIES RD SE
   0.8 MI
10. TURN LEFT ONTO PARRISH GAP RD SE
    1 MIN (1.0 MI)
11. SLIGHT RIGHT ONTO SUMMIT LOOP SE
    2.8 MI
12. TURN RIGHT. DESTINATION WILL BE ON THE LEFT.
    0.6 MI

EST. TIME: 32 MINS.
EST. MILEAGE: 17.1 MI

PROJECT DESCRIPTION

1. PROPOSED MODIFICATION OF AN EXISTING PUBLIC SAFETY COMMUNICATIONS FACILITY FOR MARION COUNTY, OREGON.
2. PROPOSED REPLACEMENT OF EXISTING 68'-6" SELF-SUPPORT TOWER W/ NEW 180'-0" SELF-SUPPORT TOWER
3. PROPOSED INSTALLATION OF THE FOLLOWING EQUIPMENT ON A NEW 180'-0" SELF-SUPPORT TOWER:
   * NEW & EXISTING ANTENNAS W/ ASSOCIATED ANCILLARY EQUIPMENT
4. PROPOSED INSTALLATION OF THE FOLLOWING EQUIPMENT WITHIN EXISTING GROUND SPACE:
   * (2) ICE BRIDGE (REPLACE EXISTING)
   * (1) GENERATOR
   * EXTEND EXISTING FENCE SECTION AS REQUIRED

PROJECT INFORMATION:

MARION COUNTY
WIPPER

11545 SUMMIT LOOP SE
TURNER, OR 97392

	DATE	RELEASE
	07-20-24	SITE SKETCH
	09-25-24	REVISED SITE SKETCH
	11-04-24	PRELIMINARY ZONING DRAWINGS
	08-19-25	PRELIMINARY CONSTRUCTION DRAWINGS
	10-07-25	FINAL CONSTRUCTION DRAWINGS

DRAWING INFORMATION:
THIS DRAWING IS COPYRIGHTED AND IS THE SOLE PROPERTY OF THE OWNER. IT IS PRODUCED SOLELY FOR USE BY THE OWNER AND ITS AFFILIATES. REPRODUCTION OR USE OF THIS DRAWING AND/OR THE INFORMATION CONTAINED IN IT IS FORBIDDEN WITHOUT THE WRITTEN PERMISSION OF THE OWNER.

PLANS PREPARED BY:

Cushing
Civil Engineers

12725 SW MILLIKAN WAY
SUITE 300
BEAVERTON, OR 97005
(503) 387-5331
www.cushingcivilengineers.com

LICENSURE:

REGISTERED PROFESSIONAL ENGINEER
83233
OREGON
JUNE 7, 2012
KENNY McMANAWAY

RENEWAL DATE 12/31/26

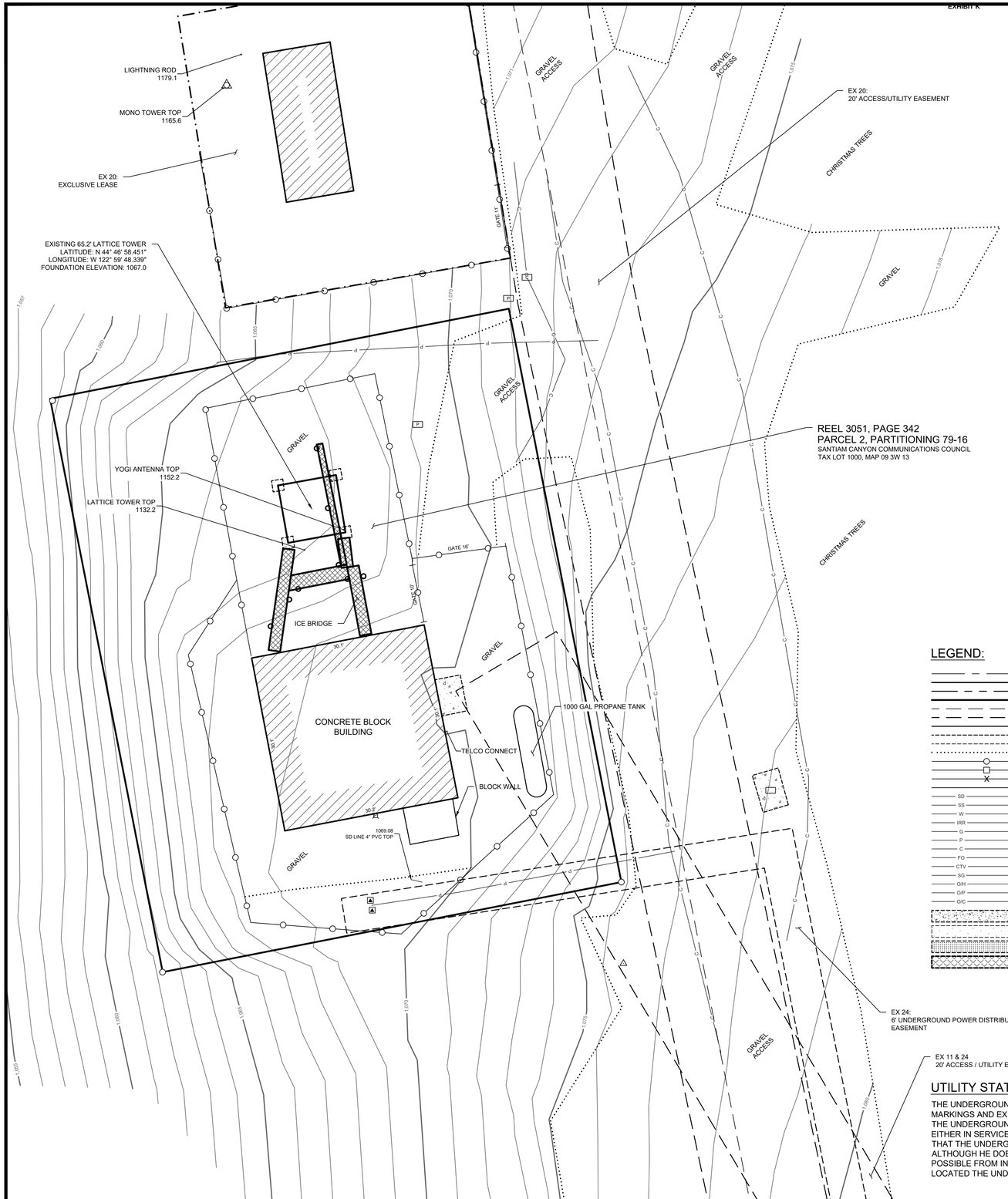
SHEET TITLE:

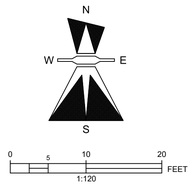
COVER SHEET

SHEET NUMBER:

T-1

EXHIBIT K





LEGEND:

- CENTERLINE OF ROAD
- RIGHT-OF-WAY LINE
- SECTION LINE
- BOUNDARY LINE
- PROPERTY / LOT LINE
- EASEMENT LINE
- CURB
- EDGE OF CONCRETE
- EDGE OF PAVEMENT
- EDGE OF GRAVEL
- CHAIN LINK FENCE
- WOOD / METAL FENCE
- WIRE FENCE
- STRIPING
- STORM DRAIN
- SANITARY SEWER
- WATER LINE
- IRRIGATION LINE
- GAS LINE
- BURIED POWER
- BURIED COMS LINE
- BURIED FIBER OPTIC
- BURIED CABLE TV
- BURIED SIGNAL
- OVERHEAD UTILITIES
- OVERHEAD POWER
- OVERHEAD COMS LINE
- CONCRETE
- ASPHALTIC CONCRETE
- RAMP
- CANOPY
- SANITARY MANHOLE
- SANITARY LIFT STATION
- SANITARY VAULT
- STORM MANHOLE
- DRY WELL
- STORM INLET
- STORM INLET (ROUND)
- STORM INLET LID
- STORM VAULT
- CLEAN OUT
- MANHOLE (UNK / OTHER TYPE)
- RISER (UNK / OTHER TYPE)
- HANDHOLE (UNK / OTHER TYPE)
- VAULT (UNK / OTHER TYPE)
- FIRE HYDRANT
- FIRE AUTO CONNECTION
- FIRE RISER
- FIRE VALVE
- FIRE VAULT
- IRRIGATION VALVE
- IRRIGATION RISER
- IRRIGATION VAULT
- WATER METER
- WATER VALVE
- WATER MANHOLE
- WATER RISER
- WATER VAULT
- NATURAL GAS METER
- NATURAL GAS VALVE
- NATURAL GAS RISER
- NATURAL GAS VAULT
- POWER METER
- TRANSFORMER
- POWER RISER
- POWER HANDHOLE
- POWER VAULT
- POWER MANHOLE
- COMS HANDHOLE
- COMS RISER
- COMS VAULT
- COMS MANHOLE
- FIBER RISER
- FIBER HANDHOLE
- FIBER VAULT
- TELCO RISER
- TELCO HANDHOLE
- TELCO VAULT
- TELCO MANHOLE
- CABLE TV RISER
- CABLE TV HANDHOLE
- CABLE TV VAULT
- FUEL FILLER
- FUEL MANHOLE
- UTILITY POLE W/DROP
- GUY ANCHOR
- POLE
- TRAFFIC SIGNAL
- PEDESTRIAN SIGNAL
- SIGNAL CONTROL BOX
- SIGNAL HANDHOLE
- SIGNAL VAULT
- LUMINAIRE / STREET LIGHT
- YARD LIGHT
- SIGN
- BOLLARD
- MAIL BOX
- TOWER
- RR SIGNAL
- RR SWITCH THROW
- RR RISER
- RR HANDHOLE
- RR VAULT
- RR CROSSING GATE
- RR CROSSING SIGNAL (NO GATE)
- MONITOR WELL
- TEST BORE
- TEST PIT
- VENT
- CONIFER TREE
- DECIDUOUS TREE
- PALM TREE
- SHRUB
- HIGH OCCUPANCY VEHICLE
- HANDICAP PARKING
- BIKE LANE
- RAILROAD CROSSING
- BENCH MARK
- FOUND CONTROL AS NOTED
- SET CONTROL AS NOTED
- PHOTO CONTROL
- FOUND MONUMENT AS NOTED
- FOUND MONUMENT AS NOTED (ALTERNATE)
- SET MONUMENT AS NOTED
- SET MONUMENT AS NOTED (ALTERNATE)
- FOUND SECTION CORNER AS NOTED
- FOUND QUARTER CONER AS NOTED
- SET SECTION CORNER AS NOTED
- SET QUARTER CONER AS NOTED
- ENCROACHMENT
- A/C ASPHALTIC CONCRETE
- YPC YELLOW PLASTIC CAP
- OPC ORANGE PLASTIC CAP
- RPC RED PLASTIC CAP
- ALC ALUMINIUM CAP
- IR IRON ROD
- IP IRON PIPE
- BP COPPER PLUG
- BRS BRASS
- UKN UNKNOWN
- COMS COMMUNICATIONS
- A AS-BUILT INFORMATION
- HFL HELD FOR LINE
- SFNF SEARCHED FOR NOT FOUND

UTILITY STATEMENT:

THE UNDERGROUND UTILITIES SHOWN ARE BASED ON SURVEYED UTILITY LOCATE MARKINGS AND EXISTING DRAWINGS. THE SURVEYOR MAKES NO GUARANTEE THAT THE UNDERGROUND UTILITIES SHOWN COMPRISE ALL SUCH UTILITIES IN THE AREA, EITHER IN SERVICE OR ABANDONED. THE SURVEYOR FURTHER DOES NOT WARRANT THAT THE UNDERGROUND UTILITIES SHOWN ARE IN THE EXACT LOCATION INDICATED ALTHOUGH HE DOES CERTIFY THAT THEY ARE LOCATED AS ACCURATELY AS POSSIBLE FROM INFORMATION AVAILABLE. THE SURVEYOR HAS NOT PHYSICALLY LOCATED THE UNDERGROUND UTILITIES.

SECTION 13, T09S, R03W, W.M

11X17 SCALE: 1" = 20' | 22X34 SCALE: 1" = 10' | 1

Marion County OREGON

PROJECT INFORMATION:

MARION COUNTY WIPPER

11454 SUMMIT LOOP SE
TURNER, OR 97392

	DATE	RELEASE
0	11/16/2024	INITIAL SURVEY RELEASE

DRAWING INFORMATION:
THIS DRAWING IS COPYRIGHTED AND IS THE SOLE PROPERTY OF THE OWNER. IT IS PRODUCED SOLELY FOR USE BY THE OWNER AND ITS AFFILIATES. REPRODUCTION OR USE OF THIS DRAWING AND/OR THE INFORMATION CONTAINED IN IT IS FORBIDDEN WITHOUT THE WRITTEN PERMISSION OF THE OWNER.

PLANS PREPARED BY:

cushing Civil Engineers

Cushing Civil Engineers
12725 SW MILLIKAN WAY
SUITE 300
BEAVERTON, OR 97005
(503) 387-5331
www.cushing-engr.com

LICENSURE:

orion GEOMATICS
Because the world is a spatial place™
1724 23rd Avenue | Forest Grove OR 97116
T: 503.359.1688 | www.oriongeomatics.com

REGISTERED
PROFESSIONAL
LAND SURVEYOR

DIGITAL SIGNATURE

OREGON
JULY 19, 1994
JOHN D. PUTNAM
2676

RENEWS: 12-31-24
DIGITALLY SIGNED 11/16/2024

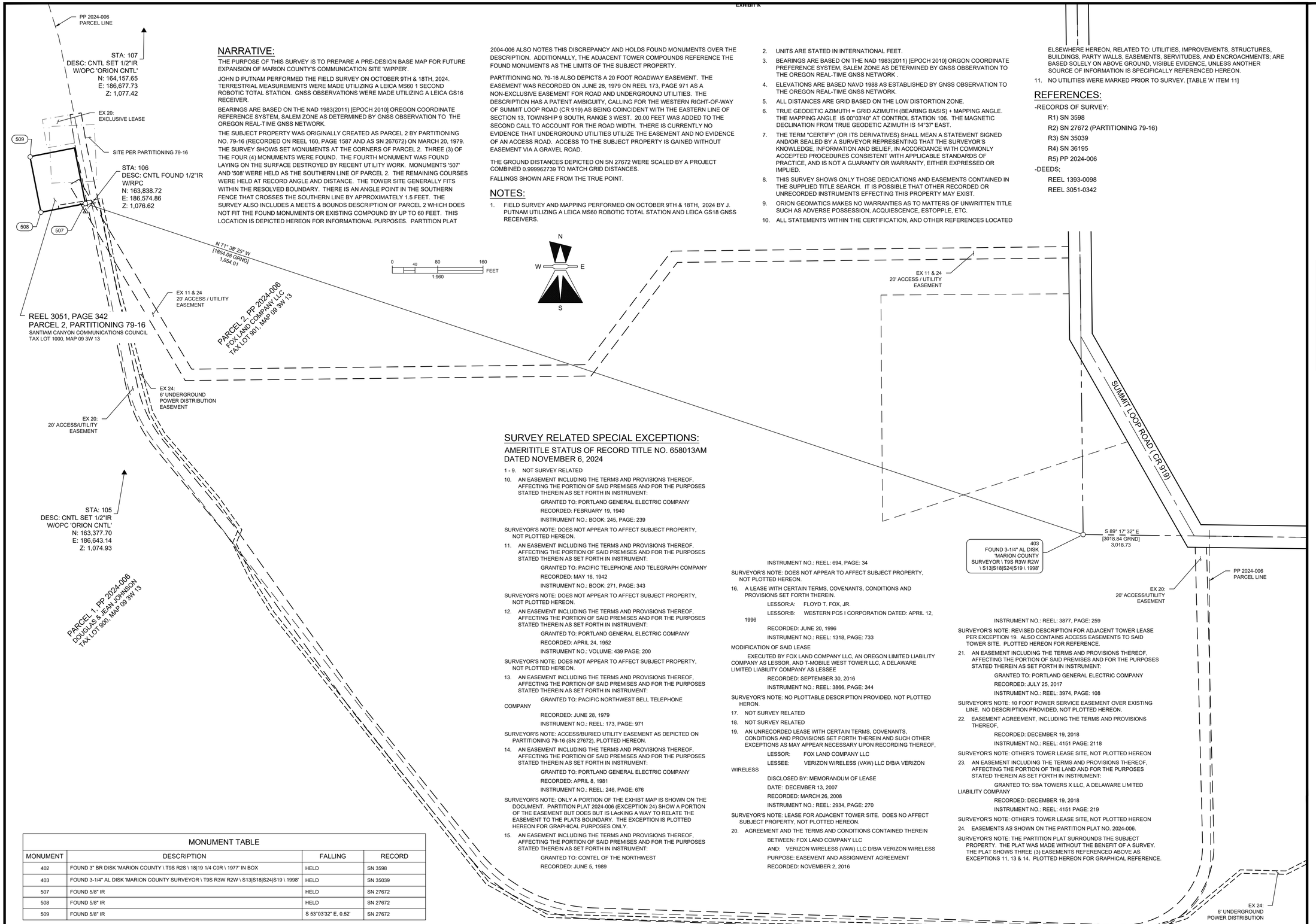
SHEET TITLE:

EXISTING CONDITIONS

SHEET NUMBER:

V-1

EXHIBIT K



NARRATIVE:

THE PURPOSE OF THIS SURVEY IS TO PREPARE A PRE-DESIGN BASE MAP FOR FUTURE EXPANSION OF MARION COUNTY'S COMMUNICATION SITE 'WIPPER'.

JOHN D PUTNAM PERFORMED THE FIELD SURVEY ON OCTOBER 9TH & 18TH, 2024. TERRESTRIAL MEASUREMENTS WERE MADE UTILIZING A LEICA MS60 1 SECOND ROBOTIC TOTAL STATION. GNSS OBSERVATIONS WERE MADE UTILIZING A LEICA GS16 RECEIVER.

BEARINGS ARE BASED ON THE NAD 1983(2011) [EPOCH 2010] OREGON COORDINATE REFERENCE SYSTEM, SALEM ZONE AS DETERMINED BY GNSS OBSERVATION TO THE OREGON REAL-TIME GNSS NETWORK.

THE SUBJECT PROPERTY WAS ORIGINALLY CREATED AS PARCEL 2 BY PARTITIONING NO. 79-16 (RECORDED ON REEL 160, PAGE 1587 AND AS SN 267672) ON MARCH 20, 1979. THE SURVEY SHOWS SET MONUMENTS AT THE CORNERS OF PARCEL 2. THREE (3) OF THE FOUR (4) MONUMENTS WERE FOUND. THE FOURTH MONUMENT WAS FOUND LAYING ON THE SURFACE DESTROYED BY RECENT UTILITY WORK. MONUMENTS '507' AND '508' WERE HELD AS THE SOUTHERN LINE OF PARCEL 2. THE REMAINING COURSES WERE HELD AT RECORD ANGLE AND DISTANCE. THE TOWER SITE GENERALLY FITS WITHIN THE RESOLVED BOUNDARY. THERE IS AN ANGLE POINT IN THE SOUTHERN FENCE THAT CROSSES THE SOUTHERN LINE BY APPROXIMATELY 1.5 FEET. THE SURVEY ALSO INCLUDES A MEETS & BOUNDS DESCRIPTION OF PARCEL 2 WHICH DOES NOT FIT THE FOUND MONUMENTS OR EXISTING COMPOUND BY UP TO 60 FEET. THIS LOCATION IS DEPICTED HEREON FOR INFORMATIONAL PURPOSES. PARTITION PLAT 2004-006 ALSO NOTES THIS DISCREPANCY AND HOLDS FOUND MONUMENTS OVER THE DESCRIPTION. ADDITIONALLY, THE ADJACENT TOWER COMPOUNDS REFERENCE THE FOUND MONUMENTS AS THE LIMITS OF THE SUBJECT PROPERTY.

PARTITIONING NO. 79-16 ALSO DEPICTS A 20 FOOT ROADWAY EASEMENT. THE EASEMENT WAS RECORDED ON JUNE 28, 1979 ON REEL 173, PAGE 971 AS A NON-EXCLUSIVE EASEMENT FOR ROAD AND UNDERGROUND UTILITIES. THE DESCRIPTION HAS A PATENT AMBIGUITY, CALLING FOR THE WESTERN RIGHT-OF-WAY OF SUMMIT LOOP ROAD (CR 919) AS BEING COINCIDENT WITH THE EASTERN LINE OF SECTION 13, TOWNSHIP 9 SOUTH, RANGE 3 WEST. 20.00 FEET WAS ADDED TO THE SECOND CALL TO ACCOUNT FOR THE ROAD WIDTH. THERE IS CURRENTLY NO EVIDENCE THAT UNDERGROUND UTILITIES UTILIZE THE EASEMENT AND NO EVIDENCE OF AN ACCESS ROAD. ACCESS TO THE SUBJECT PROPERTY IS GAINED WITHOUT EASEMENT VIA A GRAVEL ROAD.

THE GROUND DISTANCES DEPICTED ON SN 27672 WERE SCALED BY A PROJECT COMBINED 0.999962739 TO MATCH GRID DISTANCES.

FALLINGS SHOWN ARE FROM THE TRUE POINT.

NOTES:

1. FIELD SURVEY AND MAPPING PERFORMED ON OCTOBER 9TH & 18TH, 2024 BY J. PUTNAM UTILIZING A LEICA MS60 ROBOTIC TOTAL STATION AND LEICA GS18 GNSS RECEIVERS.
2. UNITS ARE STATED IN INTERNATIONAL FEET.
3. BEARINGS ARE BASED ON THE NAD 1983(2011) [EPOCH 2010] ORGON COORDINATE PREFERENCE SYSTEM, SALEM ZONE AS DETERMINED BY GNSS OBSERVATION TO THE OREGON REAL-TIME GNSS NETWORK .
4. ELEVATIONS ARE BASED NAVD 1988 AS ESTABLISHED BY GNSS OBSERVATION TO THE OREGON REAL-TIME GNSS NETWORK.
5. ALL DISTANCES ARE GRID BASED ON THE LOW DISTORTION ZONE.
6. TRUE GEODETIC AZIMUTH = GRID AZIMUTH (BEARING BASIS) + MAPPING ANGLE. THE MAPPING ANGLE IS 00°03'40" AT CONTROL STATION 106. THE MAGNETIC DECLINATION FROM TRUE GEODETIC AZIMUTH IS 14°37' EAST.
7. THE TERM "CERTIFY" (OR ITS DERIVATIVES) SHALL MEAN A STATEMENT SIGNED AND/OR SEALED BY A SURVEYOR REPRESENTING THAT THE SURVEYOR'S KNOWLEDGE, INFORMATION AND BELIEF, IN ACCORDANCE WITH COMMONLY ACCEPTED PROCEDURES CONSISTENT WITH APPLICABLE STANDARDS OF PRACTICE, AND IS NOT A GUARANTY OR WARRANTY, EITHER EXPRESSED OR IMPLIED.
8. THIS SURVEY SHOWS ONLY THOSE DEDICATIONS AND EASEMENTS CONTAINED IN THE SUPPLIED TITLE SEARCH. IT IS POSSIBLE THAT OTHER RECORDED OR UNRECORDED INSTRUMENTS EFFECTING THIS PROPERTY MAY EXIST.
9. ORION GEOMATICS MAKES NO WARRANTIES AS TO MATTERS OF UNWRITTEN TITLE SUCH AS ADVERSE POSSESSION, ACQUIESCENCE, ESTOPPLE, ETC.
10. ALL STATEMENTS WITHIN THE CERTIFICATION, AND OTHER REFERENCES LOCATED ELSEWHERE HEREON, RELATED TO: UTILITIES, IMPROVEMENTS, STRUCTURES, BUILDINGS, PARTY WALLS, EASEMENTS, SERVITUDES, AND ENCROACHMENTS; ARE BASED SOLELY ON ABOVE GROUND, VISIBLE EVIDENCE, UNLESS ANOTHER SOURCE OF INFORMATION IS SPECIFICALLY REFERENCED HEREON.
11. NO UTILITIES WERE MARKED PRIOR TO SURVEY. [TABLE 'A' ITEM 11]

REFERENCES:

-RECORDS OF SURVEY:

R1) SN 3598

R2) SN 27672 (PARTITIONING 79-16)

R3) SN 35039

R4) SN 36195

R5) PP 2024-006

-DEEDS;

REEL 1393-0098

REEL 3051-0342

SURVEY RELATED SPECIAL EXCEPTIONS:

AMERITITLE STATUS OF RECORD TITLE NO. 658013AM
DATED NOVEMBER 6, 2024

1 - 9. NOT SURVEY RELATED

10. AN EASEMENT INCLUDING THE TERMS AND PROVISIONS THEREOF, AFFECTING THE PORTION OF SAID PREMISES AND FOR THE PURPOSES STATED THEREIN AS SET FORTH IN INSTRUMENT:
GRANTED TO: PORTLAND GENERAL ELECTRIC COMPANY
RECORDED: FEBRUARY 19, 1940
INSTRUMENT NO.: BOOK: 245, PAGE: 239

SURVEYOR'S NOTE: DOES NOT APPEAR TO AFFECT SUBJECT PROPERTY, NOT PLOTTED HEREON.

11. AN EASEMENT INCLUDING THE TERMS AND PROVISIONS THEREOF, AFFECTING THE PORTION OF SAID PREMISES AND FOR THE PURPOSES STATED THEREIN AS SET FORTH IN INSTRUMENT:
GRANTED TO: PACIFIC TELEPHONE AND TELEGRAPH COMPANY
RECORDED: MAY 16, 1942
INSTRUMENT NO.: BOOK: 271, PAGE: 343

SURVEYOR'S NOTE: DOES NOT APPEAR TO AFFECT SUBJECT PROPERTY, NOT PLOTTED HEREON.

12. AN EASEMENT INCLUDING THE TERMS AND PROVISIONS THEREOF, AFFECTING THE PORTION OF SAID PREMISES AND FOR THE PURPOSES STATED THEREIN AS SET FORTH IN INSTRUMENT:
GRANTED TO: PORTLAND GENERAL ELECTRIC COMPANY
RECORDED: APRIL 24, 1952
INSTRUMENT NO.: VOLUME: 439 PAGE: 200

SURVEYOR'S NOTE: DOES NOT APPEAR TO AFFECT SUBJECT PROPERTY, NOT PLOTTED HEREON.

13. AN EASEMENT INCLUDING THE TERMS AND PROVISIONS THEREOF, AFFECTING THE PORTION OF SAID PREMISES AND FOR THE PURPOSES STATED THEREIN AS SET FORTH IN INSTRUMENT:
GRANTED TO: PACIFIC NORTHWEST BELL TELEPHONE COMPANY
RECORDED: JUNE 28, 1979
INSTRUMENT NO.: REEL: 173, PAGE: 971

SURVEYOR'S NOTE: ACCESS/BURIED UTILITY EASEMENT AS DEPICTED ON PARTITIONING 79-16 (SN 27672), PLOTTED HEREON.

14. AN EASEMENT INCLUDING THE TERMS AND PROVISIONS THEREOF, AFFECTING THE PORTION OF SAID PREMISES AND FOR THE PURPOSES STATED THEREIN AS SET FORTH IN INSTRUMENT:
GRANTED TO: PORTLAND GENERAL ELECTRIC COMPANY
RECORDED: APRIL 8, 1981
INSTRUMENT NO.: REEL: 246, PAGE: 676

SURVEYOR'S NOTE: ONLY A PORTION OF THE EXHIBT MAP IS SHOWN ON THE DOCUMENT. PARTITION PLAT 2024-006 (EXCEPTION 24) SHOW A PORTION OF THE EASEMENT BUT DOES BUT IS LACKING A WAY TO RELATE THE EASEMENT TO THE PLATS BOUNDARY. THE EXCEPTION IS PLOTTED HEREON FOR GRAPHICAL PURPOSES ONLY.

15. AN EASEMENT INCLUDING THE TERMS AND PROVISIONS THEREOF, AFFECTING THE PORTION OF SAID PREMISES AND FOR THE PURPOSES STATED THEREIN AS SET FORTH IN INSTRUMENT:
GRANTED TO: CONTEL OF THE NORTHWEST
RECORDED: JUNE 5, 1989
INSTRUMENT NO.: REEL: 694, PAGE: 34

SURVEYOR'S NOTE: DOES NOT APPEAR TO AFFECT SUBJECT PROPERTY, NOT PLOTTED HEREON.

16. A LEASE WITH CERTAIN TERMS, COVENANTS, CONDITIONS AND PROVISIONS SET FORTH THEREIN.
LESSOR:A: FLOYD T. FOX, JR.
LESSOR:B: WESTERN PCS I CORPORATION DATED: APRIL 12, 1996
RECORDED: JUNE 20, 1996
INSTRUMENT NO.: REEL: 1318, PAGE: 733
MODIFICATION OF SAID LEASE
EXECUTED BY FOX LAND COMPANY LLC, AN OREGON LIMITED LIABILITY COMPANY AS LESSOR, AND T-MOBILE WEST TOWER LLC, A DELAWARE LIMITED LIABILITY COMPANY AS LESSEE
RECORDED: SEPTEMBER 30, 2016
INSTRUMENT NO.: REEL: 3866, PAGE: 344

SURVEYOR'S NOTE: NO PLOTTABLE DESCRIPTION PROVIDED, NOT PLOTTED HERON.

17. NOT SURVEY RELATED

18. NOT SURVEY RELATED

19. AN UNRECORDED LEASE WITH CERTAIN TERMS, COVENANTS, CONDITIONS AND PROVISIONS SET FORTH THEREIN AND SUCH OTHER EXCEPTIONS AS MAY APPEAR NECESSARY UPON RECORDING THEREOF,
LESSOR: FOX LAND COMPANY LLC
LESSEE: VERIZON WIRELESS (VAW) LLC D/B/A VERIZON WIRELESS
DISCLOSED BY: MEMORANDUM OF LEASE
DATE: DECEMBER 13, 2007
RECORDED: MARCH 26, 2008
INSTRUMENT NO.: REEL: 2934, PAGE: 270

SURVEYOR'S NOTE: LEASE FOR ADJACENT TOWER SITE. DOES NO AFFECT SUBJECT PROPERTY, NOT PLOTTED HEREON.

20. AGREEMENT AND THE TERMS AND CONDITIONS CONTAINED THEREIN
BETWEEN: FOX LAND COMPANY LLC
AND: VERIZON WIRELESS (VAW) LLC D/B/A VERIZON WIRELESS
PURPOSE: EASEMENT AND ASSIGNMENT AGREEMENT
RECORDED: NOVEMBER 2, 2016
INSTRUMENT NO.: REEL: 3877, PAGE: 259

SURVEYOR'S NOTE: REVISED DESCRIPTION FOR ADJACENT TOWER LEASE PER EXCEPTION 19. ALSO CONTAINS ACCESS EASEMENTS TO SAID TOWER SITE. PLOTTED HEREON FOR REFERENCE.

21. AN EASEMENT INCLUDING THE TERMS AND PROVISIONS THEREOF, AFFECTING THE PORTION OF SAID PREMISES AND FOR THE PURPOSES STATED THEREIN AS SET FORTH IN INSTRUMENT:
GRANTED TO: PORTLAND GENERAL ELECTRIC COMPANY
RECORDED: JULY 25, 2017
INSTRUMENT NO.: REEL: 3974, PAGE: 108

SURVEYOR'S NOTE: 10 FOOT POWER SERVICE EASEMENT OVER EXISTING LINE. NO DESCRIPTION PROVIDED, NOT PLOTTED HEREON.

22. EASEMENT AGREEMENT, INCLUDING THE TERMS AND PROVISIONS THEREOF,
RECORDED: DECEMBER 19, 2018
INSTRUMENT NO.: REEL: 4151 PAGE: 2118

SURVEYOR'S NOTE: OTHER'S TOWER LEASE SITE, NOT PLOTTED HEREON

23. AN EASEMENT INCLUDING THE TERMS AND PROVISIONS THEREOF, AFFECTING THE PORTION OF THE LAND AND FOR THE PURPOSES STATED THEREIN AS SET FORTH IN INSTRUMENT:
GRANTED TO: SBA TOWERS X LLC, A DELAWARE LIMITED LIABILITY COMPANY
RECORDED: DECEMBER 19, 2018
INSTRUMENT NO.: REEL: 4151 PAGE: 219

SURVEYOR'S NOTE: OTHER'S TOWER LEASE SITE, NOT PLOTTED HEREON

24. EASEMENTS AS SHOWN ON THE PARTITION PLAT NO. 2024-006.

SURVEYOR'S NOTE: THE PARTITION PLAT SURROUNDS THE SUBJECT PROPERTY. THE PLAT WAS MADE WITHOUT THE BENEFIT OF A SURVEY. THE PLAT SHOWS THREE (3) EASEMENTS REFERENCED ABOVE AS EXCEPTIONS 11, 13 & 14. PLOTTED HEREON FOR GRAPHICAL REFERENCE.

MONUMENT TABLE			
MONUMENT	DESCRIPTION	FALLING	RECORD
402	FOUND 3" BR DISK 'MARION COUNTY \ T9S R2S \ 18|19 1/4 C0R \ 1977" IN BOX	HELD	SN 3598
403	FOUND 3-1/4" AL DISK 'MARION COUNTY SURVEYOR \ T9S R3W R2W \ S13|S18|S24|S19 \ 1998'	HELD	SN 35039
507	FOUND 5/8" IR	HELD	SN 27672
508	FOUND 5/8" IR	HELD	SN 27672
509	FOUND 5/8" IR	S 53°03'32" E, 0.52'	SN 27672

SECTION 13, T09S, R03W, W.M

11X17 SCALE: 1" = 40' | 22X34 SCALE: 1" = 20' | 1

Marion County
OREGON

PROJECT INFORMATION:

MARION COUNTY WIPPER

11454 SUMMIT LOOP SE
TURNER, OR 97392

	DATE	RELEASE
0	11/16/2024	INITIAL SURVEY RELEASE

DRAWING INFORMATION:
THIS DRAWING IS COPYRIGHTED AND IS THE SOLE PROPERTY OF THE OWNER. IT IS PRODUCED SOLELY FOR USE BY THE OWNER AND ITS AFFILIATES. REPRODUCTION OR USE OF THIS DRAWING AND/OR THE INFORMATION CONTAINED IN IT IS FORBIDDEN WITHOUT THE WRITTEN PERMISSION OF THE OWNER.

PLANS PREPARED BY:

cushing Civil Engineers

Cushing Civil Engineers
12725 SW MILLIKAN WAY
SUITE 300
BEAVERTON, OR 97005
(503) 387-5331
www.cushing-engr.com

LICENSURE:

orion GEOMATICS
Because the world is a spatial place™
1724 23rd Avenue | Forest Grove OR 97116
T: 503.359.1688 | www.oriongeomatics.com

REGISTERED
PROFESSIONAL
LAND SURVEYOR

DIGITAL SIGNATURE

OREGON
JULY 19, 1994
JOHN D. PUTNAM
2676

RENEWS: 12-31-24
DIGITALLY SIGNED 11/16/2024

SHEET TITLE:

EXISTING CONDITIONS

SHEET NUMBER:

V-2

EXHIBIT K

GENERAL NOTES:

1. DRAWINGS ARE NOT TO BE SCALED, WRITTEN DIMENSIONS TAKE PRECEDENCE, THIS SET OF DOCUMENTS IS INTENDED TO BE USED FOR DIAGRAMMATIC PURPOSED ONLY, UNLESS NOTED OTHERWISE. THE GENERAL CONTRACTOR'S SCOPE OF WORK SHALL INCLUDE FURNISHING ALL MATERIALS, EQUIPMENT, LABOR AND ANY REQUIREMENTS DEEMED NECESSARY TO COMPLETE INSTALLATION AS DESCRIBED IN THE DRAWINGS AND OWNER'S PROJECT MANUAL.
2. THE CONTRACTOR IS RESPONSIBLE FOR ALL DIMENSIONS AND STANDARDIZED DETAILS THAT REQUIRE MODIFICATIONS DUE TO ACTUAL FIELD CONDITIONS AND REQUIREMENTS MUST BE SUBMITTED TO AND APPROVED BY OWNERS REPRESENTATIVE PRIOR TO START OF WORK.
3. PRIOR TO THE SUBMISSION OF BIDS, CONTRACTORS INVOLVED SHALL VISIT THE JOB SITE TO FAMILIARIZE THEMSELVES WITH ALL CONDITIONS AFFECTING THE PROPOSED PROJECT. CONTRACTORS SHALL VISIT THE CONSTRUCTION SITE WITH THE CONSTRUCTION/CONTRACT DOCUMENTS TO VERIFY FIELD CONDITIONS AND CONFIRM THAT THE PROJECT WILL BE ACCOMPLISHED AS SHOWN. PRIOR TO PROCEEDING WITH CONSTRUCTION, ANY ERRORS, OMISSIONS, OR DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT/ENGINEER VERBALLY AND IN WRITING.
4. THE GENERAL CONTRACTOR SHALL RECEIVE WRITTEN AUTHORIZATION TO PROCEED WITH CONSTRUCTION PRIOR TO STARTING WORK ON ANY ITEM NOT CLEARLY DEFINED BY THE CONSTRUCTION DRAWINGS/CONTRACT DOCUMENTS.
5. THE CONTRACTOR SHALL SUPERVISE AND DIRECT THE PROJECT DESCRIBED IN THE CONTRACT DOCUMENTS. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR ALL CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES, SAFETY, AND PROCEDURES FOR COORDINATING ALL PORTIONS OF THE WORK UNDER THE CONTRACT.
6. THE CONTRACTOR SHALL INSTALL ALL EQUIPMENT AND MATERIALS ACCORDING TO MANUFACTURER'S/VENDOR'S SPECIFICATIONS UNLESS NOTED OTHERWISE OR WHERE LOCAL CODES OR ORDINANCES TAKE PRECEDENCE.
7. ALL WORK PERFORMED ON THE PROJECT AND MATERIALS INSTALLED SHALL BE IN STRICT ACCORDANCE WITH ALL APPLICABLE CODES, REGULATIONS, AND ORDINANCES. CONTRACTOR SHALL GIVE ALL NOTICES AND COMPLY WITH ALL LAWS, ORDINANCES, RULES, REGULATIONS AND LAWFUL ORDERS OF ANY PUBLIC AUTHORITY, MUNICIPAL AND UTILITY COMPANY SPECIFICATIONS, AND LOCAL AND STATE JURISDICTIONAL CODES BEARING ON THE PERFORMANCE OF THE WORK.
8. THE CONTRACTOR SHALL PROVIDE, AT THE PROJECT SITE, A FULL SET OF CONSTRUCTION DOCUMENTS UPDATED WITH THE LATEST REVISIONS INVOLVED WITH THE PROJECT. THIS SET IS A VALID CONTRACT DOCUMENT ONLY IF THE TITLE SHEET IS STAMPED IN RED INK "FOR CONSTRUCTION" AND EACH SUCCESSIVE SHEET BEARS THE ARCHITECT'S/ENGINEER'S SIGNED WET STAMP.
9. THE CONTRACTOR IS RESPONSIBLE FOR ADEQUATELY BRACING AND PROTECTING ALL WORK DURING CONSTRUCTION AGAINST DAMAGE, BREAKAGE, COLLAPSE, ETC. ACCORDING TO APPLICABLE CODES, STANDARDS, AND GOOD CONSTRUCTION PRACTICES. THE STRUCTURAL COMPONENTS OF ADJACENT CONSTRUCTION OR FACILITIES ARE NOT TO BE ALTERED BY THE CONSTRUCTION PROJECT UNLESS NOTED OTHERWISE.
10. THE CONTRACTOR SHALL MEET ALL OSHA REQUIREMENTS FOR ALL INSTALLATIONS.
11. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL DAMAGES TO THE EXISTING CONSTRUCTION AND REPAIR ALL DAMAGES TO EQUAL OR BETTER NEW CONSTRUCTION. THE CONTRACTOR SHALL NOTIFY THE PROJECT MANAGER OF ANY DAMAGE TO THE BUILDING SITE OR ANY ADJACENT STRUCTURES AROUND THE PROJECT. THE OWNERS REPRESENTATIVE SHALL BE SOLE AND FINAL JUDGE AS TO THE QUALITY OF THE REPAIRED CONSTRUCTION. ANY ADDITIONAL MODIFICATIONS WHICH MUST BE MADE SHALL BE MADE AT THE CONTRACTOR'S EXPENSE.
12. WHERE NEW PAVING, CONCRETE SIDEWALKS OR PATHS MEET EXISTING CONSTRUCTION, THE CONTRACTOR SHALL MATCH THE EXISTING PITCH, GRADE, AND ELEVATION SO THE ENTIRE STRUCTURE SHALL HAVE A SMOOTH TRANSITION.
13. THE CONTRACTOR SHALL MODIFY THE EXISTING FLOORS, WALL, CEILING, OR OTHER CONSTRUCTION AS REQUIRED TO GAIN ACCESS TO AREAS FOR ALL MECHANICAL, PLUMBING, ELECTRICAL, OR STRUCTURAL MODIFICATIONS. WHERE THE EXISTING CONSTRUCTION DOORS, PARTITIONS, CEILING, ETC., ARE TO BE REMOVED, MODIFIED, OR REARRANGED OR WHERE THE EXPOSED OR HIDDEN MECHANICAL, ELECTRICAL, SYSTEMS ARE ADDED OR MODIFIED, THE GENERAL CONTRACTOR SHALL REPAIR, PATCH AND MATCH ALL EXISTING CONSTRUCTION AND FINISHES OF ALL FLOORS WALLS AND CEILINGS. WHERE CONCRETE MASONRY CONSTRUCTION IS MODIFIED, THE CONTRACTOR SHALL TOOTH IN ALL NEW CONSTRUCTION TO MATCH THE EXISTING BOND. WHERE CONCRETE CONSTRUCTION IS MODIFIED, THE CONTRACTOR SHALL VERIFY THE EXACT DETAILS TO BE USED FOR CONSTRUCTION. ALL WORK SHALL BE COVERED UNDER THE GENERAL CONTRACT.
14. IF CONTRACTOR OR SUBCONTRACTOR FIND IT NECESSARY TO DEVIATE FROM ORIGINAL APPROVED PLANS, THEN IT IS THE CONTRACTOR'S AND THE SUBCONTRACTOR'S RESPONSIBILITY TO PROVIDE THE PROJECT MANAGER WITH 4 COPIES OF THE PROPOSED CHANGES FOR HIS APPROVAL BEFORE PROCEEDING WITH THE WORK. IN ADDITION THE CONTRACTOR AND SUBCONTRACTORS SHALL BE RESPONSIBLE FOR PROCURING ALL NECESSARY APPROVALS FROM THE BUILDING AUTHORITIES FOR THE PROPOSED CHANGES BEFORE PROCEEDING WITH THE WORK. THE CONTRACTOR AND SUBCONTRACTORS SHALL BE RESPONSIBLE FOR PROCURING ALL NECESSARY INSPECTIONS AND APPROVALS FROM BUILDING AUTHORITIES DURING THE EXECUTION OF THE WORK.
15. CONTRACTOR TO PROVIDE A PORTABLE FIRE EXTINGUISHER WITH A RATING OF NOT LESS THAN 2-A OR 2-A10BC WITHIN 75 FEET TRAVEL DISTANCE TO ALL PORTIONS OF PROJECT AREA DURING CONSTRUCTION.
16. THIS IS AN ESSENTIAL FACILITY THEREFORE SHALL STRICTLY MEET ALL APPLICABLE CODE AND JURISDICTIONAL REQUIREMENTS.

GENERAL NOTES CONTINUED:

17. THE CONTRACTOR SHALL PERFORM WORK DURING SITE/PROPERTY OWNER'S PREFERRED HOURS TO AVOID DISTURBING NORMAL BUSINESS.
18. SEAL ALL PENETRATIONS THROUGH FIRE-RATED AREAS WITH U.L. LISTED OR FIRE MARSHAL APPROVED MATERIALS AS APPLICABLE TO THIS FACILITY AND OR PROJECT SITE.
19. CONTRACTOR SHALL BE RESPONSIBLE FOR UTILITY LOCATES, SCHEDULING, COORDINATING SPECIAL AND BUILDING DEPARTMENT INSPECTIONS.
21. ROUTING OF ALL CONDUITS, CABLES, CABLE TRAYS ETC ARE INDICATED AS PROPOSED LOCATION ONLY. CONFIRM THE EXACT LOCATION AND ROUTING WITH THE ON SITE PROJECT MANAGER PRIOR TO STARTING WORK.

CONCRETE NOTES:

1. ALL CONCRETE WORK SHALL BE IN ACCORDANCE WITH THE ACI 301, ACI 318 AND THE SPECIFICATION CAST-IN-PLACE CONCRETE.
2. ALL CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 3000 PSI AT 28 DAYS (UNO).
3. REINFORCING STEEL SHALL CONFORM TO ASTM A 615, GRADE 60, DEFORMED UNLESS NOTED OTHERWISE. WELDED WIRE FABRIC SHALL CONFORM TO ASTM A 185 WELDED STEEL WIRE FABRIC UNLESS NOTED OTHERWISE. SPLICES CLASS "B" AND ALL HOOKS SHALL BE STANDARD (UNO).
4. THE FOLLOWING MINIMUM CONCRETE COVER SHALL BE PROVIDED FOR REINFORCING STEEL UNLESS SHOWN OTHERWISE ON DRAWINGS: CONCRETE CAST AGAINST EARTH - 3 IN.
   CONCRETE EXPOSED TO EARTH OR WEATHER:
   #6 AND LARGER .....2 IN.
   #5 AND SMALLER & WWF .....1-1/2 IN.
5. A 1/2" TROWELED RADIUS SHALL BE PROVIDED AT ALL EXPOSED EDGES OF CONCRETE (UNO). HOLES TO RECEIVE EXPANSION/WEDGE ANCHORS SHALL BE 1/8" LARGER IN DIAMETER THAN THE ANCHOR BOLT, DOWEL OR ROD AND SHALL CONFORM TO MFR RECOMMENDATION FOR EMBEDMENT DEPTH OR AS SHOWN ON THE DRAWINGS. AVOID CUTTING EXISTING REBAR WHEN DRILLING HOLES IN THE ELEVATED SLAB.
6. INSTALLATION OF CONCRETE EXPANSION AND WEDGE ANCHOR, SHALL BE PER MANUFACTURER'S WRITTEN RECOMMENDED PROCEDURES.
7. FLOAT SURFACE SHALL BE A SMOOTH FINISH. SURFACE SHALL BE FREE OF ALL OBVIOUS DEPRESSIONS. SURFACE SHALL BE SLOPED AT 2% TO PROMOTE DRAINAGE AWAY FROM EQUIPMENT.

SITE WORK NOTES:

1. RUBBISH, STUMPS, DEBRIS, STICKS, STONES AND OTHER REFUSE SHALL BE REMOVED FROM THE SITE AND DISPOSED OF LEGALLY UNLESS OTHERWISE REQUIRED TO BE LEFT AS DEFINED BY LAND/PROPERTY OWNER.
2. THE SITE SHALL BE GRADED TO CAUSE SURFACE WATER TO FLOW AWAY FROM THE EQUIPMENT, EQUIPMENT SHELTER, GENERATOR, FUEL TANK, TOWER AREAS, AND ADJACENT BUILDINGS, ETC.
3. NO FILL OR EMBANKMENT MATERIAL SHALL BE PLACED ON FROZEN GROUND. FROZEN MATERIALS, SNOW OR ICE SHALL NOT BE PLACED IN ANY FILL OR EMBANKMENT.
4. THE SUBGRADE SHALL BE COMPACTED AND BROUGHT TO A SMOOTH UNIFORM GRADE PRIOR TO THE CRUSHED STONE APPLICATION. FABRIC USE AS REQUIRED.
5. ALL APPLICABLE LOCATES SHALL BE PERFORMED PRIOR TO TO ANY EXCAVATION OR SITE GRADING. ALL EXISTING ACTIVE SEWER, WATER, GAS, ELECTRIC, AND OTHER UTILITIES WHERE ENCOUNTERED IN THE WORK, SHALL BE PROTECTED AT ALL TIMES, AND WHERE REQUIRED FOR THE PROPER EXECUTION OF THE WORK, SHALL BE RELOCATED AS DIRECTED BY ENGINEERS. EXTREME CAUTION SHOULD BE USED BY THE CONTRACTOR WHEN EXCAVATING OR PIER DRILLING AROUND OR NEAR UTILITIES. CONTRACTOR SHALL PROVIDE SAFETY TRAINING FOR THE WORKING CREW.
6. ALL EXISTING INACTIVE SEWER, WATER, GAS, ELECTRIC AND OTHER UTILITIES, WHICH INTERFERE WITH THE EXECUTION OF THE WORK, SHALL BE REMOVED AND SHALL BE CAPPED, PLUGGED OR OTHERWISE DISCONTINUED AT POINTS WHICH WILL NOT INTERFERE WITH THE EXECUTION OF THE WORK, SUBJECT TO THE APPROVAL OF ENGINEERING.
7. THE AREAS OF THE PROPERTY DISTURBED BY THE WORK AND NOT COVERED BY THE BUILDING, DRIVEWAY OR CRUSHED STONE, SHALL BE GRADED TO A UNIFORM SLOPE, FERTILIZED, SEEDED, AND COVERED WITH MULCH AS SPECIFIED IN THE SPECIFICATION LANDSCAPE WORK..
8. BEDDING MATERIAL FOR UTILITY LINES, CULVERTS AND PIPING: CLEAN SAND, MEDIUM TP COARSE, SUB ROUNDED NATURAL RIVER OR BANK SAND, WASHED, FREE OF SILT OR CLAY, LOAM, FRIABLE OR SOLUBLE MATERIALS, AND ORGANIC MATTER; GRADED IN ACCORDANCE WITH THE FOLLOWING GRAIN SIZE DISTRIBUTION:

SIEVE SIZE	PERCENT PASSING
	100
NO. 4 MESH	60-90
NO. 8 MESH	0-45
NO. 16 MESH	0-25
NO. 100 MESH	0-2
NO. 200 MESH	0-2

9. BMP'S FOR TEMPORARY EROSION/SEDIMENTATION CONTROL SHALL BE IMPLEMENTED PER LOCAL, CITY OR COUNTY GUIDELINES AND PER PLAN IF APPLICABLE.

SITE WORK NOTES CONTINUED:

10. ALL SITE DESIGN AND CONSTRUCTION MUST COMPLY WITH INDUSTRY STANDARDS AND BE ALIGNED WITH BMP GUIDELINES AS TECHNICALLY APPLICABLE. EACH SITE MUST BE PM APPROVED BEFORE IT SHALL BE CONSIDERED COMPLETE AND ACCEPTED.
11. IF INADVERTENT DISCOVERIES OF NATIVE AMERICAN CULTURAL MATERIALS OR HUMAN REMAINS ARE MADE DURING CONSTRUCTION, ALL WORK SHOULD CEASE AND POTENTIALLY AFFECTED TRIBES, AS WELL AS THE STATE HISTORIC PRESERVATION OFFICE, SHOULD BE NOTIFIED IMMEDIATELY.

TOWER/POLE NOTES:

1. ALL ANTENNAS, LINES AND RELATED INSTALLATION HARDWARE TO BE PROVIDED BY THE LAND MOBILE COMMUNICATIONS PROVIDER.
2. ALL HARDWARE (NUTS AND BOLTS) BE TIGHTENED AND TORQUED IN ACCORDANCE WITH THE TOWER MANUFACTURER'S AND STRUCTURAL ENGINEER'S SPECIFICATIONS.
3. VERIFICATION THAT THE TOWER/POLE CAN SUPPORT THE PROPOSED ANTENNA LOADING IS TO BE DONE BY OTHERS.
4. PROVIDE SUPPORTS FOR THE ANTENNA COAX CABLES TO THE ELEVATION OF ALL INITIAL AND FUTURE ANTENNAS. ANTENNA COAX CABLES ARE TO BE SUPPORTED AND RESTRAINED AT THE CENTERS SUITABLE TO THE MANUFACTURER'S REQUIREMENTS.

ATTENTION (OREGON SITES ONLY):

CALL 1-800-332-2344 48 HOURS BEFORE YOU DIG. OREGON LAW REQUIRES YOU TO FOLLOW OAR 952-001-0010 THRU 952-001-0090. COPIES ARE AVAILABLE AT THE OREGON UTILITY NOTIFICATION CENTER 503-232-1987

DESIGN LOADS:

ROOF SNOW LOAD DATA -	GROUND SNOW LOAD:	95 PSF*
	FLAT-ROOF SNOW LOAD:	N/A
	SNOW EXPOSURE FACTOR:	N/A
	SNOW LOAD IMPORTANCE FACTOR:	N/A
	THERMAL FACTOR:	N/A
WIND DESIGN DATA -	ULTIMATE DESIGN WIND SPEED:	107 MPH*
	RISK CATEGORY:	IV
	WIND EXPOSURE:	C*
	INTERNAL PRESSURE COEFFICIENT:	N/A
	DESIGN WIND PRESSURES;	
	WIND LOAD HORIZONTAL (MWFRS):	N/A
	WIND LOAD (UPLIFT) (MWFRS):	N/A
EARTHQUAKE DESIGN DATA -	RISK CATEGORY:	IV
	SEISMIC IMPORTANCE FACTOR:	N/A
	MAPPED SPECTRAL RESPONSE ACCEL-ERATION PARAMETERS;	
	S_S	0.92
	S_1	0.38
	SITE CLASS:	B/C
	DESIGN SPECTRAL RESPONSE ACCEL-ERATION PARAMETERS;	
	S_{DS}	0.55
	S_{D1}	0.26
	SEISMIC DESIGN CATEGORY:	D
SYSTEM:	BASIC SEISMIC FORCE-RESISTING BEARING WALL	
	DESIGN BASE SHEAR:	N/A
	SEISMIC RESPONSE COEFFICIENT:	N/A
	RESPONSE MODIFICATION COEFFICIENT:	N/A
	ANALYSIS PROCEDURE USED:	N/A
GEOTECHNICAL INFORMATION -	ALLOWABLE BEARING CAPACITY:	2,500 PSF

REFER TO GEOTECH REPORT BY BLACK MOUNTAIN DATED OCTOBER 06, 2024.

*INFORMATION OBTAINED FROM ASCE 7 HAZARD TOOL

SYMBOLS LEGEND

1 REVISION
1 KEY NOTE DETAIL
3 / C-4 REFERENCE ELEVATION
A / C-3 SECTION REFERENCE
ELEVATION DATUM POINT

CHAINLINK FENCE
CEDAR FENCE
PROPANE — LPG
UNDERGROUND POWER — P
OVERHEAD POWER — OHP

TELCO — T
POWER/TELCO — T/P
GAS — G
WATER — W
COAX — COAX
CENTERLINE
EASEMENT
PROPERTY LINE
SUBJECT PROPERTY LINE

ABBREVIATIONS LEGEND

A/C	AIR CONDITIONING	MET, MTL	METAL
ADJ	ADJUSTABLE	MFR	MANUFACTURER
AFF	ABOVE FINISH FLOOR	MGR	MANAGER
AGL	ABOVE GRADE LEVEL	MIN	MINIMUM
APPROX	APPROXIMATELY	MISC	MISCELLANEOUS
ASTM	AMERICAN SOCIETY FOR TESTING & MATERIALS	N	NORTH
AWG	AMERICAN WIRE GAUGE	NA	NOT APPLICABLE
BLDG	BUILDING	NIC	NOT IN CONTRACT
BLK	BLOCK	NTS	NOT TO SCALE
BMR	BASE MOBILE RADIO	OC, o/c	ON CENTER
B/S	BUILDING STANDARD	OD	OUTSIDE DIAMETER
CLG	CEILING	OPG	OPENING
CLR	CLEAR	OPP	OPPOSITE
CONC	CONCRETE	OHP	OVERHEAD POWER
CONST	CONSTRUCTION	UGP	UNDRGRND POWER
CONT	CONTINUOUS	OHT	OVERHEAD TELCO
DBL	DOUBLE	UGT	UNDRGRND TELCO
DIA, Ø	DIAMETER	PR	PAIR
DIAG	DIAGONAL	PROJ	PROJECT
DIM	DIMENSION	PROP	PROPERTY
DN	DOWN	P	PROPOSED
DTL, DETL	DETAIL	PT	PRESSURE TREATED
DWG	DRAWING	REQ'D	REQUIRED
E	EAST	RM	ROOM
EA	EACH	R.O.	ROUGH OPENING
EL, ELEV	ELEVATION	S	SOUTH
ELECT	ELECTRICAL	SHT	SHEET
EQ	EQUAL	SIM	SIMILAR
EQUIP	EQUIPMENT	SPEC	SPECIFICATION
E.W.	EACH WAY	SQ	SQUARE
EX	EXISTING	SS	STAINLESS STEEL
EXT	EXTERIOR	STL	STEEL
FIN	FINISH	STRUCT	STRUCTURAL
FLUOR	FLUORESCENT	SUSP	SUSPENDED
FLR	FLOOR	S.V.	SHEET VINYL
FT	FOOT	THRU	THROUGH
GA	GAUGE	TNND	TINNED
GALV	GALVANIZE(D)	T.O.C.	TOP OF CONCRETE
GC	GENERAL CONTRACTOR	T.O.M.	TOP OF MASONRY
GRND	GROUND	TYP	TYPICAL
GWB	GYPSUM WALL BOARD	U.N.O.	UNLESS NOTED OTHERWISE
GYP BD	GYPSUM BOARD	VERT	VERTICAL
HARD'WD	HARDWOOD	VIF	VERIFY IN FIELD
HORIZ	HORIZONTAL	VT	VINYL TILE
HR	HOUR	W	WEST
HT	HEIGHT	W/	WITH
HVAC	HEATING, VENTING AND AIR CONDITIONING	WIN	WINDOW
I.D.	INSIDE DIA.	W/O	WITHOUT
IN	INCH	WP	WATERPROOF
INFO	INFORMATION	∠	ANGLE
INSUL	INSULATION	&	AND
INT	INTERIOR	℄	CENTER LINE
LB(S)	POUND(S)	ℙ	PROPERTY LINE
LNA	ANTENNA AMPLIFIER	@	AT
MAX	MAXIMUM	#	NUMBER
MECH	MECHANICAL		

Marion County OREGON

PROJECT INFORMATION:

MARION COUNTY WIPPER

11545 SUMMIT LOOP SE
TURNER, OR 97392

	DATE	RELEASE
	07-20-24	SITE SKETCH
	09-25-24	REVISED SITE SKETCH
	11-04-24	PRELIMINARY ZONING DRAWINGS
	08-19-25	PRELIMINARY CONSTRUCTION DRAWINGS
	10-07-25	FINAL CONSTRUCTION DRAWINGS

DRAWING INFORMATION:
THIS DRAWING IS COPYRIGHTED AND IS THE SOLE PROPERTY OF THE OWNER. IT IS PRODUCED SOLELY FOR USE BY THE OWNER AND ITS AFFILIATES. REPRODUCTION OR USE OF THIS DRAWING AND/OR THE INFORMATION CONTAINED IN IT IS FORBIDDEN WITHOUT THE WRITTEN PERMISSION OF THE OWNER.

PLANS PREPARED BY:

cushing Civil Engineers

Cushing
Civil Engineers
12725 SW MILLIKAN WAY
SUITE 300
BEAVERTON, OR 97005
(503) 387-5331
www.cushingcivilengineers.com

LICENSURE:

REGISTERED PROFESSIONAL ENGINEER 83233 OREGON JUNE 7, 2012 KENNY McMANAWAY

RENEWAL DATE 12/31/26

SHEET TITLE:

GENERAL NOTES

SHEET NUMBER:

G-1

EROSION CONTROL NOTES:

1. OWNER OR DESIGNATED PERSON SHALL BE RESPONSIBLE FOR PROPER INSTALLATION AND MAINTENANCE OF ALL EROSION AND SEDIMENT CONTROL MEASURES, IN ACCORDANCE WITH LOCAL, STATE, AND FEDERAL REGULATIONS.
2. THE IMPLEMENTATION OF THESE ESC PLANS AND CONSTRUCTION, MAINTENANCE, REPLACEMENT, AND UPGRADING OF THESE ESC FACILITIES IS THE RESPONSIBILITY OF THE CONTRACTOR UNTIL ALL CONSTRUCTION IS COMPLETED AND APPROVED BY THE LOCAL JURISDICTION, AND VEGETATION/LANDSCAPING IS ESTABLISHED. THE DEVELOPER SHALL BE RESPONSIBLE FOR MAINTENANCE AFTER THE PROJECT IS APPROVED UNTIL THE LOTS ARE SOLD.
3. THE BOUNDARIES OF THE CLEARING LIMITS SHOWN ON THIS PLAN SHALL BE CLEARLY MARKED IN THE FIELD PRIOR TO CONSTRUCTION. DURING THE CONSTRUCTION PERIOD, NO DISTURBANCE BEYOND THE CLEARING LIMITS SHALL BE PERMITTED. THE MARKINGS SHALL BE MAINTAINED BY THE APPLICANT/CONTRACTOR FOR THE DURATION OF CONSTRUCTION.
4. THE ESC FACILITIES SHOWN ON THIS PLAN MUST BE CONSTRUCTED IN CONJUNCTION WITH ALL CLEARING AND GRADING ACTIVITIES, AND IN SUCH A MANNER AS TO INSURE THAT SEDIMENT AND SEDIMENT LADEN WATER DOES NOT ENTER THE DRAINAGE SYSTEM, ROADWAYS, OR VIOLATE APPLICABLE WATER STANDARDS.
5. THE ESC FACILITIES SHOWN ON THIS PLAN ARE MINIMUM REQUIREMENTS FOR ANTICIPATED SITE CONDITIONS. DURING CONSTRUCTION PERIODS, THESE ESC FACILITIES SHALL BE UPGRADED AS NEEDED FOR UNEXPECTED STORM EVENTS AND TO ENSURE THAT SEDIMENT AND SEDIMENT LADEN WATER DOES NOT LEAVE THE SITE.
6. THE ESC FACILITIES SHALL BE INSPECTED DAILY BY THE APPLICANT/CONTRACTOR AND MAINTAINED AS NECESSARY TO ENSURE THEIR CONTINUED FUNCTIONING.
7. AT NO TIME SHALL SEDIMENT BE ALLOWED TO ACCUMULATE MORE THAN 1/3 THE BARRIER HEIGHT. ALL CATCH BASINS AND CONVEYANCE LINES SHALL BE CLEANED PRIOR TO PAVING. THE CLEANING OPERATIONS SHALL NOT FLUSH SEDIMENT-LADEN WATER INTO THE DOWNSTREAM SYSTEM.
8. STABILIZED GRAVEL ENTRANCES SHALL BE INSTALLED AT THE BEGINNING OF CONSTRUCTION AND MAINTAINED FOR THE DURATION OF THE PROJECT. ADDITIONAL MEASURES MAY BE REQUIRED TO INSURE THAT ALL PAVED AREAS ARE KEPT CLEAN FOR THE DURATION OF THE PROJECT.
9. STORM DRAIN INLETS, BASINS, AND AREA DRAINS SHALL BE PROTECTED UNTIL PAVEMENT SURFACES ARE COMPLETED AND/OR VEGETATION IS RE-ESTABLISHED.
10. PAVEMENT SURFACES AND VEGETATION ARE TO BE PLACED AS RAPIDLY AS POSSIBLE.
11. SEEDING SHALL BE PERFORMED NO LATER THAN SEPTEMBER 1 FOR EACH PHASE OF CONSTRUCTION.
12. IF THERE ARE EXPOSED SOILS OR SOILS NOT FULLY ESTABLISHED FROM OCTOBER 1ST THROUGH APRIL 30TH, THE WET WEATHER EROSION PREVENTION MEASURES WILL BE IN EFFECT. SEE THE EROSION PREVENTION AND SEDIMENT CONTROL PLANNING AND DESIGN MANUAL (CHAPTER 4) FOR REQUIREMENTS.
13. NO EXPOSED, BARE SOILS SHALL REMAIN UNSTABILIZED FOR MORE THAN TWO DAYS DURING THE PERIOD OCTOBER 1 THROUGH APRIL 30 OR FOR MORE THAN SEVEN DAYS DURING THE PERIOD OF MAY 1 THROUGH SEPTEMBER 30. ALL DISTURBED SOIL SURFACES SHALL BE STABILIZED BY A SUITABLE APPLICATION OF "BEST MANAGEMENT PRACTICES".
14. WHERE FEASIBLE, NO MORE THAN 500 FEET OF TRENCH SHALL BE OPEN AT ONE TIME. EXCAVATED MATERIAL SHALL BE PLACED ON THE UPHILL SIDE OF TRENCHES PROVIDED IT DOES NOT CONFLICT WITH SAFETY REQUIREMENTS.
15. THE DEVELOPER SHALL REMOVE ESC MEASURES WHEN VEGETATION IS FULLY ESTABLISHED.

GENERAL NOTES

SCALE: NTS | 4

UNADJUSTED CUT/ FILL QUANTITIES

STRIPPING ORGANICS FOR COMPOUND;
CUT = ±95.20 CU. YD.

STRIPPING FOR ACCESS ROAD AND PARKING;
CUT = EXISTING

PROPOSED COMPOUND AREA;
CUT = ±1 CU. YD.
FILL = ±74.86 CU. YD.

PROPOSED ACCESS ROAD AND PARKING;
CUT = 0 CU. YD.
FILL = 0 CU. YD.

PROPOSED TOWER FOUNDATION;
EXCAVATION = ±TBD CU. YD.

APPROX. TOTAL AREA OF DISTURBANCE OF PROPOSED GRADING = ±3,190 SQ. FT.

REFER TO GEO-TECHNICAL ENGINEERING EVALUATION BY BLACK MOUNTAIN DATED OCTOBER 06, 2024.

CUT/ FILL QUANTITIES

SCALE: NTS | 3

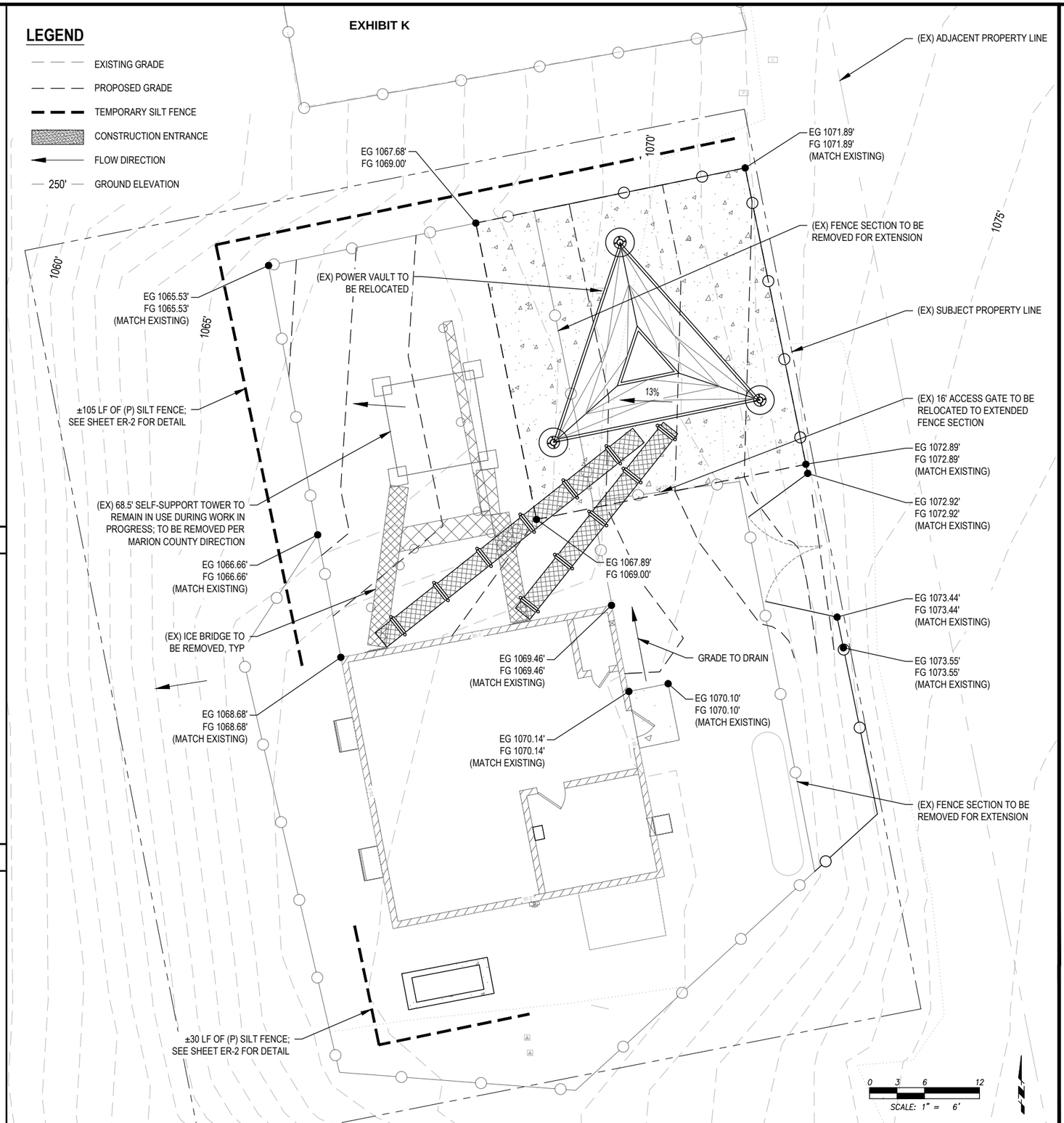
NOT USED

SCALE: NTS | 2

EXHIBIT K

LEGEND

- EXISTING GRADE
- PROPOSED GRADE
- TEMPORARY SILT FENCE
- CONSTRUCTION ENTRANCE
- FLOW DIRECTION
- 250' GROUND ELEVATION



GRADING & EROSION CONTROL PLAN

11X17 SCALE: 1" = 12' | 22X34 SCALE: 1" = 6' | 1

Marion County OREGON

PROJECT INFORMATION:

MARION COUNTY WIPPER

11545 SUMMIT LOOP SE
TURNER, OR 97392

	DATE	RELEASE
	07-20-24	SITE SKETCH
	09-25-24	REVISED SITE SKETCH
	11-04-24	PRELIMINARY ZONING DRAWINGS
	08-19-25	PRELIMINARY CONSTRUCTION DRAWINGS
	10-07-25	FINAL CONSTRUCTION DRAWINGS

DRAWING INFORMATION:

THIS DRAWING IS COPYRIGHTED AND IS THE SOLE PROPERTY OF THE OWNER. IT IS PRODUCED SOLELY FOR USE BY THE OWNER AND ITS AFFILIATES. REPRODUCTION OR USE OF THIS DRAWING AND/OR THE INFORMATION CONTAINED IN IT IS FORBIDDEN WITHOUT THE WRITTEN PERMISSION OF THE OWNER.

PLANS PREPARED BY:

cushing Civil Engineers

Cushing Civil Engineers
12725 SW MILLIKAN WAY
SUITE 300
BEAVERTON, OR 97005
(503) 387-5331
www.cushingcivilengineers.com

LICENSURE:

REGISTERED PROFESSIONAL ENGINEER
83233
OREGON
JUNE 7, 2012
KENNY McMANAWAY

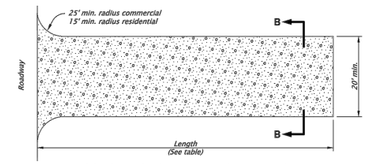
RENEWAL DATE 12/31/26

SHEET TITLE:

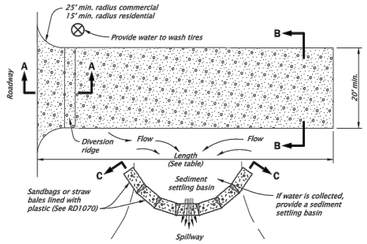
GRADING & EROSION CONTROL PLAN

SHEET NUMBER:

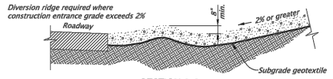
ER-1



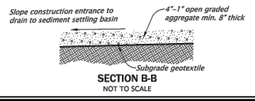
CONSTRUCTION ENTRANCE - TYPE 1
NOT TO SCALE



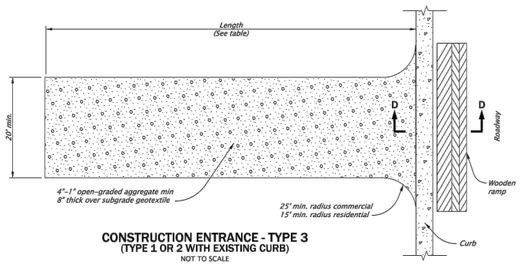
CONSTRUCTION ENTRANCE - TYPE 2
NOT TO SCALE



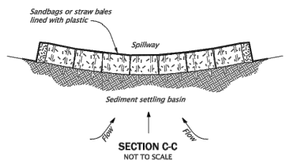
SECTION A-A
NOT TO SCALE



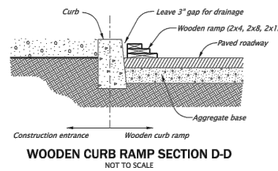
SECTION B-B
NOT TO SCALE



CONSTRUCTION ENTRANCE - TYPE 3
(TYPE 1 OR 2 WITH EXISTING CURB)
NOT TO SCALE



SECTION C-C
NOT TO SCALE



WOODEN CURB RAMP SECTION D-D
NOT TO SCALE

NOTES:
1. The Type 1 entrance is a simple entrance without a diversion ridge or settling basin.
2. The wooden ramp may be used on either Type 1 or Type 2 entrances in situations where there is curb and the curb is not removed for the construction entrance.

CONSTRUCTION ENTRANCE TABLE
MINIMUM LENGTH

Length (FT)	Area Of Exposed Soil (Acre)
20	0.25
50	0.25 < A < 1.0
100	A > 1.0

The selection and use of this Standard Drawing, while designed in accordance with generally accepted engineering principles and practices, is the sole responsibility of the user and should not be used without first consulting a Registered Professional Engineer.

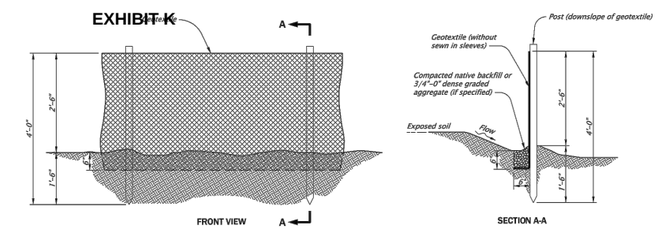
All materials shall be in accordance with the current Oregon Standard Specifications.
OREGON STANDARD DRAWINGS
CONSTRUCTION ENTRANCES
2021

DATE	REVISION DESCRIPTION
01-2021	REMOVED CALC BOOK NUMBERS

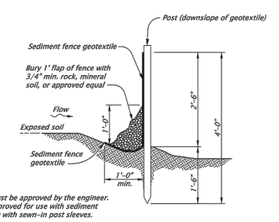
CALC BOOK NO. N/A — SDR DATE 20-JAN-2021 — **RD1000**

GRAVEL CONSTRUCTION ENTRANCE

SCALE: NTS | 1

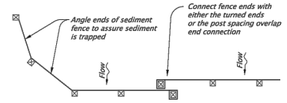


SEDIMENT FENCE AND GEOTEXTILE BURY DETAIL - TYPE 1
NOT TO SCALE

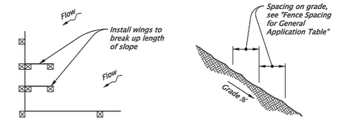


NOTES:
1. Use must be approved by the engineer.
2. Not approved for use with sediment fencing with sewn-in post sleeves.

ALTERNATE SEDIMENT FENCE WITHOUT TRENCHING - TYPE 2
NOT TO SCALE



PLAN VIEW



TERMINATION AT CORNER OR PROPERTY LINE

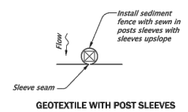
GENERAL NOTES:
1. Use 2"x2" wood fence posts.
2. Posts to be installed on downhill side of sediment fence geotextile. Position posts to prevent separation from geotextile.
3. Compact filter fabric trench backfill and soil on uphill side of fence.
4. Locate fence no closer than three feet to the toe of a slope.
5. Wing spacing shall comply with "Fence Spacing for General Application Table".

FENCE SPACING FOR GENERAL APPLICATION TABLE

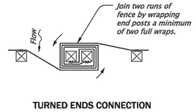
INSTALL PARALLEL ALONG CONTOURS AS FOLLOWS	
GRADE	MAXIMUM SPACING ON GRADE
Grade < 10%	300'
10% ≤ Grade < 15%	150'
15% ≤ Grade < 20%	100'
20% ≤ Grade < 30%	50'
30% ≤ Grade	25'

POST SPACING TABLE

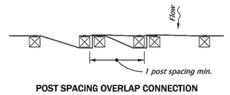
6'	Sediment Fence with Geotextile elongation less than 50%
4'	Sediment Fence with Geotextile elongation 50% or more



GEOTEXTILE WITH POST SLEEVES



TURNED ENDS CONNECTION



POST SPACING OVERLAP CONNECTION

GEOTEXTILE END CONNECTIONS
NOT TO SCALE

The selection and use of this Standard Drawing, while designed in accordance with generally accepted engineering principles and practices, is the sole responsibility of the user and should not be used without first consulting a Registered Professional Engineer.

All materials shall be in accordance with the current Oregon Standard Specifications.
OREGON STANDARD DRAWINGS
SEDIMENT FENCE
2021

DATE	REVISION DESCRIPTION
01-2021	REMOVED CALC BOOK NUMBERS

CALC BOOK NO. N/A — SDR DATE 20-JAN-2021 — **RD1040**

TEMPORARY SEDIMENT FENCE

SCALE: NTS | 2

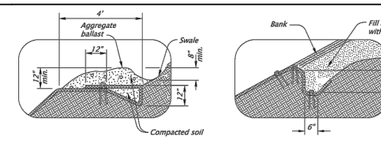


FIGURE A1:
TOP OF BANK ANCHOR TRENCH, H>3' AND TERMINAL SLOPE
NOT TO SCALE

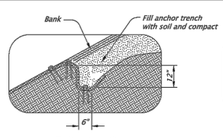


FIGURE A2:
TOP OF BANK ANCHOR TRENCH, H<3'
NOT TO SCALE

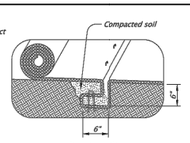


FIGURE A3:
CHANNEL CHECK SLOT
NOT TO SCALE

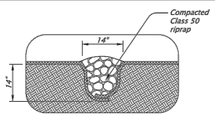


FIGURE A4:
CHANNEL CHECK SLOT WITH ROCK BACKFILL
NOT TO SCALE

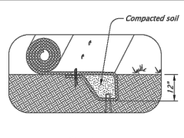
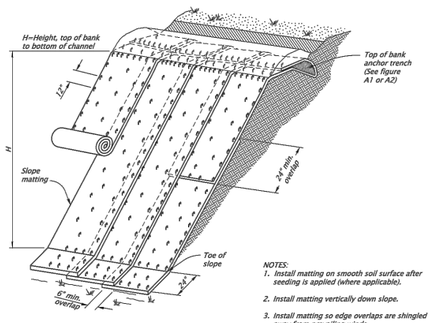
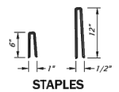


FIGURE A5:
INITIAL CHANNEL ANCHOR TRENCH
NOT TO SCALE

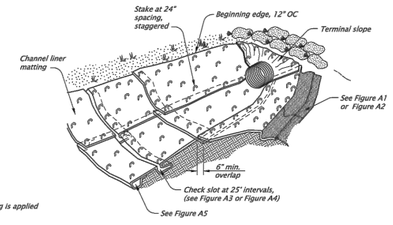


SLOPE MATTING ISOMETRIC VIEW
NOT TO SCALE

NOTES:
1. Install matting on smooth soil surface after seeding is applied (where applicable).
2. Install matting vertically down slope.
3. Install matting so edge overlaps are shingled away from prevailing winds.
4. Place fastener at 12" OC on matting edges
5. Overlap upper mat over lower mat, and fasten.
6. Stagger alternate rows of fasteners placed at 24" OC
7. Extend mat 24" beyond toe of slope; fold mat back under 4" and fasten.
8. Matting Types A through E: Furnish fully biodegradable product. Matting with plastic or photodegradable components will not be accepted.



STAPLES
NOT TO SCALE



CHANNEL MATTING ISOMETRIC VIEW
NOT TO SCALE

NOTES:
1. Install matting on smooth soil surface after seeding is applied (where applicable).
2. Install channel liner matting, in the direction of water flow. Anchor upstream end of mat with check slot for culvert outfalls, place mat under pipe 12" minimum upstream from pipe outlet.
3. Construct check slots across channel bottom at 25' spacing and at the end of each mat (Fig. A3 or A4).
4. Overlap side channel liner matting edges 6" over the center channel liner matting and fasten edges 12" OC. Continue overlap and stapling pattern for each additional side channel liner mat.
5. Lap upstream matting end 12" over beginning edge of downstream matting. Fasten 12" OC
6. Anchor top edge of side channel matting in trench and fasten 12" OC (Fig. A2).
7. Fasten matting interior at 24" OC with staggered spacing.
8. Construct initial anchor trench at downstream end of matting and terminal slope anchor at upstream end.
9. Matting Types A through E: Furnish fully biodegradable product. Matting with plastic or photodegradable components will not be accepted.

The selection and use of this Standard Drawing, while designed in accordance with generally accepted engineering principles and practices, is the sole responsibility of the user and should not be used without first consulting a Registered Professional Engineer.

All materials shall be in accordance with the current Oregon Standard Specifications.
OREGON STANDARD DRAWINGS
SLOPE AND CHANNEL MATTING
2021

DATE	REVISION DESCRIPTION
01-2021	REMOVED CALC BOOK NUMBERS

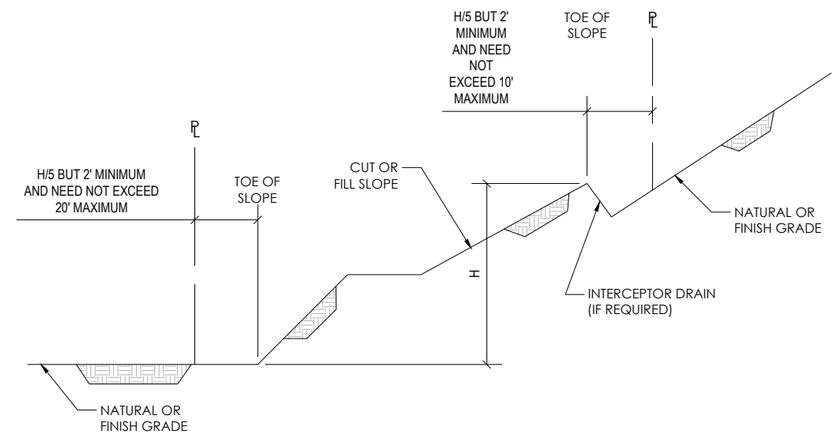
CALC BOOK NO. N/A — SDR DATE 20-JAN-2021 — **RD1055**

PLASTIC SHEETING

SCALE: NTS | 3

SEDIMENT FENCE NOTES:

1. THE FILTER FABRIC FENCE SHALL BE INSTALLED TO FOLLOW THE CONTOURS WHERE FEASIBLE. THE FENCE POSTS SHALL BE SPACED A MAXIMUM OF 6' APART AND DRIVEN SECURELY INTO THE GROUND A MINIMUM OF 24".
2. THE FILTER FABRIC SHALL BE PURCHASED IN A CONTINUOUS ROLL CUT TO THE LENGTH OF THE BARRIER TO AVOID USE OF JOINTS. WHEN JOINTS ARE NECESSARY, FILTER CLOTH SHALL BE SPLICED TOGETHER ONLY AT A SUPPORT POST, WITH A MINIMUM 6" OVERLAP, AND BOTH ENDS SECURELY FASTENED TO THE POST, OR OVERLAP 2" X 2" POSTS AND ATTACH AS SHOWN ON DETAIL SHEET 4-3A OF THE EROSION CONTROL MANUAL.
3. THE FILTER FABRIC SHALL HAVE A MINIMUM VERTICAL BURIAL OF 6". ALL EXCAVATED MATERIAL FROM FILTER FABRIC INSTALLATION SHALL BE BACKFILLED AND COMPACTED ALONG THE ENTIRE DISTURBED AREA.
4. STANDARD OR HEAVY-DUTY FILTER FABRIC FENCES SHALL HAVE MANUFACTURED STITCHED LOOPS FOR 2" X 2" POST INSTALLATION. STITCHED LOOPS SHALL BE INSTALLED ON THE UP HILLSIDE OF THE SLOPED AREA.
5. FILTER FABRIC FENCES SHALL BE REMOVED WHEN THEY HAVE SERVED THEIR USEFUL PURPOSE, BUT NOT BEFORE THE UPSLOPE AREA HAS BEEN PERMANENTLY PROTECTED AND STABILIZED.
6. FILTER FABRIC FENCES SHALL BE INSPECTED BY APPLICANT/CONTRACTOR IMMEDIATELY AFTER EACH RAINFALL AND AT LEAST DAILY DURING PROLONGED RAINFALL. ANY REQUIRED REPAIRS SHALL BE MADE IMMEDIATELY.



SETBACKS AND DRAINAGE DIMENSIONS

SCALE: NTS | 4

Marion County
OREGON

PROJECT INFORMATION:

MARION COUNTY WIPPER

11545 SUMMIT LOOP SE
TURNER, OR 97392

	DATE	RELEASE
	07-20-24	SITE SKETCH
	09-25-24	REVISED SITE SKETCH
	11-04-24	PRELIMINARY ZONING DRAWINGS
	08-19-25	PRELIMINARY CONSTRUCTION DRAWINGS
	10-07-25	FINAL CONSTRUCTION DRAWINGS

DRAWING INFORMATION:

THIS DRAWING IS COPYRIGHTED AND IS THE SOLE PROPERTY OF THE OWNER. IT IS PRODUCED SOLELY FOR USE BY THE OWNER AND ITS AFFILIATES. REPRODUCTION OR USE OF THIS DRAWING AND/OR THE INFORMATION CONTAINED IN IT IS FORBIDDEN WITHOUT THE WRITTEN PERMISSION OF THE OWNER.

PLANS PREPARED BY:

cushing
Civil Engineers

Cushing
Civil Engineers

12725 SW MILLIKAN WAY
SUITE 300
BEAVERTON, OR 97005
(503) 387-5331
www.cushingcivilengineers.com

LICENSURE:

REGISTERED PROFESSIONAL ENGINEER
83233
OREGON
JUNE 7, 2012
KENNY McMANAWAY

RENEWAL DATE 12/31/26

SHEET TITLE:

GRADING & EROSION CONTROL DETAILS

SHEET NUMBER:

ER-2

NOTE:
THIS IS NOT A SURVEY; ALL EXISTING INFORMATION IS PROVIDED BY MARION COUNTY GIS.

EXHIBIT K



OVERALL SITE PLAN

11X17 SCALE: 1" = 40' | 22X34 SCALE: 1" = 20' | 1

Marion County OREGON

PROJECT INFORMATION:

MARION COUNTY WIPPER

11545 SUMMIT LOOP SE
TURNER, OR 97392

	DATE	RELEASE
	07-20-24	SITE SKETCH
	09-25-24	REVISED SITE SKETCH
	11-04-24	PRELIMINARY ZONING DRAWINGS
	08-19-25	PRELIMINARY CONSTRUCTION DRAWINGS
	10-07-25	FINAL CONSTRUCTION DRAWINGS

DRAWING INFORMATION:

THIS DRAWING IS COPYRIGHTED AND IS THE SOLE PROPERTY OF THE OWNER. IT IS PRODUCED SOLELY FOR USE BY THE OWNER AND ITS AFFILIATES. REPRODUCTION OR USE OF THIS DRAWING AND/OR THE INFORMATION CONTAINED IN IT IS FORBIDDEN WITHOUT THE WRITTEN PERMISSION OF THE OWNER.

PLANS PREPARED BY:

cushing Civil Engineers

Cushing
Civil Engineers

12725 SW MILLIKAN WAY
SUITE 300
BEAVERTON, OR 97005
(503) 387-5331
www.cushingcivilengineers.com

LICENSURE:

REGISTERED PROFESSIONAL ENGINEER
83233
OREGON
JUNE 7, 2012
KENNY McMANAWAY

RENEWAL DATE 12/31/26

SHEET TITLE:

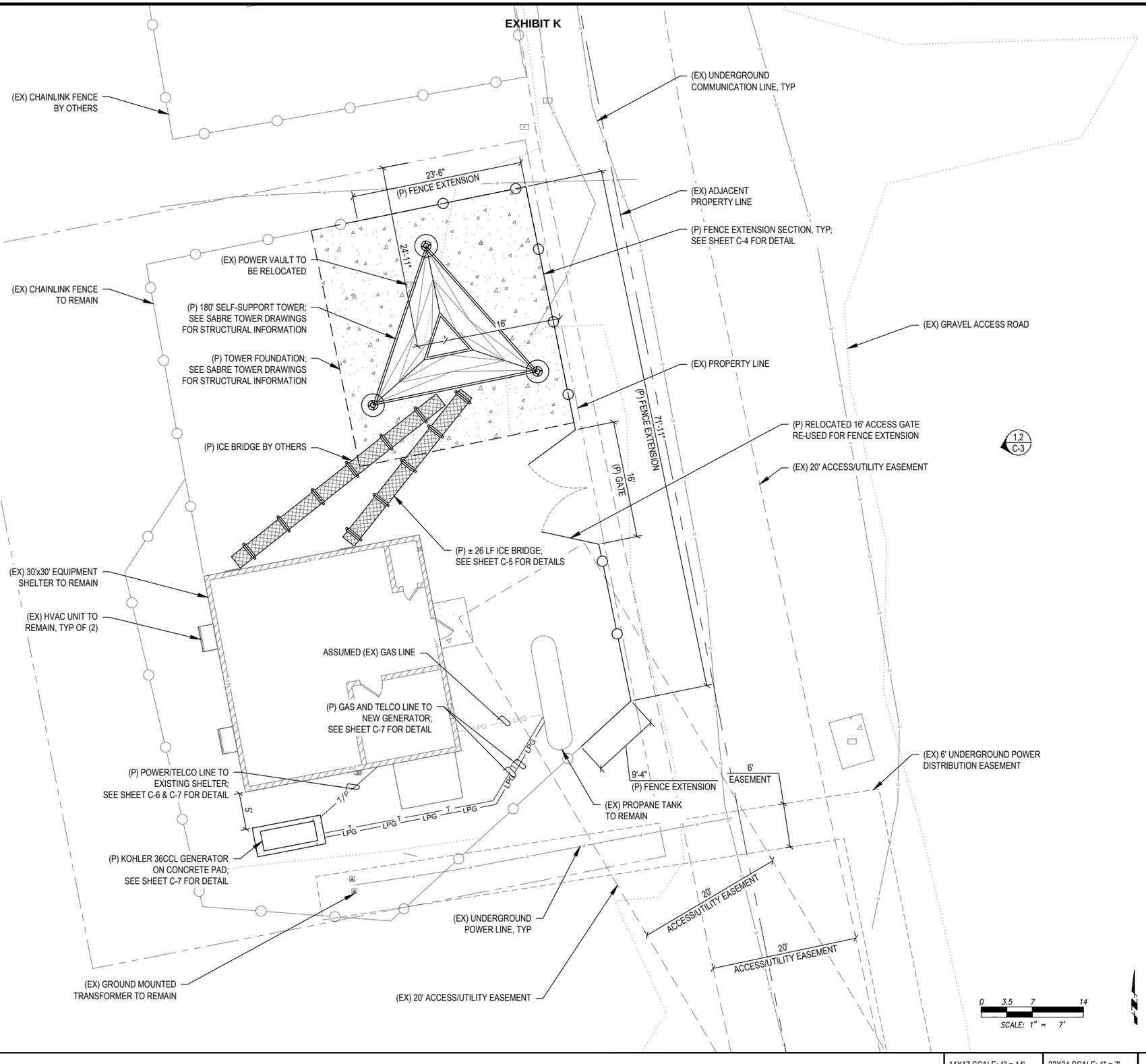
OVERALL SITE PLAN

SHEET NUMBER:

C-1

NOTES:
1. TOWER INFO SHOWN FOR CONCEPTUAL USE ONLY. SEE SABRE TOWER STRUCTURAL DESIGN FOR DETAIL.
2. THIS IS NOT A SURVEY ALL EXISTING INFORMATION IS PROVIDED BY GIS, SURVEY & SITE WALK NOTES.
3. PROPOSED AND EXISTING ANTENNAS NOT SHOWN FOR CLARITY.

EXHIBIT K



ENLARGED SITE PLAN | 11X17 SCALE: 1" = 14' | 22X34 SCALE: 1" = 7' | 1

Marion County OREGON

PROJECT INFORMATION:

MARION COUNTY WIPPER

11545 SUMMIT LOOP SE
TURNER, OR 97392

	DATE	RELEASE
	07-20-24	SITE SKETCH
	09-25-24	REVISED SITE SKETCH
	11-04-24	PRELIMINARY ZONING DRAWINGS
	08-19-25	PRELIMINARY CONSTRUCTION DRAWINGS
	10-07-25	FINAL CONSTRUCTION DRAWINGS

DRAWING INFORMATION:
THIS DRAWING IS COPYRIGHTED AND IS THE SOLE PROPERTY OF THE OWNER. IT IS PRODUCED SOLELY FOR USE BY THE OWNER AND ITS AFFILIATES. REPRODUCTION OR USE OF THIS DRAWING AND/OR THE INFORMATION CONTAINED IN IT IS FORBIDDEN WITHOUT THE WRITTEN PERMISSION OF THE OWNER.

PLANS PREPARED BY:

cushing Civil Engineers

Cushing
Civil Engineers
12725 SW MILLIKAN WAY
SUITE 300
BEAVERTON, OR 97005
(503) 387-5331
www.cushingcivilengineers.com

LICENSURE:

REGISTERED PROFESSIONAL ENGINEER
83233
OREGON
JUNE 7, 2012
KENNY McMANAWAY

RENEWAL DATE 12/31/26

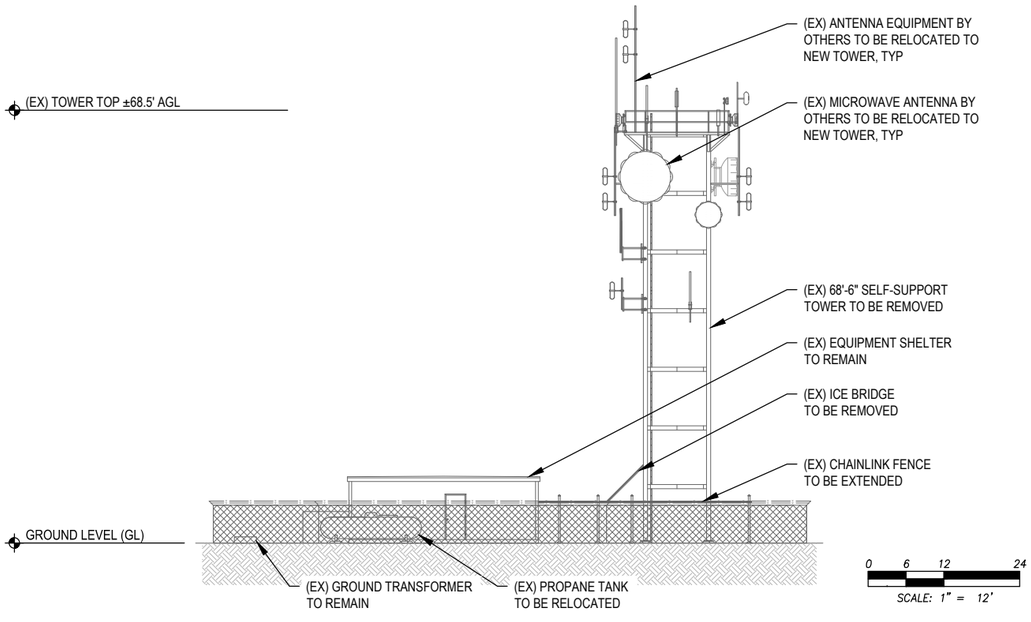
SHEET TITLE:

ENLARGED SITE PLAN

SHEET NUMBER:

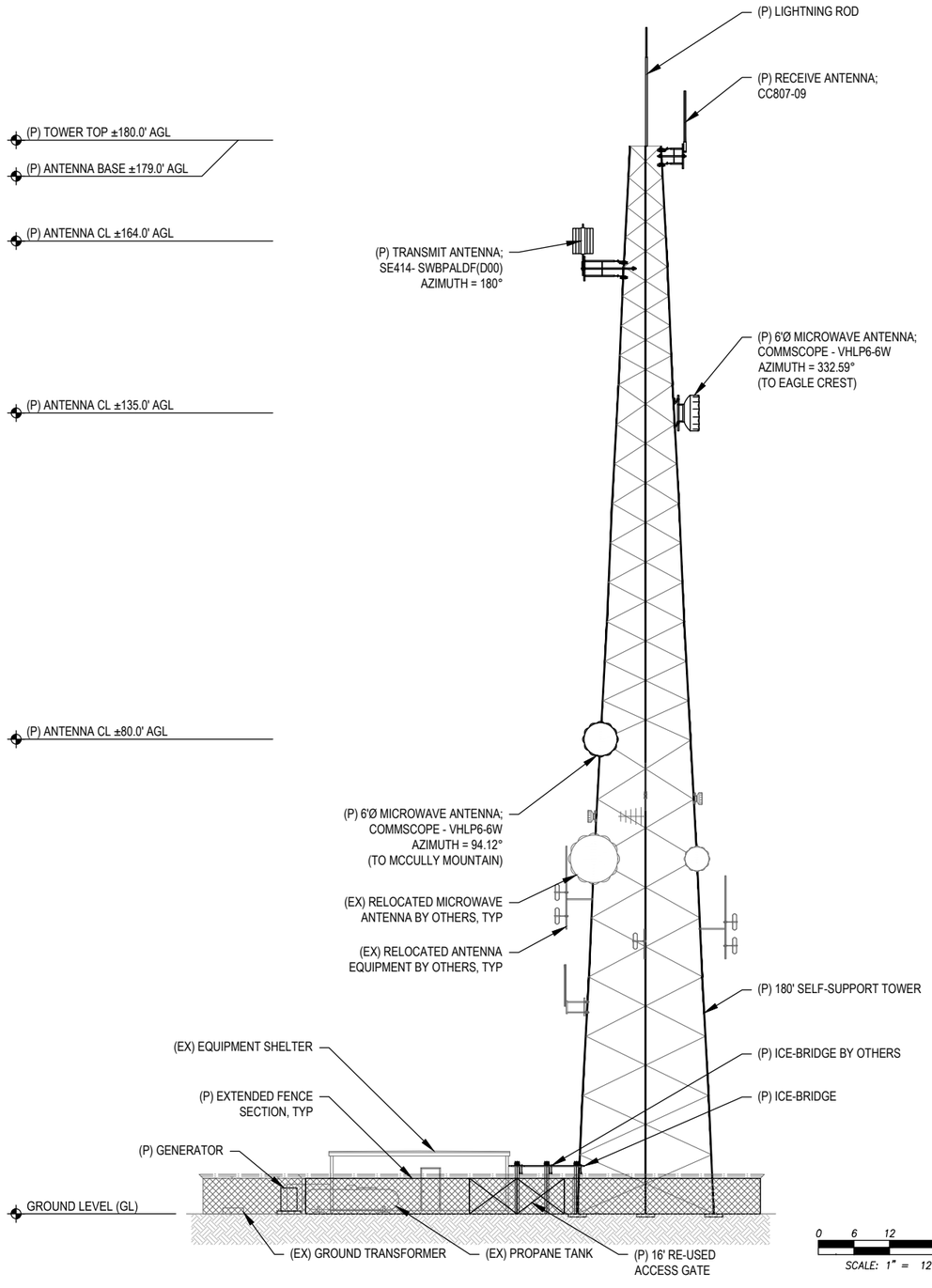
C-2

EXHIBIT K



EXISTING EAST ELEVATION | 11X17 SCALE: 1" = 24' | 22X34 SCALE: 1" = 12' | **1**

NOTES:
1. TOWER INFO SHOWN FOR CONCEPTUAL USE ONLY. SEE SABRE TOWER STRUCTURAL REPORT FOR DETAIL.
2. TOWER SHALL BE PAINTED WITH A DULL, NON-REFLECTIVE GRAY COLOR.
3. LOADING INFORMATION PROVIDED BY TAIT COMMUNICATIONS.



PROPOSED EAST ELEVATION | 11X17 SCALE: 1" = 24' | 22X34 SCALE: 1" = 12' | **2**

Marion County OREGON

PROJECT INFORMATION:

MARION COUNTY WIPPER

11545 SUMMIT LOOP SE
TURNER, OR 97392

	DATE	RELEASE
	07-20-24	SITE SKETCH
	09-25-24	REVISED SITE SKETCH
	11-04-24	PRELIMINARY ZONING DRAWINGS
	08-19-25	PRELIMINARY CONSTRUCTION DRAWINGS
	10-07-25	FINAL CONSTRUCTION DRAWINGS

DRAWING INFORMATION:

THIS DRAWING IS COPYRIGHTED AND IS THE SOLE PROPERTY OF THE OWNER. IT IS PRODUCED SOLELY FOR USE BY THE OWNER AND ITS AFFILIATES. REPRODUCTION OR USE OF THIS DRAWING AND/OR THE INFORMATION CONTAINED IN IT IS FORBIDDEN WITHOUT THE WRITTEN PERMISSION OF THE OWNER.

PLANS PREPARED BY:

cushing Civil Engineers

Cushing
Civil Engineers
12725 SW MILLIKAN WAY
SUITE 300
BEAVERTON, OR 97005
(503) 387-5331
www.cushingcivilengineers.com

LICENSURE:

REGISTERED PROFESSIONAL ENGINEER 83233 OREGON JUNE 7, 2012 KENNY McMANAWAY

RENEWAL DATE 12/31/26

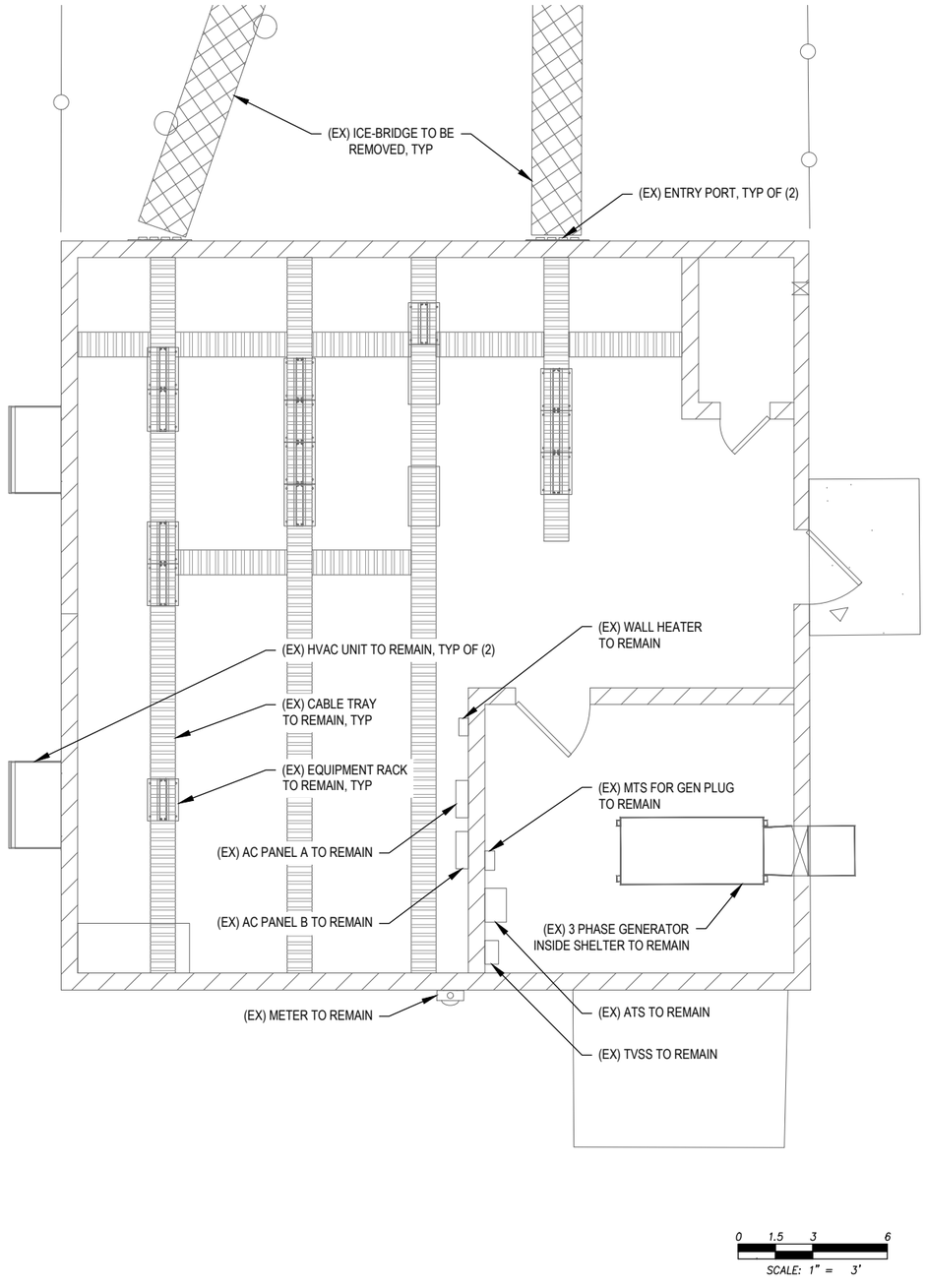
SHEET TITLE:

ELEVATIONS

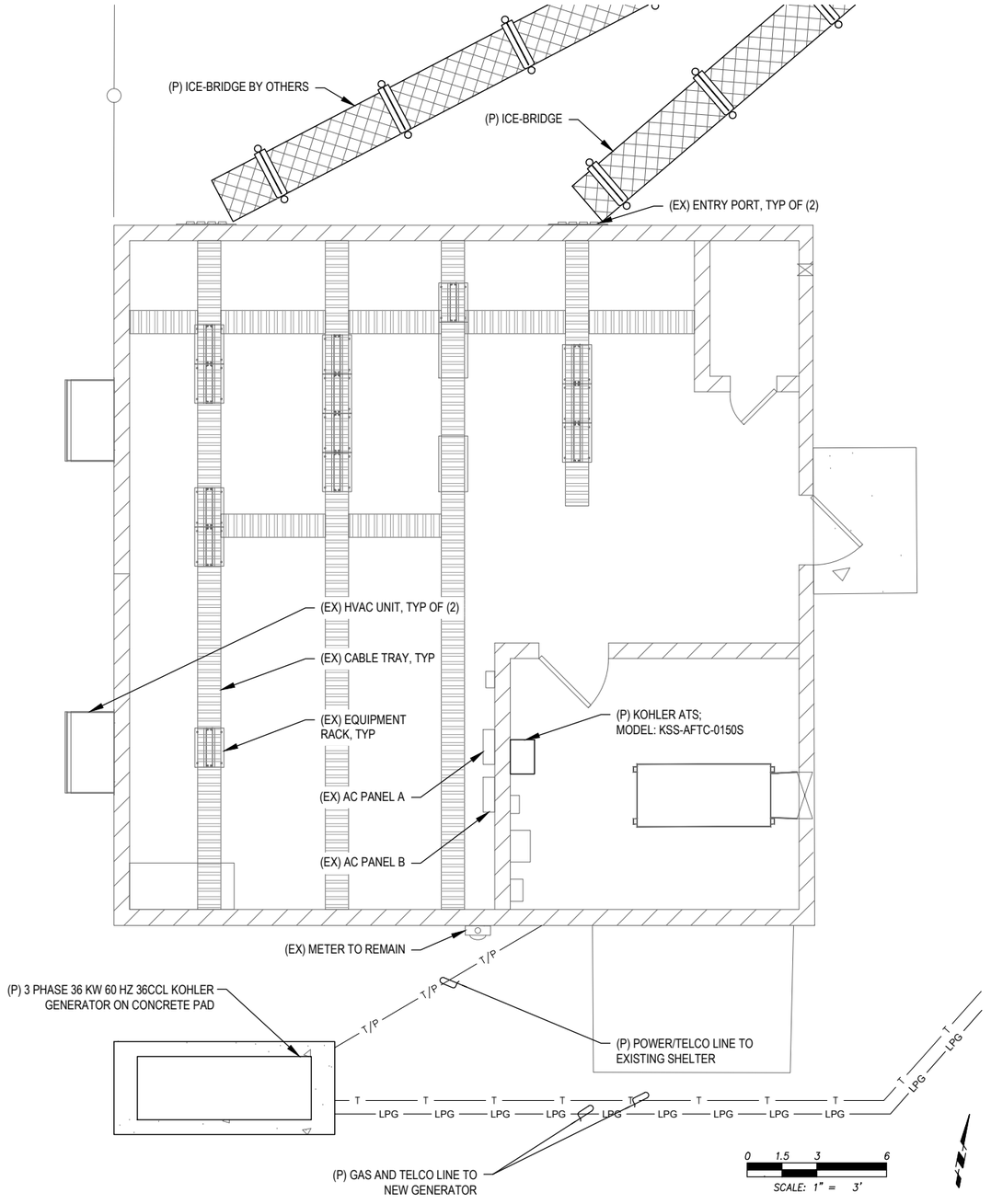
SHEET NUMBER:

C-3

EXHIBIT K



EXISTING FLOOR PLAN | 11X17 SCALE: 1" = 6' | 22X34 SCALE: 1" = 3' | 1



PROPOSED FLOOR PLAN | 11X17 SCALE: 1" = 6' | 22X34 SCALE: 1" = 3' | 2

Marion County
OREGON

PROJECT INFORMATION:

MARION COUNTY WIPPER

11545 SUMMIT LOOP SE
TURNER, OR 97392

	DATE	RELEASE
	07-20-24	SITE SKETCH
	09-25-24	REVISED SITE SKETCH
	11-04-24	PRELIMINARY ZONING DRAWINGS
	08-19-25	PRELIMINARY CONSTRUCTION DRAWINGS
	10-07-25	FINAL CONSTRUCTION DRAWINGS

DRAWING INFORMATION:

THIS DRAWING IS COPYRIGHTED AND IS THE SOLE PROPERTY OF THE OWNER. IT IS PRODUCED SOLELY FOR USE BY THE OWNER AND ITS AFFILIATES. REPRODUCTION OR USE OF THIS DRAWING AND/OR THE INFORMATION CONTAINED IN IT IS FORBIDDEN WITHOUT THE WRITTEN PERMISSION OF THE OWNER.

PLANS PREPARED BY:

cushing Civil Engineers

Cushing
Civil Engineers
12725 SW MILLIKAN WAY
SUITE 300
BEAVERTON, OR 97005
(503) 387-5331
www.cushingcivilengineers.com

LICENSURE:

REGISTERED PROFESSIONAL ENGINEER
83233
OREGON
JUNE 7, 2012
KENNY McMANAWAY

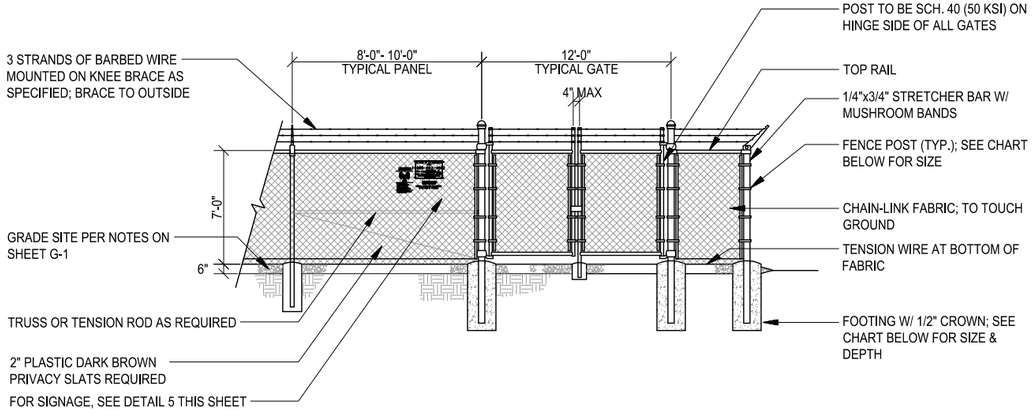
RENEWAL DATE 12/31/26

SHEET TITLE:

INTERIOR SHELTER PLANS

SHEET NUMBER:

C-4



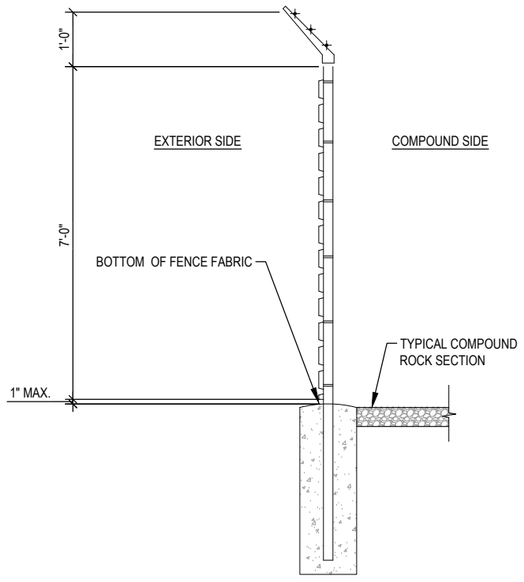
FENCE & GATE NOTES:

1. GATE FRAME-1-7/8" OD, TOP & BRACE RAIL-1-5/8" OD, SCH. 40 (50 KSI) ASTM-F1083.
2. FABRIC: 9 GA. CORE WIRE SIZE 2" MESH FABRIC; FABRIC TO TOUCH GRAVEL BASE.
3. TIE WIRE: MINIMUM 11 GA. GALVANIZED STEEL.
4. BARBED WIRE: 12" (3) STRAND.
5. GATE LATCH: SEE DETAIL 3 THIS SHEET; VERIFY WITH PROPERTY OWNER.

8' HIGH GATE/FENCE			
POST TYPE	POST DIAMETER	FOOTING SIZE	NOTES:
LINE POST	3.5"Ø	12"Øx33"	1. ALL POSTS: SCH. 40 (50 KSI) ASTM-F1083 2. ALL FENCING TO BE ENGINEERED BY FENCING MANUFACTURER & APPROVED BY PROJ. MGR. FENCE MANUFACTURER IS TO VERIFY ADEQUACY OF TABULATED POST & FOOTING SIZES
CORNER POST	4"Ø	16"Øx48"	
GATE POST	4"Ø	16"Øx48"	

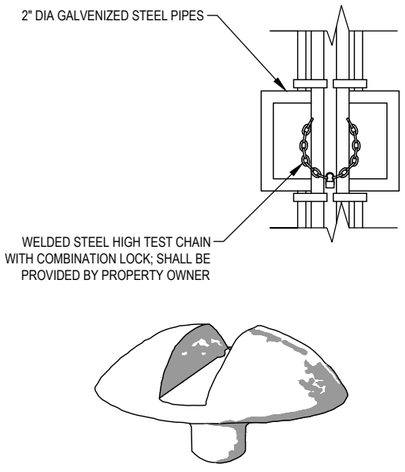
TYPICAL FENCE ELEVATION

SCALE: NTS | 1



TYPICAL FENCE SECTION

SCALE: NTS | 2



CONCRETE MUSHROOM GATE STOP INSTALLED ABOVE THE FINAL GRAVELED GRADE (INSTALL PER MANUFACTURER'S INSTRUCTIONS)

GATE LOCK & CENTER STOP

SCALE: NTS | 3

FENCING NOTES:

EXHIBIT K

1. GATE POST, CORNER, END, OR PULL POST 4" NOMNIAL (4" O.D.) SCHEDULE 40 (50 KSI) PIPE, FOR GATE WIDTHS UP TO 6 FEET OR 12 FEET FOR DOUBLE SWING GATE PER ASTM-F1083.
2. LINE POST: 2-3/8" O.D. 3.65 LBS/LIN FT. ASTM-F1083.
3. TOP RAIL AND BRACE RAIL: 1-1/2" (1.9" O.D.) PIPE 2.72 LBS/LIN FT PER ASTM-F1083. INSTALL BRACE AT ALL CORNER LOCATIONS AND ADJACENT TO GATES.
4. GATE FRAME: 1-1/2" (1.9 O.D.) 2.72 LBS/LIN FT. ASTM-F1083.
5. FABRIC SHALL BE TWO-INCH CHAINLINK MESH NO. 9 GAUGE (0.148") WIRE. THE FABRIC SHALL HAVE A KNUCKLED FINISH FOR THE TOP SELVAGES. FABRIC SHALL CONFORM TO ASTM A-392 CLASS 1.
6. TIE WIRE: MINIMUM 11Ga. GALVANIZED STEEL. PROVIDE A SINGLE WRAP OF FABRIC, TIE AT POSTS, RAILS, AND AT TENSION WIRE BY HOG RINGS. MAXIMUM SPACING 24" O.C.
7. TENSION WIRE: MINIMUM 7 Ga. GALVANIZED STEEL.
8. U.N.O. BARBED WIRE: DOUBLE STRAND 12 Ga. 1/2" O.D. TWISTED WIRE TO MATCH W/ FABRIC, 14 Ga. 4PT. BARBS SPACED ON APPROX. 5" CENTERS.
9. U.N.O. BARBED WIRE GATE GUARDS SHALL BE FITTED WITH DOME CAPS.
10. U.N.O. BARBED WIRE SUPPORT ARMS SHALL BE PRESSED STEEL COMPLETE WITH SET BOLT AND LOCK WIRE IN THE ARM.
11. PROVIDE TWO 6 FOOT WIDE OUT SWINGING GATES, (UNLESS NOTED OTHERWISE). NO PERSONNEL GATES ARE REQUIRED (UNLESS AS DIRECTED BY THE PROPERTY OWNER). GATES SHALL BE ABLE TO LOCK.
12. U.N.O. GATE POSTS SHALL BE EXTENDED 12 INCHES, INCLUDING DOME CAP, TO PROVIDE FOR ATTACHMENT OF BARBED WIRE.
13. GATE FRAMES SHALL HAVE A FULL-HEIGHT VERTICAL BRACE, AND A FULL-WIDTH HORIZONTAL BRACE, SECURED IN PLACE BY USE OF GATE BRACE CLAMPS.
14. GATE HINGES SHALL BE MERCHANTS METAL MODEL 64386 HINGE ADAPTOR WITH MODEL 6409, 180-DEGREE ATTACHMENT OR APPROVED EQUAL.
15. GATE LATCH: 1-3/8" O.D. PLUNGER ROD W/ MUSHROOM TYPE CATCH.
16. A 6" X 1/2" DIAMETER EYEBOLT TO HOLD TENSION WIRE SHALL BE PLACED AT LINE POSTS.
17. STRETCHER BARS SHALL BE 3/16" OR HAVE EQUIVALENT CROSS-SECTIONAL AREA.
18. U.N.O. ALL POSTS EXCEPT GATE POSTS SHALL HAVE A COMBINATION CAP AND BARBED WIRE SUPPORTING ARM.
19. ALL CAPS SHALL BE MALLEABLE IRON, DOME OR ACORN SHAPED AS REQUIRED BY PIPE SIZE.
20. OTHER HARDWARE MAY INCLUDE BUT NOT BE LIMITED TO TIE CLIPS, BAND CLIPS AND TENSION BAND CLIPS.
21. U.N.O. WHERE THE USE OF CONCERTINA HAS BEEN SPECIFIED, 24" DIAMETER COIL. BARBED TAPE, STAINLESS STEEL, CYCLONE FENCE MODEL G8P TO TYPE III SHALL BE FURNISHED. IT SHALL BE SUPPORTED ABOVE THE TOP RAIL BY USE OF SIX (6) BARBED WIRE ARMS POSITIONED ATOP EACH LINE/CORNER POST.
22. U.N.O. ALL CHAINLINK FENCING COMPONENTS MUST BE HOT DIPPED GALVANIZED.
23. WHEN IN USE, PRIVACY SLATS TO BE A NEUTRAL COLOR.

GENERAL FENCE NOTES

SCALE: NTS | 4



SIGN NOTES:

1. SIGN MATERIAL: 18GA ALUMINUM
2. LETTERING COLOR = BLACK
3. BACKGROUND COLOR = WHITE / RED



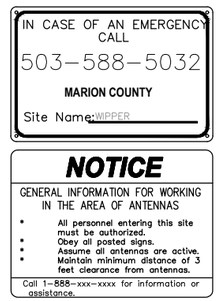
SIGN NOTES:

1. SIGN MATERIAL: 18GA ALUMINUM
2. LETTERING COLOR = BLACK / WHITE
3. BACKGROUND COLOR = WHITE / BLUE



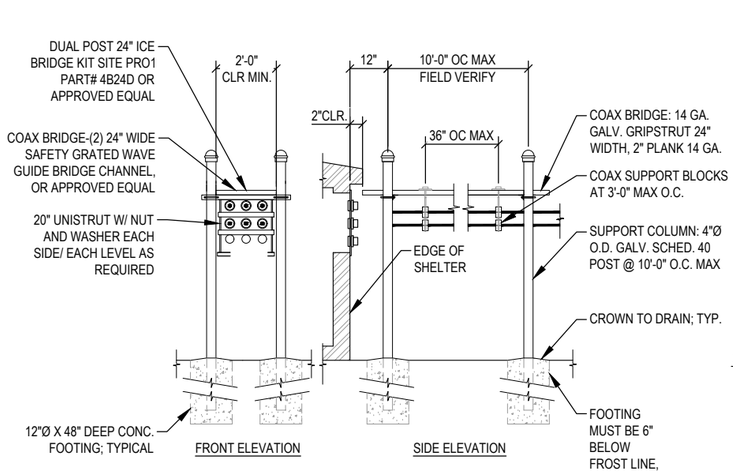
SIGN NOTES:

1. SIGN MATERIAL: 18GA ALUMINUM
2. LETTERING COLOR = BLACK
3. BACKGROUND COLOR = YELLOW

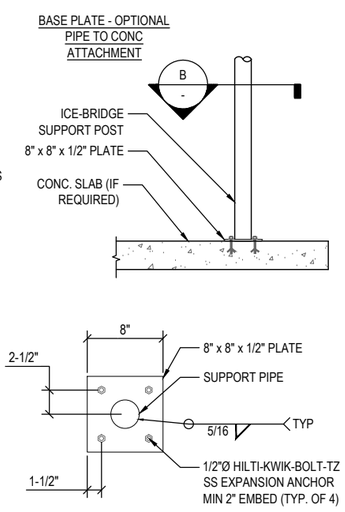


SIGN DETAILS

SCALE: NTS | 5



NOTE: GROUND COAX BRIDGE PER THE REQUIREMENTS OF THE NEC STANDARDS - SEE DETAIL 1/E-2



SECTION B

ICE BRIDGE DETAIL

SCALE: NTS | 6

Cushing
Civil Engineers

12725 SW MILLIKAN WAY
SUITE 300
BEAVERTON, OR 97005
(503) 387-5331
www.cushingcivilengineers.com

PROJECT INFORMATION:

MARION COUNTY WIPPER

11545 SUMMIT LOOP SE
TURNER, OR 97392

	DATE	RELEASE
	07-20-24	SITE SKETCH
	09-25-24	REVISED SITE SKETCH
	11-04-24	PRELIMINARY ZONING DRAWINGS
	08-19-25	PRELIMINARY CONSTRUCTION DRAWINGS
	10-07-25	FINAL CONSTRUCTION DRAWINGS

DRAWING INFORMATION:
THIS DRAWING IS COPYRIGHTED AND IS THE SOLE PROPERTY OF THE OWNER. IT IS PRODUCED SOLELY FOR USE BY THE OWNER AND ITS AFFILIATES. REPRODUCTION OR USE OF THIS DRAWING AND/OR THE INFORMATION CONTAINED IN IT IS FORBIDDEN WITHOUT THE WRITTEN PERMISSION OF THE OWNER.

PLANS PREPARED BY:

Cushing
Civil Engineers

REGISTERED PROFESSIONAL ENGINEER 83233 OREGON JUNE 7, 2012 KENNY McMANAWAY

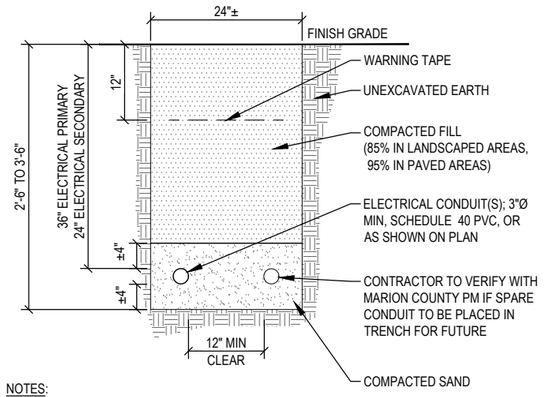
RENEWAL DATE 12/31/26

SHEET TITLE:

COMPOUND DETAILS I

SHEET NUMBER:

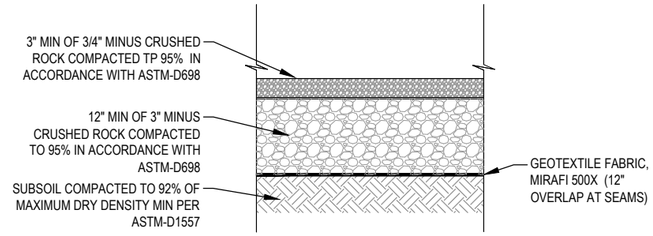
C-5



NOTES:
1. EXCAVATE TO REQUIRED DEPTH.
2. VERIFY ALL TRENCHING REQUIREMENTS PER LOCAL UTILITIES.
3. CONTRACTOR TO PROVIDE (1) 300 POUND NYLON PULL CORD AND CONDUCTORS AS REQUIRED PER CONDUIT.

POWER LINE TRENCH SCALE: NTS | 1

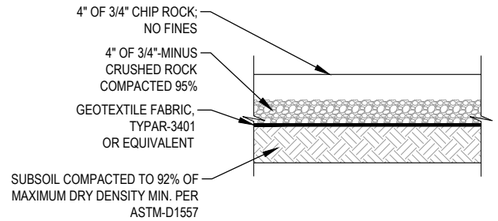
EXHIBIT K



NOTES:

1. CONTRACTOR SHALL STRIP SUPERFICIAL, SOFT, WET, ORGANIC OR DELETERIOUS SOILS TO EXPOSE FIRM AND UNYIELDING SOIL (BETWEEN 6" & 12"). IF STRIPPING IS REQUIRED DEEPER THAN 12", CONTRACTOR SHALL CONTACT THE SITE CONSTRUCTION MANGER TO DETERMINE THE APPROPRIATE STRIPPING DEPTH AT THE TIME OF CONSTRUCTION.
2. MATERIAL AND INSTALLATION SHALL CONFORM TO CURRENT ODOT/APWA STANDARD SPECIFICATIONS AND MANUFACTURERS RECOMMENDATIONS.

GRAVEL ROAD SECTION DETAIL SCALE: NTS | 2

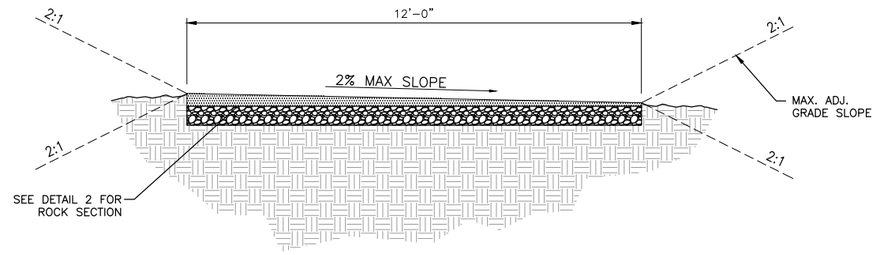


NOTE: STRIP ALL ORGANICS

COMPOUND ROCK SECTION DETAIL SCALE: NTS | 3

NOT USED SCALE: NTS | 4

NOT USED SCALE: NTS | 6



TYPICAL

NOTE:

CONTRACTOR SHALL STRIP SUPERFICIAL, SOFT, WET, ORGANIC OR DELETERIOUS SOILS TO EXPOSE FIRM AND UNYIELDING SOIL (MIN. 6"). IF STRIPPING IS REQUIRED DEEPER THAN 6", CONTRACTOR SHALL CONTACT THE SITE CONSTRUCTION MANAGER TO DETERMINE THE APPROPRIATE STRIPPING DEPTH AT THE TIME OF CONSTRUCTION.

ACCESS ROAD SECTION DETAIL SCALE: NTS | 5

Marion County OREGON

PROJECT INFORMATION:

MARION COUNTY WIPPER

11545 SUMMIT LOOP SE
TURNER, OR 97392

	DATE	RELEASE
	07-20-24	SITE SKETCH
	09-25-24	REVISED SITE SKETCH
	11-04-24	PRELIMINARY ZONING DRAWINGS
	08-19-25	PRELIMINARY CONSTRUCTION DRAWINGS
	10-07-25	FINAL CONSTRUCTION DRAWINGS

DRAWING INFORMATION:
THIS DRAWING IS COPYRIGHTED AND IS THE SOLE PROPERTY OF THE OWNER. IT IS PRODUCED SOLELY FOR USE BY THE OWNER AND ITS AFFILIATES. REPRODUCTION OR USE OF THIS DRAWING AND/OR THE INFORMATION CONTAINED IN IT IS FORBIDDEN WITHOUT THE WRITTEN PERMISSION OF THE OWNER.

PLANS PREPARED BY:

cushing Civil Engineers

Cushing
Civil Engineers
12725 SW MILLIKAN WAY
SUITE 300
BEAVERTON, OR 97005
(503) 387-5331
www.cushingcivilengineers.com

LICENSURE:

REGISTERED PROFESSIONAL ENGINEER
83233
OREGON
JUNE 7, 2012
KENNY McMANAWAY

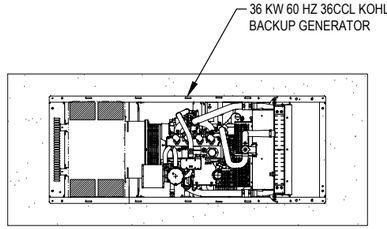
RENEWAL DATE 12/31/26

SHEET TITLE:

COMPOUND DETAILS II

SHEET NUMBER:

C-6



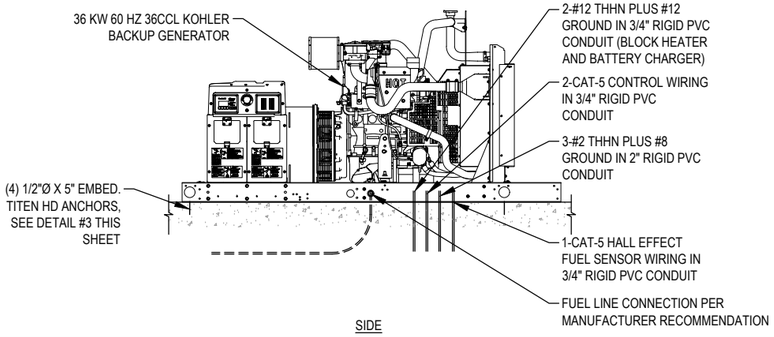
NOTE: SEE GENERATOR SPEC SHEET FOR DIMENSIONS AND WEIGHTS

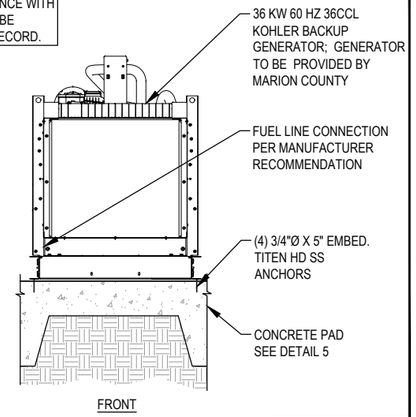
GENERATOR PLAN

SCALE: NTS | 1

EXHIBIT K

NOTE: DOCUMENTATION FOR THE GENERATOR IS TO BE PROVIDED BY THE SUPPLIER CERTIFYING THAT ALL HAZARDOUS CONTENTS WILL REMAIN CONTAINED FOLLOWING THE DESIGN EARTHQUAKE FOR THIS SITE. CERTIFICATION OF CONTAINMENT IS TO BE PROVIDED BY 1) ANALYSIS, 2) APPROVED SHAKE TABLE TESTING IN ACCORDANCE WITH SECTION 13.2.5 OF ASCE 7, OR 3) EXPERIENCE DATA IN ACCORDANCE WITH ASCE 7 SECTION 13.2.6. EVIDENCE DEMONSTRATING COMPLIANCE OF THIS REQUIREMENT SHALL BE SUBMITTED TO THE LOCAL JURISDICTION AFTER REVIEW AND APPROVAL BY THE ENGINEER OF RECORD.





GENERATOR ELEVATION

SCALE: NTS | 2

NOT USED

SCALE: NTS | 3

1. CONTRACTOR TO VERIFY AND CONFIRM ALL DIMENSIONS AND CONDITIONS AND NOTIFY ENGINEER OF RECORD OF ANY DISCREPANCIES PRIOR TO START OF WORK.
2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR STRUCTURAL STABILITY DURING CONSTRUCTION. THE STRUCTURE SHOWN ON THE DRAWINGS HAS BEEN DESIGNED FOR STABILITY UNDER THE FINAL CONFIGURATION ONLY.
3. CODE: 2018 INTERNATIONAL BUILDING CODE (IBC).
4. THE FOOTINGS HAVE BEEN DESIGNED FOR AN ALLOWABLE SOIL BEARING PRESSURE OF 1,500 PSF.
5. CONCRETE: FOOTINGS, F'C = 3,000 PSI MINIMUM COMPRESSIVE STRENGTH AT 28 DAYS.
6. REINFORCING STEEL: FY = 60,000 PSI
7. STRUCTURAL AND MISCELLANEOUS STEEL SHALL BE IN ACCORDANCE WITH AISC SPECIFICATION FOR THE DESIGN, FABRICATION AND ERECTION OF STRUCTURAL STEEL FOR BUILDINGS AND SHALL BE ASTM A-36 U.O.N. ALL BOLTS HOLES SHALL BE PUNCHED OR DRILLED; BURNING OF HOLES SHALL NOT BE PERMITTED. ALL STRUCTURAL STEEL SHALL HAVE ONE SHOP COAT OF PAINT.
   ALL MATERIALS SHALL CONFORM TO THE FOLLOWING STANDARDS:

PIPE:	A53 GR. B (MIN. FY = 35 KSI)
SHAPES:	ASTM A36/ ASTM A572 GR. 50
WIDE FLANGE:	ASTM A992
TUBES:	A500 GR. B, FY = 46 KSI
PLATES:	A36
WELDS:	E70XX ELECTRODES
STRUCTURAL BOLTS:	ASTM A325N
NON-STRUCTURAL BOLTS:	SAE J429 GR. 5 / F1554-36
U-BOLTS:	ASTM A36
THREADED ROD:	ASTM A307

SPECIAL INSPECTION BY OWNERS TESTING AGENCY

SPECIAL INSPECTIONS AND TESTING SHALL BE PERFORMED BY AN APPROVED AGENCY IN ACCORDANCE WITH INTERNATIONAL BUILDING CODE (IBC) CHAPTER 17 SECTIONS 1703 AND SECTIONS 1704, AND WITH THE STATEMENT OF SPECIAL INSPECTIONS AS REQUIRED BY IBC SECTIONS 1704.2.3 AND 1705 FOR BUILIDNG STRUCTURAL ELEMENTS SUMMARIZED AS FOLLOWS:

1. STRUCTURAL STEEL CONSTRUCTION PER IBC SECTIONS 1705.3 AND TABLE 1705.3 INCLUDING MATERIAL IDENTIFICATION, AND SHOP WELDING.

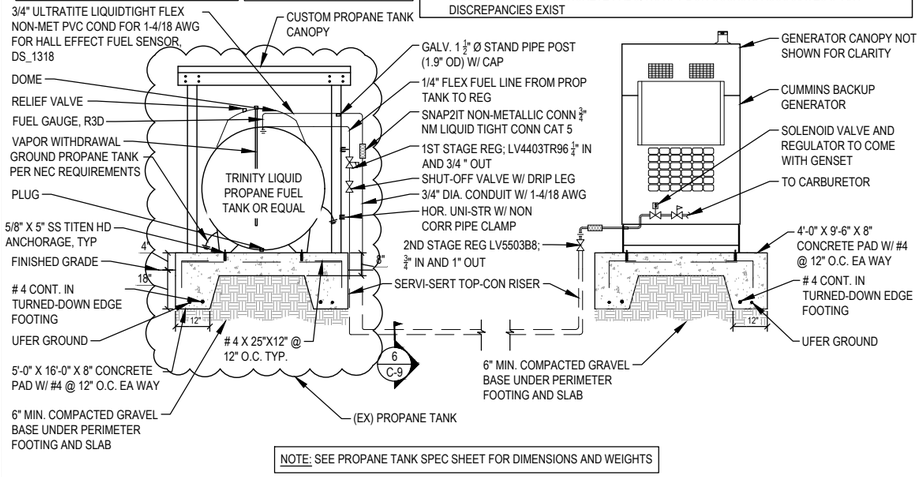
GENERAL NOTES

SCALE: NTS | 4

NOTES:
1. PROPANE TANK REGISTERED WITH NATIONAL BOARD AND COMPLIES AND INSTALLED PER NFPA 58 CODE
2. PROPANE TANK INSTALLED AT LEAST 10 FT FROM EXTERNAL SOURCE OF IGNITION

LEGEND
- SHUT-OFF VALVE
- UNION
- PRESSURE REGULATOR
- SOLENOID VALVE
- FLEXIBLE CONNECTION

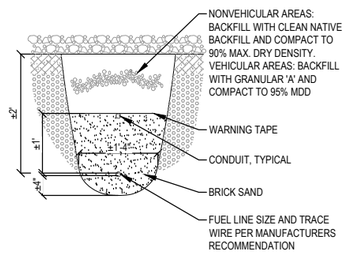
NOTES:
1. GROUND SYSTEM SHOULD COMPLY WITH INDUSTRY STANDARDS
2. CONFIRM CONNECTIONS PROVIDED WITH FUEL TANK
3. USE GASEOUS LP VAPOR WITHDRAWAL SYSTEM
4. TO CODE OFFICIAL, PAD IS FOR EQUIPMENT ONLY (NO BUILDINGS)
5. CONTRACTOR IS TO VERIFY THAT ALL PROPOSED ANCHORS WILL PROVIDE ADEQUATE FIT PRIOR TO POURING CONCRETE PADS, NOTIFY DON CUSHING ASSOCIATES IF ANY DISCREPANCIES EXIST



NOTE: SEE PROPANE TANK SPEC SHEET FOR DIMENSIONS AND WEIGHTS

GENERATOR FUEL SYSTEM ELEVATION

SCALE: NTS | 5



TRENCH SECTION

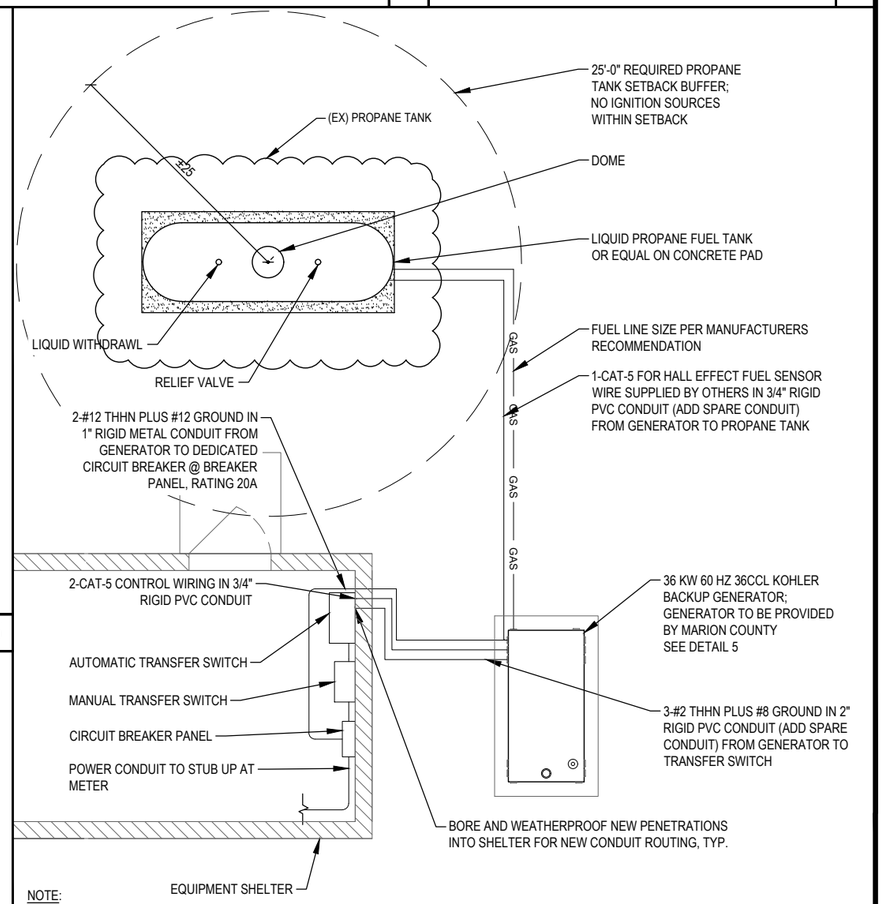
SCALE: NTS | 6

NOT USED

SCALE: NTS | 7

NOT USED

SCALE: NTS | 8



NOTE:

ALL CONDUIT INSIDE THE BUILDING MUST BE METAL AND BE GROUNDED PER R-56 STANDARDS.

INTERIOR SHELTER LAYOUT IS FOR REFERENCE ONLY.

THIS GENERATOR & PROPANE LAYOUT IS FOR INFORMATION ONLY AND IS PRESENTED AS A GUIDELINE. VERIFY SITE CONDITIONS AND LAYOUT PRIOR TO INSTALLATION OF ALL EQUIPMENT. INSTALL ALL EQUIPMENT PER MANUFACTURER'S INSTRUCTIONS.

TYPICAL GENERATOR LAYOUT

SCALE: NTS | 9

Marion County
OREGON

PROJECT INFORMATION:

MARION COUNTY WIPPER

11545 SUMMIT LOOP SE
TURNER, OR 97392

	DATE	RELEASE
	07-20-24	SITE SKETCH
	09-25-24	REVISED SITE SKETCH
	11-04-24	PRELIMINARY ZONING DRAWINGS
	08-19-25	PRELIMINARY CONSTRUCTION DRAWINGS
	10-07-25	FINAL CONSTRUCTION DRAWINGS

DRAWING INFORMATION:

THIS DRAWING IS COPYRIGHTED AND IS THE SOLE PROPERTY OF THE OWNER. IT IS PRODUCED SOLELY FOR USE BY THE OWNER AND ITS AFFILIATES. REPRODUCTION OR USE OF THIS DRAWING AND/OR THE INFORMATION CONTAINED IN IT IS FORBIDDEN WITHOUT THE WRITTEN PERMISSION OF THE OWNER.

PLANS PREPARED BY:

cushing Civil Engineers

Cushing
Civil Engineers
12725 SW MILLIKAN WAY
SUITE 300
BEAVERTON, OR 97005
(503) 387-5331
www.cushingcivilengineers.com

LICENSURE:

REGISTERED PROFESSIONAL ENGINEER
83233
OREGON
JUNE 7, 2012
KENNY McMANAWAY

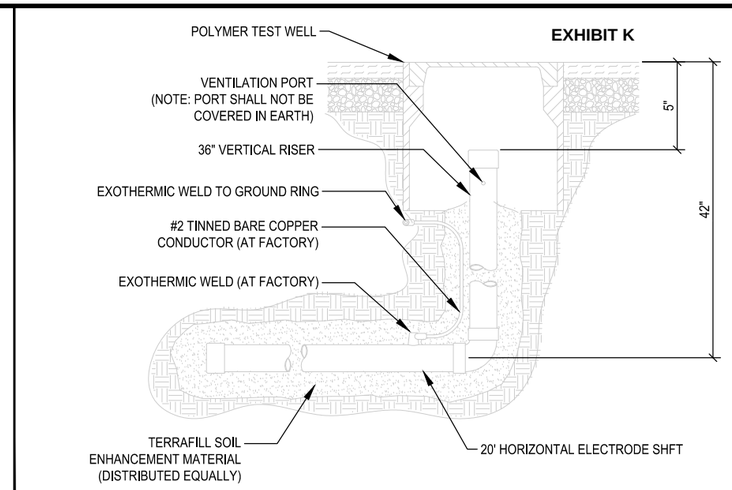
RENEWAL DATE 12/31/26

SHEET TITLE:

GENERATOR & PROPANE TANK DETAILS

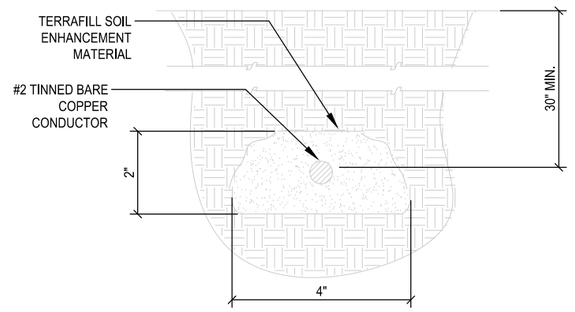
SHEET NUMBER:

C-7



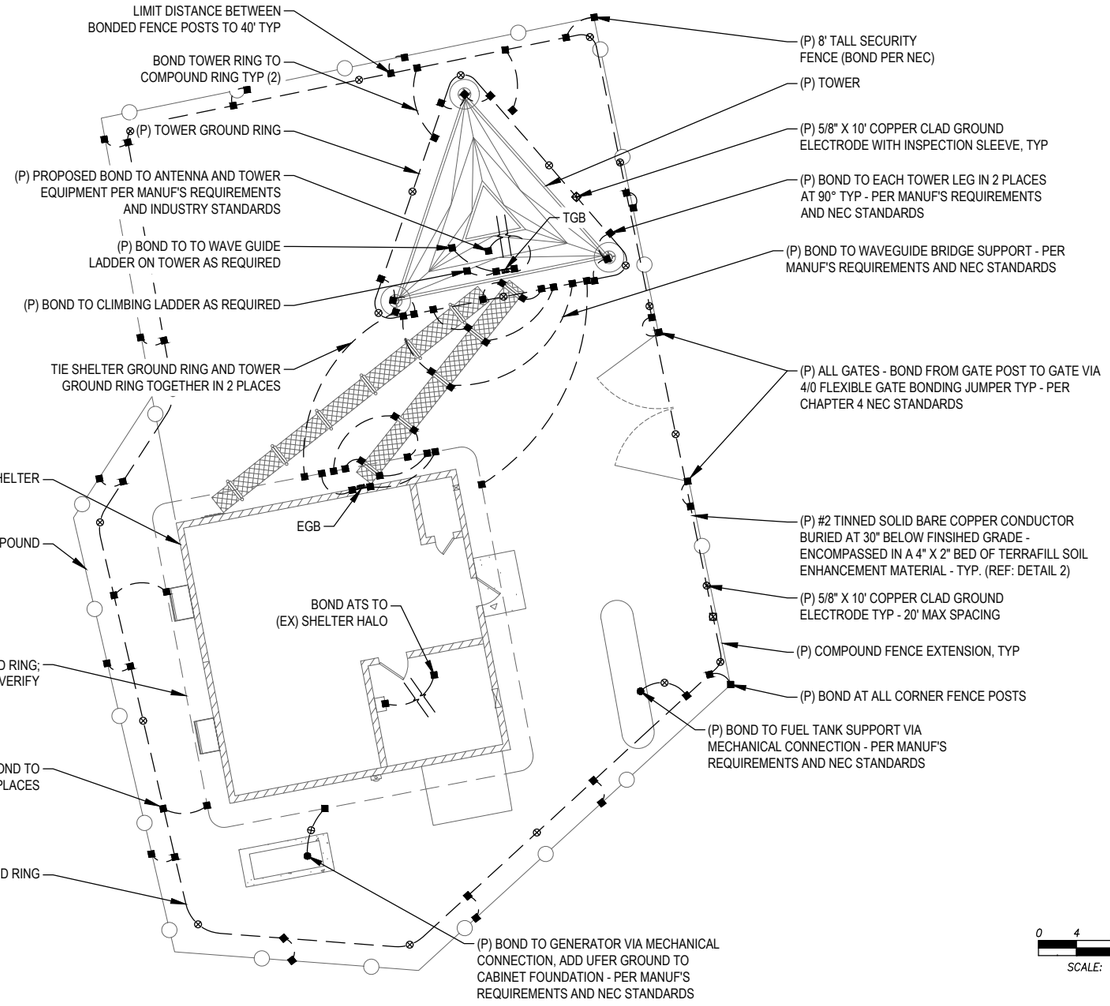
TERRADYNE ELECTROLYTIC GROUND ELECTRODE

SCALE: NTS | 3



SOIL ENHANCEMENT DETAIL

SCALE: NTS | 2



SITE COMPOUND GROUNDING PLAN

11X17 SCALE: 1" = 16' | 22X34 SCALE: 1" = 8' | 1

GENERAL NOTES:

1. ALL INSTALLATIONS ARE TO BE FIELD VERIFIED.
2. GROUND CONDUCTORS ARE TO BE BURIED AT A MINIMUM 30" BELOW GRADE OR 6" BELOW FREEZE LINE, WHICHEVER IS GREATER.
3. ALL BELOW GRADE GROUNDING CONDUCTORS ARE TO BE ENCOMPASSED IN A 2" X 4" BED OF SOIL ENHANCEMENT MATERIAL.
4. BONDS TO FENCE POSTS ARE TO BE MADE AT 12" ABOVE GRADE WHERE APPLICABLE.
5. NO CONDUCTOR SHALL HAVE A BEND IN RADIUS OF LESS THAN 12" AND SHALL NOT EXCEED 90 DEGREES.
6. TERRADYNE ELECTROLYTIC GROUND ELECTRODES ARE NOT TO SHARE THE SAME TRENCH AS GROUNDING CONDUCTOR, NOR RUN IN A PARALLEL PATH TO THE CONDUCTOR.
7. ALL GROUND SYSTEMS ARE TO BE MADE COMMON.
8. ALL BONDS ARE TO BE COATED WITH ANTI-OXIDATION COMPOUND.
9. WHERE STANDARD GROUND ELECTRODES ARE UNABLE TO BE DRIVEN, 12" X 12" X 1/8" COPPER GROUND PLATES SHALL BE INSTALLED 30" BELOW FINISHED GRADE & ENCOMPASSED IN 50LBS OF TERRAFILL SOIL ENHANCEMENT MATERIAL.

LEGEND:

	TERRADYNE TG-100L-H36-2T-36-4F-P SERIES ELECTRODE W/ INSPECTION WELL
■	EXOTHERMIC WELD
●	MECHANICAL CONNECTION
⊗	5/8" X 10' COPPER CLAD GROUND ELECTRODE
⊠	5/8" X 10' COPPER CLAD GROUND ELECTRODE WITH INSPECTION SLEEVE
— — — —	#2 TINNED SOLID COPPER CONDUCTOR

Marion County OREGON

PROJECT INFORMATION:

MARION COUNTY WIPPER

11545 SUMMIT LOOP SE
TURNER, OR 97392

	DATE	RELEASE
	07-20-24	SITE SKETCH
	09-25-24	REVISED SITE SKETCH
	11-04-24	PRELIMINARY ZONING DRAWINGS
	08-19-25	PRELIMINARY CONSTRUCTION DRAWINGS
	10-07-25	FINAL CONSTRUCTION DRAWINGS

DRAWING INFORMATION:
THIS DRAWING IS COPYRIGHTED AND IS THE SOLE PROPERTY OF THE OWNER. IT IS PRODUCED SOLELY FOR USE BY THE OWNER AND ITS AFFILIATES. REPRODUCTION OR USE OF THIS DRAWING AND/OR THE INFORMATION CONTAINED IN IT IS FORBIDDEN WITHOUT THE WRITTEN PERMISSION OF THE OWNER.

PLANS PREPARED BY:

cushing Civil Engineers

Cushing Civil Engineers
12725 SW MILLIKAN WAY
SUITE 300
BEAVERTON, OR 97005
(503) 387-5331
www.cushingcivilengineers.com

LICENSURE:

REGISTERED PROFESSIONAL ENGINEER
83233
OREGON
JUNE 7, 2012
KENNY McMANAWAY

RENEWAL DATE 12/31/26

SHEET TITLE:

SITE GROUNDING PLAN & DETAILS

SHEET NUMBER:

E-1

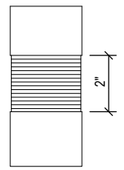


FIGURE 1

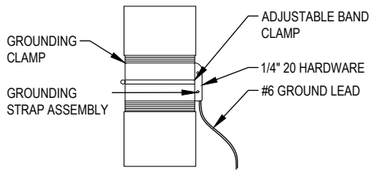


FIGURE 2

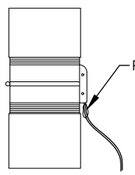


FIGURE 3

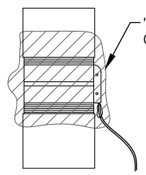


FIGURE 4

EXHIBIT K

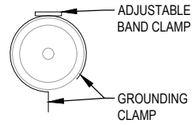


FIGURE 5

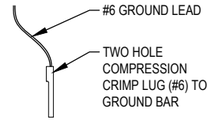
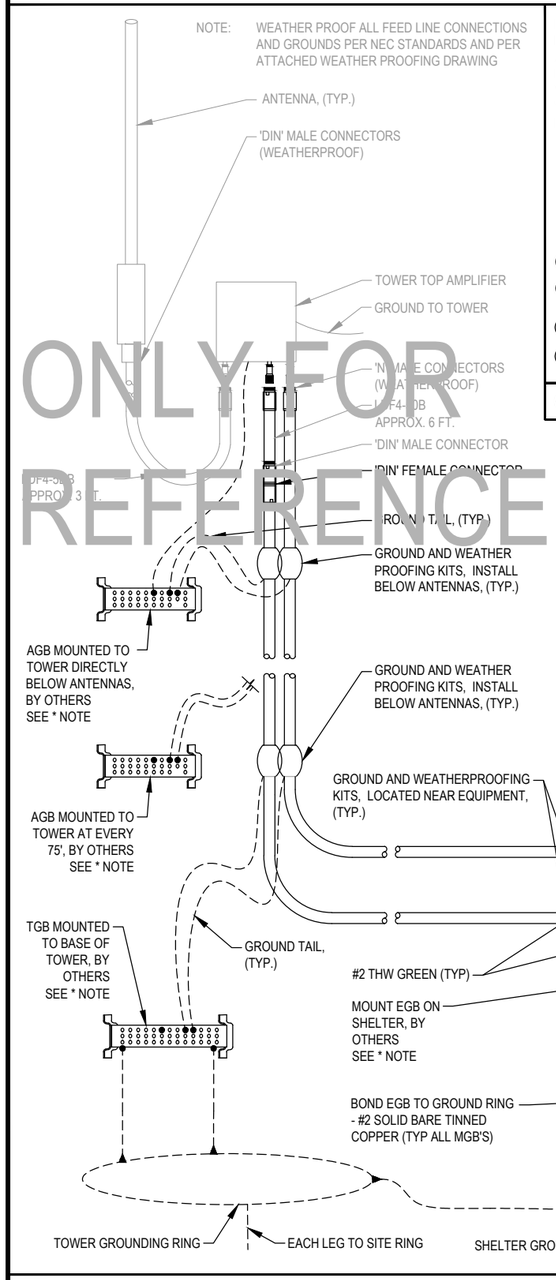


FIGURE 6

NOTE: NOT GC

FEED LINE CABLE GROUNDING

SCALE: NTS | 2

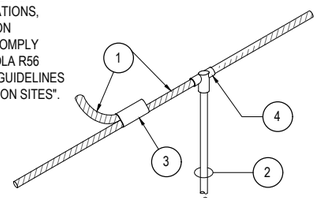


ONLY FOR REFERENCE

STANDARD RX GROUNDING SCHEMATICS

SCALE: NTS | 1

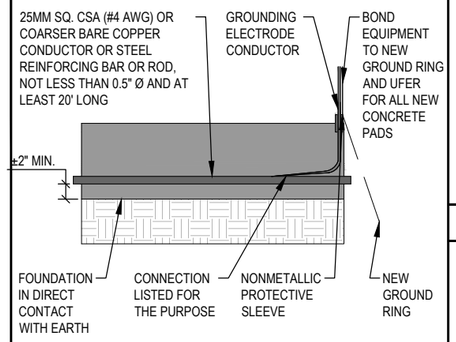
NOTE: ALL GROUNDING DESIGN, SPECIFICATIONS, AND CONSTRUCTION METHODS SHALL COMPLY WITH THE MOTOROLA R56 "STANDARDS AND GUIDELINES FOR COMMUNICATION SITES".



1. MAIN CONDUCTOR, COPPER CABLE
2. 5/8" X 10' COPPER CLAD STEEL GROUND ROD, TO BE PLACED ON CENTER 10' ALONG CONDUCTOR
3. EXOTHERMIC TYPE "NC"
4. EXOTHERMIC TYPE "GT"

GROUND ROD DETAIL

SCALE: NTS | 4



NOTE: FOR REFERENCE ONLY

UFER DETAIL

SCALE: NTS | 5

NOTE: BENDS SHOWN ON GROUND TAILS AND GROUND CONNECTION WIRES ARE FOR ILLUSTRATION PURPOSES ONLY. AVOID EXCESSIVE BENDS. WIRES TO BE AS STRAIGHT AS POSSIBLE; INSTALL DIRECT FROM EQUIPMENT TO GROUND POINT. ALL GROUNDING DESIGN, SPECIFICATIONS, AND CONSTRUCTION METHODS SHALL COMPLY WITH THE MOTOROLA R56 "STANDARDS AND GUIDELINES FOR COMMUNICATION SITES".

NOTES
1. TYP. FOR ALL GROUND WIRES FOR ELECT. AND OTHER EQUIPMENT.

2. THE ENTIRE LUG AND AREA TO BE SPRAYED WITH CLEAR LACQUER OR COLD GALVANIZING SPRAY.

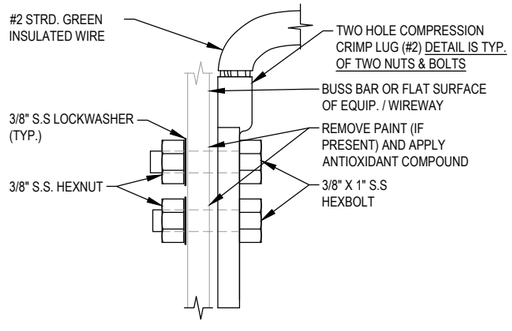
3. GROUND LEADS TO BE EXOTHERMIC WELDED TO GROUND RING.

4. AGB IS BONDED TO TOWER.

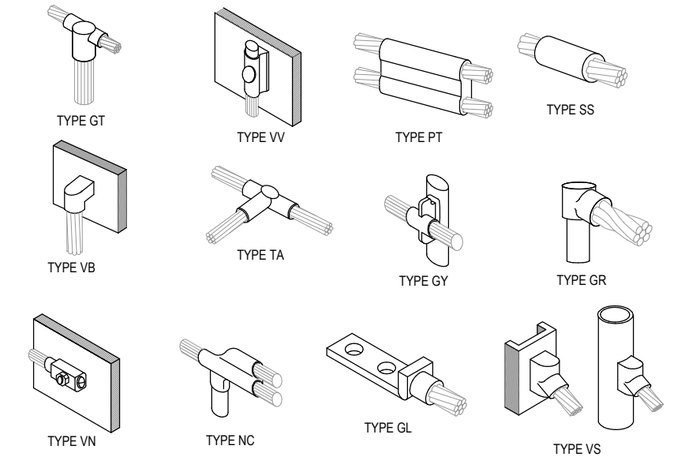
GENERAL NOTES
ALL ANTENNAS, LINES AND RELATED INSTALLATION HARDWARE TO BE PROVIDED BY THE LAND MOBILE COMMUNICATIONS PROVIDER.

GROUND BAR DETAILS

SCALE: NTS | 6

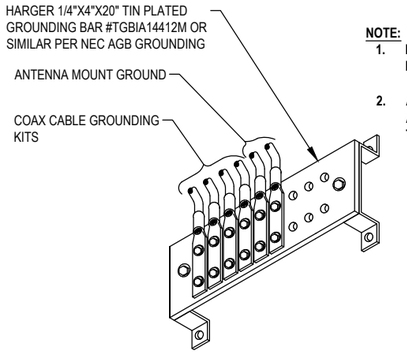


MGB (AT BASE OF TOWER AND EQUIPMENT)



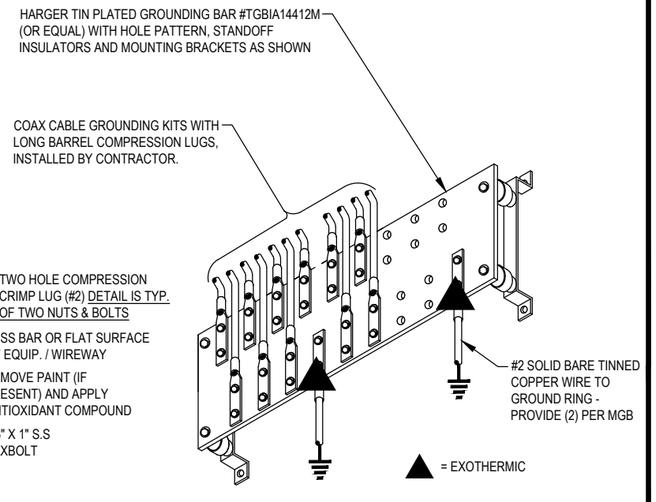
TYPICAL EXOTHERMIC CONNECTION DETAILS

SCALE: NTS | 3



NOTE:
1. **DO NOT BOND AIR TERMINAL OR LIGHTNING ROD TO AGB**
2. **AGB GROUND BAR TO BE PLATED. AGB TO BE BONDED DIRECTLY TO TOWER.**

AGB (AT ANTENNAS)



Marion County OREGON

PROJECT INFORMATION:

MARION COUNTY WIPPER

11545 SUMMIT LOOP SE
TURNER, OR 97392

	DATE	RELEASE
	07-20-24	SITE SKETCH
	09-25-24	REVISED SITE SKETCH
	11-04-24	PRELIMINARY ZONING DRAWINGS
	08-19-25	PRELIMINARY CONSTRUCTION DRAWINGS
	10-07-25	FINAL CONSTRUCTION DRAWINGS

DRAWING INFORMATION:
THIS DRAWING IS COPYRIGHTED AND IS THE SOLE PROPERTY OF THE OWNER. IT IS PRODUCED SOLELY FOR USE BY THE OWNER AND ITS AFFILIATES. REPRODUCTION OR USE OF THIS DRAWING AND/OR THE INFORMATION CONTAINED IN IT IS FORBIDDEN WITHOUT THE WRITTEN PERMISSION OF THE OWNER.

PLANS PREPARED BY:

cushing Civil Engineers

Cushing Civil Engineers
12725 SW MILLIKAN WAY
SUITE 300
BEAVERTON, OR 97005
(503) 387-5331
www.cushingcivilengineers.com

LICENSURE:

REGISTERED PROFESSIONAL ENGINEER 83233 OREGON JUNE 7, 2012 KENNY McMANAWAY

RENEWAL DATE 12/31/26

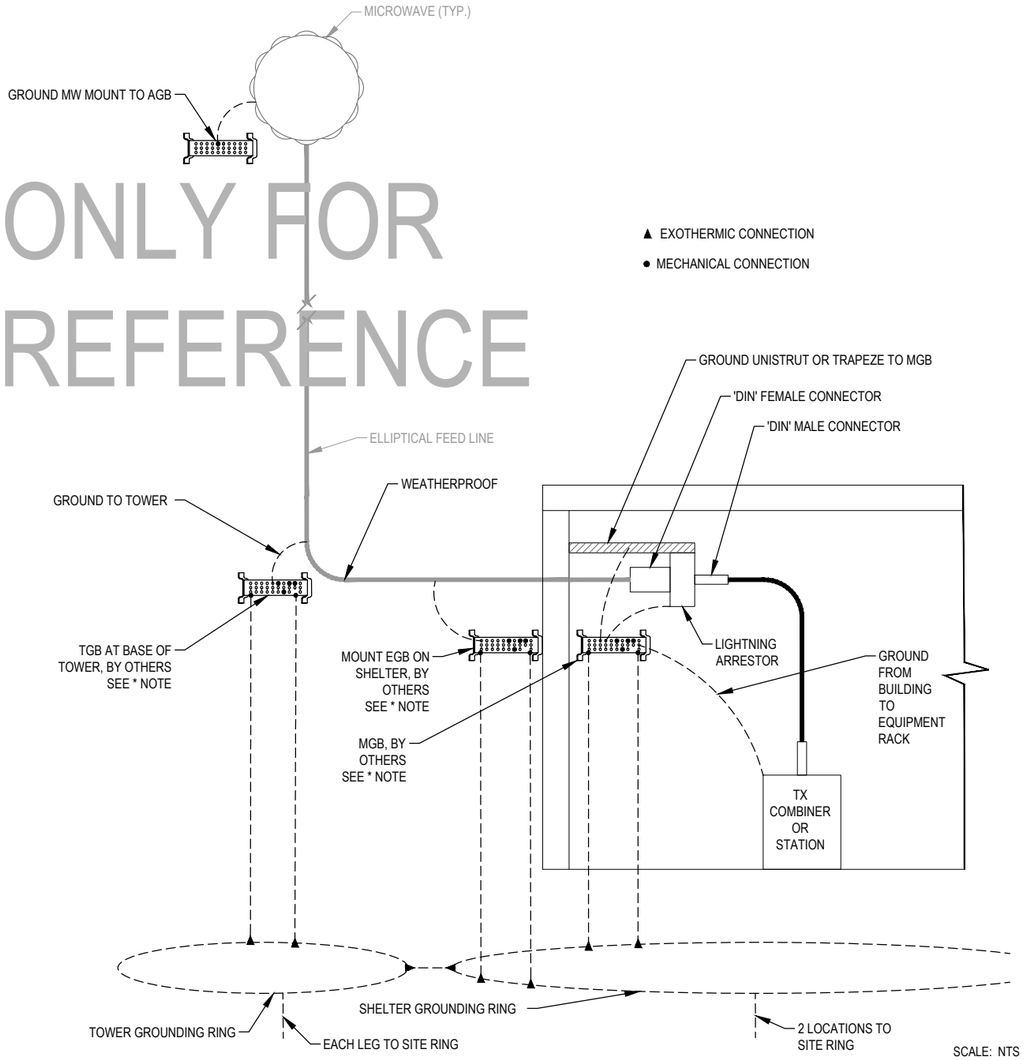
SHEET TITLE:

GROUNDING DETAILS I

SHEET NUMBER:

E-2

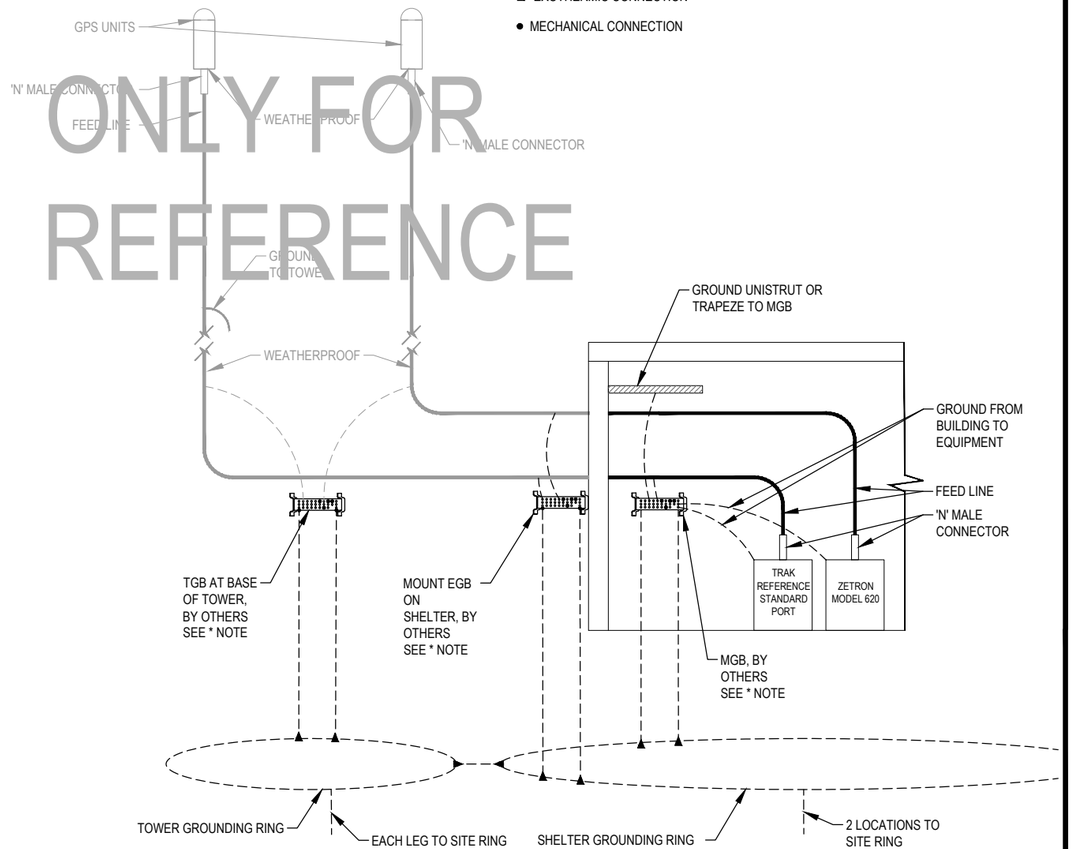
EXHIBIT K



SCALE: NTS

TYPICAL MICROWAVE ANTENNA GROUNDING SCHEMATICS | 1

NOTE:
TOWER INFO SHOWN FOR CONCEPTUAL USE ONLY. SEE TOWER STRUCTURAL REPORT BY OTHERS.



SCALE: NTS

TYPICAL GPS ANTENNA GROUNDING SCHEMATICS | 2

Marion County
OREGON

PROJECT INFORMATION:

MARION COUNTY WIPPER

11545 SUMMIT LOOP SE
TURNER, OR 97392

	DATE	RELEASE
	07-20-24	SITE SKETCH
	09-25-24	REVISED SITE SKETCH
	11-04-24	PRELIMINARY ZONING DRAWINGS
	08-19-25	PRELIMINARY CONSTRUCTION DRAWINGS
	10-07-25	FINAL CONSTRUCTION DRAWINGS

DRAWING INFORMATION:

THIS DRAWING IS COPYRIGHTED AND IS THE SOLE PROPERTY OF THE OWNER. IT IS PRODUCED SOLELY FOR USE BY THE OWNER AND ITS AFFILIATES. REPRODUCTION OR USE OF THIS DRAWING AND/OR THE INFORMATION CONTAINED IN IT IS FORBIDDEN WITHOUT THE WRITTEN PERMISSION OF THE OWNER.

PLANS PREPARED BY:

cushing Civil Engineers

Cushing Civil Engineers
12725 SW MILLIKAN WAY
SUITE 300
BEAVERTON, OR 97005
(503) 387-5331
www.cushingcivilengineers.com

LICENSURE:

REGISTERED PROFESSIONAL ENGINEER
83233
OREGON
JUNE 7, 2012
KENNY McMANAWAY

RENEWAL DATE 12/31/26

SHEET TITLE:

GROUNDING DETAILS II

SHEET NUMBER:

E-3

SITE INFORMATION	
SITE NAME	**WIPPER**

LOCATION INFORMATION			
COUNTY	MARION COUNTY		
STREET ADDRESS	11545 SUMMIT LOOP SE		
CITY	TURNER	STATE	OR
ZIP CODE	97392		
LATITUDE (DEC.)/(DEG)	44.782903 / 44° 46'58.451" N		
LONGITUDE (DEC.)/(DEG)	-122.996761 / 122°59'48.339" W		

TOWER INFORMATION			
STRUCTURE	SELF-SUPPORTING TOWER	TOWER MANUFACTURER	SABRE
TOWER OWNER	MARION COUNTY	SERIAL/MODEL #	-
GROUND ELEVATION	±1067.0'	# OF APPURTENANCE	-
# OF LEGS	3	HIGHEST POINT W/ ANT	-
TOWER HEIGHT W/O ANT	180'		

EXHIBIT K

#	Description	Part Number	Length (ft)	Leg/Face	Status	Base Height (ft)	Centerline Height (ft)	Tip Height (ft)	Antenna Azimuth	Mount Azimuth	Mount	Transmission Line Size/Type
1	P25 TX Antenna	SE414-5WBPALDF(D00)	4.4	C	New	162	164	166	180	180	Site-Pro PSA-6 (6' standoff)	7/8"
2	P25 RX Antenna	CC807-09	10.3	C	New	179	184	189	-		Standard	1/2" to TTA
3	TTA	NPD3633A-TTA	1.0	C	New	176	177	177	-		Standard	7/8"
4	Microwave - McCully	VHLP6-6W	6.0	B	New	77	80	83	94.12	94.12	Standard w/ tieback	EW63
5	Microwave - Eagle Crest	VHLP6-6W	6.0	A	New	132	135	138	332.59	332.59	Standard w/ tieback	EW63
6	Microwave-1		2	B	Existing	69	70	71			Standard	
7	Microwave-2		6	C	Existing	58	61	64			Standard	
8	Microwave-3		8	B	Existing	56	60	64			Standard	
9	Yagi-1		1	B	Existing	67	67	68			Standard	
10	Dipole-1	2 element	5	A	Existing	43	45	48			Standoff	
11	Omni-1		10	B	Existing	35	40	45			Standoff	
12	Dipole-2	2 element	5	C	Existing	48	50	53			Standoff	
13	Microwave-4		2	C	Existing	66	67	68			Standard	
14	Microwave-5		1	A	Existing	70	70	71			Standard	
15	Dipole-3	1 element	5	Face A-C	Existing	68	70	73			Standoff	
16	Microwave-6		4	A	Existing	58	60	62			Standard	
17	Dipole-4	1 element	5	Face A-C	Existing	43	45	48			Standoff	

= estimated value based on survey documentation and photos

NOTE:

INFORMATION BASED ON TAIT COMMUNICATIONS' DOCUMENT DATED 08/13/2025 PROVIDED BY MARION COUNTY.

PROVISIONAL

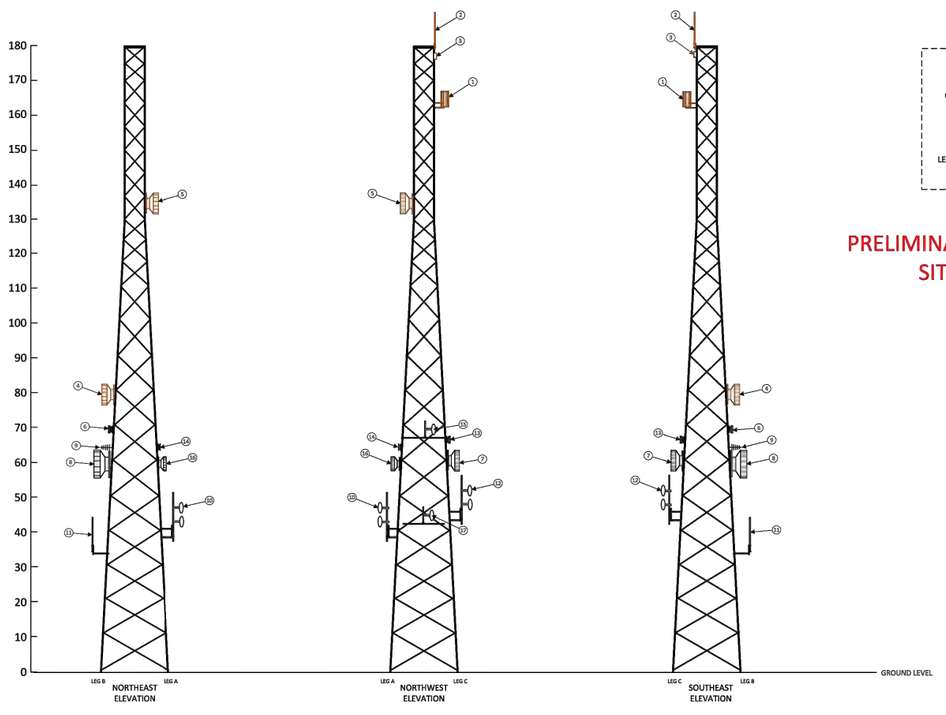
tait communications

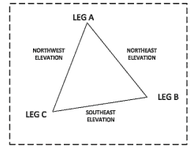
Marion County, OR
700 MHz
P25 Phase II

Date	8/13/2025
Drawn	RCA
Checked	-

FILE: 7\marion county or_wipper.vsd

Wipper
Appurtenance Chart





PRELIMINARY – PENDING SITE CIVILS

PROVISIONAL

tait communications

Marion County, OR
700 MHz
P25 Phase II

Date	8/13/2025
Drawn	RCA
Checked	-

FILE: 7\marion county or_wipper.vsd

Wipper
Tower Plan

Marion County OREGON

PROJECT INFORMATION:

MARION COUNTY WIPPER

11545 SUMMIT LOOP SE
TURNER, OR 97392

	DATE	RELEASE
	07-20-24	SITE SKETCH
	09-25-24	REVISED SITE SKETCH
	11-04-24	PRELIMINARY ZONING DRAWINGS
	08-19-25	PRELIMINARY CONSTRUCTION DRAWINGS
	10-07-25	FINAL CONSTRUCTION DRAWINGS

DRAWING INFORMATION:

THIS DRAWING IS COPYRIGHTED AND IS THE SOLE PROPERTY OF THE OWNER. IT IS PRODUCED SOLELY FOR USE BY THE OWNER AND ITS AFFILIATES. REPRODUCTION OR USE OF THIS DRAWING AND/OR THE INFORMATION CONTAINED IN IT IS FORBIDDEN WITHOUT THE WRITTEN PERMISSION OF THE OWNER.

PLANS PREPARED BY:

cushing Civil Engineers

Cushing
Civil Engineers

12725 SW MILLIKAN WAY
SUITE 300
BEAVERTON, OR 97005
(503) 387-5331
www.cushingcivilengineers.com

LICENSURE:

REGISTERED PROFESSIONAL ENGINEER
83233
OREGON
JUNE 7, 2012
KENNY McMANAWAY

RENEWAL DATE 12/31/26

SHEET TITLE:

RF TOWER APPURTENANCES I

SHEET NUMBER:

RF-1.0

EXHIBIT K

VHLPX6-6W/B

Base Product



1.8 m | 6 ft ValuLine® High Performance Low Profile Antenna, dual-polarized, 5.925–7.125 GHz

Product Classification

Product Type	Microwave antenna
Product Brand	ValuLine®

General Specifications

Antenna Type	VHLPX - ValuLine® High Performance Low Profile Antenna, dual-polarized
Polarization	Dual
Side Struts, Included	1
Side Struts, Optional	1 inboard

Dimensions

Diameter, nominal	1.8 m | 6 ft

Electrical Specifications

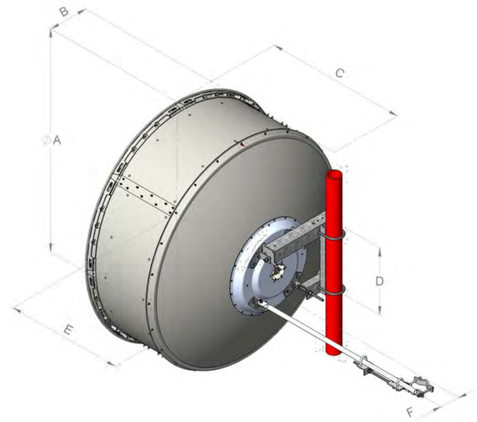
Operating Frequency Band	5.925 – 7.125 GHz
Gain, Low Band	38.5 dBi
Gain, Mid Band	39.3 dBi
Gain, Top Band	40.1 dBi
Boresite Cross Polarization Discrimination (XPD)	30 dB
Front-to-Back Ratio	66 dB
Beamwidth, Horizontal	1.8 °
Beamwidth, Vertical	1.8 °
Return Loss	17.7 dB
VSWR	1.3
Radiation Pattern Envelope Reference (RPE)	7139B
Electrical Compliance	Brazil Anatel Class 3 | Canada SRSP 305.9 Part A | Canada SRSP 306.4 Part A | ETSI 302 217 Class 3 | US FCC Part 101A

©2024 CommScope, Inc. All rights reserved. CommScope and the CommScope logo are registered trademarks of CommScope and/or its affiliates in the U.S. and other countries. For additional trademark information see https://www.commscope.com/trademarks. All product names, trademarks and registered trademarks are property of their respective owners. Revised: September 1, 2023

COMMSCOPE®

VHLPX6-6W/B

Antenna Dimensions and Mounting Information



Dimensions in inches (mm)						
Antenna size, ft (m)	A	B	C	D	E	F
6 (1.8)	74.8 (1899)	13.4 (340)	47.5 (1206)	22.4 (570)	39.4 (1001)	6.9 (174)

Wind Forces at Wind Velocity Survival Rating

Axial Force (FA)	10670 N | 2,398.712 lbf
Angle α for MT Max	-120 °
Side Force (FS)	5286 N | 1,188.34 lbf
Twisting Moment (MT)	4752 N-m | 42,058.742 in lb
Zcg without Ice	363 mm | 14.291 in
Zcg with 1/2 in (12 mm) Radial Ice	543 mm | 21.378 in
Weight with 1/2 in (12 mm) Radial Ice	234 kg | 515.881 lb

©2024 CommScope, Inc. All rights reserved. CommScope and the CommScope logo are registered trademarks of CommScope and/or its affiliates in the U.S. and other countries. For additional trademark information see https://www.commscope.com/trademarks. All product names, trademarks and registered trademarks are property of their respective owners. Revised: September 1, 2023

COMMSCOPE®

NOTE: MODEL SHOWN IS PRELIMINARY AND SUBJECT TO CHANGE UPON FINAL RF CONFIGURATION.

Marion County OREGON

PROJECT INFORMATION:

MARION COUNTY WIPPER

11545 SUMMIT LOOP SE
TURNER, OR 97392

	DATE	RELEASE
	07-20-24	SITE SKETCH
	09-25-24	REVISED SITE SKETCH
	11-04-24	PRELIMINARY ZONING DRAWINGS
	08-19-25	PRELIMINARY CONSTRUCTION DRAWINGS
	10-07-25	FINAL CONSTRUCTION DRAWINGS

DRAWING INFORMATION:

THIS DRAWING IS COPYRIGHTED AND IS THE SOLE PROPERTY OF THE OWNER. IT IS PRODUCED SOLELY FOR USE BY THE OWNER AND ITS AFFILIATES. REPRODUCTION OR USE OF THIS DRAWING AND/OR THE INFORMATION CONTAINED IN IT IS FORBIDDEN WITHOUT THE WRITTEN PERMISSION OF THE OWNER.

PLANS PREPARED BY:

cushing Civil Engineers

Cushing
Civil Engineers

12725 SW MILLIKAN WAY
SUITE 300
BEAVERTON, OR 97005
(503) 387-5331
www.cushingcivilengineers.com

LICENSURE:

REGISTERED PROFESSIONAL ENGINEER
83233
OREGON
JUNE 7, 2012
KENNY McMANAWAY

RENEWAL DATE 12/31/26

SHEET TITLE:

RF TOWER APPURTENANCES II

SHEET NUMBER:

RF-1.1

EXHIBIT K

Antennas
700-1000 MHz Antennas
SE414-WBAL - PIM Certified Series

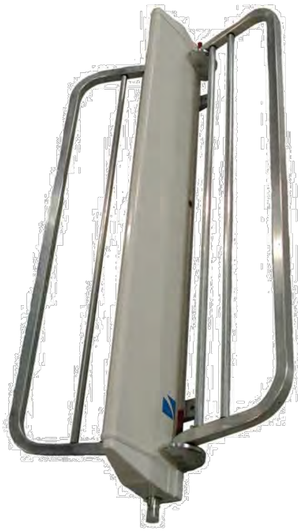
SE414-SWBPALDF(D00) Enclosed dipole, 8-11.5 dBd, adj. beamwidth, Low PIM, 746-960MHz

- Wide band design covers whole 746-960 MHz band, PIP rated
- Horizontal beamwidth can be adjusted (60º/90º/105º/130º/160º)
- Gain depends on horizontal beamwidth setting (11.5/10/9/8.5/8 dBd)
- 0-10º electrical downtilt available

One wideband antenna for your 700, 800, 900 MHz systems. Sinclair's SE414-WBL series of enclosed dipole arrays offer excellent intermodulation performance covering 746-960 MHz in a single antenna. These highly versatile antennas are particularly well suited to communication systems where a specific coverage pattern is required. These include cellular systems, trunked radio, paging, and data transmission, where predictable and highly reliable performance is a must.

The SE414-WBAL series come with field adjustable reflectors that provide horizontal beamwidths between 60 and 160 degrees. The creative design and construction permits excellent pattern control and greater efficiency.

This antenna shall be mounted in an upright position.
Clamps for mechanical downtilt can be ordered separately.
Electrical downtilt is available upon request.



Antenna may not appear exactly as picture.

www.sinctech.com

Region	United States	Europe, Middle East and Africa	Caribbean and Latin America	Canada and rest of the world
Telephone	USA: 1 800 263 3275	International: +44 (0) 1487 84 28 19	International: +1 905 726 7676	Canada: 1 800 263 3275 International: +1 905 727 0165
E-mail	salesusa@sinctech.com	salesuk@sinctech.com	salesla@sinctech.com	salescan@sinctech.com

Product Specification Sheet SE414-SWBPALDF(D00) Issue: 2 Dated: 24-07-17
EPR 018751 Dated: 16-12-15
Customer Tech Manual 005044

Sinclair's commitment to product leadership may result in improvement or change to this product
Copyright © Sinclair Technologies

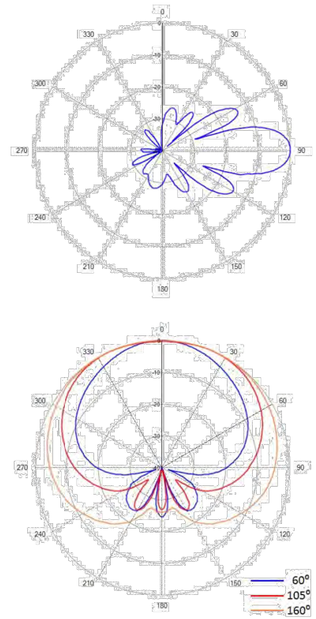
Antennas
700-1000 MHz Antennas
SE414-WBAL - PIM Certified Series

Electrical Specifications			
Frequency Range	MHz	746 to 960	
Bandwidth	MHz	214	
Connector		7/16 DIN-Female	
Gain (nominal)	dBd (dBi)	11.5 (13.6)	*1
Input VSWR (max)		1.5:1	
Polarization		vertical	
Impedance	Ω	50	
Pattern		Directional and Adjustable	
Horizontal beamwidth (typ)	degrees	60	*2
Vertical beamwidth (typ)	degrees	20	
Average Power Input (max)	W	500	
Passive intermod. (2x20W, 3rd ord.)	dBc	-150	*3
PIP(KW, max)		25	
Lightning protection		DC ground	
Electrical tilt (available)		0 to 10 degrees	
Front-to-back ratio (min)	dB	20	

Mechanical Specifications			
Width	in (mm)	25 (635)	*4
Depth	in (mm)	8.5 (216)	*5
Length/ Height	in (mm)	53 (1346)	
Base pipe diameter	in (mm)	2.88 (73)	*6
Base pipe mounting length	in (mm)	30.5 (775)	
Radiating element material		prntd circuit bd	
Weight	lbs (kg)	19.5 (8.85)	
Mounting Hardware (Included)		#130 clamp	
Mounting configurations		upright	
Actual shipping weight	lbs (kg)	24.5 (11.12)	
Shipping dimensions	in (mm)	58x14x17 (1473x356x432)	

Environmental Specifications		
Temperature range	°F (°C)	-40 to +140 (-40 to +60)
Wind Loading Area (Flat Plate Equivalent)	ft² (m²)	4.8 (0.45)
Wind Loading Area (1/2" ice)	ft² (m²)	5.7 (0.53)
Rated wind velocity (no ice)	mph (km/h)	155 (250)
Rated wind velocity (1/2" radial ice)	mph (km/h)	140 (225)
Lateral Thrust (100 mph No Ice)	lbs (N)	180 (800.6)
Torsional moment (100 mph No Ice)	ft-lbs (Nm)	93 (125.6)

Notes
*1 : Dependant on reflector setting 10/9/8.5/8 dBd
*2 : 90/105/130/160
*3 : Measured in the receive band: 2 - 20W carriers
*4 : 90° beamwidth configuration, clamp not included in measurement
*5 : 90° beamwidth configuration, clamp not included in measurement
*6 : Ref. clamp maximum



www.sinctech.com

Region	United States	Europe, Middle East and Africa	Caribbean and Latin America	Canada and rest of the world
Telephone	USA: 1 800 263 3275	International: +44 (0) 1487 84 28 19	International: +1 905 726 7676	Canada: 1 800 263 3275 International: +1 905 727 0165
E-mail	salesusa@sinctech.com	salesuk@sinctech.com	salesla@sinctech.com	salescan@sinctech.com

Product Specification Sheet SE414-SWBPALDF(D00) Issue: 2 Dated: 24-07-17
EPR 018751 Dated: 16-12-15
Customer Tech Manual 005044

Sinclair's commitment to product leadership may result in improvement or change to this product
Copyright © Sinclair Technologies

NOTE: MODEL SHOWN IS PRELIMINARY AND SUBJECT TO CHANGE UPON FINAL RF CONFIGURATION.

Marion County
OREGON

PROJECT INFORMATION:

MARION COUNTY WIPPER

11545 SUMMIT LOOP SE
TURNER, OR 97392

	DATE	RELEASE
	07-20-24	SITE SKETCH
	09-25-24	REVISED SITE SKETCH
	11-04-24	PRELIMINARY ZONING DRAWINGS
	08-19-25	PRELIMINARY CONSTRUCTION DRAWINGS
	10-07-25	FINAL CONSTRUCTION DRAWINGS

DRAWING INFORMATION:
THIS DRAWING IS COPYRIGHTED AND IS THE SOLE PROPERTY OF THE OWNER. IT IS PRODUCED SOLELY FOR USE BY THE OWNER AND ITS AFFILIATES. REPRODUCTION OR USE OF THIS DRAWING AND/OR THE INFORMATION CONTAINED IN IT IS FORBIDDEN WITHOUT THE WRITTEN PERMISSION OF THE OWNER.

PLANS PREPARED BY:

cushing Civil Engineers

Cushing
Civil Engineers

12725 SW MILLIKAN WAY
SUITE 300
BEAVERTON, OR 97005
(503) 387-5331
www.cushingcivilengineers.com

LICENSURE:

REGISTERED PROFESSIONAL ENGINEER
83233
OREGON
JUNE 7, 2012
KENNY McMANAWAY

RENEWAL DATE 12/31/26

SHEET TITLE:

RF TOWER APPURTENANCES III

SHEET NUMBER:

RF-1.2

EXHIBIT K

800MHz Corporate Collinear Antennas

748-870MHz

CC807 Series

These industry leading, full featured corporate collinear arrays allow site operators to combine, with complete integrity, a large number of communications services into a single, low profile antenna solution.

The corporate feed design employed by RFI maintains superior pattern control, allowing gain to be maximised with zero tilt variation over a very broad bandwidth, comparable to that only previously available in exposed dipole array configurations. This is achieved in the preferred form factor of a fully enclosed fibreglass radome, providing a reduction in wind loading, ice loading and tower loading in comparison.

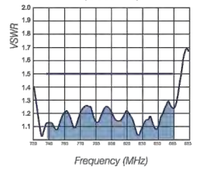
The CC807 series have been designed with an exceptional power rating of 500W across the band as well as a Peak Instantaneous Power (PIP) rating of 25kW to cater for the peak voltage levels present in large multi-carrier combining environments. RFI's refined design processes and proven construction methods achieve a PIM rating of –150dBc, further ensuring performance is maintained for the service life of the antenna.

Features:

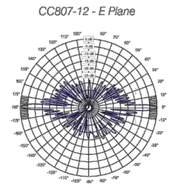
- 500W Continuous Power rating
- -150dBc Passive Intermodulation (PIM) rating, 100% PIM tested
- 25 kW Peak Instantaneous Power (PIP) rating
- DC grounding on all elements for the ultimate in lightning protection and dissipation of static noise.
- Light weight dipole construction using RFI's patented flexi-PCB architecture, maintains a low centre of gravity reducing tip deflection and sway
- Field invertible (excluding tilt models)
- Preset downtilt variations of 2 and 4 degrees available, see note (1)



Typical VSWR Response (CC807-12)



CC807-12 - E Plane



Electrical Specifications

Model Number	CC807-09-P	CC807-12-P
Nominal Gain *dBd (dBi)*	9.0 (11.1)	11.5 (13.6)
Frequency *MHz*	746-870	
Tuned Bandwidth *MHz*	Full	
VSWR *(Return Loss)*	1.5:1	
Nominal Impedance Ω	50	
Downtilt°	0 Std 2, 4 (1)	
Vertical Beamwidth°	8	4
Horizontal Beamwidth°	Omni +/- 0.5dB	
Input Power W	500	
Passive IM 3rd order (2x20W) *dBc*	-150	
Peak Instantaneous Power *kW*	25	

Mechanical

Model Number		CC807-09-P	CC807-12-P
Construction		Sky blue fibreglass radome	
Radome Diameter mm (inches)		76 (3.0)	
Length mm (inches)		3135 (123.4)	6235 (245.5)
Weight *kg (lbs)*		14 (30.9)	25.5 (56.2)
Termination		Integrated 4.3-10 Female	
Mountaing Area mm (inches)		750 x 90 (30 x 3.5) diameter Ecofilm™ plated aluminium	
Suggested Clamps		3 x UC-114	
Shipping Dimensions *mm (inches)*	H	115 (4.5)	
	W	115 (4.5)	
	L	3335 (131.3)	6435 (253.3)
Shipping Weight *kg (lbs)*		20.0 (44.1)	36.5 (80.5)
Projected area *cm² (ft²)*	No Ice	2597 (2.8)	5559 (6.0)
	With Ice	3192 (3.4)	7037 (7.6)
Lateral Thrust @160km/h *N* (100 mph lbs)		308 (69)	659 (148)
Wind Gust Rating *km/h (mph)*	No Ice	>240 (150)	
Torque @ 160km/h *Nm* (100mph ft-lbs)		413 (305)	1823 (1345)

(1) To order pre-set downtilt versions available, simply add a -T2 or -T4 towards the end of the part number to denote downtilt model required. For eg. CC807-12-T2-P to order CC807-12-P with 2deg of downtilt. Please note: Models with downtilt are NOT field invertible. . Eg. CC807-12-T2-P

Asia Pacific | EMEA | Americas

Copyright RF Industries Pty Ltd 2020. Subject to change without notice.

rfi.com.au

NOTE: MODEL SHOWN IS PRELIMINARY AND SUBJECT TO CHANGE UPON FINAL RF CONFIGURATION.

Marion County OREGON

PROJECT INFORMATION:

MARION COUNTY WIPPER

11545 SUMMIT LOOP SE
TURNER, OR 97392

	DATE	RELEASE
	07-20-24	SITE SKETCH
	09-25-24	REVISED SITE SKETCH
	11-04-24	PRELIMINARY ZONING DRAWINGS
	08-19-25	PRELIMINARY CONSTRUCTION DRAWINGS
	10-07-25	FINAL CONSTRUCTION DRAWINGS

DRAWING INFORMATION:

THIS DRAWING IS COPYRIGHTED AND IS THE SOLE PROPERTY OF THE OWNER. IT IS PRODUCED SOLELY FOR USE BY THE OWNER AND ITS AFFILIATES. REPRODUCTION OR USE OF THIS DRAWING AND/OR THE INFORMATION CONTAINED IN IT IS FORBIDDEN WITHOUT THE WRITTEN PERMISSION OF THE OWNER.

PLANS PREPARED BY:

cushing Civil Engineers

Cushing
Civil Engineers

12725 SW MILLIKAN WAY
SUITE 300
BEAVERTON, OR 97005
(503) 387-5331
www.cushingcivilengineers.com

LICENSURE:

REGISTERED PROFESSIONAL ENGINEER
83233
OREGON
JUNE 7, 2012
KENNY McMANAWAY

RENEWAL DATE 12/31/26

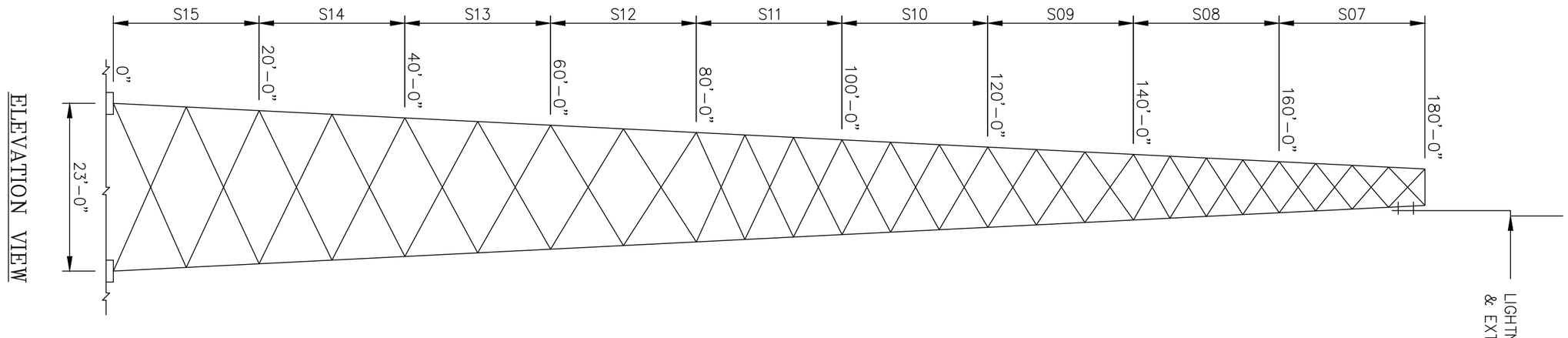
SHEET TITLE:

RF TOWER APPURTENANCES IV

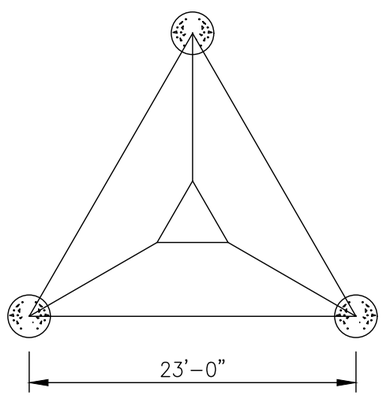
SHEET NUMBER:

RF-1.3

LEGS	14.00 OD X .500		10.75 OD X .500		8.625 OD X .500	8.625 OD X .322	5.563 OD X .375	4.000 OD X .318	2.875 OD X .203
DIAGONALS	L 6 X 4 X 3/8 (SLV)		L 4 X 4 X 3/8	L 4 X 3 1/2 X 3/8 (SLV)		L 4 X 4 X 5/16	A	B	L 2 X 2 X 5/16
HORIZONTALS	NONE								L 2 X 2 X 5/16
BAYS/SECTION	2 BAYS				3 BAYS			4 BAYS	
SECTION WEIGHT	9219 LBS.	9060 LBS.	7202 LBS.	6525 LBS.	6047 LBS.	4305 LBS.	3448 LBS.	2454 LBS.	1408 LBS.



ELEVATION VIEW



PLAN VIEW

MATERIAL LIST	
A	L 3 1/2 X 3 X 3/8 (SLV)
B	L 2 1/2 X 2 1/2 X 3/8

UNLESS OTHERWISE SPECIFIED
ALL DIMENSIONS INCLUDE
FINISHES AND ARE IN INCHES

TOLERANCES: FRACTIONS ± 1/16"
ANGLES ± 1/2 DEG.
DECIMALS ± .010"

MATERIAL:

TOLERANCES DO NOT APPLY TO RAW MATERIAL

REV	DATE	DRW	CHK	DESCRIPTION

Sabre Industries™
INNOVATION DELIVERED

CONFIDENTIAL
This document and the information contained herein is the confidential trade secret property of Sabre Industries, Inc. ("Sabre") and must not be reproduced, copied or used, in whole or in part, for any purpose without the prior written consent of Sabre.
© 2025 Sabre Industries, Inc. All rights reserved.

MASTER: 180 FT. MODEL S3TL-HD2
SITE: NORTH FORK, OR
CUSTOMER: MARION COUNTY OREGON

JOB NO. 563424		SIZE	DRAWING NO.	REV
DATE	08/07/25	B	563424-MS	0
DRAWN BY	KMP			
CHECKED BY	ZAK		SCALE NONE	PAGE 1 OF 3

DRAWING LIST

563424-F1 . . . . . MAT & PIER FOUNDATION
C30400341 . . . . . LEG TO LEG TEMPLATE
9030714 . . . . . TOWER BASE INSTALLATION
563424-S15 . . . . . SECTION 0 FT. - 20 FT.
563424-S14 . . . . . SECTION 20 FT. - 40 FT.
563424-S13 . . . . . SECTION 40 FT. - 60 FT.
563424-S12 . . . . . SECTION 60 FT. - 80 FT.
563424-S11 . . . . . SECTION 80 FT. - 100 FT.
563424-S10 . . . . . SECTION 100 FT. - 120 FT.
563424-S09 . . . . . SECTION 120 FT. - 140 FT.
563424-S08 . . . . . SECTION 140 FT. - 160 FT.
563424-S07 . . . . . SECTION 160 FT. - 180 FT.
563424-SB1 . . . . . STEP BOLT ATTACHMENT INSTALLATION
C30011-1 . . . . . SAFETY CLIMB BOTTOM MOUNTING BRACKET
C30011-2 . . . . . SAFETY CLIMB TOP MOUNTING BRACKET
C30003001 . . . . . SAFETY CLIMB INTERMEDIATE BRACKET
SEE MANUAL W/KIT . . . . . CABLE SAFETY CLIMB DEVICE
563424-WG1 . . . . . WAVEGUIDE LADDER INSTALLATION
563424-WG2 . . . . . WAVEGUIDE LADDER INSTALLATION
563424-WG3 . . . . . WAVEGUIDE LADDER INSTALLATION
9031861 . . . . . WAVEGUIDE LADDER
C30008022 . . . . . TOWER LEG CAP KIT
563424-SA1 . . . . . 3' SIDEARM @ 179'
563424-PM1 . . . . . 4 1/2 O.D. PIPE MOUNT KIT FOR SIDEARM @ 179'
563424-ST1 . . . . . SWIVEL KNUCKLE TIEBACK KITS FOR SIDEARM @ 179'
563424-FM1 . . . . . 2 3/8 O.D. FLUSH MOUNT KIT @ 177'
563424-SA2 . . . . . 3' SIDEARMS @ 175'
563424-PM2 . . . . . 4 1/2 O.D. PIPE MOUNT KITS FOR SIDEARMS @ 175'
563424-ST2 . . . . . SWIVEL KNUCKLE TIEBACK KITS FOR SIDEARMS @ 175'
563424-PM3 . . . . . 4 1/2 O.D. PIPE MOUNT KITS @ 173'
C30085002 . . . . . 8' ICE SHIELD ASSEMBLY @ 170'
563424-PM4 . . . . . 4 1/2 O.D. PIPE MOUNT KIT @ 165'
563424-SA3 . . . . . 3' SIDEARM @ 165'
563424-PM5 . . . . . 4 1/2 O.D. PIPE MOUNT KIT FOR SIDEARM @ 165'
563424-ST3 . . . . . SWIVEL KNUCKLE TIEBACK KITS FOR SIDEARM @ 165'
563424-SA4 . . . . . 3' SIDEARM @ 163'
563424-PM6 . . . . . 4 1/2 O.D. PIPE MOUNT KIT FOR SIDEARM @ 163'
563424-ST4 . . . . . SWIVEL KNUCKLE TIEBACK KITS FOR SIDEARM @ 163'
C30085002 . . . . . 8' ICE SHIELD ASSEMBLIES @ 155'
563424-PM7 . . . . . 4 1/2 O.D. PIPE MOUNT KITS @ 150'
563424-PM8 . . . . . 4 1/2 O.D. PIPE MOUNT KIT @ 143'
563424-SA5 . . . . . 3' SIDEARM @ 143'
563424-PM9 . . . . . 4 1/2 O.D. PIPE MOUNT KIT FOR SIDEARM @ 143'
563424-ST5 . . . . . SWIVEL KNUCKLE TIEBACK KITS FOR SIDEARM @ 143'
563424-SA6 . . . . . 3' SIDEARM @ 140'
563424-PM10 . . . . . 4 1/2 O.D. PIPE MOUNT KIT FOR SIDEARM @ 140'
563424-ST6 . . . . . SWIVEL KNUCKLE TIEBACK KITS FOR SIDEARM @ 140'
563424-PM11 . . . . . 4 1/2 O.D. PIPE MOUNT KIT @ 137'
563424-SA7 . . . . . 3' SIDEARM @ 134'
563424-PM12 . . . . . 4 1/2 O.D. PIPE MOUNT KIT FOR SIDEARM @ 134'
563424-ST7 . . . . . SWIVEL KNUCKLE TIEBACK KITS FOR SIDEARM @ 134'
563424-SA8 . . . . . 3' SIDEARM @ 127'
563424-PM13 . . . . . 4 1/2 O.D. PIPE MOUNT KIT FOR SIDEARM @ 127'
563424-ST8 . . . . . SWIVEL KNUCKLE TIEBACK KITS FOR SIDEARM @ 127'
563424-LR . . . . . LIGHTNING ROD W/STIFFENER & EXTENSION
9014671 . . . . . BOLT INSTALLATION
906956 . . . . . TOWER NAME PLATE
907901 . . . . . INVENTORY REQUIREMENT SHEET
BOM-1 . . . . . BILL OF MATERIAL

TOWER DESIGN INFORMATION

THIS ERECTION DRAWING PACKAGE IS BASED ON THE STRUCTURAL DESIGN REPORT NO. 563424.

THIS TOWER DESIGN ALSO MEETS OR EXCEEDS THE REQUIREMENTS OF THE 2022 OREGON STRUCTURAL SPECIALTY CODE.

DESIGN CRITERIA - ANSI/TIA-222-H	
WIND SPEED (NO ICE)	108 MPH
WIND SPEED (ICE)	30 MPH
DESIGN ICE THICKNESS	1.00 IN
RISK CATEGORY	IV
EXPOSURE CATEGORY	C
TOPOGRAPHIC FACTOR PROCEDURE	METHOD 2 (RIGOROUS)
TOPOGRAPHIC FEATURE	HILL
CREST HEIGHT	1145 FT
LENGTH OF TOPOGRAPHIC FEATURE	3450 FT
HORIZONTAL DISTANCE FROM STRUCTURE TO CREST	0 FT
GROUND ELEVATION	2504 FT
SEISMIC IMPORTANCE FACTOR, Ie	1.50
0.2-SEC SPECTRAL RESPONSE, Ss	0.616 g
1-SEC SPECTRAL RESPONSE, S1	0.309 g
SITE CLASS	C
SEISMIC DESIGN CATEGORY	D
BASIC SEISMIC FORCE-RESISTING SYSTEM	TELECOMMUNICATION TOWER (TRUSS: STEEL)

UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS INCLUDE FINISHES AND ARE IN INCHES

TOLERANCES: FRACTIONS ± 1/16" ANGLES ± 1/2 DEG. DECIMALS ± .010"

MATERIAL:

TOLERANCES DO NOT APPLY TO RAW MATERIAL

REV	DATE	DRW	CHK	DESCRIPTION

Sabre Industries™ INNOVATION DELIVERED

CONFIDENTIAL
This document and the information contained herein is the confidential trade secret property of Sabre Industries, Inc. ("Sabre") and must not be reproduced, copied or used, in whole or in part, for any purpose without the prior written consent of Sabre.
© 2025 Sabre Industries, Inc. All rights reserved.

MASTER: 180 FT. MODEL S3TL-HD2
SITE: NORTH FORK, OR
CUSTOMER: MARION COUNTY OREGON

JOB NO. 563424		SIZE	DRAWING NO.	REV
DATE	08/07/25	B	563424-MS	0
DRAWN BY	KMP			
CHECKED BY	ZAK		SCALE NONE	PAGE 2 OF 3

DESIGNED APPURTENANCE LOADING

ELEV.	ANTENNAS
189.62'	(1) DB224A
186.22'	(1) SC479-HF1LDF
185'	(1) EXTENDIBLE LIGHTNING ROD
184.14'	(1) CC807-09
182.22'	(3) SC479-HF1LDF
179'	3FT SIDEARM
179'	3FT SIDEARM
179'	3FT SIDEARM
177'	FLUSH MOUNT
177'	(1) 429-83H-01
175'	(2) 3FT SIDEARMS
173'	(2) LEG DISH MOUNT
173'	LEG DISH MOUNT
173'	(1) 1' H.P. DISH
173'	(2) VHLP2-23-2GR/B
170'	(1) 6' ICE SHIELD
168.46'	(1) OA20-67-DIN
167.21'	(1) SE414-SWBPALDF(DXX)
166.5'	(1) 7' X 2" WHIP
165'	3FT SIDEARM
165'	3FT SIDEARM
165'	LEG DISH MOUNT
165'	LEG DISH MOUNT

ELEV.	ANTENNAS
165'	(1) UHX8-59
165'	(1) VHLPX6-6W-6WH
163'	3FT SIDEARM
155'	(1) 6' ICE SHIELD
155'	(1) 6' ICE SHIELD
150'	(2) LEG DISH MOUNT
150'	(2) VHLPX6-6W-6WH
143'	3FT SIDEARM
143'	LEG DISH MOUNT
143'	(1) 3' X 1' X 3IN PANEL
143'	(1) VHLPX6-6W-6WH
140'	3FT SIDEARM
140'	(1) 3' X 1' X 3IN PANEL
137.5'	(1) 7' X 2" WHIP
137'	LEG DISH MOUNT
137'	(1) VHLPX4-11W/A
134'	3FT SIDEARM
130.5'	(1) 7' X 2" WHIP
129.5'	(1) DB404-B
127'	3FT SIDEARM
127'	3FT SIDEARM
120'	3 EHD V-BOOM - 12FT FACE - 3FT STANDOFF
120'	(12) 80010992

UNLESS OTHERWISE SPECIFIED
ALL DIMENSIONS INCLUDE
FINISHES AND ARE IN INCHES

TOLERANCES: FRACTIONS ± 1/16"
ANGLES ± 1/2 DEG.
DECIMALS ± .010"

MATERIAL:

TOLERANCES DO NOT APPLY TO RAW MATERIAL

REV	DATE	DRW	CHK	DESCRIPTION

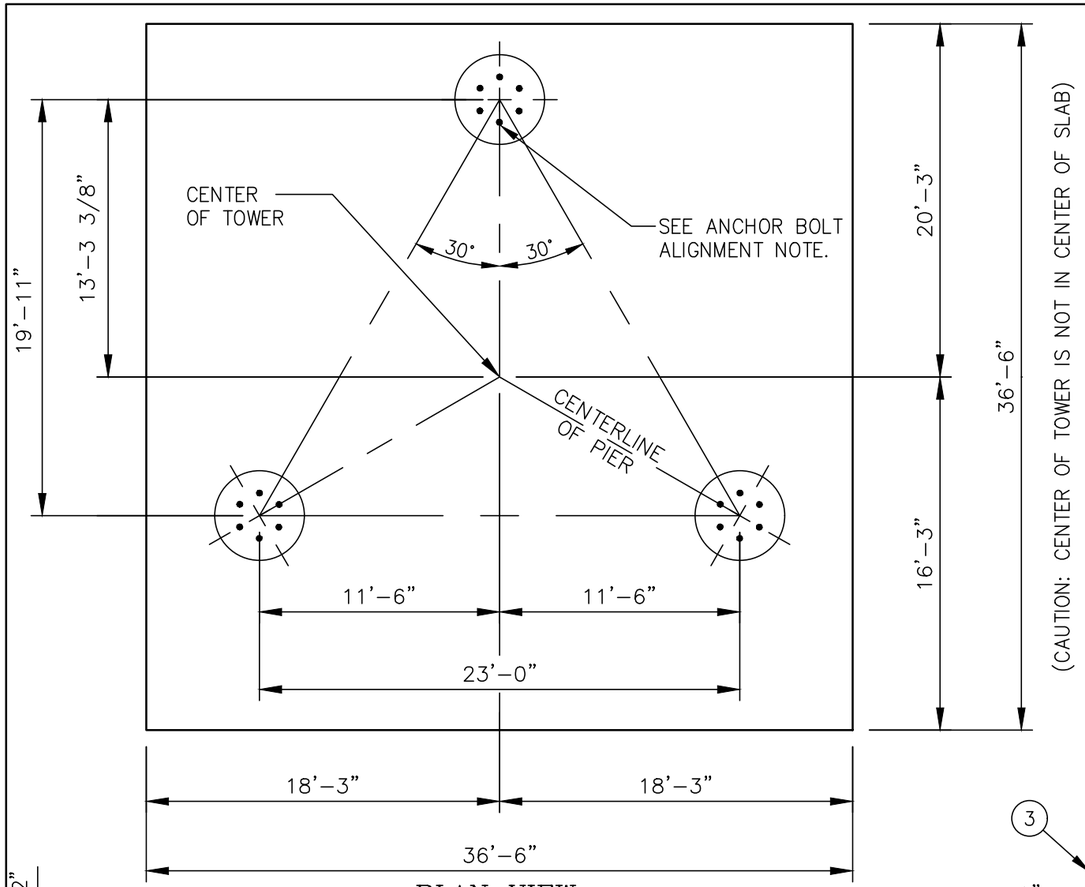
Sabre Industries™
INNOVATION DELIVERED

CONFIDENTIAL
This document and the information contained herein is the confidential trade secret property of Sabre Industries, Inc. ("Sabre") and must not be reproduced, copied or used, in whole or in part, for any purpose without the prior written consent of Sabre.
© 2025 Sabre Industries, Inc. All rights reserved.

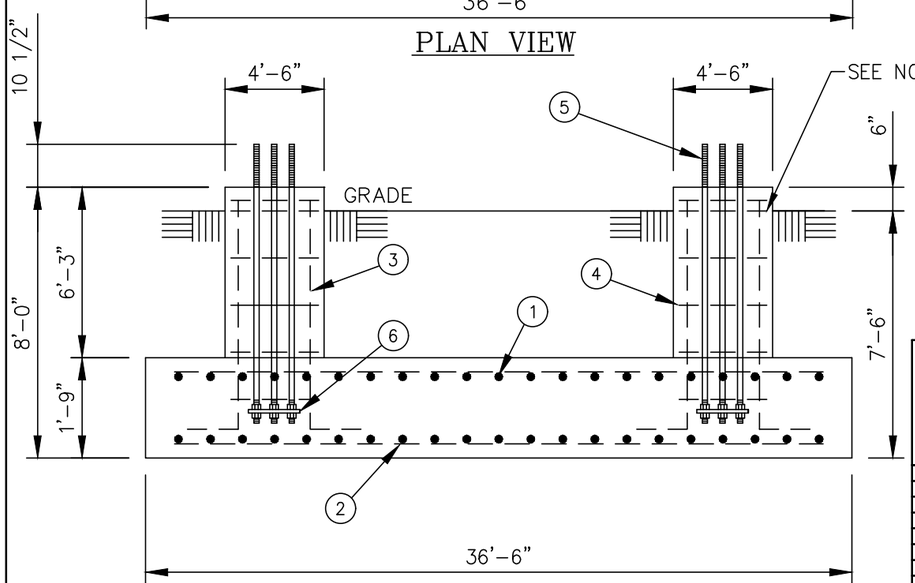
MASTER: 180 FT. MODEL S3TL-HD2
SITE: NORTH FORK, OR
CUSTOMER: MARION COUNTY OREGON

JOB NO. 563424		SIZE	DRAWING NO.	REV
DATE	08/07/25	B	563424-MS	0
DRAWN BY	KMP			
CHECKED BY	ZAK		SCALE NONE	PAGE 3 OF 3

EXHIBIT K



PLAN VIEW



ELEVATION VIEW

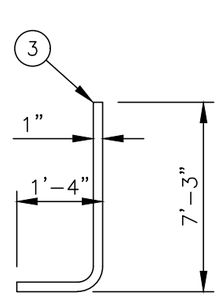
REINFORCING STEEL SCHEDULE								
ITEM	LOCATION	NO. REQ'D.	BAR SPC'G.	SIZE	CUT LGTH.	TOTAL LGTH.	TOTAL WT.	SHAPE
①	PAD TOP REINFORCING	98	EQUALLY SPACED	#11	36'-0"	3528'-0"	18744 LBS.	STRAIGHT
②	PAD BOTTOM REINFORCING	98	EQUALLY SPACED	#11	36'-0"	3528'-0"	18744 LBS.	STRAIGHT
③	PIER VERTICAL REINFORCING	78	EQUALLY SPACED	#8	8'-7"	669'-6"	1788 LBS.	
④	PIER TIES	69	SPACED 4" C/C	#4	13'-10"	954'-6"	638 LBS.	
						TOTAL REBAR WT.	39914 LBS.	

ANCHOR BOLT SCHEDULE				
ITEM	PART NO.	NO. REQ'D.	ANCHOR BOLT SIZE	SPACING
⑤	C40041061	18	1 3/4"ø X 7'-3"	EQUALLY SPACED

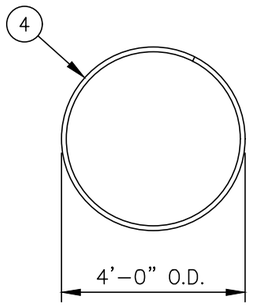
TEMPLATE SCHEDULE			
ITEM	PART NO.	NO. REQ'D.	BOLT CIRCLE
⑥	C30139220	6	1'-7"

CONCRETE REQ'D	ROUND PIERS
PAD	86.35 CU. YDS.
PIERS	11.04 CU. YDS.
TOTAL	97.39 CU. YDS.

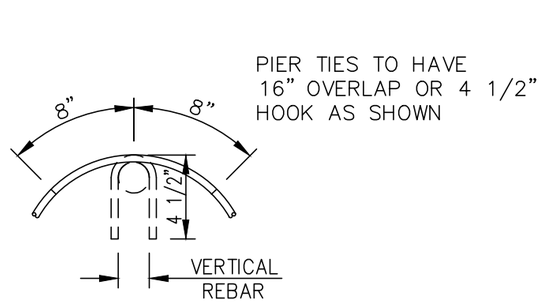
SEE PAGE 2 FOR GENERAL NOTES



REBAR DETAIL
(PIER VERTICAL REBAR)



REBAR DETAIL
(PIER TIES)



PIER TIE HOOK DETAIL

UNLESS OTHERWISE SPECIFIED
ALL DIMENSIONS INCLUDE
FINISHES AND ARE IN INCHES

TOLERANCES: FRACTIONS ± 1/16"
ANGLES ± 1/2 DEG.
DECIMALS ± .010"

MATERIAL:

TOLERANCES DO NOT APPLY TO RAW MATERIAL

REV	DATE	DRW	CHK	DESCRIPTION

Sabre Industries™
INNOVATION DELIVERED

CONFIDENTIAL
This document and the information contained herein is the confidential trade secret property of Sabre Industries, Inc. ("Sabre") and must not be reproduced, copied or used, in whole or in part, for any purpose without the prior written consent of Sabre.
© 2025 Sabre Industries, Inc. All rights reserved.

FOUNDATION: 180 FT. MODEL S3TL-HD2
SITE: NORTH FORK, OR
CUSTOMER: MARION COUNTY OREGON

JOB NO. 563424		SIZE	DRAWING NO.	REV
DATE	7/31/25	B	563424-F1	0
DRAWN BY	AWB			
CHECKED BY	BWA		SCALE NONE	PAGE 1 OF 2

GENERAL NOTES

1. CONCRETE SHALL HAVE A MINIMUM 28-DAY COMPRESSIVE STRENGTH OF 4,500 PSI, IN ACCORDANCE WITH ACI 318-14. (2 REBAR TIES REQ'D IN THE TOP 5")
2. REBAR TO CONFORM TO ASTM SPECIFICATION A615 GRADE 60.
3. ALL REBAR TO HAVE A MINIMUM OF 3" CONCRETE COVER.
4. ALL EXPOSED CONCRETE CORNERS TO BE CHAMFERED 3/4".
5. THE FOUNDATION DESIGN IS BASED ON THE GEOTECHNICAL REPORT BY CARLSON GEOTECHNICAL TESTING, INC. PROJECT NO. B2502560, DATED: 7/14/25.
6. SEE THE GEOTECHNICAL REPORT FOR COMPACTION REQUIREMENTS, IF SPECIFIED.
7. 5.75' OF SOIL COVER IS REQUIRED OVER THE ENTIRE AREA OF THE FOUNDATION SLAB.
8. THE BOTTOM ANCHOR BOLT TEMPLATE SHALL BE POSITIONED AS CLOSELY AS POSSIBLE TO THE BOTTOM OF THE ANCHOR BOLTS.
9. THIS FOUNDATION IS DESIGNED FOR A MAX CAPACITY RATIO OF 70%.
10. DISTANCE BETWEEN CENTER OF ANCHOR BOLT CAGE AND THE CENTER OF THE PIER NOT TO EXCEED 1/2" WITHOUT APPROVAL FROM ENGINEER OF RECORD.
11. ONE ANCHOR BOLT MUST BE ALIGNED DIRECTLY WITH THE CENTER OF THE TOWER (TYPICAL).

BASE REACTIONS - ANSI/TIA-222-H (WIND/ICE)

TOTAL FOUNDATION		INDIVIDUAL FOOTING	
SHEAR (KIPS)	93.55	SHEAR (KIPS)	54.42
AXIAL (KIPS)	69.38	COMPRESSION (KIPS)	484
MOMENT (FT-KIPS)	9337	UPLIFT (KIPS)	438

BASE REACTIONS - ANSI/TIA-222-H (SEISMIC)

TOTAL FOUNDATION		INDIVIDUAL FOOTING	
SHEAR (KIPS)	17.47	SHEAR (KIPS)	13.06
AXIAL (KIPS)	88.38	COMPRESSION (KIPS)	130
MOMENT (FT-KIPS)	1994	UPLIFT (KIPS)	82

UNLESS OTHERWISE SPECIFIED
ALL DIMENSIONS INCLUDE FINISHES AND ARE IN INCHES
TOLERANCES: FRACTIONS ± 1/16"
ANGLES ± 1/2 DEG.
DECIMALS ± .010"

MATERIAL:
TOLERANCES DO NOT APPLY TO RAW MATERIAL

REV	DATE	DRW	CHK	DESCRIPTION

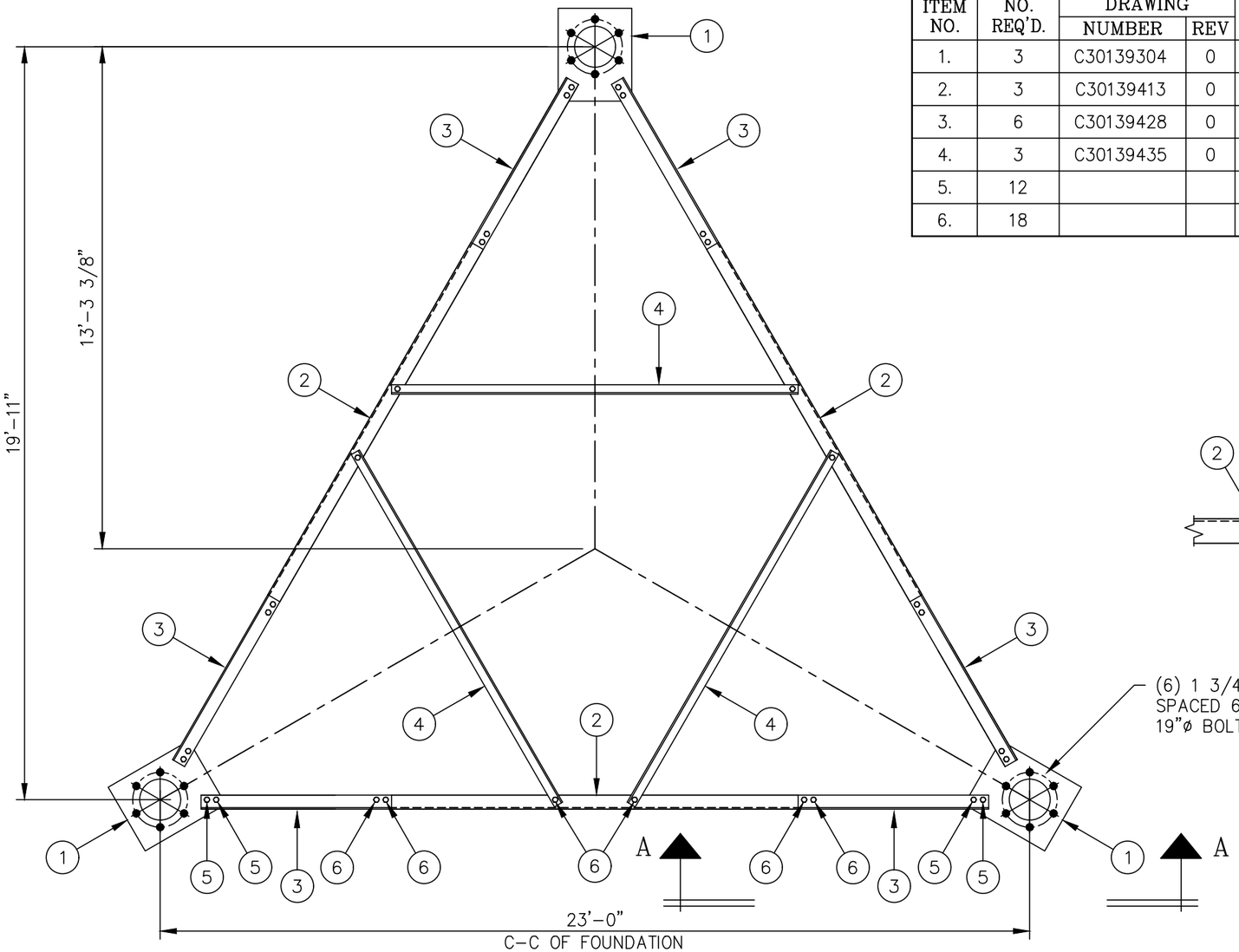
Sabre Industries™
INNOVATION DELIVERED

CONFIDENTIAL
This document and the information contained herein is the confidential trade secret property of Sabre Industries, Inc. ("Sabre") and must not be reproduced, copied or used, in whole or in part, for any purpose without the prior written consent of Sabre.
© 2025 Sabre Industries, Inc. All rights reserved.

FOUNDATION: 180 FT. MODEL S3TL-HD2
SITE: NORTH FORK, OR
CUSTOMER: MARION COUNTY OREGON

JOB NO. 563424		SIZE	DRAWING NO.	REV
DATE	7/31/25	B	563424-F1	0
DRAWN BY	AWB			
CHECKED BY	BWA		SCALE NONE	PAGE 2 OF 2

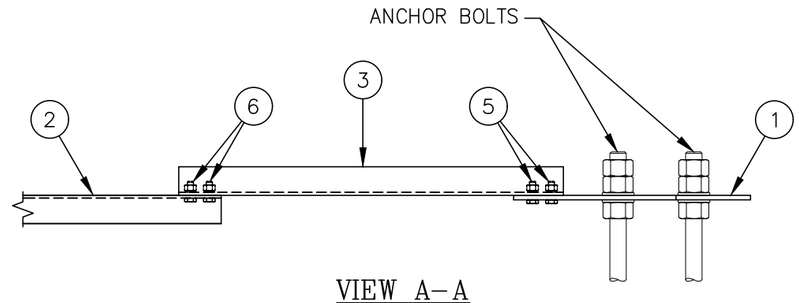
EXHIBIT K



PLAN VIEW

C30400341 LEG TO LEG TEMPLATE

ITEM NO.	NO. REQ'D.	DRAWING NUMBER	DRAWING REV	PART NO.	DESCRIPTION	WEIGHT LBS.	PAINT
1.	3	C30139304	0	C30139304	PLATE, ANCHOR BOLT TEMPLATE 1 3/4"ø A.B. ON 19"ø B.C.	155	N/R
2.	3	C30139413	0	C30139413	ANGLE, TEMPLATE SUPPORT, 3 X 3 X 3/16 X 10'-0	111	N/R
3.	6	C30139428	0	C30139428	ANGLE, TEMPLATE SUPPORT, 3 X 3 X 3/16 X 6'-1 3/4	136	N/R
4.	3	C30139435	0	C30139435	ANGLE, TEMPLATE SUPPORT, 2 1/2 X 2 1/2 X 3/16 X 11'-0	101	N/R
5.	12			C40026023	BOLT ASSEMBLY, 5/8 ø X 2 A325	6	
6.	18			C40026022	BOLT ASSEMBLY, 5/8 ø X 1 3/4 A325	8	
					TOTAL WEIGHT IN LBS.	517	



VIEW A-A

NOTE:

1. ALWAYS COMPARE THE DIMENSIONS SHOWN ON THIS DRAWING WITH THE PROPER CONCRETE FOUNDATION DRAWING, PRIOR TO PLACING CONCRETE.
2. ONE ANCHOR BOLT MUST BE ALIGNED DIRECTLY WITH THE CENTER OF THE TOWER (TYPICAL AT ALL (3) LEGS).
3. VERIFY ANCHOR BOLT CIRCLE CENTER-TO-CENTER SPACING ON ALL (3) FACES AND ALIGNMENT OF ANCHOR BOLTS WITH THE CENTER OF THE TOWER AT ALL (3) LEGS PRIOR TO PLACING CONCRETE.
4. PROVIDE NECESSARY SUPPORT TO ELIMINATE ANY MOVEMENT DURING CONCRETE PLACEMENT AND CURING.

UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS INCLUDE FINISHES AND ARE IN INCHES

TOLERANCES: FRACTIONS ± 1/16" ANGLES ± 1/2 DEG. DECIMALS ± .010"

MATERIAL:

TOLERANCES DO NOT APPLY TO RAW MATERIAL

REV	DATE	DRW	CHK	DESCRIPTION
1	07/02/25	GCK	KCG	REMOVED TOWER SERIES DESIGNATION.

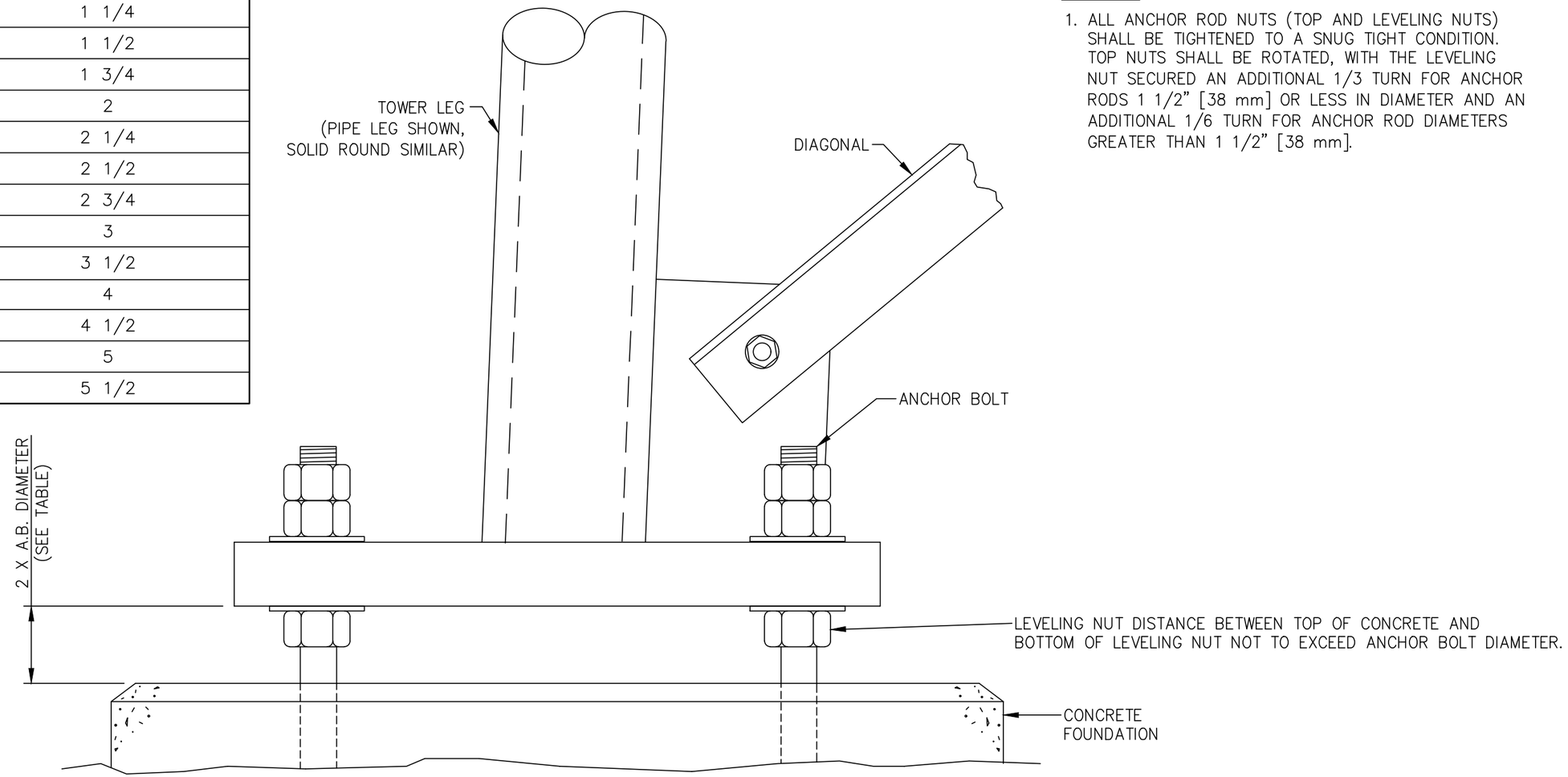
Sabre Industries™
INNOVATION DELIVERED

CONFIDENTIAL
This document and the information contained herein is the confidential trade secret property of Sabre Industries, Inc. ("Sabre") and must not be reproduced, copied or used, in whole or in part, for any purpose without the prior written consent of Sabre.
© 2022 Sabre Industries, Inc. All rights reserved.

LEG TO LEG TEMPLATE INSTALLATION FOR MODEL S3TL SECTION 15 BASE SPREAD 23'-0" C-C OF FOUNDATION (6) 1 3/4"ø A.B. ON A 19"ø B.C.

		SIZE	DRAWING NO.	REV
DATE	02/14/20	B	C30400341	1
DRAWN BY	DRL			
CHECKED BY	LRD		SCALE None	PAGE 1 OF 1

TABLE	
ANCHOR BOLT DIAMETER (in)	MAXIMUM SPACE (in)
1/2	1
5/8	1 1/4
3/4	1 1/2
7/8	1 3/4
1	2
1 1/8	2 1/4
1 1/4	2 1/2
1 3/8	2 3/4
1 1/2	3
1 3/4	3 1/2
2	4
2 1/4	4 1/2
2 1/2	5
2 3/4	5 1/2



ELEVATION VIEW

NOTES:

1. ALL ANCHOR ROD NUTS (TOP AND LEVELING NUTS) SHALL BE TIGHTENED TO A SNUG TIGHT CONDITION. TOP NUTS SHALL BE ROTATED, WITH THE LEVELING NUT SECURED AN ADDITIONAL 1/3 TURN FOR ANCHOR RODS 1 1/2" [38 mm] OR LESS IN DIAMETER AND AN ADDITIONAL 1/6 TURN FOR ANCHOR ROD DIAMETERS GREATER THAN 1 1/2" [38 mm].

UNLESS OTHERWISE SPECIFIED
ALL DIMENSIONS INCLUDE
FINISHES AND ARE IN INCHES

TOLERANCES: FRACTIONS ± 1/16"
ANGLES ± 1/2 DEG.
DECIMALS ± .010"

MATERIAL:

TOLERANCES DO NOT APPLY
TO RAW MATERIAL

REV	DATE	DRW	CHK	DESCRIPTION
2	10/13/17	RWM	MWR	ADDED ANCHOR BOLT TABLE, REVISED LEVELING NUT
				CALL OUT AND ADDED TIGHTENING NOTE #1.
1	1/6/12	DSN	RWM	REVISED BASE PLATE TO FND. GAP

Sabre Industries™
INNOVATION DELIVERED

CONFIDENTIAL
This document and the information contained herein is the confidential trade secret property of Sabre Industries, Inc. ("Sabre") and must not be reproduced, copied or used, in whole or in part, for any purpose without the prior written consent of Sabre.
© 2022 Sabre Industries, Inc. All rights reserved.

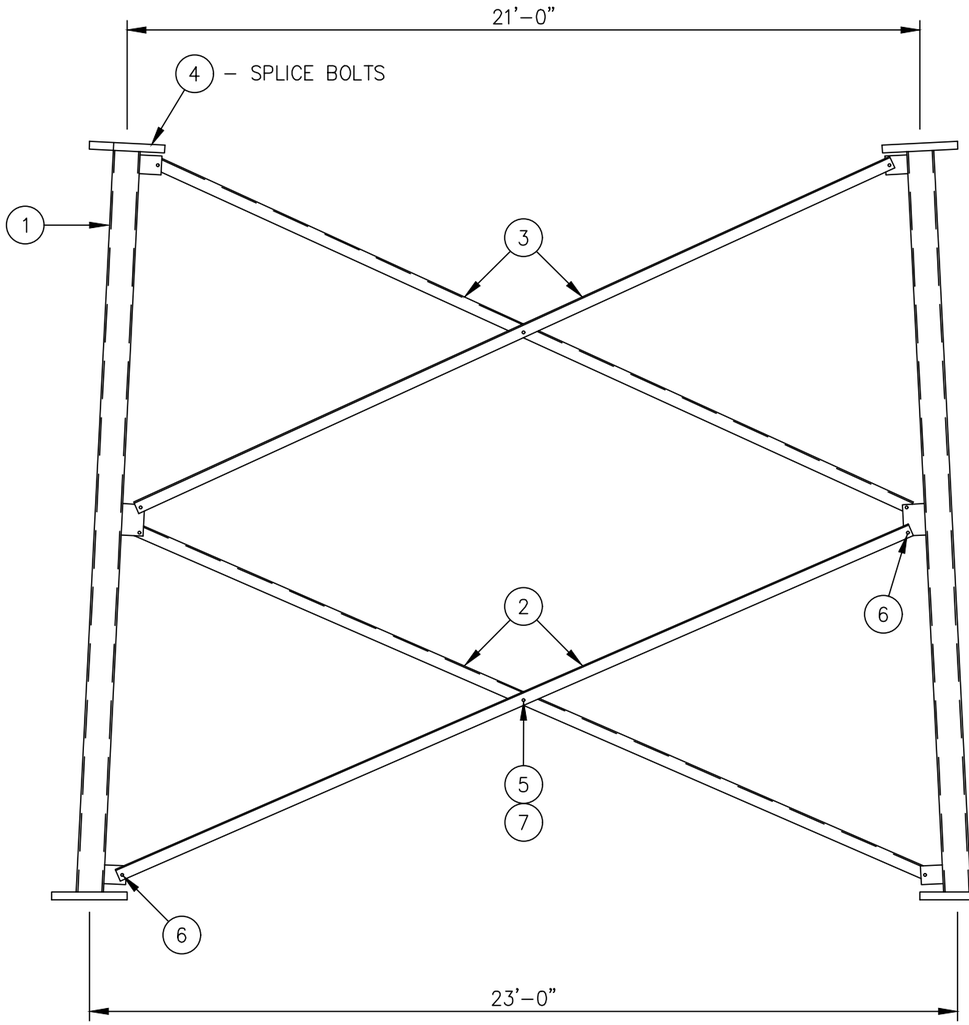
TOWER BASE INSTALLATION

DATE	11/24/09
DRAWN BY	RWM
CHECKED BY	MWR

SIZE	DRAWING NO.	REV
B	9030714	2

SCALE	PAGE
None	1 OF 1

EXHIBIT K



ELEVATION VIEW

LIST OF MATERIAL

15–LEGS

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
1	3	15–T11611441	SECT. 15 LEG 14 ø X .500 X 20'–0 5/16 W/STEP BOLTS	5508
			TOTAL WEIGHT LBS	5508

15–T8101794 BRACING KIT

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
2	6	TS11269	ANGLE, DIAGONAL 6 X 4 X 3/8 X 22'–11 3/16	1760
3	6	TS11270	ANGLE, DIAGONAL 6 X 4 X 3/8 X 22'–0 7/16	1691
			TOTAL WEIGHT LBS	3451

SPLICE BOLTS

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
4	31	C40026115	BOLT ASSEMBLY, 1 1/2 ø X 6 1/2 A325	188
			TOTAL WEIGHT LBS	188

TK01256 HARDWARE KIT

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
5	7	C40026099	BOLT ASSEMBLY, 1 1/8 ø X 3 1/4 A325	15
6	25	C40026097	BOLT ASSEMBLY, 1 1/8 ø X 2 3/4 A325	50
7	7	C40047014	RINGFILL, 3/8 THICK – 1 1/8 ø BOLT	7
			TOTAL WEIGHT LBS	72

TOTAL SECTION WEIGHT – INCLUDES 3 LEGS, BRACING AND HARDWARE KIT	9219

FIELD NOTES

1. THE PART NUMBERS FOR ALL LEGS ARE LOCATED AT THE TOP OF EACH PART.
2. STEP BOLTS PROVIDED FOR (3) LEGS.

UNLESS OTHERWISE SPECIFIED
ALL DIMENSIONS INCLUDE FINISHES AND ARE IN INCHES

TOLERANCES: FRACTIONS ± 1/16"
ANGLES ± 1/2 DEG.
DECIMALS ± .010"

MATERIAL:

TOLERANCES DO NOT APPLY TO RAW MATERIAL

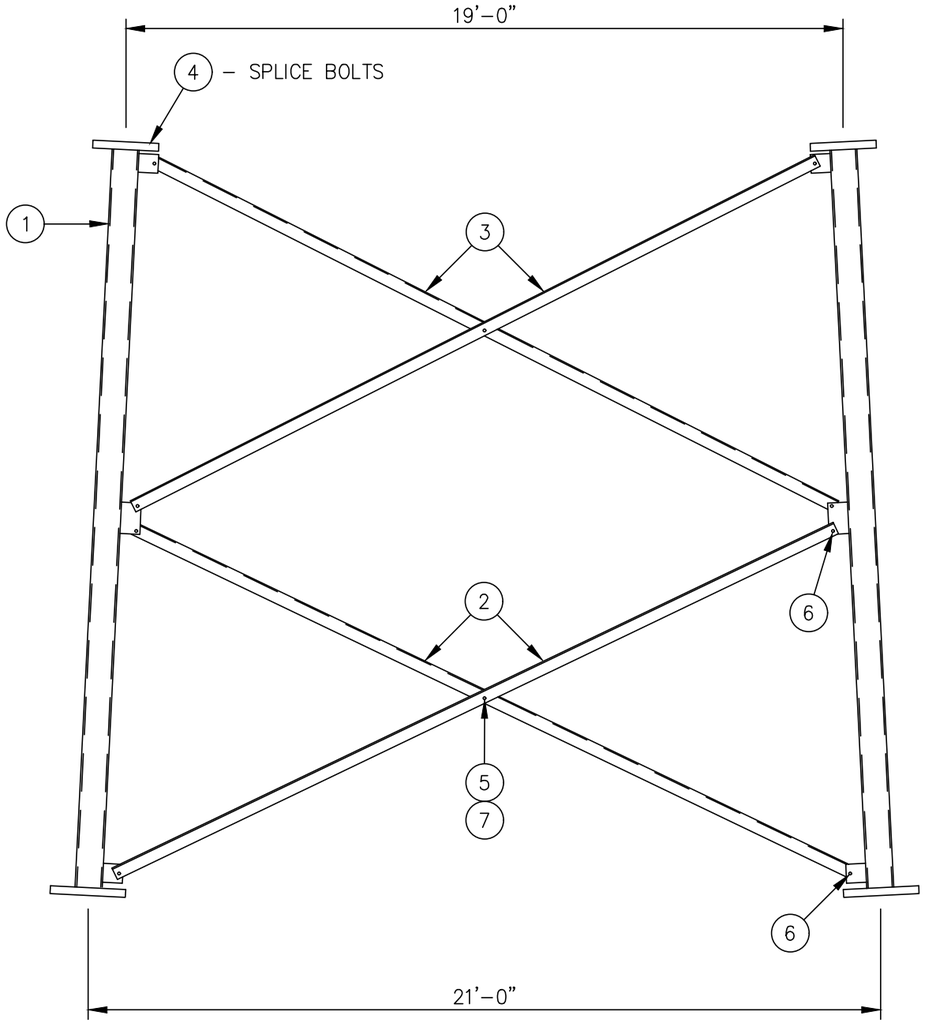
REV	DATE	DRW	CHK	DESCRIPTION

Sabre Industries™
INNOVATION DELIVERED

CONFIDENTIAL
This document and the information contained herein is the confidential trade secret property of Sabre Industries, Inc. ("Sabre") and must not be reproduced, copied or used, in whole or in part, for any purpose without the prior written consent of Sabre.
© 2025 Sabre Industries, Inc. All rights reserved.

SECTION ERECTION: 15 15–T8101794
SITE: NORTH FORK, OR
CUSTOMER: MARION COUNTY OREGON

JOB NO. 563424		SIZE	DRAWING NO.	REV
DATE	07/30/25	B	563424–S15	0
DRAWN BY	KMP			
CHECKED BY	ZAK		SCALE None	PAGE 1 OF 1



ELEVATION VIEW

LIST OF MATERIAL

14 LEGS

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
1	3	14–T11611443	SECT. 14 LEG 14 ø X .500 X 20'–0 5/16 W/STEP BOLTS	5618
			TOTAL WEIGHT LBS	5618

14–T8101795 BRACING KIT

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
2	6	TS11271	ANGLE, DIAGONAL 6 X 4 X 3/8 X 21'–1 3/8	1621
3	6	TS11272	ANGLE, DIAGONAL 6 X 4 X 3/8 X 20'–2 7/8	1553
			TOTAL WEIGHT LBS	3174

SPLICE BOLTS

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
4	31	C40026166	BOLT ASSEMBLY, 1 1/2 ø X 7 A325	196
			TOTAL WEIGHT LBS	196

TK01256 HARDWARE KIT

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
5	7	C40026099	BOLT ASSEMBLY, 1 1/8 ø X 3 1/4 A325	15
6	25	C40026097	BOLT ASSEMBLY, 1 1/8 ø X 2 3/4 A325	50
7	7	C40047014	RINGFILL, 3/8 THICK – 1 1/8 ø BOLT	7
			TOTAL WEIGHT LBS	72

TOTAL SECTION WEIGHT – INCLUDES 3 LEGS, BRACING AND HARDWARE KIT	9060

FIELD NOTES

1. THE PART NUMBERS FOR ALL LEGS ARE LOCATED AT THE TOP OF EACH PART.
2. STEP BOLTS PROVIDED FOR (3) LEGS.

UNLESS OTHERWISE SPECIFIED
ALL DIMENSIONS INCLUDE FINISHES AND ARE IN INCHES

TOLERANCES: FRACTIONS ± 1/16"
ANGLES ± 1/2 DEG.
DECIMALS ± .010"

MATERIAL:

TOLERANCES DO NOT APPLY TO RAW MATERIAL

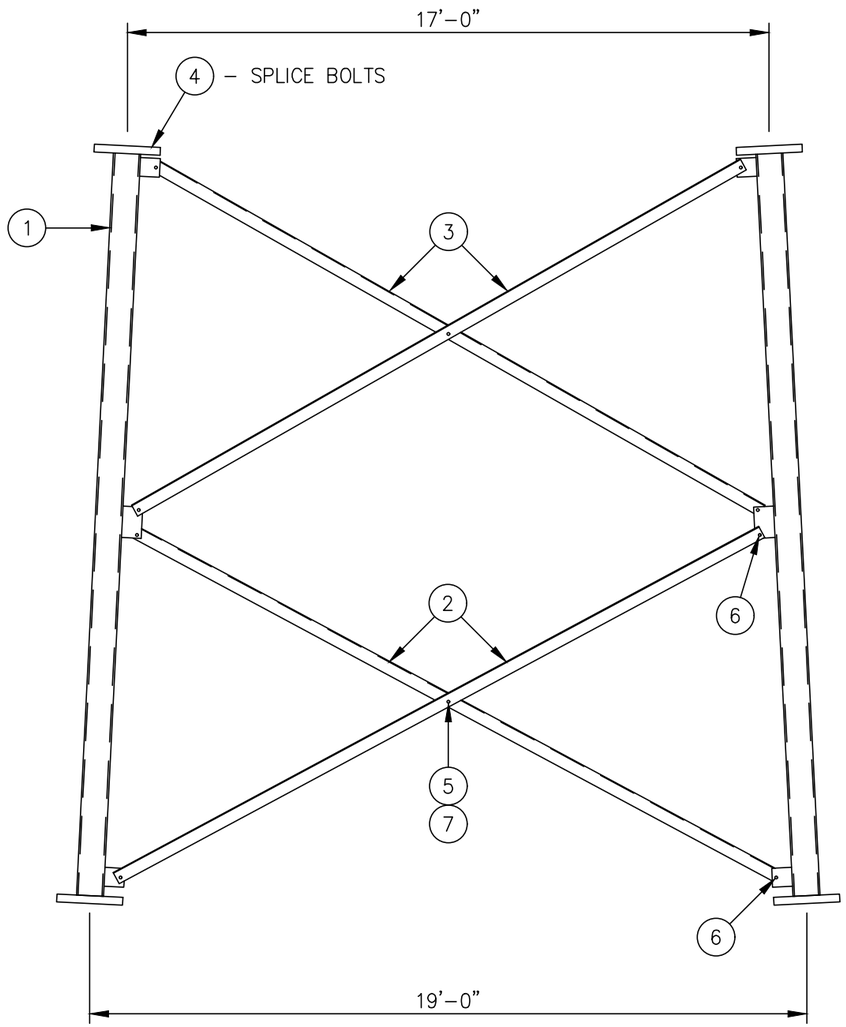
REV	DATE	DRW	CHK	DESCRIPTION

Sabre Industries™
INNOVATION DELIVERED

CONFIDENTIAL
This document and the information contained herein is the confidential trade secret property of Sabre Industries, Inc. ("Sabre") and must not be reproduced, copied or used, in whole or in part, for any purpose without the prior written consent of Sabre.
© 2025 Sabre Industries, Inc. All rights reserved.

SECTION ERECTION: 14 14–T8101795
SITE: NORTH FORK, OR
CUSTOMER: MARION COUNTY OREGON

JOB NO. 563424		SIZE	DRAWING NO.	REV
DATE	07/31/25	B	563424–S14	0
DRAWN BY	KMP			
CHECKED BY	ZAK	SCALE NONE	PAGE 1 OF 1	



ELEVATION VIEW

LIST OF MATERIAL

13–LEGS

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
1	3	13–T11611445	SECT. 13 LEG 10 3/4ø X .500 X 20'–0 5/16 W/STEP BOLTS	4625
			TOTAL WEIGHT LBS	4625

13–T8101796 BRACING KIT

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
2	6	TS11273	ANGLE, DIAGONAL 4 X 4 X 3/8 X 19'–4 1/8	1239
3	6	TS11274	ANGLE, DIAGONAL 4 X 4 X 3/8 X 18'–5 15/16	1132
			TOTAL WEIGHT LBS	2371

SPLICE BOLTS

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
4	25	C40026115	BOLT ASSEMBLY, 1 1/2 ø X 6 1/2 A325	152
			TOTAL WEIGHT LBS	152

TK00353 HARDWARE KIT

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
5	7	C40026073	BOLT ASSEMBLY, 1 ø X 3 A325	12
6	25	C40026071	BOLT ASSEMBLY, 1 ø X 2 1/2 A325	41
7	7	C40047007	RINGFILL, 3/8 THICK – 1 ø BOLT	1
			TOTAL WEIGHT LBS	54

TOTAL SECTION WEIGHT – INCLUDES 3 LEGS, BRACING AND HARDWARE KIT	7202

FIELD NOTES

1. THE PART NUMBERS FOR ALL LEGS ARE LOCATED AT THE TOP OF EACH PART.
2. STEP BOLTS PROVIDED FOR (3) LEGS.

UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS INCLUDE FINISHES AND ARE IN INCHES

TOLERANCES: FRACTIONS ± 1/16" ANGLES ± 1/2 DEG. DECIMALS ± .010"

MATERIAL:

TOLERANCES DO NOT APPLY TO RAW MATERIAL

REV	DATE	DRW	CHK	DESCRIPTION

Sabre Industries™ INNOVATION DELIVERED

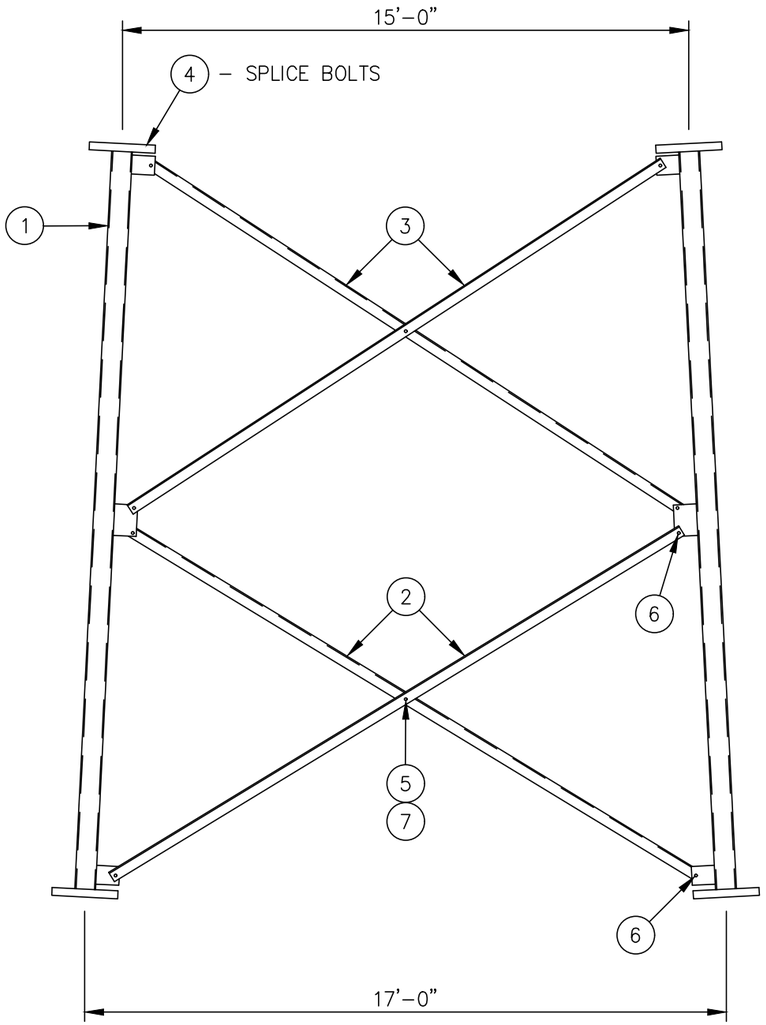
CONFIDENTIAL
This document and the information contained herein is the confidential trade secret property of Sabre Industries, Inc. ("Sabre") and must not be reproduced, copied or used, in whole or in part, for any purpose without the prior written consent of Sabre.
© 2025 Sabre Industries, Inc. All rights reserved.

SECTION ERECTION: 13 13–T8101796

SITE: NORTH FORK, OR

CUSTOMER: MARION COUNTY OREGON

JOB NO. 563424		SIZE	DRAWING NO.	REV
DATE	07/31/25	B	563424–S13	0
DRAWN BY	KMP			
CHECKED BY	ZAK	SCALE NONE	PAGE 1 OF 1	



ELEVATION VIEW

LIST OF MATERIAL

12 LEGS

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
1	3	12–T11610309	SECT. 12 LEG 10 3/4 ø X .500 X 20'–0 5/16 W/STEP BOLTS	4336
			TOTAL WEIGHT LBS	4336

12–T8101797 BRACING KIT

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
2	6	TS11275	ANGLE, DIAGONAL 4 X 3 1/2 X 3/8 X 17'–10 7/16	1015
3	6	TS11276	ANGLE, DIAGONAL 4 X 3 1/2 X 3/8 X 17'–0 9/16	968
			TOTAL WEIGHT LBS	1983

SPLICE BOLTS

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
4	25	C40026115	BOLT ASSEMBLY, 1 1/2 ø X 6 1/2 A325	152
			TOTAL WEIGHT LBS	152

TK00353 HARDWARE KIT

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
5	7	C40026073	BOLT ASSEMBLY, 1 ø X 3 A325	12
6	25	C40026071	BOLT ASSEMBLY, 1 ø X 2 1/2 A325	41
7	7	C40047007	RINGFILL, 3/8 THICK – 1" ø BOLT	1
			TOTAL WEIGHT LBS	54

TOTAL SECTION WEIGHT – INCLUDES 3 LEGS, BRACING AND HARDWARE KIT	6525

FIELD NOTES

1. THE PART NUMBERS FOR ALL LEGS ARE LOCATED AT THE TOP OF EACH PART.
2. STEP BOLTS PROVIDED FOR (3) LEGS.

UNLESS OTHERWISE SPECIFIED
ALL DIMENSIONS INCLUDE
FINISHES AND ARE IN INCHES

TOLERANCES: FRACTIONS ± 1/16"
ANGLES ± 1/2 DEG.
DECIMALS ± .010"

MATERIAL:

TOLERANCES DO NOT APPLY TO RAW MATERIAL

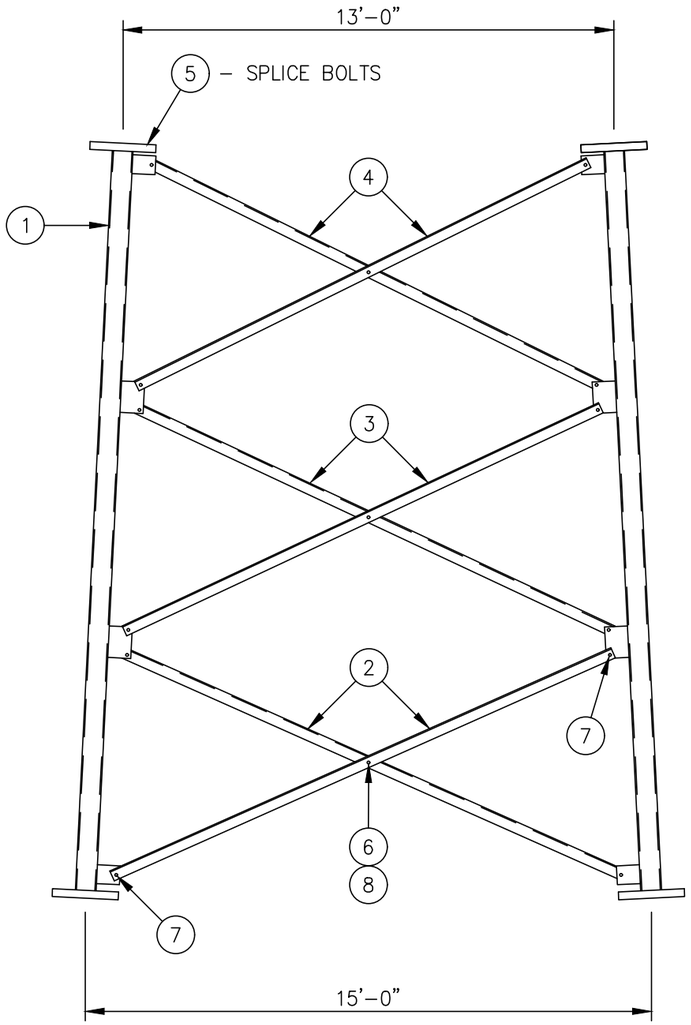
REV	DATE	DRW	CHK	DESCRIPTION

Sabre Industries™
INNOVATION DELIVERED

CONFIDENTIAL
This document and the information contained herein is the confidential trade secret property of Sabre Industries, Inc. ("Sabre") and must not be reproduced, copied or used, in whole or in part, for any purpose without the prior written consent of Sabre.
© 2025 Sabre Industries, Inc. All rights reserved.

SECTION ERECTION: 12 12–T8101797
SITE: NORTH FORK, OR
CUSTOMER: MARION COUNTY OREGON

JOB NO. 563424		SIZE	DRAWING NO.	REV
DATE	07/31/25	B	563424–S12	0
DRAWN BY	KMP			
CHECKED BY	ZAK		SCALE NONE	PAGE 1 OF 1



ELEVATION VIEW

LIST OF MATERIAL

11-LEGS

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
1	3	11-T1169117	SECT. 11 LEG 8 5/8 ø X .500 X 20'-0 5/16	3504
			TOTAL WEIGHT LBS	3504

11-T8101372 BRACING KIT

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
2	6	TS08563	ANGLE, DIAGONAL 4 X 3 1/2 X 3/8 X 14'-7 7/8	832
3	6	TS08562	ANGLE, DIAGONAL 4 X 3 1/2 X 3/8 X 14'-0 13/16	799
4	6	TS08561	ANGLE, DIAGONAL 4 X 3 1/2 X 3/8 X 13'-5 13/16	766
			TOTAL WEIGHT LBS	2397

SPLICE BOLTS

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
5	19	C40026093	BOLT ASSEMBLY, 1 1/4 ø X 5 A325	65
			TOTAL WEIGHT LBS	65

TK00430 HARDWARE KIT

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
6	10	C40026073	BOLT ASSEMBLY, 1 ø X 3 A325	18
7	38	C40026071	BOLT ASSEMBLY, 1 ø X 2 1/2 A325	62
8	10	C40047007	RINGFILL, 3/8 THICK - 1 ø BOLT	1
			TOTAL WEIGHT LBS	81

TOTAL SECTION WEIGHT - INCLUDES 3 LEGS, BRACING AND HARDWARE KIT	6047

FIELD NOTES

1. THE PART NUMBERS FOR ALL LEGS ARE LOCATED AT THE TOP OF EACH PART.
2. STEP BOLTS PROVIDED FOR (3) LEGS.

UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS INCLUDE FINISHES AND ARE IN INCHES

TOLERANCES: FRACTIONS ± 1/16" ANGLES ± 1/2 DEG. DECIMALS ± .010"

MATERIAL:

TOLERANCES DO NOT APPLY TO RAW MATERIAL

REV	DATE	DRW	CHK	DESCRIPTION

Sabre Industries™ INNOVATION DELIVERED

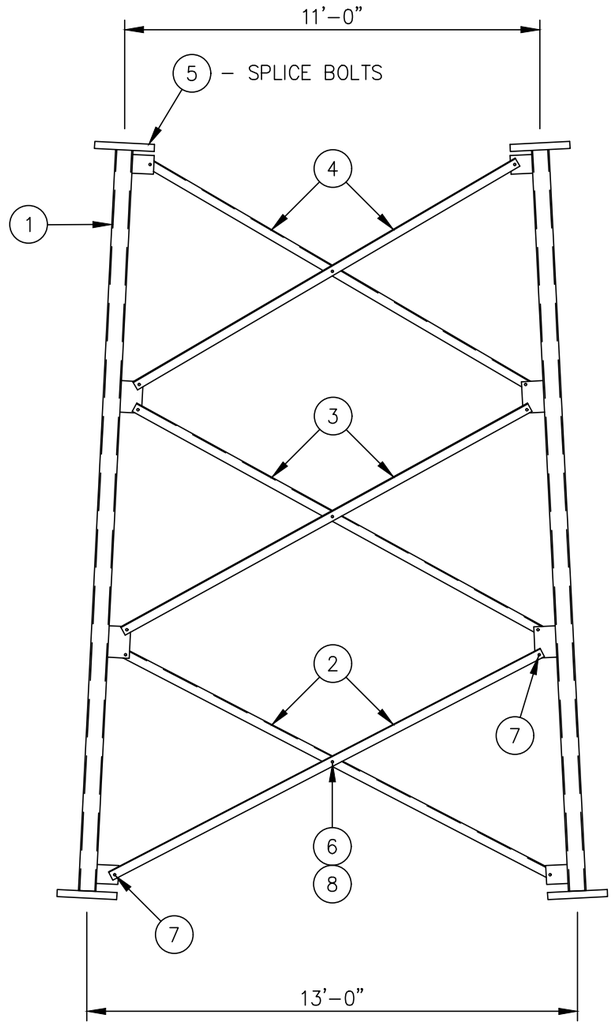
CONFIDENTIAL
This document and the information contained herein is the confidential trade secret property of Sabre Industries, Inc. ("Sabre") and must not be reproduced, copied or used, in whole or in part, for any purpose without the prior written consent of Sabre.
© 2025 Sabre Industries, Inc. All rights reserved.

SECTION ERECTION: 11 11-T8101372

SITE: NORTH FORK, OR

CUSTOMER: MARION COUNTY OREGON

JOB NO. 563424		SIZE	DRAWING NO.	REV
DATE	07/31/25	B	563424-S11	0
DRAWN BY	KMP			
CHECKED BY	ZAK		SCALE None	PAGE 1 OF 1



ELEVATION VIEW

LIST OF MATERIAL

10–LEGS

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
1	3	10–T1169819	SECT. 10 LEG 8 5/8ø X .322 X 20'–0 5/16 W/STEP BOLTS	2270
			TOTAL WEIGHT LBS	2270

10–T8100820 BRACING KIT

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
2	6	TS05779	ANGLE, DIAGONAL 4 X 4 X 5/16 X 12'–10 3/8	658
3	6	TS05780	ANGLE, DIAGONAL 4 X 4 X 5/16 X 12'–3 1/2	629
4	6	TS05781	ANGLE, DIAGONAL 4 X 4 X 5/16 X 11'–8 3/4	600
			TOTAL WEIGHT LBS	1887

SPLICE BOLTS

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
5	19	C40026094	BOLT ASSEMBLY, 1 1/4 ø X 5 1/2 A325	69
			TOTAL WEIGHT LBS	69

TK00437 HARDWARE KIT

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
6	10	C40026072	BOLT ASSEMBLY, 1 ø X 2 3/4 A325	17
7	37	C40026071	BOLT ASSEMBLY, 1 ø X 2 1/2 A325	61
8	10	C40047010	RINGFILL, 1/2 THICK – 1 ø BOLT	1
			TOTAL WEIGHT LBS	79

TOTAL SECTION WEIGHT – INCLUDES (3) LEGS, BRACING AND HARDWARE KIT	4305

FIELD NOTES

1. THE PART NUMBERS FOR ALL LEGS AND DIAGONALS ARE LOCATED AT THE TOP OF EACH PART.
2. STEP BOLTS PROVIDED FOR (3) LEGS.

UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS INCLUDE FINISHES AND ARE IN INCHES

TOLERANCES: FRACTIONS ± 1/16" ANGLES ± 1/2 DEG. DECIMALS ± .010"

MATERIAL:

TOLERANCES DO NOT APPLY TO RAW MATERIAL

REV	DATE	DRW	CHK	DESCRIPTION

Sabre Industries™ INNOVATION DELIVERED

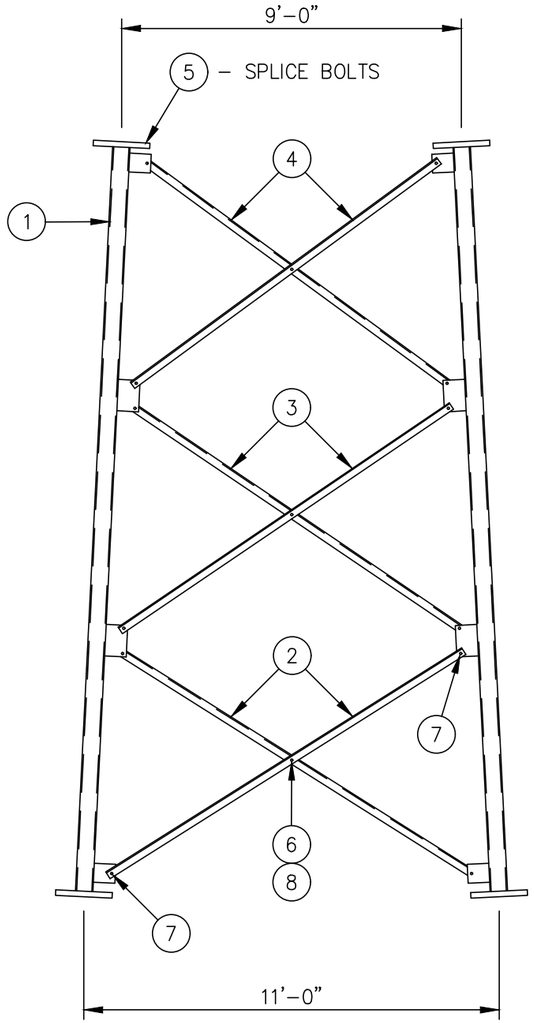
CONFIDENTIAL
This document and the information contained herein is the confidential trade secret property of Sabre Industries, Inc. ("Sabre") and must not be reproduced, copied or used, in whole or in part, for any purpose without the prior written consent of Sabre.
© 2025 Sabre Industries, Inc. All rights reserved.

SECTION ERECTION: 10 10–T8100820

SITE: NORTH FORK, OR

CUSTOMER: MARION COUNTY OREGON

JOB NO. 563424		SIZE	DRAWING NO.	REV
DATE	07/31/25	B	563424–S10	0
DRAWN BY	KMP			
CHECKED BY	ZAK		SCALE None	PAGE 1 OF 1



ELEVATION VIEW

LIST OF MATERIAL

09–LEGS

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
1	3	09–T1169975	SECT. 9 LEG 5 9/16ø X .375 X 20'–0 5/16 W/STEP BOLTS	1758
			TOTAL WEIGHT LBS	1758

09–T8100384 BRACING KIT

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
2	6	TS03786	ANGLE, DIAGONAL 3 1/2 X 3 X 3/8 X 11'–5 3/8	564
3	6	TS03787	ANGLE, DIAGONAL 3 1/2 X 3 X 3/8 X 10'–10 13/16	537
4	6	TS03788	ANGLE, DIAGONAL 3 1/2 X 3 X 3/8 X 10'–4 7/16	511
			TOTAL WEIGHT LBS	1612

SPLICE BOLTS

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
5	19	C40026078	BOLT ASSEMBLY, 1 ø X 4 1/4 A325	41
			TOTAL WEIGHT LBS	41

TK00269 HARDWARE KIT

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
6	10	C40026045	BOLT ASSEMBLY, 3/4 ø X 2 1/2 A325	8
7	38	C40026044	BOLT ASSEMBLY, 3/4 ø X 2 1/4 A325	28
8	10	C40047004	RINGFILL, 3/8 THICK – 3/4 ø BOLT	1
			TOTAL WEIGHT LBS	37

TOTAL SECTION WEIGHT – INCLUDES 3 LEGS, BRACING AND HARDWARE KIT	3448

FIELD NOTES

1. THE PART NUMBERS FOR ALL LEGS ARE LOCATED AT THE TOP OF EACH PART.
2. STEP BOLTS PROVIDED FOR (3) LEG ONLY.

UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS INCLUDE FINISHES AND ARE IN INCHES

TOLERANCES: FRACTIONS ± 1/16" ANGLES ± 1/2 DEG. DECIMALS ± .010"

MATERIAL:

TOLERANCES DO NOT APPLY TO RAW MATERIAL

REV	DATE	DRW	CHK	DESCRIPTION

Sabre Industries™ INNOVATION DELIVERED

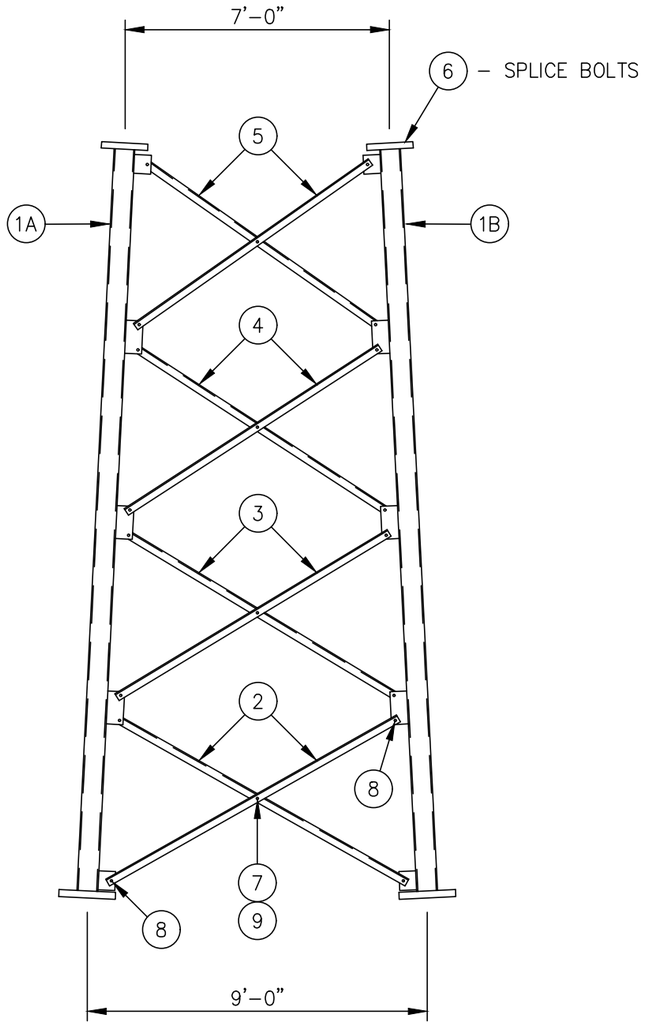
CONFIDENTIAL
This document and the information contained herein is the confidential trade secret property of Sabre Industries, Inc. ("Sabre") and must not be reproduced, copied or used, in whole or in part, for any purpose without the prior written consent of Sabre.
© 2025 Sabre Industries, Inc. All rights reserved.

SECTION ERECTION: 09 09–T8100384

SITE: NORTH FORK, OR

CUSTOMER: MARION COUNTY OREGON

JOB NO. 563424		SIZE	DRAWING NO.	REV
DATE	07/31/25	B	563424–S09	0
DRAWN BY	KMP			
CHECKED BY	ZAK		SCALE NONE	PAGE 1 OF 1



ELEVATION VIEW

LIST OF MATERIAL

08–LEGS

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
1A	1	08–T1168025	SECT.8 LEG 4 ø X .318 X 20'–0 5/16 W/ STEP BOLTS	373
1B	2	08–T1168026	SECT.8 LEG 4 ø X .318 X 20'–0 5/16	735
			TOTAL WEIGHT LBS	1108

08–T8100421 BRACING KIT

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
2	6	TS04017	ANGLE, DIAGONAL 2 1/2 X 2 1/2 X 3/8 X 9'–1 13/16	337
3	6	TS04018	ANGLE, DIAGONAL 2 1/2 X 2 1/2 X 3/8 X 8'–8 11/16	322
4	6	TS04019	ANGLE, DIAGONAL 2 1/2 X 2 1/2 X 3/8 X 8'–3 5/8	306
5	6	TS04020	ANGLE, DIAGONAL 2 1/2 X 2 1/2 X 3/8 X 7'–10 11/16	291
			TOTAL WEIGHT LBS	1256

SPLICE BOLTS

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
6	19	C40026078	BOLT ASSEMBLY, 1 ø X 4 1/4 A325	41
			TOTAL WEIGHT LBS	41

TK00348 HARDWARE KIT

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
7	13	C40026045	BOLT ASSEMBLY, 3/4 ø X 2 1/2 A325	10
8	50	C40026044	BOLT ASSEMBLY, 3/4 ø X 2 1/4 A325	37
9	13	C40047004	RINGFILL, 3/8 THICK – 3/4 ø BOLT	2
			TOTAL WEIGHT LBS	49

TOTAL SECTION WEIGHT – INCLUDES 3 LEGS, BRACING AND HARDWARE KIT	2454

FIELD NOTES

1. THE PART NUMBERS FOR ALL LEGS ARE LOCATED AT THE TOP OF EACH PART.
2. STEP BOLTS PROVIDED FOR (1) LEG ONLY.

UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS INCLUDE FINISHES AND ARE IN INCHES

TOLERANCES: FRACTIONS ± 1/16" ANGLES ± 1/2 DEG. DECIMALS ± .010"

MATERIAL:

TOLERANCES DO NOT APPLY TO RAW MATERIAL

REV	DATE	DRW	CHK	DESCRIPTION

Sabre Industries™ INNOVATION DELIVERED

CONFIDENTIAL
This document and the information contained herein is the confidential trade secret property of Sabre Industries, Inc. ("Sabre") and must not be reproduced, copied or used, in whole or in part, for any purpose without the prior written consent of Sabre.
© 2025 Sabre Industries, Inc. All rights reserved.

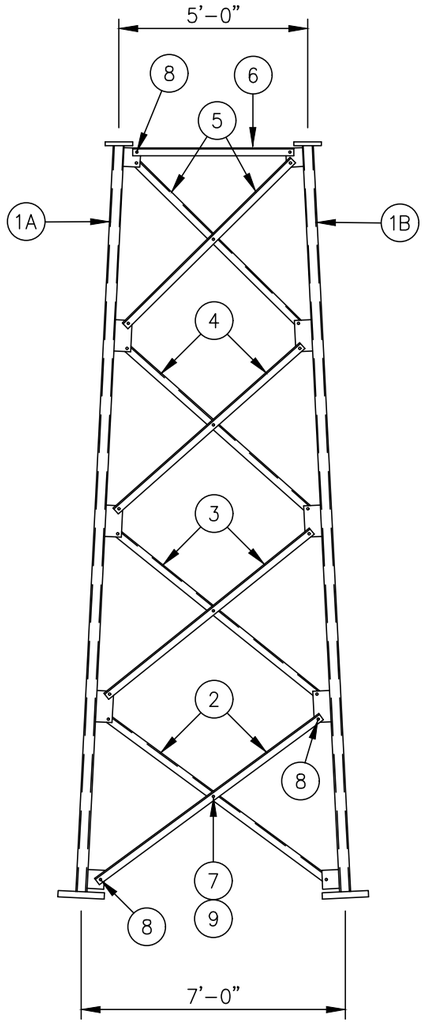
SECTION ERECTION: 08 08–T8100421

SITE: NORTH FORK, OR

CUSTOMER: MARION COUNTY OREGON

JOB NO. 563424		SIZE	DRAWING NO.	REV
DATE	07/31/25	B	563424–S08	0
DRAWN BY	KMP			
CHECKED BY	ZAK		SCALE NONE	PAGE 1 OF 1

EXHIBIT K



ELEVATION VIEW

LIST OF MATERIAL

07-LEGS

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
1A	1	07-T1165503	SECT. 7 LEG 2 7/8ø X .203 X 20'-0 5/16 W/STEP BOLTS	219
1B	2	07-T1165504	SECT. 7 LEG 2 7/8ø X .203 X 20'-0 5/16	428
			TOTAL WEIGHT LBS	647

07-T8100168 BRACING KIT

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
2	6	TS02040	ANGLE, DIAGONAL 2 X 2 X 5/16 X 7'-5 1/2	182
3	6	TS02039	ANGLE, DIAGONAL 2 X 2 X 5/16 X 7'-0 13/16	173
4	6	TS02038	ANGLE, DIAGONAL 2 X 2 X 5/16 X 6'-8 5/16	163
5	6	TS02037	ANGLE, DIAGONAL 2 X 2 X 5/16 X 6'-3 15/16	155
6	3	TS02036	ANGLE, HORIZONTAL 2 X 2 X 5/16 X 4'-4 3/8	53
			TOTAL WEIGHT LBS	726

TK00146 HARDWARE KIT

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
7	13	C40026024	BOLT ASSEMBLY, 5/8 ø X 2 1/4 A325	7
8	57	C40026023	BOLT ASSEMBLY, 5/8 ø X 2 A325	26
9	13	C40047003	RINGFILL, 3/8 THICK - 5/8 ø BOLT	2
			TOTAL WEIGHT LBS	35

TOTAL SECTION WEIGHT - INCLUDES 3 LEGS, BRACING AND HARDWARE KIT	1408

FIELD NOTES

1. THE PART NUMBERS FOR ALL LEGS ARE LOCATED AT THE TOP OF EACH PART.
2. STEP BOLTS PROVIDED FOR (1) LEG ONLY.

UNLESS OTHERWISE SPECIFIED
ALL DIMENSIONS INCLUDE
FINISHES AND ARE IN INCHES

TOLERANCES: FRACTIONS ± 1/16"
ANGLES ± 1/2 DEG.
DECIMALS ± .010"

MATERIAL:

TOLERANCES DO NOT APPLY TO RAW MATERIAL

REV	DATE	DRW	CHK	DESCRIPTION

Sabre Industries™
INNOVATION DELIVERED

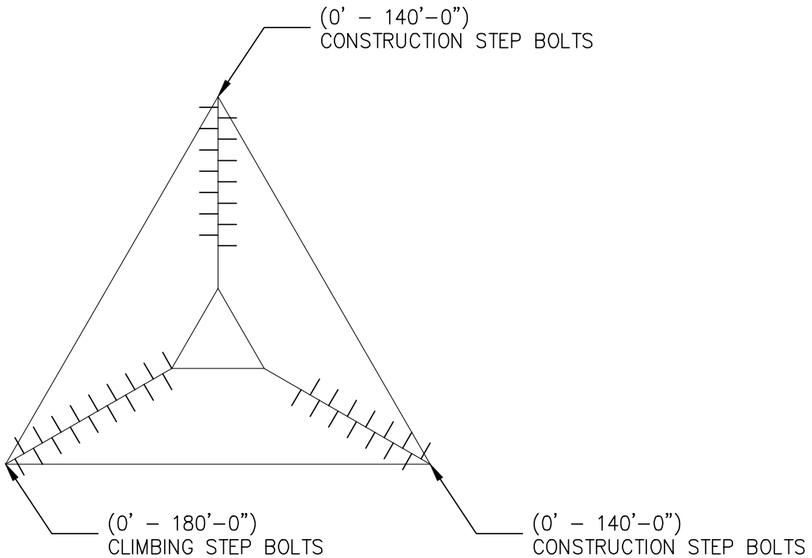
CONFIDENTIAL
This document and the information contained herein is the confidential trade secret property of Sabre Industries, Inc. ("Sabre") and must not be reproduced, copied or used, in whole or in part, for any purpose without the prior written consent of Sabre.
© 2025 Sabre Industries, Inc. All rights reserved.

SECTION ERECTION: 07 07-T8100168
SITE: NORTH FORK, OR
CUSTOMER: MARION COUNTY OREGON

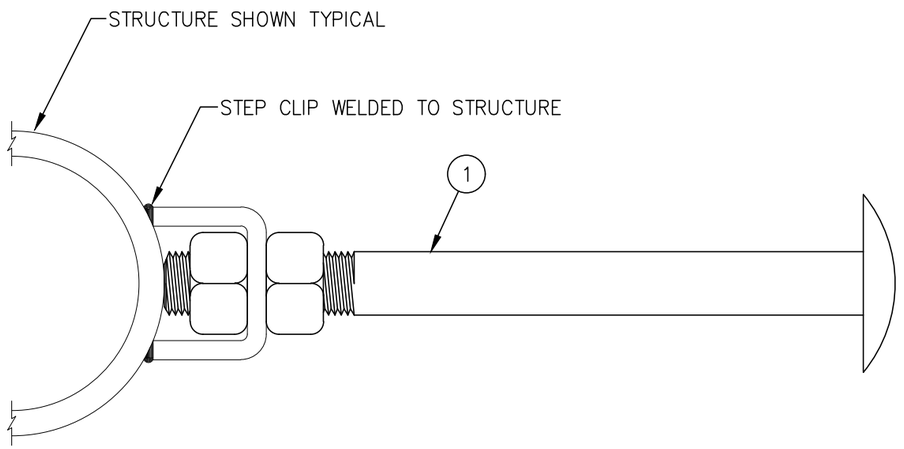
JOB NO. 563424		SIZE	DRAWING NO.	REV
DATE	07/31/25	B	563424-S07	0
DRAWN BY	KMP			
CHECKED BY	ZAK		SCALE NONE	PAGE 1 OF 1

FIELD NOTE:
SEE CUSTOMER REQUESTS FOR PROPER LEG POSITIONING OF ALL STEP BOLTS.

CLIMBING/CONSTRUCTION STEP BOLTS				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
1	368	C40044017	STEP BOLT ASSEMBLY, 5/8 ø X 7 H.D.G.	368
			TOTAL WEIGHT LBS	368



TOWER PLAN VIEW



NOTE:
STEP BOLTS PROVIDED FOR CONSTRUCTION PURPOSES ARE FOR EXPERIENCED TOWER ERECTORS ONLY AND SHOULD NEVER BE USED WITHOUT PROPER SAFETY EQUIPMENT. FOR STEP BOLTS SUPPLIED AS A FORM OF CLIMBING IN TYPICAL COMMUNICATION ACTIVITY, SABRE INDUSTRIES RECOMMENDS A FALL PROTECTION PLAN BE COMPLETED BY A COMPETENT PERSON AND FOLLOWED FOR EACH CLIMB.

UNLESS OTHERWISE SPECIFIED
ALL DIMENSIONS INCLUDE FINISHES AND ARE IN INCHES
TOLERANCES: FRACTIONS ± 1/16"
ANGLES ± 1/2 DEG.
DECIMALS ± .010"

MATERIAL:
TOLERANCES DO NOT APPLY TO RAW MATERIAL

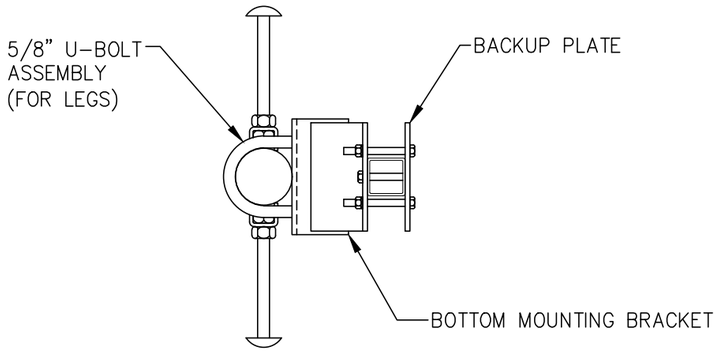
REV	DATE	DRW	CHK	DESCRIPTION

Sabre Industries™
INNOVATION DELIVERED

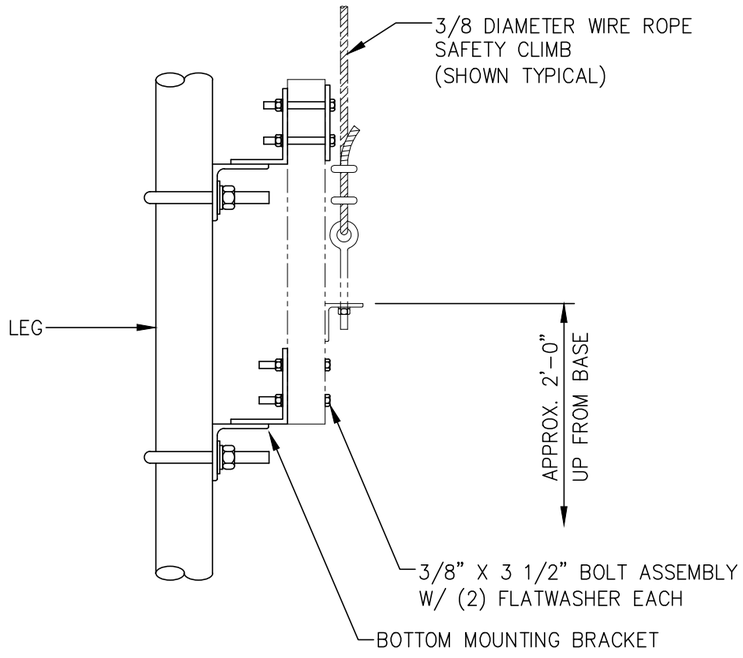
CONFIDENTIAL
This document and the information contained herein is the confidential trade secret property of Sabre Industries, Inc. ("Sabre") and must not be reproduced, copied or used, in whole or in part, for any purpose without the prior written consent of Sabre.
© 2025 Sabre Industries, Inc. All rights reserved.

STEP BOLT ATTACHMENT INSTALLATION:
SITE: NORTH FORK, OR
CUSTOMER: MARION COUNTY OREGON

JOB NO. 563424		SIZE	DRAWING NO.	REV
DATE	08/07/25	B	563424-SB1	0
DRAWN BY	KMP			
CHECKED BY	ZAK		SCALE NONE	PAGE 1 OF 1



PLAN



ELEVATION

EACH KIT CONSISTS OF:

(2) BOTTOM MOUNTING BRACKET
(1) BACKUP PLATE
(2) 5/8" U-BOLT ASSEMBLY FOR MOUNTING TO LEG
(6) 3/8"ø X 3 1/2" BOLT ASSEMBLY
(12) 3/8"ø FLATWASHER

BOTTOM MOUNTING BRACKET KITS

KIT NUMBER	LEG DIAMETER	5/8" U-BOLT ASSEMBLY	3/8" BOLT ASSEMBLY	3/8"ø FLATWASHER	BOTTOM MOUNTING BRACKET	BACKUP PLATE	KIT WEIGHT
C30011054	1 1/4"	C40034041	C40024012	C40031001	CW00346	CS00167	16.2#
C30011055	1 1/2"	C40034020	C40024012	C40031001	CW00346	CS00167	16.4#
C30011056	1 3/4"	C40034021	C40024012	C40031001	CW00346	CS00167	16.5#
C30011031	2"	C40034022	C40024012	C40031001	CW00049	CS00167	17.0#
C30011032	2 1/4" OR 2 3/8"	C40034023	C40024012	C40031001	CW00049	CS00167	17.1#
C30011033	2 1/2"	C40034024	C40024012	C40031001	CW00049	CS00167	17.2#
C30011034	2 3/4" OR 2 7/8"	C40034025	C40024012	C40031001	CW00049	CS00167	17.3#
C30011035	3"	C40034026	C40024012	C40031001	CW00049	CS00167	17.4#
C30011036	3 1/4"	C40034027	C40024012	C40031001	CW00050	CS00167	18.5#
C30011037	3 1/2"	C40034028	C40024012	C40031001	CW00050	CS00167	18.6#
C30011038	3 3/4"	C40034029	C40024012	C40031001	CW00050	CS00167	18.8#
C30011039	4"	C40034030	C40024012	C40031001	CW00050	CS00167	18.9#
C30011040	4 1/4"	C40034031	C40024012	C40031001	CW00050	CS00167	19.0#
C30011041	4 1/2"	C40034032	C40024012	C40031001	CW00051	CS00167	20.3#
C30011042	4 3/4"	C40034033	C40024012	C40031001	CW00051	CS00167	20.4#
C30011043	5"	C40034034	C40024012	C40031001	CW00051	CS00167	20.5#
C30011044	5 1/4" – 5 9/16"	C40034035	C40024012	C40031001	CW00052	CS00167	21.9#
C30011057	5 3/4"	C40034044	C40024012	C40031001	CW00052	CS00167	22.0#
C30011058	6"	C40034064	C40024012	C40031001	CW00052	CS00167	22.0#
C30011053	6 1/4"	C40034068	C40024012	C40031001	CW00052	CS00167	22.1#
C30011045	6 5/8"	C40034036	C40024012	C40031001	CW00052	CS00167	22.3#
C30011059	6 3/4"	C40034093	C40024012	C40031001	CW00204	CS00167	23.2#
C30011050	7 OR 7 1/4"	C40034065	C40024012	C40031001	CW00204	CS00167	25.0#
C30011060	7 1/2"	C40034127	C40024012	C40031001	CW00204	CS00167	23.7#
C30011104	7 3/4"	C40034099	C40024012	C40031001	CW00204	CS00167	23.8#
C30011046	8 5/8"	C40034037	C40024012	C40031001	CW00053	CS00167	33.0#
C30011062	8 3/4"	C40034152	C40024012	C40031001	CW01346	CS00167	30.9#
C30011063	9"	C40034200	C40024012	C40031001	CW01362	CS00167	31.5#
C30011061	9 1/2" OR 9 5/8"	C40034130	C40024012	C40031001	CW01242	CS00167	29.3#
C30011047	10 3/4"	C40034038	C40024012	C40031001	CW00054	CS00167	35.4#
C30011048	12 3/4"	C40034039	C40024012	C40031001	CW00053	CS00167	34.9#
C30011049	14"	C40034040	C40024012	C40031001	CW00054	CS00167	36.9#
C30011051	16"	C40034042	C40024012	C40031001	CW00208	CS00167	42.6#
C30011052	18"	C40034043	C40024012	C40031001	CW00208	CS00167	43.5#

REV	DATE	DRW	CHK	DESCRIPTION
14	10/13/17	RWM	MWR	REVISED 3/8 DIAMETER WIRE ROPE VERBIAGE
13	8/14/17	DPJ	ZAK	ADDED KIT FOR 9" O.D. LEG.
12	4/24/17	DPJ	ZAK	ADDED KIT FOR 8 3/4" O.D. LEG.
11	9/30/14	DPJ	ZAK	ADDED KIT FOR 9 1/2" & 9 5/8" O.D. LEGS.
10	5/22/14	KLE	EK	ADDED KIT FOR 7 1/2" O.D. LEG.
9	10/10/11	DPJ	CE	ADDED KIT FOR 7 3/4" O.D. LEG.
8	7/26/11	DPJ	CHH	ADDED KIT FOR 6 3/4" O.D. LEG.
7	5/29/08	DPJ	ZAK	ADDED KIT FOR 6" O.D. LEG.
6	4/29/08	LRS	CE	ADDED KIT FOR 5 3/4" O.D. LEG.
5	3/03/08	LRS	ZAK	ADDED KIT FOR 6 1/4" O.D. LEG
4	1/10/08	LRS	CE	CHANGED LEG DIAMETER FOR C30011044 KIT (WAS 5 1/2" OR 5 9/16")
3	12/27/04	DLW	DEL	ADDED KITS FOR 1 1/4" TO 1 3/4" O.D. LEGS.
2	3/3/04	KLE	DLW	ADDED KITS FOR 16" O.D. & 18" O.D. LEGS.
1	2/19/04	KLE	DLW	ADDED C30011050 & ADDED LEADING ZERO.

UNLESS OTHERWISE SPECIFIED
ALL DIMENSIONS INCLUDE FINISHES AND ARE IN INCHES
TOLERANCES: FRACTIONS ± 1/16"
ANGLES ± 1/2 DEG.
DECIMALS ± .010"

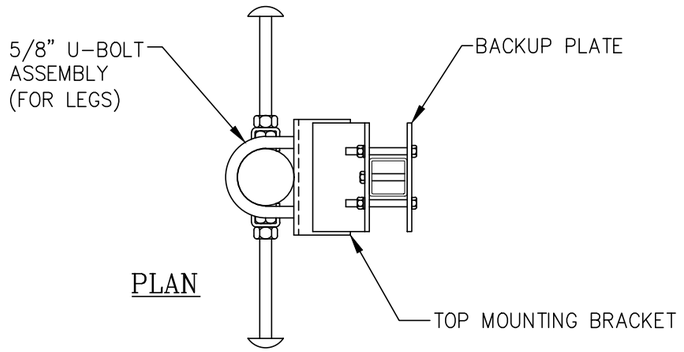
MATERIAL:
TOLERANCES DO NOT APPLY TO RAW MATERIAL

Sabre Industries™
INNOVATION DELIVERED

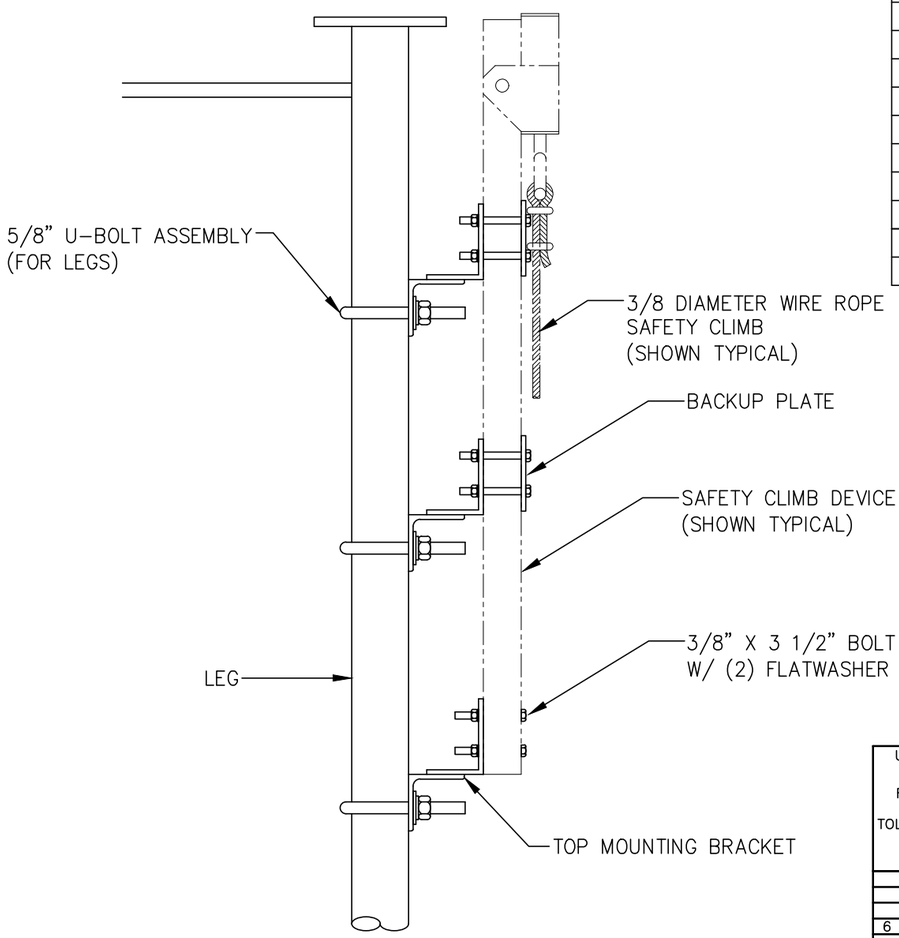
CONFIDENTIAL
This document and the information contained herein is the confidential trade secret property of Sabre Industries, Inc. ("Sabre") and must not be reproduced, copied or used, in whole or in part, for any purpose without the prior written consent of Sabre.
© 2022 Sabre Industries, Inc. All rights reserved.

3/8 DIAMETER WIRE ROPE SAFETY CLIMB BOTTOM MOUNTING BRACKET

		SIZE	DRAWING NO.	REV
DATE	4/11/02	B	C30011-1	14
DRAWN BY	KLE			
CHECKED BY	DLW	SCALE None	PAGE 1 OF 1	



PLAN



ELEVATION

TOP MOUNTING BRACKET KITS

KIT NUMBER	LEG DIAMETER	5/8" U-BOLT ASSEMBLY	3/8" BOLT ASSEMBLY	3/8"ø FLATWASHER	TOP MOUNTING BRACKET	BACKUP PLATE	KIT WEIGHT
C30011017	1 1/4"	C40034041	C40024012	C40031001	CW00346	CS00167	25.3#
C30011018	1 1/2"	C40034020	C40024012	C40031001	CW00346	CS00167	25.6#
C30011019	1 3/4"	C40034021	C40024012	C40031001	CW00346	CS00167	25.8#
C30011001	2"	C40034022	C40024012	C40031001	CW00049	CS00167	26.5#
C30011002	2 1/4" OR 2 3/8"	C40034023	C40024012	C40031001	CW00049	CS00167	26.8#
C30011003	2 1/2"	C40034024	C40024012	C40031001	CW00049	CS00167	26.9#
C30011004	2 3/4" OR 2 7/8"	C40034025	C40024012	C40031001	CW00049	CS00167	27.1#
C30011005	3"	C40034026	C40024012	C40031001	CW00049	CS00167	27.2#
C30011006	3 1/4"	C40034027	C40024012	C40031001	CW00050	CS00167	28.9#
C30011007	3 1/2"	C40034028	C40024012	C40031001	CW00050	CS00167	29.1#
C30011008	3 3/4"	C40034029	C40024012	C40031001	CW00050	CS00167	29.2#
C30011009	4"	C40034030	C40024012	C40031001	CW00050	CS00167	29.4#
C30011010	4 1/4"	C40034031	C40024012	C40031001	CW00050	CS00167	29.6#
C30011011	4 1/2"	C40034032	C40024012	C40031001	CW00051	CS00167	31.6#
C30011012	4 3/4"	C40034033	C40024012	C40031001	CW00051	CS00167	31.8#
C30011013	5"	C40034034	C40024012	C40031001	CW00051	CS00167	31.9#
C30011014	5 1/2" OR 5 9/16"	C40034035	C40024012	C40031001	CW00052	CS00167	34.0#
C30011015	6 5/8"	C40034036	C40024012	C40031001	CW00052	CS00167	34.6#
C30011020	8 5/8"	C40034037	C40024012	C40031001	CW00053	CS00167	50.5#
C30011021	12 3/4"	C40034039	C40024012	C40031001	CW00053	CS00167	53.4#

NOTES:

1. MOUNTING BRACKET SHOULD BE INSTALLED IN A MANNER THAT WILL ENSURE THE WIRE ROPE WILL NOT BE DAMAGED.
2. IF THERE IS A MOUNT AT THE TOP OF THE TOWER THAT WOULD INTERFERE WITH THE BRACKET OR SAFETY CLIMB, THE TOP MOUNTING BRACKET SHOULD BE INSTALLED JUST BELOW THE MOUNT.

EACH KIT CONSISTS OF

(3) TOP MOUNTING BRACKET
(2) BACKUP PLATE
(3) 5/8" U-BOLT ASSEMBLY FOR MOUNTING TO LEG
(10) 3/8"ø X 3 1/2" BOLT ASSEMBLY
(20) 3/8"ø FLATWASHER

UNLESS OTHERWISE SPECIFIED
ALL DIMENSIONS INCLUDE FINISHES AND ARE IN INCHES
TOLERANCES: FRACTIONS ± 1/16"
ANGLES ± 1/2 DEG.
DECIMALS ± .010"

MATERIAL:
TOLERANCES DO NOT APPLY TO RAW MATERIAL

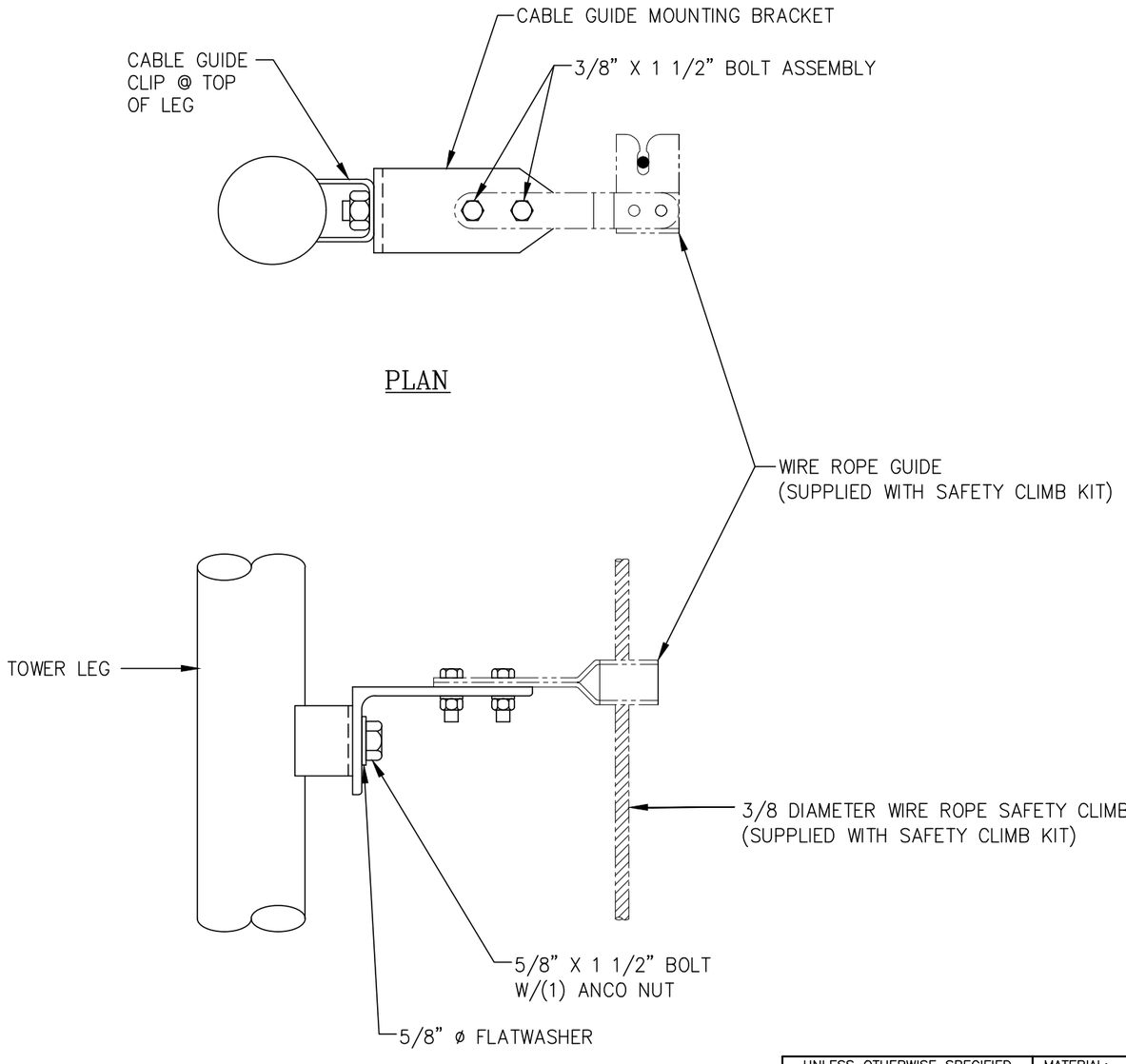
REV	DATE	DRW	CHK	DESCRIPTION
6	10/13/17	RWM	MWR	REVISED 3/8 DIAMETER WIRE ROPE VERBIAGE AND REVISED/ADDED NOTES.
5	7/2/10	CHH	HHC	ADDED KIT FOR 12 3/4" O.D. LEG.
4	11/2/09	DPJ	ZAK	ADDED KIT FOR 8 5/8" O.D. LEG.
3	12/27/04	DLW	DEL	ADDED KITS FOR 1 1/4" TO 1 3/4" O.D. LEGS
2	3/4/04	KLE	KLE	REMOVED DASHES
1	2/19/04	KLE	DLW	ADDED LEADING ZERO

Sabre Industries™
INNOVATION DELIVERED

CONFIDENTIAL
This document and the information contained herein is the confidential trade secret property of Sabre Industries, Inc. ("Sabre") and must not be reproduced, copied or used, in whole or in part, for any purpose without the prior written consent of Sabre.
© 2022 Sabre Industries, Inc. All rights reserved.

3/8 DIAMETER WIRE ROPE SAFETY CLIMB TOP MOUNTING BRACKET

		SIZE	DRAWING NO.	REV
DATE	4/12/02	B	C30011-2	6
DRAWN BY	KLE			
CHECKED BY	DLW	SCALE None	PAGE 1 OF 1	



C30003001 SAFETY CLIMB CABLE GUIDE MOUNTING BRACKET				
ITEM	QTY.	PART. NO.	DESCRIPTION	WEIGHT
1	1	CS00795	ANGLE, SAFETY CLIMB CABLE GUIDE SUPPORT	1.4#
2	1	C40126021	BOLT, 5/8 X 1 1/2 A325	0.3#
3	1	C40028003	NUT, ANCO 5/8" ø	0.1#
4	1	C40031003	FLATWASHER, 5/8" ø	0.1#
5	2	C40024004	BOLT ASSEMBLY, 3/8 X 1 1/2 GR. 5	0.2#
			TOTAL WEIGHT	2.1#

EACH KIT CONSISTS OF

(1) CABLE GUIDE MOUNTING BRACKET
(1) 5/8" X 1 1/2" BOLT FOR MOUNTING TO LEG
(1) 5/8" ANCO NUT FOR 5/8" BOLT
(1) 5/8" FLATWASHER
(2) 3/8"ø X 1 1/2" BOLT ASSEMBLY

UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS INCLUDE FINISHES AND ARE IN INCHES

TOLERANCES: FRACTIONS ± 1/16" ANGLES ± 1/2 DEG. DECIMALS ± .010"

MATERIAL:

TOLERANCES DO NOT APPLY TO RAW MATERIAL

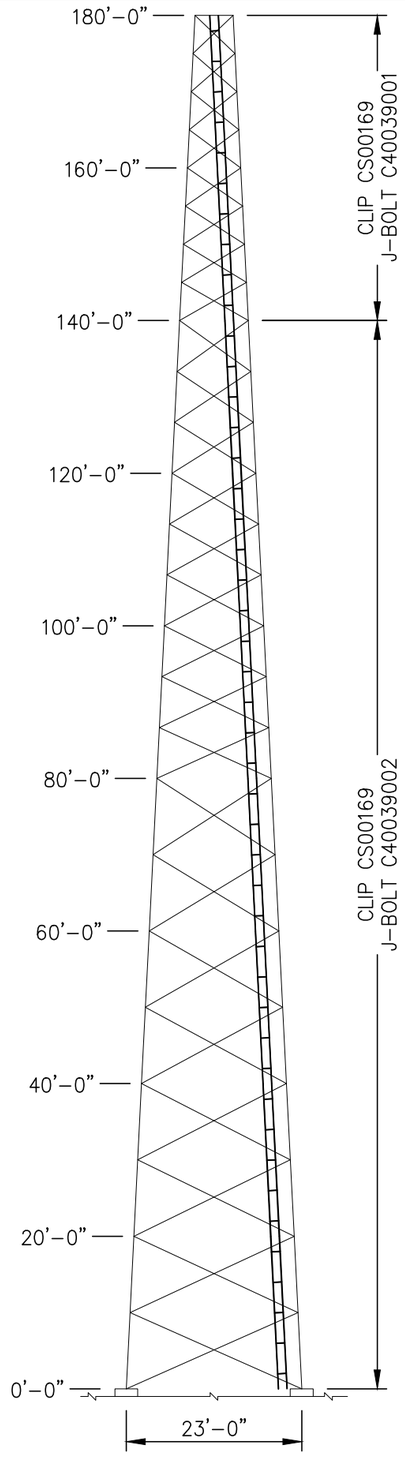
REV	DATE	DRW	CHK	DESCRIPTION
4	10/13/17	RWM	MWR	REVISED 3/8 DIAMETER WIRE ROPE VERBIAGE
3	10/6/11	CHH	RWM	REVISED MOUNTING BOLT WAS C40126019 & ADDED FLATWASHER C40031003
2	4/12/06	CHH	HHC	CHANGED PART NO. ITEM 2 (WAS C40998050).
1	2/17/06	MJM	ZAK	CORRECTED ITEM 3 PART NO. (WAS C40028004).

Sabre Industries™ INNOVATION DELIVERED

CONFIDENTIAL
This document and the information contained herein is the confidential trade secret property of Sabre Industries, Inc. ("Sabre") and must not be reproduced, copied or used, in whole or in part, for any purpose without the prior written consent of Sabre.
© 2022 Sabre Industries, Inc. All rights reserved.

3/8 DIAMETER WIRE ROPE SAFETY CLIMB CABLE GUIDE MOUNTING BRACKET

		SIZE	DRAWING NO.	REV
DATE	8/4/04	B	C30003001	4
DRAWN BY	CHH			
CHECKED BY	ZAK	SCALE None	PAGE 1 OF 1	



ELEVATION VIEW

WAVEGUIDE LADDER				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
1	18	CS00146	ANGLE, WAVEGUIDE LADDER RAIL 20 FT. W/4 FT. RUNG SPC	540
2	45	CS01619	ANGLE, WAVEGUIDE SUPPORT (6 HOLE)	95
3	16	CS00037	PLATE, LADDER SPLICE	6
4	42	CS00169	CLIP, LADDER ATTACHMENT	23
			TOTAL WEIGHT LBS	664

LADDER HARDWARE				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
5	34	C40039002	J–BOLT ASSEMBLY, 3/8 ø X 7 1/4 I.L.	12
6	8	C40039001	J–BOLT ASSEMBLY, 3/8 ø X 5 3/4 I.L.	2
7	122	C40024004	BOLT ASSEMBLY, 3/8 ø X 1 1/2 GRD 5	12
			TOTAL WEIGHT LBS	26

FIELD NOTES

1. FROM ELEVATION 0'–0" TO 140'–0" ATTACH WAVEGUIDE LADDER TO EACH TOWER DIAGONAL.
   FROM ELEVATION 140'–0" TO 180'–0" ATTACH WAVEGUIDE LADDER TO EVERY OTHER TOWER DIAGONAL.
2. SEE REFERENCE DWG. 9031861 FOR WAVEGUIDE LADDER INSTALLATION AND ATTACHMENT DETAIL.
3. SEE CUSTOMER REQUESTS FOR PROPER FACE POSITIONING OF ALL LADDERS.
4. WAVEGUIDE LADDERS SHOULD NEVER BE USED AS A CLIMBING OR RIGGING DEVICE.

UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS INCLUDE FINISHES AND ARE IN INCHES

TOLERANCES: FRACTIONS ± 1/16" ANGLES ± 1/2 DEG. DECIMALS ± .010"

MATERIAL:

TOLERANCES DO NOT APPLY TO RAW MATERIAL

REV	DATE	DRW	CHK	DESCRIPTION

Sabre Industries™ INNOVATION DELIVERED

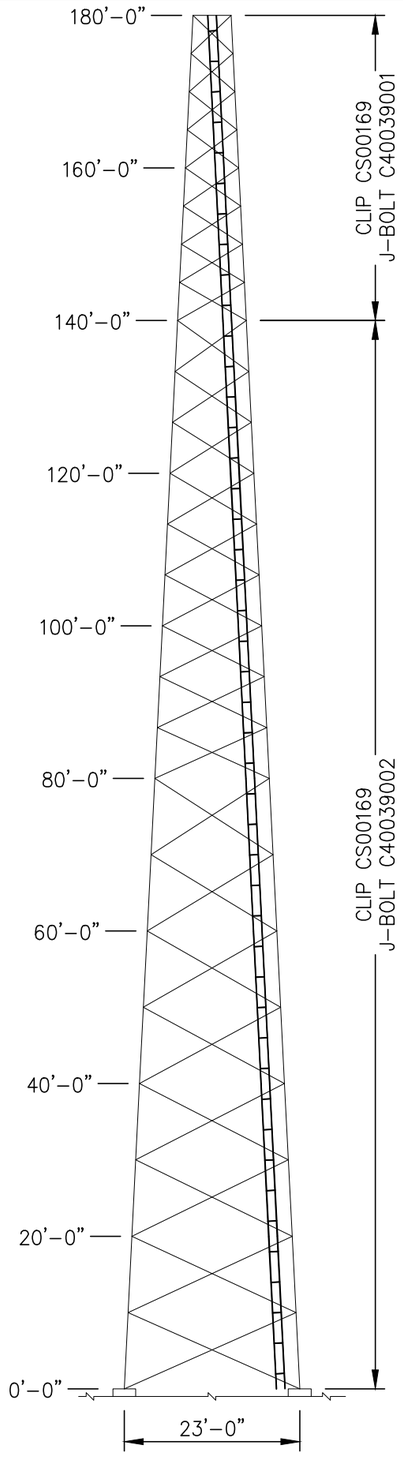
CONFIDENTIAL
This document and the information contained herein is the confidential trade secret property of Sabre Industries, Inc. ("Sabre") and must not be reproduced, copied or used, in whole or in part, for any purpose without the prior written consent of Sabre.
© 2025 Sabre Industries, Inc. All rights reserved.

W/G LADDER: 180 FT. MODEL S3TL–HD2

SITE: NORTH FORK, OR

CUSTOMER: MARION COUNTY OREGON

JOB NO. 563424		SIZE	DRAWING NO.	REV
DATE	8/7/25	B	563424–WG1	0
DRAWN BY	KMP			
CHECKED BY	ZAK		SCALE NONE	PAGE 1 OF 1



ELEVATION VIEW

WAVEGUIDE LADDER				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
1	18	CS00146	ANGLE, WAVEGUIDE LADDER RAIL 20 FT. W/4 FT. RUNG SPC	540
2	45	CS01619	ANGLE, WAVEGUIDE SUPPORT (6 HOLE)	95
3	16	CS00037	PLATE, LADDER SPLICE	6
4	42	CS00169	CLIP, LADDER ATTACHMENT	23
			TOTAL WEIGHT LBS	664

LADDER HARDWARE				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
5	34	C40039002	J–BOLT ASSEMBLY, 3/8 ø X 7 1/4 I.L.	12
6	8	C40039001	J–BOLT ASSEMBLY, 3/8 ø X 5 3/4 I.L.	2
7	122	C40024004	BOLT ASSEMBLY, 3/8 ø X 1 1/2 GRD 5	12
			TOTAL WEIGHT LBS	26

FIELD NOTES

1. FROM ELEVATION 0'–0" TO 140'–0" ATTACH WAVEGUIDE LADDER TO EACH TOWER DIAGONAL.
   FROM ELEVATION 140'–0" TO 180'–0" ATTACH WAVEGUIDE LADDER TO EVERY OTHER TOWER DIAGONAL.
2. SEE REFERENCE DWG. 9031861 FOR WAVEGUIDE LADDER INSTALLATION AND ATTACHMENT DETAIL.
3. SEE CUSTOMER REQUESTS FOR PROPER FACE POSITIONING OF ALL LADDERS.
4. WAVEGUIDE LADDERS SHOULD NEVER BE USED AS A CLIMBING OR RIGGING DEVICE.

UNLESS OTHERWISE SPECIFIED
ALL DIMENSIONS INCLUDE
FINISHES AND ARE IN INCHES

TOLERANCES: FRACTIONS ± 1/16"
ANGLES ± 1/2 DEG.
DECIMALS ± .010"

MATERIAL:

TOLERANCES DO NOT APPLY
TO RAW MATERIAL

REV	DATE	DRW	CHK	DESCRIPTION

Sabre Industries™
INNOVATION DELIVERED

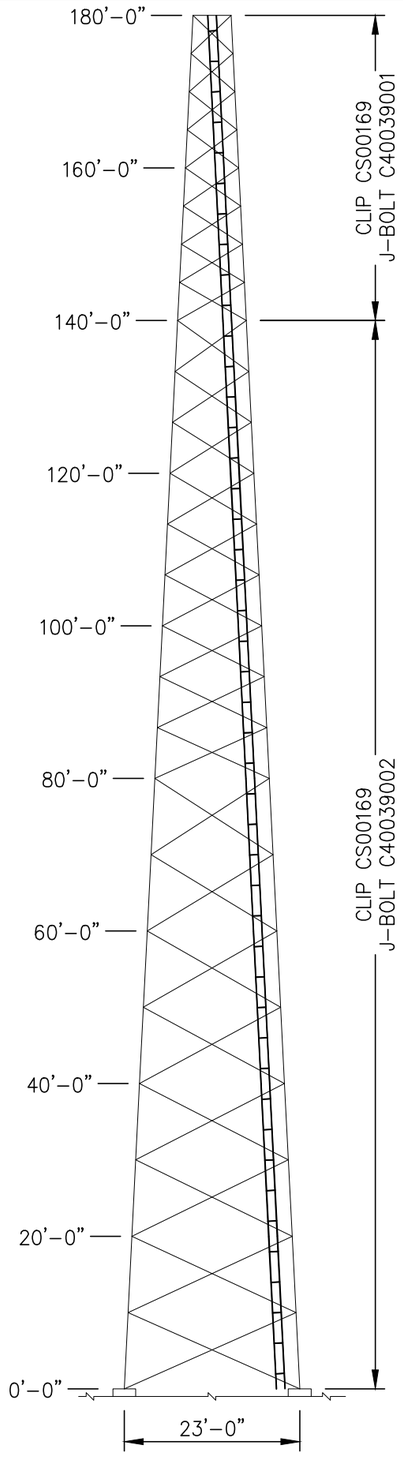
CONFIDENTIAL
This document and the information contained herein is the confidential trade secret property of Sabre Industries, Inc. ("Sabre") and must not be reproduced, copied or used, in whole or in part, for any purpose without the prior written consent of Sabre.
© 2025 Sabre Industries, Inc. All rights reserved.

W/G LADDER: 180 FT. MODEL S3TL–HD2

SITE: NORTH FORK, OR

CUSTOMER: MARION COUNTY OREGON

JOB NO. 563424		SIZE	DRAWING NO.	REV
DATE	8/7/25	B	563424–WG2	0
DRAWN BY	KMP			
CHECKED BY	ZAK		SCALE NONE	PAGE 1 OF 1



ELEVATION VIEW

WAVEGUIDE LADDER				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
1	18	CS00146	ANGLE, WAVEGUIDE LADDER RAIL 20 FT. W/4 FT. RUNG SPC	540
2	45	CS01619	ANGLE, WAVEGUIDE SUPPORT (6 HOLE)	95
3	16	CS00037	PLATE, LADDER SPLICE	6
4	42	CS00169	CLIP, LADDER ATTACHMENT	23
			TOTAL WEIGHT LBS	664

LADDER HARDWARE				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
5	34	C40039002	J–BOLT ASSEMBLY, 3/8 ø X 7 1/4 I.L.	12
6	8	C40039001	J–BOLT ASSEMBLY, 3/8 ø X 5 3/4 I.L.	2
7	122	C40024004	BOLT ASSEMBLY, 3/8 ø X 1 1/2 GRD 5	12
			TOTAL WEIGHT LBS	26

FIELD NOTES

1. FROM ELEVATION 0'–0" TO 140'–0" ATTACH WAVEGUIDE LADDER TO EACH TOWER DIAGONAL.
   FROM ELEVATION 140'–0" TO 180'–0" ATTACH WAVEGUIDE LADDER TO EVERY OTHER TOWER DIAGONAL.
2. SEE REFERENCE DWG. 9031861 FOR WAVEGUIDE LADDER INSTALLATION AND ATTACHMENT DETAIL.
3. SEE CUSTOMER REQUESTS FOR PROPER FACE POSITIONING OF ALL LADDERS.
4. WAVEGUIDE LADDERS SHOULD NEVER BE USED AS A CLIMBING OR RIGGING DEVICE.

UNLESS OTHERWISE SPECIFIED
ALL DIMENSIONS INCLUDE
FINISHES AND ARE IN INCHES

TOLERANCES: FRACTIONS ± 1/16"
ANGLES ± 1/2 DEG.
DECIMALS ± .010"

MATERIAL:

TOLERANCES DO NOT APPLY
TO RAW MATERIAL

REV	DATE	DRW	CHK	DESCRIPTION

Sabre Industries™
INNOVATION DELIVERED

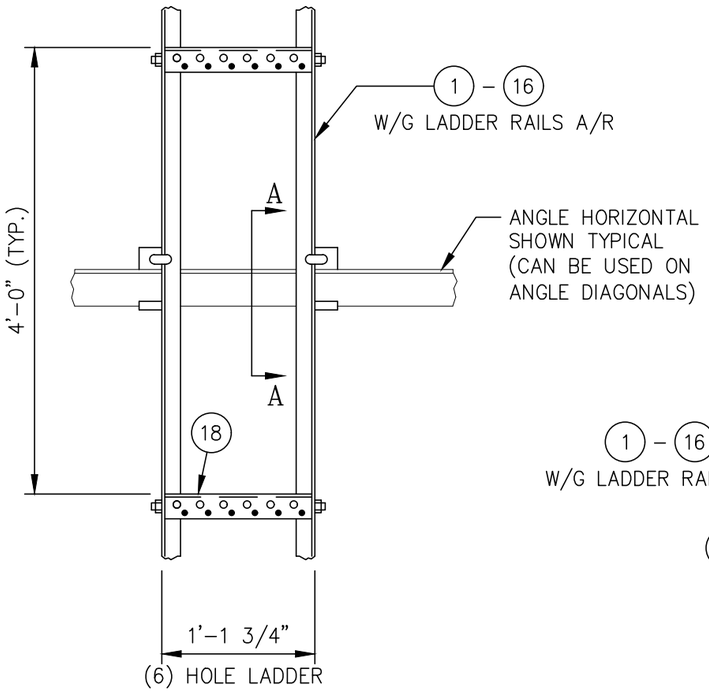
CONFIDENTIAL
This document and the information contained herein is the confidential trade secret property of Sabre Industries, Inc. ("Sabre") and must not be reproduced, copied or used, in whole or in part, for any purpose without the prior written consent of Sabre.
© 2025 Sabre Industries, Inc. All rights reserved.

W/G LADDER: 180 FT. MODEL S3TL–HD2

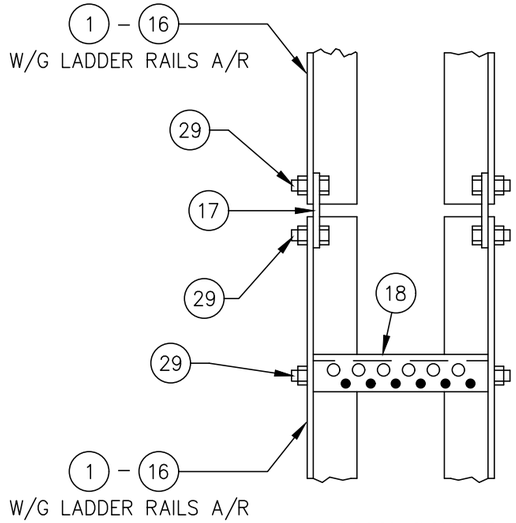
SITE: NORTH FORK, OR

CUSTOMER: MARION COUNTY OREGON

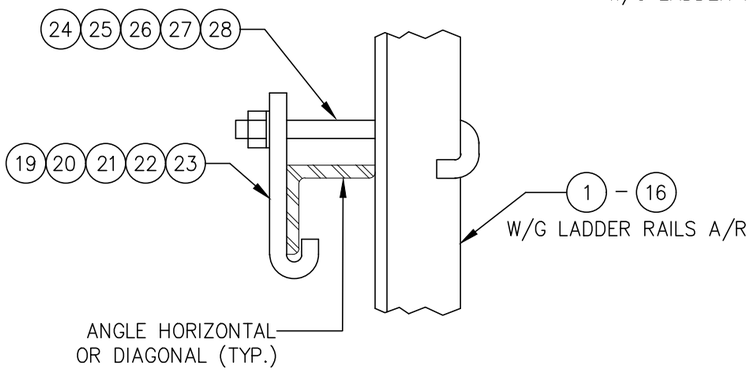
JOB NO. 563424		SIZE	DRAWING NO.	REV
DATE	8/7/25	B	563424–WG3	0
DRAWN BY	KMP		SCALE NONE	PAGE 1 OF 1
CHECKED BY	ZAK			



ELEVATION
(TYPICAL MOUNTING DETAIL)



SPLICE DETAIL



SECTION A–A

LIST OF MATERIAL

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
1	A/R	CS00146	ANGLE, WAVEGUIDE LADDER RAIL 20 FT.	
2	A/R	CS03607	ANGLE, WAVEGUIDE LADDER RAIL 19 FT.	
3	A/R	CS03608	ANGLE, WAVEGUIDE LADDER RAIL 18 FT.	
4	A/R	CS03402	ANGLE, WAVEGUIDE LADDER RAIL 17 FT.	
5	A/R	CS03609	ANGLE, WAVEGUIDE LADDER RAIL 16 FT.	
6	A/R	CS00147	ANGLE, WAVEGUIDE LADDER RAIL 15 FT.	
7	A/R	CS03621	ANGLE, WAVEGUIDE LADDER RAIL 14 FT.	
8	A/R	CS03610	ANGLE, WAVEGUIDE LADDER RAIL 13 FT.	
9	A/R	CS03611	ANGLE, WAVEGUIDE LADDER RAIL 12 FT.	
10	A/R	CS03612	ANGLE, WAVEGUIDE LADDER RAIL 11 FT.	
11	A/R	CS00148	ANGLE, WAVEGUIDE LADDER RAIL 10 FT.	
12	A/R	CS03613	ANGLE, WAVEGUIDE LADDER RAIL 9 FT.	
13	A/R	CS03444	ANGLE, WAVEGUIDE LADDER RAIL 8 FT.	
14	A/R	CS03614	ANGLE, WAVEGUIDE LADDER RAIL 7 FT.	
15	A/R	CS03615	ANGLE, WAVEGUIDE LADDER RAIL 6 FT.	
16	A/R	CS00149	ANGLE, WAVEGUIDE LADDER RAIL 5 FT.	
17	A/R	CS00037	PLATE, LADDER SPLICE	
18	A/R	CS01619	ANGLE WAVEGUIDE SUPPORT (6 HOLE)	
19	A/R	CS00169	CLIP, LADDER ATTACHMENT (1 1/2" – 4" ANGLES)	
20	A/R	CS00170	CLIP, LADDER ATTACHMENT (5" – 6" ANGLES: 3/8" THK. & UNDER)	
21	A/R	CS00171	CLIP, LADDER ATTACHMENT (1 1/2" – 6" ANGLES: 1/2" THK. & UNDER)	
22	A/R	CS00808	CLIP, LADDER ATTACHMENT (4" – 6" ANGLES: 1/2" TO 3/4" THK.)	
23	A/R	CS01212	CLIP, LADDER ATTACHMENT (8" ANGLES)	
24	A/R	C40039001	J–BOLT ASSY., 3/8 (1 1/2" – 2 1/2" ANGLES)	
25	A/R	C40039002	J–BOLT ASSY., 3/8 (3" – 4" ANGLES)	
26	A/R	C40039003	J–BOLT ASSY., 3/8 (5" – 6" ANGLES)	
27	A/R	C40039009	J–BOLT ASSY., 3/8 (3" – 6" ANGLES, 1/2" & 3/4" THK)	
28	A/R	C40039012	J–BOLT ASSY., 3/8 (8" ANGLES, 1/2" & 3/4" THK)	
29	A/R	C40024004	BOLT ASSEMBLY, 3/8 X 1 1/2 GR5	

"SEE JOB SPECIFIC BILL OF MATERIAL FOR QTY'S."

NOTE:
MAXIMUM SPACING OF LADDER CLIPS UP THE TOWER TO BE ±10'–0.

UNLESS OTHERWISE SPECIFIED
ALL DIMENSIONS INCLUDE
FINISHES AND ARE IN INCHES
TOLERANCES: FRACTIONS ± 1/16"
ANGLES ± 1/2 DEG.
DECIMALS ± .010"

MATERIAL:
TOLERANCES DO NOT APPLY
TO RAW MATERIAL

REV	DATE	DRW	CHK	DESCRIPTION
1	08/22/23	FJM	DLW	REVISED ITEM 7 (WAS CS03404)

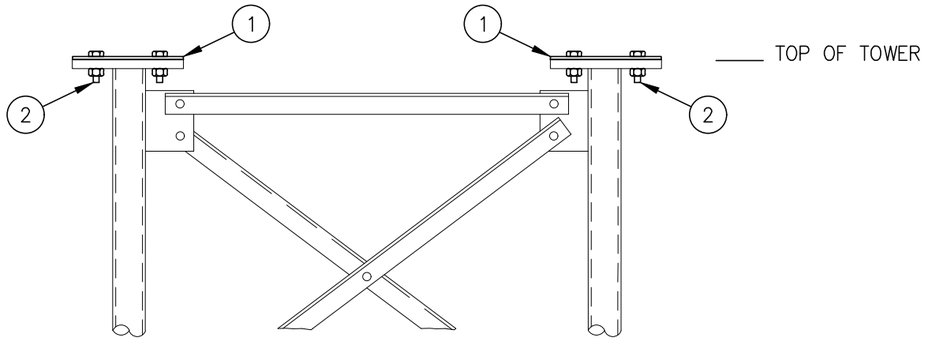
Sabre Industries™
INNOVATION DELIVERED

CONFIDENTIAL
This document and the information contained herein is the confidential trade secret property of Sabre Industries, Inc. ("Sabre") and must not be reproduced, copied or used, in whole or in part, for any purpose without the prior written consent of Sabre.
© 2021 Sabre Industries, Inc. All rights reserved.

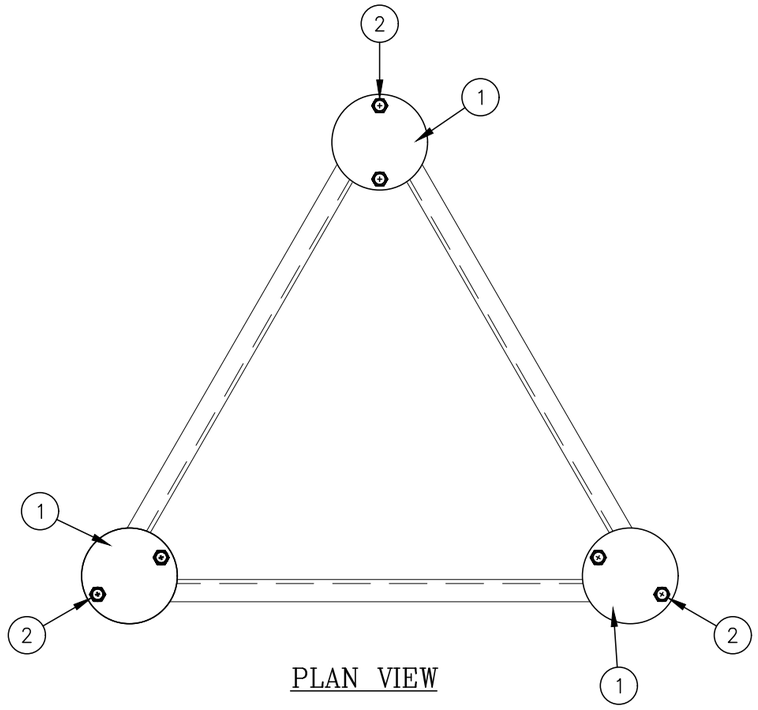
WAVEGUIDE LADDER INSTALLATION
6 HOLE RUNG – 7/16"ø & 3/4"ø
(CUSTOM LENGTH LADDER RAILS)

		SIZE	DRAWING NO.	REV
DATE	06/25/20	B	9031861	1
DRAWN BY	FJM			
CHECKED BY	DRL	SCALE None	PAGE 1 OF 1	

C30008022 LEG CAP KIT				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
1	3	CS01499	PLATE, LEG CAP (3/4" BOLTS ON A 6 1/2" B.C.)	6
2	6	C40026045	BOLT ASSEMBLY, 3/4 ø X 2 1/2 A325	5
			TOTAL WEIGHT LBS	11



ELEVATION VIEW



PLAN VIEW

UNLESS OTHERWISE SPECIFIED
ALL DIMENSIONS INCLUDE FINISHES AND ARE IN INCHES

TOLERANCES: FRACTIONS ± 1/16"
ANGLES ± 1/2 DEG.
DECIMALS ± .010"

MATERIAL:
FITS (6) 13/16"ø HOLES SPACED 60° APART ON A 6 1/2" BOLT CIRCLE

TOLERANCES DO NOT APPLY TO RAW MATERIAL

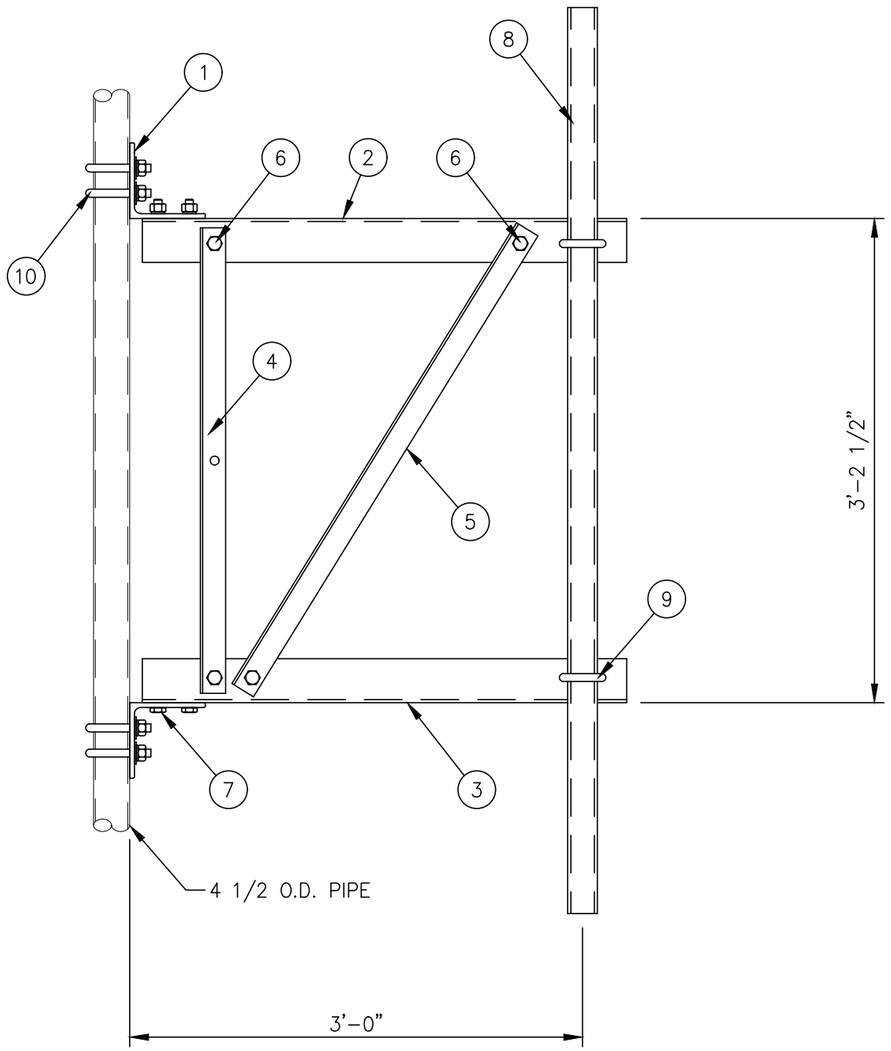
REV	DATE	DRW	CHK	DESCRIPTION

Sabre Industries™
INNOVATION DELIVERED

CONFIDENTIAL
This document and the information contained herein is the confidential trade secret property of Sabre Industries, Inc. ("Sabre") and must not be reproduced, copied or used, in whole or in part, for any purpose without the prior written consent of Sabre.
© 2021 Sabre Industries, Inc. All rights reserved.

LEG CAP INSTALLATION (S3TL–HD1) 3/4"ø BOLTS ON A 6 1/2" B.C. (1" SPLICE PLATE)

		SIZE	DRAWING NO.	REV
DATE	9/29/21	B	C30008022	0
DRAWN BY	MJM			
CHECKED BY	ZAK		SCALE None	PAGE 1 OF 1



C10151103 3 FT. SIDEARM ASSEMBLY			
1	CK00060	SIDEARM ANGLE KIT	78
1	– – –	MISC HARDWARE (FRAMING)	4
1	C10900105	PIPE ANTENNA MOUNTING KIT 2 3/8" ø X 5'-0	19
4	C40034032	U-BOLT ASSEMBLY 5/8" ø X 5 3/16 C-C	9
		TOTAL WEIGHT LBS	110

CK00060 KIT LIST OF MATERIAL				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
1	2	CS00067	ANGLE, BOOM SUPPORT	23
2	1	CS01223	ANGLE, TOP CHORD	19
3	1	CS01224	ANGLE, BOTTOM CHORD	19
4	1	CS00065	ANGLE, VERTICAL	8
5	1	CS01228	ANGLE, DIAGONAL	9
			TOTAL WEIGHT LBS	78

MISC HARDWARE (FRAMING)				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
6	4	C40026022	BOLT ASSEMBLY, 5/8 ø X 1 3/4 A325	2
7	4	C40026023	BOLT ASSEMBLY, 5/8 ø X 2 A325	2
			TOTAL WEIGHT LBS	4

C10900105 ANTENNA PIPE MOUNTING KIT				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
8	1	C10981223	ANTENNA MTG. PIPE 2 3/8" ø X 5'-0	16
9	2	C40034023	U-BOLT ASSEMBLY 5/8" ø X 3 1/16 C-C	3
			TOTAL WEIGHT LBS	19

MISC HARDWARE				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
10	4	C40034032	U-BOLT ASSEMBLY 5/8" ø X 5 3/16 C-C	9
			TOTAL WEIGHT LBS	9

NOTES:

1. IF THE MOUNT IS NOT ON THE STRAIGHT PORTION OF THE TOWER SEE SITE SPECIFIC PIPE MOUNT.
2. QUANTITIES SHOWN IN LIST OF MATERIALS ARE FOR ONE (1) SIDEARM ASSEMBLY ONLY.

UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS INCLUDE FINISHES AND ARE IN INCHES

TOLERANCES: FRACTIONS ± 1/16" ANGLES ± 1/2 DEG. DECIMALS ± .010"

MATERIAL:

TOLERANCES DO NOT APPLY TO RAW MATERIAL

REV	DATE	DRW	CHK	DESCRIPTION

Sabre Industries™ INNOVATION DELIVERED

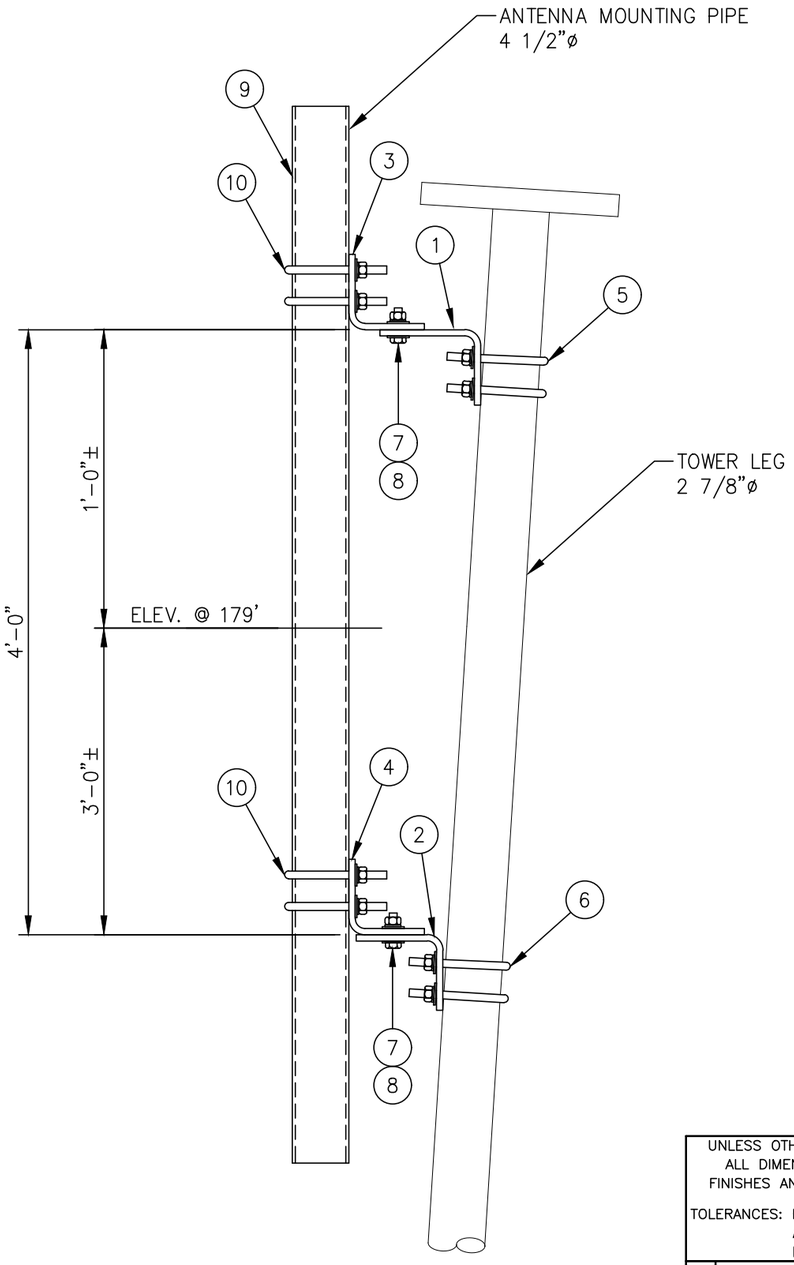
CONFIDENTIAL
This document and the information contained herein is the confidential trade secret property of Sabre Industries, Inc. ("Sabre") and must not be reproduced, copied or used, in whole or in part, for any purpose without the prior written consent of Sabre.
© 2025 Sabre Industries, Inc. All rights reserved.

3 FT. SIDEARM: 179' ELEVATION

SITE: NORTH FORK, OR

CUSTOMER: MARION COUNTY OREGON

JOB NO. 563424		SIZE	DRAWING NO.	REV
DATE	08/07/25	B	563424-SA1	0
DRAWN BY	KMP			
CHECKED BY	ZAK		SCALE NONE	PAGE 1 OF 1



ELEVATION VIEW

LIST OF MATERIALS FOR TAPERED LEG PIPE MOUNT KIT C10174018				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
1.	1	CS00216	TOP LEG MOUNT FOR 2 7/8 ø LEG	15
2.	1	CS00215	BOTTOM LEG MOUNT FOR 2 7/8 ø LEG	12
3.	1	CS00214	TOP PIPE MOUNT FOR 4 1/2 ø PIPE	15
4.	1	CS00215	BOTTOM PIPE MOUNT FOR 4 1/2 ø PIPE	12
5.	2	C40034025	U-BOLT ASSEMBLY 5/8 ø X 3 9/16 C-C (TOP LEG MOUNT)	4
6.	2	C40034025	U-BOLT ASSEMBLY 5/8 ø X 3 9/16 C-C (BOTTOM LEG MOUNT)	4
7.	4	C40026024	BOLT ASSEMBLY 5/8 ø X 2 1/4 A325	2
8.	8	C40031003	FLATWASHER, 5/8 ø (F436)	1
			KIT WEIGHT LBS	65

LIST OF ADDITIONAL MATERIALS				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
9.	1	C10981407	ANTENNA MTG. PIPE 4 1/2 ø X 7'-0	58
10.	4	C40034032	U-BOLT ASSEMBLY 5/8 ø X 5 3/16 C-C (PIPE MOUNTS)	9
			ADDITIONAL WEIGHT LBS	67

TOTAL WEIGHT LBS	132

UNLESS OTHERWISE SPECIFIED
ALL DIMENSIONS INCLUDE FINISHES AND ARE IN INCHES
TOLERANCES: FRACTIONS ± 1/16"
ANGLES ± 1/2 DEG.
DECIMALS ± .010"

MATERIAL:
TOLERANCES DO NOT APPLY TO RAW MATERIAL

REV	DATE	DRW	CHK	DESCRIPTION

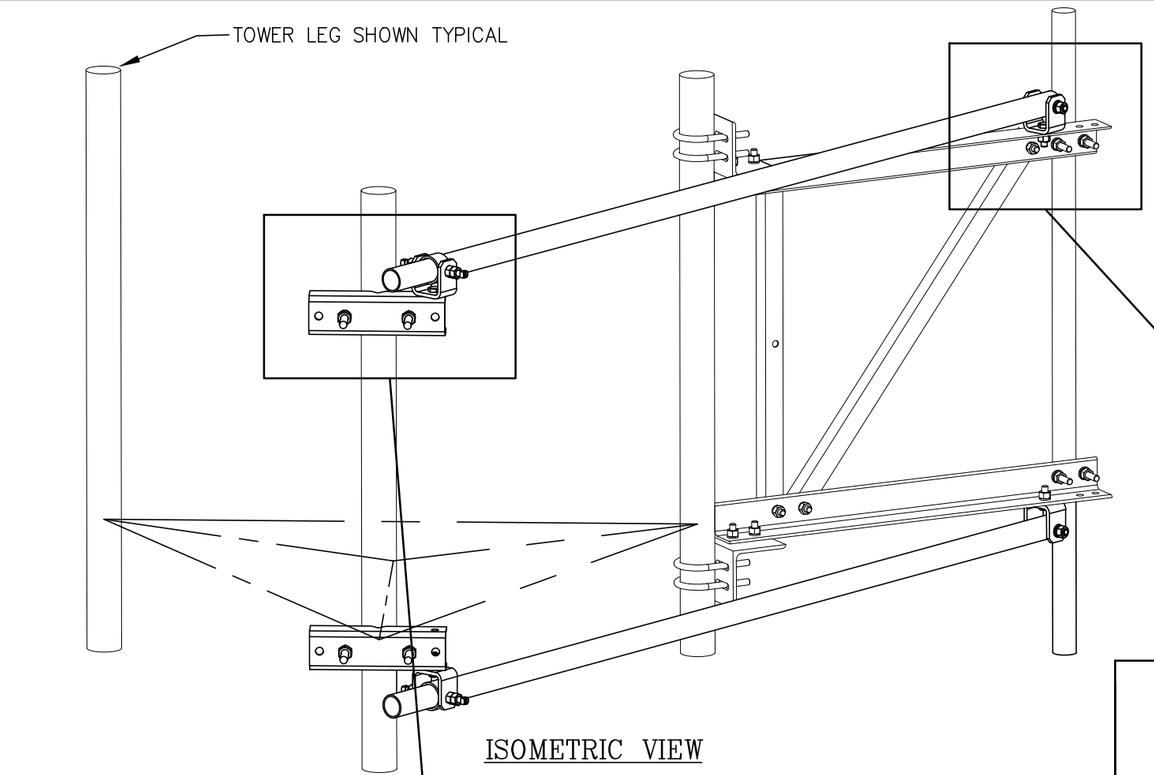
Sabre Industries™
INNOVATION DELIVERED

CONFIDENTIAL
This document and the information contained herein is the confidential trade secret property of Sabre Industries, Inc. ("Sabre") and must not be reproduced, copied or used, in whole or in part, for any purpose without the prior written consent of Sabre.
© 2025 Sabre Industries, Inc. All rights reserved.

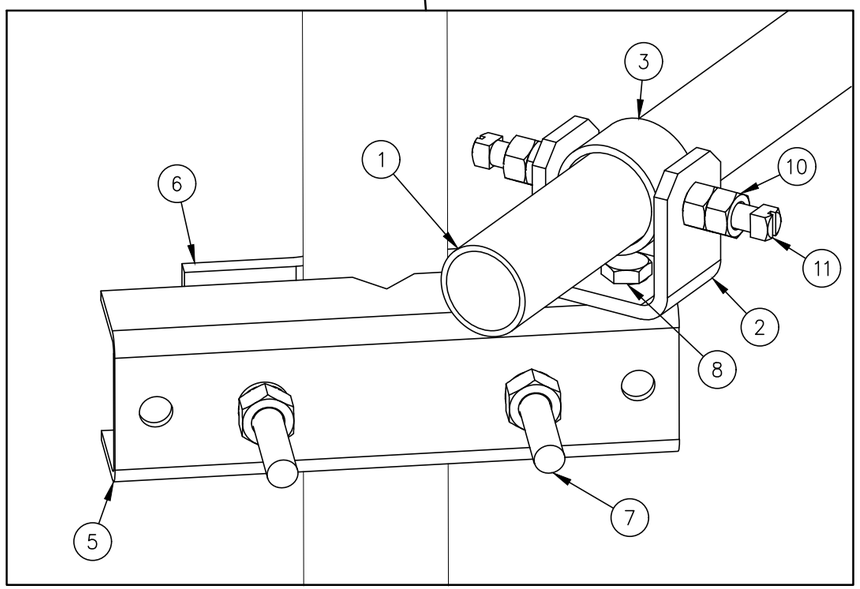
PIPE MOUNT FOR SIDEARM: 179' ELEVATION
SITE: NORTH FORK, OR
CUSTOMER: MARION COUNTY OREGON

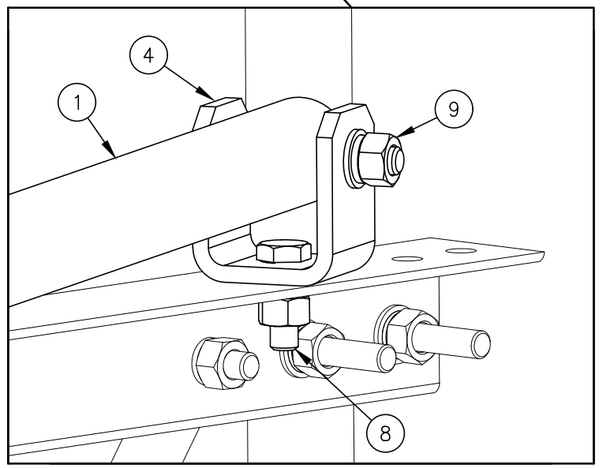
JOB NO. 563424		SIZE	DRAWING NO.	REV
DATE	8/7/25	B	563424-PM1	0
DRAWN BY	KMP			
CHECKED BY	ZAK		SCALE None	PAGE 1 OF 1

EXHIBIT K



ISOMETRIC VIEW





C10179001 SWIVEL KNUCKLE TIEBACK

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
1	1	CS00099	PIPE, 2 3/8" O.D. X 0.154 X 10'-0	38
2	1	CW00013	SWIVEL PLATE WELDMENT	3
3	1	CS00097	PIPE, SLEEVE 2 7/8 O.D. X W/0.203 X 0'-1 3/4	1
4	1	CS00098	BENT SWIVEL PLATE	3
5	1	CS01360	PLATE, MOUNTING BRACKET (FORMED CHANNEL)	9
6	1	CS01361	PLATE, 2 HOLE ADAPTER CLAMP	3
7	2	C40140001	BOLT ASSEMBLY, 3/4 X 10 A307 W/NUT, LKW, FLW	4
8	2	C40026023	BOLT ASSEMBLY, 5/8 ø X 2 A325	1
9	1	C40026033	BOLT ASSEMBLY, 5/8 ø X 4 1/2 A325	1
10	2	C40042007	HEX NUT, 5/8 A194 GRADE 2H	1
11	2	C40998007	SQ. HEAD SET SCREW, 5/8 X 2 1/2	1
			TOTAL WEIGHT LBS	65

QUANTITIES SHOWN ABOVE ARE FOR (1) SWIVEL KNUCKLE TIEBACK KIT ONLY.
(2) KITS ARE REQUIRED FOR THIS SIDEARM ASSEMBLY

UNLESS OTHERWISE SPECIFIED
ALL DIMENSIONS INCLUDE
FINISHES AND ARE IN INCHES

TOLERANCES: FRACTIONS ± 1/16"
ANGLES ± 1/2 DEG.
DECIMALS ± .010"

MATERIAL:

TOLERANCES DO NOT APPLY TO RAW MATERIAL

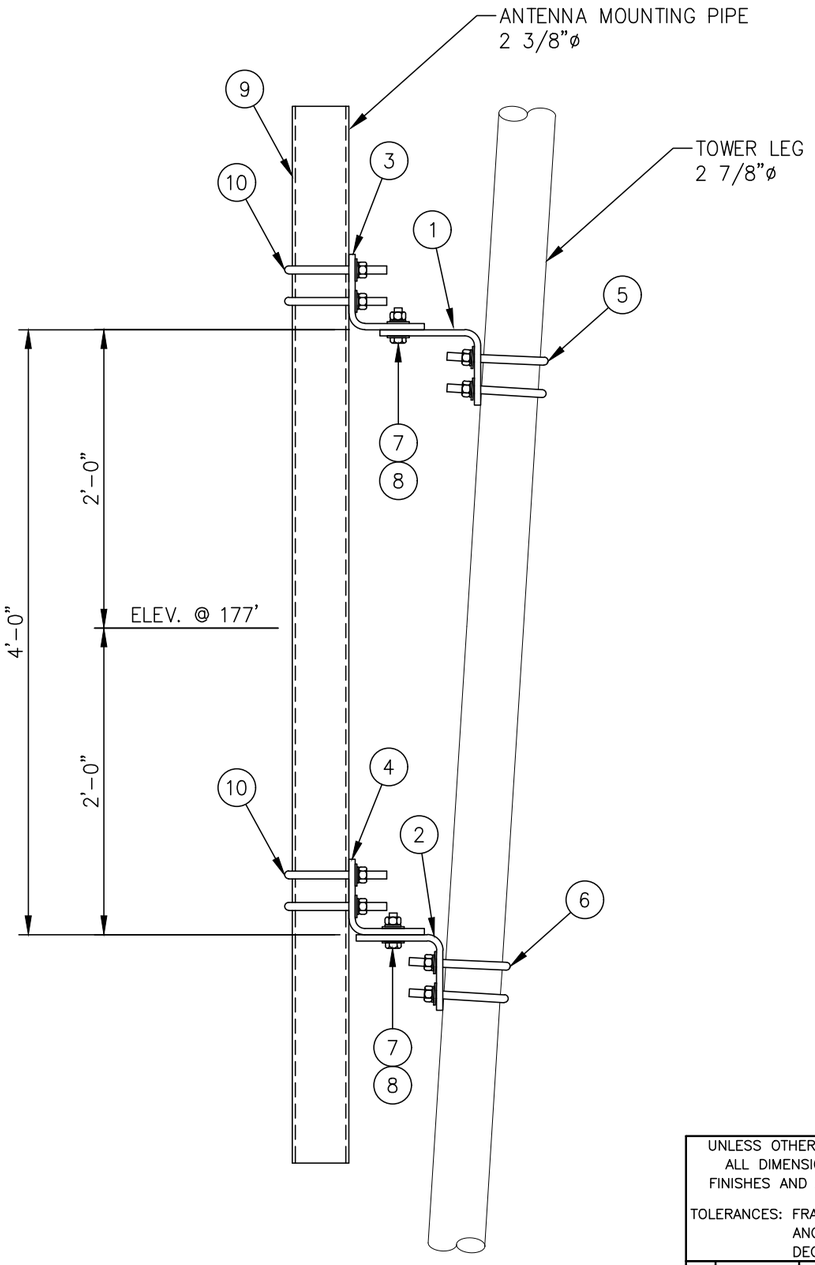
REV	DATE	DRW	CHK	DESCRIPTION

Sabre Industries™
INNOVATION DELIVERED

CONFIDENTIAL
This document and the information contained herein is the confidential trade secret property of Sabre Industries, Inc. ("Sabre") and must not be reproduced, copied or used, in whole or in part, for any purpose without the prior written consent of Sabre.
© 2025 Sabre Industries, Inc. All rights reserved.

SWIVEL KNUCKLE TIEBACKS: 179' ELEVATION
SITE: NORTH FORK, OR
CUSTOMER: MARION COUNTY OREGON

JOB NO. 563424		SIZE	DRAWING NO.	REV
DATE	08/07/25	B	563424-ST1	0
DRAWN BY	KMP			
CHECKED BY	ZAK		SCALE NONE	PAGE 1 OF 1



ELEVATION VIEW

LIST OF MATERIALS FOR TAPERED LEG FLUSH MOUNT KIT C10174018				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
1.	1	CS00216	TOP LEG MOUNT FOR 2 7/8 ø LEG	15
2.	1	CS00215	BOTTOM LEG MOUNT FOR 2 7/8 ø LEG	12
3.	1	CS00214	TOP PIPE MOUNT FOR 2 3/8 ø PIPE	15
4.	1	CS00215	BOTTOM PIPE MOUNT FOR 2 3/8 ø PIPE	12
5.	2	C40034025	U-BOLT ASSEMBLY 5/8 ø X 3 9/16 C-C (TOP LEG MOUNT)	4
6.	2	C40034025	U-BOLT ASSEMBLY 5/8 ø X 3 9/16 C-C (BOTTOM LEG MOUNT)	4
7.	4	C40026024	BOLT ASSEMBLY 5/8 ø X 2 1/4 A325	2
8.	8	C40031003	FLATWASHER, 5/8 ø (F436)	1
			KIT WEIGHT LBS	65

LIST OF ADDITIONAL MATERIALS				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
9.	1	C10981207	ANTENNA MTG. PIPE 2 3/8 ø X 7'-0	23
10.	4	C40034023	U-BOLT ASSEMBLY 5/8 ø X 3 1/16 C-C (PIPE MOUNTS)	7
			ADDITIONAL WEIGHT LBS	30

TOTAL WEIGHT LBS	95

UNLESS OTHERWISE SPECIFIED
ALL DIMENSIONS INCLUDE FINISHES AND ARE IN INCHES
TOLERANCES: FRACTIONS ± 1/16"
ANGLES ± 1/2 DEG.
DECIMALS ± .010"

MATERIAL:

TOLERANCES DO NOT APPLY TO RAW MATERIAL

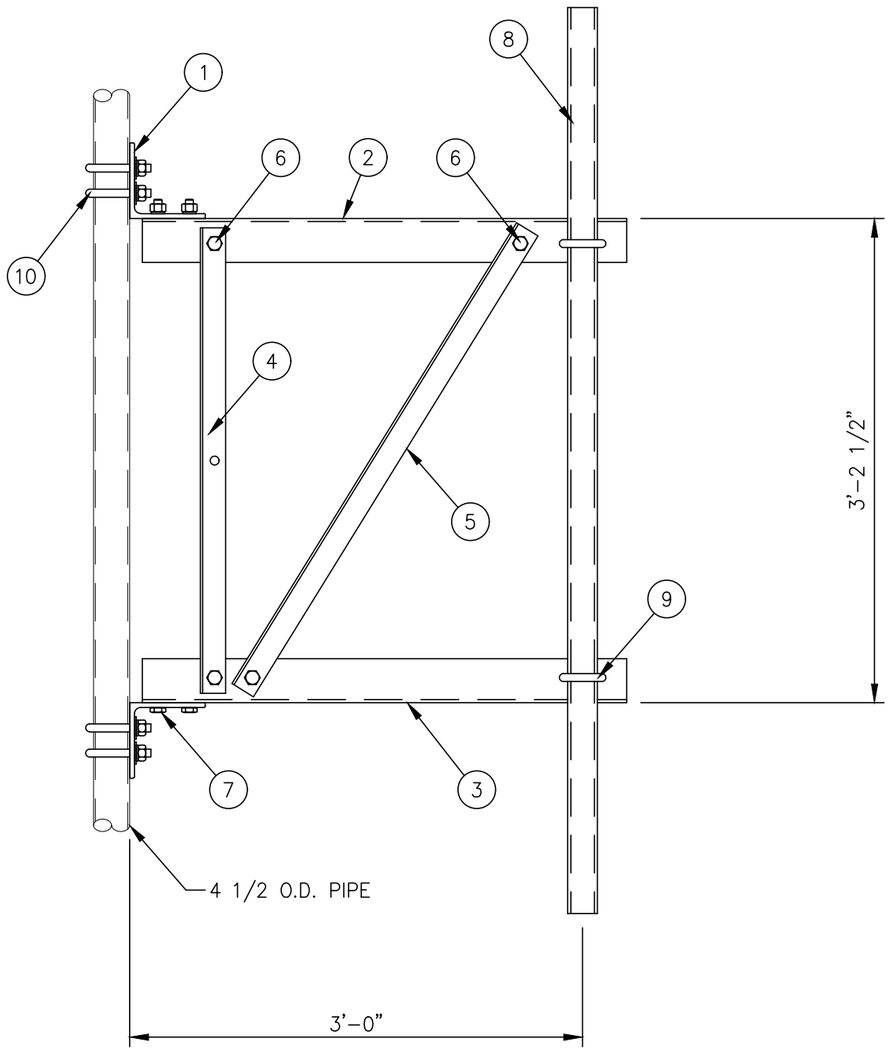
REV	DATE	DRW	CHK	DESCRIPTION

Sabre Industries™
INNOVATION DELIVERED

CONFIDENTIAL
This document and the information contained herein is the confidential trade secret property of Sabre Industries, Inc. ("Sabre") and must not be reproduced, copied or used, in whole or in part, for any purpose without the prior written consent of Sabre.
© 2025 Sabre Industries, Inc. All rights reserved.

FLUSH MOUNT: 177' ELEVATION
SITE: NORTH FORK, OR
CUSTOMER: MARION COUNTY OREGON

JOB NO. 563424		SIZE	DRAWING NO.	REV
DATE	8/7/25	B	563424-FM1	0
DRAWN BY	KMP			
CHECKED BY	ZAK		SCALE None	PAGE 1 OF 1



C10151103 3 FT. SIDEARM ASSEMBLY			
1	CK00060	SIDEARM ANGLE KIT	78
1	– – –	MISC HARDWARE (FRAMING)	4
1	C10900105	PIPE ANTENNA MOUNTING KIT 2 3/8" ø X 5'-0	19
4	C40034032	U-BOLT ASSEMBLY 5/8" ø X 5 3/16 C-C	9
		TOTAL WEIGHT LBS	110

CK00060 KIT LIST OF MATERIAL				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
1	2	CS00067	ANGLE, BOOM SUPPORT	23
2	1	CS01223	ANGLE, TOP CHORD	19
3	1	CS01224	ANGLE, BOTTOM CHORD	19
4	1	CS00065	ANGLE, VERTICAL	8
5	1	CS01228	ANGLE, DIAGONAL	9
			TOTAL WEIGHT LBS	78

MISC HARDWARE (FRAMING)				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
6	4	C40026022	BOLT ASSEMBLY, 5/8 ø X 1 3/4 A325	2
7	4	C40026023	BOLT ASSEMBLY, 5/8 ø X 2 A325	2
			TOTAL WEIGHT LBS	4

C10900105 ANTENNA PIPE MOUNTING KIT				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
8	1	C10981223	ANTENNA MTG. PIPE 2 3/8" ø X 5'-0	16
9	2	C40034023	U-BOLT ASSEMBLY 5/8" ø X 3 1/16 C-C	3
			TOTAL WEIGHT LBS	19

MISC HARDWARE				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
10	4	C40034032	U-BOLT ASSEMBLY 5/8" ø X 5 3/16 C-C	9
			TOTAL WEIGHT LBS	9

NOTES:

1. IF THE MOUNT IS NOT ON THE STRAIGHT PORTION OF THE TOWER SEE SITE SPECIFIC PIPE MOUNT.
2. QUANTITIES SHOWN IN LIST OF MATERIALS ARE FOR ONE (1) SIDEARM ASSEMBLY ONLY.

UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS INCLUDE FINISHES AND ARE IN INCHES

TOLERANCES: FRACTIONS ± 1/16" ANGLES ± 1/2 DEG. DECIMALS ± .010"

MATERIAL:

TOLERANCES DO NOT APPLY TO RAW MATERIAL

REV	DATE	DRW	CHK	DESCRIPTION

Sabre Industries™ INNOVATION DELIVERED

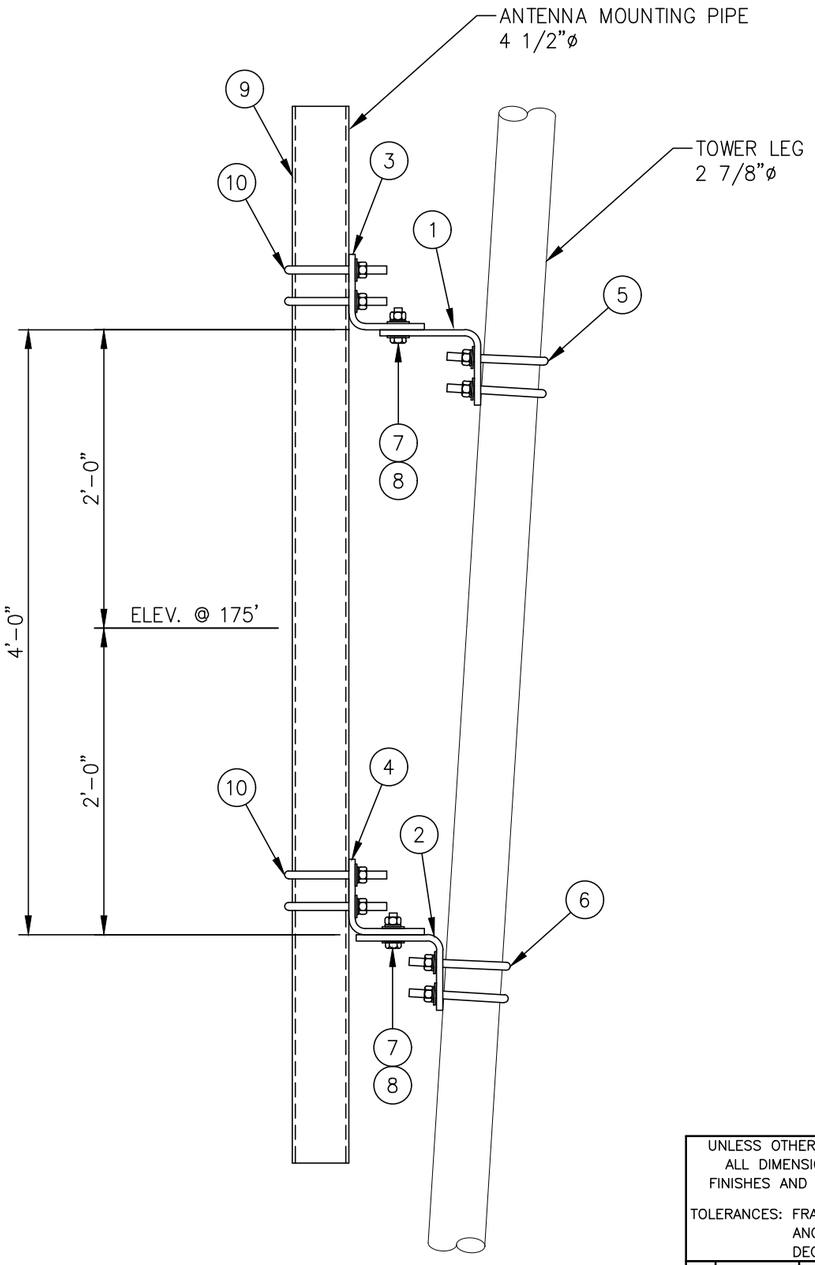
CONFIDENTIAL
This document and the information contained herein is the confidential trade secret property of Sabre Industries, Inc. ("Sabre") and must not be reproduced, copied or used, in whole or in part, for any purpose without the prior written consent of Sabre.
© 2025 Sabre Industries, Inc. All rights reserved.

3 FT. SIDEARMS: 175' ELEVATION

SITE: NORTH FORK, OR

CUSTOMER: MARION COUNTY OREGON

JOB NO. 563424		SIZE	DRAWING NO.	REV
DATE	08/07/25	B	563424-SA2	0
DRAWN BY	KMP			
CHECKED BY	ZAK		SCALE NONE	PAGE 1 OF 1



ELEVATION VIEW

LIST OF MATERIALS FOR TAPERED LEG PIPE MOUNT KIT C10174018				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
1.	1	CS00216	TOP LEG MOUNT FOR 2 7/8 ø LEG	15
2.	1	CS00215	BOTTOM LEG MOUNT FOR 2 7/8 ø LEG	12
3.	1	CS00214	TOP PIPE MOUNT FOR 4 1/2 ø PIPE	15
4.	1	CS00215	BOTTOM PIPE MOUNT FOR 4 1/2 ø PIPE	12
5.	2	C40034025	U-BOLT ASSEMBLY 5/8 ø X 3 9/16 C-C (TOP LEG MOUNT)	4
6.	2	C40034025	U-BOLT ASSEMBLY 5/8 ø X 3 9/16 C-C (BOTTOM LEG MOUNT)	4
7.	4	C40026024	BOLT ASSEMBLY 5/8 ø X 2 1/4 A325	2
8.	8	C40031003	FLATWASHER, 5/8 ø (F436)	1
			KIT WEIGHT LBS	65

LIST OF ADDITIONAL MATERIALS				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
9.	1	C10981407	ANTENNA MTG. PIPE 4 1/2 ø X 7'-0	58
10.	4	C40034032	U-BOLT ASSEMBLY 5/8 ø X 5 3/16 C-C (PIPE MOUNTS)	9
			ADDITIONAL WEIGHT LBS	67

TOTAL WEIGHT LBS	132

UNLESS OTHERWISE SPECIFIED
ALL DIMENSIONS INCLUDE FINISHES AND ARE IN INCHES
TOLERANCES: FRACTIONS ± 1/16"
ANGLES ± 1/2 DEG.
DECIMALS ± .010"

MATERIAL:

TOLERANCES DO NOT APPLY TO RAW MATERIAL

REV	DATE	DRW	CHK	DESCRIPTION

Sabre Industries™
INNOVATION DELIVERED

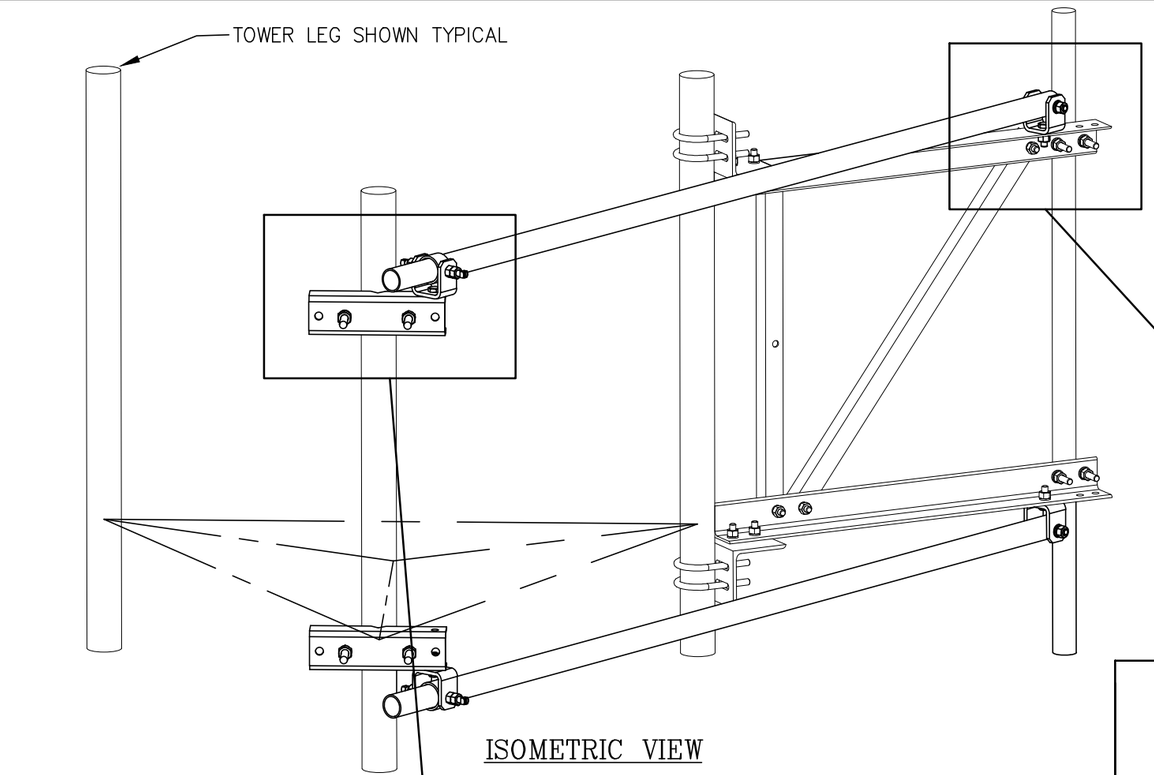
CONFIDENTIAL

This document and the information contained herein is the confidential trade secret property of Sabre Industries, Inc. ("Sabre") and must not be reproduced, copied or used, in whole or in part, for any purpose without the prior written consent of Sabre.
© 2025 Sabre Industries, Inc. All rights reserved.

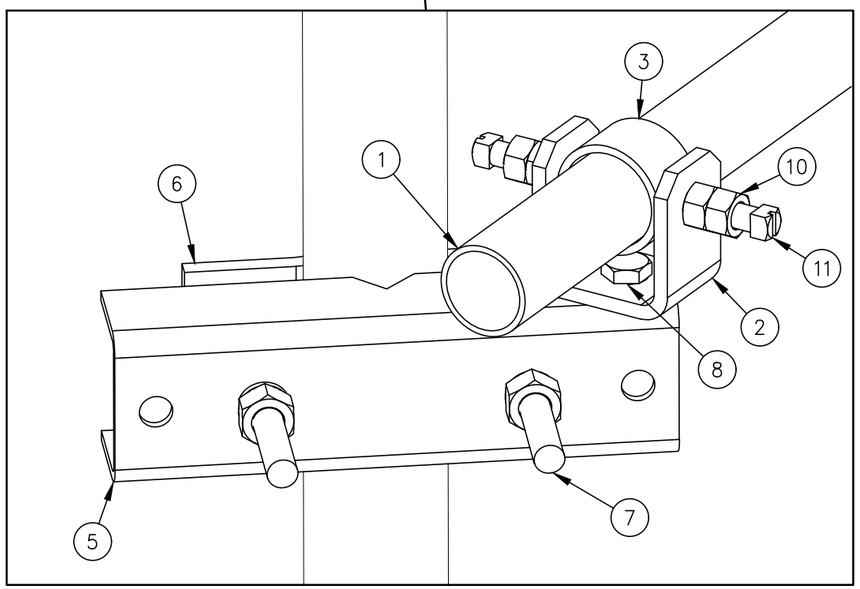
PIPE MOUNTS FOR SIDEARMS: 175' ELEVATION
SITE: NORTH FORK, OR
CUSTOMER: MARION COUNTY OREGON

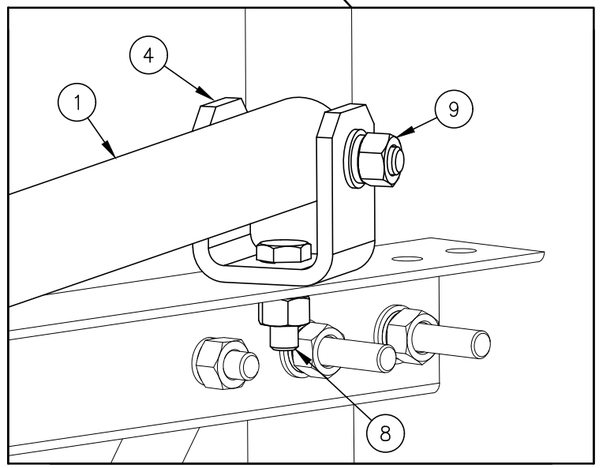
JOB NO. 563424		SIZE	DRAWING NO.		REV
DATE	8/7/25	B	563424-PM2		0
DRAWN BY	KMP			SCALE	PAGE
CHECKED BY	ZAK			None	1 OF 1

EXHIBIT K



ISOMETRIC VIEW





C10179002 SWIVEL KNUCKLE TIEBACK

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
1	1	CS02089	TIEBACK 2 3/8 X .134 X 13'-3"	43
2	1	CW00013	SWIVEL PLATE WELDMENT	3
3	1	CS00097	PIPE, SLEEVE 2 7/8 O.D. X W/0.203 X 0'-1 3/4	1
4	1	CS00098	BENT SWIVEL PLATE	3
5	1	CS01360	PLATE, MOUNTING BRACKET (FORMED CHANNEL)	9
6	1	CS01361	PLATE, 2 HOLE ADAPTER CLAMP	3
7	2	C40140001	BOLT ASSEMBLY, 3/4 X 10 A307 W/NUT, LKW, FLW	4
8	2	C40026023	BOLT ASSEMBLY, 5/8 ø X 2 A325	1
9	1	C40026033	BOLT ASSEMBLY, 5/8 ø X 4 1/2 A325	1
10	2	C40042007	HEX NUT, 5/8 A194 GRADE 2H	1
11	2	C40998007	SQ. HEAD SET SCREW, 5/8 X 2 1/2	1
			TOTAL WEIGHT LBS	70

QUANTITIES SHOWN ABOVE ARE FOR (1) SWIVEL KNUCKLE TIEBACK KIT ONLY.
(2) KITS ARE REQUIRED FOR THIS SIDEARM ASSEMBLY

UNLESS OTHERWISE SPECIFIED
ALL DIMENSIONS INCLUDE
FINISHES AND ARE IN INCHES

TOLERANCES: FRACTIONS ± 1/16"
ANGLES ± 1/2 DEG.
DECIMALS ± .010"

MATERIAL:

TOLERANCES DO NOT APPLY
TO RAW MATERIAL

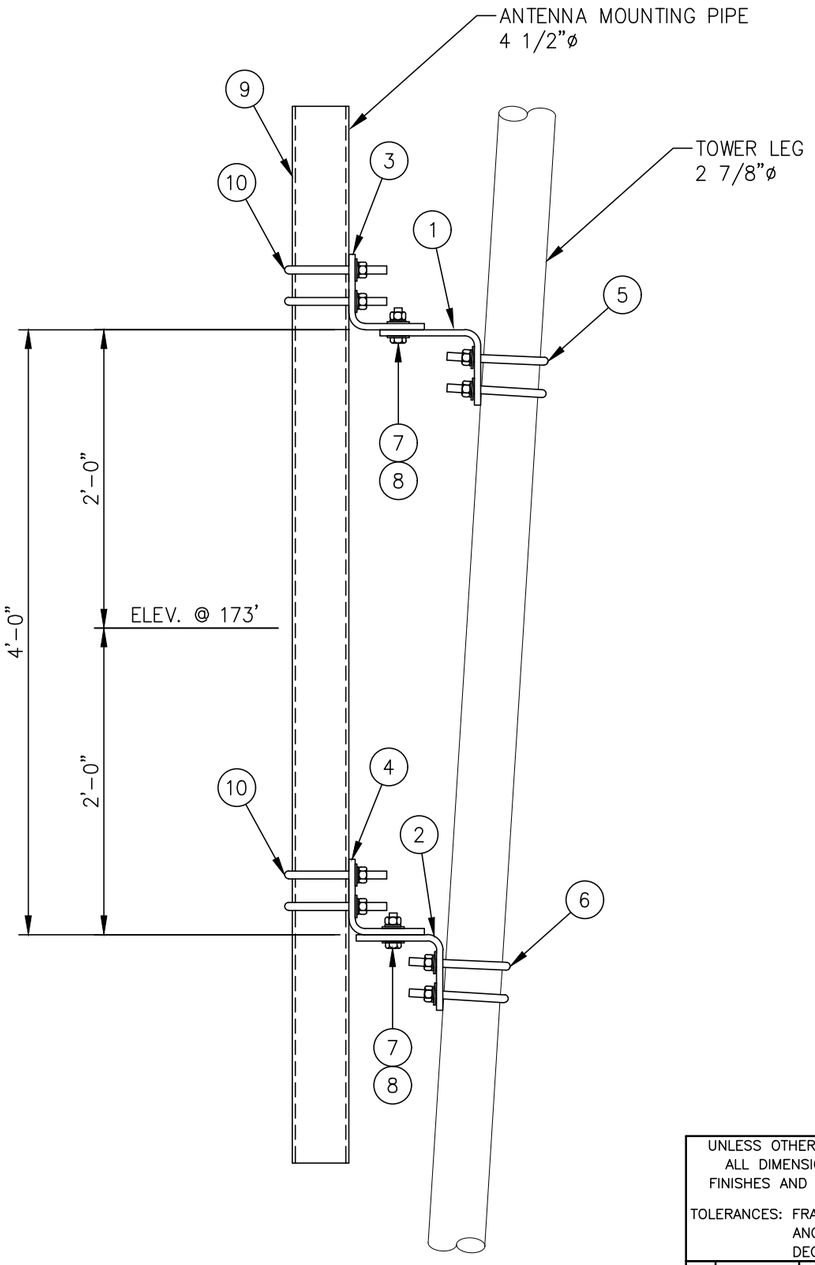
REV	DATE	DRW	CHK	DESCRIPTION

Sabre Industries™
INNOVATION DELIVERED

CONFIDENTIAL
This document and the information contained herein is the confidential trade secret property of Sabre Industries, Inc. ("Sabre") and must not be reproduced, copied or used, in whole or in part, for any purpose without the prior written consent of Sabre.
© 2025 Sabre Industries, Inc. All rights reserved.

SWIVEL KNUCKLE TIEBACKS: 175' ELEVATION
SITE: NORTH FORK, OR
CUSTOMER: MARION COUNTY OREGON

JOB NO. 563424		SIZE	DRAWING NO.	REV
DATE	08/07/25	B	563424-ST2	0
DRAWN BY	KMP			
CHECKED BY	ZAK		SCALE NONE	PAGE 1 OF 1



ELEVATION VIEW

LIST OF MATERIALS FOR TAPERED LEG PIPE MOUNT KIT C10174018				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
1.	1	CS00216	TOP LEG MOUNT FOR 2 7/8 ø LEG	15
2.	1	CS00215	BOTTOM LEG MOUNT FOR 2 7/8 ø LEG	12
3.	1	CS00214	TOP PIPE MOUNT FOR 4 1/2 ø PIPE	15
4.	1	CS00215	BOTTOM PIPE MOUNT FOR 4 1/2 ø PIPE	12
5.	2	C40034025	U-BOLT ASSEMBLY 5/8 ø X 3 9/16 C-C (TOP LEG MOUNT)	4
6.	2	C40034025	U-BOLT ASSEMBLY 5/8 ø X 3 9/16 C-C (BOTTOM LEG MOUNT)	4
7.	4	C40026024	BOLT ASSEMBLY 5/8 ø X 2 1/4 A325	2
8.	8	C40031003	FLATWASHER, 5/8 ø (F436)	1
			KIT WEIGHT LBS	65

LIST OF ADDITIONAL MATERIALS				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
9.	1	C10981407	ANTENNA MTG. PIPE 4 1/2 ø X 7'-0	58
10.	4	C40034032	U-BOLT ASSEMBLY 5/8 ø X 5 3/16 C-C (PIPE MOUNTS)	9
			ADDITIONAL WEIGHT LBS	67

TOTAL WEIGHT LBS	132

UNLESS OTHERWISE SPECIFIED
ALL DIMENSIONS INCLUDE FINISHES AND ARE IN INCHES
TOLERANCES: FRACTIONS ± 1/16"
ANGLES ± 1/2 DEG.
DECIMALS ± .010"

MATERIAL:

TOLERANCES DO NOT APPLY TO RAW MATERIAL

REV	DATE	DRW	CHK	DESCRIPTION

Sabre Industries™
INNOVATION DELIVERED

CONFIDENTIAL

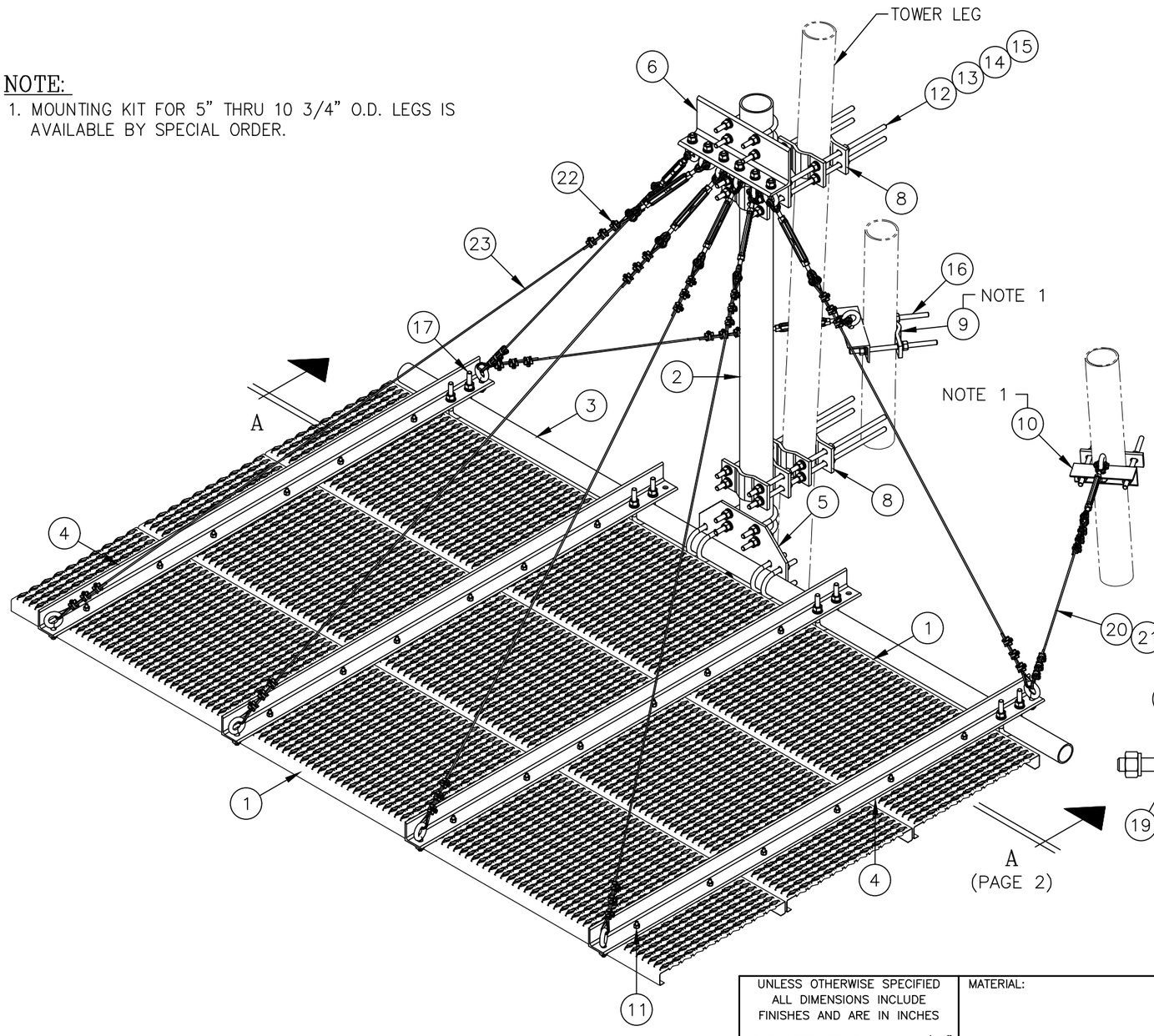
This document and the information contained herein is the confidential trade secret property of Sabre Industries, Inc. ("Sabre") and must not be reproduced, copied or used, in whole or in part, for any purpose without the prior written consent of Sabre.
© 2025 Sabre Industries, Inc. All rights reserved.

PIPE MOUNTS: 173' ELEVATION
SITE: NORTH FORK, OR
CUSTOMER: MARION COUNTY OREGON

JOB NO. 563424		SIZE	DRAWING NO.	REV
DATE	8/7/25	B	563424-PM3	0
DRAWN BY	KMP			
CHECKED BY	ZAK		SCALE None	PAGE 1 OF 1

NOTE:

1. MOUNTING KIT FOR 5" THRU 10 3/4" O.D. LEGS IS AVAILABLE BY SPECIAL ORDER.

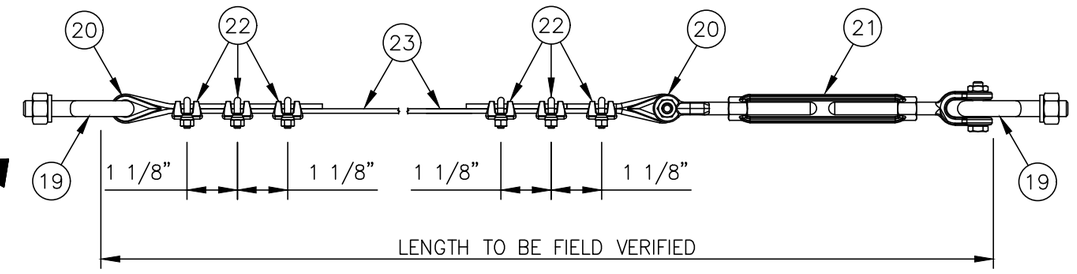


ISOMETRIC VIEW

(SEE PAGE 2 FOR MORE DETAILS)

C30085002 ICE SHIELD ASSEMBLY

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT
1.	3	C20137002	SAFETY GRATING, 2'-0 WIDE BY 10'-0 LONG	222
2.	1	C10981407	PIPE, 4 1/2" O.D. X W/0.180 X 7'-0	58
3.	1	C10901310	PIPE, 2 7/8" O.D. X W/0.203 X 10'-6	63
4.	4	CS00155	ANGLE, ICE SHIELD SUPPORT	143
5.	1	CS00156	PLATE, ICE SHIELD MOUNT	22
6.	1	CS01926	ANGLE, ICE SHIELD HANGER	19
7.	12	CS00158	PLATE, ICE SHIELD BACKUP	28
8.	8	CS00017	4 HOLE ADAPTER CLAMP 1 1/2" TO 5" O.D.	39
9.	2	CS00144	2 HOLE ADAPTER CLAMP 1 1/2" TO 5" O.D.	5
10.	2	CS01925	ANGLE, ICE SHIELD TIE BACK	7
11.	24	C40024006	BOLT ASSEMBLY, 3/8 ø X 2 GR 5	2
12.	16	C40042007	NUT, 5/8 ø A194 GRADE 2H	1
13.	16	C40030012	LOCKWASHER, 5/8 ø	1
14.	16	C40031003	FLATWASHER, 5/8 ø HARDENED ASTM F436	1
15.	8	C40099004	THREADED ROD ASS'Y, 5/8 ø X 2'-2 ASTM A193	22
16.	4	C40099002	THREADED ROD ASS'Y, 5/8 ø X 1'-0 ASTM A193	6
17.	8	C40034025	U-BOLT ASSEMBLY, 5/8 ø X 3 9/16" C-C	14
18.	6	C40034032	U-BOLT ASSEMBLY, 5/8 ø X 5 3/16" C-C	13
19.	14	C40079002	EYEBOLT ASSEMBLY, 5/8 ø X 1 3/4	8
20.	16	C40055011	THIMBLE, 3/16" STD	1
21.	8	C40051018	TURNBUCKLE, 1/2" X 6" J & J HDG	12
22.	48	C40056001	WIRE ROPE CLIP, 3/16"	5
23.	1	C30998120	AIRCRAFT CABLE, 3/16" X 120'-0	9
			TOTAL WEIGHT	701



TYPICAL CABLE ASSEMBLY

UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS INCLUDE FINISHES AND ARE IN INCHES

TOLERANCES: FRACTIONS ± 1/16" ANGLES ± 1/2 DEG. DECIMALS ± .010"

MATERIAL:

TOLERANCES DO NOT APPLY TO RAW MATERIAL

REV	DATE	DRW	CHK	DESCRIPTION
4	1/29/09	WRF	MC	REVISED PART NUMBERS OF ITEMS 6, 10, & EYEBOLTS WERE 3/8" & TURNB. WERE 1/4"
3	1/13/09	MLC	MC	REVISE PIPE (ITEM 2)
2	06/21/06	WRF	WMN	ADDED ISOMETRIC VIEW
1	4/4/03	KLE	DLW	REVISED PART NUMBERS

Sabre Industries™ INNOVATION DELIVERED

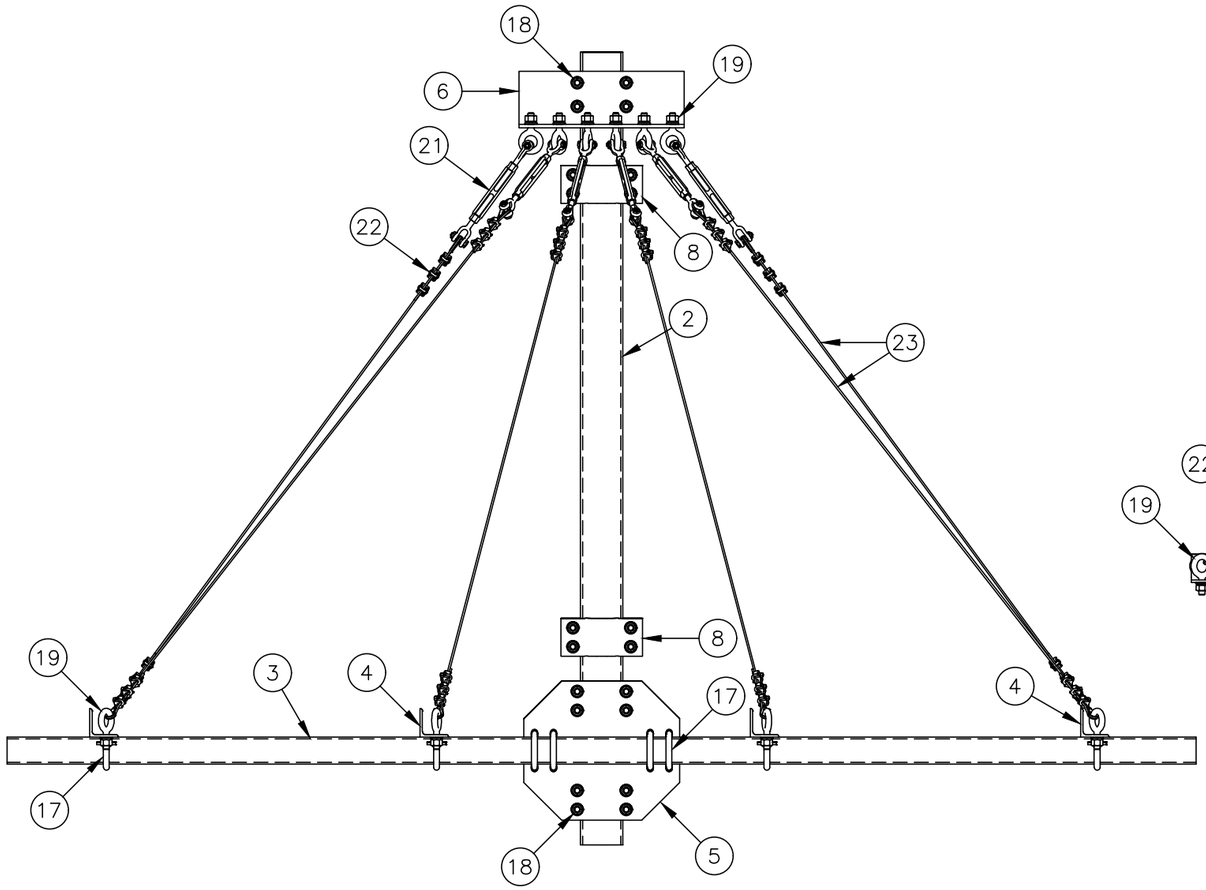
CONFIDENTIAL

This document and the information contained herein is the confidential trade secret property of Sabre Industries, Inc. ("Sabre") and must not be reproduced, copied or used, in whole or in part, for any purpose without the prior written consent of Sabre.

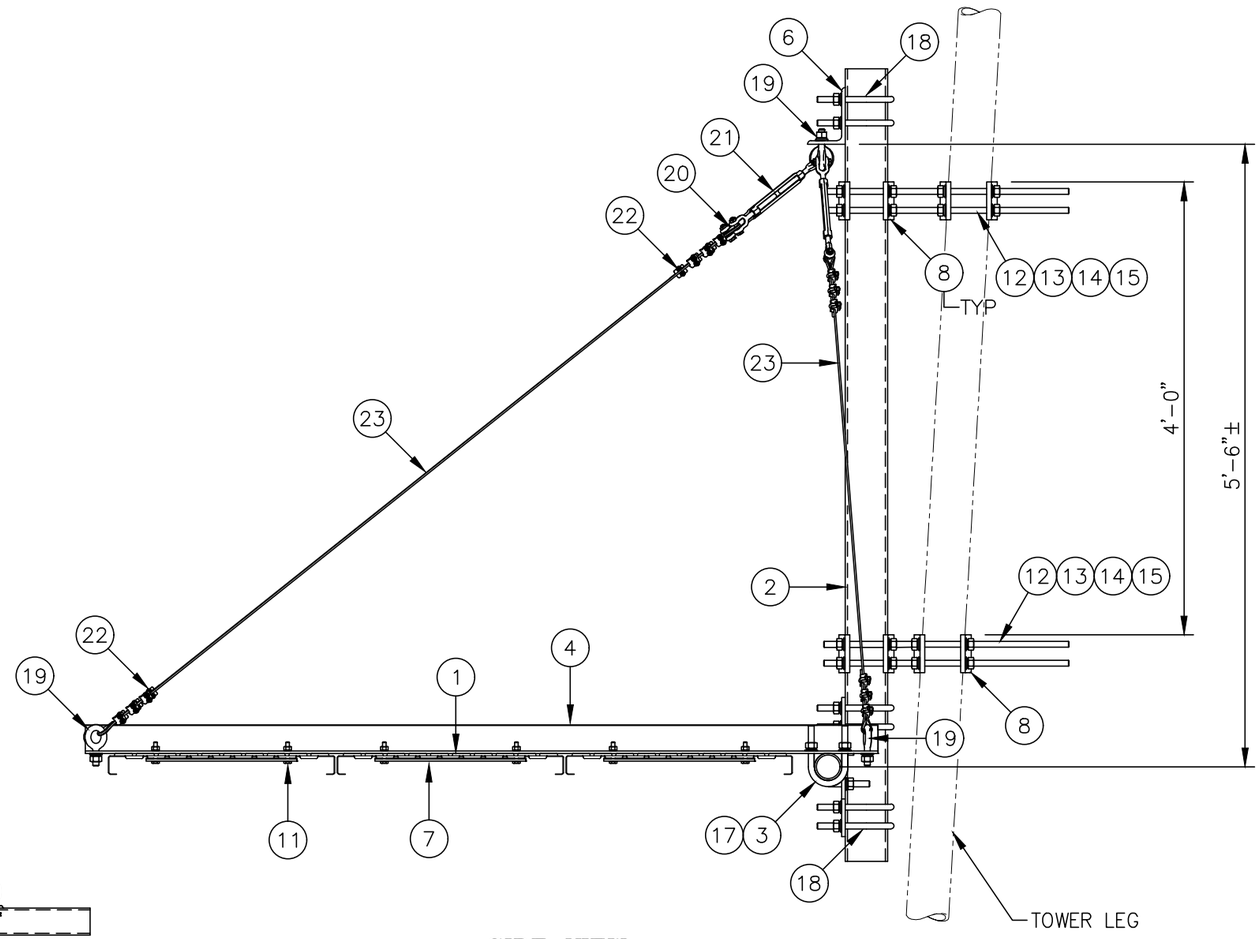
© 2022 Sabre Industries, Inc. All rights reserved.

ICE SHIELD ASSEMBLY FOR 6'-0 & 8'-0 DISH ANTENNA FITS 1 1/2 ø TO 5 ø LEGS

		SIZE	DRAWING NO.	REV
DATE	01/11/01	B	C30085002	4
DRAWN BY	BCT			
CHECKED BY	KLE		SCALE None	PAGE 1 OF 2



SECTION A–A
(GRATING REMOVED FOR CLARITY)



SIDE VIEW

REV	DATE	DRW	CHK	DESCRIPTION
4	1/29/09	WRF	MC	REVISED PART NUMBERS OF ITEMS 6, 10, & EYEBOLTS WERE 3/8" & TURNB. WERE 1/4"
3	1/13/09	MLC	MC	REVISE PIPE (ITEM 2)
2	06/21/06	WRF	WMN	ADDED ISOMETRIC VIEW
1	4/4/03	KLE	DLW	REVISED PART NUMBERS

UNLESS OTHERWISE SPECIFIED
ALL DIMENSIONS INCLUDE FINISHES AND ARE IN INCHES
TOLERANCES: FRACTIONS ± 1/16"
ANGLES ± 1/2 DEG.
DECIMALS ± .010"

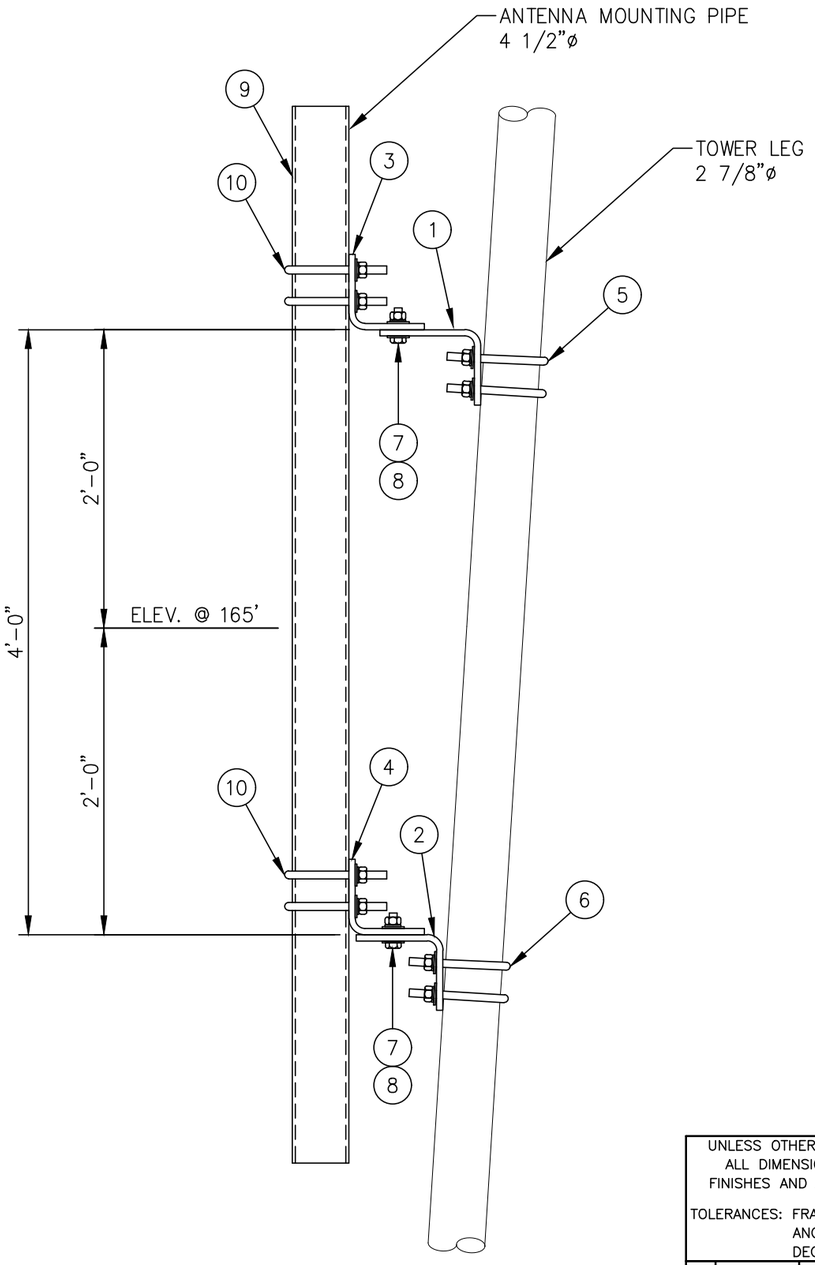
MATERIAL:
TOLERANCES DO NOT APPLY TO RAW MATERIAL

Sabre Industries™
INNOVATION DELIVERED

CONFIDENTIAL
This document and the information contained herein is the confidential trade secret property of Sabre Industries, Inc. ("Sabre") and must not be reproduced, copied or used, in whole or in part, for any purpose without the prior written consent of Sabre.
© 2022 Sabre Industries, Inc. All rights reserved.

ICE SHIELD ASSEMBLY
FOR 6'–0 & 8'–0 DISH ANTENNA
FITS 1 1/2 ø TO 5 ø LEGS

		SIZE	DRAWING NO.	REV
DATE	01/11/01	B	C30085002	4
DRAWN BY	BCT			
CHECKED BY	KLE	SCALE None	PAGE 2 OF 2	



ELEVATION VIEW

LIST OF MATERIALS FOR TAPERED LEG PIPE MOUNT KIT C10174018				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
1.	1	CS00216	TOP LEG MOUNT FOR 2 7/8 ø LEG	15
2.	1	CS00215	BOTTOM LEG MOUNT FOR 2 7/8 ø LEG	12
3.	1	CS00214	TOP PIPE MOUNT FOR 4 1/2 ø PIPE	15
4.	1	CS00215	BOTTOM PIPE MOUNT FOR 4 1/2 ø PIPE	12
5.	2	C40034025	U-BOLT ASSEMBLY 5/8 ø X 3 9/16 C-C (TOP LEG MOUNT)	4
6.	2	C40034025	U-BOLT ASSEMBLY 5/8 ø X 3 9/16 C-C (BOTTOM LEG MOUNT)	4
7.	4	C40026024	BOLT ASSEMBLY 5/8 ø X 2 1/4 A325	2
8.	8	C40031003	FLATWASHER, 5/8 ø (F436)	1
			KIT WEIGHT LBS	65

LIST OF ADDITIONAL MATERIALS				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
9.	1	C10981407	ANTENNA MTG. PIPE 4 1/2 ø X 7'-0	58
10.	4	C40034032	U-BOLT ASSEMBLY 5/8 ø X 5 3/16 C-C (PIPE MOUNTS)	9
			ADDITIONAL WEIGHT LBS	67

TOTAL WEIGHT LBS	132

UNLESS OTHERWISE SPECIFIED
ALL DIMENSIONS INCLUDE FINISHES AND ARE IN INCHES
TOLERANCES: FRACTIONS ± 1/16"
ANGLES ± 1/2 DEG.
DECIMALS ± .010"

MATERIAL:

TOLERANCES DO NOT APPLY TO RAW MATERIAL

REV	DATE	DRW	CHK	DESCRIPTION

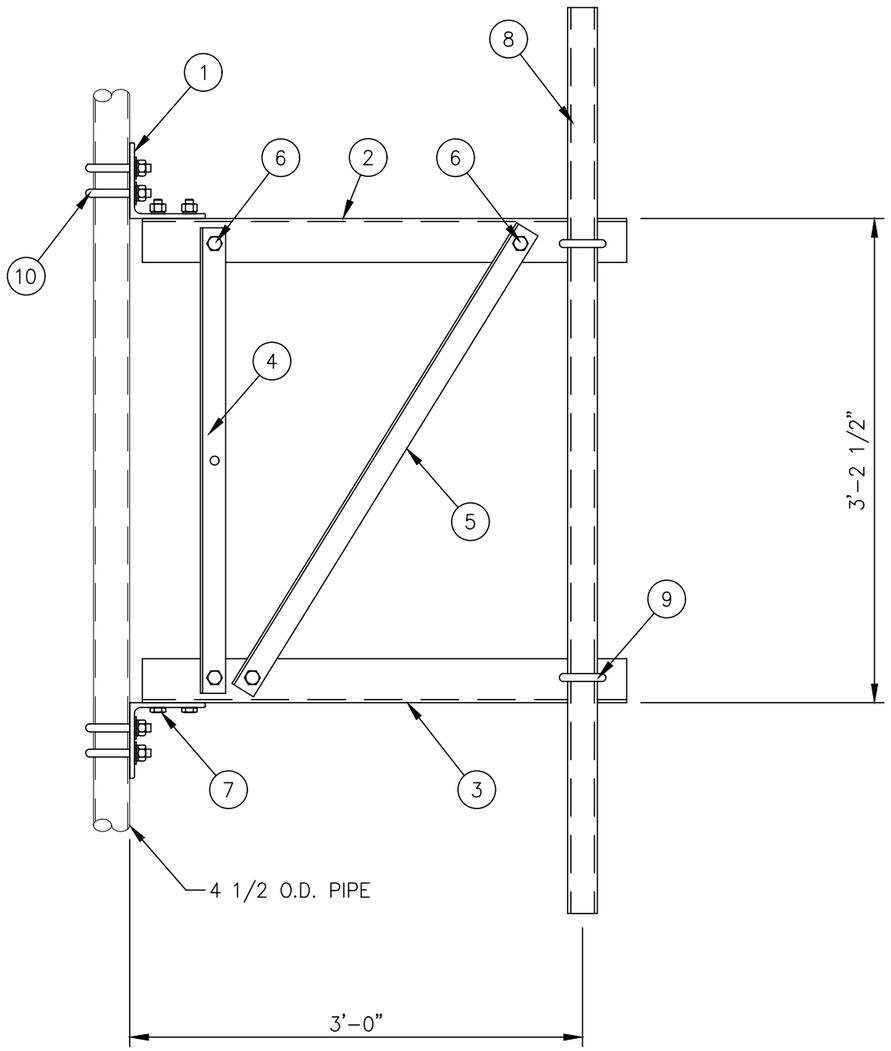
Sabre Industries™
INNOVATION DELIVERED

CONFIDENTIAL

This document and the information contained herein is the confidential trade secret property of Sabre Industries, Inc. ("Sabre") and must not be reproduced, copied or used, in whole or in part, for any purpose without the prior written consent of Sabre.
© 2025 Sabre Industries, Inc. All rights reserved.

PIPE MOUNT: 165' ELEVATION
SITE: NORTH FORK, OR
CUSTOMER: MARION COUNTY OREGON

JOB NO. 563424		SIZE	DRAWING NO.	REV
DATE	8/7/25	B	563424-PM4	0
DRAWN BY	KMP			
CHECKED BY	ZAK		SCALE None	PAGE 1 OF 1



C10151103 3 FT. SIDEARM ASSEMBLY			
1	CK00060	SIDEARM ANGLE KIT	78
1	– – –	MISC HARDWARE (FRAMING)	4
1	C10900105	PIPE ANTENNA MOUNTING KIT 2 3/8" ø X 5'-0	19
4	C40034032	U-BOLT ASSEMBLY 5/8" ø X 5 3/16 C-C	9
		TOTAL WEIGHT LBS	110

CK00060 KIT LIST OF MATERIAL				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
1	2	CS00067	ANGLE, BOOM SUPPORT	23
2	1	CS01223	ANGLE, TOP CHORD	19
3	1	CS01224	ANGLE, BOTTOM CHORD	19
4	1	CS00065	ANGLE, VERTICAL	8
5	1	CS01228	ANGLE, DIAGONAL	9
			TOTAL WEIGHT LBS	78

MISC HARDWARE (FRAMING)				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
6	4	C40026022	BOLT ASSEMBLY, 5/8 ø X 1 3/4 A325	2
7	4	C40026023	BOLT ASSEMBLY, 5/8 ø X 2 A325	2
			TOTAL WEIGHT LBS	4

C10900105 ANTENNA PIPE MOUNTING KIT				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
8	1	C10981223	ANTENNA MTG. PIPE 2 3/8" ø X 5'-0	16
9	2	C40034023	U-BOLT ASSEMBLY 5/8" ø X 3 1/16 C-C	3
			TOTAL WEIGHT LBS	19

MISC HARDWARE				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
10	4	C40034032	U-BOLT ASSEMBLY 5/8" ø X 5 3/16 C-C	9
			TOTAL WEIGHT LBS	9

NOTES:

1. IF THE MOUNT IS NOT ON THE STRAIGHT PORTION OF THE TOWER SEE SITE SPECIFIC PIPE MOUNT.
2. QUANTITIES SHOWN IN LIST OF MATERIALS ARE FOR ONE (1) SIDEARM ASSEMBLY ONLY.

UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS INCLUDE FINISHES AND ARE IN INCHES

TOLERANCES: FRACTIONS ± 1/16" ANGLES ± 1/2 DEG. DECIMALS ± .010"

MATERIAL:

TOLERANCES DO NOT APPLY TO RAW MATERIAL

REV	DATE	DRW	CHK	DESCRIPTION

Sabre Industries™ INNOVATION DELIVERED

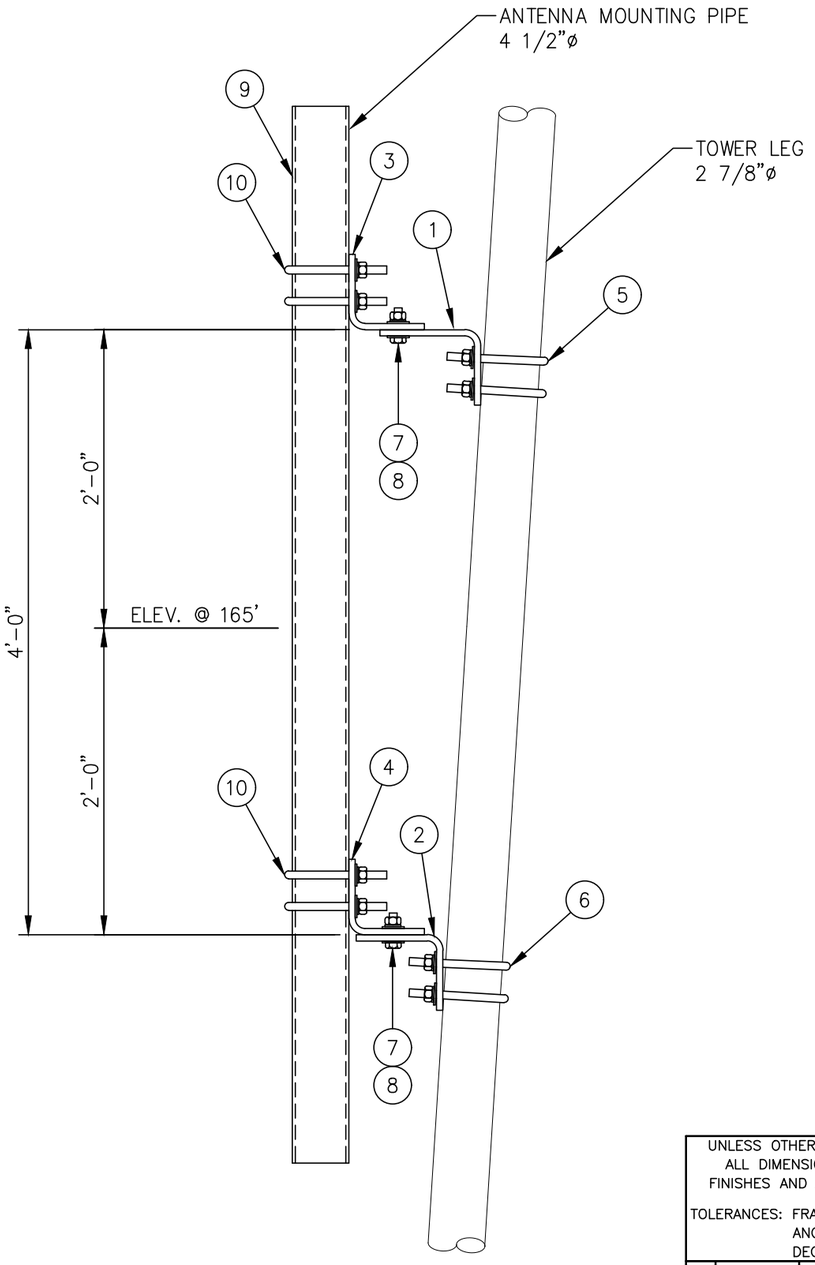
CONFIDENTIAL
This document and the information contained herein is the confidential trade secret property of Sabre Industries, Inc. ("Sabre") and must not be reproduced, copied or used, in whole or in part, for any purpose without the prior written consent of Sabre.
© 2025 Sabre Industries, Inc. All rights reserved.

3 FT. SIDEARM: 165' ELEVATION

SITE: NORTH FORK, OR

CUSTOMER: MARION COUNTY OREGON

JOB NO. 563424		SIZE	DRAWING NO.	REV
DATE	08/07/25	B	563424-SA3	0
DRAWN BY	KMP			
CHECKED BY	ZAK		SCALE NONE	PAGE 1 OF 1



ELEVATION VIEW

LIST OF MATERIALS FOR TAPERED LEG PIPE MOUNT KIT C10174018				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
1.	1	CS00216	TOP LEG MOUNT FOR 2 7/8 ø LEG	15
2.	1	CS00215	BOTTOM LEG MOUNT FOR 2 7/8 ø LEG	12
3.	1	CS00214	TOP PIPE MOUNT FOR 4 1/2 ø PIPE	15
4.	1	CS00215	BOTTOM PIPE MOUNT FOR 4 1/2 ø PIPE	12
5.	2	C40034025	U-BOLT ASSEMBLY 5/8 ø X 3 9/16 C-C (TOP LEG MOUNT)	4
6.	2	C40034025	U-BOLT ASSEMBLY 5/8 ø X 3 9/16 C-C (BOTTOM LEG MOUNT)	4
7.	4	C40026024	BOLT ASSEMBLY 5/8 ø X 2 1/4 A325	2
8.	8	C40031003	FLATWASHER, 5/8 ø (F436)	1
			KIT WEIGHT LBS	65

LIST OF ADDITIONAL MATERIALS				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
9.	1	C10981407	ANTENNA MTG. PIPE 4 1/2 ø X 7'-0	58
10.	4	C40034032	U-BOLT ASSEMBLY 5/8 ø X 5 3/16 C-C (PIPE MOUNTS)	9
			ADDITIONAL WEIGHT LBS	67

TOTAL WEIGHT LBS	132

UNLESS OTHERWISE SPECIFIED
ALL DIMENSIONS INCLUDE FINISHES AND ARE IN INCHES
TOLERANCES: FRACTIONS ± 1/16"
ANGLES ± 1/2 DEG.
DECIMALS ± .010"

MATERIAL:

TOLERANCES DO NOT APPLY TO RAW MATERIAL

REV	DATE	DRW	CHK	DESCRIPTION

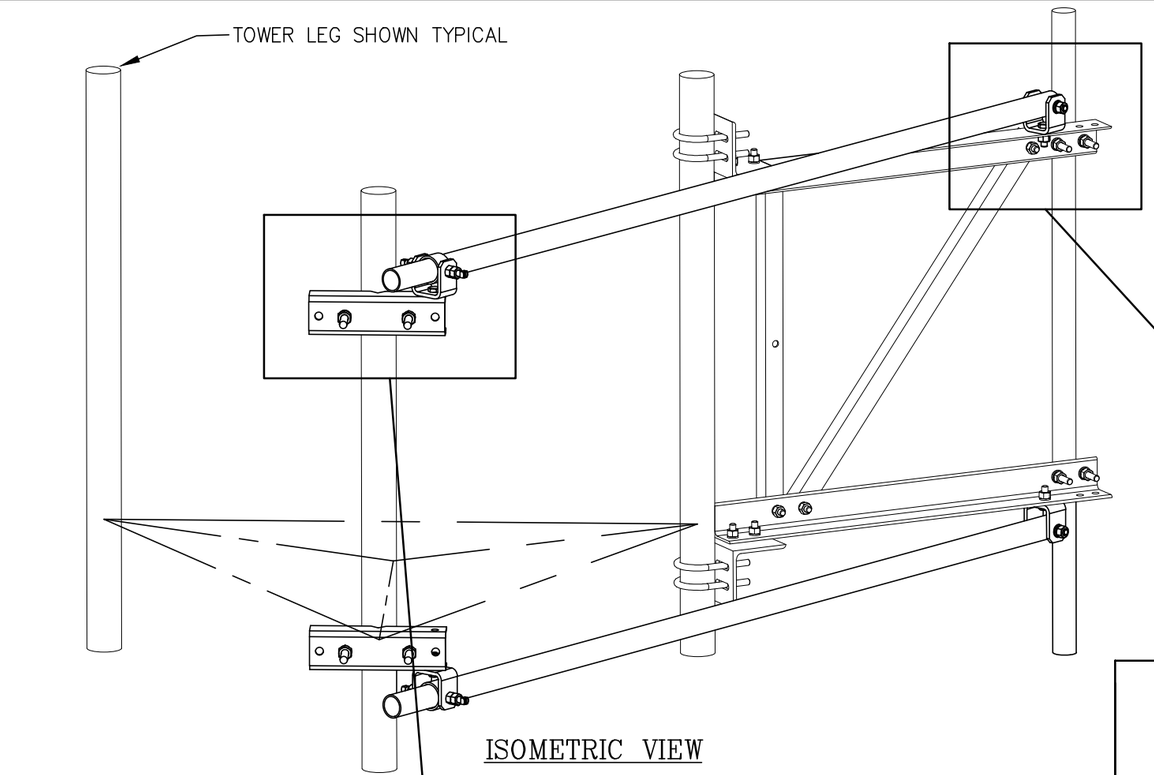
Sabre Industries™
INNOVATION DELIVERED

CONFIDENTIAL
This document and the information contained herein is the confidential trade secret property of Sabre Industries, Inc. ("Sabre") and must not be reproduced, copied or used, in whole or in part, for any purpose without the prior written consent of Sabre.
© 2025 Sabre Industries, Inc. All rights reserved.

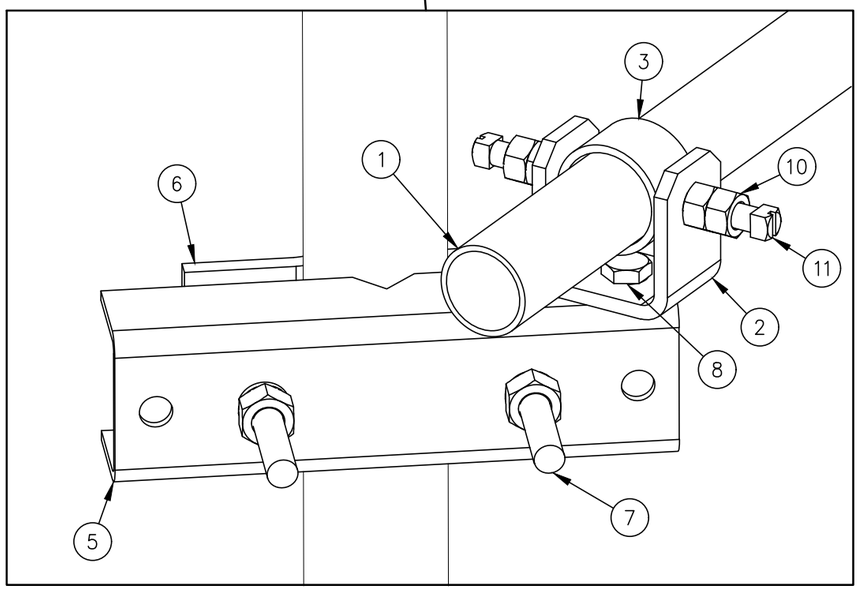
PIPE MOUNT FOR SIDEARM: 165' ELEVATION
SITE: NORTH FORK, OR
CUSTOMER: MARION COUNTY OREGON

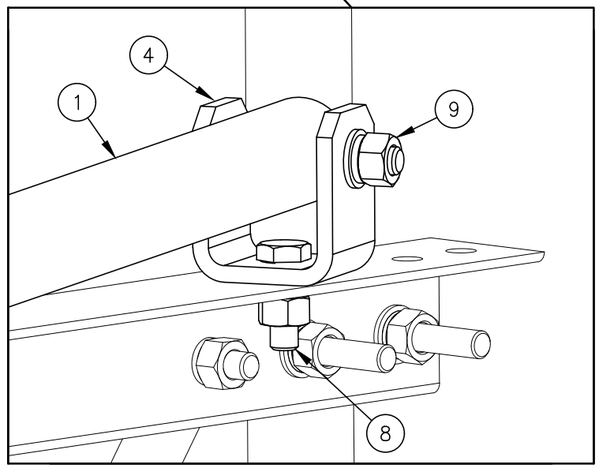
JOB NO. 563424		SIZE	DRAWING NO.	REV
DATE	8/7/25	B	563424-PM5	0
DRAWN BY	KMP			
CHECKED BY	ZAK		SCALE None	PAGE 1 OF 1

EXHIBIT K



ISOMETRIC VIEW





C10179002 SWIVEL KNUCKLE TIEBACK

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
1	1	CS02089	TIEBACK 2 3/8 X .134 X 13'–3"	43
2	1	CW00013	SWIVEL PLATE WELDMENT	3
3	1	CS00097	PIPE, SLEEVE 2 7/8 O.D. X W/0.203 X 0'–1 3/4	1
4	1	CS00098	BENT SWIVEL PLATE	3
5	1	CS01360	PLATE, MOUNTING BRACKET (FORMED CHANNEL)	9
6	1	CS01361	PLATE, 2 HOLE ADAPTER CLAMP	3
7	2	C40140001	BOLT ASSEMBLY, 3/4 X 10 A307 W/NUT, LKW, FLW	4
8	2	C40026023	BOLT ASSEMBLY, 5/8 ø X 2 A325	1
9	1	C40026033	BOLT ASSEMBLY, 5/8 ø X 4 1/2 A325	1
10	2	C40042007	HEX NUT, 5/8 A194 GRADE 2H	1
11	2	C40998007	SQ. HEAD SET SCREW, 5/8 X 2 1/2	1
			TOTAL WEIGHT LBS	70

QUANTITIES SHOWN ABOVE ARE FOR (1) SWIVEL KNUCKLE TIEBACK KIT ONLY.
(2) KITS ARE REQUIRED FOR THIS SIDEARM ASSEMBLY

UNLESS OTHERWISE SPECIFIED
ALL DIMENSIONS INCLUDE
FINISHES AND ARE IN INCHES

TOLERANCES: FRACTIONS ± 1/16"
ANGLES ± 1/2 DEG.
DECIMALS ± .010"

MATERIAL:

TOLERANCES DO NOT APPLY TO RAW MATERIAL

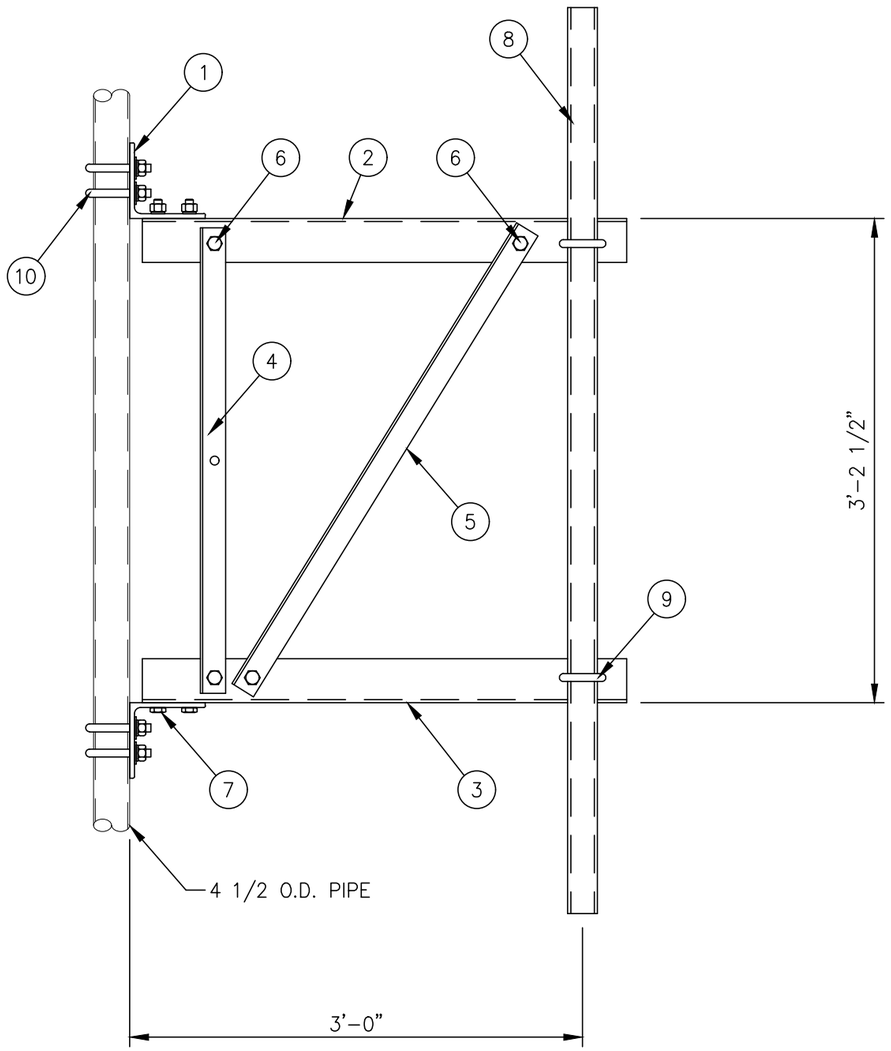
REV	DATE	DRW	CHK	DESCRIPTION

Sabre Industries™
INNOVATION DELIVERED

CONFIDENTIAL
This document and the information contained herein is the confidential trade secret property of Sabre Industries, Inc. ("Sabre") and must not be reproduced, copied or used, in whole or in part, for any purpose without the prior written consent of Sabre.
© 2025 Sabre Industries, Inc. All rights reserved.

SWIVEL KNUCKLE TIEBACKS: 165' ELEVATION
SITE: NORTH FORK, OR
CUSTOMER: MARION COUNTY OREGON

JOB NO. 563424		SIZE	DRAWING NO.	REV
DATE	08/07/25	B	563424–ST3	0
DRAWN BY	KMP			
CHECKED BY	ZAK		SCALE NONE	PAGE 1 OF 1



C10151103 3 FT. SIDEARM ASSEMBLY			
1	CK00060	SIDEARM ANGLE KIT	78
1	– – –	MISC HARDWARE (FRAMING)	4
1	C10900104	PIPE ANTENNA MOUNTING KIT 2 3/8" ø X 4'-0	16
4	C40034032	U-BOLT ASSEMBLY 5/8" ø X 5 3/16 C-C	9
		TOTAL WEIGHT LBS	107

CK00060 KIT LIST OF MATERIAL				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
1	2	CS00067	ANGLE, BOOM SUPPORT	23
2	1	CS01223	ANGLE, TOP CHORD	19
3	1	CS01224	ANGLE, BOTTOM CHORD	19
4	1	CS00065	ANGLE, VERTICAL	8
5	1	CS01228	ANGLE, DIAGONAL	9
			TOTAL WEIGHT LBS	78

MISC HARDWARE (FRAMING)				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
6	4	C40026022	BOLT ASSEMBLY, 5/8 ø X 1 3/4 A325	2
7	4	C40026023	BOLT ASSEMBLY, 5/8 ø X 2 A325	2
			TOTAL WEIGHT LBS	4

C10900104 ANTENNA PIPE MOUNTING KIT				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
8	1	C10981204	ANTENNA MTG. PIPE 2 3/8" ø X 4'-0	13
9	2	C40034023	U-BOLT ASSEMBLY 5/8" ø X 3 1/16 C-C	3
			TOTAL WEIGHT LBS	16

MISC HARDWARE				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
10	4	C40034032	U-BOLT ASSEMBLY 5/8" ø X 5 3/16 C-C	9
			TOTAL WEIGHT LBS	9

NOTES:

1. IF THE MOUNT IS NOT ON THE STRAIGHT PORTION OF THE TOWER SEE SITE SPECIFIC PIPE MOUNT.
2. QUANTITIES SHOWN IN LIST OF MATERIALS ARE FOR ONE (1) SIDEARM ASSEMBLY ONLY.

UNLESS OTHERWISE SPECIFIED
ALL DIMENSIONS INCLUDE
FINISHES AND ARE IN INCHES

TOLERANCES: FRACTIONS ± 1/16"
ANGLES ± 1/2 DEG.
DECIMALS ± .010"

MATERIAL:

TOLERANCES DO NOT APPLY TO RAW MATERIAL

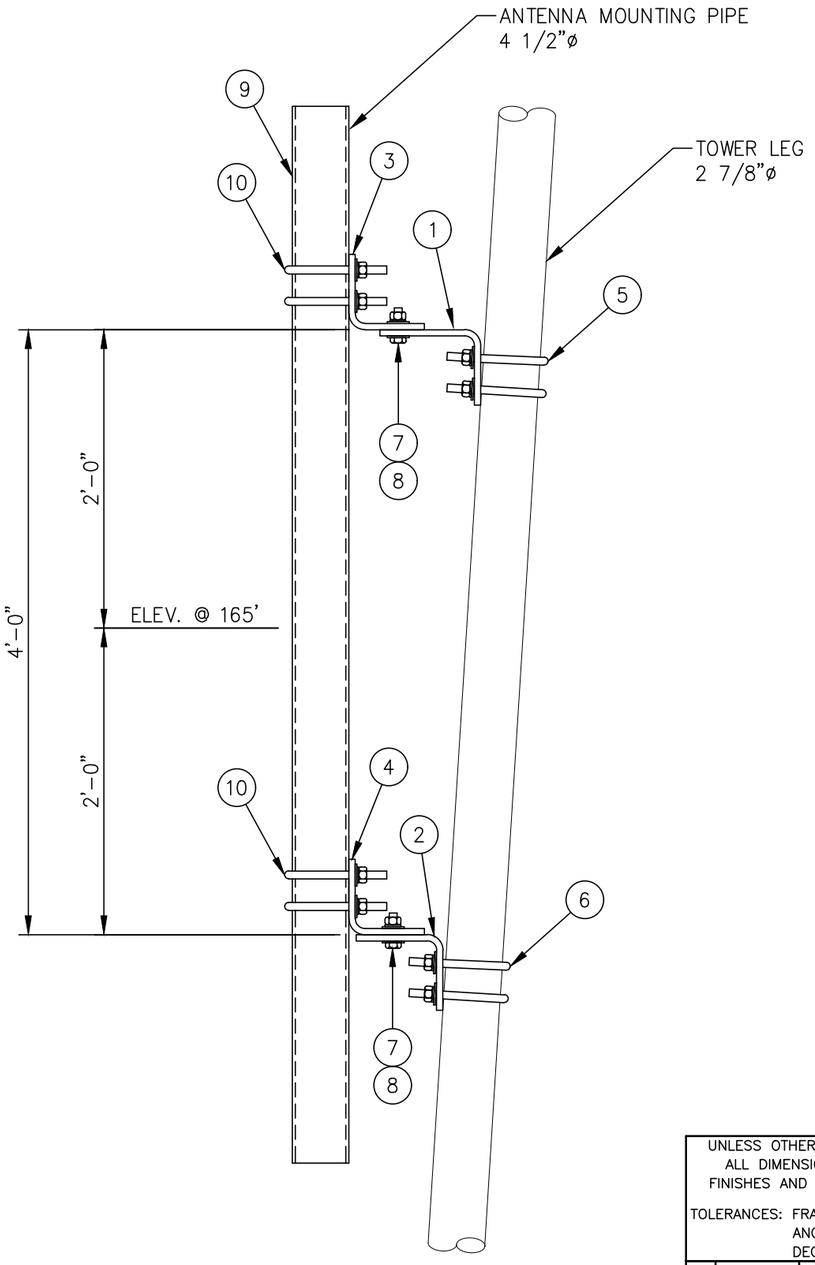
REV	DATE	DRW	CHK	DESCRIPTION

Sabre Industries™
INNOVATION DELIVERED

CONFIDENTIAL
This document and the information contained herein is the confidential trade secret property of Sabre Industries, Inc. ("Sabre") and must not be reproduced, copied or used, in whole or in part, for any purpose without the prior written consent of Sabre.
© 2025 Sabre Industries, Inc. All rights reserved.

3 FT. SIDEARM: 163' ELEVATION
SITE: NORTH FORK, OR
CUSTOMER: MARION COUNTY OREGON

JOB NO. 563424		SIZE	DRAWING NO.	REV
DATE	08/07/25	B	563424-SA4	0
DRAWN BY	KMP			
CHECKED BY	ZAK		SCALE NONE	PAGE 1 OF 1



ELEVATION VIEW

LIST OF MATERIALS FOR TAPERED LEG PIPE MOUNT KIT C10174018				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
1.	1	CS00216	TOP LEG MOUNT FOR 2 7/8 ø LEG	15
2.	1	CS00215	BOTTOM LEG MOUNT FOR 2 7/8 ø LEG	12
3.	1	CS00214	TOP PIPE MOUNT FOR 4 1/2 ø PIPE	15
4.	1	CS00215	BOTTOM PIPE MOUNT FOR 4 1/2 ø PIPE	12
5.	2	C40034025	U-BOLT ASSEMBLY 5/8 ø X 3 9/16 C-C (TOP LEG MOUNT)	4
6.	2	C40034025	U-BOLT ASSEMBLY 5/8 ø X 3 9/16 C-C (BOTTOM LEG MOUNT)	4
7.	4	C40026024	BOLT ASSEMBLY 5/8 ø X 2 1/4 A325	2
8.	8	C40031003	FLATWASHER, 5/8 ø (F436)	1
			KIT WEIGHT LBS	65

LIST OF ADDITIONAL MATERIALS				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
9.	1	C10981407	ANTENNA MTG. PIPE 4 1/2 ø X 7'-0	58
10.	4	C40034032	U-BOLT ASSEMBLY 5/8 ø X 5 3/16 C-C (PIPE MOUNTS)	9
			ADDITIONAL WEIGHT LBS	67

TOTAL WEIGHT LBS	132

UNLESS OTHERWISE SPECIFIED
ALL DIMENSIONS INCLUDE FINISHES AND ARE IN INCHES
TOLERANCES: FRACTIONS ± 1/16"
ANGLES ± 1/2 DEG.
DECIMALS ± .010"

MATERIAL:

TOLERANCES DO NOT APPLY TO RAW MATERIAL

REV	DATE	DRW	CHK	DESCRIPTION

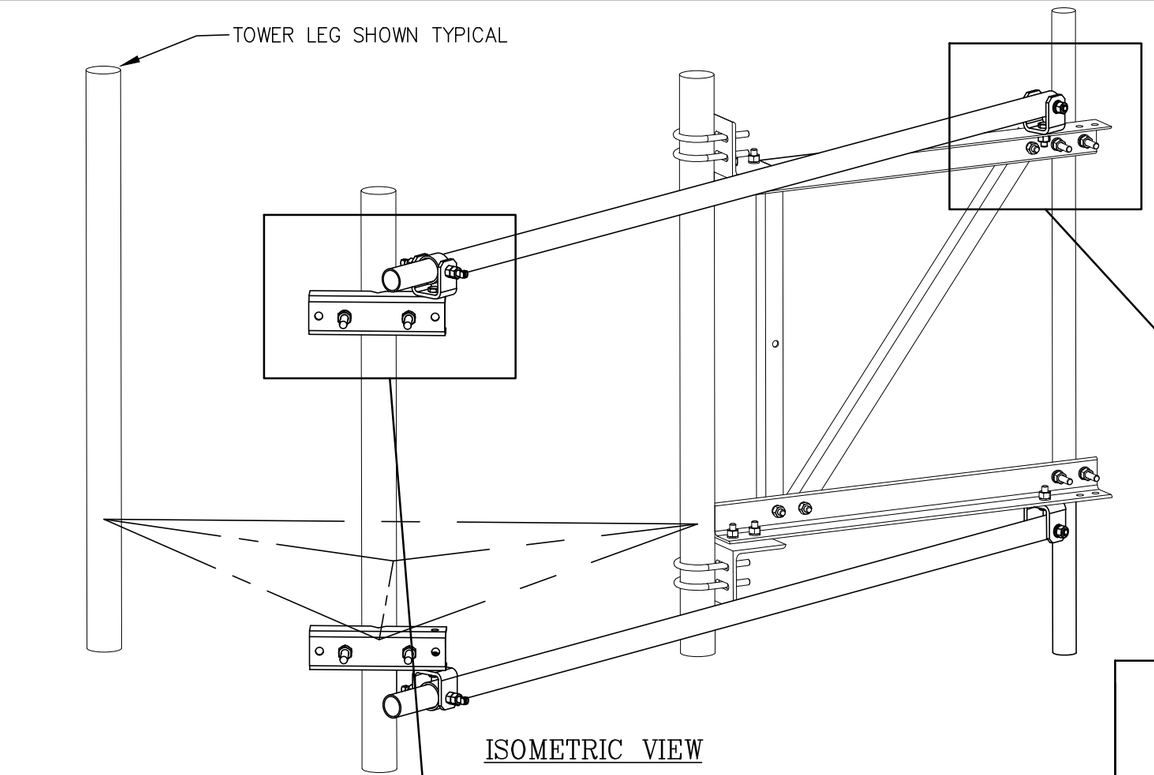
Sabre Industries™
INNOVATION DELIVERED

CONFIDENTIAL
This document and the information contained herein is the confidential trade secret property of Sabre Industries, Inc. ("Sabre") and must not be reproduced, copied or used, in whole or in part, for any purpose without the prior written consent of Sabre.
© 2025 Sabre Industries, Inc. All rights reserved.

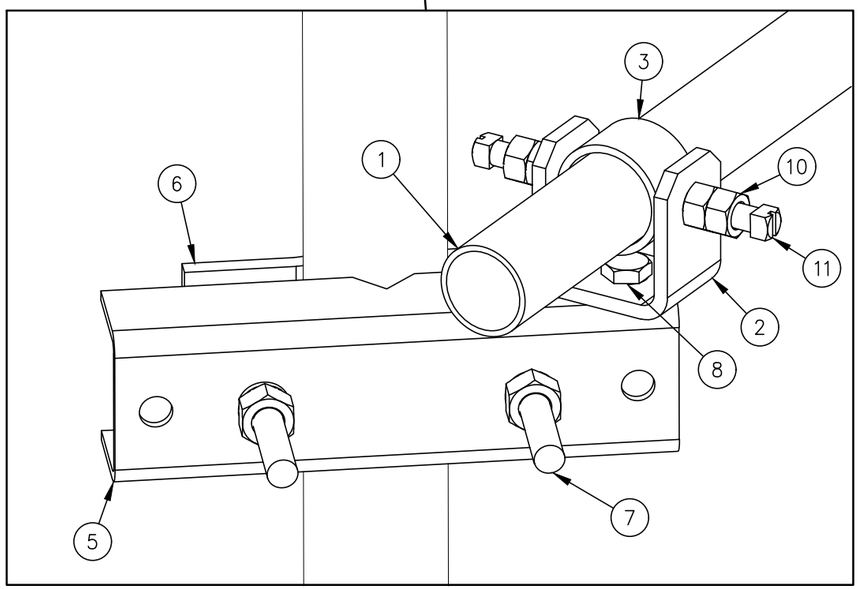
PIPE MOUNT FOR SIDEARM: 163' ELEVATION
SITE: NORTH FORK, OR
CUSTOMER: MARION COUNTY OREGON

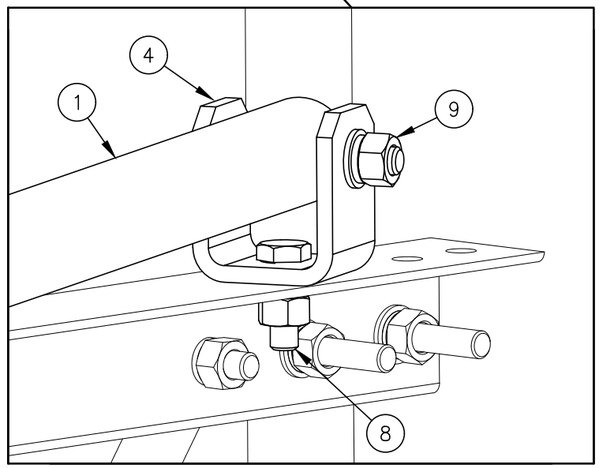
JOB NO. 563424		SIZE	DRAWING NO.	REV
DATE	8/7/25	B	563424-PM6	0
DRAWN BY	KMP			
CHECKED BY	ZAK		SCALE None	PAGE 1 OF 1

EXHIBIT K



ISOMETRIC VIEW





C10179002 SWIVEL KNUCKLE TIEBACK

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
1	1	CS02089	TIEBACK 2 3/8 X .134 X 13'-3"	43
2	1	CW00013	SWIVEL PLATE WELDMENT	3
3	1	CS00097	PIPE, SLEEVE 2 7/8 O.D. X W/0.203 X 0'-1 3/4	1
4	1	CS00098	BENT SWIVEL PLATE	3
5	1	CS01360	PLATE, MOUNTING BRACKET (FORMED CHANNEL)	9
6	1	CS01361	PLATE, 2 HOLE ADAPTER CLAMP	3
7	2	C40140001	BOLT ASSEMBLY, 3/4 X 10 A307 W/NUT, LKW, FLW	4
8	2	C40026023	BOLT ASSEMBLY, 5/8 ø X 2 A325	1
9	1	C40026033	BOLT ASSEMBLY, 5/8 ø X 4 1/2 A325	1
10	2	C40042007	HEX NUT, 5/8 A194 GRADE 2H	1
11	2	C40998007	SQ. HEAD SET SCREW, 5/8 X 2 1/2	1
			TOTAL WEIGHT LBS	70

QUANTITIES SHOWN ABOVE ARE FOR (1) SWIVEL KNUCKLE TIEBACK KIT ONLY.
(2) KITS ARE REQUIRED FOR THIS SIDEARM ASSEMBLY

UNLESS OTHERWISE SPECIFIED
ALL DIMENSIONS INCLUDE
FINISHES AND ARE IN INCHES

TOLERANCES: FRACTIONS ± 1/16"
ANGLES ± 1/2 DEG.
DECIMALS ± .010"

MATERIAL:

TOLERANCES DO NOT APPLY
TO RAW MATERIAL

REV	DATE	DRW	CHK	DESCRIPTION

Sabre Industries™
INNOVATION DELIVERED

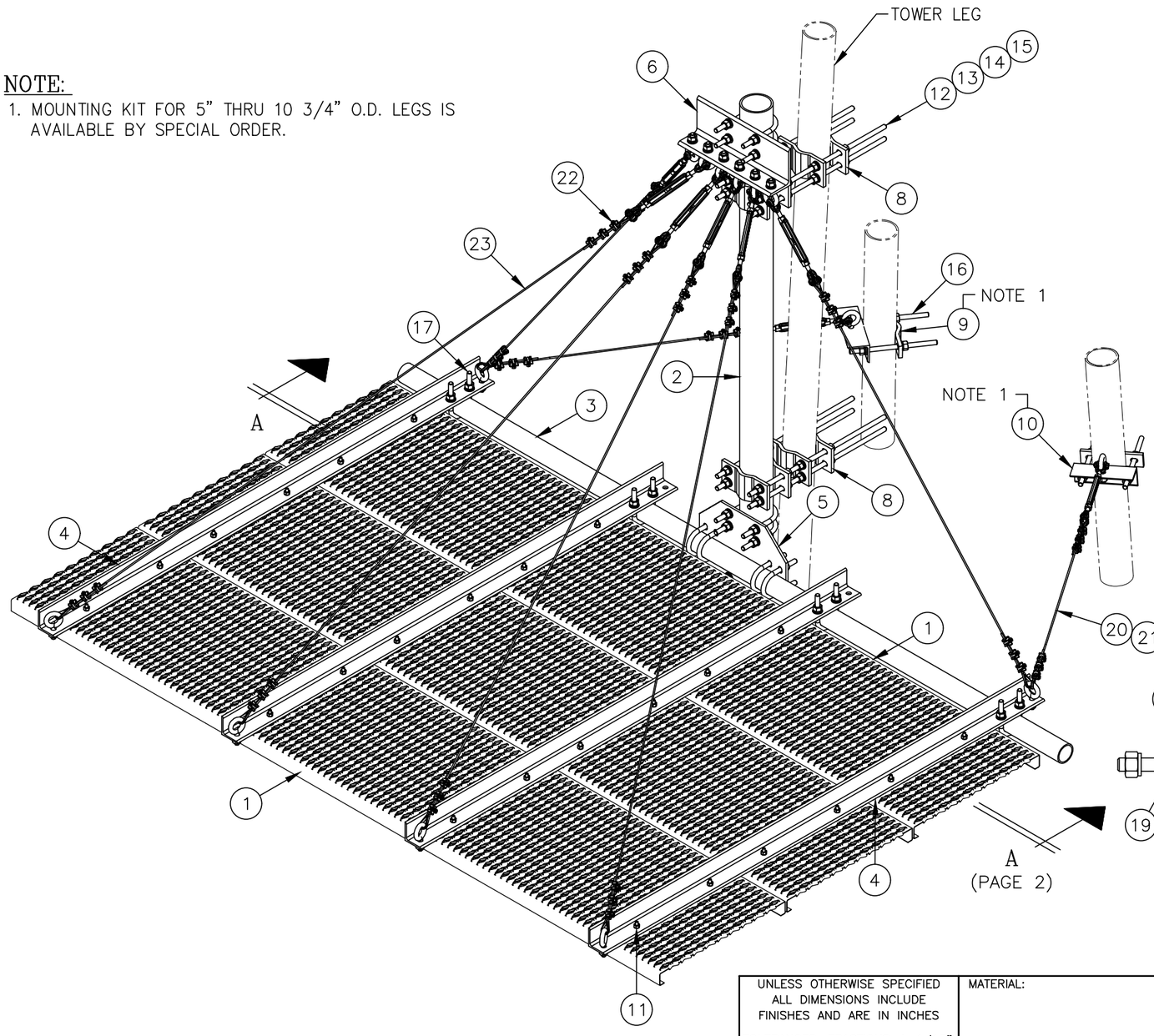
CONFIDENTIAL
This document and the information contained herein is the confidential trade secret property of Sabre Industries, Inc. ("Sabre") and must not be reproduced, copied or used, in whole or in part, for any purpose without the prior written consent of Sabre.
© 2025 Sabre Industries, Inc. All rights reserved.

SWIVEL KNUCKLE TIEBACKS: 163' ELEVATION
SITE: NORTH FORK, OR
CUSTOMER: MARION COUNTY OREGON

JOB NO. 563424		SIZE	DRAWING NO.	REV
DATE	08/07/25	B	563424-ST4	0
DRAWN BY	KMP			
CHECKED BY	ZAK		SCALE NONE	PAGE 1 OF 1

NOTE:

1. MOUNTING KIT FOR 5" THRU 10 3/4" O.D. LEGS IS AVAILABLE BY SPECIAL ORDER.

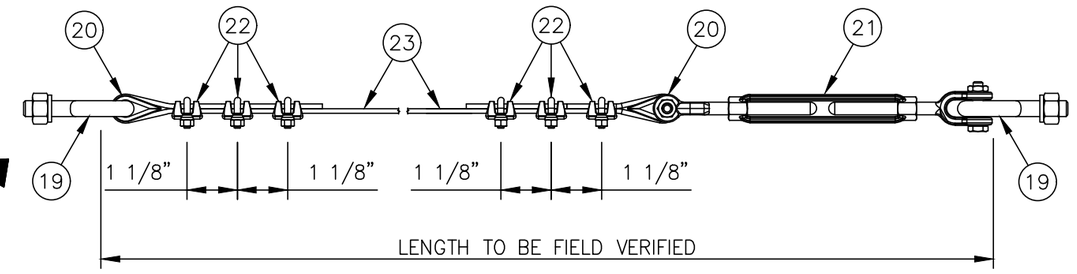


ISOMETRIC VIEW

(SEE PAGE 2 FOR MORE DETAILS)

C30085002 ICE SHIELD ASSEMBLY

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT
1.	3	C20137002	SAFETY GRATING, 2'-0 WIDE BY 10'-0 LONG	222
2.	1	C10981407	PIPE, 4 1/2" O.D. X W/0.180 X 7'-0	58
3.	1	C10901310	PIPE, 2 7/8" O.D. X W/0.203 X 10'-6	63
4.	4	CS00155	ANGLE, ICE SHIELD SUPPORT	143
5.	1	CS00156	PLATE, ICE SHIELD MOUNT	22
6.	1	CS01926	ANGLE, ICE SHIELD HANGER	19
7.	12	CS00158	PLATE, ICE SHIELD BACKUP	28
8.	8	CS00017	4 HOLE ADAPTER CLAMP 1 1/2" TO 5" O.D.	39
9.	2	CS00144	2 HOLE ADAPTER CLAMP 1 1/2" TO 5" O.D.	5
10.	2	CS01925	ANGLE, ICE SHIELD TIE BACK	7
11.	24	C40024006	BOLT ASSEMBLY, 3/8 ø X 2 GR 5	2
12.	16	C40042007	NUT, 5/8 ø A194 GRADE 2H	1
13.	16	C40030012	LOCKWASHER, 5/8 ø	1
14.	16	C40031003	FLATWASHER, 5/8 ø HARDENED ASTM F436	1
15.	8	C40099004	THREADED ROD ASS'Y, 5/8 ø X 2'-2 ASTM A193	22
16.	4	C40099002	THREADED ROD ASS'Y, 5/8 ø X 1'-0 ASTM A193	6
17.	8	C40034025	U-BOLT ASSEMBLY, 5/8 ø X 3 9/16" C-C	14
18.	6	C40034032	U-BOLT ASSEMBLY, 5/8 ø X 5 3/16" C-C	13
19.	14	C40079002	EYEBOLT ASSEMBLY, 5/8 ø X 1 3/4	8
20.	16	C40055011	THIMBLE, 3/16" STD	1
21.	8	C40051018	TURNBUCKLE, 1/2" X 6" J & J HDG	12
22.	48	C40056001	WIRE ROPE CLIP, 3/16"	5
23.	1	C30998120	AIRCRAFT CABLE, 3/16" X 120'-0	9
			TOTAL WEIGHT	701



TYPICAL CABLE ASSEMBLY

UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS INCLUDE FINISHES AND ARE IN INCHES

TOLERANCES: FRACTIONS ± 1/16" ANGLES ± 1/2 DEG. DECIMALS ± .010"

MATERIAL:

TOLERANCES DO NOT APPLY TO RAW MATERIAL

REV	DATE	DRW	CHK	DESCRIPTION
4	1/29/09	WRF	MC	REVISED PART NUMBERS OF ITEMS 6, 10, & EYEBOLTS WERE 3/8" & TURNB. WERE 1/4"
3	1/13/09	MLC	MC	REVISE PIPE (ITEM 2)
2	06/21/06	WRF	WMN	ADDED ISOMETRIC VIEW
1	4/4/03	KLE	DLW	REVISED PART NUMBERS

Sabre Industries™ INNOVATION DELIVERED

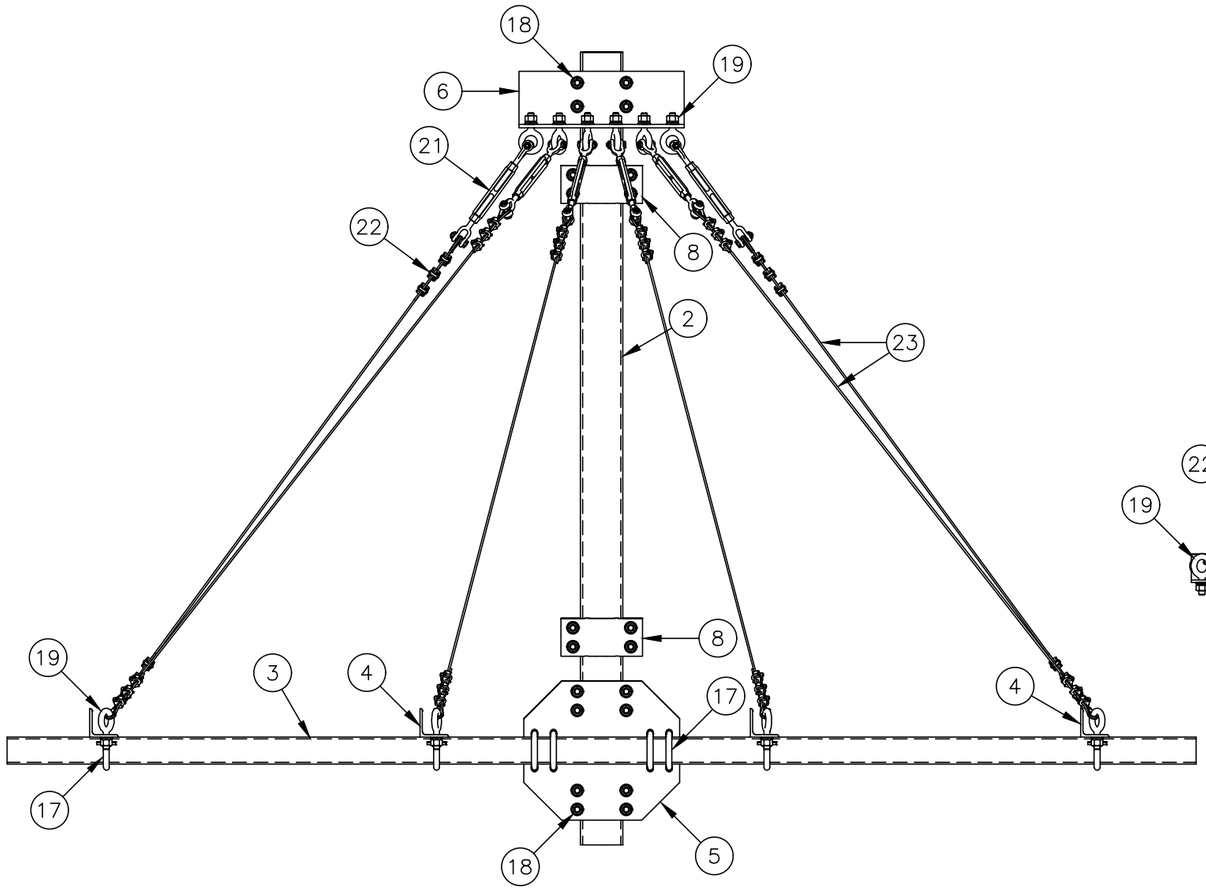
CONFIDENTIAL

This document and the information contained herein is the confidential trade secret property of Sabre Industries, Inc. ("Sabre") and must not be reproduced, copied or used, in whole or in part, for any purpose without the prior written consent of Sabre.

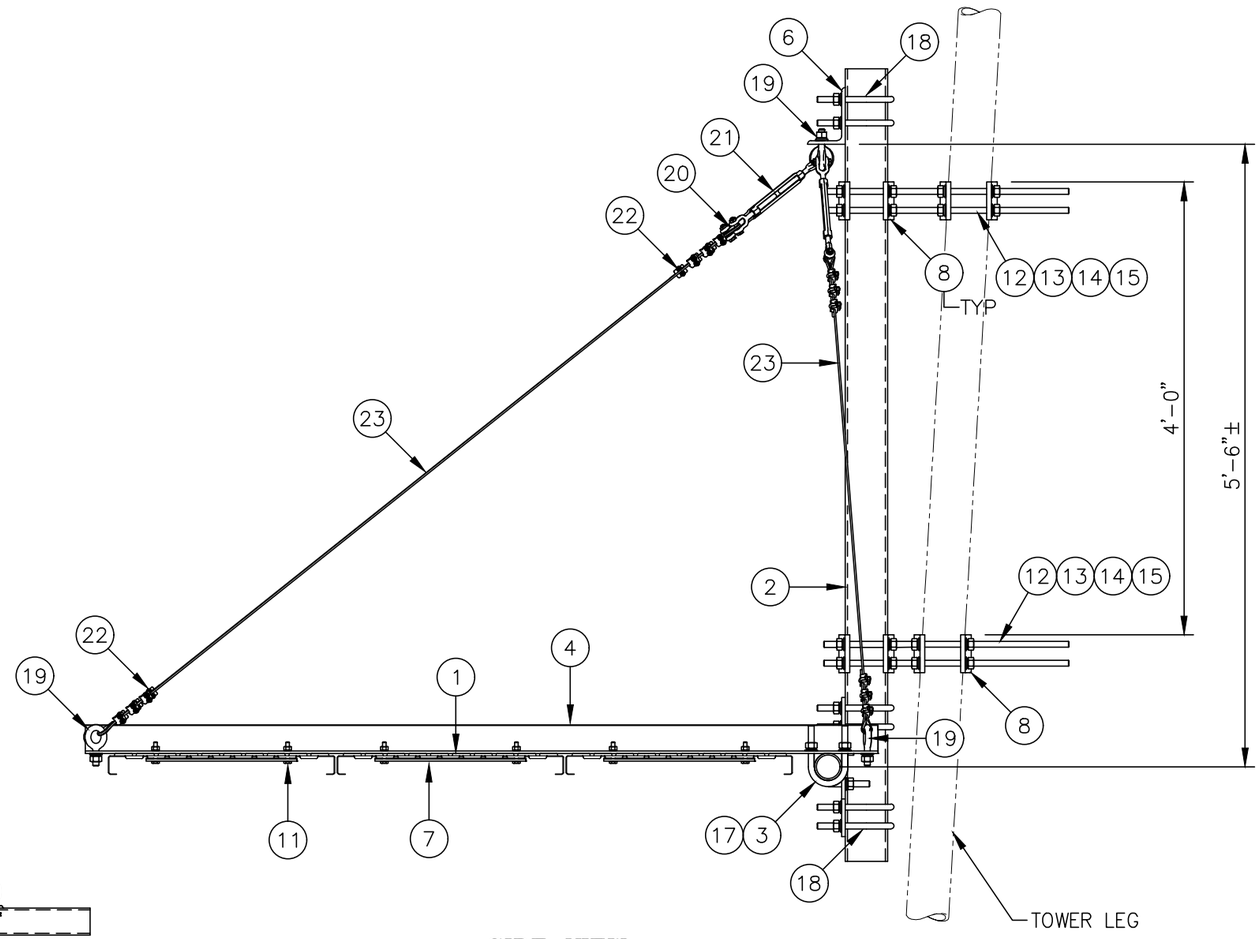
© 2022 Sabre Industries, Inc. All rights reserved.

ICE SHIELD ASSEMBLY FOR 6'-0 & 8'-0 DISH ANTENNA FITS 1 1/2 ø TO 5 ø LEGS

		SIZE	DRAWING NO.	REV
DATE	01/11/01	B	C30085002	4
DRAWN BY	BCT			
CHECKED BY	KLE		SCALE None	PAGE 1 OF 2



SECTION A–A
(GRATING REMOVED FOR CLARITY)



SIDE VIEW

REV	DATE	DRW	CHK	DESCRIPTION
4	1/29/09	WRF	MC	REVISED PART NUMBERS OF ITEMS 6, 10, & EYEBOLTS WERE 3/8" & TURNB. WERE 1/4"
3	1/13/09	MLC	MC	REVISE PIPE (ITEM 2)
2	06/21/06	WRF	WMN	ADDED ISOMETRIC VIEW
1	4/4/03	KLE	DLW	REVISED PART NUMBERS

UNLESS OTHERWISE SPECIFIED
ALL DIMENSIONS INCLUDE FINISHES AND ARE IN INCHES
TOLERANCES: FRACTIONS ± 1/16"
ANGLES ± 1/2 DEG.
DECIMALS ± .010"

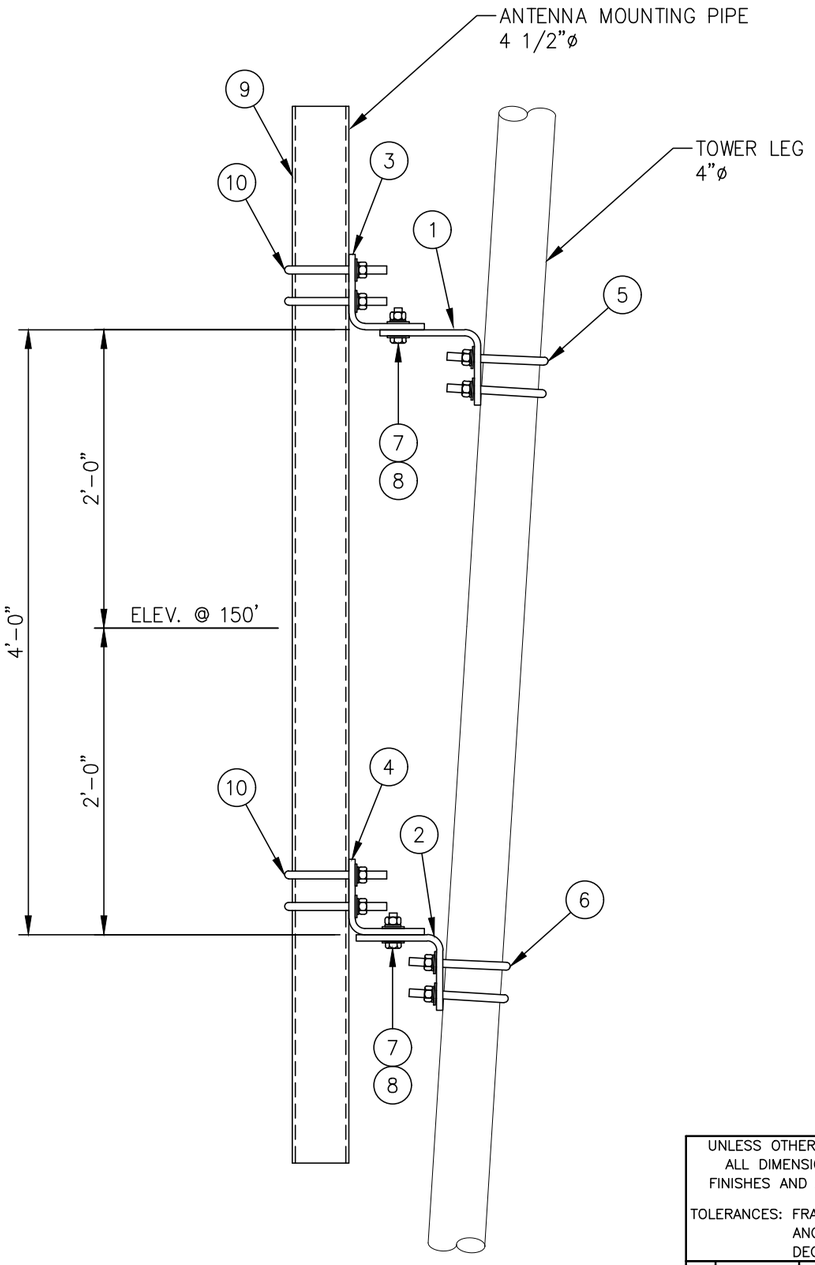
MATERIAL:
TOLERANCES DO NOT APPLY TO RAW MATERIAL

Sabre Industries™
INNOVATION DELIVERED

CONFIDENTIAL
This document and the information contained herein is the confidential trade secret property of Sabre Industries, Inc. ("Sabre") and must not be reproduced, copied or used, in whole or in part, for any purpose without the prior written consent of Sabre.
© 2022 Sabre Industries, Inc. All rights reserved.

ICE SHIELD ASSEMBLY
FOR 6'–0 & 8'–0 DISH ANTENNA
FITS 1 1/2 ø TO 5 ø LEGS

		SIZE	DRAWING NO.	REV
DATE	01/11/01	B	C30085002	4
DRAWN BY	BCT			
CHECKED BY	KLE	SCALE None	PAGE 2 OF 2	



ELEVATION VIEW

LIST OF MATERIALS FOR TAPERED LEG PIPE MOUNT KIT C10174036				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
1.	1	CS00216	TOP LEG MOUNT FOR 4 ø LEG	15
2.	1	CS00215	BOTTOM LEG MOUNT FOR 4 ø LEG	12
3.	1	CS00214	TOP PIPE MOUNT FOR 4 1/2 ø PIPE	15
4.	1	CS00215	BOTTOM PIPE MOUNT FOR 4 1/2 ø PIPE	12
5.	2	C40034030	U-BOLT ASSEMBLY 5/8 ø X 4 11/16 C-C (TOP LEG MOUNT)	4
6.	2	C40034030	U-BOLT ASSEMBLY 5/8 ø X 4 11/16 C-C (BOTTOM LEG MOUNT)	4
7.	4	C40026024	BOLT ASSEMBLY 5/8 ø X 2 1/4 A325	2
8.	8	C40031003	FLATWASHER, 5/8 ø (F436)	1
			KIT WEIGHT LBS	65

LIST OF ADDITIONAL MATERIALS				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
9.	1	C10981407	ANTENNA MTG. PIPE 4 1/2 ø X 7'-0	58
10.	4	C40034032	U-BOLT ASSEMBLY 5/8 ø X 5 3/16 C-C (PIPE MOUNTS)	9
			ADDITIONAL WEIGHT LBS	67

TOTAL WEIGHT LBS	132

UNLESS OTHERWISE SPECIFIED
ALL DIMENSIONS INCLUDE FINISHES AND ARE IN INCHES
TOLERANCES: FRACTIONS ± 1/16"
ANGLES ± 1/2 DEG.
DECIMALS ± .010"

MATERIAL:

TOLERANCES DO NOT APPLY TO RAW MATERIAL

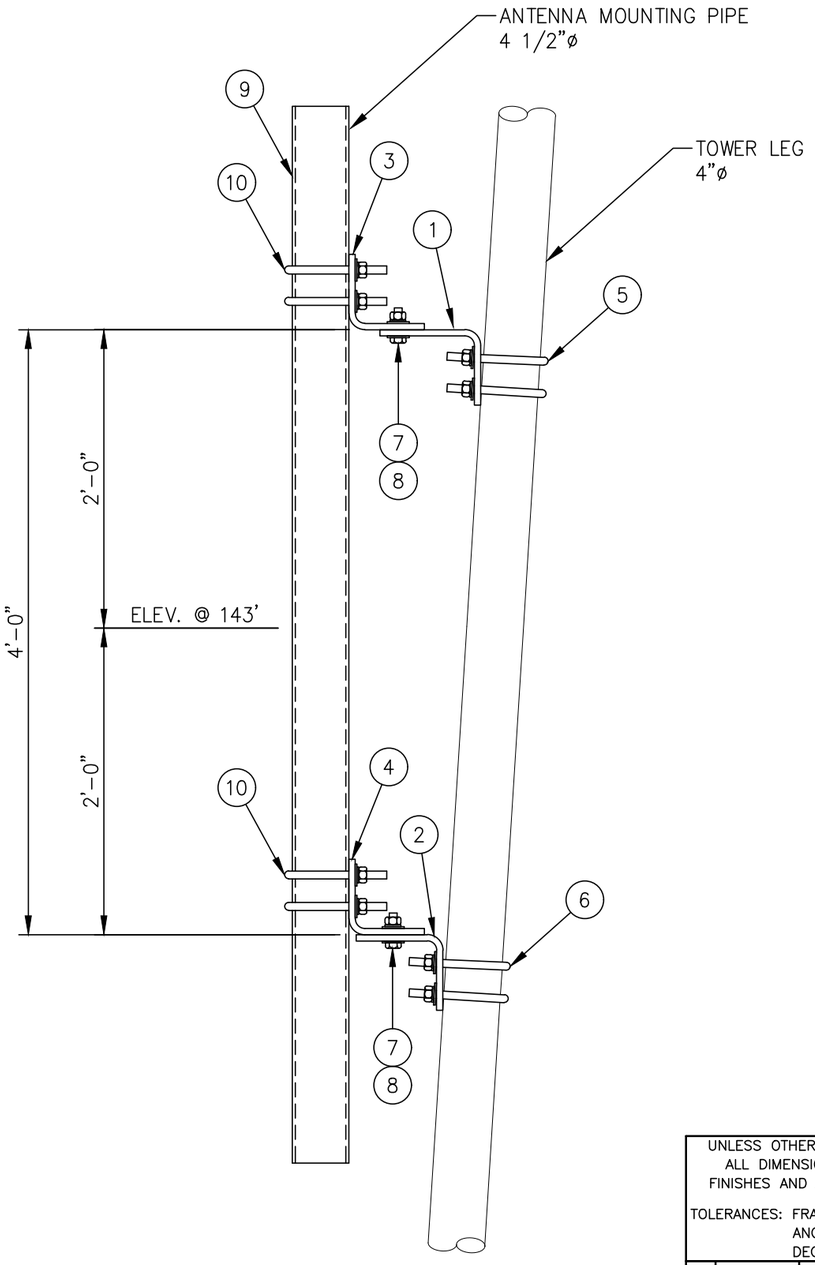
REV	DATE	DRW	CHK	DESCRIPTION

Sabre Industries™
INNOVATION DELIVERED

CONFIDENTIAL
This document and the information contained herein is the confidential trade secret property of Sabre Industries, Inc. ("Sabre") and must not be reproduced, copied or used, in whole or in part, for any purpose without the prior written consent of Sabre.
© 2025 Sabre Industries, Inc. All rights reserved.

PIPE MOUNTS: 150' ELEVATION
SITE: NORTH FORK, OR
CUSTOMER: MARION COUNTY OREGON

JOB NO. 563424		SIZE	DRAWING NO.	REV
DATE	8/7/25	B	563424-PM7	0
DRAWN BY	KMP			
CHECKED BY	ZAK		SCALE None	PAGE 1 OF 1



ELEVATION VIEW

LIST OF MATERIALS FOR TAPERED LEG PIPE MOUNT KIT C10174036				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
1.	1	CS00216	TOP LEG MOUNT FOR 4 ø LEG	15
2.	1	CS00215	BOTTOM LEG MOUNT FOR 4 ø LEG	12
3.	1	CS00214	TOP PIPE MOUNT FOR 4 1/2 ø PIPE	15
4.	1	CS00215	BOTTOM PIPE MOUNT FOR 4 1/2 ø PIPE	12
5.	2	C40034030	U-BOLT ASSEMBLY 5/8 ø X 4 11/16 C-C (TOP LEG MOUNT)	4
6.	2	C40034030	U-BOLT ASSEMBLY 5/8 ø X 4 11/16 C-C (BOTTOM LEG MOUNT)	4
7.	4	C40026024	BOLT ASSEMBLY 5/8 ø X 2 1/4 A325	2
8.	8	C40031003	FLATWASHER, 5/8 ø (F436)	1
			KIT WEIGHT LBS	65

LIST OF ADDITIONAL MATERIALS				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
9.	1	C10981407	ANTENNA MTG. PIPE 4 1/2 ø X 7'-0	58
10.	4	C40034032	U-BOLT ASSEMBLY 5/8 ø X 5 3/16 C-C (PIPE MOUNTS)	9
			ADDITIONAL WEIGHT LBS	67

TOTAL WEIGHT LBS	132

UNLESS OTHERWISE SPECIFIED
ALL DIMENSIONS INCLUDE FINISHES AND ARE IN INCHES

TOLERANCES: FRACTIONS ± 1/16"
ANGLES ± 1/2 DEG.
DECIMALS ± .010"

MATERIAL:

TOLERANCES DO NOT APPLY TO RAW MATERIAL

REV	DATE	DRW	CHK	DESCRIPTION

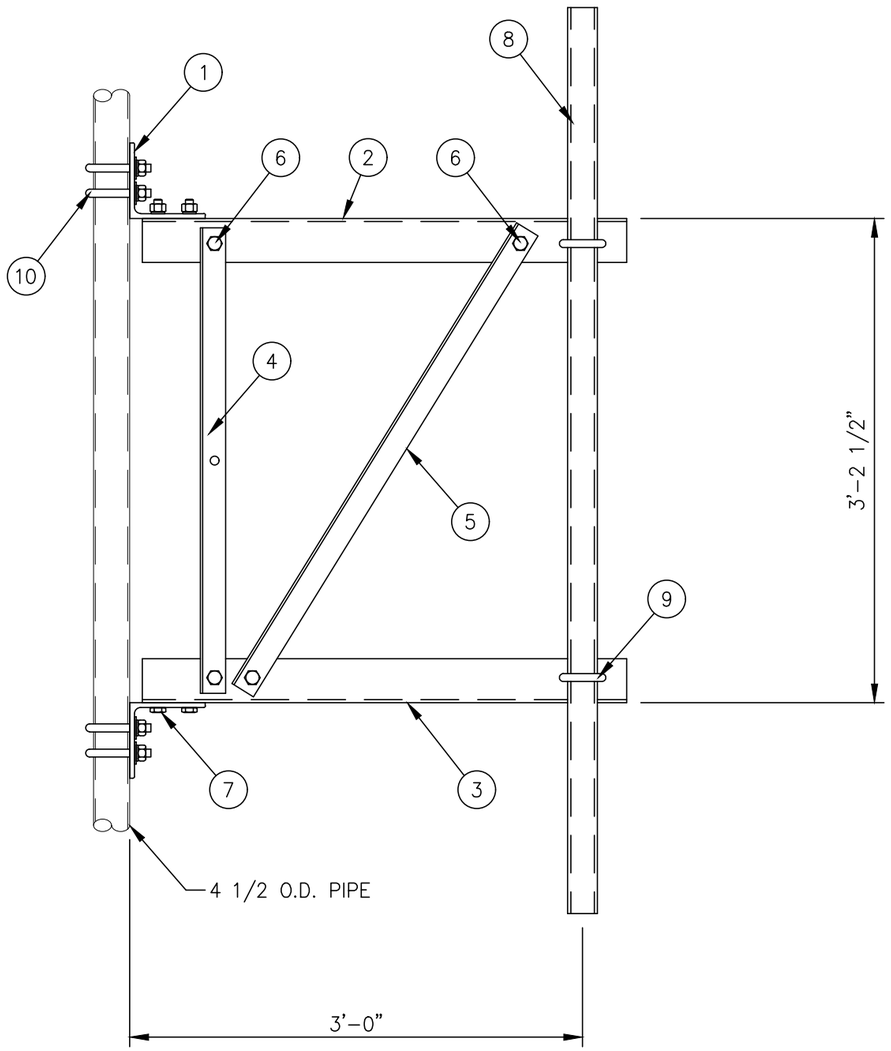
Sabre Industries™
INNOVATION DELIVERED

CONFIDENTIAL

This document and the information contained herein is the confidential trade secret property of Sabre Industries, Inc. ("Sabre") and must not be reproduced, copied or used, in whole or in part, for any purpose without the prior written consent of Sabre.
© 2025 Sabre Industries, Inc. All rights reserved.

PIPE MOUNT: 143' ELEVATION
SITE: NORTH FORK, OR
CUSTOMER: MARION COUNTY OREGON

JOB NO. 563424		SIZE	DRAWING NO.	REV
DATE	8/7/25	B	563424-PM8	0
DRAWN BY	KMP			
CHECKED BY	ZAK		SCALE None	PAGE 1 OF 1



C10151103 3 FT. SIDEARM ASSEMBLY			
1	CK00060	SIDEARM ANGLE KIT	78
1	– – –	MISC HARDWARE (FRAMING)	4
1	C10900105	PIPE ANTENNA MOUNTING KIT 2 3/8" ø X 5'-0	19
4	C40034032	U-BOLT ASSEMBLY 5/8" ø X 5 3/16 C-C	9
		TOTAL WEIGHT LBS	110

CK00060 KIT LIST OF MATERIAL				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
1	2	CS00067	ANGLE, BOOM SUPPORT	23
2	1	CS01223	ANGLE, TOP CHORD	19
3	1	CS01224	ANGLE, BOTTOM CHORD	19
4	1	CS00065	ANGLE, VERTICAL	8
5	1	CS01228	ANGLE, DIAGONAL	9
			TOTAL WEIGHT LBS	78

MISC HARDWARE (FRAMING)				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
6	4	C40026022	BOLT ASSEMBLY, 5/8 ø X 1 3/4 A325	2
7	4	C40026023	BOLT ASSEMBLY, 5/8 ø X 2 A325	2
			TOTAL WEIGHT LBS	4

C10900105 ANTENNA PIPE MOUNTING KIT				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
8	1	C10981223	ANTENNA MTG. PIPE 2 3/8" ø X 5'-0	16
9	2	C40034023	U-BOLT ASSEMBLY 5/8" ø X 3 1/16 C-C	3
			TOTAL WEIGHT LBS	19

MISC HARDWARE				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
10	4	C40034032	U-BOLT ASSEMBLY 5/8" ø X 5 3/16 C-C	9
			TOTAL WEIGHT LBS	9

NOTES:

1. IF THE MOUNT IS NOT ON THE STRAIGHT PORTION OF THE TOWER SEE SITE SPECIFIC PIPE MOUNT.
2. QUANTITIES SHOWN IN LIST OF MATERIALS ARE FOR ONE (1) SIDEARM ASSEMBLY ONLY.

UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS INCLUDE FINISHES AND ARE IN INCHES

TOLERANCES: FRACTIONS ± 1/16" ANGLES ± 1/2 DEG. DECIMALS ± .010"

MATERIAL:

TOLERANCES DO NOT APPLY TO RAW MATERIAL

REV	DATE	DRW	CHK	DESCRIPTION

Sabre Industries™ INNOVATION DELIVERED

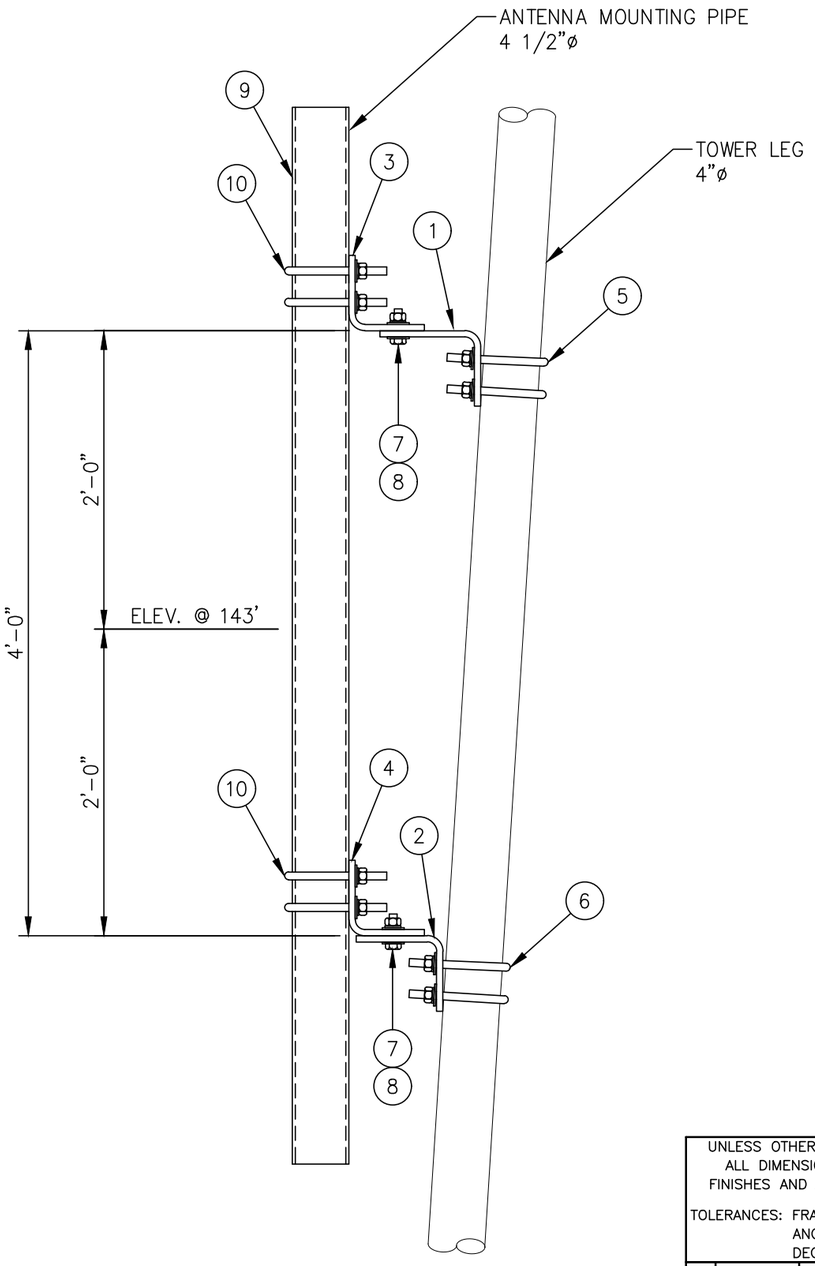
CONFIDENTIAL
This document and the information contained herein is the confidential trade secret property of Sabre Industries, Inc. ("Sabre") and must not be reproduced, copied or used, in whole or in part, for any purpose without the prior written consent of Sabre.
© 2025 Sabre Industries, Inc. All rights reserved.

3 FT. SIDEARM: 143' ELEVATION

SITE: NORTH FORK, OR

CUSTOMER: MARION COUNTY OREGON

JOB NO. 563424		SIZE	DRAWING NO.	REV
DATE	08/07/25	B	563424-SA5	0
DRAWN BY	KMP			
CHECKED BY	ZAK		SCALE NONE	PAGE 1 OF 1



ELEVATION VIEW

LIST OF MATERIALS FOR TAPERED LEG PIPE MOUNT KIT C10174036				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
1.	1	CS00216	TOP LEG MOUNT FOR 4 ø LEG	15
2.	1	CS00215	BOTTOM LEG MOUNT FOR 4 ø LEG	12
3.	1	CS00214	TOP PIPE MOUNT FOR 4 1/2 ø PIPE	15
4.	1	CS00215	BOTTOM PIPE MOUNT FOR 4 1/2 ø PIPE	12
5.	2	C40034030	U-BOLT ASSEMBLY 5/8 ø X 4 11/16 C-C (TOP LEG MOUNT)	4
6.	2	C40034030	U-BOLT ASSEMBLY 5/8 ø X 4 11/16 C-C (BOTTOM LEG MOUNT)	4
7.	4	C40026024	BOLT ASSEMBLY 5/8 ø X 2 1/4 A325	2
8.	8	C40031003	FLATWASHER, 5/8 ø (F436)	1
			KIT WEIGHT LBS	65

LIST OF ADDITIONAL MATERIALS				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
9.	1	C10981407	ANTENNA MTG. PIPE 4 1/2 ø X 7'-0	58
10.	4	C40034032	U-BOLT ASSEMBLY 5/8 ø X 5 3/16 C-C (PIPE MOUNTS)	9
			ADDITIONAL WEIGHT LBS	67

TOTAL WEIGHT LBS	132

UNLESS OTHERWISE SPECIFIED
ALL DIMENSIONS INCLUDE FINISHES AND ARE IN INCHES
TOLERANCES: FRACTIONS ± 1/16"
ANGLES ± 1/2 DEG.
DECIMALS ± .010"

MATERIAL:

TOLERANCES DO NOT APPLY TO RAW MATERIAL

REV	DATE	DRW	CHK	DESCRIPTION

Sabre Industries™
INNOVATION DELIVERED

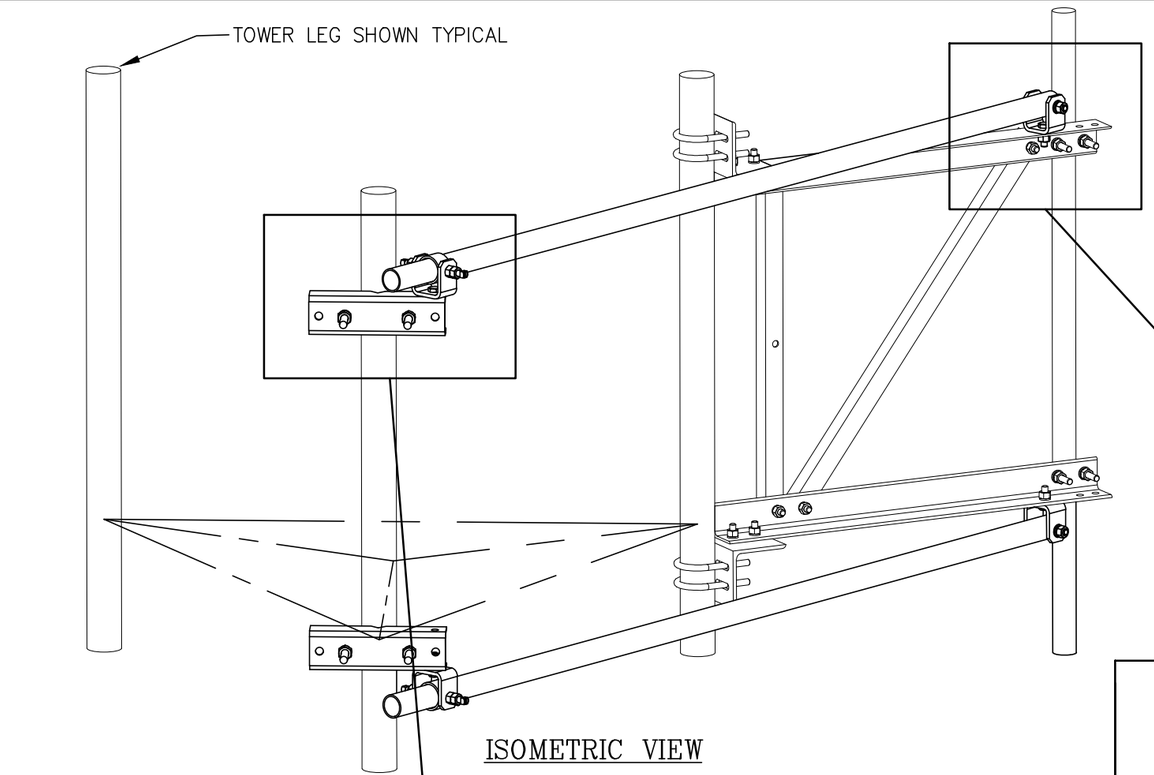
CONFIDENTIAL

This document and the information contained herein is the confidential trade secret property of Sabre Industries, Inc. ("Sabre") and must not be reproduced, copied or used, in whole or in part, for any purpose without the prior written consent of Sabre.
© 2025 Sabre Industries, Inc. All rights reserved.

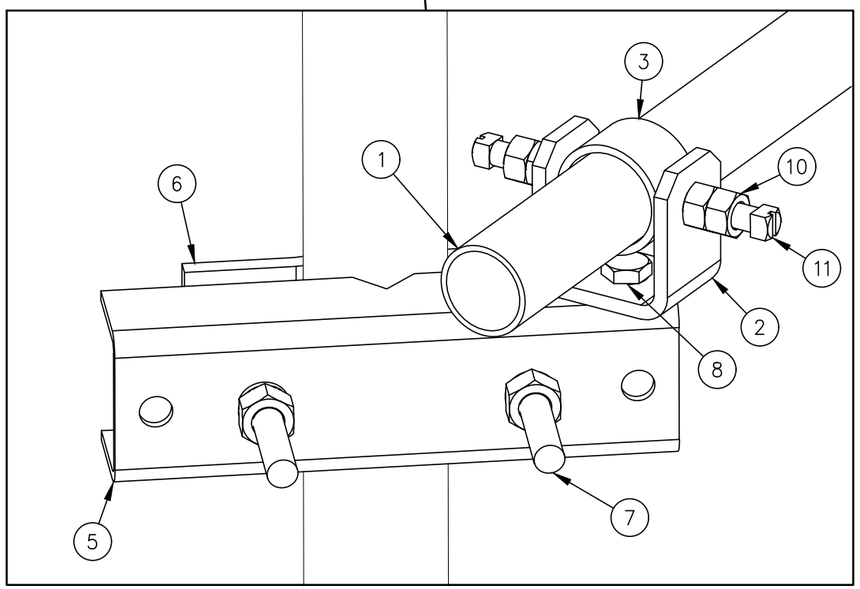
PIPE MOUNT FOR SIDEARM: 143' ELEVATION
SITE: NORTH FORK, OR
CUSTOMER: MARION COUNTY OREGON

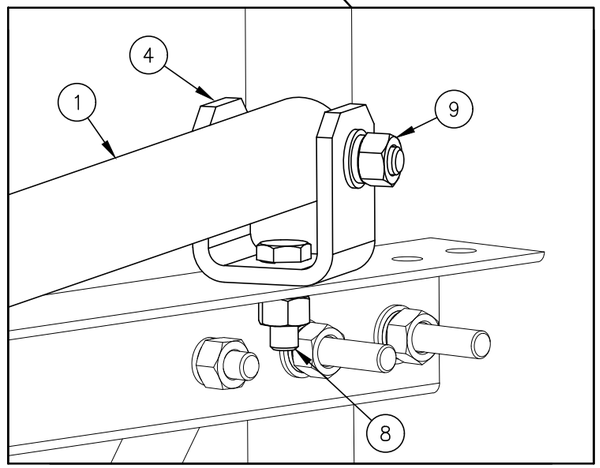
JOB NO. 563424		SIZE	DRAWING NO.		REV
DATE	8/7/25	B	563424-PM9		0
DRAWN BY	KMP			SCALE	PAGE
CHECKED BY	ZAK			None	1 OF 1

EXHIBIT K



ISOMETRIC VIEW





C10179002 SWIVEL KNUCKLE TIEBACK

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
1	1	CS02089	TIEBACK 2 3/8 X .134 X 13'-3"	43
2	1	CW00013	SWIVEL PLATE WELDMENT	3
3	1	CS00097	PIPE, SLEEVE 2 7/8 O.D. X W/0.203 X 0'-1 3/4	1
4	1	CS00098	BENT SWIVEL PLATE	3
5	1	CS01360	PLATE, MOUNTING BRACKET (FORMED CHANNEL)	9
6	1	CS01361	PLATE, 2 HOLE ADAPTER CLAMP	3
7	2	C40140001	BOLT ASSEMBLY, 3/4 X 10 A307 W/NUT, LKW, FLW	4
8	2	C40026023	BOLT ASSEMBLY, 5/8 ø X 2 A325	1
9	1	C40026033	BOLT ASSEMBLY, 5/8 ø X 4 1/2 A325	1
10	2	C40042007	HEX NUT, 5/8 A194 GRADE 2H	1
11	2	C40998007	SQ. HEAD SET SCREW, 5/8 X 2 1/2	1
			TOTAL WEIGHT LBS	70

QUANTITIES SHOWN ABOVE ARE FOR (1) SWIVEL KNUCKLE TIEBACK KIT ONLY.
(2) KITS ARE REQUIRED FOR THIS SIDEARM ASSEMBLY

UNLESS OTHERWISE SPECIFIED
ALL DIMENSIONS INCLUDE
FINISHES AND ARE IN INCHES

TOLERANCES: FRACTIONS ± 1/16"
ANGLES ± 1/2 DEG.
DECIMALS ± .010"

MATERIAL:

TOLERANCES DO NOT APPLY TO RAW MATERIAL

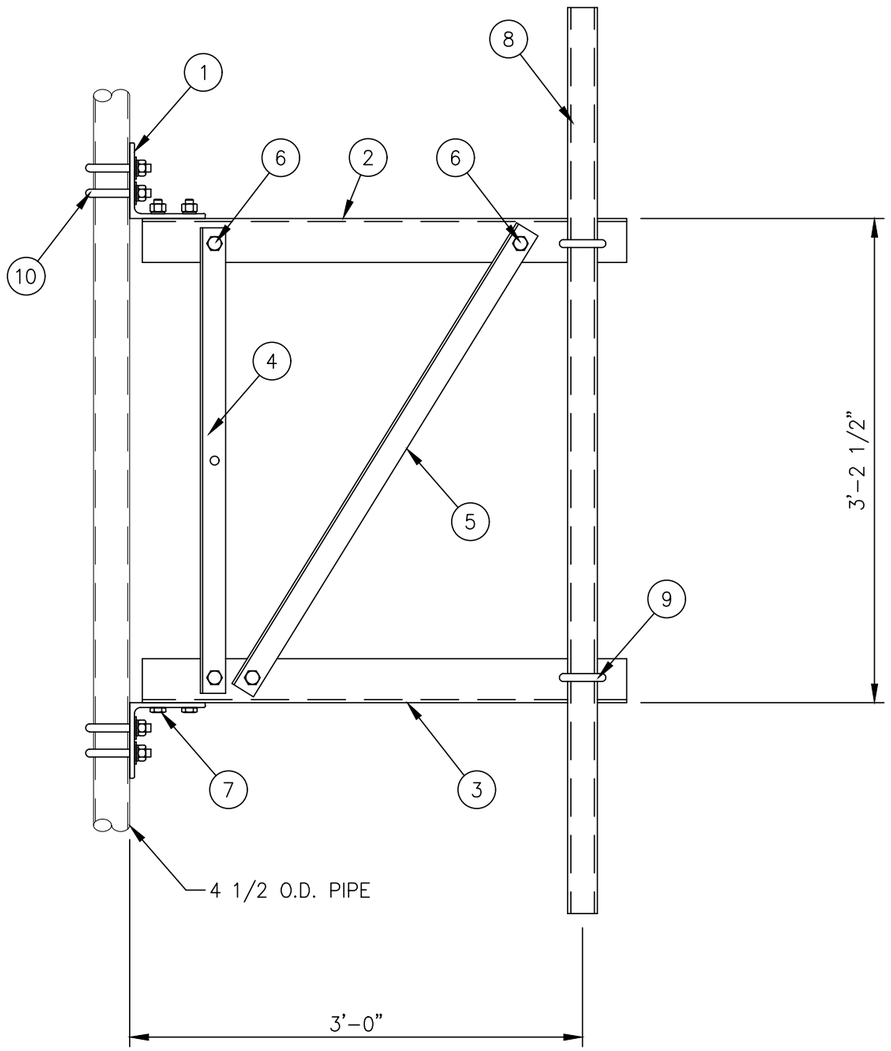
REV	DATE	DRW	CHK	DESCRIPTION

Sabre Industries™
INNOVATION DELIVERED

CONFIDENTIAL
This document and the information contained herein is the confidential trade secret property of Sabre Industries, Inc. ("Sabre") and must not be reproduced, copied or used, in whole or in part, for any purpose without the prior written consent of Sabre.
© 2025 Sabre Industries, Inc. All rights reserved.

SWIVEL KNUCKLE TIEBACKS: 143' ELEVATION
SITE: NORTH FORK, OR
CUSTOMER: MARION COUNTY OREGON

JOB NO. 563424		SIZE	DRAWING NO.	REV
DATE	08/07/25	B	563424-ST5	0
DRAWN BY	KMP			
CHECKED BY	ZAK		SCALE NONE	PAGE 1 OF 1



C10151103 3 FT. SIDEARM ASSEMBLY			
1	CK00060	SIDEARM ANGLE KIT	78
1	– – –	MISC HARDWARE (FRAMING)	4
1	C10900105	PIPE ANTENNA MOUNTING KIT 2 3/8" ø X 5'-0	19
4	C40034032	U-BOLT ASSEMBLY 5/8" ø X 5 3/16 C-C	9
		TOTAL WEIGHT LBS	110

CK00060 KIT LIST OF MATERIAL				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
1	2	CS00067	ANGLE, BOOM SUPPORT	23
2	1	CS01223	ANGLE, TOP CHORD	19
3	1	CS01224	ANGLE, BOTTOM CHORD	19
4	1	CS00065	ANGLE, VERTICAL	8
5	1	CS01228	ANGLE, DIAGONAL	9
			TOTAL WEIGHT LBS	78

MISC HARDWARE (FRAMING)				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
6	4	C40026022	BOLT ASSEMBLY, 5/8 ø X 1 3/4 A325	2
7	4	C40026023	BOLT ASSEMBLY, 5/8 ø X 2 A325	2
			TOTAL WEIGHT LBS	4

C10900105 ANTENNA PIPE MOUNTING KIT				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
8	1	C10981223	ANTENNA MTG. PIPE 2 3/8" ø X 5'-0	16
9	2	C40034023	U-BOLT ASSEMBLY 5/8" ø X 3 1/16 C-C	3
			TOTAL WEIGHT LBS	19

MISC HARDWARE				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
10	4	C40034032	U-BOLT ASSEMBLY 5/8" ø X 5 3/16 C-C	9
			TOTAL WEIGHT LBS	9

NOTES:

1. IF THE MOUNT IS NOT ON THE STRAIGHT PORTION OF THE TOWER SEE SITE SPECIFIC PIPE MOUNT.
2. QUANTITIES SHOWN IN LIST OF MATERIALS ARE FOR ONE (1) SIDEARM ASSEMBLY ONLY.

UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS INCLUDE FINISHES AND ARE IN INCHES

TOLERANCES: FRACTIONS ± 1/16" ANGLES ± 1/2 DEG. DECIMALS ± .010"

MATERIAL:

TOLERANCES DO NOT APPLY TO RAW MATERIAL

REV	DATE	DRW	CHK	DESCRIPTION

Sabre Industries™ INNOVATION DELIVERED

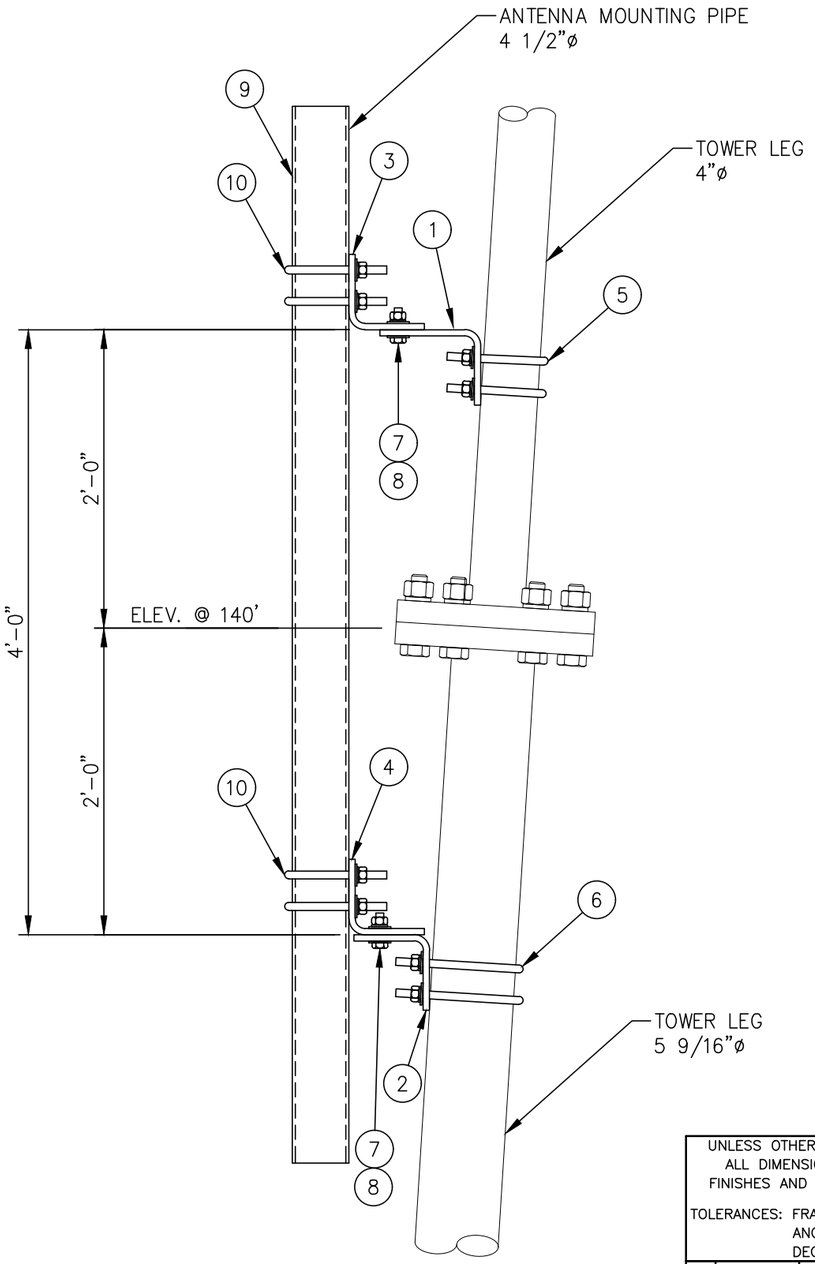
CONFIDENTIAL
This document and the information contained herein is the confidential trade secret property of Sabre Industries, Inc. ("Sabre") and must not be reproduced, copied or used, in whole or in part, for any purpose without the prior written consent of Sabre.
© 2025 Sabre Industries, Inc. All rights reserved.

3 FT. SIDEARM: 140' ELEVATION

SITE: NORTH FORK, OR

CUSTOMER: MARION COUNTY OREGON

JOB NO. 563424		SIZE	DRAWING NO.	REV
DATE	08/07/25	B	563424-SA6	0
DRAWN BY	KMP			
CHECKED BY	ZAK		SCALE NONE	PAGE 1 OF 1



ELEVATION VIEW

LIST OF MATERIALS FOR TAPERED LEG PIPE MOUNT KIT C10174053				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
1.	1	CS00217	TOP LEG MOUNT FOR 4 ø LEG	18
2.	1	CS00218	BOTTOM LEG MOUNT FOR 5 9/16 ø LEG	20
3.	1	CS00222	TOP PIPE MOUNT FOR 4 1/2 ø PIPE	18
4.	1	CS00215	BOTTOM PIPE MOUNT FOR 4 1/2 ø PIPE	12
5.	2	C40034030	U-BOLT ASSEMBLY 5/8 ø X 4 11/16 C-C (TOP LEG MOUNT)	4
6.	2	C40034035	U-BOLT ASSEMBLY 5/8 ø X 6 1/4 C-C (BOTTOM LEG MOUNT)	5
7.	4	C40026024	BOLT ASSEMBLY 5/8 ø X 2 1/4 A325	2
8.	8	C40031003	FLATWASHER, 5/8 ø (F436)	1
			KIT WEIGHT LBS	80

LIST OF ADDITIONAL MATERIALS				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
9.	1	C10981407	ANTENNA MTG. PIPE 4 1/2 ø X 7'-0	58
10.	4	C40034032	U-BOLT ASSEMBLY 5/8 ø X 5 3/16 C-C (PIPE MOUNTS)	9
			ADDITIONAL WEIGHT LBS	67

TOTAL WEIGHT LBS	147

UNLESS OTHERWISE SPECIFIED
ALL DIMENSIONS INCLUDE
FINISHES AND ARE IN INCHES

TOLERANCES: FRACTIONS ± 1/16"
ANGLES ± 1/2 DEG.
DECIMALS ± .010"

MATERIAL:

TOLERANCES DO NOT APPLY TO RAW MATERIAL

REV	DATE	DRW	CHK	DESCRIPTION

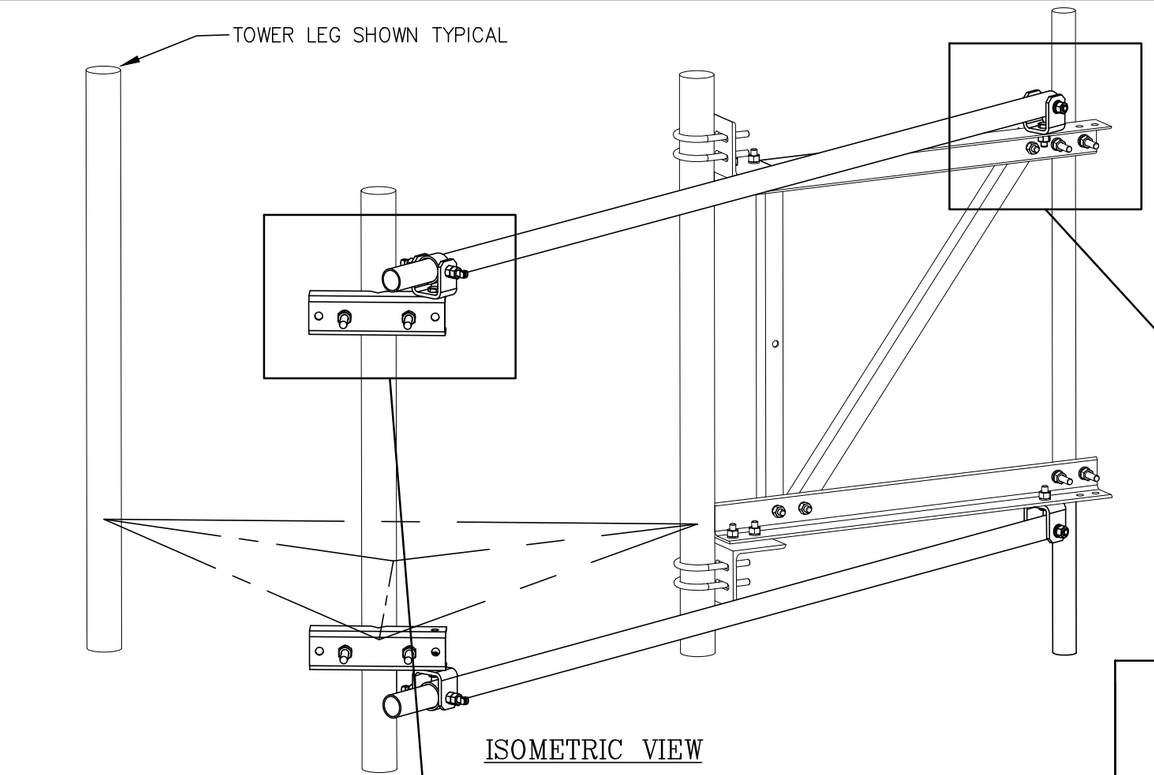
Sabre Industries™
INNOVATION DELIVERED

CONFIDENTIAL
This document and the information contained herein is the confidential trade secret property of Sabre Industries, Inc. ("Sabre") and must not be reproduced, copied or used, in whole or in part, for any purpose without the prior written consent of Sabre.
© 2025 Sabre Industries, Inc. All rights reserved.

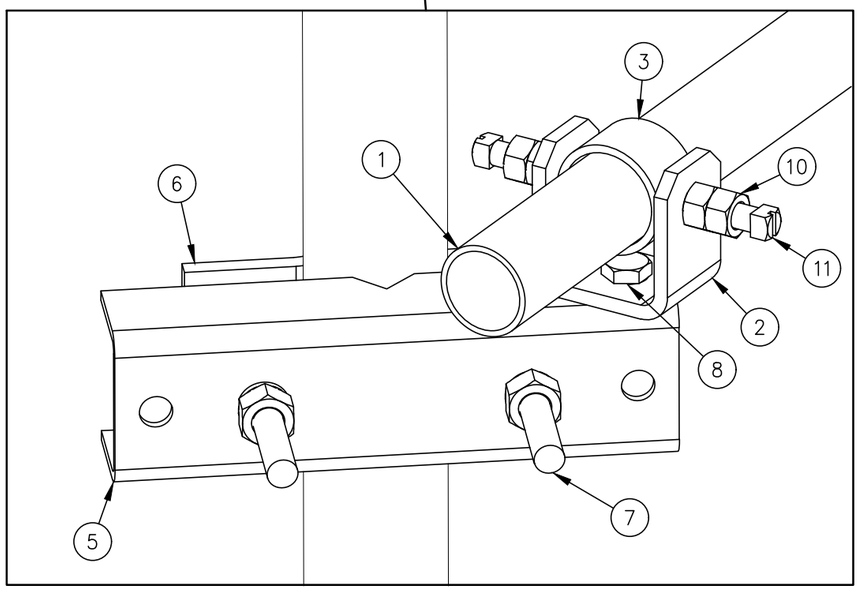
PIPE MOUNT FOR SIDEARM: 140' ELEVATION
SITE: NORTH FORK, OR
CUSTOMER: MARION COUNTY OREGON

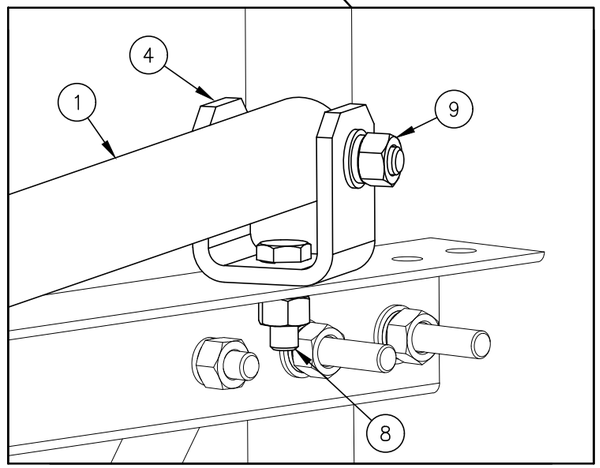
JOB NO. 563424		SIZE	DRAWING NO.	REV
DATE	8/7/25	B	563424-PM10	0
DRAWN BY	KMP			
CHECKED BY	ZAK		SCALE None	PAGE 1 OF 1

EXHIBIT K



ISOMETRIC VIEW





C10179011 SWIVEL KNUCKLE TIEBACK

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
1	1	CS00249	PIPE, 2 7/8 O.D. X W/0.203 X 15'-6	93
2	1	CW00022	SWIVEL PLATE WELDMENT	3
3	1	CS00092	PIPE, SLEEVE 3 1/2 O.D. X W/0.216 X 0'-1 3/4	1
4	1	CS00096	BENT SWIVEL PLATE	3
5	1	CS01360	PLATE, MOUNTING BRACKET (FORMED CHANNEL)	9
6	1	CS01361	PLATE, 2 HOLE ADAPTER CLAMP	3
7	2	C40140001	BOLT ASSEMBLY, 3/4 X 10 A307 W/NUT, LKW, FLW	4
8	2	C40026023	BOLT ASSEMBLY, 5/8 ø X 2 A325	1
9	1	C40026035	BOLT ASSEMBLY, 5/8 ø X 5 A325	1
10	2	C40042007	HEX NUT, 5/8 A194 GRADE 2H	1
11	2	C40998007	SQ. HEAD SET SCREW, 5/8 X 2 1/2	1
			TOTAL WEIGHT LBS	120

QUANTITIES SHOWN ABOVE ARE FOR (1) SWIVEL KNUCKLE TIEBACK KIT ONLY.
(2) KITS ARE REQUIRED FOR THIS SIDEARM ASSEMBLY

UNLESS OTHERWISE SPECIFIED
ALL DIMENSIONS INCLUDE
FINISHES AND ARE IN INCHES

TOLERANCES: FRACTIONS ± 1/16"
ANGLES ± 1/2 DEG.
DECIMALS ± .010"

MATERIAL:

TOLERANCES DO NOT APPLY TO RAW MATERIAL

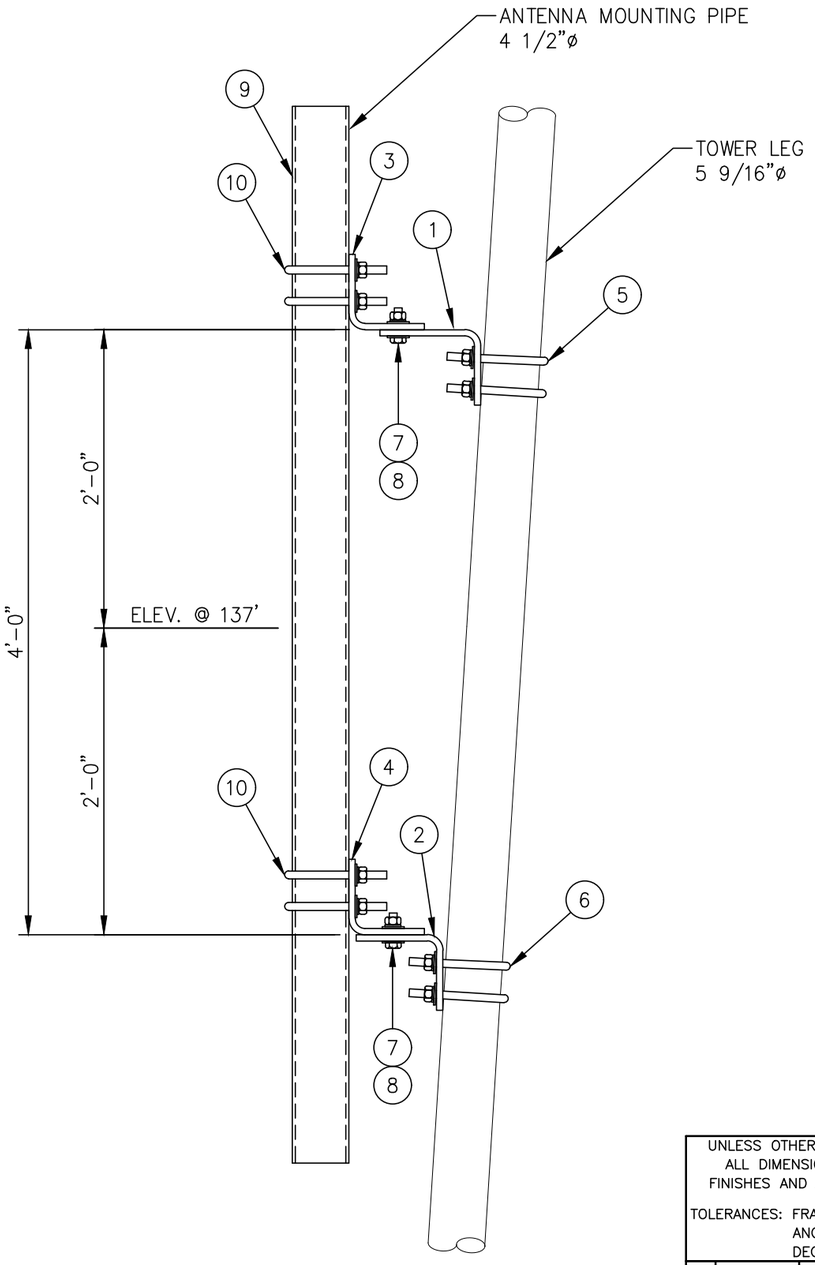
REV	DATE	DRW	CHK	DESCRIPTION

Sabre Industries™
INNOVATION DELIVERED

CONFIDENTIAL
This document and the information contained herein is the confidential trade secret property of Sabre Industries, Inc. ("Sabre") and must not be reproduced, copied or used, in whole or in part, for any purpose without the prior written consent of Sabre.
© 2025 Sabre Industries, Inc. All rights reserved.

SWIVEL KNUCKLE TIEBACKS: 140' ELEVATION
SITE: NORTH FORK, OR
CUSTOMER: MARION COUNTY OREGON

JOB NO. 563424		SIZE	DRAWING NO.	REV
DATE	08/07/25	B	563424-ST6	0
DRAWN BY	KMP			
CHECKED BY	ZAK	SCALE NONE	PAGE 1 OF 1	



ELEVATION VIEW

LIST OF MATERIALS FOR TAPERED LEG PIPE MOUNT KIT C10174055				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
1.	1	CS00219	TOP LEG MOUNT FOR 5 9/16 ø LEG	24
2.	1	CS00218	BOTTOM LEG MOUNT FOR 5 9/16 ø LEG	20
3.	1	CS00214	TOP PIPE MOUNT FOR 4 1/2 ø PIPE	15
4.	1	CS00215	BOTTOM PIPE MOUNT FOR 4 1/2 ø PIPE	12
5.	2	C40034035	U-BOLT ASSEMBLY 5/8 ø X 6 1/4 C-C (TOP LEG MOUNT)	5
6.	2	C40034035	U-BOLT ASSEMBLY 5/8 ø X 6 1/4 C-C (BOTTOM LEG MOUNT)	5
7.	4	C40026024	BOLT ASSEMBLY 5/8 ø X 2 1/4 A325	2
8.	8	C40031003	FLATWASHER, 5/8 ø (F436)	1
			KIT WEIGHT LBS	84

LIST OF ADDITIONAL MATERIALS				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
9.	1	C10981407	ANTENNA MTG. PIPE 4 1/2 ø X 7'-0	58
10.	4	C40034032	U-BOLT ASSEMBLY 5/8 ø X 5 3/16 C-C (PIPE MOUNTS)	9
			ADDITIONAL WEIGHT LBS	67

TOTAL WEIGHT LBS	151

UNLESS OTHERWISE SPECIFIED
ALL DIMENSIONS INCLUDE FINISHES AND ARE IN INCHES

TOLERANCES: FRACTIONS ± 1/16"
ANGLES ± 1/2 DEG.
DECIMALS ± .010"

MATERIAL:

TOLERANCES DO NOT APPLY TO RAW MATERIAL

REV	DATE	DRW	CHK	DESCRIPTION

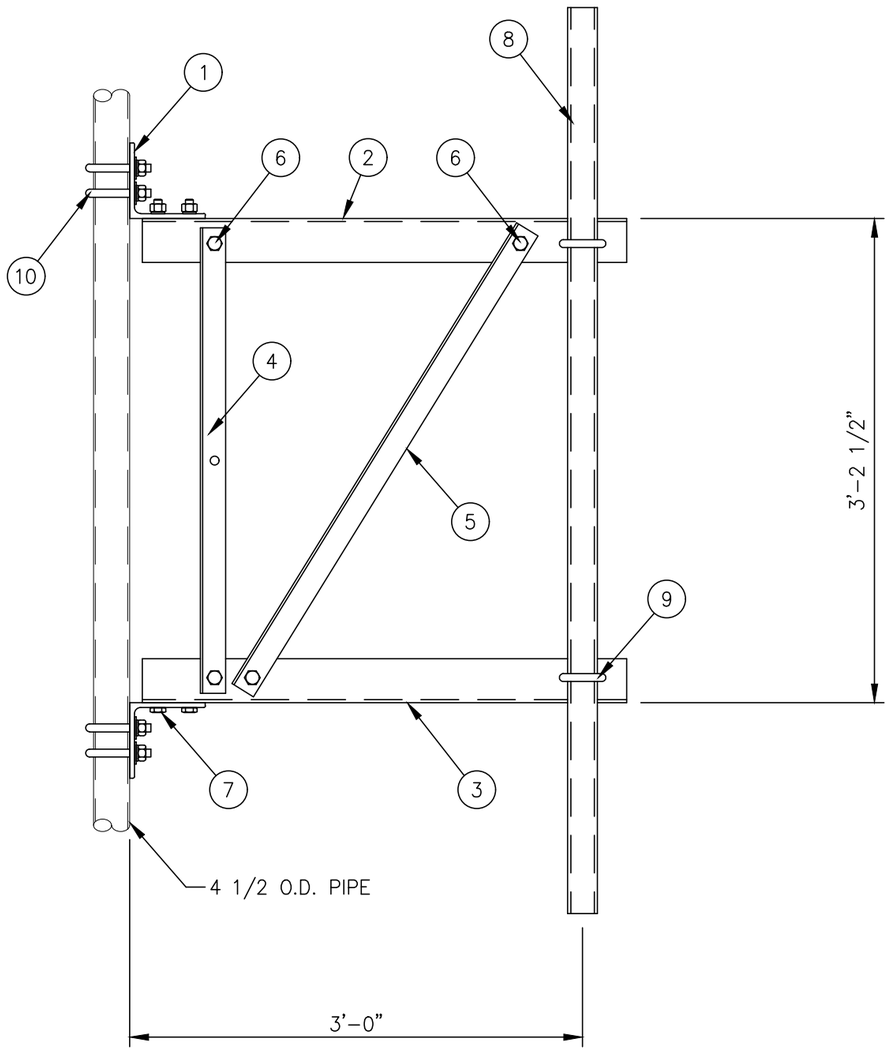
Sabre Industries™
INNOVATION DELIVERED

CONFIDENTIAL

This document and the information contained herein is the confidential trade secret property of Sabre Industries, Inc. ("Sabre") and must not be reproduced, copied or used, in whole or in part, for any purpose without the prior written consent of Sabre.
© 2025 Sabre Industries, Inc. All rights reserved.

PIPE MOUNT: 137' ELEVATION
SITE: NORTH FORK, OR
CUSTOMER: MARION COUNTY OREGON

JOB NO. 563424		SIZE	DRAWING NO.	REV
DATE	8/7/25	B	563424-PM11	0
DRAWN BY	KMP			
CHECKED BY	ZAK		SCALE None	PAGE 1 OF 1



C10151103 3 FT. SIDEARM ASSEMBLY			
1	CK00060	SIDEARM ANGLE KIT	78
1	- - -	MISC HARDWARE (FRAMING)	4
1	C10900104	PIPE ANTENNA MOUNTING KIT 2 3/8" ø X 4'-0	16
4	C40034032	U-BOLT ASSEMBLY 5/8" ø X 5 3/16 C-C	9
		TOTAL WEIGHT LBS	107

CK00060 KIT LIST OF MATERIAL				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
1	2	CS00067	ANGLE, BOOM SUPPORT	23
2	1	CS01223	ANGLE, TOP CHORD	19
3	1	CS01224	ANGLE, BOTTOM CHORD	19
4	1	CS00065	ANGLE, VERTICAL	8
5	1	CS01228	ANGLE, DIAGONAL	9
			TOTAL WEIGHT LBS	78

MISC HARDWARE (FRAMING)				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
6	4	C40026022	BOLT ASSEMBLY, 5/8 ø X 1 3/4 A325	2
7	4	C40026023	BOLT ASSEMBLY, 5/8 ø X 2 A325	2
			TOTAL WEIGHT LBS	4

C10900104 ANTENNA PIPE MOUNTING KIT				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
8	1	C10981204	ANTENNA MTG. PIPE 2 3/8" ø X 4'-0"	13
9	2	C40034023	U-BOLT ASSEMBLY 5/8" ø X 3 1/16 C-C	3
			TOTAL WEIGHT LBS	16

MISC HARDWARE				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
10	4	C40034032	U-BOLT ASSEMBLY 5/8" ø X 5 3/16 C-C	9
			TOTAL WEIGHT LBS	9

NOTES:

1. IF THE MOUNT IS NOT ON THE STRAIGHT PORTION OF THE TOWER SEE SITE SPECIFIC PIPE MOUNT.
2. QUANTITIES SHOWN IN LIST OF MATERIALS ARE FOR ONE (1) SIDEARM ASSEMBLY ONLY.

UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS INCLUDE FINISHES AND ARE IN INCHES

TOLERANCES: FRACTIONS ± 1/16" ANGLES ± 1/2 DEG. DECIMALS ± .010"

MATERIAL:

TOLERANCES DO NOT APPLY TO RAW MATERIAL

REV	DATE	DRW	CHK	DESCRIPTION

Sabre Industries™ INNOVATION DELIVERED

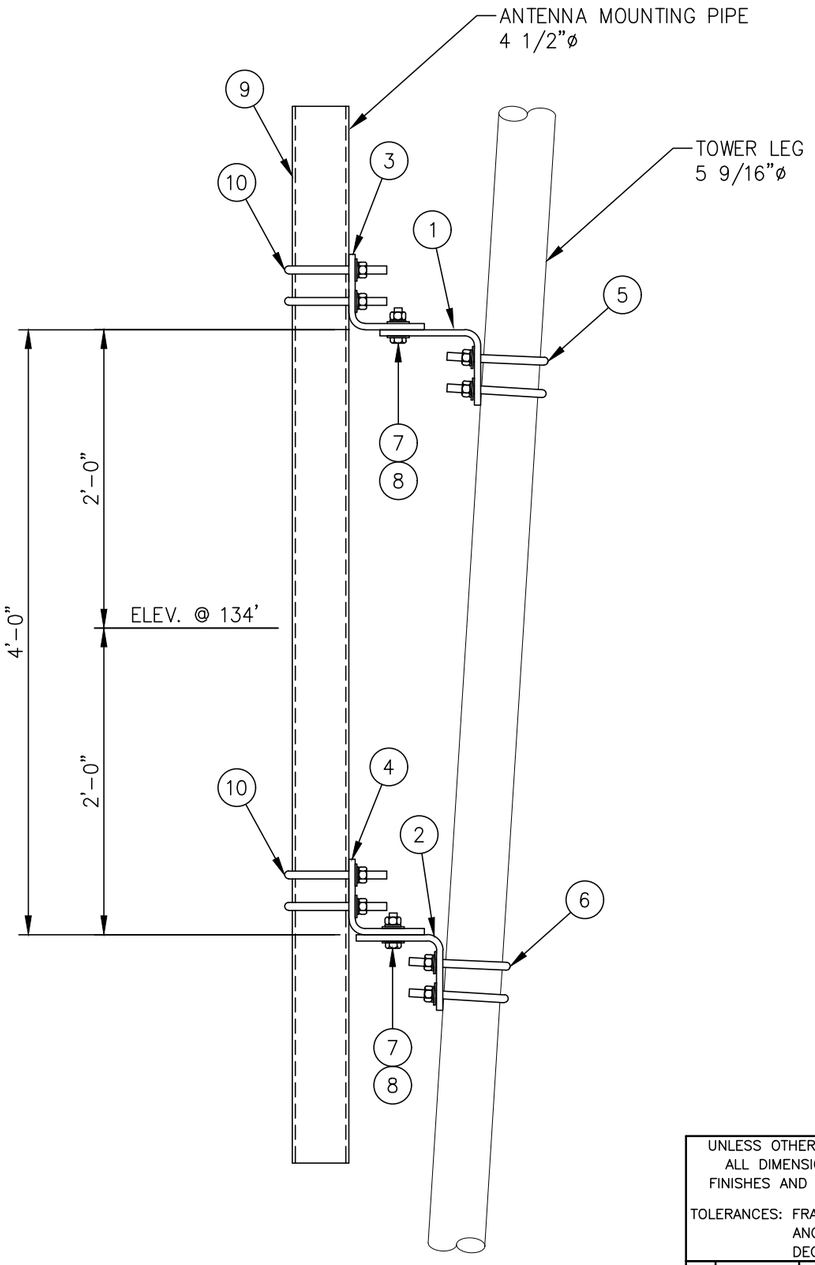
CONFIDENTIAL
This document and the information contained herein is the confidential trade secret property of Sabre Industries, Inc. ("Sabre") and must not be reproduced, copied or used, in whole or in part, for any purpose without the prior written consent of Sabre.
© 2025 Sabre Industries, Inc. All rights reserved.

3 FT. SIDEARM: 134' ELEVATION

SITE: NORTH FORK, OR

CUSTOMER: MARION COUNTY OREGON

JOB NO. 563424		SIZE	DRAWING NO.	REV
DATE	08/07/25	B	563424-SA7	0
DRAWN BY	KMP			
CHECKED BY	ZAK		SCALE NONE	PAGE 1 OF 1



ELEVATION VIEW

LIST OF MATERIALS FOR TAPERED LEG PIPE MOUNT KIT C10174055				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
1.	1	CS00219	TOP LEG MOUNT FOR 5 9/16 ø LEG	24
2.	1	CS00218	BOTTOM LEG MOUNT FOR 5 9/16 ø LEG	20
3.	1	CS00214	TOP PIPE MOUNT FOR 4 1/2 ø PIPE	15
4.	1	CS00215	BOTTOM PIPE MOUNT FOR 4 1/2 ø PIPE	12
5.	2	C40034035	U-BOLT ASSEMBLY 5/8 ø X 6 1/4 C-C (TOP LEG MOUNT)	5
6.	2	C40034035	U-BOLT ASSEMBLY 5/8 ø X 6 1/4 C-C (BOTTOM LEG MOUNT)	5
7.	4	C40026024	BOLT ASSEMBLY 5/8 ø X 2 1/4 A325	2
8.	8	C40031003	FLATWASHER, 5/8 ø (F436)	1
			KIT WEIGHT LBS	84

LIST OF ADDITIONAL MATERIALS				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
9.	1	C10981407	ANTENNA MTG. PIPE 4 1/2 ø X 7'-0	58
10.	4	C40034032	U-BOLT ASSEMBLY 5/8 ø X 5 3/16 C-C (PIPE MOUNTS)	9
			ADDITIONAL WEIGHT LBS	67

TOTAL WEIGHT LBS	151

UNLESS OTHERWISE SPECIFIED
ALL DIMENSIONS INCLUDE FINISHES AND ARE IN INCHES
TOLERANCES: FRACTIONS ± 1/16"
ANGLES ± 1/2 DEG.
DECIMALS ± .010"

MATERIAL:

TOLERANCES DO NOT APPLY TO RAW MATERIAL

REV	DATE	DRW	CHK	DESCRIPTION

Sabre Industries™
INNOVATION DELIVERED

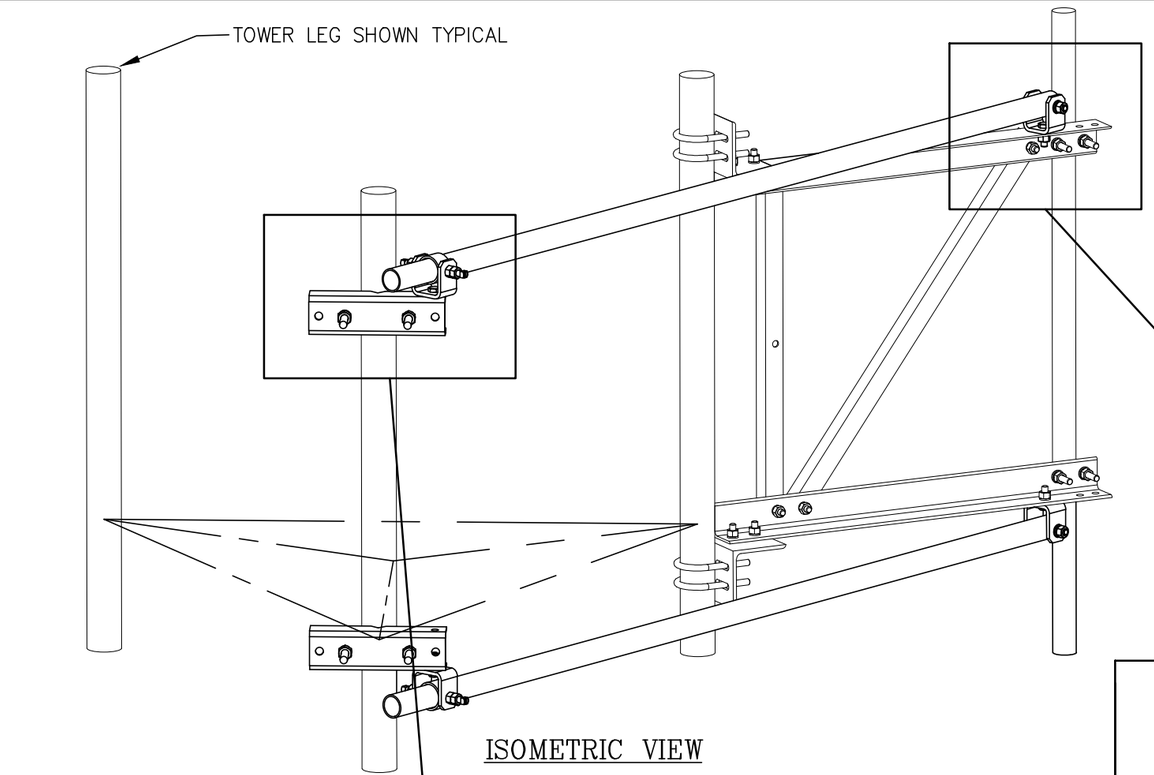
CONFIDENTIAL

This document and the information contained herein is the confidential trade secret property of Sabre Industries, Inc. ("Sabre") and must not be reproduced, copied or used, in whole or in part, for any purpose without the prior written consent of Sabre.
© 2025 Sabre Industries, Inc. All rights reserved.

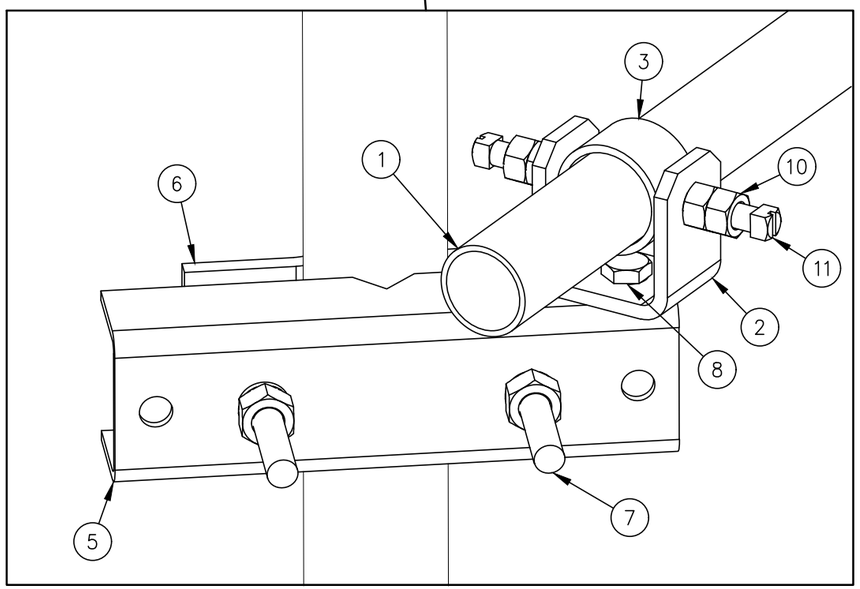
PIPE MOUNT FOR SIDEARM: 134' ELEVATION
SITE: NORTH FORK, OR
CUSTOMER: MARION COUNTY OREGON

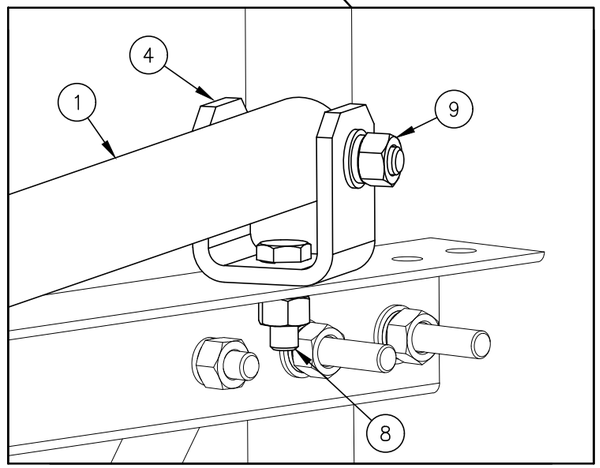
JOB NO. 563424		SIZE	DRAWING NO.	REV
DATE	8/7/25	B	563424-PM12	0
DRAWN BY	KMP			
CHECKED BY	ZAK		SCALE None	PAGE 1 OF 1

EXHIBIT K



ISOMETRIC VIEW





C10179011 SWIVEL KNUCKLE TIEBACK

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
1	1	CS00249	PIPE, 2 7/8 O.D. X W/0.203 X 15'-6	93
2	1	CW00022	SWIVEL PLATE WELDMENT	3
3	1	CS00092	PIPE, SLEEVE 3 1/2 O.D. X W/0.216 X 0'-1 3/4	1
4	1	CS00096	BENT SWIVEL PLATE	3
5	1	CS01360	PLATE, MOUNTING BRACKET (FORMED CHANNEL)	9
6	1	CS01361	PLATE, 2 HOLE ADAPTER CLAMP	3
7	2	C40140001	BOLT ASSEMBLY, 3/4 X 10 A307 W/NUT, LKW, FLW	4
8	2	C40026023	BOLT ASSEMBLY, 5/8 ø X 2 A325	1
9	1	C40026035	BOLT ASSEMBLY, 5/8 ø X 5 A325	1
10	2	C40042007	HEX NUT, 5/8 A194 GRADE 2H	1
11	2	C40998007	SQ. HEAD SET SCREW, 5/8 X 2 1/2	1
			TOTAL WEIGHT LBS	120

QUANTITIES SHOWN ABOVE ARE FOR (1) SWIVEL KNUCKLE TIEBACK KIT ONLY.
(2) KITS ARE REQUIRED FOR THIS SIDEARM ASSEMBLY

UNLESS OTHERWISE SPECIFIED
ALL DIMENSIONS INCLUDE
FINISHES AND ARE IN INCHES

TOLERANCES: FRACTIONS ± 1/16"
ANGLES ± 1/2 DEG.
DECIMALS ± .010"

MATERIAL:

TOLERANCES DO NOT APPLY TO RAW MATERIAL

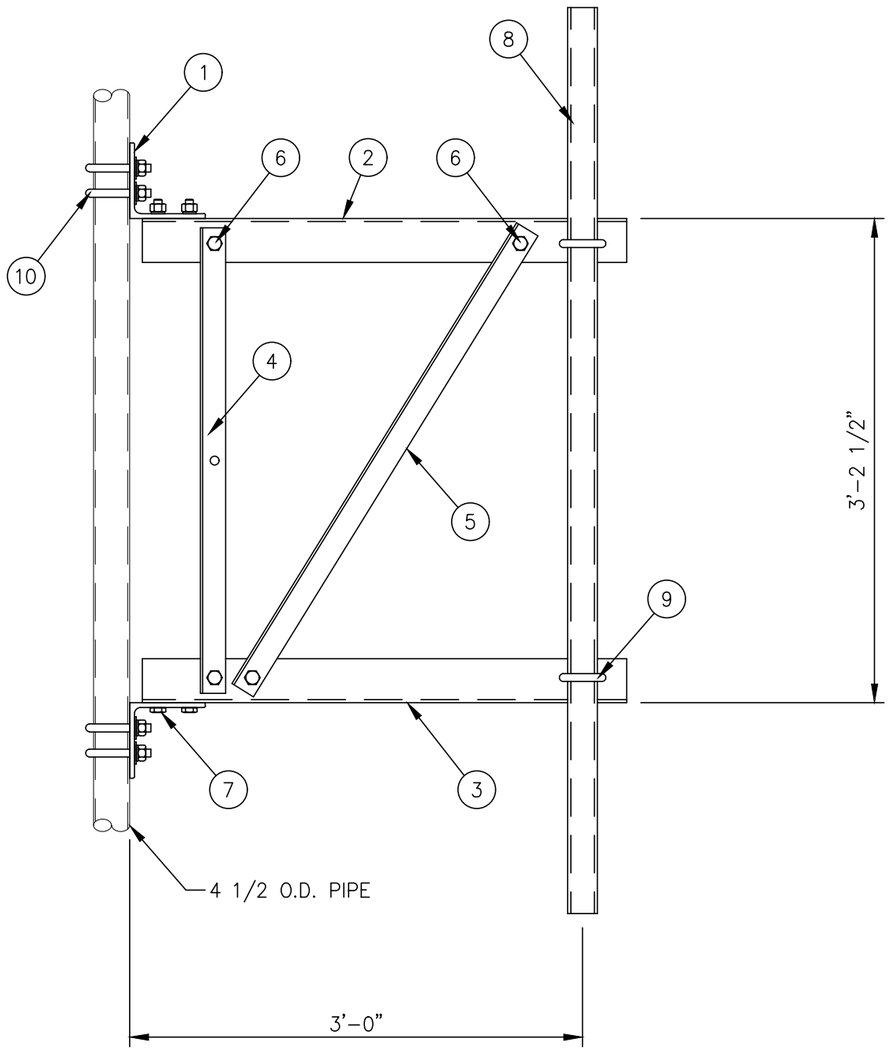
REV	DATE	DRW	CHK	DESCRIPTION

Sabre Industries™
INNOVATION DELIVERED

CONFIDENTIAL
This document and the information contained herein is the confidential trade secret property of Sabre Industries, Inc. ("Sabre") and must not be reproduced, copied or used, in whole or in part, for any purpose without the prior written consent of Sabre.
© 2025 Sabre Industries, Inc. All rights reserved.

SWIVEL KNUCKLE TIEBACKS: 134' ELEVATION
SITE: NORTH FORK, OR
CUSTOMER: MARION COUNTY OREGON

JOB NO. 563424		SIZE	DRAWING NO.	REV
DATE	08/07/25	B	563424-ST7	0
DRAWN BY	KMP			
CHECKED BY	ZAK		SCALE NONE	PAGE 1 OF 1



C10151103 3 FT. SIDEARM ASSEMBLY			
1	CK00060	SIDEARM ANGLE KIT	78
1	– – –	MISC HARDWARE (FRAMING)	4
1	C10900105	PIPE ANTENNA MOUNTING KIT 2 3/8" ø X 5'-0	19
4	C40034032	U-BOLT ASSEMBLY 5/8" ø X 5 3/16 C-C	9
		TOTAL WEIGHT LBS	110

CK00060 KIT LIST OF MATERIAL				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
1	2	CS00067	ANGLE, BOOM SUPPORT	23
2	1	CS01223	ANGLE, TOP CHORD	19
3	1	CS01224	ANGLE, BOTTOM CHORD	19
4	1	CS00065	ANGLE, VERTICAL	8
5	1	CS01228	ANGLE, DIAGONAL	9
			TOTAL WEIGHT LBS	78

MISC HARDWARE (FRAMING)				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
6	4	C40026022	BOLT ASSEMBLY, 5/8 ø X 1 3/4 A325	2
7	4	C40026023	BOLT ASSEMBLY, 5/8 ø X 2 A325	2
			TOTAL WEIGHT LBS	4

C10900105 ANTENNA PIPE MOUNTING KIT				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
8	1	C10981223	ANTENNA MTG. PIPE 2 3/8" ø X 5'-0	16
9	2	C40034023	U-BOLT ASSEMBLY 5/8" ø X 3 1/16 C-C	3
			TOTAL WEIGHT LBS	19

MISC HARDWARE				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
10	4	C40034032	U-BOLT ASSEMBLY 5/8" ø X 5 3/16 C-C	9
			TOTAL WEIGHT LBS	9

NOTES:

1. IF THE MOUNT IS NOT ON THE STRAIGHT PORTION OF THE TOWER SEE SITE SPECIFIC PIPE MOUNT.
2. QUANTITIES SHOWN IN LIST OF MATERIALS ARE FOR ONE (1) SIDEARM ASSEMBLY ONLY.

UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS INCLUDE FINISHES AND ARE IN INCHES

TOLERANCES: FRACTIONS ± 1/16" ANGLES ± 1/2 DEG. DECIMALS ± .010"

MATERIAL:

TOLERANCES DO NOT APPLY TO RAW MATERIAL

REV	DATE	DRW	CHK	DESCRIPTION

Sabre Industries™ INNOVATION DELIVERED

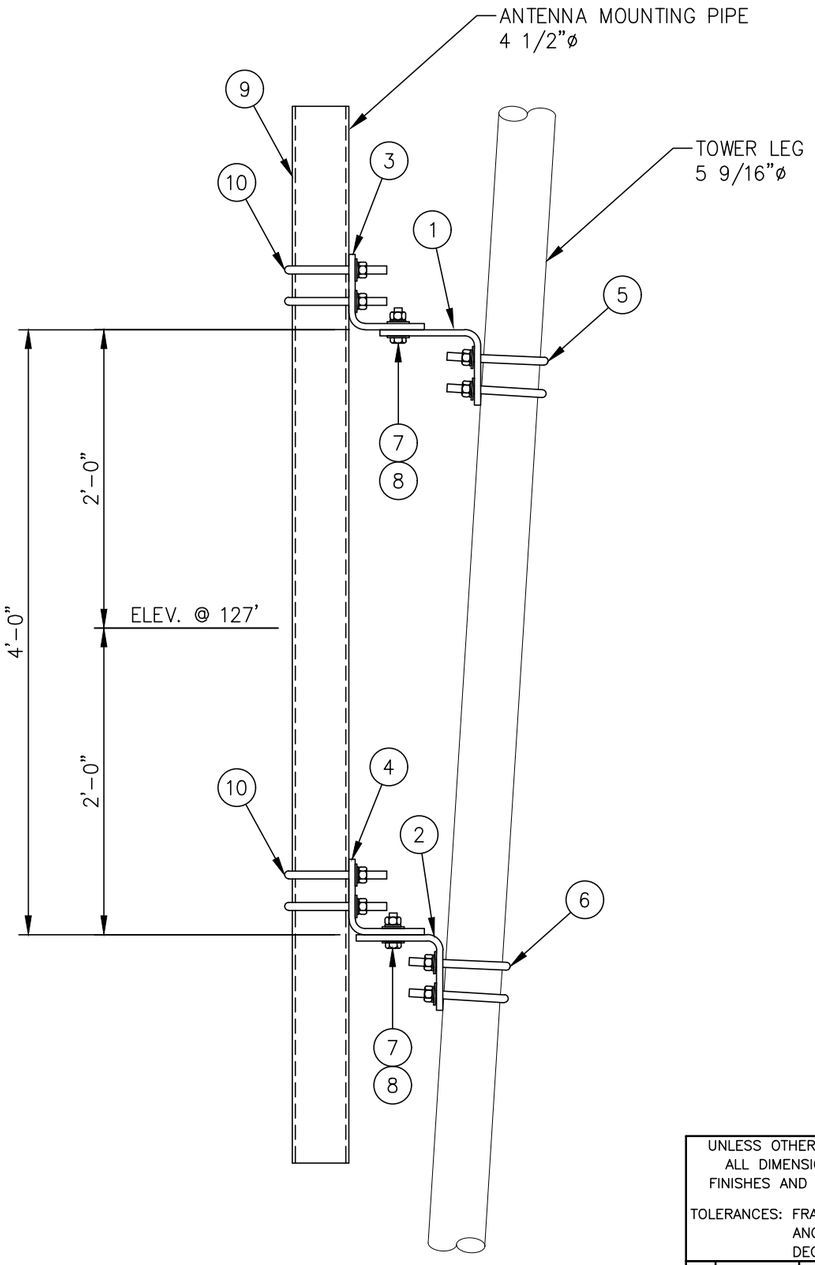
CONFIDENTIAL
This document and the information contained herein is the confidential trade secret property of Sabre Industries, Inc. ("Sabre") and must not be reproduced, copied or used, in whole or in part, for any purpose without the prior written consent of Sabre.
© 2025 Sabre Industries, Inc. All rights reserved.

3 FT. SIDEARM: 127' ELEVATION

SITE: NORTH FORK, OR

CUSTOMER: MARION COUNTY OREGON

JOB NO. 563424		SIZE	DRAWING NO.	REV
DATE	08/07/25	B	563424-SA8	0
DRAWN BY	KMP			
CHECKED BY	ZAK		SCALE NONE	PAGE 1 OF 1



ELEVATION VIEW

LIST OF MATERIALS FOR TAPERED LEG PIPE MOUNT KIT C10174055				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
1.	1	CS00219	TOP LEG MOUNT FOR 5 9/16 ø LEG	24
2.	1	CS00218	BOTTOM LEG MOUNT FOR 5 9/16 ø LEG	20
3.	1	CS00214	TOP PIPE MOUNT FOR 4 1/2 ø PIPE	15
4.	1	CS00215	BOTTOM PIPE MOUNT FOR 4 1/2 ø PIPE	12
5.	2	C40034035	U-BOLT ASSEMBLY 5/8 ø X 6 1/4 C-C (TOP LEG MOUNT)	5
6.	2	C40034035	U-BOLT ASSEMBLY 5/8 ø X 6 1/4 C-C (BOTTOM LEG MOUNT)	5
7.	4	C40026024	BOLT ASSEMBLY 5/8 ø X 2 1/4 A325	2
8.	8	C40031003	FLATWASHER, 5/8 ø (F436)	1
			KIT WEIGHT LBS	84

LIST OF ADDITIONAL MATERIALS				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
9.	1	C10981407	ANTENNA MTG. PIPE 4 1/2 ø X 7'-0	58
10.	4	C40034032	U-BOLT ASSEMBLY 5/8 ø X 5 3/16 C-C (PIPE MOUNTS)	9
			ADDITIONAL WEIGHT LBS	67

TOTAL WEIGHT LBS	151

UNLESS OTHERWISE SPECIFIED
ALL DIMENSIONS INCLUDE FINISHES AND ARE IN INCHES
TOLERANCES: FRACTIONS ± 1/16"
ANGLES ± 1/2 DEG.
DECIMALS ± .010"

MATERIAL:

TOLERANCES DO NOT APPLY TO RAW MATERIAL

REV	DATE	DRW	CHK	DESCRIPTION

Sabre Industries™
INNOVATION DELIVERED

CONFIDENTIAL

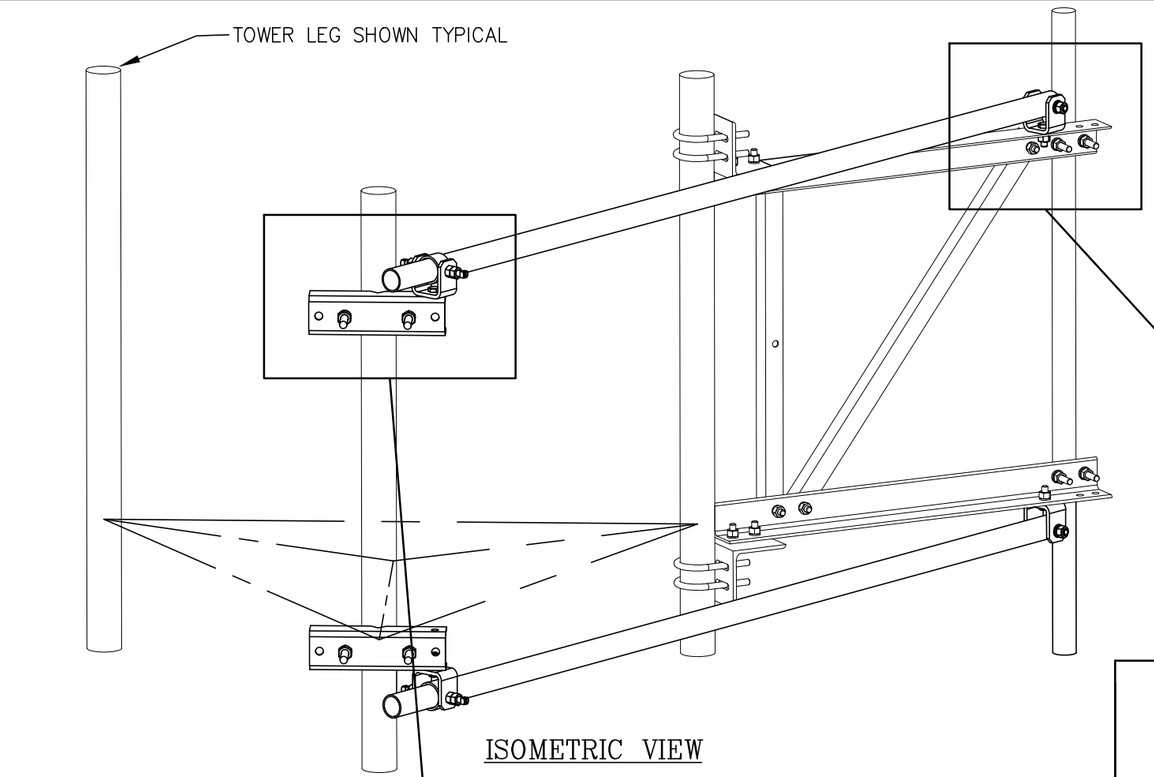
This document and the information contained herein is the confidential trade secret property of Sabre Industries, Inc. ("Sabre") and must not be reproduced, copied or used, in whole or in part, for any purpose without the prior written consent of Sabre.
© 2025 Sabre Industries, Inc. All rights reserved.

PIPE MOUNT FOR SIDEARM: 127' ELEVATION

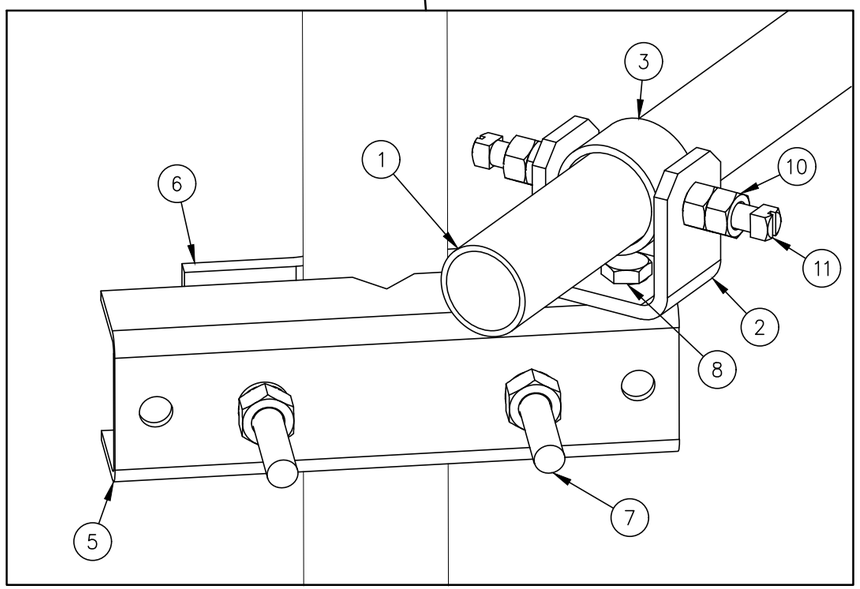
SITE: NORTH FORK, OR

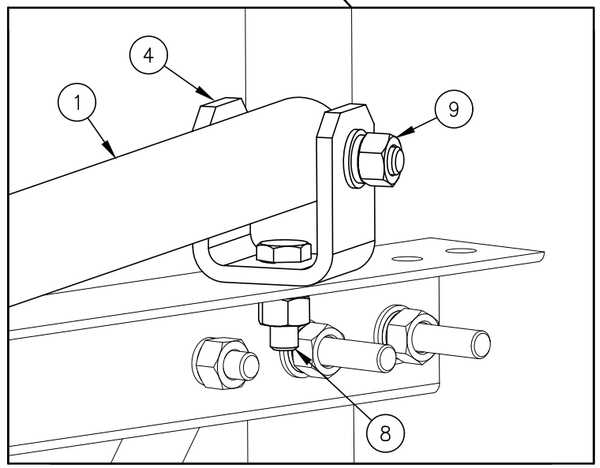
CUSTOMER: MARION COUNTY OREGON

JOB NO. 563424		SIZE	DRAWING NO.	REV
DATE	8/7/25	B	563424-PM13	0
DRAWN BY	KMP			
CHECKED BY	ZAK		SCALE None	PAGE 1 OF 1



ISOMETRIC VIEW





C10179011 SWIVEL KNUCKLE TIEBACK

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
1	1	CS00249	PIPE, 2 7/8 O.D. X W/0.203 X 15'-6	93
2	1	CW00022	SWIVEL PLATE WELDMENT	3
3	1	CS00092	PIPE, SLEEVE 3 1/2 O.D. X W/0.216 X 0'-1 3/4	1
4	1	CS00096	BENT SWIVEL PLATE	3
5	1	CS01360	PLATE, MOUNTING BRACKET (FORMED CHANNEL)	9
6	1	CS01361	PLATE, 2 HOLE ADAPTER CLAMP	3
7	2	C40140001	BOLT ASSEMBLY, 3/4 X 10 A307 W/NUT, LKW, FLW	4
8	2	C40026023	BOLT ASSEMBLY, 5/8 ø X 2 A325	1
9	1	C40026035	BOLT ASSEMBLY, 5/8 ø X 5 A325	1
10	2	C40042007	HEX NUT, 5/8 A194 GRADE 2H	1
11	2	C40998007	SQ. HEAD SET SCREW, 5/8 X 2 1/2	1
			TOTAL WEIGHT LBS	120

QUANTITIES SHOWN ABOVE ARE FOR (1) SWIVEL KNUCKLE TIEBACK KIT ONLY.
(2) KITS ARE REQUIRED FOR THIS SIDEARM ASSEMBLY

UNLESS OTHERWISE SPECIFIED
ALL DIMENSIONS INCLUDE
FINISHES AND ARE IN INCHES

TOLERANCES: FRACTIONS ± 1/16"
ANGLES ± 1/2 DEG.
DECIMALS ± .010"

MATERIAL:

TOLERANCES DO NOT APPLY TO RAW MATERIAL

REV	DATE	DRW	CHK	DESCRIPTION

Sabre Industries™
INNOVATION DELIVERED

CONFIDENTIAL
This document and the information contained herein is the confidential trade secret property of Sabre Industries, Inc. ("Sabre") and must not be reproduced, copied or used, in whole or in part, for any purpose without the prior written consent of Sabre.
© 2025 Sabre Industries, Inc. All rights reserved.

SWIVEL KNUCKLE TIEBACKS: 127' ELEVATION

SITE: NORTH FORK, OR

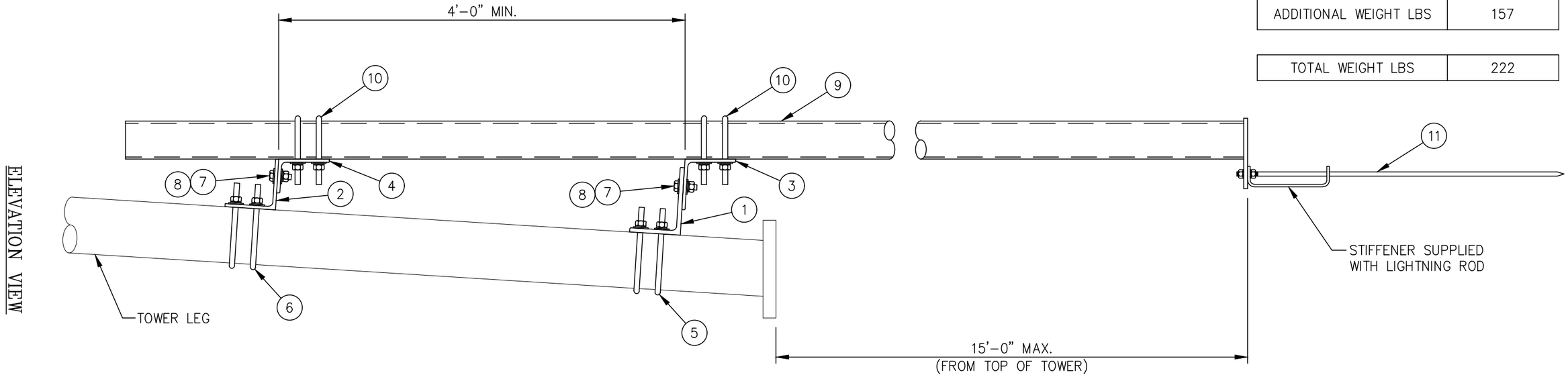
CUSTOMER: MARION COUNTY OREGON

JOB NO. 563424		SIZE	DRAWING NO.	REV
DATE	08/07/25	B	563424-ST8	0
DRAWN BY	KMP			
CHECKED BY	ZAK		SCALE NONE	PAGE 1 OF 1

LIST OF MATERIALS FOR TAPERED LEG PIPE MOUNT KIT C10174018				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
1.	1	CS00216	TOP LEG MOUNT FOR 2 7/8 ø LEG	15
2.	1	CS00215	BOTTOM LEG MOUNT FOR 2 7/8 ø LEG	12
3.	1	CS00214	TOP PIPE MOUNT FOR 2 7/8 ø PIPE	15
4.	1	CS00215	BOTTOM PIPE MOUNT FOR 2 7/8 ø PIPE	12
5.	2	C40034025	U-BOLT ASSEMBLY 5/8 ø X 3 9/16 C-C (TOP LEG MOUNT)	4
6.	2	C40034025	U-BOLT ASSEMBLY 5/8 ø X 3 9/16 C-C (BOTTOM LEG MOUNT)	4
7.	4	C40026024	BOLT ASSEMBLY 5/8 ø X 2 1/4 A325	2
8.	8	C40031003	FLATWASHER, 5/8 ø (F436)	1
			KIT WEIGHT LBS	65

LIST OF ADDITIONAL MATERIALS				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
9.	1	CW00032	LIGHTNING ROD EXTENSION 2 7/8 ø X 21'-0"	128
10.	4	C40034025	U-BOLT ASSEMBLY 5/8 ø X 3 9/16 C-C (PIPE MOUNTS)	7
11.	1 KIT	C30986004	LIGHTNING ROD ASSY 3/4 ø X 10'-0 CCS W/STIFFENER	22
			ADDITIONAL WEIGHT LBS	157

TOTAL WEIGHT LBS	222



ELEVATION VIEW

NOTE:
THE ASSEMBLY IS SHOWN ON THE OUTSIDE OF THE TOWER.
IT MAY ALSO BE MOUNTED ON THE INSIDE OF TOWER, IF NECESSARY.

UNLESS OTHERWISE SPECIFIED
ALL DIMENSIONS INCLUDE
FINISHES AND ARE IN INCHES

TOLERANCES: FRACTIONS ± 1/16"
ANGLES ± 1/2 DEG.
DECIMALS ± .010"

MATERIAL:

TOLERANCES DO NOT APPLY
TO RAW MATERIAL

REV	DATE	DRW	CHK	DESCRIPTION

Sabre Industries™
INNOVATION DELIVERED

CONFIDENTIAL
This document and the information contained herein is the confidential trade secret property of Sabre Industries, Inc. ("Sabre") and must not be reproduced, copied or used, in whole or in part, for any purpose without the prior written consent of Sabre.
© 2025 Sabre Industries, Inc. All rights reserved.

LIGHTNING ROD W/STIFFENER & EXTENSION
SITE: NORTH FORK, OR
CUSTOMER: MARION COUNTY OREGON

JOB NO. 563424		SIZE	DRAWING NO.	REV
DATE	8/7/25	B	563424-LR	0
DRAWN BY	KMP			
CHECKED BY	ZAK		SCALE None	PAGE 1 OF 1

BOLT INSTALLATION DETAILS:

1. INSTALLATION OF BOLTS: BOLTS FOR TOWERS AND ANTENNAS SHALL BE INSTALLED WITH THE NUTS FACING TO THE OUTSIDE AND/OR TO THE TOP OF THE TOWER, UNLESS PROHIBITED BY LACK OF CLEARANCE.

2. TIGHTENING OF BOLTS: ALL HIGH STRENGTH BOLTS SHALL BE TIGHTENED TO A SNUG-TIGHT CONDITION, AS DEFINED BY AISC.

3. NUT LOCKING DEVICE: ALL NUTS SHALL BE EQUIPPED WITH SOME TYPE OF NUT LOCKING DEVICE. SEE THE INDIVIDUAL DRAWINGS FOR THE TYPE OF NUT LOCKING DEVICE TO BE USED FOR EACH INDIVIDUAL APPLICATION.

UNLESS OTHERWISE SPECIFIED
ALL DIMENSIONS INCLUDE
FINISHES AND ARE IN INCHES

TOLERANCES: FRACTIONS ± 1/16"
ANGLES ± 1/2 DEG.
DECIMALS ± .010"

MATERIAL:

TOLERANCES DO NOT APPLY TO RAW MATERIAL

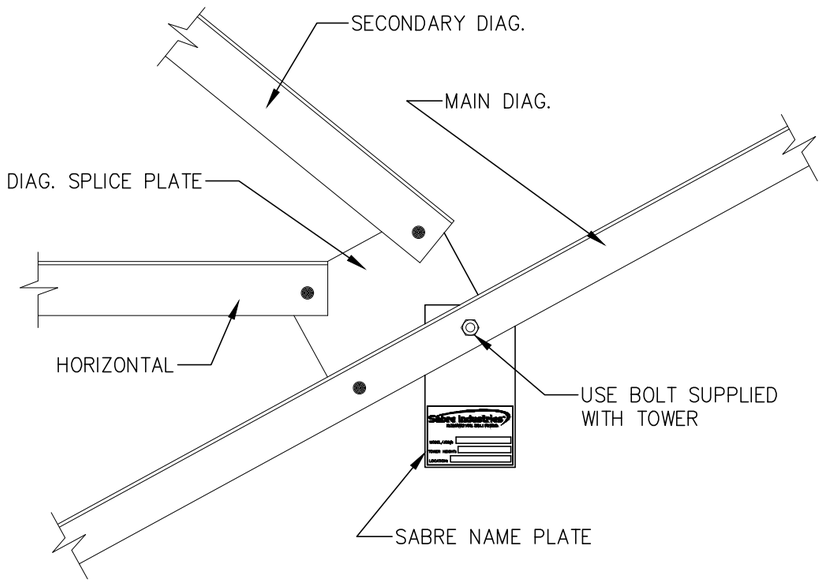
REV	DATE	DRW	CHK	DESCRIPTION
3	02/15/08	KLE	DLW	REVISED PER KEITH TINDALL
2	03/04/04	PSB	ZAK	REDRAWN ONTO "B" SIZE TITLEBLOCK.
1	03/06/01	JKW	PSB	REDRAWN IN AUTOCAD 2000i.

Sabre Industries™
INNOVATION DELIVERED

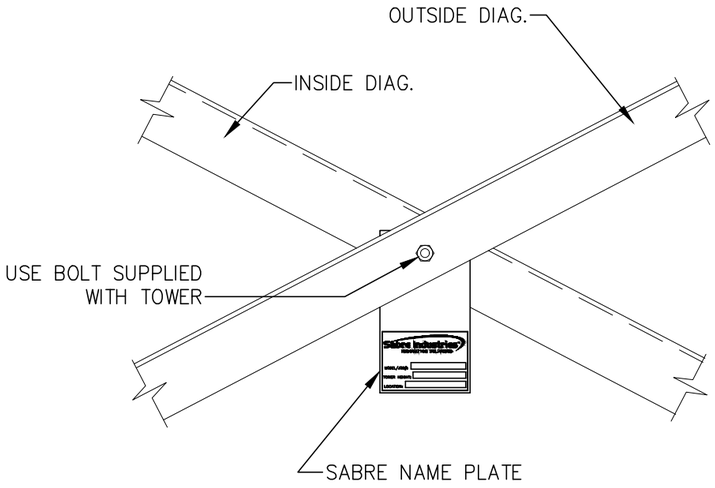
CONFIDENTIAL
This document and the information contained herein is the confidential trade secret property of Sabre Industries, Inc. ("Sabre") and must not be reproduced, copied or used, in whole or in part, for any purpose without the prior written consent of Sabre.
© 2022 Sabre Industries, Inc. All rights reserved.

BOLT INSTALLATION DETAILS

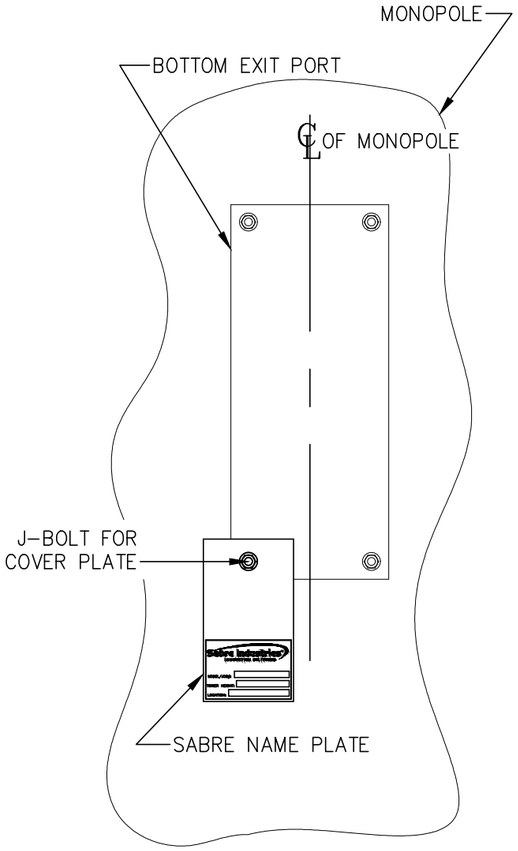
		SIZE	DRAWING NO.	REV
DATE	01/28/00	B	9014671	3
DRAWN BY	MJM			
CHECKED BY	KJT/DLW	SCALE None	PAGE 1 OF 1	



TYPICAL FOR MODEL S3TL, S4TL, S3R & S4R
SELF-SUPPORTING TOWER
(K-BRACE)

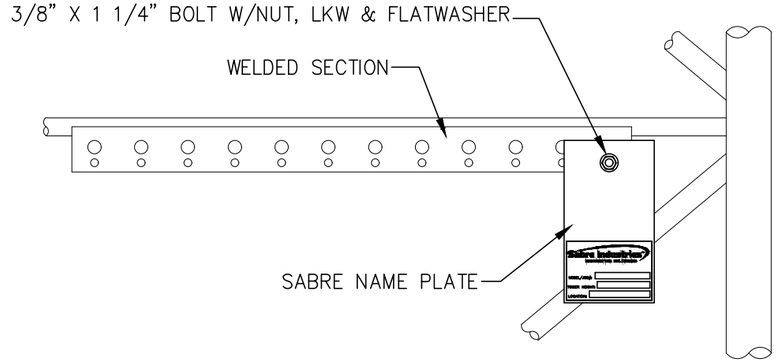


TYPICAL FOR MODEL S3TL, S4TL, S3R & S4R
SELF-SUPPORTING TOWER
(X-BRACE)

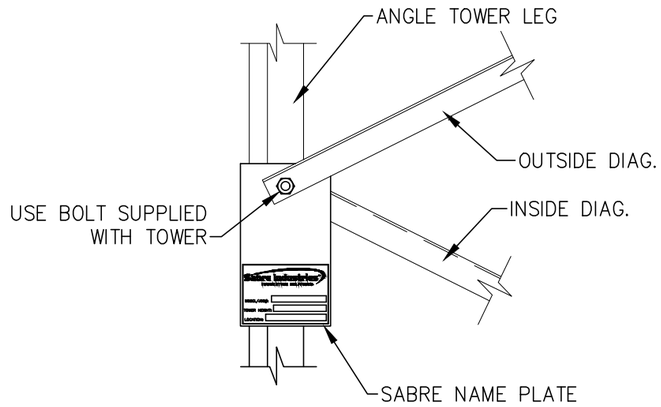


TYPICAL FOR MONOPOLE
STRUCTURE

NOTE:
NAME PLATE SHOULD BE MOUNTED AT
APPROXIMATELY EYE LEVEL WHEN POSSIBLE.



TYPICAL FOR MODEL 2400 / 3600 / 4400 / 4800 / 6000
WELDED GUYED TOWER



TYPICAL FOR MODEL 3000 / 3600 / 4800
ANGLE GUYED TOWER

UNLESS OTHERWISE SPECIFIED
ALL DIMENSIONS INCLUDE
FINISHES AND ARE IN INCHES

TOLERANCES: FRACTIONS ± 1/16"
ANGLES ± 1/2 DEG.
DECIMALS ± .010"

MATERIAL:

TOLERANCES DO NOT APPLY
TO RAW MATERIAL

REV	DATE	DRW	CHK	DESCRIPTION
7	05/25/21	FJM	DLW	UPDATED SABRE NAME PLATE LOGO
6	8/18/11	DSN	KTW	ADDED 4800 & 6000 WELDED GUYED TOWER.
5	3/30/04	MJM	ZAK	ADDED S4TL & S4R TO S.S. TOWER.
4	11/11/02	PSB	RGF	ADDED 2400 WELDED GUYED TOWER.
3	08/23/01	SMC	PSB	REVISED BOLT ON GUYED TOWER WAS 3/8 X 1"
				REVISED MONOPOLE INSTALLATION.
2	02/16/01	DEM	RGF	REDRAWN IN AUTOCAD 2000i
1	04/16/97	DEM	RGF	REDRAWN WITH NEW TITLE BLOCK

Sabre Industries™
INNOVATION DELIVERED

CONFIDENTIAL
This document and the information contained herein is the confidential trade secret property of Sabre Industries, Inc. ("Sabre") and must not be reproduced, copied or used, in whole or in part, for any purpose without the prior written consent of Sabre.
© 2022 Sabre Industries, Inc. All rights reserved.

OPTIONAL MOUNTING INSTALLATION
SABRE NAME PLATE

		SIZE	DRAWING NO.	REV
DATE	10/15/96	B	906956	7
DRAWN BY	DEM			
CHECKED BY	RGF	SCALE None	PAGE 1 OF 1	

NOTICE

ALL PARTS ARE TO BE INVENTORIED AND ANY
SHORTAGES REPORTED WITHIN 48 HOURS OF DELIVERY
TO THE CONTRACTING ERECTOR.

SHORTAGES REPORTED AFTER THIS TIME PERIOD WILL
BE CHARGED TO THE CONTRACTOR.

CALL 712-258-6690

TO REACH THE SABRE CONTRACTS DEPARTMENT.

AVISO

Todas las partes serán inventariadas y los faltantes reportados
por el contratista dentro de las 48 horas a partir de la entrega.

Los faltantes reportados después de 48 horas serán cargados al contratista.

Para aclaraciones llame a:

Sabre-Departamento de Contrataciones

(001) 712 258-6690

UNLESS OTHERWISE SPECIFIED
ALL DIMENSIONS INCLUDE
FINISHES AND ARE IN INCHES

TOLERANCES: FRACTIONS ± 1/16"
ANGLES ± 1/2 DEG.
DECIMALS ± .010"

MATERIAL:

TOLERANCES DO NOT APPLY
TO RAW MATERIAL

REV	DATE	DRW	CHK	DESCRIPTION
3	03/04/04	PSB	ZAK	REDRAWN ONTO "B" SIZE TITLEBLOCK.
2	02/25/02	CHH	RWM	ADDED SPANISH TEXT.
1	02/27/01	CHH	CE	REDRAWN IN AUTOCAD 2000i & UPDATED VERBAGE.

Sabre Industries™
INNOVATION DELIVERED

CONFIDENTIAL

This document and the information contained herein is the confidential trade secret property of Sabre Industries, Inc. ("Sabre") and must not be reproduced, copied or used, in whole or in part, for any purpose without the prior written consent of Sabre.
© 2022 Sabre Industries, Inc. All rights reserved.

INVENTORY REQUIREMENT SHEET

DATE	05/12/97
DRAWN BY	ZAK
CHECKED BY	JD

SIZE	DRAWING NO.	REV
B	907901	3

SCALE	PAGE
None	1 OF 1

EXHIBIT K

CUSTOMER : MARION COUNTY OREGON

SITE : NORTH FORK, OR

B.O.M. 180 FT. MODEL S3TL-HD2 SELF-SUPPORTING TOWER

PC=PIECE	OR=ORANGE
PLT=PALLET	WH=WHITE
BDL=BUNDLE	O/W=OR & WH
CRT=CRATE	N/R=NOT REQ'D
D=DRUM	SP=SPECIAL
BX=BOX	

ITEM NO.	NO. REQ'D.	DRAWING NUMBER	DRAWING REV	PART NO.	DESCRIPTION	TOTAL WEIGHT LBS.	PAINT	PACKING KIT	PACKING QTY OF PKG'S	PACKING PKG. NO.
1					**ANCHOR BOLTS AND TEMPLATES**					
2	18	C40041061	0	C40041061	ANCHOR BOLT ASSEMBLY, 1 3/4 Ø X 7'-3 (F1554 GR 105)	1305				
3					W/(5) NUTS 1 3/4 HEAVY HEX (A563 DH)					
4					(2) FLATWASHERS 1 3/4 (F436)					
5	6	C30139220	0	C30139220	PLATE, A.B. TEMPLATE 1 3/4"Ø A.B. ON 19"Ø B.C.	161				
6					**LEG TO LEG TEMPLATE MATERIAL**					
7	1 KIT			C30400341	LEG TO LEG TEMPLATE KIT, 23'-0 BASE SPREAD	517				
8					(6) 1 3/4"Ø A.B. ON A 19"Ø B.C.					
9										
10										
11										
12										
13										
14										
15										
16										
17										
18										
19										
20										

REV	DATE	DRW	CHK	DESCRIPTION

DATE	7/31/25	**JOB NO.**	563424
DRAWN BY	AWB	**PRINT NO.**	BOM-1
CHECKED BY	BWA	**PAGE**	1 OF 23

EXHIBIT K

Sabre Industries™
INNOVATION DELIVERED

CUSTOMER : MARION COUNTY OREGON

SITE : NORTH FORK, OR

B.O.M. 180 FT. MODEL S3TL-HD2 SELF-SUPPORTING TOWER

PC=PIECE	OR=ORANGE
PLT=PALLET	WH=WHITE
BDL=BUNDLE	O/W=OR & WH
CRT=CRATE	N/R=NOT REQ'D
D=DRUM	SP=SPECIAL
BX=BOX	

ITEM NO.	NO. REQ'D.	DRAWING NUMBER	DRAWING REV	PART NO.	DESCRIPTION	TOTAL WEIGHT LBS.	PAINT	PACKING KIT	PACKING QTY OF PKG'S	PACKING PKG. NO.
1					**TOWER LEGS**					
2	3	15-T11611441	0	15-T11611441	SECT. 15 LEG 14 Ø X .500 X 20'-0 5/16 W/STEP BOLTS	5508				
3	3	14-T11611443	0	14-T11611443	SECT. 14 LEG 14 Ø X .500 X 20'-0 5/16 W/STEP BOLTS	5618				
4	3	13-T11611445	0	13-T11611445	SECT. 13 LEG 10 3/4 Ø X .500 X 20'-0 5/16 W/STEP BOLTS	4625				
5	3	12-T11610309	0	12-T11610309	SECT. 12 LEG 10 3/4 Ø X .500 X 20'-0 5/16 W/STEP BOLTS	4336				
6	3	11-T1169117	0	11-T1169117	SECT. 11 LEG 8 5/8 Ø X .500 X 20'-0 5/16 W/STEP BOLTS	3504				
7	3	10-T1169819	0	10-T1169819	SECT. 10 LEG 8 5/8 Ø X .322 X 20'-0 5/16 W/STEP BOLTS	2270				
8	3	09-T1169975	0	09-T1169975	SECT. 9 LEG 5 9/16 Ø X .375 X 20'-0 5/16 W/STEP BOLTS	1758				
9	1	08-T1168025	0	08-T1168025	SECT. 8 LEG 4 Ø X .318 X 20'-0 5/16 W/STEP BOLTS	373				
10	2	08-T1168026	0	08-T1168026	SECT. 8 LEG 4 Ø X .318 X 20'-0 5/16	735				
11	1	07-T1165503	0	07-T1165503	SECT. 7 LEG 2 7/8 Ø X .203 X 20'-0 5/16 W/STEP BOLTS	219				
12	2	07-T1165504	0	07-T1165504	SECT. 7 LEG 2 7/8 Ø X .203 X 20'-0 5/16	428				
13										
14										
15										
16										
17										
18										
19										
20										

REV	DATE	DRW	CHK	DESCRIPTION

DATE	8/7/25	**JOB NO.**	563424
DRAWN BY	KMP	**PRINT NO.**	BOM-1
CHECKED BY	ZAK	**PAGE**	2 OF 23

EXHIBIT K

CUSTOMER : MARION COUNTY OREGON

SITE : NORTH FORK, OR

B.O.M. 180 FT. MODEL S3TL-HD2 SELF-SUPPORTING TOWER

PC=PIECE	OR=ORANGE
PLT=PALLET	WH=WHITE
BDL=BUNDLE	O/W=OR & WH
CRT=CRATE	N/R=NOT REQ'D
D=DRUM	SP=SPECIAL
BX=BOX	

ITEM NO.	NO. REQ'D.	DRAWING NUMBER	DRAWING REV	PART NO.	DESCRIPTION	TOTAL WEIGHT LBS.	PAINT	PACKING KIT	PACKING QTY OF PKG'S	PACKING PKG. NO.
1					**TOWER BRACING**					
2	1 KIT				**BRACING #15-T8101794 SECTION 15**	3451				
3					**CONSISTING OF THE MATERIAL LISTED BELOW**					
4	6	TS11269	0	TS11269	ANGLE, DIAGONAL 6 X 4 X 3/8 X 22'-11 3/16	1760				
5	6	TS11270	0	TS11270	ANGLE, DIAGONAL 6 X 4 X 3/8 X 22'-0 7/16	1691				
6					**SPLICE BOLTS TOP OF SECTION 15**					
7	31			C40026115	BOLT ASSEMBLY, 1 1/2 Ø X 6 1/2 A325	188				
8	1 KIT				**HARDWARE #TK01256 SECTION 15**	72				
9					**CONSISTING OF THE MATERIAL LISTED BELOW**					
10	7			C40026099	BOLT ASSEMBLY, 1 1/8 Ø X 3 1/4 A325	15				
11	25			C40026097	BOLT ASSEMBLY, 1 1/8 Ø X 2 3/4 A325	50				
12	7	C40047014	0	C40047014	RINGFILL, 3/8 THICK - 1 1/8 Ø BOLT (3 X 3)	7				
13										
14										
15										
16										
17										
18										
19										
20										

REV	DATE	DRW	CHK	DESCRIPTION

DATE	8/7/25	**JOB NO.**	563424
DRAWN BY	KMP	**PRINT NO.**	BOM-1
CHECKED BY	ZAK	**PAGE**	3 OF 23

CUSTOMER : MARION COUNTY OREGON

SITE : NORTH FORK, OR

B.O.M. 180 FT. MODEL S3TL-HD2 SELF-SUPPORTING TOWER

PC=PIECE	OR=ORANGE
PLT=PALLET	WH=WHITE
BDL=BUNDLE	O/W=OR & WH
CRT=CRATE	N/R=NOT REQ'D
D=DRUM	SP=SPECIAL
BX=BOX	

ITEM NO.	NO. REQ'D.	DRAWING NUMBER	DRAWING REV	PART NO.	DESCRIPTION	TOTAL WEIGHT LBS.	PAINT	PACKING KIT	PACKING QTY OF PKG'S	PACKING PKG. NO.
1					**TOWER BRACING CONT'D**					
2	1 KIT				**BRACING #14-T8101795 SECTION 14**	3174				
3					**CONSISTING OF THE MATERIAL LISTED BELOW**					
4	6	TS11271	0	TS11271	ANGLE, DIAGONAL 6 X 4 X 3/8 X 21'-1 3/8	1621				
5	6	TS11272	0	TS11272	ANGLE, DIAGONAL 6 X 4 X 3/8 X 20'-2 7/8	1553				
6					**SPLICE BOLTS TOP OF SECTION 14**					
7	31			C40026166	BOLT ASSEMBLY, 1 1/2 Ø X 7 A325	196				
8	1 KIT				**HARDWARE #TK01256 SECTION 14**	72				
9					**CONSISTING OF THE MATERIAL LISTED BELOW**					
10	7			C40026099	BOLT ASSEMBLY, 1 1/8 Ø X 3 1/4 A325	15				
11	25			C40026097	BOLT ASSEMBLY, 1 1/8 Ø X 2 3/4 A325	50				
12	7	C40047014	0	C40047014	RINGFILL, 3/8 THICK - 1 1/8 Ø BOLT (3 X 3)	7				
13										
14										
15										
16										
17										
18										
19										
20										

REV	DATE	DRW	CHK	DESCRIPTION

DATE	8/7/25	**JOB NO.**	563424
DRAWN BY	KMP	**PRINT NO.**	BOM-1
CHECKED BY	ZAK	**PAGE**	4 OF 23

EXHIBIT K

Sabre Industries™ INNOVATION DELIVERED

CUSTOMER : MARION COUNTY OREGON

SITE : NORTH FORK, OR

B.O.M. 180 FT. MODEL S3TL-HD2 SELF-SUPPORTING TOWER

PC=PIECE	OR=ORANGE
PLT=PALLET	WH=WHITE
BDL=BUNDLE	O/W=OR & WH
CRT=CRATE	N/R=NOT REQ'D
D=DRUM	SP=SPECIAL
BX=BOX	

ITEM NO.	NO. REQ'D.	DRAWING NUMBER	DRAWING REV	PART NO.	DESCRIPTION	TOTAL WEIGHT LBS.	PAINT	PACKING KIT	PACKING QTY OF PKG'S	PACKING PKG. NO.
1					**TOWER BRACING CONT'D**					
2	1 KIT				**BRACING #13-T8101796 SECTION 13**	2371				
3					**CONSISTING OF THE MATERIAL LISTED BELOW**					
4	6	TS11273	0	TS11273	ANGLE, DIAGONAL 4 X 4 X 3/8 X 19'-4 1/8	1239				
5	6	TS11274	0	TS11274	ANGLE, DIAGONAL 4 X 4 X 3/8 X 18'-5 15/16	1132				
6					**SPLICE BOLTS TOP OF SECTION 13**					
7	25			C40026115	BOLT ASSEMBLY, 1 1/2 Ø X 6 1/2 A325	152				
8	1 KIT				**HARDWARE #TK00353 SECTION 13**	54				
9					**CONSISTING OF THE MATERIAL LISTED BELOW**					
10	7			C40026073	BOLT ASSEMBLY, 1 Ø X 3 A325	12				
11	25			C40026071	BOLT ASSEMBLY, 1 Ø X 2 1/2 A325	41				
12	7			C40047007	RINGFILL, 3/8 THICK - 1 Ø BOLT	1				
13										
14										
15										
16										
17										
18										
19										
20										

REV	DATE	DRW	CHK	DESCRIPTION

DATE	8/7/25	**JOB NO.**	563424
DRAWN BY	KMP	**PRINT NO.**	BOM-1
CHECKED BY	ZAK	**PAGE**	5 OF 23

Sabre Industries™
INNOVATION DELIVERED

CUSTOMER : MARION COUNTY OREGON

SITE : NORTH FORK, OR

B.O.M. 180 FT. MODEL S3TL-HD2 SELF-SUPPORTING TOWER

PC=PIECE	OR=ORANGE
PLT=PALLET	WH=WHITE
BDL=BUNDLE	O/W=OR & WH
CRT=CRATE	N/R=NOT REQ'D
D=DRUM	SP=SPECIAL
BX=BOX	

ITEM NO.	NO. REQ'D.	DRAWING NUMBER	DRAWING REV	PART NO.	DESCRIPTION	TOTAL WEIGHT LBS.	PAINT	PACKING KIT	PACKING QTY OF PKG'S	PACKING PKG. NO.
1					**TOWER BRACING CONT'D**					
2	1 KIT				**BRACING #12-T8101797 SECTION 12**	1983				
3					**CONSISTING OF THE MATERIAL LISTED BELOW**					
4	6	TS11275	0	TS11275	ANGLE, DIAGONAL 4 X 3 1/2 X 3/8 X 17'-10 7/16	1015				
5	6	TS11276	0	TS11276	ANGLE, DIAGONAL 4 X 3 1/2 X 3/8 X 17'-0 9/16	968				
6					**SPLICE BOLTS TOP OF SECTION 12**					
7	25			C40026115	BOLT ASSEMBLY, 1 1/2 Ø X 6 1/2 A325	152				
8	1 KIT				**HARDWARE #TK00353 SECTION 12**	54				
9					**CONSISTING OF THE MATERIAL LISTED BELOW**					
10	7			C40026073	BOLT ASSEMBLY, 1 Ø X 3 A325	12				
11	25			C40026071	BOLT ASSEMBLY, 1 Ø X 2 1/2 A325	41				
12	7			C40047007	RINGFILL, 3/8 THICK - 1 Ø BOLT	1				
13										
14										
15										
16										
17										
18										
19										
20										

REV	DATE	DRW	CHK	DESCRIPTION

DATE	8/7/25	**JOB NO.**	563424
DRAWN BY	KMP	**PRINT NO.**	BOM-1
CHECKED BY	ZAK	**PAGE**	6 OF 23

CUSTOMER : MARION COUNTY OREGON

SITE : NORTH FORK, OR

B.O.M. 180 FT. MODEL S3TL-HD2 SELF-SUPPORTING TOWER

PC=PIECE	OR=ORANGE
PLT=PALLET	WH=WHITE
BDL=BUNDLE	O/W=OR & WH
CRT=CRATE	N/R=NOT REQ'D
D=DRUM	SP=SPECIAL
BX=BOX	

ITEM NO.	NO. REQ'D.	DRAWING NUMBER	DRAWING REV	PART NO.	DESCRIPTION	TOTAL WEIGHT LBS.	PAINT	PACKING KIT	PACKING QTY OF PKG'S	PACKING PKG. NO.
1					**TOWER BRACING CONT'D**					
2	1 KIT				**BRACING #11-T8101372 SECTION 11**	2397				
3					**CONSISTING OF THE MATERIAL LISTED BELOW**					
4	6	TS08563	0	TS08563	ANGLE, DIAGONAL 4 X 3 1/2 X 3/8 X 14'-7 7/8	832				
5	6	TS08562	0	TS08562	ANGLE, DIAGONAL 4 X 3 1/2 X 3/8 X 14'-0 13/16	799				
6	6	TS08561	0	TS08561	ANGLE, DIAGONAL 4 X 3 1/2 X 3/8 X 13'-5 13/16	766				
7					**SPLICE BOLTS TOP OF SECTION 11**					
8	19			C40026093	BOLT ASSEMBLY, 1 1/4 Ø X 5 A325	65				
9	1 KIT				**HARDWARE #TK00430 SECTION 11**	81				
10					**CONSISTING OF THE MATERIAL LISTED BELOW**					
11	10			C40026073	BOLT ASSEMBLY, 1 Ø X 3 A325	18				
12	38			C40026071	BOLT ASSEMBLY, 1 Ø X 2 1/2 A325	62				
13	10			C40047007	RINGFILL, 3/8 THICK - 1 Ø BOLT	1				
14										
15										
16										
17										
18										
19										
20										

REV	DATE	DRW	CHK	DESCRIPTION

DATE	8/7/25	**JOB NO.**	563424
DRAWN BY	KMP	**PRINT NO.**	BOM-1
CHECKED BY	ZAK	**PAGE**	7 OF 23

CUSTOMER : MARION COUNTY OREGON

SITE : NORTH FORK, OR

B.O.M. 180 FT. MODEL S3TL-HD2 SELF-SUPPORTING TOWER

PC=PIECE	OR=ORANGE
PLT=PALLET	WH=WHITE
BDL=BUNDLE	O/W=OR & WH
CRT=CRATE	N/R=NOT REQ'D
D=DRUM	SP=SPECIAL
BX=BOX	

ITEM NO.	NO. REQ'D.	DRAWING NUMBER	DRAWING REV	PART NO.	DESCRIPTION	TOTAL WEIGHT LBS.	PAINT	PACKING KIT	PACKING QTY OF PKG'S	PACKING PKG. NO.
1					**TOWER BRACING CONT'D**					
2	1 KIT				**BRACING #10-T8100820 SECTION 10**	1887				
3					**CONSISTING OF THE MATERIAL LISTED BELOW**					
4	6	TS05779	1	TS05779	ANGLE, DIAGONAL 4 X 4 X 5/16 X 12'-10 3/8	658				
5	6	TS05780	1	TS05780	ANGLE, DIAGONAL 4 X 4 X 5/16 X 12'-3 1/2	629				
6	6	TS05781	1	TS05781	ANGLE, DIAGONAL 4 X 4 X 5/16 X 11'-8 3/4	600				
7					**SPLICE BOLTS TOP OF SECTION 10**					
8	19			C40026094	BOLT ASSEMBLY, 1 1/4 Ø X 5 1/2 A325	69				
9	1 KIT				**HARDWARE #TK00437 SECTION 10**	79				
10					**CONSISTING OF THE MATERIAL LISTED BELOW**					
11	10			C40026072	BOLT ASSEMBLY, 1 Ø X 2 3/4 A325	17				
12	37			C40026071	BOLT ASSEMBLY, 1 Ø X 2 1/2 A325	61				
13	10			C40047010	RINGFILL, 1/2 THICK - 1 Ø BOLT	1				
14										
15										
16										
17										
18										
19										
20										

REV	DATE	DRW	CHK	DESCRIPTION

DATE 8/7/25 **JOB NO.** 563424

DRAWN BY KMP **PRINT NO.** BOM-1

CHECKED BY ZAK **PAGE** 8 OF 23

Sabre Industries™
INNOVATION DELIVERED

CUSTOMER : MARION COUNTY OREGON

SITE : NORTH FORK, OR

B.O.M. 180 FT. MODEL S3TL-HD2 SELF-SUPPORTING TOWER

PC=PIECE	OR=ORANGE
PLT=PALLET	WH=WHITE
BDL=BUNDLE	O/W=OR & WH
CRT=CRATE	N/R=NOT REQ'D
D=DRUM	SP=SPECIAL
BX=BOX	

ITEM NO.	NO. REQ'D.	DRAWING NUMBER	DRAWING REV	PART NO.	DESCRIPTION	TOTAL WEIGHT LBS.	PAINT	PACKING KIT	PACKING QTY OF PKG'S	PACKING PKG. NO.
1					**TOWER BRACING CONT'D**					
2	1 KIT				**BRACING #09-T8100384 SECTION 09**	1612				
3					**CONSISTING OF THE MATERIAL LISTED BELOW**					
4	6	TS03786	1	TS03786	ANGLE, DIAGONAL 3 1/2 X 3 X 3/8 X 11'-5 3/8	564				
5	6	TS03787	1	TS03787	ANGLE, DIAGONAL 3 1/2 X 3 X 3/8 X 10'-10 13/16	537				
6	6	TS03788	1	TS03788	ANGLE, DIAGONAL 3 1/2 X 3 X 3/8 X 10'-4 7/16	511				
7					**SPLICE BOLTS TOP OF SECTION 09**					
8	19			C40026078	BOLT ASSEMBLY, 1 Ø X 4 1/4 A325	41				
9	1 KIT				**HARDWARE #TK00269 SECTION 09**	37				
10					**CONSISTING OF THE MATERIAL LISTED BELOW**					
11	10			C40026045	BOLT ASSEMBLY, 3/4 Ø X 2 1/2 A325	8				
12	38			C40026044	BOLT ASSEMBLY, 3/4 Ø X 2 1/4 A325	28				
13	10			C40047004	RINGFILL, 3/8 THICK - 3/4 Ø BOLT	1				
14										
15										
16										
17										
18										
19										
20										

REV	DATE	DRW	CHK	DESCRIPTION

DATE	8/7/25	**JOB NO.**	563424
DRAWN BY	KMP	**PRINT NO.**	BOM-1
CHECKED BY	ZAK	**PAGE**	9 OF 23

Sabre Industries™
INNOVATION DELIVERED

CUSTOMER : MARION COUNTY OREGON

SITE : NORTH FORK, OR

B.O.M. 180 FT. MODEL S3TL-HD2 SELF-SUPPORTING TOWER

PC=PIECE	OR=ORANGE
PLT=PALLET	WH=WHITE
BDL=BUNDLE	O/W=OR & WH
CRT=CRATE	N/R=NOT REQ'D
D=DRUM	SP=SPECIAL
BX=BOX	

ITEM NO.	NO. REQ'D.	DRAWING NUMBER	DRAWING REV	PART NO.	DESCRIPTION	TOTAL WEIGHT LBS.	PAINT	PACKING KIT	PACKING QTY OF PKG'S	PACKING PKG. NO.
1					**TOWER BRACING CONT'D**					
2	1 KIT				**BRACING #08-T8100421 SECTION 08**	1256				
3					**CONSISTING OF THE MATERIAL LISTED BELOW**					
4	6	TS04017	1	TS04017	ANGLE, DIAGONAL 2 1/2 X 2 1/2 X 3/8 X 9'-1 13/16	337				
5	6	TS04018	1	TS04018	ANGLE, DIAGONAL 2 1/2 X 2 1/2 X 3/8 X 8'-8 11/16	322				
6	6	TS04019	1	TS04019	ANGLE, DIAGONAL 2 1/2 X 2 1/2 X 3/8 X 8'-3 5/8	306				
7	6	TS04020	1	TS04020	ANGLE, DIAGONAL 2 1/2 X 2 1/2 X 3/8 X 7'-10 11/16	291				
8					**SPLICE BOLTS TOP OF SECTION 08**					
9	19			C40026078	BOLT ASSEMBLY, 1 Ø X 4 1/4 A325	41				
10	1 KIT				**HARDWARE #TK00348 SECTION 08**	49				
11					**CONSISTING OF THE MATERIAL LISTED BELOW**					
12	13			C40026045	BOLT ASSEMBLY, 3/4 Ø X 2 1/2 A325	10				
13	50			C40026044	BOLT ASSEMBLY, 3/4 Ø X 2 1/4 A325	37				
14	13			C40047004	RINGFILL, 3/8 THICK - 3/4 Ø BOLT	2				
15										
16										
17										
18										
19										
20										

REV	DATE	DRW	CHK	DESCRIPTION

DATE	8/7/25	**JOB NO.**	563424
DRAWN BY	KMP	**PRINT NO.**	BOM-1
CHECKED BY	ZAK	**PAGE**	10 OF 23

Sabre Industries™ INNOVATION DELIVERED

CUSTOMER : MARION COUNTY OREGON

SITE : NORTH FORK, OR

B.O.M. 180 FT. MODEL S3TL-HD2 SELF-SUPPORTING TOWER

PC=PIECE	OR=ORANGE
PLT=PALLET	WH=WHITE
BDL=BUNDLE	O/W=OR & WH
CRT=CRATE	N/R=NOT REQ'D
D=DRUM	SP=SPECIAL
BX=BOX	

ITEM NO.	NO. REQ'D.	DRAWING NUMBER	DRAWING REV	PART NO.	DESCRIPTION	TOTAL WEIGHT LBS.	PAINT	PACKING KIT	PACKING QTY OF PKG'S	PACKING PKG. NO.
1					**TOWER BRACING**					
2	1 KIT				**BRACING #07-T8100168 SECTION 07**	726				
3					**CONSISTING OF THE MATERIAL LISTED BELOW**					
4	6	TS02040	1	TS02040	ANGLE, DIAGONAL 2 X 2 X 5/16 X 7'-5 1/2	182				
5	6	TS02039	1	TS02039	ANGLE, DIAGONAL 2 X 2 X 5/16 X 7'-0 13/16	173				
6	6	TS02038	1	TS02038	ANGLE, DIAGONAL 2 X 2 X 5/16 X 6'-8 5/16	163				
7	6	TS02037	1	TS02037	ANGLE, DIAGONAL 2 X 2 X 5/16 X 6'-3 15/16	155				
8	3	TS02036	1	TS02036	ANGLE, HORIZONTAL 2 X 2 X 5/16 X 4'-4 3/8	53				
9	1 KIT				**HARDWARE #TK00146 SECTION 07**	35				
10					**CONSISTING OF THE MATERIAL LISTED BELOW**					
11	13			C40026024	BOLT ASSEMBLY, 5/8 Ø X 2 1/4 A325	7				
12	57			C40026023	BOLT ASSEMBLY, 5/8 Ø X 2 A325	26				
13	13			C40047003	RINGFILL, 3/8 THICK - 5/8 Ø BOLT	2				
14										
15										
16										
17										
18										
19										
20										

REV	DATE	DRW	CHK	DESCRIPTION

DATE 8/7/25 **JOB NO.** 563424

DRAWN BY KMP **PRINT NO.** BOM-1

CHECKED BY ZAK **PAGE** 11 OF 23

CUSTOMER : MARION COUNTY OREGON

SITE : NORTH FORK, OR

B.O.M. 180 FT. MODEL S3TL-HD2 SELF-SUPPORTING TOWER

PC=PIECE	OR=ORANGE
PLT=PALLET	WH=WHITE
BDL=BUNDLE	O/W=OR & WH
CRT=CRATE	N/R=NOT REQ'D
D=DRUM	SP=SPECIAL
BX=BOX	

ITEM NO.	NO. REQ'D.	DRAWING NUMBER	DRAWING REV	PART NO.	DESCRIPTION	TOTAL WEIGHT LBS.	PAINT	PACKING KIT	PACKING QTY OF PKG'S	PACKING PKG. NO.
1					**SAFETY CLIMB**					
2	1 KIT			C30012054	200' TUF-TUG SAFETY CLIMB MATERIAL	95				
3										
4										
5										
6										
7										
8										
9										
10										
11										
12										
13										
14										
15										
16										
17										
18										
19										
20										

REV	DATE	DRW	CHK	DESCRIPTION

DATE	8/7/25	**JOB NO.**	563424
DRAWN BY	KMP	**PRINT NO.**	BOM-1
CHECKED BY	ZAK	**PAGE**	12 OF 23

EXHIBIT K

Sabre Industries™ INNOVATION DELIVERED

CUSTOMER : MARION COUNTY OREGON

SITE : NORTH FORK, OR

B.O.M. 180 FT. MODEL S3TL-HD2 SELF-SUPPORTING TOWER

PC=PIECE	OR=ORANGE
PLT=PALLET	WH=WHITE
BDL=BUNDLE	O/W=OR & WH
CRT=CRATE	N/R=NOT REQ'D
D=DRUM	SP=SPECIAL
BX=BOX	

ITEM NO.	NO. REQ'D.	DRAWING NUMBER	DRAWING REV	PART NO.	DESCRIPTION	TOTAL WEIGHT LBS.	PAINT	PACKING KIT	PACKING QTY OF PKG'S	PACKING PKG. NO.
1					**SAFETY CLIMB MATERIAL**					
2	1 KIT			C30011049	SAFETY CLIMB BOTTOM MOUNT (14"Ø)	37				
3	1 KIT			C30011004	SAFETY CLIMB TOP MOUNT (2 3/4"Ø - 2 7/8"Ø)	27				
4	8 KITS			C30003001	SAFETY CLIMB INTERMEDIATE MOUNT	17				
5					**CLIMBING/CONSTRUCTION STEP BOLTS**					
6	373			C40044017	STEP BOLT ASSEMBLY, 5/8 Ø X 7 H.D.G.	373				
7										
8										
9										
10										
11										
12										
13										
14										
15										
16										
17										
18										
19										
20										

REV	DATE	DRW	CHK	DESCRIPTION

DATE	8/11/25	**JOB NO.**	563424
DRAWN BY	KMP	**PRINT NO.**	BOM-1
CHECKED BY	ZAK	**PAGE**	13 OF 23

EXHIBIT K

CUSTOMER : MARION COUNTY OREGON

SITE : NORTH FORK, OR

B.O.M. 180 FT. MODEL S3TL-HD2 SELF-SUPPORTING TOWER

PC=PIECE	OR=ORANGE
PLT=PALLET	WH=WHITE
BDL=BUNDLE	O/W=OR & WH
CRT=CRATE	N/R=NOT REQ'D
D=DRUM	SP=SPECIAL
BX=BOX	

ITEM NO.	NO. REQ'D.	DRAWING NUMBER	DRAWING REV	PART NO.	DESCRIPTION	TOTAL WEIGHT LBS.	PAINT	PACKING KIT	PACKING QTY OF PKG'S	PACKING PKG. NO.
1					**WAVEGUIDE LADDER (WG1)**					
2	18	CS00146	2	CS00146	ANGLE, WAVEGUIDE LADDER RAIL 20 FT. W/4 FT. RUNG SPC	540				
3	45	CS01619	0	CS01619	ANGLE, WAVEGUIDE SUPPORT (6 HOLE)	95				
4	18	CS00037	2	CS00037	PLATE, LADDER SPLICE	7				
5	46	CS00169	2	CS00169	CLIP, LADDER ATTACHMENT	25				
6					**WAVEGUIDE LADDER HARDWARE (WG1)**					
7	36			C40039002	J-BOLT ASSEMBLY, 3/8 Ø X 7 1/4 I.L.	13				
8	10			C40039001	J-BOLT ASSEMBLY, 3/8 Ø X 5 3/4 I.L.	3				
9	130			C40024004	BOLT ASSEMBLY, 3/8 Ø X 1 1/2 GRD 5	13				
10										
11										
12										
13										
14										
15										
16										
17										
18										
19										
20										

REV	DATE	DRW	CHK	DESCRIPTION

DATE	8/11/25	**JOB NO.**	563424
DRAWN BY	KMP	**PRINT NO.**	BOM-1
CHECKED BY	ZAK	**PAGE**	14 OF 23

CUSTOMER : MARION COUNTY OREGON

SITE : NORTH FORK, OR

B.O.M. 180 FT. MODEL S3TL-HD2 SELF-SUPPORTING TOWER

PC=PIECE	OR=ORANGE
PLT=PALLET	WH=WHITE
BDL=BUNDLE	O/W=OR & WH
CRT=CRATE	N/R=NOT REQ'D
D=DRUM	SP=SPECIAL
BX=BOX	

ITEM NO.	NO. REQ'D.	DRAWING NUMBER	DRAWING REV	PART NO.	DESCRIPTION	TOTAL WEIGHT LBS.	PAINT	PACKING KIT	PACKING QTY OF PKG'S	PACKING PKG. NO.
1					**WAVEGUIDE LADDER (WG2)**					
2	18	CS00146	2	CS00146	ANGLE, WAVEGUIDE LADDER RAIL 20 FT. W/4 FT. RUNG SPC	540				
3	45	CS01619	0	CS01619	ANGLE, WAVEGUIDE SUPPORT (6 HOLE)	95				
4	18	CS00037	2	CS00037	PLATE, LADDER SPLICE	7				
5	46	CS00169	2	CS00169	CLIP, LADDER ATTACHMENT	25				
6					**WAVEGUIDE LADDER HARDWARE (WG2)**					
7	36			C40039002	J-BOLT ASSEMBLY, 3/8 Ø X 7 1/4 I.L.	13				
8	10			C40039001	J-BOLT ASSEMBLY, 3/8 Ø X 5 3/4 I.L.	3				
9	130			C40024004	BOLT ASSEMBLY, 3/8 Ø X 1 1/2 GRD 5	13				
10										
11										
12										
13										
14										
15										
16										
17										
18										
19										
20										

REV	DATE	DRW	CHK	DESCRIPTION

DATE 8/11/25 **JOB NO.** 563424

DRAWN BY KMP **PRINT NO.** BOM-1

CHECKED BY ZAK **PAGE** 15 OF 23

Sabre Industries™
INNOVATION DELIVERED

CUSTOMER : MARION COUNTY OREGON

SITE : NORTH FORK, OR

B.O.M. 180 FT. MODEL S3TL-HD2 SELF-SUPPORTING TOWER

PC=PIECE	OR=ORANGE
PLT=PALLET	WH=WHITE
BDL=BUNDLE	O/W=OR & WH
CRT=CRATE	N/R=NOT REQ'D
D=DRUM	SP=SPECIAL
BX=BOX	

ITEM NO.	NO. REQ'D.	DRAWING NUMBER	DRAWING REV	PART NO.	DESCRIPTION	TOTAL WEIGHT LBS.	PAINT	PACKING KIT	PACKING QTY OF PKG'S	PACKING PKG. NO.
1					**WAVEGUIDE LADDER (WG3)**					
2	18	CS00146	2	CS00146	ANGLE, WAVEGUIDE LADDER RAIL 20 FT. W/4 FT. RUNG SPC	540				
3	45	CS01619	0	CS01619	ANGLE, WAVEGUIDE SUPPORT (6 HOLE)	95				
4	18	CS00037	2	CS00037	PLATE, LADDER SPLICE	7				
5	46	CS00169	2	CS00169	CLIP, LADDER ATTACHMENT	25				
6					**WAVEGUIDE LADDER HARDWARE (WG3)**					
7	36			C40039002	J-BOLT ASSEMBLY, 3/8 Ø X 7 1/4 I.L.	13				
8	10			C40039001	J-BOLT ASSEMBLY, 3/8 Ø X 5 3/4 I.L.	3				
9	130			C40024004	BOLT ASSEMBLY, 3/8 Ø X 1 1/2 GRD 5	13				
10										
11										
12										
13										
14										
15										
16										
17										
18										
19										
20										

REV	DATE	DRW	CHK	DESCRIPTION

DATE	8/11/25	**JOB NO.**	563424
DRAWN BY	KMP	**PRINT NO.**	BOM-1
CHECKED BY	ZAK	**PAGE**	16 OF 23

Sabre Industries™
INNOVATION DELIVERED

CUSTOMER : MARION COUNTY OREGON

SITE : NORTH FORK, OR

B.O.M. 180 FT. MODEL S3TL-HD2 SELF-SUPPORTING TOWER

PC=PIECE	OR=ORANGE
PLT=PALLET	WH=WHITE
BDL=BUNDLE	O/W=OR & WH
CRT=CRATE	N/R=NOT REQ'D
D=DRUM	SP=SPECIAL
BX=BOX	

ITEM NO.	NO. REQ'D.	DRAWING NUMBER	DRAWING REV	PART NO.	DESCRIPTION	TOTAL WEIGHT LBS.	PAINT	PACKING KIT	PACKING QTY OF PKG'S	PACKING PKG. NO.
1					**LEG CAPS**					
2	1 KIT			C30008022	LEG CAP KIT, 3/4" BOLTS ON 6 1/2" B.C. (1" SPLICE PLATE)	11				
3					**3' SIDEARM MOUNT @ 179'**					
4	1 KIT			C10151103	3 FT. SIDEARM ASSEMBLY	82				
5	1			C10900105	PIPE ANTENNA MOUNTING KIT 2 3/8 Ø X 5'-0	22				
6	4			C40034032	U-BOLT ASSEMBLY 5/8 Ø X 5 3/16 C-C	9				
7					**Z-BRACKET PIPE MOUNT FOR SIDEARM @ 179'**					
8	1 KIT			C10174018	TAPERED LEG PIPE MOUNT KIT	64				
9	1			C10981407	ANTENNA MTG. PIPE 4 1/2 Ø X 7'-0	58				
10	4			C40034032	U-BOLT ASSEMBLY 5/8 Ø X 5 3/16 C-C	9				
11					**SWIVEL KNUCKLE TIEBACKS FOR SIDEARM @ 179'**					
12	2 KITS			C10179001	SWIVEL KNUCKLE TIEBACK KIT 2 3/8 Ø PIPE X 10'-0	118				
13					**Z-BRACKET FLUSH MOUNT @ 177'**					
14	1 KIT			C10174018	TAPERED LEG FLUSH MOUNT KIT	64				
15	1			C10981207	ANTENNA MTG. PIPE 2 3/8 Ø X 7'-0	23				
16	4			C40034023	U-BOLT ASSEMBLY 5/8 Ø X 3 1/16 C-C	5				
17					**3' SIDEARM MOUNTS @ 175'**					
18	2 KITS			C10151103	3 FT. SIDEARM ASSEMBLY	164				
19	2			C10900105	PIPE ANTENNA MOUNTING KIT 2 3/8 Ø X 5'-0	45				
20	8			C40034032	U-BOLT ASSEMBLY 5/8 Ø X 5 3/16 C-C	17				

REV	DATE	DRW	CHK	DESCRIPTION

DATE	8/11/25	**JOB NO.**	563424
DRAWN BY	KMP	**PRINT NO.**	BOM-1
CHECKED BY	ZAK	**PAGE**	17 OF 23

Sabre Industries™
INNOVATION DELIVERED

CUSTOMER : MARION COUNTY OREGON

SITE : NORTH FORK, OR

B.O.M. 180 FT. MODEL S3TL-HD2 SELF-SUPPORTING TOWER

PC=PIECE	OR=ORANGE
PLT=PALLET	WH=WHITE
BDL=BUNDLE	O/W=OR & WH
CRT=CRATE	N/R=NOT REQ'D
D=DRUM	SP=SPECIAL
BX=BOX	

ITEM NO.	NO. REQ'D.	DRAWING NUMBER	DRAWING REV	PART NO.	DESCRIPTION	TOTAL WEIGHT LBS.	PAINT	PACKING KIT	PACKING QTY OF PKG'S	PACKING PKG. NO.
1					**Z-BRACKET PIPE MOUNTS FOR SIDEARMS @ 175'**					
2	2 KITS			C10174018	TAPERED LEG PIPE MOUNT KIT	127				
3	2			C10981407	ANTENNA MTG. PIPE 4 1/2 Ø X 7'-0	116				
4	8			C40034032	U-BOLT ASSEMBLY 5/8 Ø X 5 3/16 C-C	17				
5					**SWIVEL KNUCKLE TIEBACKS FOR SIDEARMS @ 175'**					
6	4 KITS			C10179002	SWIVEL KNUCKLE TIEBACK KIT 2 3/8 Ø PIPE X 13'-3	280				
7					**Z-BRACKET PIPE MOUNTS @ 173'**					
8	3 KITS			C10174018	TAPERED LEG PIPE MOUNT KIT	191				
9	3			C10981407	ANTENNA MTG. PIPE 4 1/2 Ø X 7'-0	175				
10	12			C40034032	U-BOLT ASSEMBLY 5/8 Ø X 5 3/16 C-C	26				
11					**8 FT. PARABOLIC ANTENNA ICE SHIELD @ 170'**					
12	1 KIT			C30085002	PARABOLIC ANTENNA ICE SHIELD, 6'-8' ANTENNAS	701				
13					**Z-BRACKET PIPE MOUNT @ 165'**					
14	1 KIT			C10174018	TAPERED LEG PIPE MOUNT KIT	64				
15	1			C10981407	ANTENNA MTG. PIPE 4 1/2 Ø X 7'-0	58				
16	4			C40034032	U-BOLT ASSEMBLY 5/8 Ø X 5 3/16 C-C	9				
17					**3' SIDEARM MOUNT @ 165'**					
18	1 KIT			C10151103	3 FT. SIDEARM ASSEMBLY	82				
19	1			C10900105	PIPE ANTENNA MOUNTING KIT 2 3/8 Ø X 5'-0	22				
20	4			C40034032	U-BOLT ASSEMBLY 5/8 Ø X 5 3/16 C-C	9				

REV	DATE	DRW	CHK	DESCRIPTION

DATE	8/11/25	**JOB NO.**	563424
DRAWN BY	KMP	**PRINT NO.**	BOM-1
CHECKED BY	ZAK	**PAGE**	18 OF 23

EXHIBIT K

CUSTOMER : MARION COUNTY OREGON

SITE : NORTH FORK, OR

B.O.M. 180 FT. MODEL S3TL-HD2 SELF-SUPPORTING TOWER

PC=PIECE	OR=ORANGE
PLT=PALLET	WH=WHITE
BDL=BUNDLE	O/W=OR & WH
CRT=CRATE	N/R=NOT REQ'D
D=DRUM	SP=SPECIAL
BX=BOX	

ITEM NO.	NO. REQ'D.	DRAWING NUMBER	DRAWING REV	PART NO.	DESCRIPTION	TOTAL WEIGHT LBS.	PAINT	PACKING KIT	PACKING QTY OF PKG'S	PACKING PKG. NO.
1					**Z-BRACKET PIPE MOUNT FOR SIDEARM @ 165'**					
2	1 KIT			C10174018	TAPERED LEG PIPE MOUNT KIT	64				
3	1			C10981407	ANTENNA MTG. PIPE 4 1/2 Ø X 7'-0	58				
4	4			C40034032	U-BOLT ASSEMBLY 5/8 Ø X 5 3/16 C-C	9				
5					**SWIVEL KNUCKLE TIEBACKS FOR SIDEARM @ 165'**					
6	2 KITS			C10179002	SWIVEL KNUCKLE TIEBACK KIT 2 3/8 Ø PIPE X 13'-3	140				
7					**3' SIDEARM MOUNT @ 163'**					
8	1 KIT			C10151103	3 FT. SIDEARM ASSEMBLY	82				
9	1			C10900104	PIPE ANTENNA MOUNTING KIT 2 3/8 Ø X 4'-0	19				
10	4			C40034032	U-BOLT ASSEMBLY 5/8 Ø X 5 3/16 C-C	9				
11					**Z-BRACKET PIPE MOUNT FOR SIDEARM @ 163'**					
12	1 KIT			C10174018	TAPERED LEG PIPE MOUNT KIT	64				
13	1			C10981407	ANTENNA MTG. PIPE 4 1/2 Ø X 7'-0	58				
14	4			C40034032	U-BOLT ASSEMBLY 5/8 Ø X 5 3/16 C-C	9				
15					**SWIVEL KNUCKLE TIEBACKS FOR SIDEARM @ 163'**					
16	2 KITS			C10179002	SWIVEL KNUCKLE TIEBACK KIT 2 3/8 Ø PIPE X 13'-3	140				
17					**8 FT. PARABOLIC ANTENNA ICE SHIELD @ 155'**					
18	2 KITS			C30085002	PARABOLIC ANTENNA ICE SHIELD, 6'-8' ANTENNAS	1402				
19										
20										

REV	DATE	DRW	CHK	DESCRIPTION

DATE 8/11/25 **JOB NO.** 563424

DRAWN BY KMP **PRINT NO.** BOM-1

CHECKED BY ZAK **PAGE** 19 OF 23

CUSTOMER : MARION COUNTY OREGON

SITE : NORTH FORK, OR

B.O.M. 180 FT. MODEL S3TL-HD2 SELF-SUPPORTING TOWER

PC=PIECE	OR=ORANGE
PLT=PALLET	WH=WHITE
BDL=BUNDLE	O/W=OR & WH
CRT=CRATE	N/R=NOT REQ'D
D=DRUM	SP=SPECIAL
BX=BOX	

ITEM NO.	NO. REQ'D.	DRAWING NUMBER	DRAWING REV	PART NO.	DESCRIPTION	TOTAL WEIGHT LBS.	PAINT	PACKING KIT	PACKING QTY OF PKG'S	PACKING PKG. NO.
1					**Z-BRACKET PIPE MOUNTS @ 150'**					
2	2 KITS			C10174036	TAPERED LEG PIPE MOUNT KIT	129				
3	2			C10981407	ANTENNA MTG. PIPE 4 1/2 Ø X 7'-0	116				
4	8			C40034032	U-BOLT ASSEMBLY 5/8 Ø X 5 3/16 C-C	17				
5					**Z-BRACKET PIPE MOUNT @ 143'**					
6	1 KIT			C10174036	TAPERED LEG PIPE MOUNT KIT	65				
7	1			C10981407	ANTENNA MTG. PIPE 4 1/2 Ø X 7'-0	58				
8	4			C40034032	U-BOLT ASSEMBLY 5/8 Ø X 5 3/16 C-C	9				
9					**3' SIDEARM MOUNT @ 143'**					
10	1 KIT			C10151103	3 FT. SIDEARM ASSEMBLY	82				
11	1			C10900105	PIPE ANTENNA MOUNTING KIT 2 3/8 Ø X 5'-0	22				
12	4			C40034032	U-BOLT ASSEMBLY 5/8 Ø X 5 3/16 C-C	9				
13					**Z-BRACKET PIPE MOUNT FOR SIDEARM @ 143'**					
14	1 KIT			C10174036	TAPERED LEG PIPE MOUNT KIT	65				
15	1			C10981407	ANTENNA MTG. PIPE 4 1/2 Ø X 7'-0	58				
16	4			C40034032	U-BOLT ASSEMBLY 5/8 Ø X 5 3/16 C-C	9				
17					**SWIVEL KNUCKLE TIEBACKS FOR SIDEARM @ 143'**					
18	2 KITS			C10179002	SWIVEL KNUCKLE TIEBACK KIT 2 3/8 Ø PIPE X 13'-3	140				
19										
20										

REV	DATE	DRW	CHK	DESCRIPTION

DATE 8/11/25 **JOB NO.** 563424

DRAWN BY KMP **PRINT NO.** BOM-1

CHECKED BY ZAK **PAGE** 20 OF 23

Sabre Industries™
INNOVATION DELIVERED

CUSTOMER : MARION COUNTY OREGON

SITE : NORTH FORK, OR

B.O.M. 180 FT. MODEL S3TL-HD2 SELF-SUPPORTING TOWER

PC=PIECE	OR=ORANGE
PLT=PALLET	WH=WHITE
BDL=BUNDLE	O/W=OR & WH
CRT=CRATE	N/R=NOT REQ'D
D=DRUM	SP=SPECIAL
BX=BOX	

ITEM NO.	NO. REQ'D.	DRAWING NUMBER	DRAWING REV	PART NO.	DESCRIPTION	TOTAL WEIGHT LBS.	PAINT	PACKING KIT	PACKING QTY OF PKG'S	PACKING PKG. NO.
1					**3' SIDEARM MOUNT @ 140'**					
2	1 KIT			C10151103	3 FT. SIDEARM ASSEMBLY	82				
3	1			C10900105	PIPE ANTENNA MOUNTING KIT 2 3/8 Ø X 5'-0	22				
4	4			C40034032	U-BOLT ASSEMBLY 5/8 Ø X 5 3/16 C-C	9				
5					**Z-BRACKET PIPE MOUNT FOR SIDEARM @ 140'**					
6	1 KIT			C10174053	TAPERED LEG PIPE MOUNT KIT	79				
7	1			C10981407	ANTENNA MTG. PIPE 4 1/2 Ø X 7'-0	58				
8	4			C40034032	U-BOLT ASSEMBLY 5/8 Ø X 5 3/16 C-C	9				
9					**SWIVEL KNUCKLE TIEBACKS FOR SIDEARM @ 140'**					
10	2 KITS			C10179011	SWIVEL KNUCKLE TIEBACK KIT 2 7/8 Ø PIPE X 15'-6	240				
11					**Z-BRACKET PIPE MOUNT @ 137'**					
12	1 KIT			C10174055	TAPERED LEG PIPE MOUNT KIT	83				
13	1			C10981407	ANTENNA MTG. PIPE 4 1/2 Ø X 7'-0	58				
14	4			C40034032	U-BOLT ASSEMBLY 5/8 Ø X 5 3/16 C-C	9				
15					**3' SIDEARM MOUNT @ 134'**					
16	1 KIT			C10151103	3 FT. SIDEARM ASSEMBLY	82				
17	1			C10900104	PIPE ANTENNA MOUNTING KIT 2 3/8 Ø X 4'-0	19				
18	4			C40034032	U-BOLT ASSEMBLY 5/8 Ø X 5 3/16 C-C	9				
19										
20										

REV	DATE	DRW	CHK	DESCRIPTION

DATE	8/11/25	**JOB NO.**	563424
DRAWN BY	KMP	**PRINT NO.**	BOM-1
CHECKED BY	ZAK	**PAGE**	21 OF 23

EXHIBIT K

CUSTOMER : MARION COUNTY OREGON

SITE : NORTH FORK, OR

B.O.M. 180 FT. MODEL S3TL-HD2 SELF-SUPPORTING TOWER

PC=PIECE	OR=ORANGE
PLT=PALLET	WH=WHITE
BDL=BUNDLE	O/W=OR & WH
CRT=CRATE	N/R=NOT REQ'D
D=DRUM	SP=SPECIAL
BX=BOX	

ITEM NO.	NO. REQ'D.	DRAWING NUMBER	DRAWING REV	PART NO.	DESCRIPTION	TOTAL WEIGHT LBS.	PAINT	PACKING KIT	PACKING QTY OF PKG'S	PACKING PKG. NO.
1					**Z-BRACKET PIPE MOUNT FOR SIDEARM @ 134'**					
2	1 KIT			C10174055	TAPERED LEG PIPE MOUNT KIT	83				
3	1			C10981407	ANTENNA MTG. PIPE 4 1/2 Ø X 7'-0	58				
4	4			C40034032	U-BOLT ASSEMBLY 5/8 Ø X 5 3/16 C-C	9				
5					**SWIVEL KNUCKLE TIEBACKS FOR SIDEARM @ 134'**					
6	2 KITS			C10179011	SWIVEL KNUCKLE TIEBACK KIT 2 7/8 Ø PIPE X 15'-6	240				
7					**3' SIDEARM MOUNT @ 127'**					
8	1 KIT			C10151103	3 FT. SIDEARM ASSEMBLY	82				
9	1			C10900105	PIPE ANTENNA MOUNTING KIT 2 3/8 Ø X 5'-0	22				
10	4			C40034032	U-BOLT ASSEMBLY 5/8 Ø X 5 3/16 C-C	9				
11					**Z-BRACKET PIPE MOUNT FOR SIDEARM @ 127'**					
12	1 KIT			C10174055	TAPERED LEG PIPE MOUNT KIT	83				
13	1			C10981407	ANTENNA MTG. PIPE 4 1/2 Ø X 7'-0	58				
14	4			C40034032	U-BOLT ASSEMBLY 5/8 Ø X 5 3/16 C-C	9				
15					**SWIVEL KNUCKLE TIEBACKS FOR SIDEARM @ 127'**					
16	2 KITS			C10179011	SWIVEL KNUCKLE TIEBACK KIT 2 7/8 Ø PIPE X 15'-6	240				
17										
18										
19										
20										

REV	DATE	DRW	CHK	DESCRIPTION

DATE	8/11/25	**JOB NO.**	563424
DRAWN BY	KMP	**PRINT NO.**	BOM-1
CHECKED BY	ZAK	**PAGE**	22 OF 23

EXHIBIT K

Sabre Industries™ INNOVATION DELIVERED

CUSTOMER : MARION COUNTY OREGON

SITE : NORTH FORK, OR

B.O.M. 180 FT. MODEL S3TL-HD2 SELF-SUPPORTING TOWER

PC=PIECE	OR=ORANGE
PLT=PALLET	WH=WHITE
BDL=BUNDLE	O/W=OR & WH
CRT=CRATE	N/R=NOT REQ'D
D=DRUM	SP=SPECIAL
BX=BOX	

ITEM NO.	NO. REQ'D.	DRAWING NUMBER	DRAWING REV	PART NO.	DESCRIPTION	TOTAL WEIGHT LBS.	PAINT	PACKING KIT	PACKING QTY OF PKG'S	PACKING PKG. NO.
1					**LIGHTNING ROD**					
2	1 KIT			C10174018	TAPERED LEG PIPE MOUNT KIT	64				
3	1	CW00032	2	CW00032	LIGHTNING ROD EXTENSION 2 7/8 O.D. X 21'-0	128				
4	4			C40034025	U-BOLT ASSEMBLY 5/8 Ø X 3 9/16 C-C	7				
5	1 KIT			C30986004	LIGHTNING ROD ASSY 3/4 Ø X 10'-0 CCS W/STIFFENER	22				
6					**MISCELLANEOUS**					
7	1			C40068001	COLD GALVANIZING SPRAY	1				
8	1	CS00500	2	CS00500	TOWER NAME PLATE	1				
9										
10										
11										
12										
13										
14										
15										
16										
17										
18										
19										
20										

REV	DATE	DRW	CHK	DESCRIPTION

DATE	8/11/25	**JOB NO.**	563424
DRAWN BY	KMP	**PRINT NO.**	BOM-1
CHECKED BY	ZAK	**PAGE**	23 OF 23

Carlson Geotechnical
A division of Carlson Testing, Inc.
Phone: (541) 330-9155
www.carlsontesting.com

EXHIBIT K

Bend Office (541) 330-9155
Eugene Office (541) 345-0289
Salem Office (503) 589-1252
Tigard Office (503) 684-3460

Report of Geotechnical Investigation & Site Specific Seismic Hazards Study Marion County APW Tower 2.6 Miles North of 910 N. Santiam Highway W. Marion County, Oregon

CGT Project Number B2502560

Prepared for

Kenny McManaway, P.E.
Cushing Civil Engineers
12725 SW Millikan Way, Suite 300
Beaverton, Oregon 97005

July 14, 2025

Carlson Geotechnical

A division of Carlson Testing, Inc.
Phone: (541) 330-9155
www.carlsontesting.com

EXHIBIT K

Bend Office	(541) 330-9155
Eugene Office	(541) 345-0289
Salem Office	(503) 589-1252
Tigard Office	(503) 684-3460

July 14, 2025

Kenny McManaway, P.E.
Cushing Civil Engineers
12725 SW Millikan Way, Suite 300
Beaverton, Oregon 97005

Report of
Geotechnical Investigation
& Site Specific Seismic Hazards Study
Marion County APW Tower
2.6 Miles North of 910 N. Santiam Highway W.
Marion County, Oregon

CGT Project Number B2502560

Dear Kenny McManaway:

Carlson Geotechnical (CGT), a division of Carlson Testing, Inc. (CTI), is pleased to submit this report summarizing the results of our geotechnical investigation and site specific seismic hazard study (SSSHS) for the proposed Marion County APW Tower project. The site is located 2.6 Miles North of address 910 N. Santiam Highway W. in Marion County, Oregon. A more specific site location is longitude 44.781126° West and latitude 122.447819° North. We performed our work in general accordance with CGT Proposal B25-069, dated June 11, 2025. Written authorization for our services was received on the same day.

We appreciate the opportunity to work with you on this project. Please contact us at (541) 330-9155 if you have any questions regarding this report.

Respectfully Submitted,
CARLSON GEOTECHNICAL

CERTIFIED OREGON PARKER B. RICHMOND E2546 ENGINEERING GEOLOGIST
Expires: 06/01/26

Parker Richmond, R.G., C.E.G.
Senior Engineering Geologist
prichmond@carlsontesting.com

REGISTERED PROFESSIONAL ENGINEER #95830PE OREGON SEPTEMBER 14, 2021 SAMUEL J. KANE
Expires: 6/30/27

Sam Kane, P.E.
Senior Geotechnical Engineer
skane@carlsontesting.com

Doc ID: G:\GEOTECH\PROJECTS\2025 Projects\001 - Bend Projects\B2502560 - Marion County APW Tower\008 - Deliverables\Report\B2502560 Geotechnical Investigation & SSSHS.docx

Marion County APW Tower
Marion County, Oregon
CGT Project Number B2502560
July 14, 2025

TABLE OF CONTENTS

1.0 INTRODUCTION 4
1.1 Project Information 4
1.2 Scope of Services 4
2.0 SITE DESCRIPTION 5
2.1 Regional & Site Geology 5
2.2 Site Surface Conditions 5
2.3 Subsurface Conditions 5
3.0 SEISMIC CONSIDERATIONS: SITE-SPECIFIC SEISMIC HAZARDS STUDY 7
3.1 Overview 7
3.2 Seismic Design 7
4.0 CONCLUSIONS 8
4.1 Undocumented Fills 8
4.2 Foundation Setbacks from Descending Slopes 8
5.0 RECOMMENDATIONS 8
5.1 Site Preparation 9
5.2 Temporary Excavations 10
5.3 Wet Weather Considerations 11
5.4 Structural Fill 12
5.5 Permanent Slopes 14
6.0 COMMUNICATION TOWER 14
6.1 Shallow Mat Foundations 14
6.2 Shallow Foundations – Equipment Building & Generator Shelter 16
6.3 Floor Slabs 17
6.4 Micro-Pile Foundations 18
6.5 Additional Considerations 20
7.0 RECOMMENDED ADDITIONAL SERVICES 20
7.1 Design Review 20
7.2 Observation of Construction 20
8.0 LIMITATIONS 21

ATTACHMENTS

Site Location ..... Figure 1
Site Plan ..... Figures 2A & 2B
Site Photographs ..... Figure 3
Fill Slope Detail ..... Figure 4

Subsurface Investigation and Laboratory Testing ..... Appendix A
Site Specific Seismic Hazard Study ..... Appendix B
Field Earth Resistivity Testing ..... Appendix C
Seismic Site Class Determination (ReMi) ..... Appendix D

Marion County APW Tower
Marion County, Oregon
CGT Project Number B2502560
July 14, 2025

1.0 INTRODUCTION

Carlson Geotechnical (CGT), a division of Carlson Testing, Inc. (CTI), is pleased to submit this report summarizing the results of our geotechnical investigation and site specific seismic hazard study (SSSHS) for the proposed Marion County APW Tower project. The site is located 2.6 Miles North of 910 N. Santiam Highway W. in Marion County, Oregon, as shown on the attached Site Location, Figure 1.

1.1 Project Information

CGT developed an understanding of the proposed project based on our correspondence with you and project documents provided to us on June 5, 2025. The documents provided included a project plan set, prepared by Cushing Civil Engineers, dated May 23, 2025. Based on our review, we understand the project will include:

- Construction of a new public safety communications facility. The facility will include the construction of a 180 foot tall, self-supporting steel lattice communication tower. We understand the tower will be supported on a shallow mat foundation system. We understand that micro-piles (rock-anchors) may also be used in conjunction with the mat foundations, if required. Structural loads associated with the new tower have not been provided at this time.
- The communications facility will additionally include the construction of a 192 square foot equipment shelter, a 100 square foot generator shelter, and other miscellaneous structures to support the facility including a propane tank pad and ground-mounted solar panel. We anticipate the new buildings and equipment pads will incorporate slab on grade foundations with uniform floor slab loads will be on the order 150 pounds per square foot (psf). The foundation type for the ground-mounted solar array is not known at this time. Design of solar panel foundations was outside the scope of this assignment.
- Although no grading plans have been provided, we anticipate permanent grade changes at the site will be minimal, with maximum cuts and fills on the order of 3 feet in depth.

Per our correspondence with our client, we understand that the communication tower and the associated equipment shelter will be classified as Risk Category IV per Table 1604.5 of the 2022 Oregon Structural Specialty Code (OSSC). Accordingly, a Site Specific Seismic Hazard Study (SSSHS) has been included as part of this assignment in accordance with Section 1803.3.2 of the OSSC, which is presented in Appendix B.

1.2 Scope of Services

Our scope of work included the following:

- Contact the Oregon Utilities Notification Center to mark the locations of public utilities within a 20-foot radius of our explorations at the site.
- Explore subsurface conditions at the site by excavating four test pits to depths of up to about 9½ feet below ground surface (bgs). Details of the subsurface investigation are presented in Appendix A.
- Classify the soils encountered in the explorations in general accordance with ASTM D2488 (Visual-Manual Procedure). Rock encountered in the explorations was classified in general accordance with procedures outlined in ASTM D5878.
- Complete a Site-Specific Seismic Hazards Study (SSSHS) in accordance with requirements outlined in Section 1803.6.1 of the OSSC. Results of the SSSHS are presented in Appendix B.

- Perform field earth resistivity testing, as requested by our client. Results of the testing are presented in Appendix C.
- Perform a seismic site class determination using the Refraction Microtremor (ReMi) technique. The results of the survey are presented in Appendix D.
- Provide a technical narrative describing surface and subsurface deposits, and local geology of the site, based on the results of our explorations and published geologic mapping.
- Provide recommendations for the Seismic Site Class, mapped maximum considered earthquake spectral response accelerations, and site seismic coefficients.
- Provide geotechnical recommendations for site preparation and earthwork.
- Provide recommendations for design and construction of slab-on-grade (mat) foundations, including subgrade preparation, recommended ultimate and allowable bearing pressures, modulus of subgrade reaction, estimated settlement for provided design loads, and general construction considerations.
- Provide recommendations for design and construction of micro-pile (rock anchor) foundations.
- Provide this written report summarizing the results of our geotechnical investigation and recommendations for the project.

2.0 SITE DESCRIPTION

2.1 Regional & Site Geology

Regional and site geology is presented in the attached Appendix B.

2.2 Site Surface Conditions

The project site was located at the summit of an unnamed peak, approximately 2½ miles north of Gates, Oregon at an elevation of 2,430 feet above sea level. The proposed facility is located at the terminus of a gravel access road, which extends from the site down to N. Santiam Highway to the south. The project site is relatively level and appears to have been previously graded. Slopes descended steeply to the north and west at gradients of between 2 horizontal to 1 vertical 2H:1V and 3H:1V, and at shallower descending gradients (e.g. 5H:1V or less) to the east and south beyond the level area. Overall the site is surrounded by undeveloped forest land that appears to have undergone logging activities beginning between 2011 and 2012, with additional activity around 2019. We anticipate that the gravel pad where the site is located was graded as a logging cable pull equipment staging area. Site layout and surface conditions at the time of our field investigation are shown on the attached Site Plan (Figure 2) and Site Photographs (Figure 3).

2.3 Subsurface Conditions

2.3.1 Subsurface Investigation & Laboratory Testing

Our subsurface investigation consisted of four test pits (TP-1 through TP-4) completed on June 19, 2025. The approximate exploration locations are shown on the Site Plan, attached as Figure 2. In summary, the test pits were excavated to depths ranging from about 8 to 9½ feet bgs. Details regarding the subsurface investigation, logs of the explorations, and results of laboratory testing are presented in Appendix A. Subsurface conditions encountered during our investigation are summarized below.

2.3.2 Subsurface Materials

Logs of the explorations are presented in Appendix A. The following describes each of the subsurface materials encountered at the site.

Organic Topsoil Fill (OL Fill)
Organic topsoil fill was encountered at the surface of each of the test pit explorations, and extended to a depth of approximately 3 inches. This soil was brown, moist, and contained abundant rootlets.

Undocumented Poorly Graded Gravel Fill (GP Fill) & Silty Sand Fill (SM Fill)
Undocumented poorly graded gravel fill and silty sand fill was encountered underlying the topsoil fill material in each of the test pits. Undocumented fill refers to materials placed without (available) records of subgrade conditions or evaluation of compaction. The poorly graded gravel fill was typically brown to gray, moist, subrounded to angular, and contained gravel and cobbles up to about 6 inches in diameter with nonplastic fines.

The silty sand fill material was typically red to brown, moist, fine- to medium-grained, subrounded to subangular, and contained a varying amount of gravel and low to medium plasticity fines. Isolated logs and other wood debris was observed within this material. The undocumented silty sand fill and poorly graded gravel fill materials extended between ¼ foot and 2½ feet bgs.

Silty Sand (SM)
Within test pit TP-1, underlying the undocumented fill materials (SM Fill, GP Fill) was native silty sand (SM). The silty sand was medium dense, red to brown, moist, subangular to subrounded, fine- to medium-grained, and contained low to medium plasticity fines. This soil extended between 1 foot and 2 feet bgs.

Silty Gravel (GM) to Poorly Graded Gravel with Silt (GP-GM)
Underlying the silty sand in test pit TP-1 and the undocumented fill materials (GP Fill, SM Fill) in the remaining test pits was native silty gravel and poorly graded gravel with silt. These soils were typically medium dense to very dense, gray to brown, or cream and black, moist, contained subangular gravel up to 3 inches in diameter and low to medium plasticity fines. The gravel particles were often friable under hard hand pressure or firm hammer blows. These soils extended between 1 foot and 9½ feet bgs, and were consistent with a residual soil resulting from the in-place weathering of the parent bedrock material.

Basalt Bedrock (RX)
Basalt bedrock was encountered between 8 and 9 feet bgs within test pits TP-3 and TP-4 underlying the soils described above. The basalt was typically medium strong (R3), dark gray, slightly weathered, and fractured. The referenced excavation equipment encountered practical digging refusal on the basalt bedrock, where encountered. Depths to the surface of the surface of the basalt bedrock layer are shown on the Site Plan, attached as Figure 2.

2.3.3 Groundwater

No groundwater was encountered during our June 19, 2025 field investigation. To determine approximate regional groundwater levels in the area, we researched well logs available on the Oregon Water Resources Department (OWRD) website for wells located within Section 21, Township 09 South, Range 03 East, Willamette Meridian. Our review indicated that groundwater levels in the area were encountered at 60 feet feet bgs. Deeper water zones were reported at depths below 140 feet bgs. It should be noted groundwater levels vary with local topography, and the project site is significantly higher in elevation than the nearest well. In addition, the groundwater levels reported on the OWRD logs often reflect the purpose of the well, so water well logs may only report deeper, confined groundwater, while geotechnical or environmental borings will

often report any groundwater encountered, including shallow, unconfined groundwater. Therefore, the levels reported on the OWRD well logs referenced above are considered generally indicative of local water levels and may not reflect actual groundwater levels at the project site. We anticipate that groundwater levels will fluctuate due to seasonal and annual variations in precipitation, changes in site utilization, or other factors.

3.0 SEISMIC CONSIDERATIONS: SITE-SPECIFIC SEISMIC HAZARDS STUDY

3.1 Overview

We performed a Site-Specific Seismic Hazards Study (SSSHS) for the site in accordance with Section 1803.3.2 of the 2022 Oregon Structural Specialty Code (OSSC). The complete results of our hazards study are presented in the attached Appendix B. The following conclusions highlight the results of our SSSHS:

- We conclude the potential for seismically-induced liquefaction settlement at the site is negligible.
- We conclude there is a negligible risk of surface rupture from faulting.
- We conclude there is a negligible risk of surface rupture from lateral spread.
- We conclude there is a low risk of slope instability from a design-level earthquake.
- We conclude there is a negligible risk of tsunami/seiche inundation at this site.

3.2 Seismic Design

Seismic site class was determined using the average shear-wave velocity from the seismic (ReMi) analysis of the site (attached in Appendix D). The average shear-wave velocity from the seismic array was calculated at 1,318 feet per second (ft/s). The average shear wave velocity falls into Site Class C ("Very Dense Soil / Soft Rock") as defined in Section 1613.2.2 of the 2022 OSSC and Chapter 20.3 of the American Society of Civil Engineers Minimum Design Loads for Buildings and Other Structures (ASCE 7-16).

Earthquake ground motion parameters for the site were obtained in accordance with the 2022 OSSC using the ASCE Hazard Tool calculator on the ASCE website[1]. The site Latitude 44.781126° North and Longitude 122.447819° West were input as the site location. The following table shows the recommended seismic design parameters for the site.

Table 1 Seismic Ground Motion Values

Parameter		Value
Mapped Acceleration Parameters	Spectral Acceleration, 0.2 second (S_s)	0.617g
	Spectral Acceleration, 1.0 second (S_1)	0.309g
Coefficients (Site Class C)	Site Coefficient, 0.2 second (F_A)	1.253
	Site Coefficient, 1.0 second (F_V)	1.500
Adjusted MCE Spectral Response Parameters	MCE Spectral Acceleration, 0.2 second (S_{MS})	0.773g
	MCE Spectral Acceleration, 1.0 second (S_{M1})	0.463g
Design Spectral Response Accelerations	Design Spectral Acceleration, 0.2 second (S_{DS})	0.515g
	Design Spectral Acceleration, 1.0 second (S_{D1})	0.309g
Seismic Design Category (Risk Category IV)		D

[1] American Society of Civil Engineers (ASCE), 2025. USGS seismic design parameters determined using "ASCE Hazard Tool," *accessed July 2025*, from the ASCE website https://ascehazardtool.org/.

4.0 CONCLUSIONS

Based on the results of our geotechnical investigation and analyses, the site is suitable for the planned improvements described in Section 1.1 of this report. Satisfactory subgrade support for proposed shallow (spread and mat) foundations and floor slabs supporting new equipment at the site can be achieved by the native, near-surface, medium dense to better silty gravel (GM), poorly graded gravel with silt (GP-GM), silty sand (SM), the basalt bedrock (RX), or new structural fill that is properly placed and compacted on these materials during construction. Geotechnical recommendations for use in design and construction of shallow spread footings and shallow mat foundations are presented in Section 6.0 of this report. Geotechnical recommendations for micro-piles (i.e. rock anchors) to be used to help mitigate uplift forces for shallow foundations (if considered) are presented in Section 6.4 of this report.

The primary geotechnical considerations for the project include 1) the presence of undocumented fill materials encountered at the site and 2) proposed foundation setbacks from descending slopes. These considerations are discussed in the following sections.

4.1 Undocumented Fills

The existing undocumented fill materials encountered within the explorations were highly variable in terms of relative density and consistency. In addition, some of the fill contained debris associated with logging activities (logs, wood chunks, etc). Due to its highly variable nature and the presence of organics and debris, it is evident the existing fill materials were not placed in accordance with typical code requirements for structural fill. Accordingly, the existing fill materials are not recommended for subgrade support of shallow spread foundations or shallow mat foundations due to the inherent risk of (1) uneven subgrade response once loads are applied, and (2) excessive, long-term, total and differential settlements. CGT recommends the existing fill materials be removed and replaced with structural fill placed and compacted in accordance with the recommendations provided in Section 5.4 below.

4.2 Foundation Setbacks from Descending Slopes

As shown on the attached Figure 2A, we understand the proposed tower structure and communications shelter foundations are located on or very near the edge of existing site slopes that descend to the west off of the existing gravel pad at gradients between approximately 3H:1V and 2H:1V (horizontal:vertical). Recognizing that localized geologic conditions at the site are favorable for stability, and no historic landslides have been identified at the site, we recommend that foundations be set back a minimum setback of 5 feet from the face of descending site slopes. The setback should be measured from the bottom, outside edge of the shallow foundations horizontally to the slope face. Loose surface or organic soils should not be accounted for when measuring this distance.

Alternatively, the contractor could elect to build a fill slope to extend the existing dimensions of the gravel pad. If chosen, we recommend the fill slope be constructed in accordance with the recommendations presented in Section 5.5 of this report.

5.0 RECOMMENDATIONS

The recommendations presented in this report are based on the information provided to us, results of our field investigation and analyses, laboratory data, and professional judgment. CGT has observed only a small portion of the pertinent subsurface conditions. The recommendations are based on the assumptions that the subsurface conditions do not deviate appreciably from those found during the field investigation. CGT should

be consulted for further recommendations if the design of the proposed development changes and/or variations or undesirable geotechnical conditions are encountered during site development.

5.1 Site Preparation

5.1.1 Stripping

Existing vegetation, rooted soils, and undocumented fill soils should be removed from within, and for a minimum 5-foot margin around, proposed building pad and tower foundation areas. Based on the results of our field explorations, topsoil stripping depths are anticipated to be less than ¼ foot bgs. Based on the results of our field explorations, undocumented fill encountered at the site extended to depths of about 2½ feet bgs. These materials may be deeper or shallower at locations away from the completed explorations. The geotechnical engineer's representative should provide recommendations for actual stripping depths based on observations during site stripping. Stripped surface vegetation and rooted soils should be transported off-site for disposal, or stockpiled for later use in landscaped areas. Stripped, inorganic fill materials should be transported off-site for disposal, or may be stockpiled for later use as structural fill as described in Section 5.4.1 of this report.

5.1.2 Grubbing

Grubbing of trees should include the removal of the root mass and roots greater than ½-inch in diameter. Grubbed materials should be transported off-site for disposal. Root masses from larger trees may extend greater than 3 feet bgs. Where root masses are removed, the resulting excavation should be properly backfilled with structural fill in conformance with Section 5.4.2 of this report.

5.1.3 Test Pit Backfills

The test pits conducted at the site were loosely backfilled during our field investigation. Where test pits are located within finalized building, structural fill, or pavement areas, the loose backfill materials should be re-excavated. The resulting excavations should be backfilled with structural fill in conformance with Section 5.4 of this report.

5.1.4 Existing Utilities & Below-Grade Structures

All existing utilities at the site (if encountered) should be identified prior to excavation. Abandoned utility lines beneath the new buildings and tower foundations should be completely removed or grouted full. Soft, loose, or otherwise unsuitable soils encountered in utility trench excavations should be removed and replaced with structural fill in conformance with Section 5.4 this report. Buried structures (i.e. footings, foundation walls, retaining walls, slabs-on-grade, tanks, etc.), if encountered during site development, should be completely removed and replaced with structural fill in conformance with Section 5.4 of this report.

5.1.5 Subgrade Preparation – Tower Pad, Building Pad, and Areas to Receive Structural Fill

After site preparation as recommended above, but prior to placement of structural fill and/or aggregate base, the geotechnical engineer or their representative should observe the exposed subgrade soils in order to identify areas of excessive yielding through either proof rolling or probing. Proof rolling of subgrade soils is typically conducted during dry weather using a fully-loaded, 10- to 12-cubic-yard, tandem-axle, tire-mounted, dump truck or equivalent weighted water truck. Areas of limited access or that appear too soft or wet to support proof rolling equipment should be evaluated by probing. During wet weather, subgrade preparation should be performed in general accordance with the recommendations presented in Section 5.3 of this

report. If areas of soft soil or excessive yielding are identified, the affected material should be over-excavated to firm, unyielding subgrade, and replaced with imported granular structural fill in conformance with Section 5.4.2 of this report.

Preparation of subgrade soils during wet weather should be in conformance with Section 5.3 of this report. As indicated therein, increased base rock sections and a geotextile separation fabric may be required in wet conditions in order to support construction traffic and protect the subgrade.

5.1.6 Freezing Weather Considerations

For construction that occurs during extended periods of sub-freezing temperatures, the following special provisions are recommended:

- Structural fill should not be placed over frozen ground.
- Frozen soil should not be placed as structural fill.
- Fine-grained (silty) soils should not be placed as structural fill during sub-freezing temperatures.

Identification of frozen soils at the site should be in accordance with ASTM D4083-01 “Standard Practice for Description of Frozen Soils” or other approved method. The geotechnical engineer can aid the contractor with supplemental recommendations for earthwork that will take place during extended periods of sub-freezing weather, as required.

5.1.7 Erosion Control

Erosion and sedimentation control measures should be employed in accordance with applicable City, County, and State regulations.

5.2 Temporary Excavations

5.2.1 Overview

Within the onsite soils (GP Fill, SM Fill, SM, GP-GM, GM), conventional earthmoving equipment in proper working condition should be capable of making necessary excavations for the anticipated site cuts as described earlier in this report. However, where temporary excavations extend into basalt bedrock (RX), we anticipate hydraulic hammering will likely be required to facilitate its removal. All excavations should be in accordance with applicable OSHA and state regulations. It is the contractor's responsibility to select the excavation methods, to monitor site excavations for safety, and to provide any shoring required to protect personnel and adjacent improvements. A “competent person”, as defined by OR-OSHA, should be on-site during construction in accordance with regulations presented by OR-OSHA. CGT’s current role on the project does not include review or oversight of excavation safety.

5.2.2 OSHA Soil Type

For use in the planning and construction of temporary excavations up to 10 feet in depth, an OSHA soil type “C” should be used for the onsite soils (GP Fill, SM Fill, SM, GP-GM, GM) encountered in the test pits. A soil type “C” may be used for fractured or jointed basalt that does not appear stable, otherwise a “Stable Rock” type may be used.

5.2.3 Utility Trenches

Temporary trench cuts should stand near vertical to depths of approximately 4 feet bgs in the onsite soils (GP Fill, SM Fill, SM, GP-GM, GM) encountered at the site. If caving of the sidewalls is observed during excavation, the sidewalls should be flattened or shored. Depending on the time of year trench excavations occur, trench dewatering may be required in order to maintain dry working conditions. If groundwater is present at the base of utility excavations, we recommend placing trench stabilization material at the base of the excavations. Trench stabilization material should be in conformance with Section 5.4.3 of this report.

5.2.4 Excavations Near Foundations

Excavations near footings should not extend within a 1 horizontal to 1 vertical (1H:1V) plane projected out and down from the outside, bottom edge of the footings. In the event excavation needs to extend below the referenced plane, temporary shoring of the excavation and/or underpinning of the subject footing may be required. The geotechnical engineer should be consulted to review proposed excavation plans for this design case to provide specific recommendations.

5.3 Wet Weather Considerations

For planning purposes, the wet season should be considered to extend from late September to late June. It is our experience that dry weather working conditions should prevail between early July and mid-September. Notwithstanding the above, soil conditions should be evaluated in the field by the geotechnical engineer's representative at the initial stage of site preparation to determine whether the recommendations within this section should be incorporated into construction.

5.3.1 Overview

Due to its fines content, the near-surface silty sand (SM) and silty sand fill (SM Fill) are moisture sensitive and susceptible to disturbance during wet weather. Trafficability of this soil may be difficult, and significant damage to subgrade soils could occur, if earthwork is undertaken without proper precautions at times when the exposed soils are more than a few percentage points above optimum moisture content. Site preparation activities may need to be accomplished using track-mounted equipment, loading removed material onto trucks supported on granular haul roads, or other methods to limit soil disturbance. The geotechnical engineer or their representative should evaluate the subgrade during excavation by probing rather than proof rolling. Soils that have been disturbed during site preparation activities, or soft or loose areas identified during probing, should be over-excavated to firm, unyielding subgrade, and replaced with imported granular structural fill in conformance with Section 5.4.2 of this report.

5.3.2 Geotextile Separation Fabric

We recommend a geotextile separation fabric be placed to serve as a barrier between the prepared subgrade and granular fill/base rock in areas of repeated or heavy construction traffic. The geotextile fabric should meet the requirements presented in the current Oregon Department of Transportation Standard Specification for Construction (ODOT SSC), Section 02320.

5.3.3 Granular Working Surfaces (Haul Roads & Staging Areas)

Haul roads subjected to repeated heavy, tire-mounted, construction traffic (e.g. dump trucks, concrete trucks, etc.) will require a minimum of 18 inches of imported granular material. For light staging areas, 12 inches of imported granular material is typically sufficient. Additional granular material or geo-grid reinforcement may

be recommended based on site conditions and/or loading at the time of construction. The imported granular material should be in conformance with Section 5.4.2 and have less than 5 percent material passing the U.S. Standard No. 200 Sieve. The prepared subgrade should be covered with geotextile fabric (Section 5.3.2) prior to placement of the imported granular material. The imported granular material should be placed in a single lift (up to 24 inches deep) and compacted using a smooth-drum, non-vibratory roller until well-keyed.

5.3.4 Footing Subgrade Protection

A minimum of 3 inches of imported granular material is recommended to protect fine-grained footing excavation subgrades from foot traffic during inclement weather. The imported granular material should be in conformance with Section 5.4.2. The maximum particle size should be limited to 1 inch. The imported granular material should be placed in one lift over the prepared, undisturbed subgrade, and compacted using non-vibratory equipment until well keyed.

5.4 Structural Fill

The geotechnical engineer should be provided the opportunity to review all materials considered for use as structural fill (prior to placement). Samples of the proposed fill materials should be submitted to the geotechnical engineer a minimum of 5 business days prior their use on site[2]. The geotechnical engineer or their representative should be contacted to evaluate compaction of structural fill as the material is being placed. Evaluation of compaction may take the form of in-place density tests and/or proof roll tests with suitable equipment. Structural fill should be evaluated at intervals not exceeding every 2 vertical feet as the fill is being placed.

5.4.1 On-Site Soils – General Use

5.4.1.1 Silty Sand Fill (SM Fill), Silty Sand (SM), Poorly Graded Gravel with Silt (GP-GM), Silty Gravel (GM)
Re-use of these soils as structural fill may be difficult because they are sensitive to small changes in moisture content and difficult to adequately compact during wet weather. Moisture-conditioning (wetting) should be expected in order to achieve adequate compaction. If used as structural fill, these soils should be kept free of organic matter, debris, and particles larger than 4 inches. Processing (removal) of large cobbles and boulders may be required in some areas of the site, and should be factored. When used as structural fill, these soils should be placed in lifts with a maximum thickness of about 9 inches at moisture contents within –4 and +2 percent of optimum, and compacted to not less than 95 percent of the material's maximum dry density as determined in accordance with ASTM D1557 (Modified Proctor).

5.4.1.2 Poorly Graded Gravel Fill (GP Fill)
Re-use of the on-site, relatively clean, gravelly soils as structural fill is feasible, provided the materials are kept clean of organics, debris, and particles larger than 4 inches in diameter. Re-use of the on-site gravel may require processing (removal) of large cobbles. If reused as structural fill, these materials should be prepared in general accordance with Section 5.4.2.

If the on-site materials cannot be properly moisture-conditioned and/or processed, we recommend using imported granular material for structural fill.

[2] Laboratory testing for moisture density relationship (Proctor) is required. Tests for gradation may be required.

5.4.2 Imported Granular Structural Fill – General Use

Imported granular structural fill should consist of angular pit or quarry run rock, crushed rock, or crushed gravel that is fairly well graded between coarse and fine particle sizes. The granular fill should contain no organic matter, debris, or particles larger than 4 inches, and have less than 10 percent material passing the U.S. Standard No. 200 Sieve. For fine-grading purposes, the maximum particle size should be limited to 1½ inches. The percentage of fines can be increased to 15 percent of the material passing the U.S. Standard No. 200 Sieve if placed during dry weather, and provided the fill material is moisture-conditioned, as necessary, for proper compaction. Imported granular fill material should be placed in lifts with a maximum thickness of about 12 inches, and compacted to not less than 95 percent of the material's maximum dry density, as determined in general accordance with ASTM D1557 (Modified Proctor). Proper moisture conditioning and the use of vibratory equipment will facilitate compaction of these materials.

Granular fill materials with high percentages of particle sizes in excess of 1½ inches are considered non-moisture-density testable materials. As an alternative to conventional density testing, compaction of these materials should be evaluated by proof roll test observation (deflection tests), where accepted by the geotechnical engineer.

5.4.3 Trench Base Stabilization Material

If groundwater is present at the base of utility excavations, trench base stabilization material should be placed. Trench base stabilization material should consist of a minimum of 1 foot of well-graded granular material with a maximum particle size of 4 inches and less than 5 percent material passing the U.S. Standard No. 4 Sieve. The material should be free of organic matter and other deleterious material, placed in one lift, and compacted until well-keyed.

5.4.4 Trench Backfill Material

Trench backfill for the utility pipe base and pipe zone should consist of granular material as recommended by the utility pipe manufacturer. Trench backfill above the pipe zone should consist of well-graded granular material containing no organic matter or debris, have a maximum particle size of ¾ inch, and have less than 8 percent material passing the U.S. Standard No. 200 Sieve. As a guideline, trench backfill should be placed in maximum 12-inch-thick lifts. The earthwork contractor may elect to use alternative lift thicknesses based on their experience with specific equipment and fill material conditions during construction in order to achieve the required compaction. The following table presents recommended relative compaction percentages for utility trench backfill.

Table 2 Utility Trench Backfill Compaction Recommendations

Backfill Zone	Recommended Minimum Relative Compaction	
	Structural Areas[1,2]	Landscaping Areas
Pipe Base and Within Pipe Zone	90% ASTM D1557 or pipe manufacturer's recommendation	88% ASTM D1557 or pipe manufacturer's recommendation
Above Pipe Zone	92% ASTM D1557	90% ASTM D1557
Within 3 Feet of Design Subgrade	95% ASTM D1557	90% ASTM D1557

1 Includes proposed building, pavement areas, structural fill areas, exterior hardscaping, etc.
2 Or as specified by the local jurisdiction where located in the public right of way.

5.4.5 Controlled Low-Strength Material (CLSM)

CLSM is a self-compacting, cementitious material that is typically considered when backfilling localized areas. CLSM is sometimes referred to as “controlled density fill” or CDF. Due to its flowable characteristics, CLSM typically can be placed in restricted-access excavations where placing and compacting fill is difficult. If chosen for use at this site, we recommend the CLSM be in conformance with Section 00442 of the most recent, ODOT SSC. The geotechnical engineer’s representative should observe placement of the CLSM and obtain samples for compression testing in accordance with ASTM D4832. As a guideline, for each day’s placement, two compressive strength specimens from the same CLSM sample should be tested. The results of the two individual compressive strength tests should be averaged to obtain the reported 28-day compressive strength. If CLSM is considered for use on this site, please contact the geotechnical engineer for site-specific and application-specific recommendations.

5.5 Permanent Slopes

5.5.1 Overview

Permanent cut or fill slopes constructed at the site, if any, should be graded at 2H:1V or flatter. Constructed slopes should be overbuilt by a few feet depending on their size and gradient so that they can be properly compacted prior to being cut to final grade. The surface of all slopes should be protected from erosion by seeding, sodding, or other acceptable means. Adjacent on-site and off-site structures should be located at least 5 feet from the top of slopes.

5.5.2 Placement of Fill on Slopes

New fill should be placed and compacted against horizontal surfaces. Where slopes exceed 5H:1V, the slopes should be keyed and benched prior to structural fill placement in general accordance with the attached Fill Slope Detail, Figure 4. If subdrains are needed on benches, subject to the review of the CGT geotechnical representative, they should be placed as shown on the attached Fill Slope Detail. In order to achieve well-compacted slope faces, slopes should be overbuilt by a few feet and then trimmed back to proposed final grades. A representative from CGT should observe the benches, keyways, and associated subdrains, if needed, prior to placement of structural fill.

6.0 COMMUNICATION TOWER

6.1 Shallow Mat Foundations

6.1.1 Subgrade Preparation

Satisfactory subgrade support for shallow mat foundations can be obtained from the native, medium dense to better silty sand (SM), poorly graded gravel with silt (GP-GM), silty gravel (GM), the basalt bedrock (RX). or new structural fill that is properly placed and compacted on these materials during construction. These materials were first encountered at depths of between 1 and 3 feet bgs within our explorations in the vicinity of the communication tower pad. We recommend that mat foundations be founded on a minimum 6-inch-thick “leveling course”. The leveling course should conform to the recommendations presented in Section 5.4.2 of this report.

The geotechnical engineer or their representative should be contacted to observe subgrade conditions prior to placement of forms, reinforcement steel, or granular backfill (if required). If soft, loose, or otherwise unsuitable soils are encountered, they should be over-excavated as recommended by the geotechnical

representative at the time of construction. The resulting over-excavation should be brought back to grade with imported granular structural fill in conformance with Section 5.4.2. The maximum particle size of over-excavation backfill should be limited to 1½ inches. All granular pads for footings should be constructed a minimum of 6 inches wider on each side of the footing for every vertical foot of over-excavation.

6.1.2 Minimum Footing Width & Embedment

The mat foundation should be founded at least 12 inches below the lowest, permanent adjacent grade to develop lateral capacity and for frost protection.

6.1.3 Bearing Pressure & Settlement

Mat foundation(s) founded as recommended above should be proportioned for a maximum allowable soil bearing pressure of 4,000 pounds per square foot (psf). This bearing pressure is a net bearing pressure, applies to the total of dead and long-term live loads, and may be increased by one-third when considering seismic or wind loads. For mat foundations founded as recommended above, total settlement of foundations will be on the order of ½-inch. Differential settlements ("tilt") across the mat foundation(s) are anticipated to be less than ¼-inch.

6.1.4 Modulus of Subgrade Reaction

For mat foundations founded as recommended above, an effective modulus of subgrade reaction of up to 300 pounds per cubic inch (pci) may be used for design.

6.1.5 Lateral Capacity

A maximum passive (equivalent fluid) earth pressure of 275 pounds per cubic foot (pcf) is recommended for design of footings cast neat into excavations in suitable native soil or confined by the recommended imported granular structural fill that is properly placed and compacted during construction. The recommended earth pressure was computed using a factor of safety of 1½, which is appropriate due to the amount of movement required to develop full passive resistance. In order to develop the above capacity, the following should be understood:

1. Concrete must be poured neat in excavations or the foundations must be backfilled with imported granular structural fill,
2. The adjacent grade must be level,
3. The static ground water level must remain below the base of the footings throughout the year.
4. Adjacent floor slabs, pavements, or the upper 12-inch-depth of adjacent, unpaved areas should not be considered when calculating passive resistance.

An ultimate coefficient of friction equal to 0.55 may be used when calculating resistance to sliding for mat foundations founded on the native soils or bedrock described above. An ultimate coefficient of friction equal to 0.60 may be used when calculating resistance to sliding for footings founded on a minimum of 6 inches of imported granular structural fill (crushed rock) that is properly placed and compacted during construction.

6.1.6 Subsurface Drainage

Recognizing the predominantly granular soils encountered at this site, the decision to include foundation drainage may be left to the owner, the architect, and other members of the design team.

6.2 Shallow Foundations – Equipment Building & Generator Shelter

6.2.1 Subgrade Preparation

Satisfactory subgrade support for shallow foundations can be obtained from the native, medium dense to better silty sand (SM), poorly graded gravel with silt (GP-GM), silty gravel (GM), the basalt bedrock (RX), or new structural fill that is properly placed and compacted on these materials during construction.

The geotechnical engineer or their representative should be contacted to observe subgrade conditions prior to placement of forms, reinforcement steel, or granular backfill (if required). If soft, loose, or otherwise unsuitable soils are encountered, they should be over-excavated as recommended by the geotechnical representative at the time of construction. The resulting over-excavation should be brought back to grade with imported granular structural fill in conformance with Section 5.4.2. The maximum particle size of over-excavation backfill should be limited to 1½ inches. All granular pads for footings should be constructed a minimum of 6 inches wider on each side of the footing for every vertical foot of over-excavation.

6.2.2 Minimum Footing Width & Embedment

Minimum footing widths should be in conformance with the current OSSC. As a guideline, CGT recommends individual spread footings have a minimum width of 24 inches. We recommend continuous wall footings have a minimum width of 18 inches. All footings should be founded at least 12 inches below the lowest, permanent adjacent grade to develop lateral capacity and for frost protection.

6.2.3 Bearing Pressure & Settlement

Footings founded as recommended above should be proportioned for a maximum allowable soil bearing pressure of 3,500 pounds per square foot (psf). This bearing pressure is a net bearing pressure, applies to the total of dead and long-term live loads, and may be increased by one-third when considering seismic or wind loads. For foundations founded as recommended above, total settlement of foundations is anticipated to be less than 1 inch. Differential settlements between adjacent columns and/or bearing walls should not exceed ½-inch. If an increased allowable soil bearing pressure is desired, the geotechnical engineer should be consulted.

6.2.4 Lateral Capacity

A maximum passive (equivalent fluid) earth pressure of 250 pounds per cubic foot (pcf) is recommended for design of footings cast neat into excavations in suitable native soil or confined by the recommended imported granular structural fill that is properly placed and compacted during construction. The recommended earth pressure was computed using a factor of safety of 1½, which is appropriate due to the amount of movement required to develop full passive resistance. In order to develop the above capacity, the following should be understood:

5. Concrete must be poured neat in excavations or the foundations must be backfilled with imported granular structural fill,
6. The adjacent grade must be level,
7. The static ground water level must remain below the base of the footings throughout the year.
8. Adjacent floor slabs, pavements, or the upper 12-inch-depth of adjacent, unpaved areas should not be considered when calculating passive resistance.

An ultimate coefficient of friction equal to 0.55 may be used when calculating resistance to sliding for footings founded on the native soils described above. An ultimate coefficient of friction equal to 0.55 may be used when calculating resistance to sliding for footings founded on a minimum of 6 inches of imported granular structural fill (crushed rock) that is properly placed and compacted during construction.

6.2.5 Subsurface Drainage

Recognizing the predominantly granular soils encountered at this site, the decision to include foundation drainage may be left to the owner, the architect, and other members of the design team.

6.3 Floor Slabs

6.3.1 Subgrade Preparation

Satisfactory subgrade support for slabs constructed on grade, supporting up to 150 psf area loading, can be obtained from native, medium dense to better silty sand (SM), poorly graded gravel with silt (GP-GM), silty gravel (GM), the basalt bedrock (RX), or new structural fill that is properly placed and compacted on these materials during construction.. The geotechnical engineer or their representative should observe floor slab subgrade soils to evaluate surface consistencies. If soft, loose, or otherwise unsuitable soils are encountered, they should be over-excavated as recommended by the CGT geotechnical representative at the time of construction. The resulting over-excavation should be brought back to grade with imported granular structural fill as described in Section 5.4.2.

6.3.2 Crushed Rock Base

Concrete floor slabs should be supported on a minimum 6-inch-thick layer of crushed rock (base rock). Floor slab base rock should consist of well-graded granular material (crushed rock) containing no organic matter or debris, have a maximum particle size of ¾ inch, and have less than 10 percent material passing the U.S. Standard No. 200 Sieve. Floor slab base rock should be placed in one lift and compacted to not less than 95 percent of the material's maximum dry density as determined in general accordance with ASTM D1557 (Modified Proctor). We recommend "choking" the surface of the base rock with sand just prior to concrete placement. Choking means the voids between the largest aggregate particles are filled with sand, but does not provide a layer of sand above the base rock. Choking the base rock surface reduces the lateral restraint on the bottom of the concrete during curing. Choking the base rock also reduces punctures in vapor retarding membranes due to foot traffic where such membranes are used.

6.3.3 Design Considerations

For floor slabs constructed with a 6-inch thick base rock layer as recommended, an effective modulus of subgrade reaction of 250 pounds per cubic inch (pci) is recommended for the design of the floor slab. A higher effective modulus of subgrade reaction can be obtained by increasing the base rock thickness. Please contact the geotechnical engineer for additional recommendations if a higher modulus is desired. Floor slabs constructed as recommended will likely settle less than ½ inch. For general floor slab construction, slabs should be jointed around columns and walls to permit slabs and foundations to settle differentially.

6.3.4 Subgrade Moisture Considerations

Liquid moisture and moisture vapor should be expected at the subgrade surface. The recommended crushed rock base is anticipated to provide protection against liquid moisture. Where moisture vapor emission through the slab must be minimized, e.g. impervious floor coverings, storage of moisture sensitive materials

directly on the slab surface, etc., a vapor retarding membrane or vapor barrier below the slab should be considered. Factors such as cost, special considerations for construction, floor coverings, and end use suggest that the decision regarding a vapor retarding membrane or vapor barrier be made by the architect and owner.

If a vapor retarder or vapor barrier is placed below the slab, its location should be based on current American Concrete Institute (ACI) guidelines, ACI 302 Guide for Concrete Floor and Slab Construction. In some cases, this indicates placement of concrete directly on the vapor retarder or barrier. Please note that the placement of concrete directly on impervious membranes increases the risk of plastic shrinkage cracking and slab curling in the concrete. Construction practices to reduce or eliminate such risk, as described in ACI 302, should be employed during concrete placement.

6.4 Micro-Pile Foundations

6.4.1 General Discussion

Micropiles consist of small diameter, high-quality steel, hollow bars typically drilled and grouted into place using a hydraulic rotary (electric, diesel, or pneumatic), track- or truck-mounted, drill rig or drill attachment to track-mounted equipment. Compression (and tension, if required) loads applied at the top of the micropile are resisted through grout-to-ground bond strength over a specified length of the micropile, referred to as the bond zone or bond length. Due to their relatively small cross-sectional area, resistance developed at the base of the micropile is typically ignored in design calculations. For design, the ultimate capacity of the micropile is the same in compression and tension (uplift).

The means and methods for drilling and grouting of micropiles are typically determined by specialty contractors based on their experience with the specific soil conditions. Accordingly, it is recommended that qualified, experienced micropile contractor(s) be consulted during the planning phase to participate in selecting method(s) of installation, as well as sizing, locations, and other criteria related to micropiles.

The geotechnical recommendations presented in the following section are based on design methodology presented in FHWA NHI-05-039[3], and assume the micropile design (including structural capacity) will rest with the structural engineer. If alternative methodology is used, CGT should be consulted for method-specific geotechnical recommendations.

6.4.2 Geotechnical Bond Capacity

For purposes of design and planning, allowable/design axial loads for the micropiles considering development of grout-to-ground bonding may be based on the following equation[4]:

$$P_{G\text{-allowable}} = [\alpha_{bond} / FS] * [3.14 * D_b * L_b]$$

where:

$P_{G\text{-allowable}}$ = Allowable axial load in tension or compression. To be determined by designer.
α_{bond} = Grout-to-ground bond stress between the subsurface material and the grout. See Table 3 below.
FS = Factor of safety used in calculating bond length. Subject to review of the micropile designer, a minimum factor of safety of 2 is recommended.

[3] Micropile Design and Construction Manual, Publication No. FHWA NHI-05-039, December 2005.
[4] Equation 5-9 of FHWA NHI-05-039.

D_b = Diameter of grout column. To be determined by designer.
L_b = Bond length of grout column. To be determined by designer.

Table 3 Recommended Grout-to-Ground Values for Micropile Design

Test Pit	Depth[1] (feet bgs)	Description[2]	Recommended FHWA Micropile Soil/Rock Description[3]	Recommended Grout to Ground Bond Value (α_{bond})[4]
TP-1	0 to 2	Undocumented Silty Sand Fill (SM Fill) & Silty Sand (SM)	Neglect contribution	
	2 to 8+	Native Silty Gravel (GM)	Gravel (some sand) (medium-very dense)	30 psi
TP-2	0 to 2	Undocumented Silty Sand Fill (SM Fill)	Neglect contribution	
	2 to 9½+	Native Silty Gravel (GM)	Gravel (some sand) (medium-very dense)	30 psi
TP-3	0 to 3	Undocumented Poorly Graded Gravel with Cobbles Fill (GP Fill)	Neglect contribution	
	3 to 8	Native Poorly Graded Gravel with Silt (GP-GM)	Gravel (some sand) (medium-very dense)	30 psi
	8+	Native, Medium strong (R3) Basalt Bedrock (RX)	Granite and Basalt (fresh-moderate fracturing, little to no weathering)	250 psi
TP-4	0 to 1	Organic Topsoil Fill (OL Fill) and Poorly Graded Gravel Fill (GP Fill)	Neglect contribution	
	1 to 9	Native Silty Gravel (GM)	Gravel (some sand) (medium-very dense)	30 psi
	9+	Native, Medium strong (R3) Basalt Bedrock (RX)	Granite and Basalt (fresh-moderate fracturing, little to no weathering)	250 psi

[1] Relative to existing site grades.

[2] Per Table 5-3 of FHWA NHI-05-039.

[3] Values presented above for α_{bond} reflects the "middle of the road" value for the soil description listed above and micropile "Type B" as shown in Table 5-3 of the referenced FHWA manual. The use of micropile "Type B" is presented in conformance with Section 5.9.2 of the FHWA manual and is subject to the grouting method preferred by the micropile contractor. Accordingly, the values presented for α_{bond} are recommended for preliminary design and planning.

6.4.3 Lateral Capacity

Design procedures for analyzing a single, vertical micropile for lateral loading and/or overturning moments are presented in Section 5.18 of the referenced FHWA micropile manual. It should be noted that individual vertical micropiles do not offer much lateral load-carrying capacity. Battered micropile groups may be considered to provide additional resistance to lateral loading as detailed in Section 5.19.4 of the referenced FHWA micropile manual.

6.4.4 Load Testing

The load test program requirements, including actual number of load tests, load increments used during testing, and duration, will rest with the foundation designer. Guidelines for load testing of micropiles are provided in Sections 5.9.2 and 7.6 of the referenced FHWA manual. The geotechnical engineer or his representative should witness the installation of test and production piles, and all phases of load testing performed at the site.

6.5 Additional Considerations

6.5.1 Drainage

Subsurface drains should be connected to the nearest storm drain, on-site infiltration system (to be designed by others) or other suitable discharge point. Paved surfaces and grading near or adjacent to the building should be sloped to drain away from the building. Surface water from paved surfaces and open spaces should be collected and routed to a suitable discharge point. Surface water should not be directed into foundation drains, onto site slopes, or into undocumented fill materials (if encountered).

6.5.2 Expansive Potential

The near surface native soils consist of generally granular soils with low to medium plasticity fines with a significant coarse-grained portion. Based on experience with similar soils in the region, these soils are not considered susceptible to appreciable movements from changes in moisture content. Accordingly, no special considerations are required to mitigate expansive potential of the near surface soils at the site.

7.0 RECOMMENDED ADDITIONAL SERVICES

7.1 Design Review

Geotechnical design review is of paramount importance. We recommend the geotechnical design review take place prior to releasing bid packets to contractors.

7.2 Observation of Construction

Satisfactory earthwork, foundation, floor slab, and pavement performance depends to a large degree on the quality of construction. Sufficient observation of the contractor's activities is a key part of determining that the work is completed in accordance with the construction drawings and specifications. Subsurface conditions observed during construction should be compared with those encountered during subsurface explorations, and recognition of changed conditions often requires experience. We recommend that qualified personnel visit the site with sufficient frequency to detect whether subsurface conditions change significantly from those observed to date and anticipated in this report. We recommend the geotechnical engineer or their representative attend a pre-construction meeting coordinated by the contractor and/or developer. The project geotechnical engineer or their representative should provide observations and/or testing of at least the following earthwork elements during construction:

- Site Stripping
- Subgrade Preparation for Mat Foundation, Shallow Foundations, Structural Fills, and Floor Slabs
- Compaction of Structural Fill and Utility Trench Backfill
- Compaction of Base Rock for Floor Slabs
- Observation and Load Testing of Micro-piles (if selected)

It is imperative that the owner and/or contractor request earthwork observations and testing at a frequency sufficient to allow the geotechnical engineer to provide a final letter of compliance for the earthwork activities.

8.0 LIMITATIONS

We have prepared this report for use by the owner/developer and other members of the design and construction team for the proposed development. The opinions and recommendations contained within this report are forwarded to assist in the planning and design process and are not intended to be, nor should they be construed as, a warranty of subsurface conditions.

We have made observations based on our explorations that indicate the soil conditions at only those specific locations and only to the depths penetrated. These observations do not necessarily reflect soil types, strata thickness, or water level variations that may exist between or away from our explorations. If subsurface conditions vary from those encountered in our site explorations, CGT should be alerted to the change in conditions so that we may provide additional geotechnical recommendations, if necessary. Observation by experienced geotechnical personnel should be considered an integral part of the construction process.

The owner/developer is responsible for ensuring that the project designers and contractors implement our recommendations. When the design has been finalized, prior to releasing bid packets to contractors, we recommend that the design drawings and specifications be reviewed by our firm to see that our recommendations have been interpreted and implemented as intended. If design changes are made, we request that we be retained to review our conclusions and recommendations and to provide a written modification or verification. Design review and construction phase testing and observation services are beyond the scope of our current assignment, but will be provided for an additional fee.

The scope of our services does not include services related to construction safety precautions, and our recommendations are not intended to direct the contractor’s methods, techniques, sequences, or procedures, except as specifically described in our report for consideration in design.

Geotechnical engineering and the geologic sciences are characterized by a degree of uncertainty. Professional judgments presented in this report are based on our understanding of the proposed construction, familiarity with similar projects in the area, and on general experience. Within the limitations of scope, schedule, and budget, our services have been executed in accordance with the generally accepted practices in this area at the time this report was prepared; no warranty, expressed or implied, is made. This report is subject to review and should not be relied upon after a period of three years.

EXHIBIT K

MARION COUNTY APW TOWER - MARION COUNTY, OREGON

Project Number B2502560

FIGURE 1

Site Location



CARLSON CGT GEOTECHNICAL
503-601-8250

Drafted by: KJH

USGS Topographic base map created with The National Map, 2025, at https://apps.nationalmap.gov/viewer/

Township 9 South, Range 3 East, Section 16, Willamette Meridian

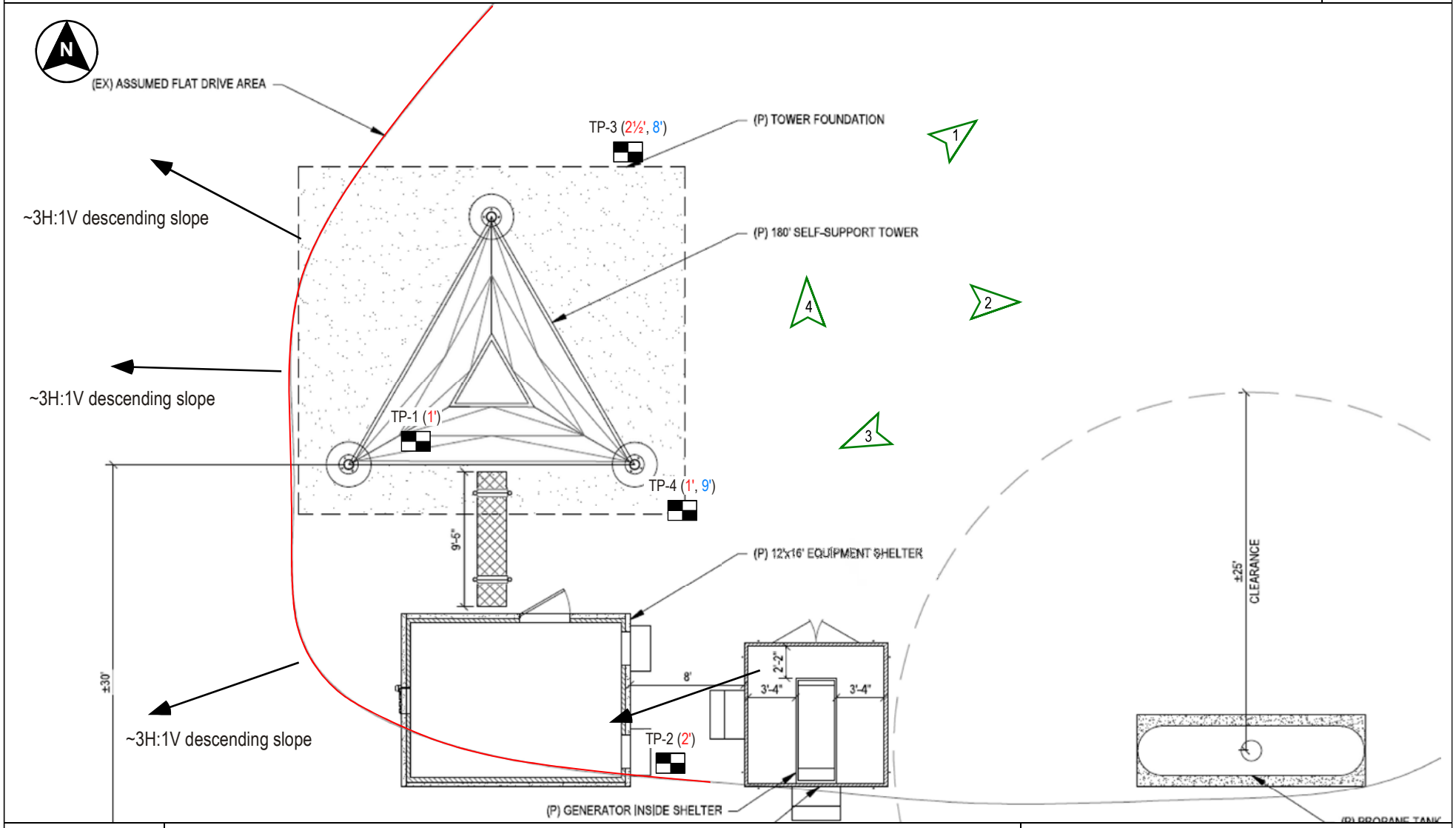
Latitude: 44.781126° North
Longitude: 122.447819° West

1 Inch = 2,000 feet

0 2000 4000

MARION COUNTY APW TOWER - MARION COUNTY, OREGON
Project Number B2502560

FIGURE 2A
Site Plan



CARLSON CGT GEOTECHNICAL 503-601-8250

Drafted by: KJH

TP-1 (X', X') Approximate test pit location. Depth of undocumented fill indicated in red. Depth to basalt bedrock, if encountered, indicated in blue.

1 Orientation of site photographs shown on Figure 3

LEGEND

Approximate edge of slope

Note: Locations of field earth resistivity arrays and seismic survey relative to existing site features shown on Figure 2B

1 Inch = 10 Feet

0 10 20

NOTES: Drawing based on observations made while on site and "Enlarged Site Plan" Sheet C-2 prepared by Cushing Civil Engineers, dated May 23, 2025. All locations are approximate.

EXHIBIT K

MARION COUNTY APW TOWER - MARION COUNTY, OREGON
Project Number B2502560

FIGURE 2B
Site Plan



LEGEND

Line #1 - ReMi — Seismic survey line, see Appendix D for results.

Array #1 & #2 — Field earth resistivity arrays, see Appendix C for results.

CARLSON CGT GEOTECHNICAL 503-601-8250

Drafted by: PR/KH

NOTES: Drawing based on observations made while on site and aerial imagery retrieved from Google Earth Pro version 7.3.6.9345 (6/18/24). Marion County, Oregon, USA. 44° 46' 52.14" N 122° 26' 52.13" W, Eye alt 527 ft. All locations are approximate.

1 Inch = 40 Feet

0 40 80

MARION COUNTY APW TOWER - MARION COUNTY, OREGON
Project Number B2502560

FIGURE 3
Site Photographs



Photograph 1



Photograph 2



Photograph 3



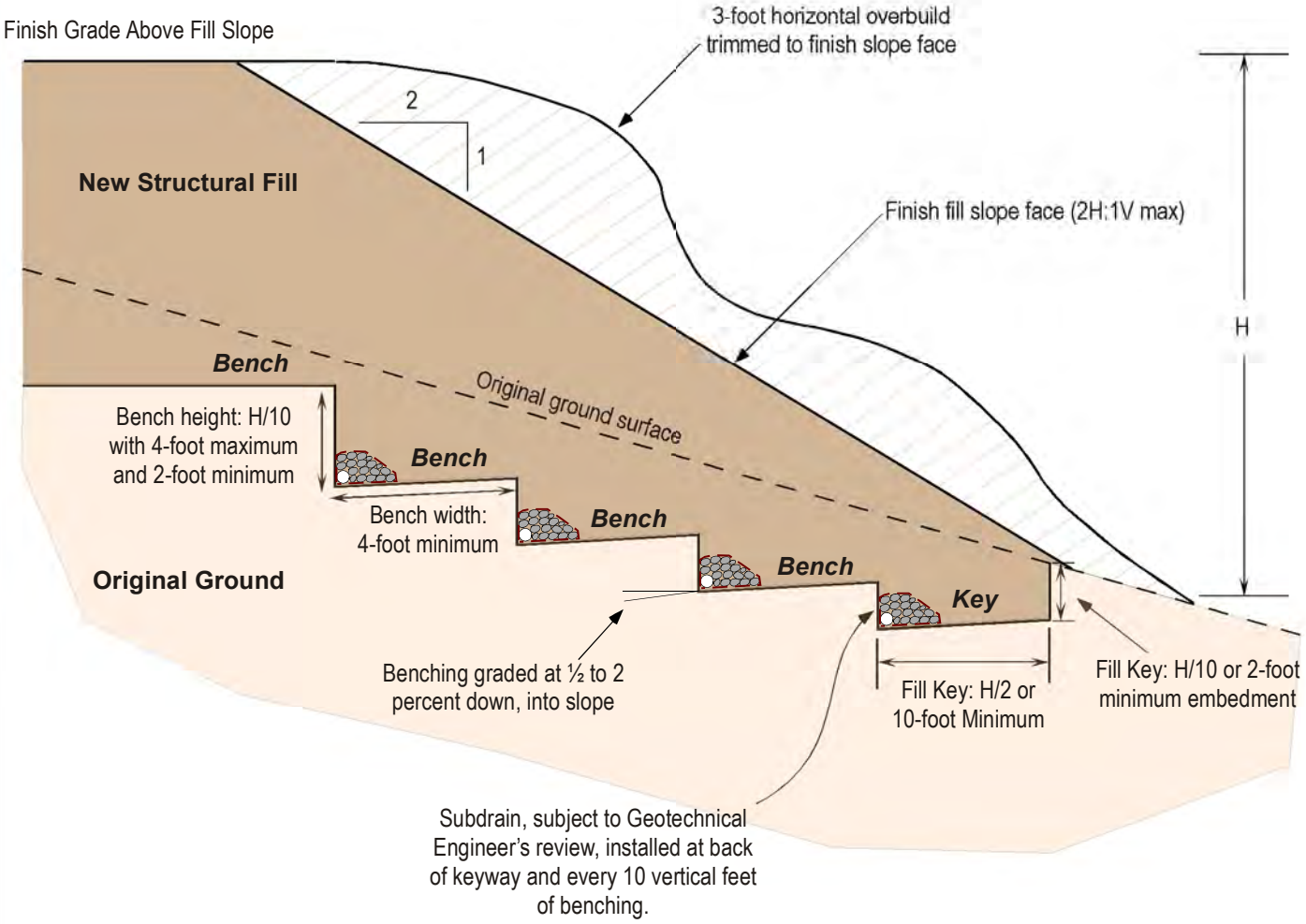
Photograph 4

CARLSON CGT GEOTECHNICAL 503-601-8250
Drafted by: XXX

See Figure 2 for approximate photograph locations and directions. Photographs were taken at the time of our fieldwork.

MARION COUNTY APW TOWER - MARION COUNTY, OREGON
Project Number B2502560

FIGURE 4
Fill Slope Detail



CARLSON CGT GEOTECHNICAL 503-601-8250

NOTE: Surfaces to receive fill with slopes steeper than 5H:1V (horizontal:vertical) should be benched and keyed as shown.

Carlson Geotechnical EXHIBIT K
A division of Carlson Testing, Inc.
Phone: (541) 330-9155
www.carlsontesting.com

Bend Office (541) 330-9155
Eugene Office (541) 345-0289
Salem Office (503) 589-1252
Tigard Office (503) 684-3460

Appendix A: Subsurface Investigation and Laboratory Testing

Marion County APW Tower
2.6 Miles North of 910 N. Santiam Highway W.
Marion County, Oregon

CGT Project Number B2502560

July 14, 2025

Prepared For:

Kenny McManaway, P.E.
Cushing Civil Engineers
12725 SW Millikan Way, Suite 300
Beaverton, Oregon 97005

Prepared by
Carlson Geotechnical

Exploration Key ..... Figure A1
Soil Classification ..... Figure A2
Rock Classification ..... Figure A3
Exploration Logs ..... Figures A4 – A7

A.1.0 SUBSURFACE INVESTIGATION

Our field investigation consisted of four test pits completed on June 19, 2025. The exploration locations are shown on the Site Plan, attached to the geotechnical report as Figures 2A. The exploration locations shown therein were determined based on measurements from existing site features (e.g. gravel access road, existing edge of former logging equipment staging pad) and are approximate. Surface elevations indicated on the logs were estimated based on the ground elevation provided on Sheet T-1 of the project civil drawings and are approximate. The attached figures detail the exploration methods (Figure A1), soil and rock classification criteria (Figures A2 and A3), and present detailed logs of the explorations (Figures A4 through A7), as discussed below.

A.1.1 Test Pits

CGT observed the excavation of four test pits (TP-1 through TP-4) at the site to depths of about 8 to 9½ feet bgs. The test pits were excavated using a Takeuchi TB 260 mini-excavator provided and operated provided by our excavation subcontractor, Terry Shine Excavation of Bend, Oregon. The test pits were loosely backfilled with the excavated materials upon completion.

A.1.2 Material Classification & Sampling

Representative disturbed (grab) samples of the soils encountered were obtained at select intervals within the test pits. A qualified member of CGT's geological staff collected the samples and logged the soils in general accordance with the Visual-Manual Procedure (ASTM D2488). Rock was classified in general accordance with procedures outlined in ASTM D5878. An explanation of these classification systems is attached as Figures A2 and A3. The grab samples were stored in sealable plastic bags and transported to our soils laboratory for further examination and testing. Our geotechnical staff visually examined all samples in order to refine the initial field classifications.

A.1.3 Subsurface Conditions

Subsurface conditions are summarized in Section 2.3 of the geotechnical report. Detailed logs of the explorations are presented on the attached exploration logs, Figures A4 through A7.

A.2.0 LABORATORY TESTING

Laboratory testing was performed on samples collected in the field to refine our initial field classifications and determine in-situ parameters. Laboratory testing included the following:

- Three moisture content determinations (ASTM D2216).
- Two percentage passing the U.S. Standard No. 200 Sieve tests (ASTM D1140).

Results of the laboratory tests are shown on the exploration logs.

MARION COUNTY APW TOWER - MARION COUNTY, OREGON
Project Number B2502560

FIGURE A1
Exploration Key

PL — MC — LL
Atterberg limits (plasticity) test results (ASTM D4318): PL = Plastic Limit, LL = Liquid Limit, and MC = Moisture Content (ASTM D2216)

FINES CONTENT (%) — Percentage passing the U.S. Standard No. 200 Sieve (ASTM D1140)

SAMPLING

GRAB — Grab sample

BULK — Bulk sample

SPT — **Standard Penetration Test** (ASTM D1586) consists of driving a (2-inch, outside-diameter, split-spoon sampler into the undisturbed formation with repeated blows of a 140-pound, hammer falling a vertical distance of 30 inches. The number of blows (value) required to drive the sampler the last 12 inches of an 18-inch sample interval is used to characterize the soil consistency or relative density. The drill rig was equipped with an cat-head or automatic hammer to conduct the SPTs. The observed N-values, hammer efficiency, and N_{60} are noted on the boring logs.

MC — **Modified California** sampling consists of 2.5-inch, outside-diameter, split-spoon sampler (ASTM D3550) driven similarly to the SPT sampling method described above. A sampler diameter correction factor of 0.44 is applied to calculate the equivalent SPT N_{60} value per Lacroix and Horn, 1973.

CORE — **Rock Coring** interval

SH — **Shelby Tube** is a 2-inch, inner-diameter, thin-walled, steel tube push sampler (ASTM D1587) used to collect relatively undisturbed samples of fine-grained soils.

WDCP — **Water-Filled Dynamic Cone Penetrometer** (WDCP) test consists of driving 1.1-inch diameter, steel rods with a 1.4-inch diameter, cone tip into the ground using a 140 pound drop hammer with a 30 inch free-fall height. The number of blows required to drive the steel rods is recorded for each 10 centimeters (3.94 inches) of penetration. The blow count for each interval is then converted to the corresponding SPT N_{60} values.

DCP — **Dynamic Cone Penetrometer** (DCP) test consists of driving a 20-millimeter diameter, hardened steel cone on 25 millimeter diameter steel rods into the ground using a 10-kilogram drop hammer with a 460-millimeter free-fall height. The depth of penetration in millimeters is recorded for each drop of the hammer.

POCKET PEN. (tsf) — **Pocket Penetrometer** test is a hand-held instrument that provides an approximation of the unconfined compressive strength in tons per square foot (tsf) of cohesive, fine-grained soils.

CONTACTS

Observed (measured) contact between soil or rock units.

Inferred (approximate) contact between soil or rock units.

Transitional (gradational) contact between soil or rock units.

ADDITIONAL NOTATIONS

Italics — Notes drilling action or digging effort

?Braces } — Interpretation of material origin/geologic formation (e.g. { Base Rock } or { Columbia River Basalt })

CARLSON CGT GEOTECHNICAL

All measurements are approximate.

MARION COUNTY APW TOWER - MARION COUNTY, OREGON
Project Number B2502560

FIGURE A2
Soil Classification

Classification f Terms and C ntent

AME: Group Name and Symbol
Re˘a^ve Density or Consistency
Color
Mo˙sture Content
Plasticity
ther Constituents
ther: Gra˙n Shape, Approximate Gradation
rganics, Cement, Structure, Odor, etc.
Geologic Name or Formation

Grain Size

		U.S. Standard Sieve
&˙nes		<#200 (*.075 mm.
Sand	Fine	#200 - #40 (0.425 mm.
	Medium	#40 - #10 () mm.
	° oarse	#10 - #4 (9.75 mm.
Gravel	Fine	#4 - 0.75 inch
	° oarse	0.75 inch - 3 inches
° obbles		3 to 12 inches
Boulders		> 12 inches

C arse-Grained (Granular) Soils

Relative Density

SPT 3*45alue	˛ ensi˘y
0 - 9	Very Loose
4 - 0*	Loose
10 - /*	Medium Dense
30 - -*	˛ ense
6-*	Very Dense

Minor Constituents

Percent by Volume	Descriptor	xample
0 - -;	“Trace” as part of soil description	“trace silt”
5 - 0-;	“With” as part of group name	“**POORLY GRADED SAND WITH SILT**”
15 - 9C;	Modifier to group name	“**SILTY SAND**”

Fine-Grained (Cohesive) Soils

SPT 3*45alue	Tor˝ane tsf Shear Strength	Pocket Pen tsf 8nconfined	° onsistency	Manual Penetra^on Test
')	'*%0/	'*%)-	Very Soft	Thumb penetrates more than 1 inch
2 - 9	0.13 - *%)-	0.25 - *%-*	Soft	Thumb penetrates about 1 inch
4 - A	0.25 - *%-*	0.50 - 0%**	Medium Stiff	Thumb penetrates about ¼ inch
8 - 0-	0.50 - 0%**	1.00 -)%**	Stiff	Thumb penetrates less than ¼ inch
15 - /*	1.00 -)%**	2.00 - 9%**	Very Stiff	Readi˘y indented by thumbnai˘
6/*	6)%**	69%**	Hard	Difficult to indent by thumbnail

M˙nor Constituents

Percent by Volume	Descriptor	Example
0 - -;	“Trace” as part of soil description	“trace fine-grained sand”
5 - 0-;	“Some” as part of soil description	“some fine-grained sand”
15 - /*;	“With” as part of group name	“**SILT WITH SAND**”
30 - 9C;	Modifier to group name	“**SANDY SILT**”

Moisture Content

Dry: Absence of moisture, dusty, dry to the touch
Moist: Leaves moisture on hand
> et: Visible free water, likely from below water table

	Plasticity	˙ ry Strength	Dilatanc˝	Toughness
ML	on to Low	on to Low	Slow to Rapid	Low, can’t roll
CL	Low to Medium	Medium to H˙gh	None to Slow	Medium
MH	Medium to H˙gh	Low to Medium	None to Slow	Low to Medium
CH	Medium to H˙$!	: ˙gh to Very H˙$!	one	:˙$!

Structure

Stra^˙fied: Al˙ernating layers of mater˙a˘ or color >6 mm thic7
Laminated: Alternating layers < 6 mm thick
Fissured: Breaks along definite fracture planes
Slickensided: Striated, polished, or glossy fracture planes
Blocky: Cohesive soil that can be broken down into small angular lumps which resist further breakdown
Lenses: Has small pockets of different soils, note thickness
: omogeneous: Same color and appearance throughout

Visual-˛ anual Classification

Major Divisions			Group Symbols	Typical Names
° oarse Grained Soils: More than -*; retained on No. 200 sieve	Gravels: 50% or more *retained* on the No. 4 sieve	° ˘ean Gravels	GW	> e˜˝4graded gravels and gravel/sand m˙xtures, l˜˜˜e or no fines
			GP	Poor˙y45raded gravels and gravel/sand m˙xtures, l˜˜˜e or no fines
		Gravels with Fines	GM	Si˘ty gravels, gravel/sand/si˘t m˙#tures
			GC	° ˘ayey gravels, gravel/sand/clay m˙#tures
	Sands: More than -*; *passing* the No. 4 sieve	° ˘ean Sands	SW	> e˜˝4graded sands and gravel˘y sands, l˜˜˜e or no fines
			SP	Poor˘y45raded sands and gravel˘y sands, l˜˜˜e or no fines
		Sands with Fines	SM	Si˘ty sands, sand/si˘t m˙#tures
			SC	° ˘ayey sands, sand/clay m˙#tures
&˙ne-Grained Soils: - *; or more Passes No. 200 Sieve	Si˘t and C˘ays <o= Plasticity Fines		M<	Inorganic si˘ts, rock flour, clayey si˘ts
			° <	Inorganic clays of low to medium plastic˙ty, gravel˘y clays, sandy clays, lean clays
			<	rganic soi˘ of low plastic˜˝y
	Si˘t and C˘ays : ˙gh Plasticity Fines		M:	Inorganic si˘ts, clayey si˘ts
			°:	Inorganic clays of high plasticity, fat clays
			:	rganic soi˘ of medium to high plasticity
: ˙$!˘y Organic Soi˘s			˜2	Peat, muck, and other highly organic soils

CARLSON CGT GEOTECHNICAL 503-601-34./

References:
ASTM D2487 Standard Practice for Classification of Soils for Engineering Purposes (Unified Soil Classification System)
ASTM D2488 Standard Practice for Description and Identification of Soils (Visual-Manual Procedure)
Terzaghi, K., and Peck, R.B., 1948, Soil Mechanics in Engineering Practice, John Wiley & Sons.

MARION COUNTY APW TOWER - MARION COUNTY, OREGON
Project Number B2502560

FIGURE A3
Rock Classification

Scale of Relative Rock Hardness

Term	Field Identification	Hardness Designation	Approximate Unconfined Compressive Strength
Extremely Weak	Can be indented with difficulty by thumbnail. May be moldable or friable with finger pressure.	R0	<150 psi
Very Weak	Crumbles under firm blows with point of geology pick. Can be peeled by pocket knife. Scratched with finger nail.	R1	150-725 psi
Weak	Can be peeled by pocket knife with difficulty. Cannot be scratched with finger nail. Shallow indention made by firm blow of geology pick.	R2	725-3,500 psi
Medium Strong	Can be scratched by knife or pick. specimen can be fractured with a single firm blow of hammer/geology pick.	R3	3,500-7,250 psi
Strong	Can be scratched with knife or pick only with difficulty. Several hard blows required to fracture specimen.	R4	7,250-14,500 psi
Very Strong	Cannot be scratched by knife or sharp pick. Specimen requires many blows of hammer to fracture or chip. Hammer rebounds after impact.	R5	14,500-36,250 psi
Extremely Strong	Can only be chipped with firm blows of hammer.	R6	>36,250 psi

Scale of Relative Rock Weathering

Designation	Field Identification
Fresh	Crystals are bright. Discontinuities may show some minor surface staining. No discoloration in rock fabric.
Slightly Weathered	Rock mass is generally fresh. Discontinuities are stained and may contain clay. Some discoloration in rock fabric. Decomposition extends up to 1 inch into rock.
Moderately Weathered	Rock mass is decomposed 50% or less. Significant portions of rock show discoloration and weathering effects. Crystals are dull and show visible chemical alteration. Discontinuities are stained and may contain secondary mineral deposits.
Highly Weathered	Rock mass is more than 50% decomposed. Rock can be excavated with geologist's pick. All discontinuities exhibit secondary mineralization. Complete discoloration of rock fabric. Surface of core is friable and usually pitted due to washing out of highly altered minerals by drilling water.
Decomposed	Rock mass is completely decomposed. Original rock fabric may be evident. May be reduced to soil with hand pressure.

Spacing Terms

Bedding/Foliation	Spacing	Joints
Very thin	< 2 in.	Very close
Thin	2 in. - 1 ft.	Close
Medium	1 ft. - 3 ft.	Moderately Close
Thick	3 ft. - 10 ft.	Wide
Massive	> 10 ft.	Very Wide

Discontinuity/Joint Condition

Condition	Description
Very Good Condition	Very rough, fresh surfaces, no separation
Good Condition	Slightly rough, slightly weathered surfaces, separation less than 1 mm (0.05 in.)
Fair Condition	Smooth to slightly rough, moderately weathered and altered surfaces, separation greater than 1 mm (0.05 in.)
Poor Condition	Slickensided, highly weathered surfaces, or soft gouge less than 5 mm (0.2 in.) thick, or open discontinuities 1 to 5 mm (0.05 to 0.2 in.)
Very Poor Condition	Highly weathered surfaces with soft gouge greater than 5 mm (0.2 in.) thick, or open discontinuities greater than 5 mm (0.2 in.)

Rock Quality Designation

Rock Quality Designation (RQD) is the percent of a core run with intact lengths greater than 4 inches excluding mechanical breaks caused by drilling.

$$RQD = \frac{\sum \text{length of sound pieces >4 inches}}{\text{total length of core run in inches}}$$

RQD (%)	Designation
0 - 25	Very poor
25 - 50	Poor
50 - 75	Fair
75 - 90	Good
90 - 100	Excellent

Fracture Frequency

$$FF = \frac{\text{number of natural fractures}}{\text{total length of core recovered}}$$

Degree of Vesicularity

Term	Volume (%)
Trace Vesicles	<5
Some Vesicles	5 - 25
Vesicular	25 - 50
Scoriaceous	> 50

CARLSON CGT GEOTECHNICAL 503-601-8250

Explanation of Common Terms Used in Rock Descriptions, adapted from ASTM International D5878, 1987 Oregon Department of Transportation Soil and Rock Classification Manual, 2019 Washington State Department of Transportation Geotechnical Design Manual, and 2017 Federal Highway Administration Geotechnical Engineering Circular No. 5.

EXHIBIT K

Carlson Geotechnical
A Division of Carlson Testing, Inc.
www.carlsontesting.com

FIGURE A4

Test Pit TP-01

CLIENT Kenny McManaway, P.E., Cushing Civil Engineers
PROJECT NAME Marion County APW Tower
PROJECT NUMBER B2502560
PROJECT LOCATION Gates, Oregon
DATE STARTED 6/19/25
GROUND ELEVATION 2430 ft
ELEVATION DATUM See Appendix A
WEATHER Clear, 70° F
SURFACE Gravel, grasses
LOGGED BY AET
REVIEWED BY PBR
EXCAVATION CONTRACTOR Terry Shine Excavating
SEEPAGE ---
EQUIPMENT Takeuchi TB260
GROUNDWATER DURING DRILLING ---
EXCAVATION METHOD 24" Rock Bucket
GROUNDWATER AFTER EXCAVATION ---

ELEVATION (ft)	GRAPHIC LOG	GROUP SYMBOL	MATERIAL DESCRIPTION	GROUNDWATER	DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	WDCP N_{60} VALUE	POCKET PEN. (tsf)	DRY UNIT WT. (pcf)	▲ WDCP N_{60} VALUE ▲ / PL LL MC / ☐ FINES CONTENT (%) ☐
		OL Fill	**ORGANIC TOPSOIL FILL:** Brown, moist, abundant rootlets.		0						0 20 40 60 80 100
		SM FILL	**SILTY SAND FILL:** Red to brown, moist, fine- to medium-grained, subrounded to subangular, low to medium plasticity fines, some weathered subangular to angular gravel up to 1 inch in diameter. Two isolated wood chunks up to 8 inches long.						4.5		
		SM							4.5		
2428									4.5		
			SILTY SAND: Red to brown, moist, fine- to medium-grained, subrounded to subangular, low to medium plasticity fines, blocky texture, some black and white staining. {Residual Soil}		2	GRAB 1					31 ☐ ● 38
			SILTY GRAVEL: *Medium dense to dense*, dark gray, moist, some subangular gravel up to 3 inches in diameter, low to medium plasticity fines. Weathered and friable under hard hand pressure, trace rootlets observed in sidewalls. {Residual Soil}						4.5		
2426					4	GRAB 2			4.5		
		GM							4.5		
2424			*Dense* below 6 feet bgs.		6	GRAB 3					
2422					8						
		GM	**SILTY GRAVEL:** *Dense to very dense,* light brown, moist, subangular to subrounded particles up to 2 inches in diameter, with low plasticity fines. Friable under hand pressure. {Weathered Tuff}			GRAB 4					
2420			•Test pit terminated at 9½ feet bgs due to practical digging limit of excavation equipment. •No groundwater encountered. •No caving encountered. •Test pit loosely backfilled with excavated spoils.								
2418											

CGT EXPLORATION WITH WDCP TEST PIT LOGS -KH.GPJ 7/9/25 DRAFTED BY: KJH

EXHIBIT K

Carlson Geotechnical
A Division of Carlson Testing, Inc.
www.carlsontesting.com

FIGURE A5

Test Pit TP-02

CLIENT Kenny McManaway, P.E., Cushing Civil Engineers
PROJECT NAME Marion County APW Tower
PROJECT NUMBER B2502560
PROJECT LOCATION Gates, Oregon
DATE STARTED 6/19/25
GROUND ELEVATION 2430 ft
ELEVATION DATUM See Appendix A
WEATHER Clear, 70° F
SURFACE
LOGGED BY AET
REVIEWED BY PBR
EXCAVATION CONTRACTOR Terry Shine Excavating
SEEPAGE ---
EQUIPMENT Takeuchi TB260
GROUNDWATER DURING DRILLING ---
EXCAVATION METHOD 24" Rock Bucket
GROUNDWATER AFTER EXCAVATION ---

ELEVATION (ft)	GRAPHIC LOG	GROUP SYMBOL	MATERIAL DESCRIPTION	GROUNDWATER	DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	WDCP N_{60} VALUE	POCKET PEN. (tsf)	DRY UNIT WT. (pcf)	▲ WDCP N_{60} VALUE ▲ / PL LL MC / ☐ FINES CONTENT (%) ☐
					0						0 20 40 60 80 100
		OL Fill	**ORGANIC TOPSOIL FILL:** Brown, moist, abundant rootlets.						4.5		
		SM Fill	**SILTY SAND FILL:** Red to brown, moist, fine- to medium-grained, subrounded to subangular, low to medium plasticity fines, some weathered subangular to angular gravel up to 1 inch in diameter. Buried log up to 14 inches in diameter and 3 feet long at 1½ feet bgs.						4.5		
2428					2				4.5		
		GM	**SILTY GRAVEL:** *Medium dense,* mottled cream and brown, moist, subangular to subrounded gravel up to 3 inches in diameter, with silt fines. Friable under hand pressure. {Residual Soil}			GRAB 1					39
2426					4						
			Medium dense to dense, light brown, with black staining below 4 feet bgs.								
2424					6	GRAB 2					
2422			*Dense* below 8 feet bgs.		8						
2420			•Test pit terminated at 9½ feet bgs due to practical digging limit of excavation equipment. •No groundwater encountered. •No caving encountered. •Test pit loosely backfilled with excavated spoils.								
2418											

CGT EXPLORATION WITH WDCP TEST PIT LOGS -KH.GPJ 7/9/25 DRAFTED BY: KJH

EXHIBIT K

Carlson Geotechnical
A Division of Carlson Testing, Inc.
www.carlsontesting.com

FIGURE A6

Test Pit TP-03

CLIENT Kenny McManaway, P.E., Cushing Civil Engineers
PROJECT NAME Marion County APW Tower
PROJECT NUMBER B2502560
PROJECT LOCATION Gates, Oregon
DATE STARTED 6/19/25
GROUND ELEVATION 2430 ft
ELEVATION DATUM See Appendix A
WEATHER Clear, 70° F
SURFACE
LOGGED BY AET
REVIEWED BY PBR
EXCAVATION CONTRACTOR Terry Shine Excavating
SEEPAGE ---
EQUIPMENT Takeuchi TB260
GROUNDWATER DURING DRILLING ---
EXCAVATION METHOD 24" Rock Bucket
GROUNDWATER AFTER EXCAVATION ---

ELEVATION (ft)	GRAPHIC LOG	GROUP SYMBOL	MATERIAL DESCRIPTION	GROUNDWATER	DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	WDCP N_{60} VALUE	POCKET PEN. (tsf)	DRY UNIT WT. (pcf)
		OL Fill	**ORGANIC TOPSOIL FILL:** Brown, moist, abundant rootlets.		0					
2428		GP Fill	**POORLY GRADED GRAVEL WITH COBBLES FILL:** *Dense,* brown, moist, subangular to angular, with cobbles up to 6 inches in diameter. Some nonplastic fines.		2					
2426		GP-GM	**POORLY GRADED GRAVEL WITH SILT:** *Medium dense to dense,* red to brown, moist, subangular to subrounded up to 2 inches in diameter. Some black staining, low to medium plasticity fines. Friable under hand pressure. {Residual Soil}		4	GRAB 1				
2424			*Dense* below 5 feet bgs.		6					
2422		RX	**BASALT:** Medium strong (R3), dark gray, slightly weathered, fractured.		8	GRAB 2				
2420			•Terminated at 8 feet bgs due to practical digging refusal on basalt bedrock. •No groundwater encountered. •No caving encountered. •Test pit loosely backfilled with excavated spoils.							
2418										

▲ WDCP N_{60} VALUE ▲
PL LL MC
☐ FINES CONTENT (%) ☐
0 20 40 60 80 100
38
43

CGT EXPLORATION WITH WDCP TEST PIT LOGS -KH.GPJ 7/9/25 DRAFTED BY: KJH

EXHIBIT K

Carlson Geotechnical
A Division of Carlson Testing, Inc.
www.carlsontesting.com

FIGURE A7

Test Pit TP-04

CLIENT Kenny McManaway, P.E., Cushing Civil Engineers
PROJECT NAME Marion County APW Tower
PROJECT NUMBER B2502560
PROJECT LOCATION Gates, Oregon
DATE STARTED 6/19/25
GROUND ELEVATION 2430 ft
ELEVATION DATUM See Appendix A
WEATHER Clear, 70° F
SURFACE
LOGGED BY AET
REVIEWED BY PBR
EXCAVATION CONTRACTOR Terry Shine Excavating
SEEPAGE ---
EQUIPMENT Takeuchi TB260
GROUNDWATER DURING DRILLING ---
EXCAVATION METHOD 24" Rock Bucket
GROUNDWATER AFTER EXCAVATION ---

ELEVATION (ft)	GRAPHIC LOG	GROUP SYMBOL	MATERIAL DESCRIPTION	GROUNDWATER	DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	WDCP N_{60} VALUE	POCKET PEN. (tsf)	DRY UNIT WT. (pcf)
		OL FIll	**ORGANIC TOPSOIL FILL:** Brown, moist, abundant rootlets.		0					
		GP Fill	**POORLY GRADED GRAVEL FILL:** Gray, moist, subangular to angular up to 2 inches in diameter. Some silt fines.							
2428			**SILTY GRAVEL:** *Medium dense*, dark gray with brown staining, moist, subangular to subrounded gravel up to 3 inches in diameter, friable under hand pressure. {Residual Soil}		2					
						GRAB 1				
2426			Heavily mottled brown, dark gray, and red below 4 feet bgs.		4					
		GM	*Dense* below 5 feet bgs.			GRAB 2				
2424					6					
			Very dense below 7 feet bgs.							
2422					8					
		RX	**BASALT:** Medium strong (R3), dark gray, slightly weathered, fractured.							
2420			•Terminated at 9 feet bgs due to practical digging refusal on basalt bedrock. •No groundwater encountered. •No caving encountered. •Test pit loosely backfilled with excavated spoils.							
2418										

▲ WDCP N_{60} VALUE ▲

PL — MC — LL

☐ FINES CONTENT (%) ☐

0 20 40 60 80 100

18 ☐ 51 ●

CGT EXPLORATION WITH WDCP TEST PIT LOGS -KH.GPJ 7/9/25 DRAFTED BY: KJH

Appendix B: Site-Specific Seismic Hazards Study

Marion County APW Tower
2.6 Miles North of 910 N. Santiam Highway W.
Marion County, Oregon

CGT Project Number B2502560

July 14, 2025

Prepared For:

Kenny McManaway, P.E.
Cushing Civil Engineers
12725 SW Millikan Way, Suite 300
Beaverton, Oregon 97005

Prepared by
Carlson Geotechnical

TABLE OF CONTENTS

B.1.0 INTRODUCTION 3
B.2.0 GEOLOGIC SETTING 3
B.2.1 Regional Geology 3
B.2.2 Site Geology 3
B.3.0 GROUND MOTION HAZARD ANALYSIS 4
B.3.1 Earthquake Sources and Seismicity 4
B.3.1.1 Crustal Sources 4
B.3.1.2 Cascadia Subduction Zone Seismic Sources 4
B.3.1.3 Characteristic Earthquake Magnitude 5
B.4.0 SEISMIC SITE CLASS 7
B.5.0 SEISMIC GROUND MOTION VALUES 7
B.6.0 SEISMIC HAZARDS 7
B.6.1 Liquefaction 7
B.6.2 Surface Rupture 8
B.6.2.1 Faulting 8
B.6.2.2 Lateral Spread 8
B.6.3 Slope Stability 8
B.6.3.1 Landslide Hazard 8
B.6.4 Tsunami/Seiche Inundation 9

ATTACHMENTS

Geologic Map ..... Figure B1
Regional Seismicity ..... Figure B2

Doc ID: G:\GEOTECH\PROJECTS\2025 Projects\001 - Bend Projects\B2502560 - Marion County APW Tower\008 - Deliverables\Appendix B - Site Specific Seismic Hazard Study\Appendix B - SSSHS.docx

B.1.0 INTRODUCTION

Based on the information provided, we understand the proposed communication tower and the associated communications shelter will be classified as Risk Category IV per Table 1604.5 of the 2022 Oregon Structural Specialty Code (OSSC). Accordingly, a Site-Specific Seismic Hazards Study (SSSHS) was prepared for the project in accordance with Section 1803.3.2 of the 2022 OSSC. This appendix presents the results of that study.

B.2.0 GEOLOGIC SETTING

B.2.1 Regional Geology

The site is located on the eastern margin of the Willamette Valley physiographic province in Marion County, Oregon. The Willamette Valley is a broad trough-like lowland defined by uplift and faulting of the Coast and Western Cascade Ranges to the west and east respectively. Approximately 35 million years ago, a large slab of oceanic crust and associated marine sediments accreted onto the margin of North America, which was located in a rough line from southwestern Oregon to the northeastern portion of the state. A portion of this accreted slab became the Willamette Valley, which was still covered by a shallow ocean. Additional accretion, faulting, and folding created the Coast Range to the west. This folding and faulting also raised the Willamette Valley out of the sea. Volcanic activity from the Cascade Range approximately 25 million years ago covered and filled in much of the southern and eastern portions of the early Willamette Valley[1].

Approximately 15 million years ago, Columbia River Basalts flowed down what is now the Columbia River Gorge as far west as the Oregon and Washington coast, and into the Willamette Valley as far south as Salem, Oregon. Uplift and faulting within the Willamette Basin formed the intra-valley highlands such as the Tualatin and Chehalem Mountains and the Amity, Eola, and Salem Hills. Infilling of the Willamette Valley continued from weathering of the adjacent hills and deposition of alluvium by the Willamette River and its tributaries throughout the valley. Catastrophic glacial floods later flowed into the Willamette Valley approximately 18,000 to 15,000 years ago[2] and deposited fine to coarse-grained sedimentary assemblages (Pleistocene flood deposits) mapped throughout the area[3,4,5].

B.2.2 Site Geology

<u>Tuffaceous Sedimentary Rocks, Basalt Flows, and Tuffs (Tu):</u>
Based on available geologic mapping[6] and the soils encountered within our explorations the site is underlain by Miocene and Oligocene tuffaceous sedimentary rocks, basaltic flows, and tuffs. This unit consists of basalt and basaltic andesite flows and breccias interbedded with epiclastic and volcaniclastic deposits, ash-flow tuff, air-fall tuff, lapilli tuff, tuff breccia, mudflow (lahar) deposits, and massive to bedded, fine- to coarse-

---

1 Pacific Northwest Ecosystem Research Consortium, 2002. Willamette River Basin: trajectories of environmental and ecological change, Oregon State University Press.

2 Allen, John Eliot, Burns, Marjorie, and Burns, Scott, 2009. Cataclysms on the Columbia, The Great Missoula Floods, Revised Second Edition: Ooligan Press, Portland State University.

3 Bela, James L., 1981, Geology of the Rickreall, Salem West, Monmouth, and Sidney 7½' Quadrangles, Marion, Polk, and Linn Counties, Oregon: Oregon Department of Geology and Mineral Industries Map GMS-18, 2 plates.

4 Orr, Elizabeth L., Orr, William N., and Baldwin, Ewart M., 1992, Geology of Oregon, Fourth Edition: Kendall/Hunt Publishing, pp. 203-222.

5 O'Connor, Jim E., et al., 2001, Origin, extent, and thickness of quaternary geologic units in the Willamette Valley, Oregon: US Geological Survey, Professional Paper 1620,52p, 1plate.

6 Walker, George W. and Duncan, Robert A., 1989. Geologic Map of the Salem 1 degree by 2-degree Quadrangle, Western, Oregon: U.S. Geological Survey, Miscellaneous Investigations Map Series, Map I-1893, scale 1:250,000.

grained, tuffaceous sedimentary rocks and volcanic conglomerates. These deposits are locally intruded by granitoid rocks, invasive flows, dikes, sills, and plugs of basalt and basaltic andesite. These deposits extend to a depth of at least 100 feet bgs within the vicinity of the site.

B.3.0 GROUND MOTION HAZARD ANALYSIS

The geological and geotechnical data developed within the geotechnical report were used to evaluate the ground motion response of the project site to various earthquake sources and events. The ground motion hazard analysis addresses the following seismic hazards for the site in accordance with Section 1803.6.1 of the 2022 OSSC:

- Ground Shaking;
- Liquefaction;
- Lateral Spread;
- Earthquake-induced Landsliding;
- Inundation from Tsunami / Seiche; and
- Surface Rupture due to Fault Displacement.

The analysis was based on procedures presented in Section 1613.2.4 of the 2022 OSSC and Section 11.4 of American Society of Civil Engineers (ASCE) Minimum Design Loads for Buildings and Other Structures (ASCE 7-16). A site-specific response analysis could be performed to develop a site-specific design response spectrum at the owner's discretion, if desired, for an additional fee.

B.3.1 Earthquake Sources and Seismicity

The site is located in a tectonically active area that may be affected by crustal earthquakes, large subduction zone earthquakes, or earthquakes caused by faulting within the subducting slab (intraplate earthquakes).

B.3.1.1 Crustal Sources

Crustal earthquakes typically occur at depths ranging from 15 to 40 kilometers bgs[7]. According to the United States Geological Survey Quaternary fault and fold database[8], there are no nearby seismic sources capable of producing damaging earthquakes in the vicinity of the site.

B.3.1.2 Cascadia Subduction Zone Seismic Sources

The Cascadia Subduction Zone (CSZ) is a 1,100-kilometer-long zone of active tectonic convergence where oceanic crust of the Juan de Fuca Plate is subducting beneath the North American continental plate at a rate of about 3 to 4 centimeters per year[9]. The fault trace is located off of the coast of southern British Columbia, Washington, Oregon, and northern California; approximately 235 kilometers (146 miles) west of the site (see attached Figure B2).

---

7 Geomatrix Consultants, 1995. Seismic Design Mapping, State of Oregon: unpublished report prepared for Oregon Department of Transportation, Personal Services Contract 11688, January 1995.

8 U.S. Geological Survey, 2025. Quaternary fault and fold database for the United States, *accessed July 2025*, from USGS web site: http://earthquakes.usgs.gov/regional/qfaults/.

9 DeMets, C., Gordon, R.G., Argus, D.F., Stein, S., 1990. Current plate motions: Geophysical Journal International, v. 101, p. 425-478.

Two primary sources of seismicity are associated with the CSZ: relatively shallow earthquakes that occur on the interface between the two plates (Subduction Zone earthquakes), and deep earthquakes that occur along faults within the subducting Juan de Fuca plate (intraplate earthquakes).

B.3.1.2.1 *Subduction Zone Earthquakes*

Large subduction zone (megathrust) earthquakes occur within the upper approximate 30 kilometers of the contact between the two plates[10]. As the Juan de Fuca Plate subducts beneath the North American Plate through this zone, the plates are locked together by friction[11]. Stress slowly builds as the plates converge until the frictional resistance is exceeded, and the plates rapidly slip past each other resulting in a "megathrust" earthquake. The United States Geologic Survey estimates megathrust earthquakes on the CSZ may have magnitudes up to M9.2.

Geologic evidence indicates a recurrence interval for major subduction zone earthquakes of 250 to 650 years, with the last major event occurring in 1700[12,13]. The eastern margin of the seismogenic portion of the Cascadia Subduction zone is located approximately 105 kilometers (65 miles) west of the site, as shown on Figure B2.

B.3.1.2.2 *Intraplate Earthquakes*

Below about 30 kilometers, the plate interface does not appear to be locked by friction, and the plates slowly slide past each other. The curvature of the subducted plate increases as the advancing edge moves east, creating extensional forces within the plate. Normal faulting occurs in response to these extensional forces. This region of maximum curvature and faulting of the subducting plate is where large intraplate earthquakes are expected to occur, and is located at depths ranging from 30 to 60 kilometers[14,15,16]. Intraplate earthquakes within the Juan de Fuca plate generally have magnitudes less than M7.5[17].

The 2001 M6.8 Nisqually earthquake near Olympia, Washington, occurred within this seismogenic zone at a depth of 52 kilometers. The eastern margin of the intraplate seismogenic zone is located approximately 16 kilometers (10 miles) west of the site, as shown on Figure B2.

B.3.1.3 Characteristic Earthquake Magnitude

The maximum characteristic earthquake magnitude is defined as the largest earthquake that could be expected to be generated by a specific seismic source, independent of recurrence interval.

---

10 Pacific Northwest Seismic Network, 2025. Pacific Northwest Earthquake Sources Overview, *accessed July 2025,* from PNSN web site, http://pnsn.org/outreach/earthquakesources/.

11 Pacific Northwest Seismic Network, 2025. Pacific Northwest Earthquake Sources Overview, *accessed July 2025,* from PNSN web site, http://pnsn.org/outreach/earthquakesources/.

12 Atwater, B.F., 1992. Geologic evidence for earthquakes during the past 2,000 years along the Copalis River, southern coastal Washington: Journal of Geophysical Research, v. 97, p. 1901-1919.

13 Peterson, C.D., Darienzo, M.E., Burns, S.F., and Burris, W.K., 1993. Field trip guide to Cascadia paleoseismic evidence along the northern California coast: evidence of subduction zone seismicity in the central Cascadia margin. Oregon Department of Geology and Mineral Industries, Oregon Geology, Vol. 55, p. 99-144.

14 Geomatrix Consultants, 1995. Seismic Design Mapping, State of Oregon: unpublished report prepared for Oregon Department of Transportation, Personal Services Contract 11688, January 1995.

15 Geomatrix Consultants, 1993. Seismic margin Earthquake For the Trojan Site: Final Unpublished Report For Portland General Electric Trojan Nuclear Plant, Rainier, Oregon, May 1993.

16 Kirby, Stephen H., Wang, Kelin, Dunlop, Susan, 2002, The Cascadia Subduction Zone and Related Subduction Systems—Seismic Structure, Intraslab Earthquakes and Processes, and Earthquake Hazards: U.S. Geological Survey Open-File Report 02-328, 182 pp.

17 Cascadia Region Earthquake Workshop, 2008. Cascadia Deep Earthquakes. Washington Division of Geology and Earth Resources, Open File Report 2008-1.

B.3.1.3.1 Historical Earthquakes

The Pacific Northwest is a seismically active area. Epicenters for historic earthquakes[18] in western Oregon from 1904 to 2025 are shown on Figure B2. The majority of these earthquakes are shallow (crustal) in nature, with a lesser amount of intraplate sources. No large-scale subduction-zone earthquakes occurred during this period.

Based on the historical record and crustal faulting models of the region, the maximum earthquake for crustal sources within the Pacific Northwest is estimated to be M5.75[19] (independent of recurrence interval). Similarly, the maximum earthquake for an intra-slab source on the subducting Juan De Fuca plate is estimated to be M7.5 to M7.7.

B.3.1.3.2 Empirical Determination of Characteristic Earthquake

Another method for estimating the characteristic earthquake that a particular seismic source could generate is by using empirical relationships between earthquake magnitude and fault rupture length[20]. Based on these relationships, the size of historical earthquakes, and the thickness of seismogenic crust in the region, the maximum earthquake magnitude expected from crustal sources is M6.0 to M6.6[21]. Based on the likely thin nature of the Juan de Fuca Plate, and comparing the historic seismicity along the intraplate area with other similar intraplate regions, the estimated maximum magnitude earthquake for intraplate sources is M7.0 to M7.5[22,23]. Similarly, based on magnitude versus rupture area relationships for subduction zone earthquakes worldwide, the maximum magnitude of a CSZ earthquake is estimated to be M8.0 to M9.2[24,25]. These magnitudes are also reflected in the probabilistic analyses used by U.S. Geological Survey.

B.3.1.3.3 Code Specified Design Earthquake

Section 1803.3.2.1 of the 2022 Oregon Structural Specialty Code[26] (OSSC) indicates specific minimum requirements for earthquake magnitudes to be used in seismic analyses, which are summarized in the following table:

Table B1 OSSC Minimum Design Earthquake

Seismic Source	Minimum Design Earthquake
Shallow Crustal Faults	6.0
Cascadia Subduction Zone – Subducting Plate (Intraplate)	7.0
Cascadia Subduction Zone – Interface (Subduction Zone)	8.5

[18] U.S. Geological Survey, 2025. Earthquake Catalog, *accessed July 2025*, from USGS web site: https://earthquake.usgs.gov/earthquakes/.
[19] Geomatrix Consultants, 1995. Seismic Design Mapping, State of Oregon: unpublished report prepared for Oregon Department of Transportation, Personal Services Contract 11688, January 1995.
[20] Bonilla, M.G., R. K. Mark, and J.J. Lienkaemper, 1984, Statistical relations among earthquake magnitude, surface rupture length, and surface fault displacement: Bulletin of the Seismological Society of America, V. 74, p. 2379-2411.
[21] Geomatrix Consultants, 1995. Seismic Design Mapping, State of Oregon: Final Report to Oregon Department of Transportation, Project No. 2442.
[22] Geomatrix Consultants, 1995. Seismic Design Mapping, State of Oregon: Final Report to Oregon Department of Transportation, Project No. 2442.
[23] Pacific Northwest Seismic Network website, http://pnsn.org/outreach/earthquakesources/
[24] Geomatrix Consultants, 1995. Seismic Design Mapping, State of Oregon: Final Report to Oregon Department of Transportation, Project No. 2442.
[25] Pacific Northwest Seismic Network, 2025. Pacific Northwest Earthquake Sources Overview, *accessed July 2025,* from PNSN web site, http://pnsn.org/outreach/earthquakesources/.
[26] International Code Council, Inc., 2022. 2022 Oregon Structural Specialty Code. Based on the 2018 International Building Code.

B.4.0 SEISMIC SITE CLASS

Section 1613.2.2 of the 2022 Oregon Structural Specialty Code (2022 OSSC) requires that the determination of the seismic site class be in accordance with Chapter 20 of the American Society of Civil Engineers Minimum Design Loads for Buildings and Other Structures (ASCE 7-16). Seismic site class was determined using the average shear-wave velocity from the seismic array (ReMi) analysis of the site (attached in Appendix D). The average shear-wave velocity from the seismic array was calculated at 1,318 feet per second (ft/s). The average shear wave velocity falls into Site Class C ("Very Dense Soil / Soft Rock") as defined in Section 1613.2.2 of the 2022 OSSC and Chapter 20.3 of the American Society of Civil Engineers Minimum Design Loads for Buildings and Other Structures (ASCE 7-16).

B.5.0 SEISMIC GROUND MOTION VALUES

Earthquake ground motion parameters for the site were obtained in accordance with the 2022 OSSC using the ASCE Hazard Tool calculator on the ASCE website[27]. The site Latitude 44.781126° North and Longitude 122.447819° West were input as the site location. The following table shows the recommended seismic design parameters for the site.

Table B2 Seismic Ground Motion Values

Parameter		Value
Mapped Acceleration Parameters	Spectral Acceleration, 0.2 second (S_s)	0.617g
	Spectral Acceleration, 1.0 second (S_1)	0.309g
Coefficients (Site Class C)	Site Coefficient, 0.2 second (F_A)	1.253
	Site Coefficient, 1.0 second (F_V)	1.500
Adjusted MCE Spectral Response Parameters	MCE Spectral Acceleration, 0.2 second (S_{MS})	0.773g
	MCE Spectral Acceleration, 1.0 second (S_{M1})	0.463g
Design Spectral Response Accelerations	Design Spectral Acceleration, 0.2 second (S_{DS})	0.515g
	Design Spectral Acceleration, 1.0 second (S_{D1})	0.309g
Seismic Design Category (Risk Category IV)		D

B.6.0 SEISMIC HAZARDS

B.6.1 Liquefaction

In general, liquefaction occurs when deposits of loose/soft, saturated, cohesionless soils, generally sands and silts, are subjected to strong earthquake shaking. If these deposits cannot drain quickly enough, pore water pressures can increase, approaching the value of the overburden pressure. The shear strength of a cohesionless soil is directly proportional to the effective stress, which is equal to the difference between the overburden pressure and the pore water pressure. When the pore water pressure increases to the value of the overburden pressure, the shear strength of the soil reduces to zero, and the soil deposit can liquefy. The liquefied soils can undergo rapid consolidation or, if unconfined, can flow as a liquid. Structures supported by the liquefied soils can experience rapid, excessive settlement, shearing, or even catastrophic failure. The Oregon Department of Geology and Mineral Industries' Oregon Statewide Geohazards Viewer[28] shows no hazard for liquefaction for the site or immediate vicinity.

[27] American Society of Civil Engineers (ASCE), 2025. USGS seismic design parameters determined using "ASCE Hazard Tool," *accessed July 2025*, from the ASCE website https://ascehazardtool.org/.

[28] Oregon Department of Geology and Mineral Industries, 2025. Oregon Statewide Geohazards Viewer, *accessed July 2025*, from DOGAMI web site: http://www.oregongeology.org/sub/hazvu/index.htm.

For fine-grained soils, susceptibility to liquefaction is evaluated based on penetration resistance and plasticity, among other characteristics. Criteria for identifying non-liquefiable, fine-grained soils are constantly evolving. Current practice to identify non-liquefiable, fine-grained soils is based on moisture content and plasticity characteristics of the soils[29,30]. The susceptibility of sands, gravels, and sand-gravel mixtures to liquefaction is typically assessed based on penetration resistance, as measured using SPTs, CPTs, or Becker Hammer Penetration tests (BPTs).

Based on the lack of saturated conditions encountered during our field investigation, the soils encountered are considered non-liquefiable. Based on the presence of dense to better granular soils, relatively shallow basalt bedrock, review of the geologic mapping, nearby well logs, and our previous experience in the area, we do not anticipate liquefiable conditions are present at depths below those explored as part of this assignment.

B.6.2 Surface Rupture

B.6.2.1 Faulting

As discussed above, the site is situated in a region of the country characterized by extensive faulting and known for seismic activity. However, no known faults are mapped on or immediately adjacent to the site. Therefore, the risk of surface rupture impacting the proposed development at the site due to faulting is considered negligible.

B.6.2.2 Lateral Spread

Surface rupture due to lateral spread can occur on sites underlain by liquefiable soils that are located on or immediately adjacent to slopes steeper than about 3 degrees (20H:1V), and/or adjacent to a free face, such as a stream bank or the shore of an open body of water. During lateral spread, the materials overlying the liquefied soils are subject to lateral movement downslope or toward the free face. Recognizing the lack of liquefiable soils present at the site, we characterize the risk of surface rupture due to lateral spread as negligible.

B.6.3 Slope Stability

B.6.3.1 Landslide Hazard

The landslide susceptibility hazard mapping available via the Oregon Department of Geology and Mineral Industries Oregon Statewide Geohazards Viewer[31] (HazVu) indicates a "*moderate to high*" (landsliding possible) for the site and surrounding area based on their relative slope gradients. We did not observe any obvious signs of past or on-going slope instability at the site. Review of the Statewide Landslide Information Database for Oregon (SLIDO)[32], indicates the nearest mapped landslides are approximately 970 feet to the north, 1,000 feet to the south and 2,100 feet to the east of the site.

---

29 Seed, R.B. et al., 2003. Recent Advances in Soil Liquefaction Engineering: A Unified and Consistent Framework. Earthquake Engineering Research Center Report No. EERC 2003-06.

30 Bray, Jonathan D., Sancio, Rodolfo B., et al., 2006. Liquefaction Susceptibility of Fine-Grained Soils, Journal of Geotechnical and Geoenvironmental Engineering, Volume 132, Issue 9, September 2006.

31 Oregon Department of Geology and Mineral Industries, 2024. Oregon Statewide Geohazards Viewer, *accessed July 2025*, from DOGAMI web site: http://www.oregongeology.org/sub/hazvu/index.htm.

32 Oregon Department of Geology and Mineral Industries, 2025. Statewide Landslide Information Database for Oregon (SLIDO), *accessed July 2025*, from DOGAMI web site: http://www.oregongeology.org/sub/slido/index.htm.

DOGAMI developed a statewide landslide susceptibility map[33] using local lidar data, USGS topography, SLIDO historical landslide information, and the state geologic map. Per information available on SLIDO, the landslide mapped to the north of the site has a failure depth of approximately 29 feet, and the age of the landslide is pre-historic, or older than 150 years. The headscarp of this landslide is approximately 30 feet in height and several debris flows have been identified within the mapped area of the headscarp, these debris flows are also pre-historic in age and flow towards the north. The landslide mapped to the south of the project site has a failure depth of approximately 213 feet, and the age of the landslide is pre-historic, or older than 150 years. The headscarp of this landslide is approximately 225 feet in height and is south facing. The landslide mapped to the east of the project site has a failure depth of approximately 49 feet, and has failed in the last 150 years, indicating a relatively young age. The headscarp of this landslide is approximately 50 feet in height and east facing. In reviewing bare-earth LiDAR data, all of the landslides exhibit typical characteristics of landslide terrain, including hummocky topography and disrupted drainage patterns.

Recognizing that the site is not located within an existing landslide, is relatively distant (approximately 970 to 2,100 feet) from mapped landslides, and the proposed grading at the site will be minimal, the risk of slope instability occurring on the site due to the proposed site improvements is considered low.

B.6.4 Tsunami/Seiche Inundation

The site is geographically distant from the Oregon coast and therefore not at risk of inundation from a tsunami occurring in the Pacific Ocean.

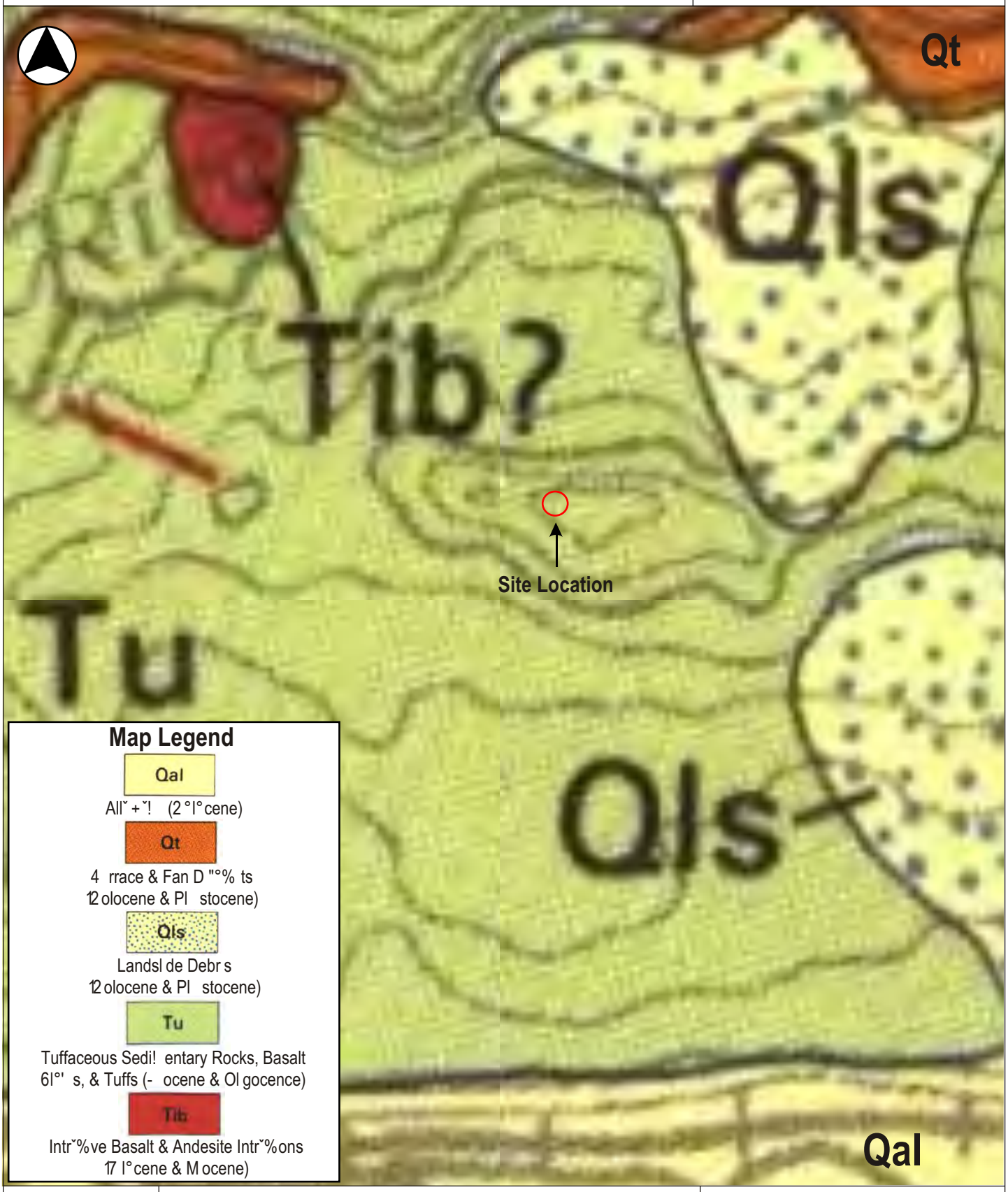
The term seiche refers to oscillating standing waves that can produce dramatic changes in water level over relatively short periods of time and can cause inundation of nearby areas. A seiche can be generated in enclosed or partially enclosed bodies of water by atmospheric conditions or seismic activity. The site is not located near any large body of water that could produce a seismically-induced seiche. Accordingly, the hazard associated with seiche inundation at the site is considered negligible.

[33] Burns, William J, Mickelson, Katherine A., and Madin, Ian P, 2016. Landslide susceptibility overview map of Oregon. Oregon Department of Geology and Mineral Industries, Open-File Report O-16-02.

EXHIBIT K

MARION COUNTY APW TOWER - MARION COUNTY, OREGON
Project Number B2502560

FIGURE B1
Geologic Map



Map Legend

Qal
All˘ + ˘! (2 °l° cene)

Qt
4 rrace & Fan D "°% ts
12 olocene & Pl stocene)

Qls
Landsl de Debr s
12 olocene & Pl stocene)

Tu
Tuffaceous Sedi! entary Rocks, Basalt
6l°' s, & Tuffs (- ocene & Ol gocence)

Tib
Intr˘%ve Basalt & Andesite Intr˘%ons
17 l° cene & M ocene)

CARLSON CGT GEOTECHNICAL 503-601-8250

Walker, G.W., and Duncan, R.A., 1989, Geologic map of the Salem 1 degree x 2 degrees, quadrangle, western Oregon: U.S. Geol°˜ cal Sur+ey, - scellaneous Investigations Ser es Map I-1893, scal 1: 250,000.

Latitude: 44.781126° North
Longitude: 122.447819° West

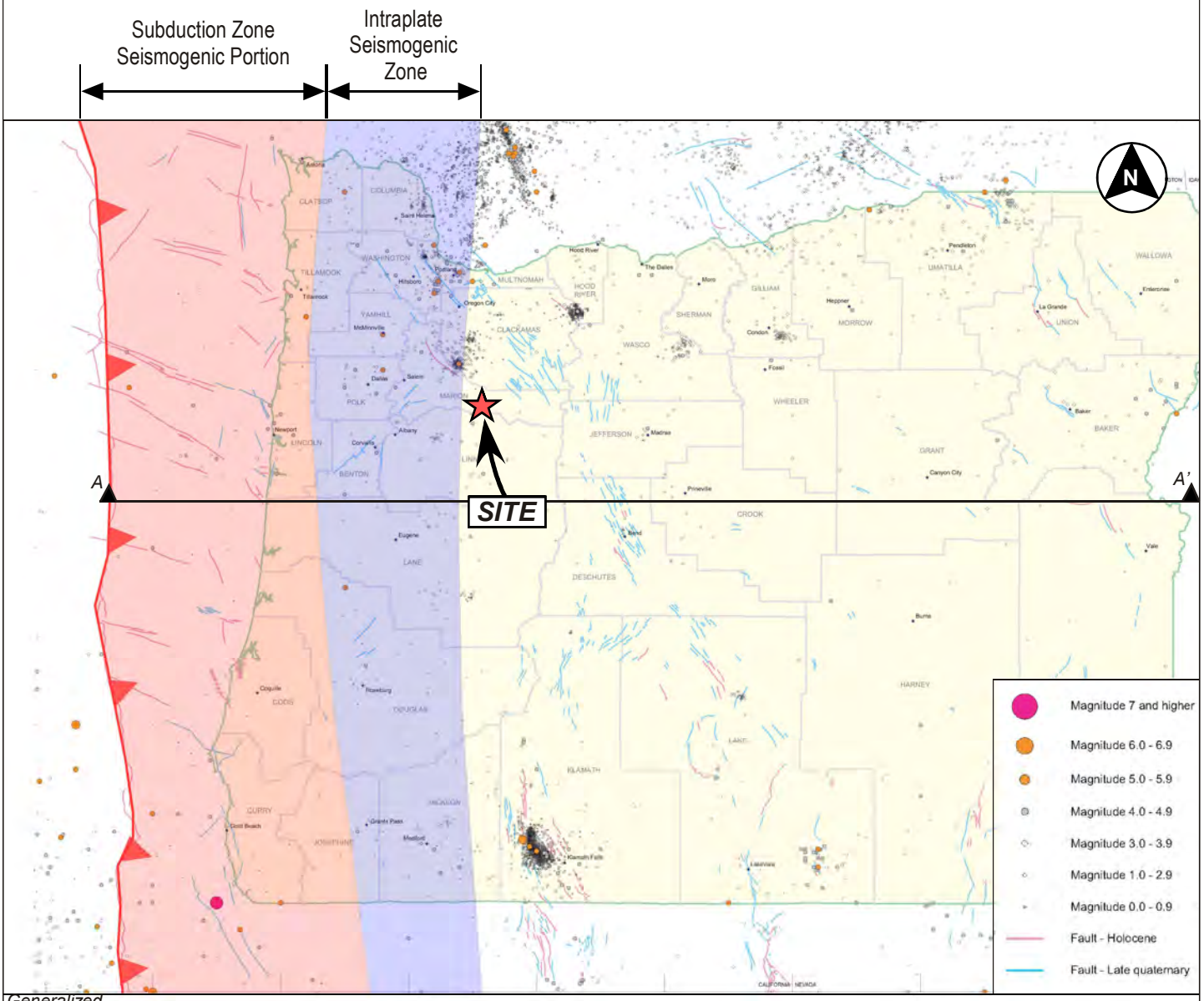
1 Inch = 2,000 feet

0 2000 4000

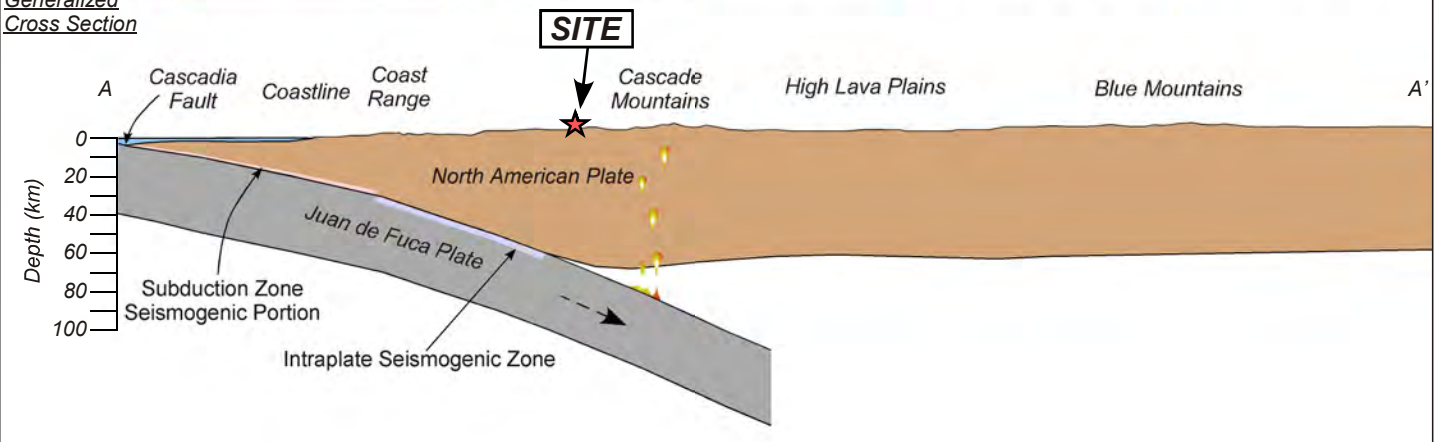
EXHIBIT K

MARION COUNTY APW TOWER - MARION COUNTY, OREGON
Project Number B2502560

FIGURE B2
Regional Seismicity



Generalized Cross Section



CARLSON CGT GEOTECHNICAL 503-601-8250

• McCrory, Blair, Oppenheimer, and Walter, 2004. Depth to the Juan de Fuca slab beneath the Cascadia subduction margin - A 3-D model for storing earthquakes: U.S. Geological Survey Data Series 91.
• Niewendorp, Clark A., and Neuhaus, Mark E., Map of Selected Earthquakes for Oregon,1841 through 2002 by Oregon Department of Geology and Mineral Industries, OFR O-03-02.

Scale 1 Inch = 100 kilometers

0 100 200

Bend Office (541) 330-9155
Eugene Office (541) 345-0289
Salem Office (503) 589-1252
Tigard Office (503) 684-3460

Appendix C: Results of Field Earth Resistivity Testing

Marion County APW Tower
2.6 Miles North of 910 N. Santiam Highway W.
Marion County, Oregon

CGT Project Number B2502560

July 14, 2025

Prepared For:

Kenny McMannaway, P.E.
Cushing Civil Engineers
12725 SW Millikan Way, Suite 300
Beaverton, Oregon 97005

Prepared by
Carlson Geotechnical

Logarithmic Plot & Resistivity Data.....Figure C1
Equipment Technical Specifications.....Figure C2

Appendix C: Results of Field Earth Resistivity Testing
Marion County APW Tower
Marion County, Oregon
CGT Project Number B250260
July 14, 2025

C.1.0 INTRODUCTION

Field earth resistivity tests were conducted in general accordance with the Wenner 4 Point Method as described in ANSI/IEEE Standard 81-1983, using an L and R Instruments Ultra MiniRes Earth Resistivity Meter (Serial Number SN-301) rented from Exploration Instruments in Austin, Texas. Our services were performed in general accordance with the RFP referenced in Section 1.1 of the main geotechnical report.

C.2.0 SITE INFORMATION

The project site was located on an unnamed peak, approximately 2½ miles north of Highway 22 near Gates, Oregon. The site was accessible via gravel logging roads, which terminated at the summit of the unnamed peak. The peak was located along an east-west trending ridgeline, which descended sharply to the north and south. The project area consisted of a relatively level, gravel surfaced pad which was approximately 80 feet in diameter and appeared to have been previously graded to support logging activities. Overall, the site conditions were conducive for the field earth resistivity surveys. The following tabulation presents a summary of site surface conditions within the field site during the time of testing:

Field Site Condition (Arrays 1-2)	Description (Arrays 1-2)
Weather Conditions	*June 19, 2025* - Sunny, clear, with a high temperature of 70°F and low temperature of 55°F.
Site Surface Conditions	The site was surfaced with dry granular soils, likely emplaced during the grading of the pad. The stainless steel pins needed to be driven with a hammer at all locations, and pin refusal on coarse particles was typically met within the upper 6 inches on the dense gravels.
Soils Observed at Site Surface	The site was surfaced with a 1 foot to 2½ foot thick layer of granular fill material, and underlain by dense, silty gravels consisting of residual soils derived from the in place weathering of the underlying bedrock.
Utility Observations	None.
Man-made Features	The site was undeveloped, aside from the gravel pad. Initial logging efforts in the area appear to have occurred between 2011 and 2012 within the vicinity of the project site.

Photographs of the field site were taken during our field investigation and are presented on the attached Site Photographs, attached to the main report as Figure 3.

C.3.0 FIELD EARTH RESISTIVITY TESTING

Field testing was performed by CGT Engineering Geologist Parker Richmond and Carlson staff on June 19, 2025, using the referenced MiniRes Ultra Earth Resistivity Meter. Two resistivity arrays were requested within the project RFP, with maximum ‘A’ spacing of 40 feet on Arrays 1 and 2. Resistivity soundings were completed at ‘A’ spacing of 1, 5, 10, 20, 30 and 40 feet. To complete the resistivity soundings, pins were generally buried at less than 1/20 of the ‘A’ spacing, though each pin was advanced deeper than the loose surface soils to ensure good contact was made for accurate readings. Most pins were embedded up to 6 inches at spacing greater than 15 feet. Due to the dry coarse gravel present near the surface of the site, the pin locations needed to be wetted down in the field to reduce the contact resistance and ensure accurate field readings. A plot of the data collected and tables of the resistivity testing results are shown on the attached Figures C1, and in the tables below. Technical specifications of the equipment used are shown on the attached Figure C2.

C.4.0 SOIL PROFILE DESCRIPTION

The results of the test pit data as described in Section 2.3 of the geotechnical report were reviewed and compared to the resistivity measurements obtained in the field. Based on the results of the test pits, review of geologic mapping, well logs, and geologic observations of the site surface, a generalized subsurface profile is presented in the following tabulation:

Material Type	USCS Classification	Notes from Geotechnical Investigation
Native Sandy Soils, Sand & Gravel Fills	SM Fill, GP Fill, SM, GM	In general, the site was surfaced with dry to moist sand and gravel fill materials extending to a depth of 2½ feet bgs. The fill materials are underlain by silty gravel materials and slightly weathered basalt bedrock to the full depths explored, approximately 9½ feet bgs.
Groundwater	-	Not encountered during field investigation. Nearby well logs indicate a depth to static groundwater of approximately 63 feet bgs within the vicinity of the site, but depths to groundwater can vary significantly with topography.

C.5.0 TEST RESULTS

Table C1 Line 1 Test Data Results

'A' Spacing (feet)	Resistance (ohm)	Apparent Resistivity (ohm-feet)	Pin Bury Depth (inches)
1	228.00	1433	2
5	23.30	732	3
10	4.20	264	4
20	1.30	163	5
30	1.00	188	6
40	0.60	151	6

Table C2 Line 2 Test Data Results

'A' Spacing (feet)	Resistance (ohm)	Apparent Resistivity (ohm-feet)	Pin Bury Depth (inches)
1	177.00	1112	2
5	10.10	317	3
10	2.80	176	4
20	1.70	214	5
30	0.70	132	6
40	0.70	176	6

C.6.0 DISCUSSION OF FINDINGS

The resistivity versus spacing data for the two arrays completed at the project site is shown on the attached Figure C1 and in the table above. As shown therein, the field site profiles for Array 1 and Array 2 reflect a high level consistency between the two arrays. The initial apparent resistivity measurement ranges between 1,100 ohm-feet and 1,400 ohm-feet, which is consistent with the sandy and gravelly fill materials observed near the site surface. Between 'A' spacing of 10 and 40 feet, the apparent resistivity measurements are

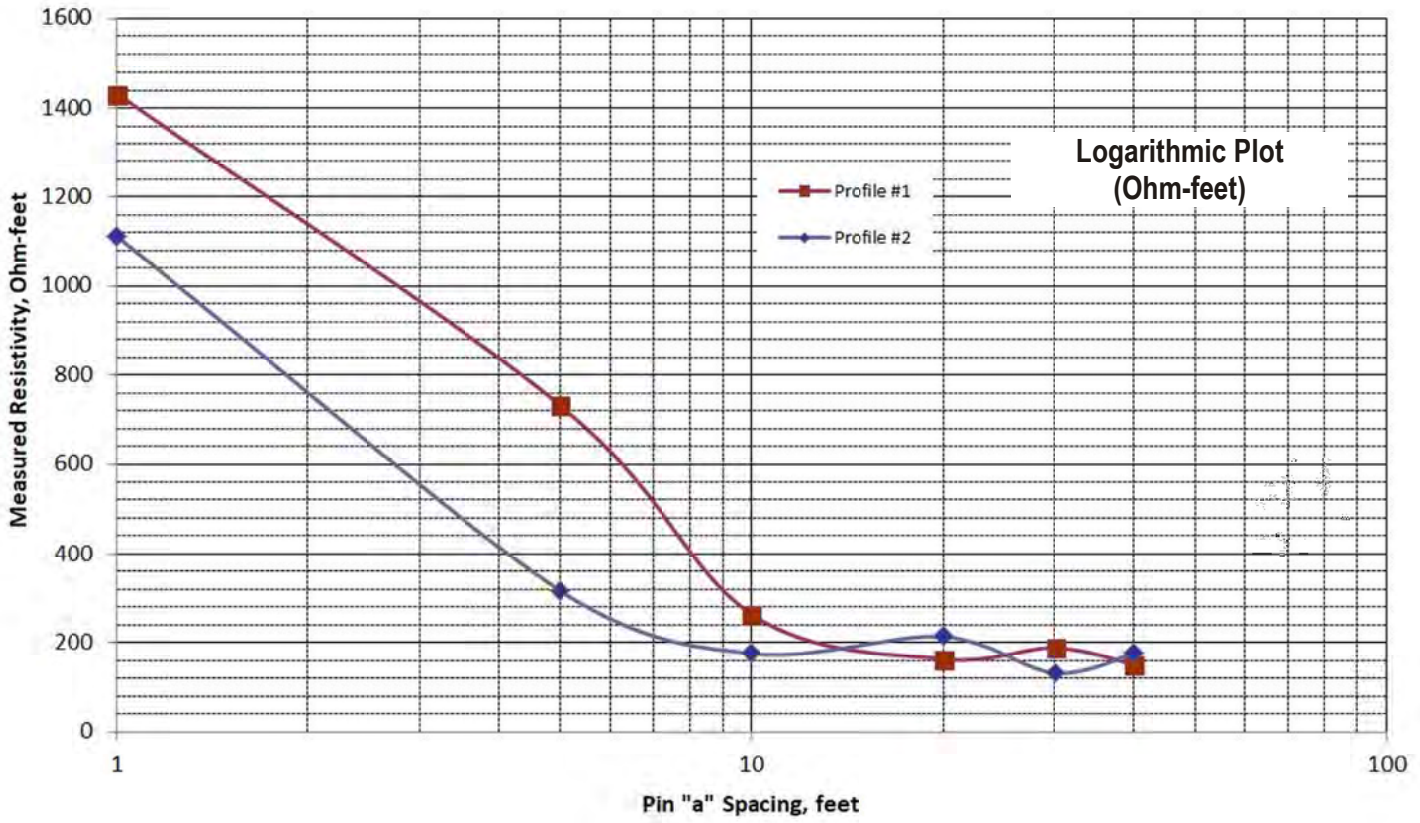
consistent at approximately 200 ohm-feet. This apparent resistivity is consistent a moist, weathered rock material, which was encountered below the fill materials.

C.7.0 LIMITATIONS & CLOSURE

The resistivity data is subjective to soil and rock conditions deeper than physical subsurface investigative test pits. The conditions below the depth of test pits and related resistivity results can only be generalized. For example, bedrock may be represented by rather large apparent resistance whereas ground water conditions or saturated clays could be comparatively small. The difference can be a factor of 1000 more or less, but more conductive material layers below the surface might affect the measured resistivity of other ‘A’ spacing. We have prepared this report for use by our client and other members of the design and construction team for the proposed project. The data and discussion of test results contained within this report are not intended to be, nor should they be construed as, a warranty of subsurface conditions, but are forwarded to assist in the planning and design process. Information contained herein is not to be reproduced, except in full, without prior authorization from this office. Within the limitations of scope, schedule, and budget, our services have been executed in accordance with the generally accepted practices in this area at the time this report was prepared; no warranty, expressed or implied, is made.

MARION COUNTY APW TOWER - MARION COUNTY, OREGON
Project Number B2502560

FIGURE C1



Resistance Data (Ohm)

#1	#2
ohm	ohm
228.000	177.000
23.300	10.100
4.200	2.800
1.300	1.700
1.000	0.700
0.600	0.700

Pin Spacing		Profile #1		Profile #2	
feet	meters	ohm-ft	ohm-m	ohm-ft	ohm-m
1	0.3	1433	437	1112	339
5	1.5	732	223	317	97
10.0	3.0	264	80	176	54
20	6.1	163	50	214	65
30	9.1	188	57	132	40
40	12.2	151	46	176	54

Resistivity Profile Data (Ohm-feet / Ohm-meters)

CARLSON CGT GEOTECHNICAL 503-601-8250

Drafted by: PBR

Appendix B(3) Specifications for serial numbers from 141 and up

and meters having a serial number followed by a U

- Three resistance measurement ranges:1.9999 Kohms, 19.999 Ohms and 1999.9 milliOhms.
- IP (Quadrature Component) measurement range:1.9999 and 199.99 ohms
- Transmitter constant current choices:2.0 milliamps when on the 1999.9 ohm range or 20.0 milliamps when on the 19.999 ohm range or the 1.9999 ohm range
- Input resistance: 200 Megohms
- Power source: 4 standard "D" size alkaline batteries
- Accuracy: Better than 0.1 percent plus or minus 3 least significant digits (LSD) over 0°C to 50°C ambient.
- Switching frequency: 5.00 Hertz plus or minus 0.01 percent. Optional: 2.50 Hertz
- No mechanical relays
- Designed to operate with stainless steel electrodes. No nonpolarizing electrodes required to operate in either the resistivity or the IP mode.
- Transmitter maximum compliance voltage: up to 640 peak-to-peak at 2 mA or 450 peak-to-peak at 20 mA (values for compliance voltage assume fresh batteries at room temperature)
- Operating Temperature Range: -10 to +50 degrees Celsius (limited by LCD)
- Storage Temperature Range: -20 to + 75 degrees Celsius
- Housing: water tight, high-impact ABS plastic
- Display device: 4.5 digit LCD Digital Panel Meter
- Analog to digital converter: laboratory grade +/- 20,000 dual slope integrated
- Method of demodulation and detection: Synchronous Demodulation
- Dimensions: 36.3 x 27.4 x 15.8 cm (14.3 x 10.8 x 6.2 inches)
- Weight: 4.3 Kilos (9.5 pounds)
- Impact resistance: will sustain a drop of one meter to a concrete surface (vibration isolated printed circuit board)
- Resistance (in phase or real) mode resolution: 0.1 milliohm
- IP (quadrature component) mode resolution: 0.01 milliohm
- Typical resistance mode capabilities: Provides accurate Wenner Array resistivities with "a" spacings of 1 foot to 600 feet (current electrode separation of 1,800 feet or more). The 2.50 Hz version is accurate for a "Wenner" spacings of 1000 feet or more.
- Typical induced polarization mode capabilities: Provides accurate Wenner Array IP phase readings with "a" spacings of 1 foot to over 100 feet (300 feet between current electrodes). The 2.50 Hz version is accurate for a "Wenner" spacings of 200 feet or more.
- Readings per set of batteries at room temperature: 1999.9 Ω range – 1,400 readings

  19.999 Ω range – 750 readings

NOTES: Technical specifications obtained from L and R Instruments website available at landrinstruments.com. Equipment: L and R Instruments MiniRes Ultra (Serial Number SN-301).

Appendix D: Seismic Site Class Determination

Marion County APW Tower
2.6 Miles North of 910 N. Santiam Highway W.
Marion County, Oregon

CGT Project Number B2502560

July 14, 2025

Prepared For:

Kenny McManaway, P.E.
Cushing Civil Engineers
12725 SW Millikan Way, Suite 300
Beaverton, Oregon 97005

Prepared by
Carlson Geotechnical

Appendix D: Seismic Site Class Determination
Marion County APW Tower
Marion County, Oregon
CGT Project Number B2502560
July 14, 2025

TABLE OF CONTENTS

D.1.0 INTRODUCTION 3
D.1.0 REMI METHODOLOGY & BACKGROUND 3
D.2.0 DATA COLLECTION AND FIELDWORK 3
D.2.1 Data Collection 3
D.2.2 Survey Layout 4
D.3.0 ESTIMATING SHEAR WAVE VELOCITY 5
D.4.0 RESULTS – SEISMIC SITE CLASS DETERMINATION 8
D.5.0 LIMITATIONS & CLOSURE 8

ATTACHMENTS

Site Photographs ..... Figure D1

Doc ID: G:\GEOTECH\PROJECTS\2025 Projects\001 - Bend Projects\B2502560 - Marion County APW Tower\008 - Deliverables\Appendix D - Seismic Site Class Determination\Appendix D - Seismic Site Class Determination.docx

Appendix D: Seismic Site Class Determination
Marion County APW Tower
Marion County, Oregon
CGT Project Number B2502560
July 14, 2025

D.1.0 INTRODUCTION

On June 19, 2025, CGT conducted a geophysical site evaluation that included a single soil shear wave velocity profile at the project site. Per our correspondence with the project design team, we understand that the proposed APW Tower project will be designed in accordance with ASCE 7-16. Accordingly, a seismic survey was performed to determine the seismic site class per ASCE 7-16 using the weighted-average soil shear wave velocity for the upper 100 feet (Vs100). This appendix presents the results of our survey.

D.1.0 REMI METHODOLOGY & BACKGROUND

Refraction microtremor or ReMi® is a technology that was initially developed by Louie (2001) as a non-invasive surface-performed geophysical survey technique, to rapidly and cost-effectively measure the average shear-wave velocity (Vs) to 100 feet (30 meters) depth to meet building code requirements, but has since been further developed towards comprehensive engineering applications.

ReMi utilizes both ambient vibrations, primarily from human activities (e.g., pedestrians, vehicle traffic, trains, machinery, tree movement, and wave action) and active-source hammer hits. A key advantage of ReMi is its ability to operate effectively in noisy environments, eliminating the need to halt construction activities during data collection. This differs from other seismic methods, such as seismic refraction and multichannel analysis of surface waves (MASW), which require background noise to be at a minimum.

The essence of the technique is that ambient vibrations contain usable signal that can be used to predict velocity structure underneath the measurement array (Louie, 2001; Louie et al., 2021). ReMi exploits the fact that random ambient ground vibrations generate surface Rayleigh waves that transfer significant information about the velocity structure of the subsurface materials. Rayleigh waves are a seismic surface wave that travels along the surface of the earth, causing the ground to shake in an elliptical motion. These recorded Rayleigh waves include high-frequency (short wavelengths, with frequencies >2 Hz) ***active*** ground motions that have physical characteristics governed by the elastic properties of the near-surface materials through which they propagate. Meanwhile, lower frequency ***passive*** motion (longer wavelengths, with frequencies ≤ 2 Hz) are influenced by material properties at depths generally greater than 100 ft. More importantly, Rayleigh waves are dispersive, meaning that wave velocity is dependent on frequency, with low frequencies normally propagating at higher velocity. This unique property of Rayleigh waves allows information regarding the shear-wave velocities of the subsurface materials to be determined.

ReMi analysis has been validated through comparisons with borehole profiles (Asten et al., 2005; Stephenson et al., 2005; Thelen et al., 2006), synthetic data (Heath et al, 2006), as well as MASW, and spectral analysis of surface waves (Liu et al., 2005; Stephenson et al., 2005).

D.2.0 DATA COLLECTION AND FIELDWORK

D.2.1 Data Collection

This survey was designed to determine the seismic site class and included one survey that was 230 feet long, with 24 geophones placed at 10 foot intervals. Seismic signal was generated by hammer strikes during data acquisition while ambient noise was generated from traffic along the nearby roads. The seismic data

was acquired using a ReMiDAQ™ 5-24 channel seismograph. Data collection parameters are summarized below:

Table D1 Acquisition Parameters

Parameters	Setting (S-wave)
Number of arrays	1
Geophone Interval	10 feet
Number of Geophones	24
Geophone Frequency	4.5 hertz
Record Length	30 seconds
Sample Interval	2 milliseconds
Gain	1 dB
Low Cut Filter	0.12 Hz
File format	SEG-Y

D.2.2 Survey Layout

Field testing was performed by a two person team including CGT Engineering Geologist Parker Richmond, C.E.G., and Carlson staff on June 19, 2025. Data collection began by locating the start point for the seismic array and laying out the cables and geophones. The latitude and longitude of the seismic array starting location (points A-A' on Figure 2B if the main report) are shown in the below table:

Table D2 Survey Locations

Seismic Line Point	Latitude (North)	Longitude (West)
A	44.781185°	122.447859°
A'	44.781136°	122.446976°

The geophones are arranged along the survey line at the set spacing (e.g. 10 feet) and securely planted into the ground. Initial passive seismic data collection is performed by recording ambient noise for 30-second intervals. The ambient noise sources may include traffic, industrial activity, and natural environmental vibrations. Hammer strikes are conducted at defined locations to supplement ambient noise and improve shallow resolution. Standard impact locations include off-end shots where hammer hits are performed approximately 15 to 30 feet (5 to 10 meters) beyond both ends of the geophone array and midline strikes where additional hammer strikes at evenly spaced intervals along the array are taken to enhance wave propagation coverage. Each hammer hit is performed on a polycarbonate plate to ensure consistent energy generation and minimize energy loss. A minimum of five hammer strikes per location is recommended to ensure reproducibility and redundancy in data collection.

Appendix D: Seismic Site Class Determination
Marion County APW Tower
Marion County, Oregon
CGT Project Number B2502560
July 14, 2025

D.3.0 ESTIMATING SHEAR WAVE VELOCITY

The data collected in the field was processed using industry standard, commercially available Terēan VsSurf ReMi® seismic data processing software.

The vertical component of ambient noise, dominated by Rayleigh waves, is reduced and processed by trace-equalization, DC offset removal and computation of the velocity spectrum by slowness-frequency (p-f) transformation for data recorded across the entire array.

The fundamental-mode phase-velocity Rayleigh wave dispersion curve is picked along the minimum-velocity of the envelope of the energy within the slowness frequency spectral image. The spectrum is normalized as the ratio of the power spectrum at a particular frequency and slowness (inverse velocity) over the average value for all slowness values at that frequency. This fundamental-mode Rayleigh-wave dispersion curve is then interactively modelled to obtain a shear-wave velocity versus depth profile that produces a dispersion curve that matches the observed picks (Louie, 2001). This is where the user can incorporate additional subsurface data such as local geology and boreholes to improve their model. Refraction microtremor is a volume-averaging surface-wave measurement, averaging velocities where geology is laterally variable, thus differing from the single-location-point data obtained from downhole logs. In essence the method averages the material properties beneath the length of the array.

The ability of a seismic array to image velocity structure at depth depends on the capability of the array to capture ground motion at wavelengths that sample the target depths. The frequency content of the recorded data is dependent on several factors. These include the array length, geophone spacing, geophone frequency, the time length of the data records, and the frequency content of the excited noise sources producing the recorded ground motions. Typically, the depth of penetration of a ReMi analysis is roughly half the array length.

Figure A illustrates the ReMi procedure. The noise recordings obtained along the deployed array shown on Figure A(a), are transformed into a slowness–frequency (p-f) spectrum. The fundamental-mode phase-velocity Rayleigh-wave dispersion curve is picked along the minimum-velocity envelope of the energy in the slowness-frequency spectral image, Figure A(b). The spectrum is normalized as the ratio of the power spectrum at a particular frequency and slowness (inverse velocity) over the average value for all slowness values at that frequency. This fundamental-mode Rayleigh-wave dispersion curve is then interactively modelled, using trial-and-error adjustments of the velocity model, Figure A(c), to obtain a shear-wave velocity versus depth profile Figure A(d) that produces a dispersion curve that matches the observed picks.

Appendix D: Seismic Site Class Determination
Marion County APW Tower
Marion County, Oregon
CGT Project Number B2502560
July 14, 2025

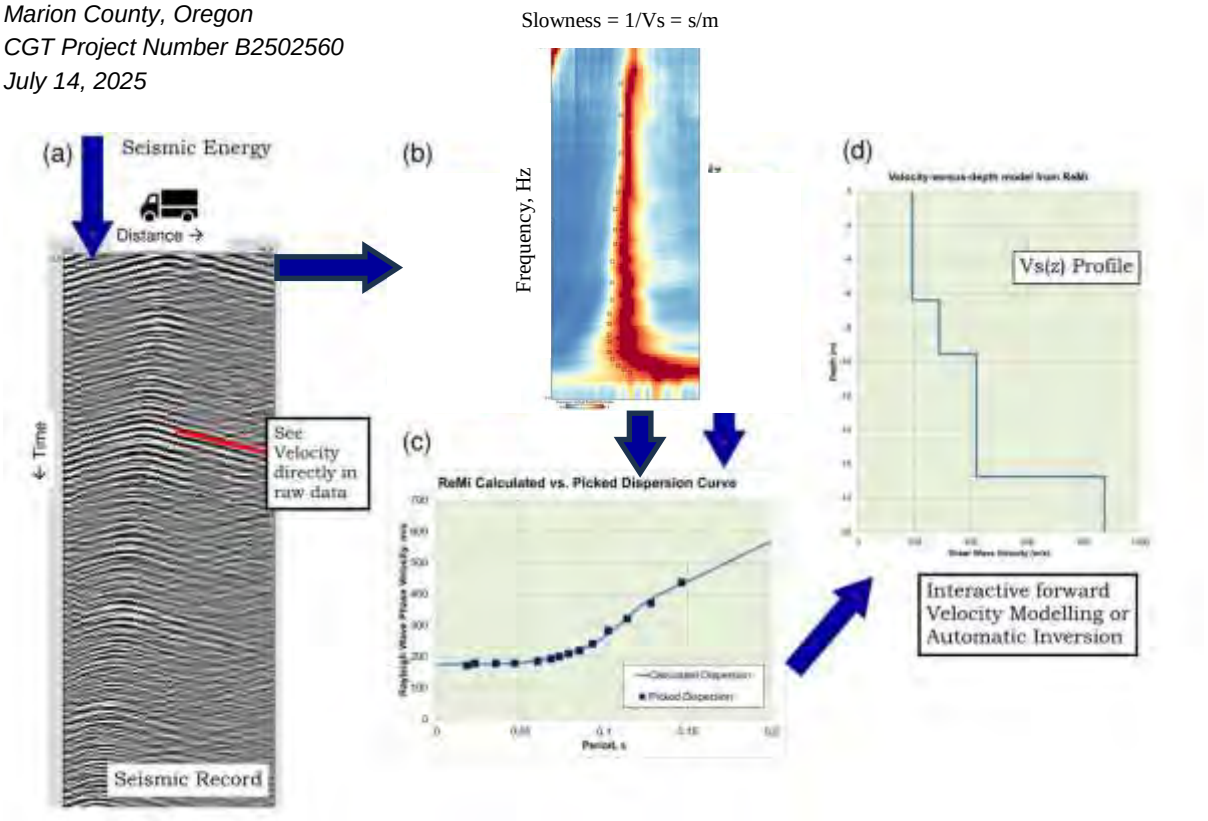


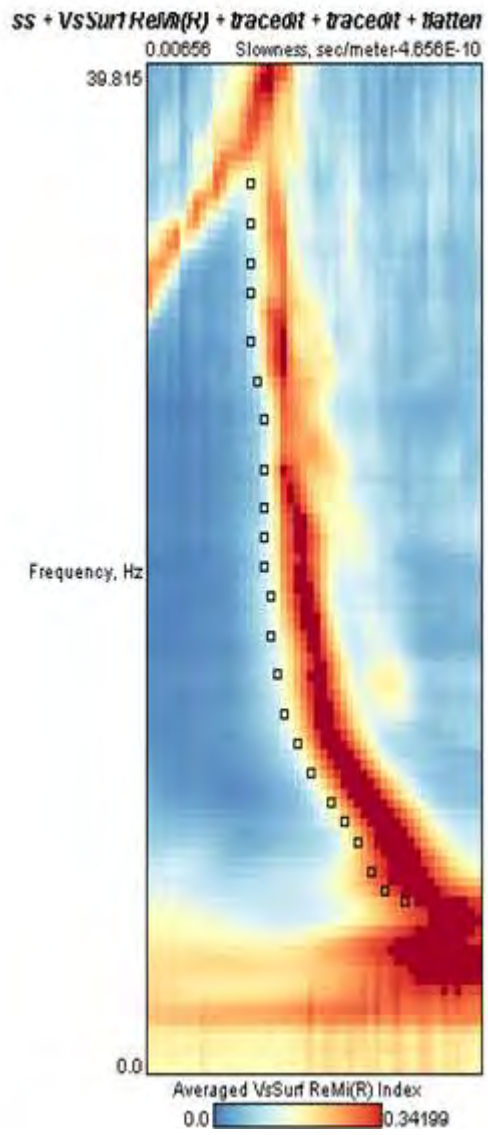
Figure A.

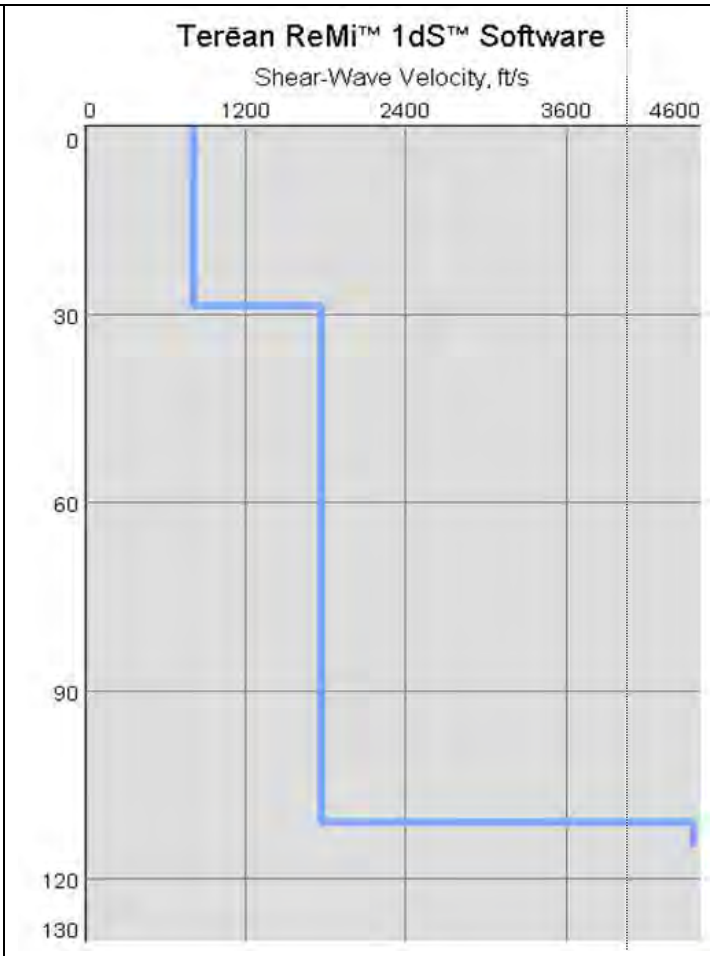
Schematic of the ReMi technique is shown above. (a) Refraction Microtremor involved the deployment of a linear array of vertical geophones to record Rayleigh waves generated by ambient noise. The velocities of the Rayleigh waves can often be observed directly from the raw data. (b) The recorded data are transformed into the frequency-slowness (p-f) domain (see Louie, 2001 and Louie et al., 2021)). The fundamental-mode phase-velocity of the Rayleigh wave is “picked” along the minimum-velocity envelope (black squares). (c) Dispersion curves and associated picks from p-f plots and matching fits. Modelling of the dispersion curve produces a velocity-depth model that matches the data. (d) Modelled shear-wave velocity-depth profiles.

Energy propagating parallel to the array is associated with power-spectral energy along the minimum velocity envelope of the Rayleigh-wave dispersion curve. In comparison, oblique energy occurs at higher apparent velocities, causing the peak ratio along the dispersion curve. The off-end hammer shots performed are during the data collection ensure that the minimum phase velocity of the Rayleigh-wave is correctly identified. Thus, the refraction microtremor methodology necessitates that the fundamental-mode Rayleigh-wave dispersion curve observed in the slowness–frequency spectral image is picked along the minimum-velocity of the envelope of the energy.

The dispersion curve “picks” and the 1D profile (Vs 100 Model) for this project are shown below.

Appendix D: Seismic Site Class Determination
Marion County APW Tower
Marion County, Oregon
CGT Project Number B2502560
July 14, 2025





Depth	Vs
(ft)	(ft/s)
0.0	813
28.6	813
28.6	1,768
111.0	1,768
111.0	4,536
115.0	4,536

Appendix D: Seismic Site Class Determination
Marion County APW Tower
Marion County, Oregon
CGT Project Number B2502560
July 14, 2025

D.4.0 RESULTS – SEISMIC SITE CLASS DETERMINATION

Table 20.3-1 – Site Classification of ASCE 7-16 defines nine individual site classes based on the shear wave velocity of the soil to a depth of 100 feet (Vs). The site classifications are as follows:

ASCE 7-16 Table 20.3-1 Site Classification

Site Class	Vs Calculated Using Measured or Estimated Shear Wave Velocity Profile (ft/s)
A – Hard Rock	> 5,000
B – Rock	> 2,500 to 5,000
C – Very Dense Soil or Soft Rock	> 1,200 to 2,500
D – Stiff Soil	> 600 to 1,200
E – Soft Clay Soil	> 600
F – Site Response Analysis Required	-

Survey results indicate a weighted-average soil shear wave velocity of the upper 100 feet (Vs100) of **1,318 ft/s**. This results in a designation of a **Seismic Site Class C** according to ASCE 7-16.

D.5.0 LIMITATIONS & CLOSURE

The data is subjective to soil and rock conditions deeper than the physical subsurface explorations. Additionally, the models presented are comprised of processed data, and are therefore only a representation of actual site conditions. The conditions below the depth of the explorations and between the explorations and the related results can only be generalized. We have prepared this report for use by our client and other members of the design and construction team for the proposed project. The data and discussion of test results contained within this report are not intended to be, nor should they be construed as, a warranty of subsurface conditions, but are forwarded to assist in the planning and design process. Information contained herein is not to be reproduced, except in full, without prior authorization from this office. Within the limitations of scope, schedule, and budget, our services have been executed in accordance with the generally accepted practices in this area at the time this report was prepared; no warranty, expressed or implied, is made.

MARION COUNTY APW TOWER - MARION COUNTY, OREGON
Project Number B2502560

FIGURE D1
Site Photographs



Photograph 1: Placing geophones, looking south.



Photograph 2: Working along the seismic line.



Photograph 3: Field operations



Photograph 4: Processing early data in the field.

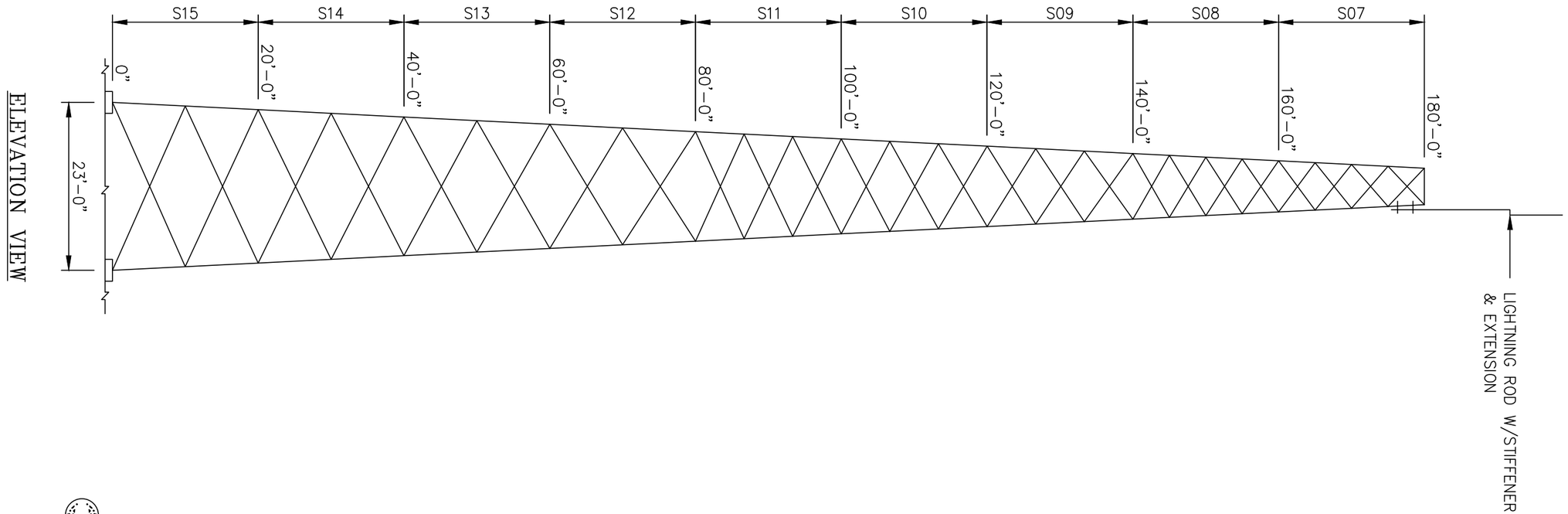
CARLSON CGT GEOTECHNICAL 503-601-8250

Drafted by: PBR

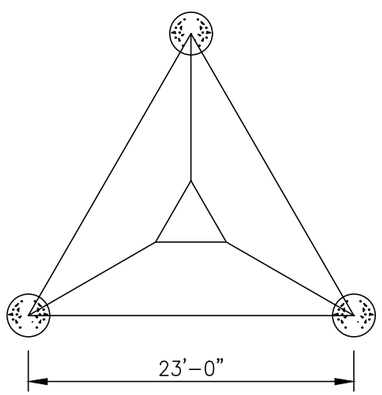
Photographs were taken at the time of our fieldwork.

EXHIBIT K

LEGS	14.00 OD X .500		10.75 OD X .500		8.625 OD X .500	8.625 OD X .322	5.563 OD X .375	4.000 OD X .318	2.875 OD X .203
DIAGONALS	L 6 X 4 X 3/8 (SLV)		L 4 X 4 X 3/8	L 4 X 3 1/2 X 3/8 (SLV)		L 4 X 4 X 5/16	A	B	L 2 X 2 X 5/16
HORIZONTALS	NONE								L 2 X 2 X 5/16
BAYS/SECTION	2 BAYS				3 BAYS			4 BAYS	
SECTION WEIGHT	9219 LBS.	9060 LBS.	7202 LBS.	6525 LBS.	6047 LBS.	4305 LBS.	3448 LBS.	2454 LBS.	1408 LBS.



ELEVATION VIEW



PLAN VIEW

MATERIAL LIST	
A	L 3 1/2 X 3 X 3/8 (SLV)
B	L 2 1/2 X 2 1/2 X 3/8

UNLESS OTHERWISE SPECIFIED
ALL DIMENSIONS INCLUDE
FINISHES AND ARE IN INCHES

TOLERANCES: FRACTIONS ± 1/16"
ANGLES ± 1/2 DEG.
DECIMALS ± .010"

MATERIAL:

TOLERANCES DO NOT APPLY TO RAW MATERIAL

REV	DATE	DRW	CHK	DESCRIPTION

Sabre Industries™
INNOVATION DELIVERED

CONFIDENTIAL
This document and the information contained herein is the confidential trade secret property of Sabre Industries, Inc. ("Sabre") and must not be reproduced, copied or used, in whole or in part, for any purpose without the prior written consent of Sabre.
© 2025 Sabre Industries, Inc. All rights reserved.

MASTER: 180 FT. MODEL S3TL-HD2
SITE: CROOKED FINGER, OR
CUSTOMER: MARION COUNTY OREGON

JOB NO. 563429		SIZE	DRAWING NO.	REV
DATE	08/07/25	B	563429-MS	0
DRAWN BY	KMP			
CHECKED BY	ZAK		SCALE NONE	PAGE 1 OF 3

DRAWING LIST

563429-F1 . . . . . MAT & PIER FOUNDATION
C30400341 . . . . . LEG TO LEG TEMPLATE
9030714 . . . . . TOWER BASE INSTALLATION
563429-S15 . . . . . SECTION 0 FT. - 20 FT.
563429-S14 . . . . . SECTION 20 FT. - 40 FT.
563429-S13 . . . . . SECTION 40 FT. - 60 FT.
563429-S12 . . . . . SECTION 60 FT. - 80 FT.
563429-S11 . . . . . SECTION 80 FT. - 100 FT.
563429-S10 . . . . . SECTION 100 FT. - 120 FT.
563429-S09 . . . . . SECTION 120 FT. - 140 FT.
563429-S08 . . . . . SECTION 140 FT. - 160 FT.
563429-S07 . . . . . SECTION 160 FT. - 180 FT.
563429-SB1 . . . . . STEP BOLT ATTACHMENT INSTALLATION
C30011-1 . . . . . SAFETY CLIMB BOTTOM MOUNTING BRACKET
C30011-2 . . . . . SAFETY CLIMB TOP MOUNTING BRACKET
C30003001 . . . . . SAFETY CLIMB INTERMEDIATE BRACKET
SEE MANUAL W/KIT . . . . . CABLE SAFETY CLIMB DEVICE
563429-WG1 . . . . . WAVEGUIDE LADDER INSTALLATION
563429-WG2 . . . . . WAVEGUIDE LADDER INSTALLATION
563429-WG3 . . . . . WAVEGUIDE LADDER INSTALLATION
9031861 . . . . . WAVEGUIDE LADDER
C30008022 . . . . . TOWER LEG CAP KIT
563429-SA1 . . . . . 3' SIDEARM @ 179'
563429-PM1 . . . . . 4 1/2 O.D. PIPE MOUNT KIT FOR SIDEARM @ 179'
563429-ST1 . . . . . SWIVEL KNUCKLE TIEBACK KITS FOR SIDEARM @ 179'
563429-FM1 . . . . . 2 3/8 O.D. FLUSH MOUNT KIT @ 177'
563429-SA2 . . . . . 3' SIDEARMS @ 175'
563429-PM2 . . . . . 4 1/2 O.D. PIPE MOUNT KITS FOR SIDEARMS @ 175'
563429-ST2 . . . . . SWIVEL KNUCKLE TIEBACK KITS FOR SIDEARMS @ 175'
563429-PM3 . . . . . 4 1/2 O.D. PIPE MOUNT KITS @ 173'
C30085002 . . . . . 8' ICE SHIELD ASSEMBLY @ 170'
563429-PM4 . . . . . 4 1/2 O.D. PIPE MOUNT KIT @ 165'
563429-SA3 . . . . . 3' SIDEARM @ 165'
563429-PM5 . . . . . 4 1/2 O.D. PIPE MOUNT KIT FOR SIDEARM @ 165'
563429-ST3 . . . . . SWIVEL KNUCKLE TIEBACK KITS FOR SIDEARM @ 165'
563429-SA4 . . . . . 3' SIDEARM @ 163'
563429-PM6 . . . . . 4 1/2 O.D. PIPE MOUNT KIT FOR SIDEARM @ 163'
563429-ST4 . . . . . SWIVEL KNUCKLE TIEBACK KITS FOR SIDEARM @ 163'
C30085002 . . . . . 8' ICE SHIELD ASSEMBLIES @ 155'
563429-PM7 . . . . . 4 1/2 O.D. PIPE MOUNT KITS @ 150'
563429-PM8 . . . . . 4 1/2 O.D. PIPE MOUNT KIT @ 143'
563429-SA5 . . . . . 3' SIDEARM @ 143'
563429-PM9 . . . . . 4 1/2 O.D. PIPE MOUNT KIT FOR SIDEARM @ 143'
563429-ST5 . . . . . SWIVEL KNUCKLE TIEBACK KITS FOR SIDEARM @ 143'
563429-SA6 . . . . . 3' SIDEARM @ 140'
563429-PM10 . . . . . 4 1/2 O.D. PIPE MOUNT KIT FOR SIDEARM @ 140'
563429-ST6 . . . . . SWIVEL KNUCKLE TIEBACK KITS FOR SIDEARM @ 140'
563429-PM11 . . . . . 4 1/2 O.D. PIPE MOUNT KIT @ 137'
563429-SA7 . . . . . 3' SIDEARM @ 134'
563429-PM12 . . . . . 4 1/2 O.D. PIPE MOUNT KIT FOR SIDEARM @ 134'
563429-ST7 . . . . . SWIVEL KNUCKLE TIEBACK KITS FOR SIDEARM @ 134'
563429-SA8 . . . . . 3' SIDEARM @ 127'
563429-PM13 . . . . . 4 1/2 O.D. PIPE MOUNT KIT FOR SIDEARM @ 127'
563429-ST8 . . . . . SWIVEL KNUCKLE TIEBACK KITS FOR SIDEARM @ 127'
563429-LR . . . . . LIGHTNING ROD W/STIFFENER & EXTENSION
9014671 . . . . . BOLT INSTALLATION
906956 . . . . . TOWER NAME PLATE
907901 . . . . . INVENTORY REQUIREMENT SHEET
BOM-1 . . . . . BILL OF MATERIAL

TOWER DESIGN INFORMATION

THIS ERECTION DRAWING PACKAGE IS BASED ON THE STRUCTURAL DESIGN REPORT NO. 563429.

THIS TOWER DESIGN ALSO MEETS OR EXCEEDS THE REQUIREMENTS OF THE 2022 OREGON STRUCTURAL SPECIALTY CODE.

DESIGN CRITERIA - ANSI/TIA-222-H	
WIND SPEED (NO ICE)	108 MPH
WIND SPEED (ICE)	30 MPH
DESIGN ICE THICKNESS	1.00 IN
RISK CATEGORY	IV
EXPOSURE CATEGORY	C
TOPOGRAPHIC FACTOR PROCEDURE	METHOD 2 (RIGOROUS)
TOPOGRAPHIC FEATURE	FLAT TOPPED HILL
CREST HEIGHT	1100 FT
LENGTH OF TOPOGRAPHIC FEATURE	7000 FT
HORIZONTAL DISTANCE FROM STRUCTURE TO CREST	1200 FT
GROUND ELEVATION	1904 FT
SEISMIC IMPORTANCE FACTOR, Ie	1.50
0.2-SEC SPECTRAL RESPONSE, Ss	0.725 g
1-SEC SPECTRAL RESPONSE, S1	0.348 g
SITE CLASS	C
SEISMIC DESIGN CATEGORY	D
BASIC SEISMIC FORCE-RESISTING SYSTEM	TELECOMMUNICATION TOWER (TRUSS: STEEL)

UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS INCLUDE FINISHES AND ARE IN INCHES

TOLERANCES: FRACTIONS ± 1/16" ANGLES ± 1/2 DEG. DECIMALS ± .010"

MATERIAL:

TOLERANCES DO NOT APPLY TO RAW MATERIAL

REV	DATE	DRW	CHK	DESCRIPTION

Sabre Industries™ INNOVATION DELIVERED

CONFIDENTIAL
This document and the information contained herein is the confidential trade secret property of Sabre Industries, Inc. ("Sabre") and must not be reproduced, copied or used, in whole or in part, for any purpose without the prior written consent of Sabre.
© 2025 Sabre Industries, Inc. All rights reserved.

MASTER: 180 FT. MODEL S3TL-HD2
SITE: CROOKED FINGER, OR
CUSTOMER: MARION COUNTY OREGON

JOB NO. 563429		SIZE	DRAWING NO.	REV
DATE	08/07/25	B	563429-MS	0
DRAWN BY	KMP			
CHECKED BY	ZAK		SCALE NONE	PAGE 2 OF 3

DESIGNED APPURTENANCE LOADING

ELEV.	ANTENNAS
189.62'	(1) DB224A
186.22'	(1) SC479-HF1LDF
185'	(1) EXTENDIBLE LIGHTNING ROD
184.14'	(1) CC807-09
182.22'	(3) SC479-HF1LDF
179'	3FT SIDEARM
179'	3FT SIDEARM
179'	3FT SIDEARM
177'	FLUSH MOUNT
177'	(1) 429-83H-01
175'	(2) 3FT SIDEARMS
173'	(2) LEG DISH MOUNT
173'	LEG DISH MOUNT
173'	(1) 1' H.P. DISH
173'	(2) VHLP2-23-2GR/B
170'	(1) 6' ICE SHIELD
168.46'	(1) OA20-67-DIN
167.21'	(1) SE414-SWBPALDF(DXX)
166.5'	(1) 7' X 2" WHIP
165'	3FT SIDEARM
165'	3FT SIDEARM
165'	LEG DISH MOUNT
165'	LEG DISH MOUNT

ELEV.	ANTENNAS
165'	(1) UHX8-59
165'	(1) VHLPX6-6W-6WH
163'	3FT SIDEARM
155'	(1) 6' ICE SHIELD
155'	(1) 6' ICE SHIELD
150'	(2) LEG DISH MOUNT
150'	(2) VHLPX6-6W-6WH
143'	3FT SIDEARM
143'	LEG DISH MOUNT
143'	(1) 3' X 1' X 3IN PANEL
143'	(1) VHLPX6-6W-6WH
140'	3FT SIDEARM
140'	(1) 3' X 1' X 3IN PANEL
137.5'	(1) 7' X 2" WHIP
137'	LEG DISH MOUNT
137'	(1) VHLPX4-11W/A
134'	3FT SIDEARM
130.5'	(1) 7' X 2" WHIP
129.5'	(1) DB404-B
127'	3FT SIDEARM
127'	3FT SIDEARM
120'	3 EHD V-BOOM - 12FT FACE - 3FT STANDOFF
120'	(12) 80010992

UNLESS OTHERWISE SPECIFIED
ALL DIMENSIONS INCLUDE FINISHES AND ARE IN INCHES

TOLERANCES: FRACTIONS ± 1/16"
ANGLES ± 1/2 DEG.
DECIMALS ± .010"

MATERIAL:

TOLERANCES DO NOT APPLY TO RAW MATERIAL

REV	DATE	DRW	CHK	DESCRIPTION

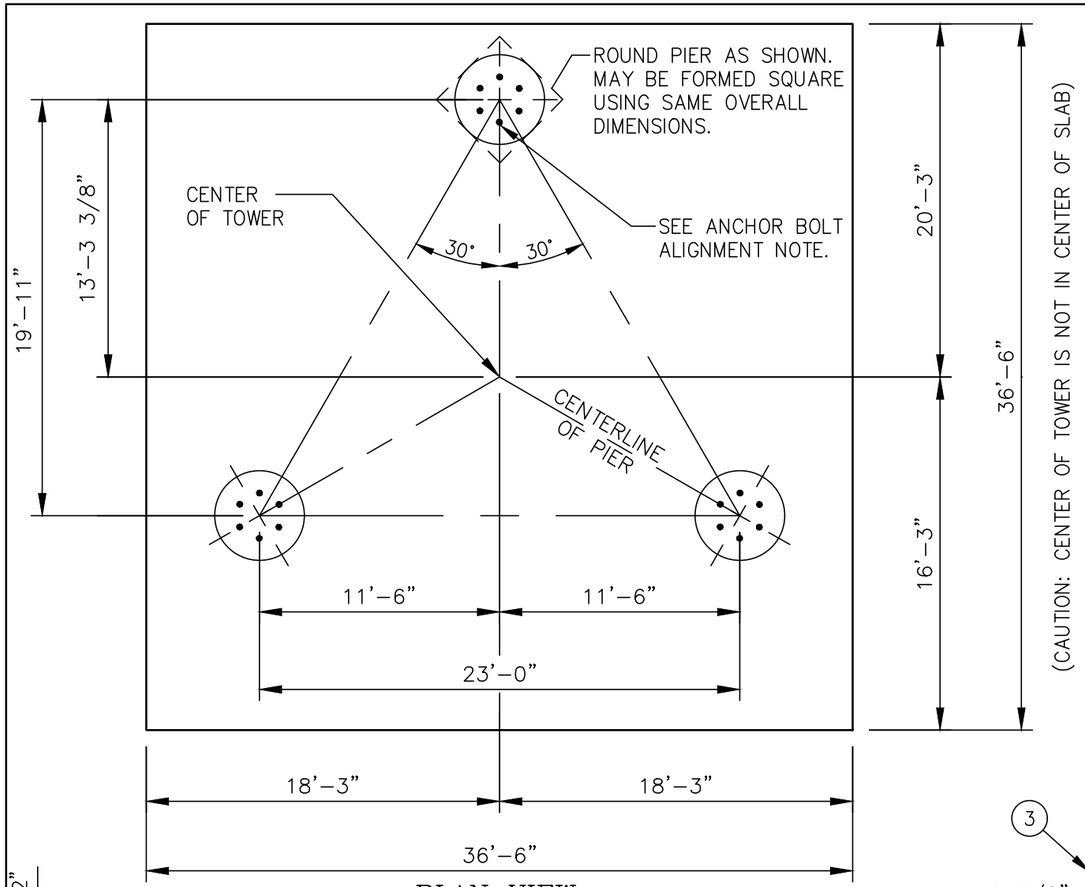
Sabre Industries™
INNOVATION DELIVERED

CONFIDENTIAL
This document and the information contained herein is the confidential trade secret property of Sabre Industries, Inc. ("Sabre") and must not be reproduced, copied or used, in whole or in part, for any purpose without the prior written consent of Sabre.
© 2025 Sabre Industries, Inc. All rights reserved.

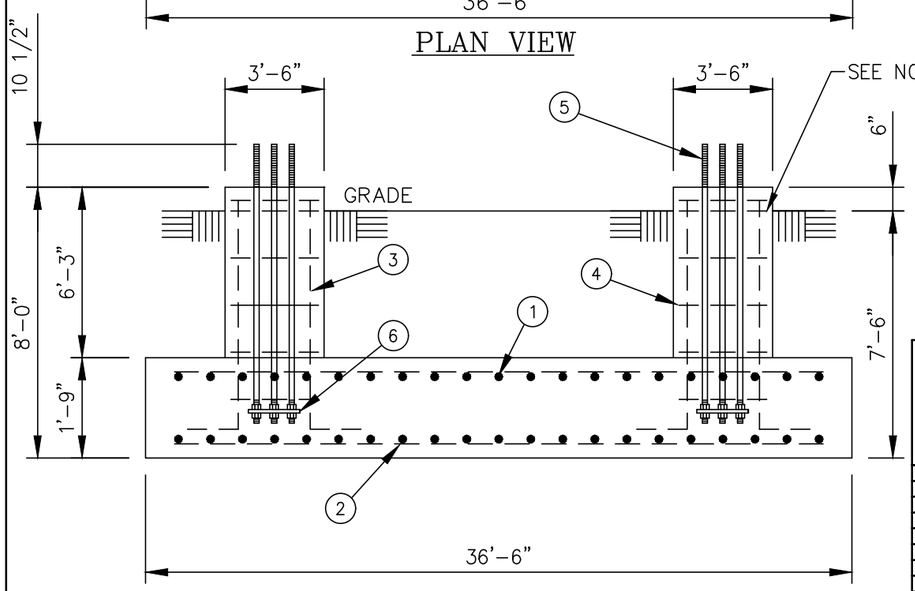
MASTER: 180 FT. MODEL S3TL-HD2
SITE: CROOKED FINGER, OR
CUSTOMER: MARION COUNTY OREGON

JOB NO. 563429		SIZE	DRAWING NO.		REV
DATE	08/07/25	B	563429-MS		0
DRAWN BY	KMP			SCALE	PAGE
CHECKED BY	ZAK			NONE	3 OF 3

EXHIBIT K



PLAN VIEW



ELEVATION VIEW

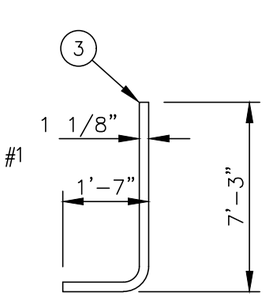
REINFORCING STEEL SCHEDULE								
ITEM	LOCATION	NO. REQ'D.	BAR SPC'G.	SIZE	CUT LGTH.	TOTAL LGTH.	TOTAL WT.	SHAPE
①	PAD TOP REINFORCING	106	EQUALLY SPACED	#9	36'-0"	3816'-0"	12974 LBS.	STRAIGHT
②	PAD BOTTOM REINFORCING	106	EQUALLY SPACED	#9	36'-0"	3816'-0"	12974 LBS.	STRAIGHT
③	PIER VERTICAL REINFORCING	60	EQUALLY SPACED	#9	8'-10"	530'-0"	1802 LBS.	
④	PIER TIES	69	SPACED 4" C/C	#4	10'-8"	736'-0"	492 LBS.	
						TOTAL REBAR WT.	28242 LBS.	

ANCHOR BOLT SCHEDULE				
ITEM	PART NO.	NO. REQ'D.	ANCHOR BOLT SIZE	SPACING
⑤	C40041061	18	1 3/4"ø X 7'-3"	EQUALLY SPACED

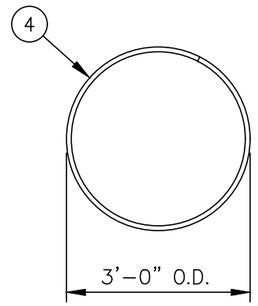
TEMPLATE SCHEDULE			
ITEM	PART NO.	NO. REQ'D.	BOLT CIRCLE
⑥	C30139220	6	1'-7"

CONCRETE REQ'D	ROUND PIERS	SQUARE PIERS
PAD	86.35 CU. YDS.	86.35 CU. YDS.
PIERS	6.68 CU. YDS.	8.51 CU. YDS.
TOTAL	93.03 CU. YDS.	94.86 CU. YDS.

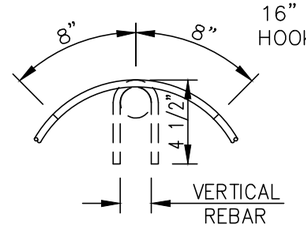
SEE PAGE 2 FOR GENERAL NOTES



REBAR DETAIL
(PIER VERTICAL REBAR)



REBAR DETAIL
(PIER TIES)



PIER TIE HOOK DETAIL

UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS INCLUDE FINISHES AND ARE IN INCHES

TOLERANCES: FRACTIONS ± 1/16" ANGLES ± 1/2 DEG. DECIMALS ± .010"

MATERIAL:

TOLERANCES DO NOT APPLY TO RAW MATERIAL

REV	DATE	DRW	CHK	DESCRIPTION

Sabre Industries™ INNOVATION DELIVERED

CONFIDENTIAL
This document and the information contained herein is the confidential trade secret property of Sabre Industries, Inc. ("Sabre") and must not be reproduced, copied or used, in whole or in part, for any purpose without the prior written consent of Sabre.
© 2025 Sabre Industries, Inc. All rights reserved.

FOUNDATION: 180 FT. MODEL S3TL-HD2

SITE: CROOKED FINGER, OR

CUSTOMER: MARION COUNTY OREGON

JOB NO. 563429		SIZE	DRAWING NO.	REV
DATE	7/16/25	B	563429-F1	0
DRAWN BY	AWB			
CHECKED BY	BWA		SCALE NONE	PAGE 1 OF 2

GENERAL NOTES

1. CONCRETE SHALL HAVE A MINIMUM 28-DAY COMPRESSIVE STRENGTH OF 4,500 PSI, IN ACCORDANCE WITH ACI 318-19. (2 REBAR TIES REQ'D IN THE TOP 5")
2. REBAR TO CONFORM TO ASTM SPECIFICATION A615 GRADE 60.
3. ALL REBAR TO HAVE A MINIMUM OF 3" CONCRETE COVER.
4. ALL EXPOSED CONCRETE CORNERS TO BE CHAMFERED 3/4".
5. THE FOUNDATION DESIGN IS BASED ON THE GEOTECHNICAL REPORT BY BLACK MOUNTAIN CONSULTING, LLC, PROJECT 250015-GEO, DATED APRIL 26, 2025.
6. SEE THE GEOTECHNICAL REPORT FOR COMPACTION REQUIREMENTS, IF SPECIFIED.
7. 5.75' OF SOIL COVER IS REQUIRED OVER THE ENTIRE AREA OF THE FOUNDATION SLAB.
8. THE BOTTOM ANCHOR BOLT TEMPLATE SHALL BE POSITIONED AS CLOSELY AS POSSIBLE TO THE BOTTOM OF THE ANCHOR BOLTS.
9. THIS FOUNDATION IS DESIGNED FOR A MAX CAPACITY RATIO OF 70%.
10. DISTANCE BETWEEN CENTER OF ANCHOR BOLT CAGE AND THE CENTER OF THE PIER NOT TO EXCEED 1/2" WITHOUT APPROVAL FROM ENGINEER OF RECORD.
11. ONE ANCHOR BOLT MUST BE ALIGNED DIRECTLY WITH THE CENTER OF THE TOWER (TYPICAL).

BASE REACTIONS - ANSI/TIA-222-H (WIND/ICE)

TOTAL FOUNDATION		INDIVIDUAL FOOTING	
SHEAR (KIPS)	75.04	SHEAR (KIPS)	44.02
AXIAL (KIPS)	153.02	COMPRESSION (KIPS)	400
MOMENT (FT-KIPS)	7649	UPLIFT (KIPS)	355

BASE REACTIONS - ANSI/TIA-222-H (SEISMIC)

TOTAL FOUNDATION		INDIVIDUAL FOOTING	
SHEAR (KIPS)	19.8	SHEAR (KIPS)	14.51
AXIAL (KIPS)	89.33	COMPRESSION (KIPS)	143
MOMENT (FT-KIPS)	2259	UPLIFT (KIPS)	96

UNLESS OTHERWISE SPECIFIED
ALL DIMENSIONS INCLUDE FINISHES AND ARE IN INCHES
TOLERANCES: FRACTIONS ± 1/16"
ANGLES ± 1/2 DEG.
DECIMALS ± .010"

MATERIAL:
TOLERANCES DO NOT APPLY TO RAW MATERIAL

REV	DATE	DRW	CHK	DESCRIPTION

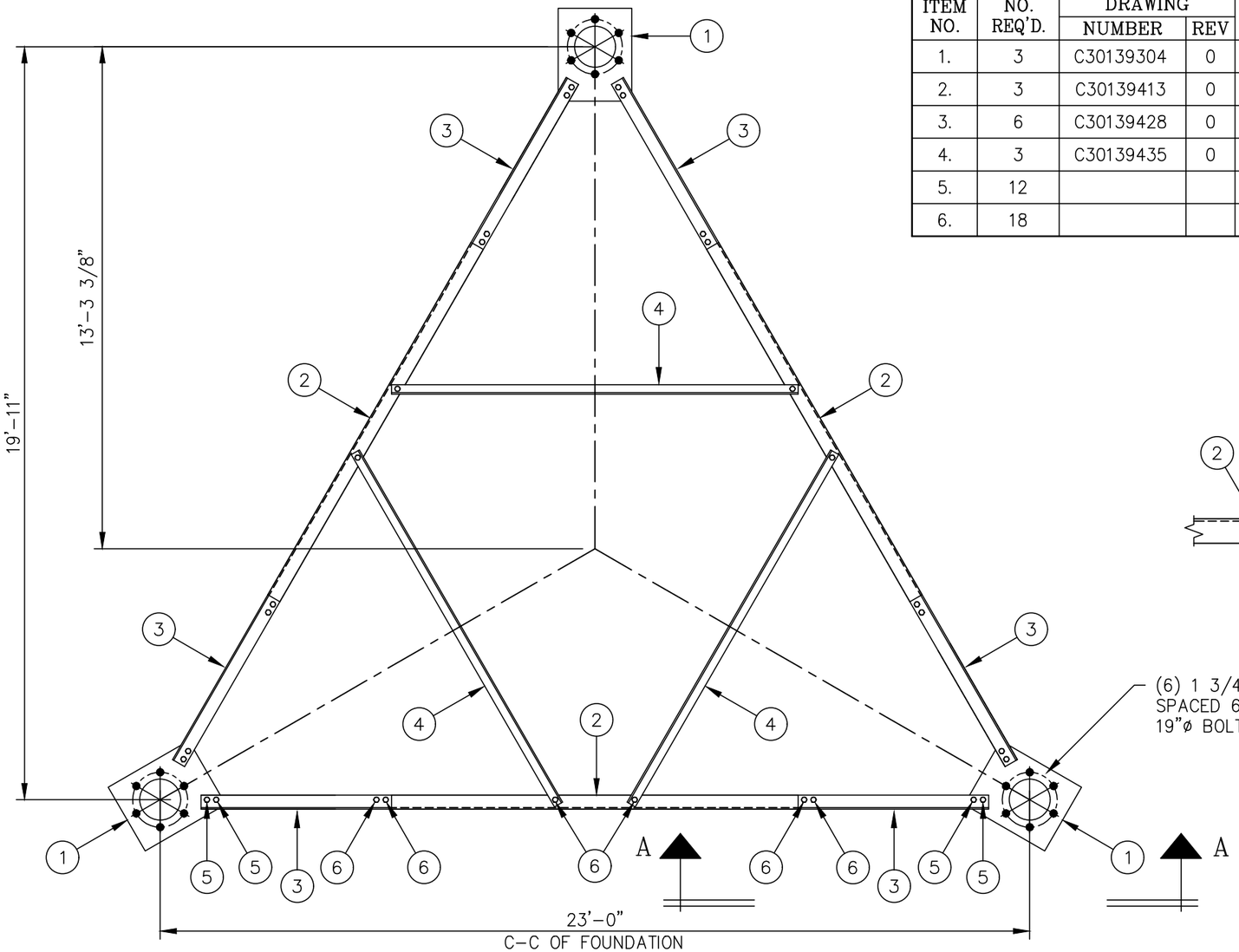
Sabre Industries™
INNOVATION DELIVERED

CONFIDENTIAL
This document and the information contained herein is the confidential trade secret property of Sabre Industries, Inc. ("Sabre") and must not be reproduced, copied or used, in whole or in part, for any purpose without the prior written consent of Sabre.
© 2025 Sabre Industries, Inc. All rights reserved.

FOUNDATION: 180 FT. MODEL S3TL-HD2
SITE: CROOKED FINGER, OR
CUSTOMER: MARION COUNTY OREGON

JOB NO. 563429		SIZE	DRAWING NO.	REV
DATE	7/16/25	B	563429-F1	0
DRAWN BY	AWB			
CHECKED BY	BWA		SCALE NONE	PAGE 2 OF 2

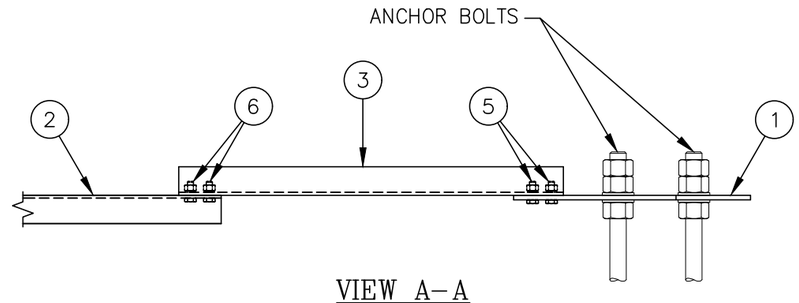
EXHIBIT K



PLAN VIEW

C30400341 LEG TO LEG TEMPLATE

ITEM NO.	NO. REQ'D.	DRAWING NUMBER	DRAWING REV	PART NO.	DESCRIPTION	WEIGHT LBS.	PAINT
1.	3	C30139304	0	C30139304	PLATE, ANCHOR BOLT TEMPLATE 1 3/4"ø A.B. ON 19"ø B.C.	155	N/R
2.	3	C30139413	0	C30139413	ANGLE, TEMPLATE SUPPORT, 3 X 3 X 3/16 X 10'-0	111	N/R
3.	6	C30139428	0	C30139428	ANGLE, TEMPLATE SUPPORT, 3 X 3 X 3/16 X 6'-1 3/4	136	N/R
4.	3	C30139435	0	C30139435	ANGLE, TEMPLATE SUPPORT, 2 1/2 X 2 1/2 X 3/16 X 11'-0	101	N/R
5.	12			C40026023	BOLT ASSEMBLY, 5/8 ø X 2 A325	6	
6.	18			C40026022	BOLT ASSEMBLY, 5/8 ø X 1 3/4 A325	8	
					TOTAL WEIGHT IN LBS.	517	



VIEW A-A

NOTE:

1. ALWAYS COMPARE THE DIMENSIONS SHOWN ON THIS DRAWING WITH THE PROPER CONCRETE FOUNDATION DRAWING, PRIOR TO PLACING CONCRETE.
2. ONE ANCHOR BOLT MUST BE ALIGNED DIRECTLY WITH THE CENTER OF THE TOWER (TYPICAL AT ALL (3) LEGS).
3. VERIFY ANCHOR BOLT CIRCLE CENTER-TO-CENTER SPACING ON ALL (3) FACES AND ALIGNMENT OF ANCHOR BOLTS WITH THE CENTER OF THE TOWER AT ALL (3) LEGS PRIOR TO PLACING CONCRETE.
4. PROVIDE NECESSARY SUPPORT TO ELIMINATE ANY MOVEMENT DURING CONCRETE PLACEMENT AND CURING.

UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS INCLUDE FINISHES AND ARE IN INCHES

TOLERANCES: FRACTIONS ± 1/16" ANGLES ± 1/2 DEG. DECIMALS ± .010"

MATERIAL:

TOLERANCES DO NOT APPLY TO RAW MATERIAL

REV	DATE	DRW	CHK	DESCRIPTION
1	07/02/25	GCK	KCG	REMOVED TOWER SERIES DESIGNATION.

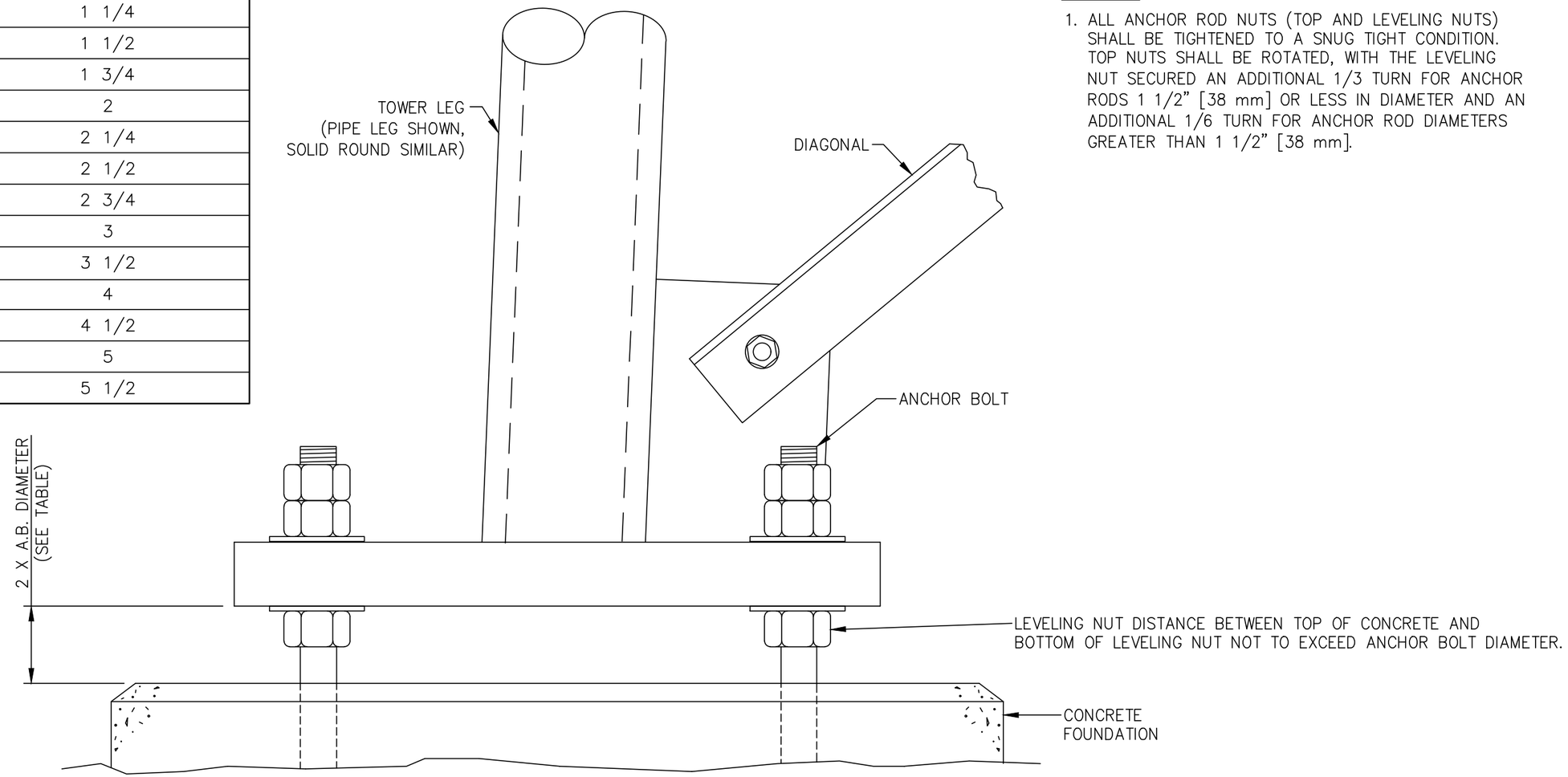
Sabre Industries™
INNOVATION DELIVERED

CONFIDENTIAL
This document and the information contained herein is the confidential trade secret property of Sabre Industries, Inc. ("Sabre") and must not be reproduced, copied or used, in whole or in part, for any purpose without the prior written consent of Sabre.
© 2022 Sabre Industries, Inc. All rights reserved.

LEG TO LEG TEMPLATE INSTALLATION FOR MODEL S3TL SECTION 15 BASE SPREAD 23'-0" C-C OF FOUNDATION (6) 1 3/4"ø A.B. ON A 19"ø B.C.

		SIZE	DRAWING NO.	REV
DATE	02/14/20	B	C30400341	1
DRAWN BY	DRL			
CHECKED BY	LRD		SCALE None	PAGE 1 OF 1

TABLE	
ANCHOR BOLT DIAMETER (in)	MAXIMUM SPACE (in)
1/2	1
5/8	1 1/4
3/4	1 1/2
7/8	1 3/4
1	2
1 1/8	2 1/4
1 1/4	2 1/2
1 3/8	2 3/4
1 1/2	3
1 3/4	3 1/2
2	4
2 1/4	4 1/2
2 1/2	5
2 3/4	5 1/2



ELEVATION VIEW

NOTES:

1. ALL ANCHOR ROD NUTS (TOP AND LEVELING NUTS) SHALL BE TIGHTENED TO A SNUG TIGHT CONDITION. TOP NUTS SHALL BE ROTATED, WITH THE LEVELING NUT SECURED AN ADDITIONAL 1/3 TURN FOR ANCHOR RODS 1 1/2" [38 mm] OR LESS IN DIAMETER AND AN ADDITIONAL 1/6 TURN FOR ANCHOR ROD DIAMETERS GREATER THAN 1 1/2" [38 mm].

UNLESS OTHERWISE SPECIFIED
ALL DIMENSIONS INCLUDE
FINISHES AND ARE IN INCHES

TOLERANCES: FRACTIONS ± 1/16"
ANGLES ± 1/2 DEG.
DECIMALS ± .010"

MATERIAL:

TOLERANCES DO NOT APPLY
TO RAW MATERIAL

REV	DATE	DRW	CHK	DESCRIPTION
2	10/13/17	RWM	MWR	ADDED ANCHOR BOLT TABLE, REVISED LEVELING NUT
				CALL OUT AND ADDED TIGHTENING NOTE #1.
1	1/6/12	DSN	RWM	REVISED BASE PLATE TO FND. GAP

Sabre Industries™
INNOVATION DELIVERED

CONFIDENTIAL
This document and the information contained herein is the confidential trade secret property of Sabre Industries, Inc. ("Sabre") and must not be reproduced, copied or used, in whole or in part, for any purpose without the prior written consent of Sabre.
© 2022 Sabre Industries, Inc. All rights reserved.

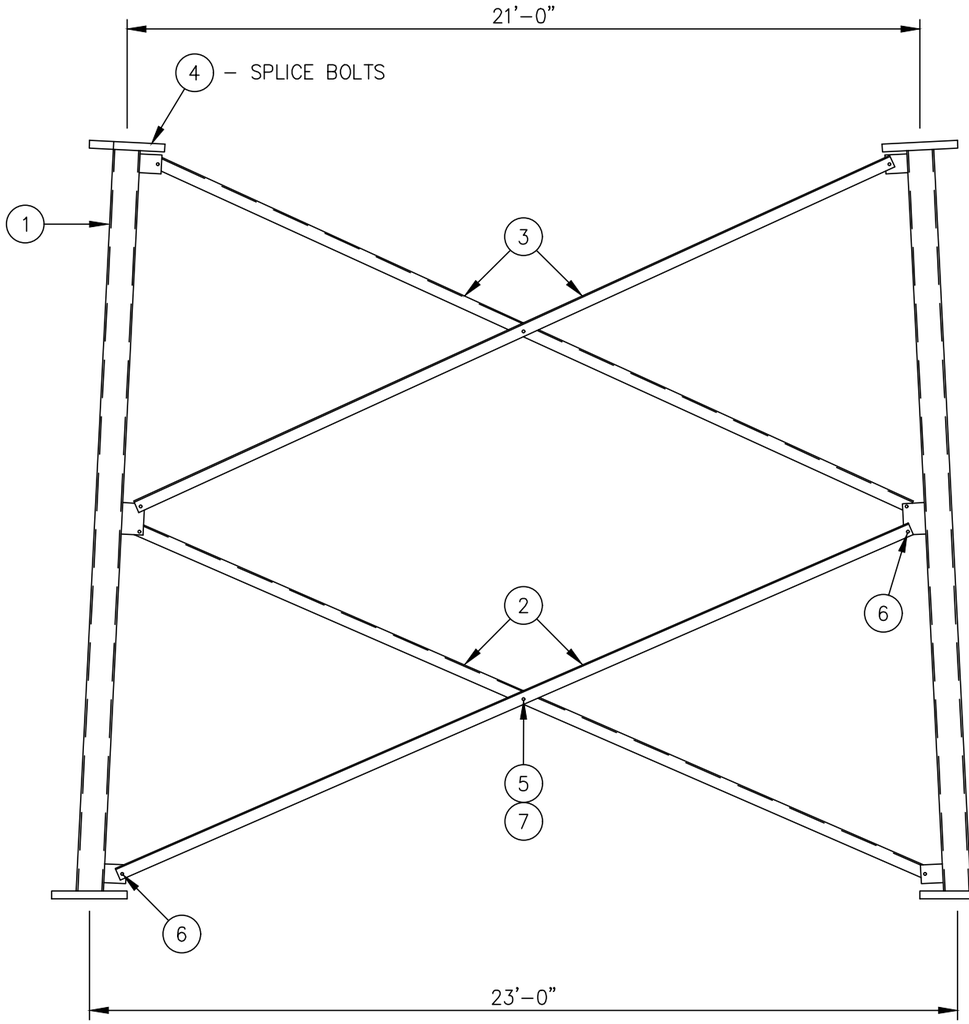
TOWER BASE INSTALLATION

DATE	11/24/09
DRAWN BY	RWM
CHECKED BY	MWR

SIZE	DRAWING NO.	REV
B	9030714	2

SCALE	PAGE
None	1 OF 1

EXHIBIT K



ELEVATION VIEW

LIST OF MATERIAL

15–LEGS

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
1	3	15–T11611441	SECT. 15 LEG 14 ø X .500 X 20'–0 5/16 W/STEP BOLTS	5508
			TOTAL WEIGHT LBS	5508

15–T8101794 BRACING KIT

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
2	6	TS11269	ANGLE, DIAGONAL 6 X 4 X 3/8 X 22'–11 3/16	1760
3	6	TS11270	ANGLE, DIAGONAL 6 X 4 X 3/8 X 22'–0 7/16	1691
			TOTAL WEIGHT LBS	3451

SPLICE BOLTS

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
4	31	C40026115	BOLT ASSEMBLY, 1 1/2 ø X 6 1/2 A325	188
			TOTAL WEIGHT LBS	188

TK01256 HARDWARE KIT

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
5	7	C40026099	BOLT ASSEMBLY, 1 1/8 ø X 3 1/4 A325	15
6	25	C40026097	BOLT ASSEMBLY, 1 1/8 ø X 2 3/4 A325	50
7	7	C40047014	RINGFILL, 3/8 THICK – 1 1/8 ø BOLT	7
			TOTAL WEIGHT LBS	72

TOTAL SECTION WEIGHT – INCLUDES 3 LEGS, BRACING AND HARDWARE KIT	9219

FIELD NOTES

1. THE PART NUMBERS FOR ALL LEGS ARE LOCATED AT THE TOP OF EACH PART.
2. STEP BOLTS PROVIDED FOR (3) LEGS.

UNLESS OTHERWISE SPECIFIED
ALL DIMENSIONS INCLUDE FINISHES AND ARE IN INCHES

TOLERANCES: FRACTIONS ± 1/16"
ANGLES ± 1/2 DEG.
DECIMALS ± .010"

MATERIAL:

TOLERANCES DO NOT APPLY TO RAW MATERIAL

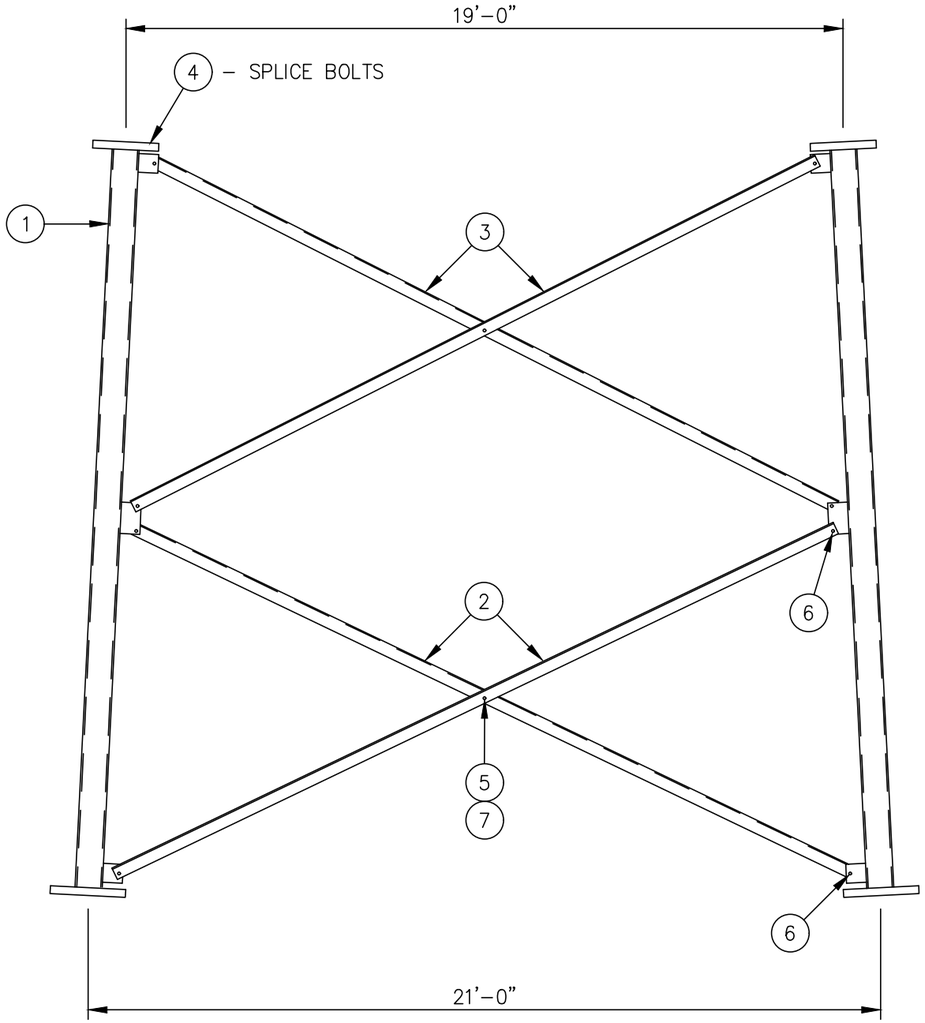
REV	DATE	DRW	CHK	DESCRIPTION

Sabre Industries™
INNOVATION DELIVERED

CONFIDENTIAL
This document and the information contained herein is the confidential trade secret property of Sabre Industries, Inc. ("Sabre") and must not be reproduced, copied or used, in whole or in part, for any purpose without the prior written consent of Sabre.
© 2025 Sabre Industries, Inc. All rights reserved.

SECTION ERECTION: 15 15–T8101794
SITE: CROOKED FINGER, OR
CUSTOMER: MARION COUNTY OREGON

JOB NO. 563429		SIZE	DRAWING NO.	REV
DATE	07/30/25	B	563429–S15	0
DRAWN BY	KMP			
CHECKED BY	ZAK		SCALE None	PAGE 1 OF 1



ELEVATION VIEW

LIST OF MATERIAL

14 LEGS

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
1	3	14–T11611443	SECT. 14 LEG 14 ø X .500 X 20'–0 5/16 W/STEP BOLTS	5618
			TOTAL WEIGHT LBS	5618

14–T8101795 BRACING KIT

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
2	6	TS11271	ANGLE, DIAGONAL 6 X 4 X 3/8 X 21'–1 3/8	1621
3	6	TS11272	ANGLE, DIAGONAL 6 X 4 X 3/8 X 20'–2 7/8	1553
			TOTAL WEIGHT LBS	3174

SPLICE BOLTS

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
4	31	C40026166	BOLT ASSEMBLY, 1 1/2 ø X 7 A325	196
			TOTAL WEIGHT LBS	196

TK01256 HARDWARE KIT

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
5	7	C40026099	BOLT ASSEMBLY, 1 1/8 ø X 3 1/4 A325	15
6	25	C40026097	BOLT ASSEMBLY, 1 1/8 ø X 2 3/4 A325	50
7	7	C40047014	RINGFILL, 3/8 THICK – 1 1/8 ø BOLT	7
			TOTAL WEIGHT LBS	72

TOTAL SECTION WEIGHT – INCLUDES 3 LEGS, BRACING AND HARDWARE KIT	9060

FIELD NOTES

1. THE PART NUMBERS FOR ALL LEGS ARE LOCATED AT THE TOP OF EACH PART.
2. STEP BOLTS PROVIDED FOR (3) LEGS.

UNLESS OTHERWISE SPECIFIED
ALL DIMENSIONS INCLUDE FINISHES AND ARE IN INCHES
TOLERANCES: FRACTIONS ± 1/16"
ANGLES ± 1/2 DEG.
DECIMALS ± .010"

MATERIAL:

TOLERANCES DO NOT APPLY TO RAW MATERIAL

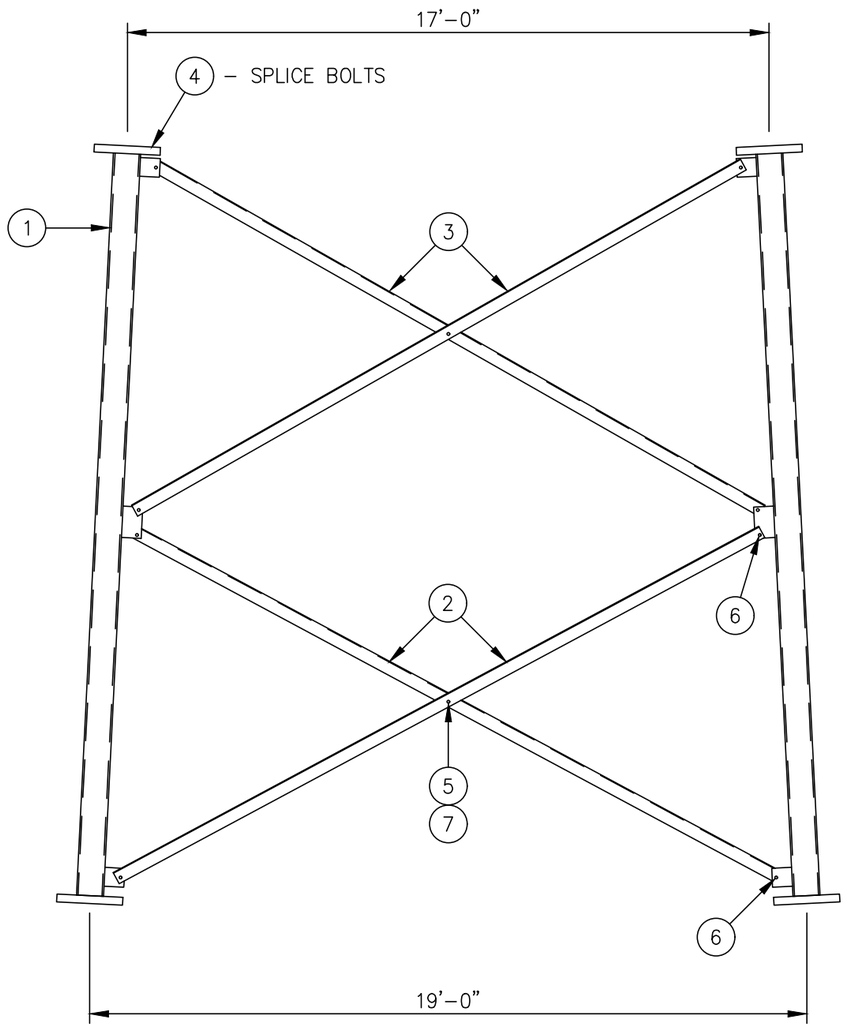
REV	DATE	DRW	CHK	DESCRIPTION

Sabre Industries™
INNOVATION DELIVERED

CONFIDENTIAL
This document and the information contained herein is the confidential trade secret property of Sabre Industries, Inc. ("Sabre") and must not be reproduced, copied or used, in whole or in part, for any purpose without the prior written consent of Sabre.
© 2025 Sabre Industries, Inc. All rights reserved.

SECTION ERECTION: 14 14–T8101795
SITE: CROOKED FINGER, OR
CUSTOMER: MARION COUNTY OREGON

JOB NO. 563429		SIZE	DRAWING NO.	REV
DATE	07/31/25	B	563429–S14	0
DRAWN BY	KMP			
CHECKED BY	ZAK		SCALE NONE	PAGE 1 OF 1



ELEVATION VIEW

LIST OF MATERIAL

13–LEGS

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
1	3	13–T11611445	SECT. 13 LEG 10 3/4ø X .500 X 20'–0 5/16 W/STEP BOLTS	4625
			TOTAL WEIGHT LBS	4625

13–T8101796 BRACING KIT

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
2	6	TS11273	ANGLE, DIAGONAL 4 X 4 X 3/8 X 19'–4 1/8	1239
3	6	TS11274	ANGLE, DIAGONAL 4 X 4 X 3/8 X 18'–5 15/16	1132
			TOTAL WEIGHT LBS	2371

SPLICE BOLTS

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
4	25	C40026115	BOLT ASSEMBLY, 1 1/2 ø X 6 1/2 A325	152
			TOTAL WEIGHT LBS	152

TK00353 HARDWARE KIT

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
5	7	C40026073	BOLT ASSEMBLY, 1 ø X 3 A325	12
6	25	C40026071	BOLT ASSEMBLY, 1 ø X 2 1/2 A325	41
7	7	C40047007	RINGFILL, 3/8 THICK – 1 ø BOLT	1
			TOTAL WEIGHT LBS	54

TOTAL SECTION WEIGHT – INCLUDES 3 LEGS, BRACING AND HARDWARE KIT	7202

FIELD NOTES

1. THE PART NUMBERS FOR ALL LEGS ARE LOCATED AT THE TOP OF EACH PART.
2. STEP BOLTS PROVIDED FOR (3) LEGS.

UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS INCLUDE FINISHES AND ARE IN INCHES

TOLERANCES: FRACTIONS ± 1/16" ANGLES ± 1/2 DEG. DECIMALS ± .010"

MATERIAL:

TOLERANCES DO NOT APPLY TO RAW MATERIAL

REV	DATE	DRW	CHK	DESCRIPTION

Sabre Industries™ INNOVATION DELIVERED

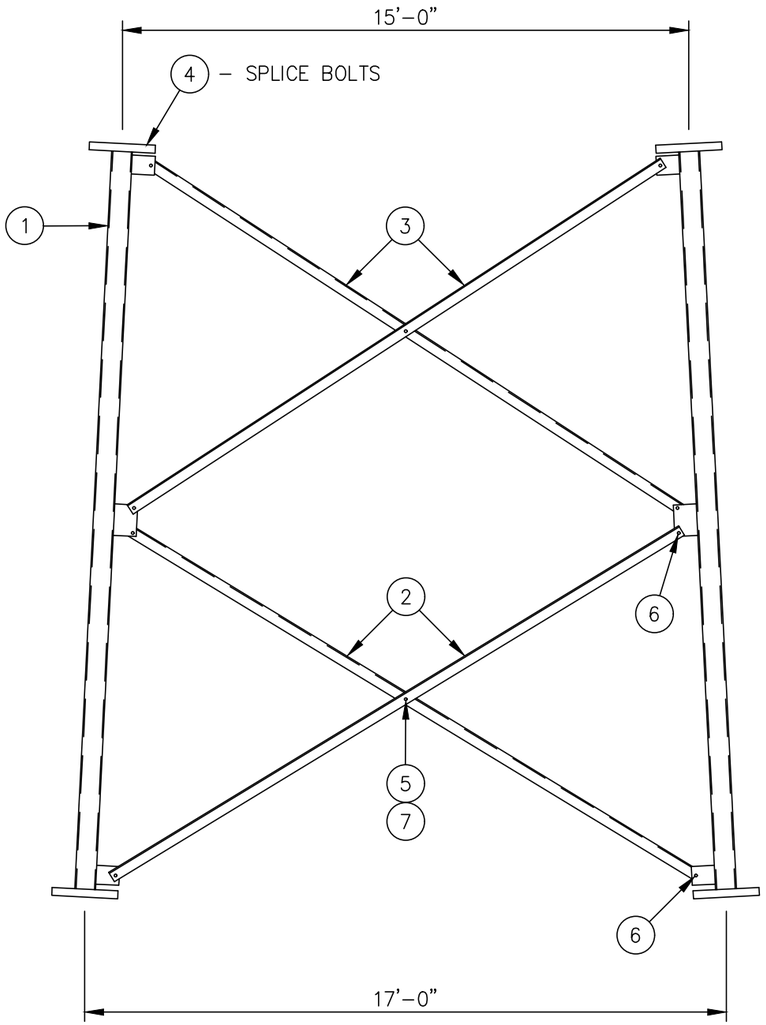
CONFIDENTIAL
This document and the information contained herein is the confidential trade secret property of Sabre Industries, Inc. ("Sabre") and must not be reproduced, copied or used, in whole or in part, for any purpose without the prior written consent of Sabre.
© 2025 Sabre Industries, Inc. All rights reserved.

SECTION ERECTION: 13 13–T8101796

SITE: CROOKED FINGER, OR

CUSTOMER: MARION COUNTY OREGON

JOB NO. 563429		SIZE	DRAWING NO.	REV
DATE	07/31/25	B	563429–S13	0
DRAWN BY	KMP			
CHECKED BY	ZAK		SCALE NONE	PAGE 1 OF 1



ELEVATION VIEW

LIST OF MATERIAL

12 LEGS

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
1	3	12–T11610309	SECT. 12 LEG 10 3/4 ø X .500 X 20'–0 5/16 W/STEP BOLTS	4336
			TOTAL WEIGHT LBS	4336

12–T8101797 BRACING KIT

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
2	6	TS11275	ANGLE, DIAGONAL 4 X 3 1/2 X 3/8 X 17'–10 7/16	1015
3	6	TS11276	ANGLE, DIAGONAL 4 X 3 1/2 X 3/8 X 17'–0 9/16	968
			TOTAL WEIGHT LBS	1983

SPLICE BOLTS

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
4	25	C40026115	BOLT ASSEMBLY, 1 1/2 ø X 6 1/2 A325	152
			TOTAL WEIGHT LBS	152

TK00353 HARDWARE KIT

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
5	7	C40026073	BOLT ASSEMBLY, 1 ø X 3 A325	12
6	25	C40026071	BOLT ASSEMBLY, 1 ø X 2 1/2 A325	41
7	7	C40047007	RINGFILL, 3/8 THICK – 1" ø BOLT	1
			TOTAL WEIGHT LBS	54

TOTAL SECTION WEIGHT – INCLUDES 3 LEGS, BRACING AND HARDWARE KIT	6525

FIELD NOTES

1. THE PART NUMBERS FOR ALL LEGS ARE LOCATED AT THE TOP OF EACH PART.
2. STEP BOLTS PROVIDED FOR (3) LEGS.

UNLESS OTHERWISE SPECIFIED
ALL DIMENSIONS INCLUDE FINISHES AND ARE IN INCHES

TOLERANCES: FRACTIONS ± 1/16"
ANGLES ± 1/2 DEG.
DECIMALS ± .010"

MATERIAL:

TOLERANCES DO NOT APPLY TO RAW MATERIAL

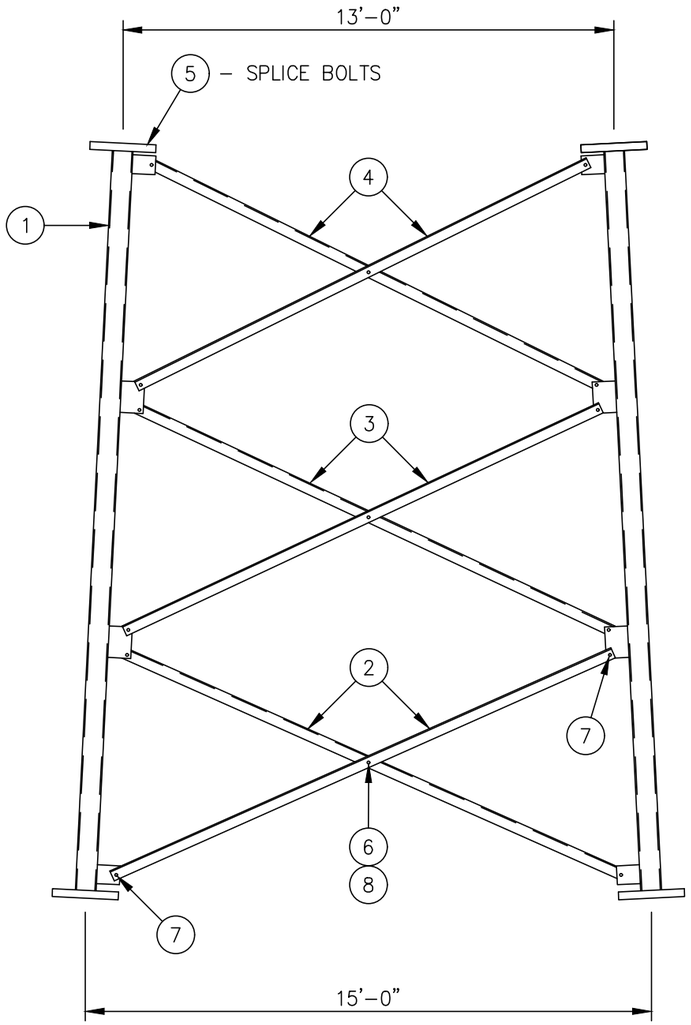
REV	DATE	DRW	CHK	DESCRIPTION

Sabre Industries™
INNOVATION DELIVERED

CONFIDENTIAL
This document and the information contained herein is the confidential trade secret property of Sabre Industries, Inc. ("Sabre") and must not be reproduced, copied or used, in whole or in part, for any purpose without the prior written consent of Sabre.
© 2025 Sabre Industries, Inc. All rights reserved.

SECTION ERECTION: 12 12–T8101797
SITE: CROOKED FINGER, OR
CUSTOMER: MARION COUNTY OREGON

JOB NO. 563429		SIZE	DRAWING NO.	REV
DATE	07/31/25	B	563429–S12	0
DRAWN BY	KMP			
CHECKED BY	ZAK		SCALE NONE	PAGE 1 OF 1



ELEVATION VIEW

LIST OF MATERIAL

11-LEGS

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
1	3	11-T1169117	SECT. 11 LEG 8 5/8 ø X .500 X 20'-0 5/16	3504
			TOTAL WEIGHT LBS	3504

11-T8101372 BRACING KIT

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
2	6	TS08563	ANGLE, DIAGONAL 4 X 3 1/2 X 3/8 X 14'-7 7/8	832
3	6	TS08562	ANGLE, DIAGONAL 4 X 3 1/2 X 3/8 X 14'-0 13/16	799
4	6	TS08561	ANGLE, DIAGONAL 4 X 3 1/2 X 3/8 X 13'-5 13/16	766
			TOTAL WEIGHT LBS	2397

SPLICE BOLTS

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
5	19	C40026093	BOLT ASSEMBLY, 1 1/4 ø X 5 A325	65
			TOTAL WEIGHT LBS	65

TK00430 HARDWARE KIT

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
6	10	C40026073	BOLT ASSEMBLY, 1 ø X 3 A325	18
7	38	C40026071	BOLT ASSEMBLY, 1 ø X 2 1/2 A325	62
8	10	C40047007	RINGFILL, 3/8 THICK - 1 ø BOLT	1
			TOTAL WEIGHT LBS	81

TOTAL SECTION WEIGHT - INCLUDES 3 LEGS, BRACING AND HARDWARE KIT	6047

FIELD NOTES

1. THE PART NUMBERS FOR ALL LEGS ARE LOCATED AT THE TOP OF EACH PART.
2. STEP BOLTS PROVIDED FOR (3) LEGS.

UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS INCLUDE FINISHES AND ARE IN INCHES

TOLERANCES: FRACTIONS ± 1/16" ANGLES ± 1/2 DEG. DECIMALS ± .010"

MATERIAL:

TOLERANCES DO NOT APPLY TO RAW MATERIAL

REV	DATE	DRW	CHK	DESCRIPTION

Sabre Industries™ INNOVATION DELIVERED

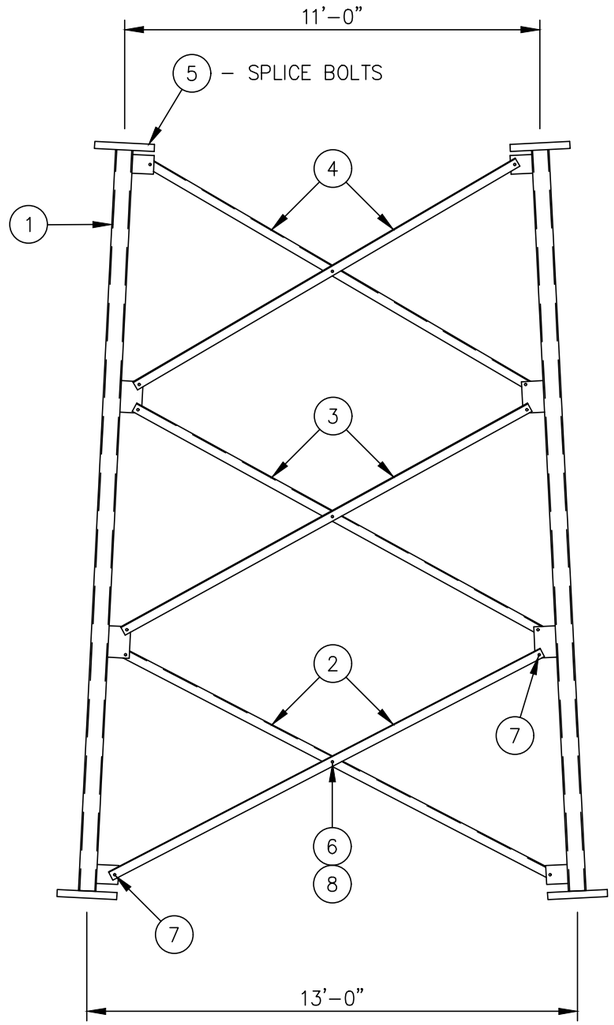
CONFIDENTIAL
This document and the information contained herein is the confidential trade secret property of Sabre Industries, Inc. ("Sabre") and must not be reproduced, copied or used, in whole or in part, for any purpose without the prior written consent of Sabre.
© 2025 Sabre Industries, Inc. All rights reserved.

SECTION ERECTION: 11 11-T8101372

SITE: CROOKED FINGER, OR

CUSTOMER: MARION COUNTY OREGON

JOB NO. 563429		SIZE	DRAWING NO.	REV
DATE	07/31/25	B	563429-S11	0
DRAWN BY	KMP			
CHECKED BY	ZAK		SCALE None	PAGE 1 OF 1



ELEVATION VIEW

LIST OF MATERIAL

10–LEGS

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
1	3	10–T1169819	SECT. 10 LEG 8 5/8ø X .322 X 20'–0 5/16 W/STEP BOLTS	2270
			TOTAL WEIGHT LBS	2270

10–T8100820 BRACING KIT

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
2	6	TS05779	ANGLE, DIAGONAL 4 X 4 X 5/16 X 12'–10 3/8	658
3	6	TS05780	ANGLE, DIAGONAL 4 X 4 X 5/16 X 12'–3 1/2	629
4	6	TS05781	ANGLE, DIAGONAL 4 X 4 X 5/16 X 11'–8 3/4	600
			TOTAL WEIGHT LBS	1887

SPLICE BOLTS

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
5	19	C40026094	BOLT ASSEMBLY, 1 1/4 ø X 5 1/2 A325	69
			TOTAL WEIGHT LBS	69

TK00437 HARDWARE KIT

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
6	10	C40026072	BOLT ASSEMBLY, 1 ø X 2 3/4 A325	17
7	37	C40026071	BOLT ASSEMBLY, 1 ø X 2 1/2 A325	61
8	10	C40047010	RINGFILL, 1/2 THICK – 1 ø BOLT	1
			TOTAL WEIGHT LBS	79

TOTAL SECTION WEIGHT – INCLUDES (3) LEGS, BRACING AND HARDWARE KIT	4305

FIELD NOTES

1. THE PART NUMBERS FOR ALL LEGS AND DIAGONALS ARE LOCATED AT THE TOP OF EACH PART.
2. STEP BOLTS PROVIDED FOR (3) LEGS.

UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS INCLUDE FINISHES AND ARE IN INCHES

TOLERANCES: FRACTIONS ± 1/16" ANGLES ± 1/2 DEG. DECIMALS ± .010"

MATERIAL:

TOLERANCES DO NOT APPLY TO RAW MATERIAL

REV	DATE	DRW	CHK	DESCRIPTION

Sabre Industries™ INNOVATION DELIVERED

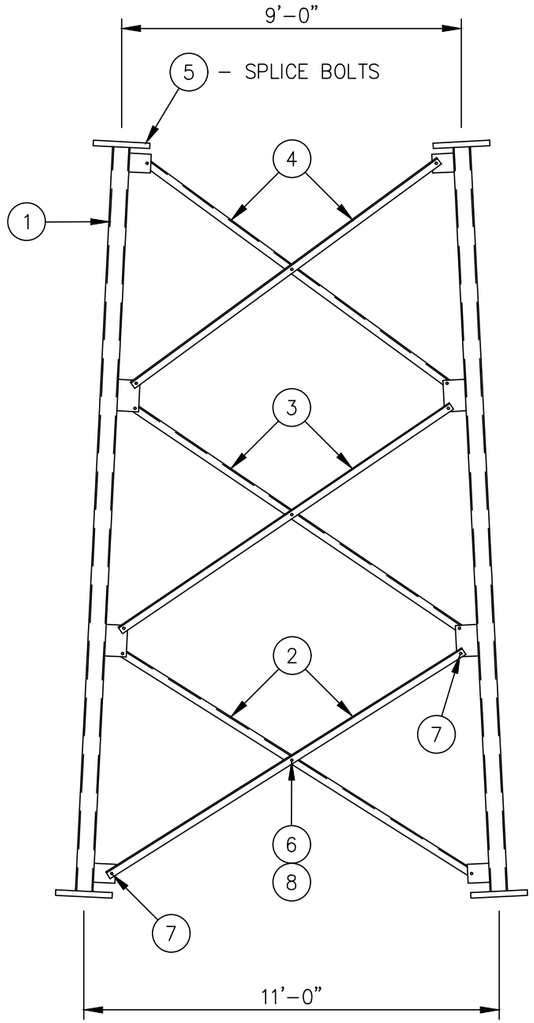
CONFIDENTIAL
This document and the information contained herein is the confidential trade secret property of Sabre Industries, Inc. ("Sabre") and must not be reproduced, copied or used, in whole or in part, for any purpose without the prior written consent of Sabre.
© 2025 Sabre Industries, Inc. All rights reserved.

SECTION ERECTION: 10 10–T8100820

SITE: CROOKED FINGER, OR

CUSTOMER: MARION COUNTY OREGON

JOB NO. 563429		SIZE	DRAWING NO.	REV
DATE	07/31/25	B	563429–S10	0
DRAWN BY	KMP			
CHECKED BY	ZAK		SCALE None	PAGE 1 OF 1



ELEVATION VIEW

LIST OF MATERIAL

09–LEGS

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
1	3	09–T1169975	SECT. 9 LEG 5 9/16ø X .375 X 20'–0 5/16 W/STEP BOLTS	1758
			TOTAL WEIGHT LBS	1758

09–T8100384 BRACING KIT

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
2	6	TS03786	ANGLE, DIAGONAL 3 1/2 X 3 X 3/8 X 11'–5 3/8	564
3	6	TS03787	ANGLE, DIAGONAL 3 1/2 X 3 X 3/8 X 10'–10 13/16	537
4	6	TS03788	ANGLE, DIAGONAL 3 1/2 X 3 X 3/8 X 10'–4 7/16	511
			TOTAL WEIGHT LBS	1612

SPLICE BOLTS

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
5	19	C40026078	BOLT ASSEMBLY, 1 ø X 4 1/4 A325	41
			TOTAL WEIGHT LBS	41

TK00269 HARDWARE KIT

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
6	10	C40026045	BOLT ASSEMBLY, 3/4 ø X 2 1/2 A325	8
7	38	C40026044	BOLT ASSEMBLY, 3/4 ø X 2 1/4 A325	28
8	10	C40047004	RINGFILL, 3/8 THICK – 3/4 ø BOLT	1
			TOTAL WEIGHT LBS	37

TOTAL SECTION WEIGHT – INCLUDES 3 LEGS, BRACING AND HARDWARE KIT	3448

FIELD NOTES

1. THE PART NUMBERS FOR ALL LEGS ARE LOCATED AT THE TOP OF EACH PART.
2. STEP BOLTS PROVIDED FOR (3) LEG ONLY.

UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS INCLUDE FINISHES AND ARE IN INCHES

TOLERANCES: FRACTIONS ± 1/16" ANGLES ± 1/2 DEG. DECIMALS ± .010"

MATERIAL:

TOLERANCES DO NOT APPLY TO RAW MATERIAL

REV	DATE	DRW	CHK	DESCRIPTION

Sabre Industries™ INNOVATION DELIVERED

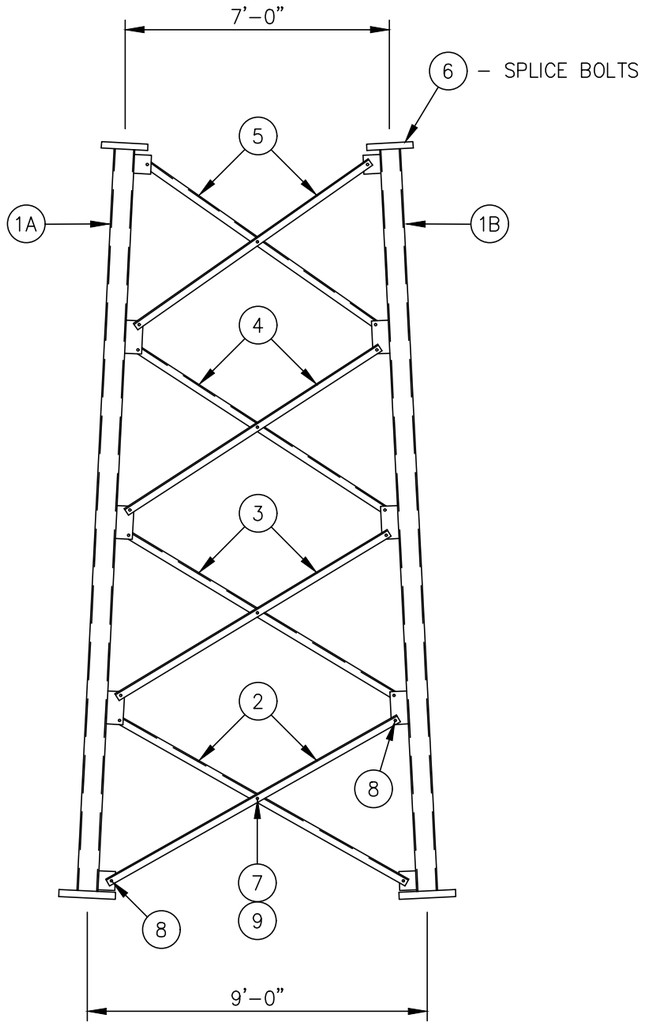
CONFIDENTIAL
This document and the information contained herein is the confidential trade secret property of Sabre Industries, Inc. ("Sabre") and must not be reproduced, copied or used, in whole or in part, for any purpose without the prior written consent of Sabre.
© 2025 Sabre Industries, Inc. All rights reserved.

SECTION ERECTION: 09 09–T8100384

SITE: CROOKED FINGER, OR

CUSTOMER: MARION COUNTY OREGON

JOB NO. 563429		SIZE	DRAWING NO.	REV
DATE	07/31/25	B	563429–S09	0
DRAWN BY	KMP			
CHECKED BY	ZAK		SCALE NONE	PAGE 1 OF 1



ELEVATION VIEW

LIST OF MATERIAL

08–LEGS

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
1A	1	08–T1168025	SECT.8 LEG 4 ø X .318 X 20'–0 5/16 W/ STEP BOLTS	373
1B	2	08–T1168026	SECT.8 LEG 4 ø X .318 X 20'–0 5/16	735
			TOTAL WEIGHT LBS	1108

08–T8100421 BRACING KIT

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
2	6	TS04017	ANGLE, DIAGONAL 2 1/2 X 2 1/2 X 3/8 X 9'–1 13/16	337
3	6	TS04018	ANGLE, DIAGONAL 2 1/2 X 2 1/2 X 3/8 X 8'–8 11/16	322
4	6	TS04019	ANGLE, DIAGONAL 2 1/2 X 2 1/2 X 3/8 X 8'–3 5/8	306
5	6	TS04020	ANGLE, DIAGONAL 2 1/2 X 2 1/2 X 3/8 X 7'–10 11/16	291
			TOTAL WEIGHT LBS	1256

SPLICE BOLTS

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
6	19	C40026078	BOLT ASSEMBLY, 1 ø X 4 1/4 A325	41
			TOTAL WEIGHT LBS	41

TK00348 HARDWARE KIT

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
7	13	C40026045	BOLT ASSEMBLY, 3/4 ø X 2 1/2 A325	10
8	50	C40026044	BOLT ASSEMBLY, 3/4 ø X 2 1/4 A325	37
9	13	C40047004	RINGFILL, 3/8 THICK – 3/4 ø BOLT	2
			TOTAL WEIGHT LBS	49

TOTAL SECTION WEIGHT – INCLUDES 3 LEGS, BRACING AND HARDWARE KIT	2454

FIELD NOTES

1. THE PART NUMBERS FOR ALL LEGS ARE LOCATED AT THE TOP OF EACH PART.
2. STEP BOLTS PROVIDED FOR (1) LEG ONLY.

UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS INCLUDE FINISHES AND ARE IN INCHES

TOLERANCES: FRACTIONS ± 1/16" ANGLES ± 1/2 DEG. DECIMALS ± .010"

MATERIAL:

TOLERANCES DO NOT APPLY TO RAW MATERIAL

REV	DATE	DRW	CHK	DESCRIPTION

Sabre Industries™ INNOVATION DELIVERED

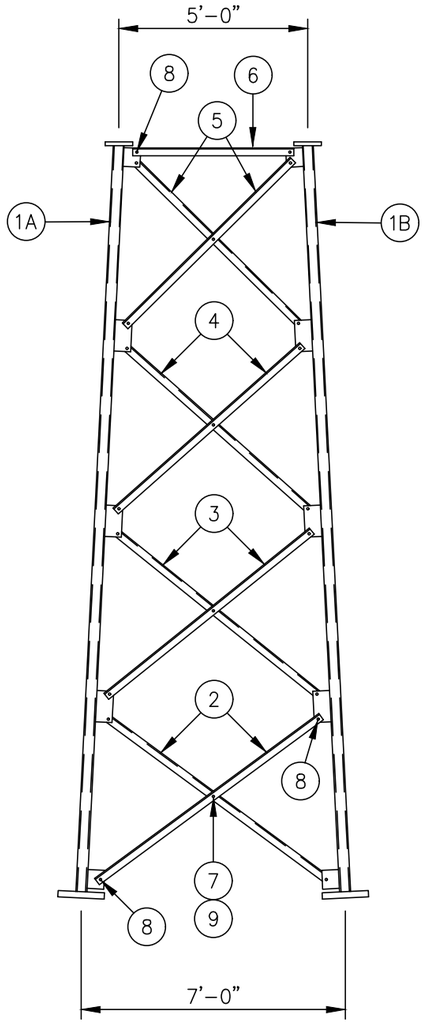
CONFIDENTIAL
This document and the information contained herein is the confidential trade secret property of Sabre Industries, Inc. ("Sabre") and must not be reproduced, copied or used, in whole or in part, for any purpose without the prior written consent of Sabre.
© 2025 Sabre Industries, Inc. All rights reserved.

SECTION ERECTION: 08 08–T8100421

SITE: CROOKED FINGER, OR

CUSTOMER: MARION COUNTY OREGON

JOB NO. 563429		SIZE	DRAWING NO.	REV
DATE	07/31/25	B	563429–S08	0
DRAWN BY	KMP			
CHECKED BY	ZAK		SCALE NONE	PAGE 1 OF 1



ELEVATION VIEW

LIST OF MATERIAL

07-LEGS

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
1A	1	07-T1165503	SECT. 7 LEG 2 7/8ø X .203 X 20'-0 5/16 W/STEP BOLTS	219
1B	2	07-T1165504	SECT. 7 LEG 2 7/8ø X .203 X 20'-0 5/16	428
			TOTAL WEIGHT LBS	647

07-T8100168 BRACING KIT

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
2	6	TS02040	ANGLE, DIAGONAL 2 X 2 X 5/16 X 7'-5 1/2	182
3	6	TS02039	ANGLE, DIAGONAL 2 X 2 X 5/16 X 7'-0 13/16	173
4	6	TS02038	ANGLE, DIAGONAL 2 X 2 X 5/16 X 6'-8 5/16	163
5	6	TS02037	ANGLE, DIAGONAL 2 X 2 X 5/16 X 6'-3 15/16	155
6	3	TS02036	ANGLE, HORIZONTAL 2 X 2 X 5/16 X 4'-4 3/8	53
			TOTAL WEIGHT LBS	726

TK00146 HARDWARE KIT

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
7	13	C40026024	BOLT ASSEMBLY, 5/8 ø X 2 1/4 A325	7
8	57	C40026023	BOLT ASSEMBLY, 5/8 ø X 2 A325	26
9	13	C40047003	RINGFILL, 3/8 THICK - 5/8 ø BOLT	2
			TOTAL WEIGHT LBS	35

TOTAL SECTION WEIGHT - INCLUDES 3 LEGS, BRACING AND HARDWARE KIT	1408

FIELD NOTES

1. THE PART NUMBERS FOR ALL LEGS ARE LOCATED AT THE TOP OF EACH PART.
2. STEP BOLTS PROVIDED FOR (1) LEG ONLY.

UNLESS OTHERWISE SPECIFIED
ALL DIMENSIONS INCLUDE
FINISHES AND ARE IN INCHES

TOLERANCES: FRACTIONS ± 1/16"
ANGLES ± 1/2 DEG.
DECIMALS ± .010"

MATERIAL:

TOLERANCES DO NOT APPLY TO RAW MATERIAL

REV	DATE	DRW	CHK	DESCRIPTION

Sabre Industries™
INNOVATION DELIVERED

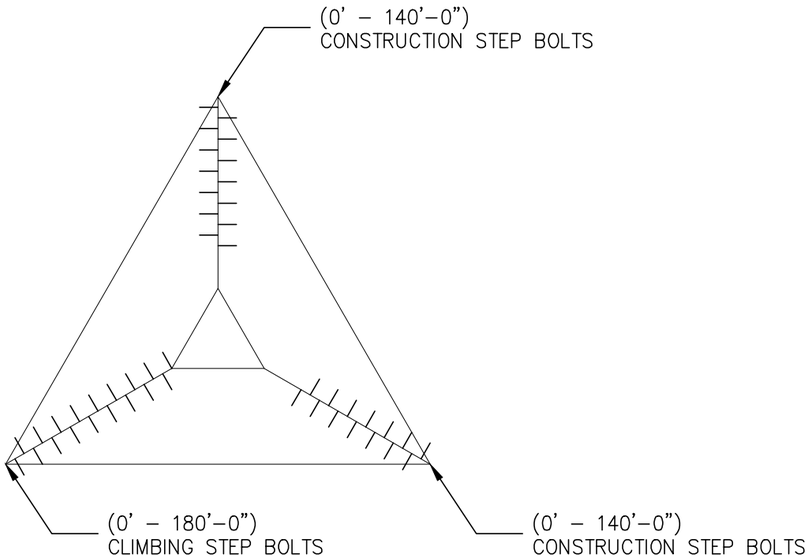
CONFIDENTIAL
This document and the information contained herein is the confidential trade secret property of Sabre Industries, Inc. ("Sabre") and must not be reproduced, copied or used, in whole or in part, for any purpose without the prior written consent of Sabre.
© 2025 Sabre Industries, Inc. All rights reserved.

SECTION ERECTION: 07 07-T8100168
SITE: CROOKED FINGER, OR
CUSTOMER: MARION COUNTY OREGON

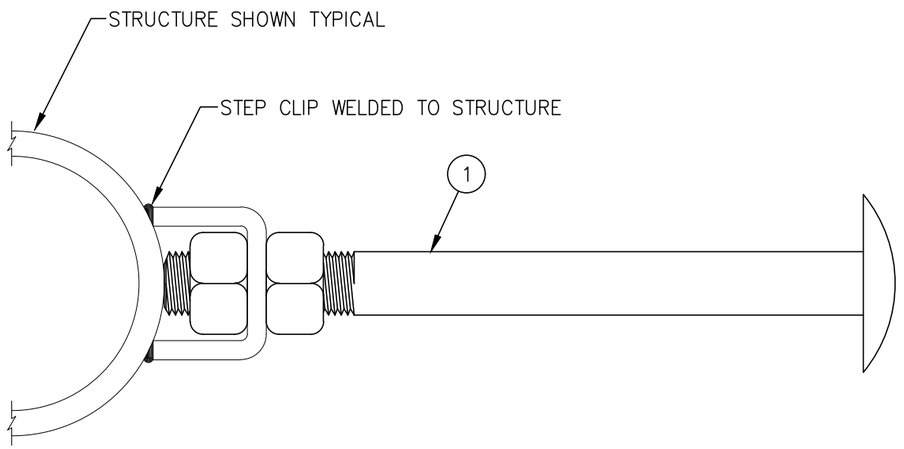
JOB NO. 563429		SIZE	DRAWING NO.	REV
DATE	07/31/25	B	563429-S07	0
DRAWN BY	KMP			
CHECKED BY	ZAK		SCALE NONE	PAGE 1 OF 1

FIELD NOTE:
SEE CUSTOMER REQUESTS FOR PROPER LEG POSITIONING OF ALL STEP BOLTS.

CLIMBING/CONSTRUCTION STEP BOLTS				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
1	368	C40044017	STEP BOLT ASSEMBLY, 5/8 ø X 7 H.D.G.	368
			TOTAL WEIGHT LBS	368



TOWER PLAN VIEW



NOTE:
STEP BOLTS PROVIDED FOR CONSTRUCTION PURPOSES ARE FOR EXPERIENCED TOWER ERECTORS ONLY AND SHOULD NEVER BE USED WITHOUT PROPER SAFETY EQUIPMENT. FOR STEP BOLTS SUPPLIED AS A FORM OF CLIMBING IN TYPICAL COMMUNICATION ACTIVITY, SABRE INDUSTRIES RECOMMENDS A FALL PROTECTION PLAN BE COMPLETED BY A COMPETENT PERSON AND FOLLOWED FOR EACH CLIMB.

UNLESS OTHERWISE SPECIFIED
ALL DIMENSIONS INCLUDE FINISHES AND ARE IN INCHES
TOLERANCES: FRACTIONS ± 1/16"
ANGLES ± 1/2 DEG.
DECIMALS ± .010"

MATERIAL:
TOLERANCES DO NOT APPLY TO RAW MATERIAL

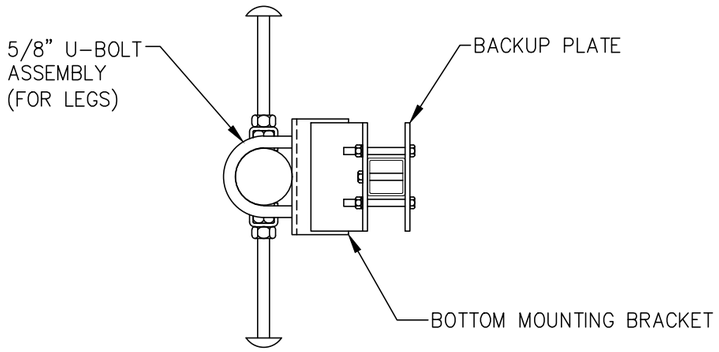
REV	DATE	DRW	CHK	DESCRIPTION

Sabre Industries™
INNOVATION DELIVERED

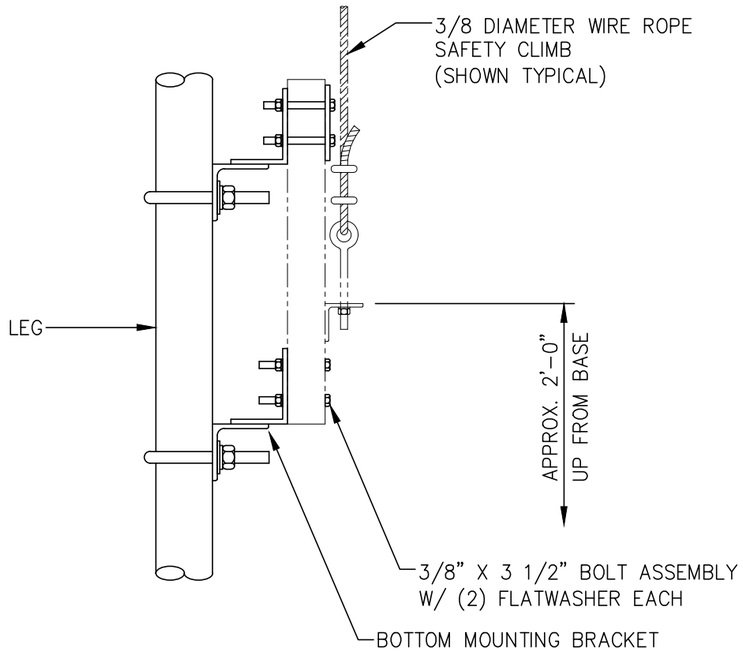
CONFIDENTIAL
This document and the information contained herein is the confidential trade secret property of Sabre Industries, Inc. ("Sabre") and must not be reproduced, copied or used, in whole or in part, for any purpose without the prior written consent of Sabre.
© 2025 Sabre Industries, Inc. All rights reserved.

STEP BOLT ATTACHMENT INSTALLATION:
SITE: CROOKED FINGER, OR
CUSTOMER: MARION COUNTY OREGON

JOB NO. 563429		SIZE	DRAWING NO.	REV
DATE	08/07/25	B	563429–SB1	0
DRAWN BY	KMP			
CHECKED BY	ZAK		SCALE NONE	PAGE 1 OF 1



PLAN



ELEVATION

EACH KIT CONSISTS OF:

(2) BOTTOM MOUNTING BRACKET
(1) BACKUP PLATE
(2) 5/8" U-BOLT ASSEMBLY FOR MOUNTING TO LEG
(6) 3/8"ø X 3 1/2" BOLT ASSEMBLY
(12) 3/8"ø FLATWASHER

BOTTOM MOUNTING BRACKET KITS

KIT NUMBER	LEG DIAMETER	5/8" U-BOLT ASSEMBLY	3/8" BOLT ASSEMBLY	3/8"ø FLATWASHER	BOTTOM MOUNTING BRACKET	BACKUP PLATE	KIT WEIGHT
C30011054	1 1/4"	C40034041	C40024012	C40031001	CW00346	CS00167	16.2#
C30011055	1 1/2"	C40034020	C40024012	C40031001	CW00346	CS00167	16.4#
C30011056	1 3/4"	C40034021	C40024012	C40031001	CW00346	CS00167	16.5#
C30011031	2"	C40034022	C40024012	C40031001	CW00049	CS00167	17.0#
C30011032	2 1/4" OR 2 3/8"	C40034023	C40024012	C40031001	CW00049	CS00167	17.1#
C30011033	2 1/2"	C40034024	C40024012	C40031001	CW00049	CS00167	17.2#
C30011034	2 3/4" OR 2 7/8"	C40034025	C40024012	C40031001	CW00049	CS00167	17.3#
C30011035	3"	C40034026	C40024012	C40031001	CW00049	CS00167	17.4#
C30011036	3 1/4"	C40034027	C40024012	C40031001	CW00050	CS00167	18.5#
C30011037	3 1/2"	C40034028	C40024012	C40031001	CW00050	CS00167	18.6#
C30011038	3 3/4"	C40034029	C40024012	C40031001	CW00050	CS00167	18.8#
C30011039	4"	C40034030	C40024012	C40031001	CW00050	CS00167	18.9#
C30011040	4 1/4"	C40034031	C40024012	C40031001	CW00050	CS00167	19.0#
C30011041	4 1/2"	C40034032	C40024012	C40031001	CW00051	CS00167	20.3#
C30011042	4 3/4"	C40034033	C40024012	C40031001	CW00051	CS00167	20.4#
C30011043	5"	C40034034	C40024012	C40031001	CW00051	CS00167	20.5#
C30011044	5 1/4" – 5 9/16"	C40034035	C40024012	C40031001	CW00052	CS00167	21.9#
C30011057	5 3/4"	C40034044	C40024012	C40031001	CW00052	CS00167	22.0#
C30011058	6"	C40034064	C40024012	C40031001	CW00052	CS00167	22.0#
C30011053	6 1/4"	C40034068	C40024012	C40031001	CW00052	CS00167	22.1#
C30011045	6 5/8"	C40034036	C40024012	C40031001	CW00052	CS00167	22.3#
C30011059	6 3/4"	C40034093	C40024012	C40031001	CW00204	CS00167	23.2#
C30011050	7 OR 7 1/4"	C40034065	C40024012	C40031001	CW00204	CS00167	25.0#
C30011060	7 1/2"	C40034127	C40024012	C40031001	CW00204	CS00167	23.7#
C30011104	7 3/4"	C40034099	C40024012	C40031001	CW00204	CS00167	23.8#
C30011046	8 5/8"	C40034037	C40024012	C40031001	CW00053	CS00167	33.0#
C30011062	8 3/4"	C40034152	C40024012	C40031001	CW01346	CS00167	30.9#
C30011063	9"	C40034200	C40024012	C40031001	CW01362	CS00167	31.5#
C30011061	9 1/2" OR 9 5/8"	C40034130	C40024012	C40031001	CW01242	CS00167	29.3#
C30011047	10 3/4"	C40034038	C40024012	C40031001	CW00054	CS00167	35.4#
C30011048	12 3/4"	C40034039	C40024012	C40031001	CW00053	CS00167	34.9#
C30011049	14"	C40034040	C40024012	C40031001	CW00054	CS00167	36.9#
C30011051	16"	C40034042	C40024012	C40031001	CW00208	CS00167	42.6#
C30011052	18"	C40034043	C40024012	C40031001	CW00208	CS00167	43.5#

REV	DATE	DRW	CHK	DESCRIPTION
14	10/13/17	RWM	MWR	REVISED 3/8 DIAMETER WIRE ROPE VERBIAGE
13	8/14/17	DPJ	ZAK	ADDED KIT FOR 9" O.D. LEG.
12	4/24/17	DPJ	ZAK	ADDED KIT FOR 8 3/4" O.D. LEG.
11	9/30/14	DPJ	ZAK	ADDED KIT FOR 9 1/2" & 9 5/8" O.D. LEGS.
10	5/22/14	KLE	EK	ADDED KIT FOR 7 1/2" O.D. LEG.
9	10/10/11	DPJ	CE	ADDED KIT FOR 7 3/4" O.D. LEG.
8	7/26/11	DPJ	CHH	ADDED KIT FOR 6 3/4" O.D. LEG.
7	5/29/08	DPJ	ZAK	ADDED KIT FOR 6" O.D. LEG.
6	4/29/08	LRS	CE	ADDED KIT FOR 5 3/4" O.D. LEG.
5	3/03/08	LRS	ZAK	ADDED KIT FOR 6 1/4" O.D. LEG
4	1/10/08	LRS	CE	CHANGED LEG DIAMETER FOR C30011044 KIT (WAS 5 1/2" OR 5 9/16")
3	12/27/04	DLW	DEL	ADDED KITS FOR 1 1/4" TO 1 3/4" O.D. LEGS.
2	3/3/04	KLE	DLW	ADDED KITS FOR 16" O.D. & 18" O.D. LEGS.
1	2/19/04	KLE	DLW	ADDED C30011050 & ADDED LEADING ZERO.

UNLESS OTHERWISE SPECIFIED
ALL DIMENSIONS INCLUDE FINISHES AND ARE IN INCHES
TOLERANCES: FRACTIONS ± 1/16"
ANGLES ± 1/2 DEG.
DECIMALS ± .010"

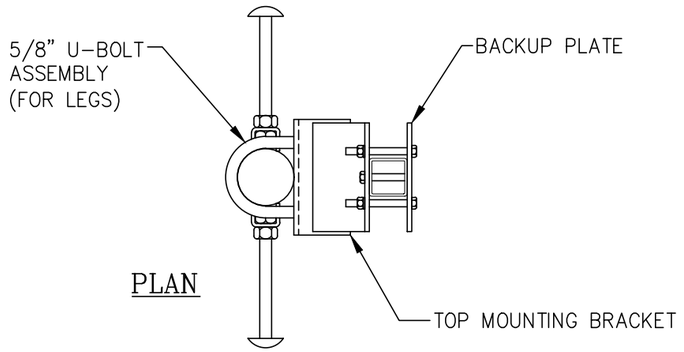
MATERIAL:
TOLERANCES DO NOT APPLY TO RAW MATERIAL

Sabre Industries™
INNOVATION DELIVERED

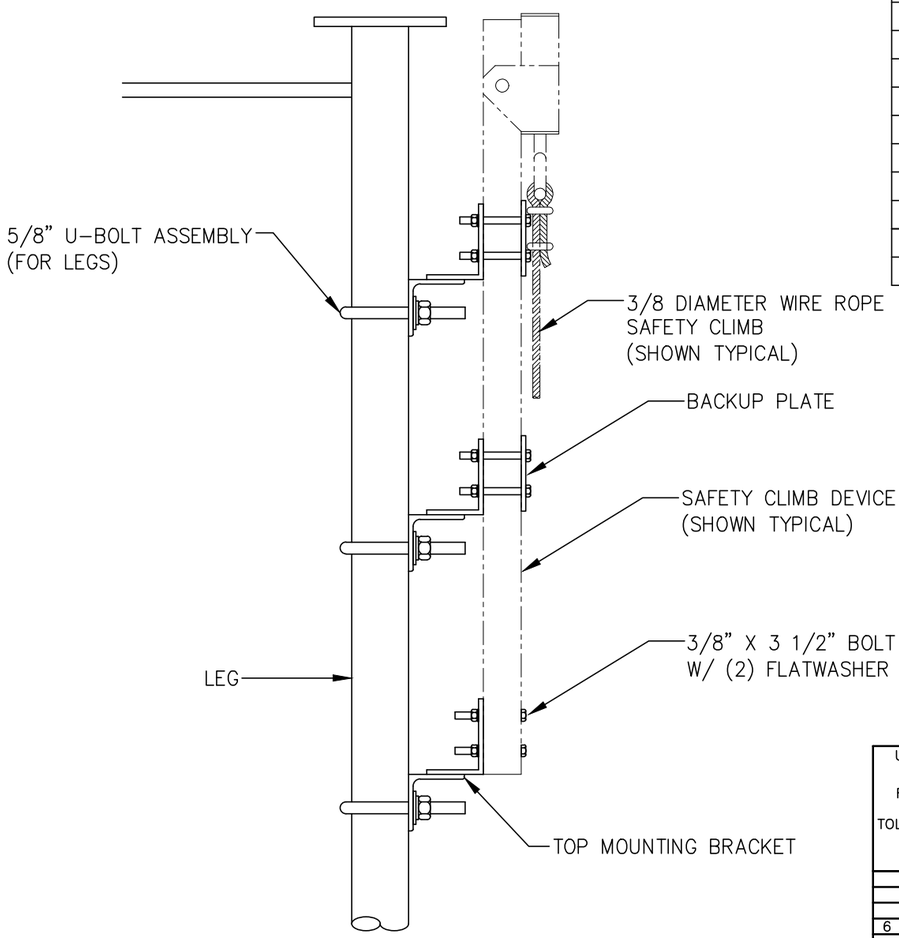
CONFIDENTIAL
This document and the information contained herein is the confidential trade secret property of Sabre Industries, Inc. ("Sabre") and must not be reproduced, copied or used, in whole or in part, for any purpose without the prior written consent of Sabre.
© 2022 Sabre Industries, Inc. All rights reserved.

3/8 DIAMETER WIRE ROPE SAFETY CLIMB BOTTOM MOUNTING BRACKET

		SIZE	DRAWING NO.	REV
DATE	4/11/02	B	C30011-1	14
DRAWN BY	KLE			
CHECKED BY	DLW	SCALE None	PAGE 1 OF 1	



PLAN



ELEVATION

TOP MOUNTING BRACKET KITS

KIT NUMBER	LEG DIAMETER	5/8" U-BOLT ASSEMBLY	3/8" BOLT ASSEMBLY	3/8"ø FLATWASHER	TOP MOUNTING BRACKET	BACKUP PLATE	KIT WEIGHT
C30011017	1 1/4"	C40034041	C40024012	C40031001	CW00346	CS00167	25.3#
C30011018	1 1/2"	C40034020	C40024012	C40031001	CW00346	CS00167	25.6#
C30011019	1 3/4"	C40034021	C40024012	C40031001	CW00346	CS00167	25.8#
C30011001	2"	C40034022	C40024012	C40031001	CW00049	CS00167	26.5#
C30011002	2 1/4" OR 2 3/8"	C40034023	C40024012	C40031001	CW00049	CS00167	26.8#
C30011003	2 1/2"	C40034024	C40024012	C40031001	CW00049	CS00167	26.9#
C30011004	2 3/4" OR 2 7/8"	C40034025	C40024012	C40031001	CW00049	CS00167	27.1#
C30011005	3"	C40034026	C40024012	C40031001	CW00049	CS00167	27.2#
C30011006	3 1/4"	C40034027	C40024012	C40031001	CW00050	CS00167	28.9#
C30011007	3 1/2"	C40034028	C40024012	C40031001	CW00050	CS00167	29.1#
C30011008	3 3/4"	C40034029	C40024012	C40031001	CW00050	CS00167	29.2#
C30011009	4"	C40034030	C40024012	C40031001	CW00050	CS00167	29.4#
C30011010	4 1/4"	C40034031	C40024012	C40031001	CW00050	CS00167	29.6#
C30011011	4 1/2"	C40034032	C40024012	C40031001	CW00051	CS00167	31.6#
C30011012	4 3/4"	C40034033	C40024012	C40031001	CW00051	CS00167	31.8#
C30011013	5"	C40034034	C40024012	C40031001	CW00051	CS00167	31.9#
C30011014	5 1/2" OR 5 9/16"	C40034035	C40024012	C40031001	CW00052	CS00167	34.0#
C30011015	6 5/8"	C40034036	C40024012	C40031001	CW00052	CS00167	34.6#
C30011020	8 5/8"	C40034037	C40024012	C40031001	CW00053	CS00167	50.5#
C30011021	12 3/4"	C40034039	C40024012	C40031001	CW00053	CS00167	53.4#

NOTES:

1. MOUNTING BRACKET SHOULD BE INSTALLED IN A MANNER THAT WILL ENSURE THE WIRE ROPE WILL NOT BE DAMAGED.
2. IF THERE IS A MOUNT AT THE TOP OF THE TOWER THAT WOULD INTERFERE WITH THE BRACKET OR SAFETY CLIMB, THE TOP MOUNTING BRACKET SHOULD BE INSTALLED JUST BELOW THE MOUNT.

EACH KIT CONSISTS OF

(3) TOP MOUNTING BRACKET
(2) BACKUP PLATE
(3) 5/8" U-BOLT ASSEMBLY FOR MOUNTING TO LEG
(10) 3/8"ø X 3 1/2" BOLT ASSEMBLY
(20) 3/8"ø FLATWASHER

UNLESS OTHERWISE SPECIFIED
ALL DIMENSIONS INCLUDE FINISHES AND ARE IN INCHES
TOLERANCES: FRACTIONS ± 1/16"
ANGLES ± 1/2 DEG.
DECIMALS ± .010"

MATERIAL:
TOLERANCES DO NOT APPLY TO RAW MATERIAL

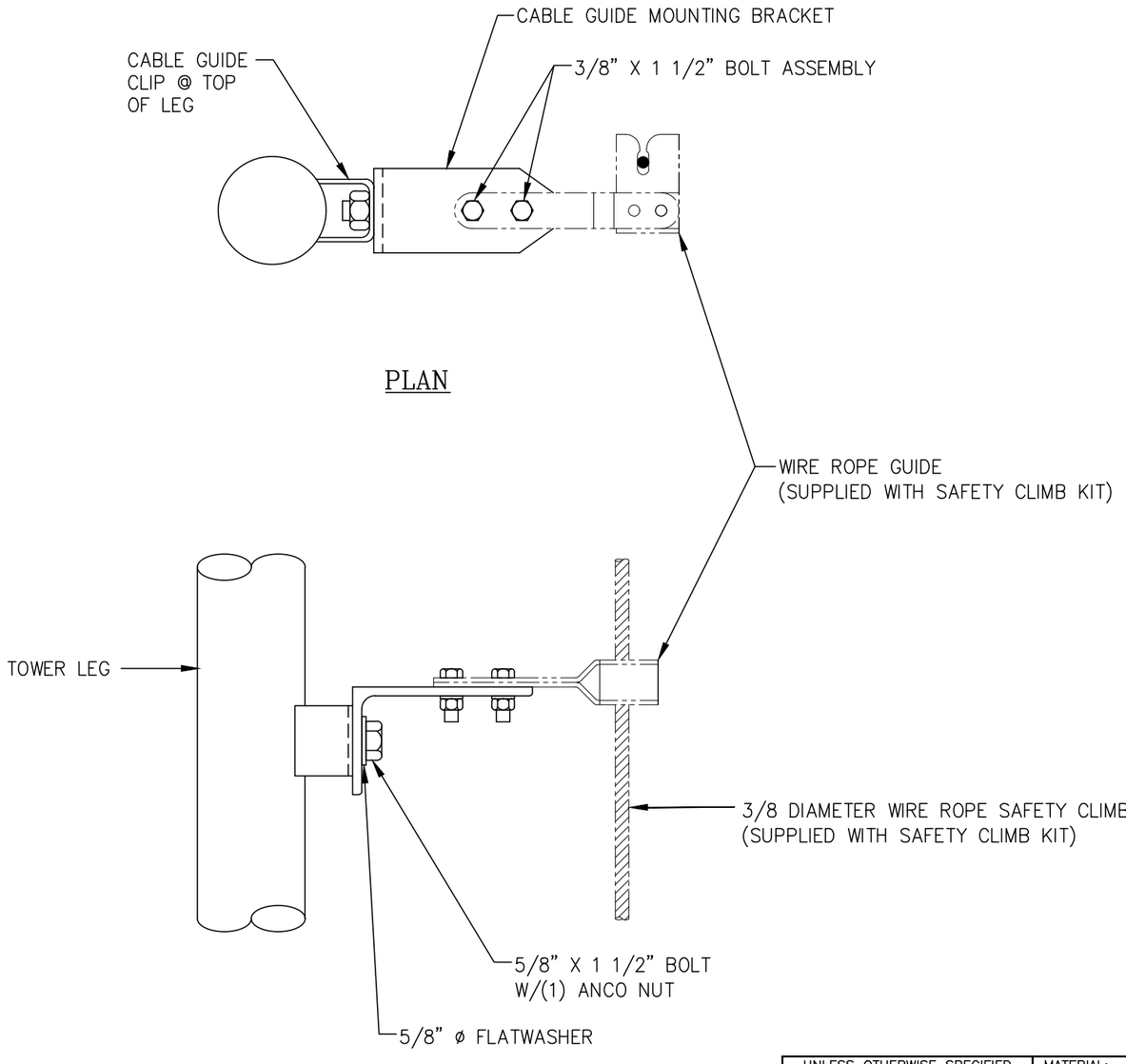
REV	DATE	DRW	CHK	DESCRIPTION
6	10/13/17	RWM	MWR	REVISED 3/8 DIAMETER WIRE ROPE VERBIAGE AND REVISED/ADDED NOTES.
5	7/2/10	CHH	HHC	ADDED KIT FOR 12 3/4" O.D. LEG.
4	11/2/09	DPJ	ZAK	ADDED KIT FOR 8 5/8" O.D. LEG.
3	12/27/04	DLW	DEL	ADDED KITS FOR 1 1/4" TO 1 3/4" O.D. LEGS
2	3/4/04	KLE	KLE	REMOVED DASHES
1	2/19/04	KLE	DLW	ADDED LEADING ZERO

Sabre Industries™
INNOVATION DELIVERED

CONFIDENTIAL
This document and the information contained herein is the confidential trade secret property of Sabre Industries, Inc. ("Sabre") and must not be reproduced, copied or used, in whole or in part, for any purpose without the prior written consent of Sabre.
© 2022 Sabre Industries, Inc. All rights reserved.

3/8 DIAMETER WIRE ROPE SAFETY CLIMB TOP MOUNTING BRACKET

		SIZE	DRAWING NO.	REV
DATE	4/12/02	B	C30011-2	6
DRAWN BY	KLE			
CHECKED BY	DLW	SCALE None	PAGE 1 OF 1	



C30003001 SAFETY CLIMB CABLE GUIDE MOUNTING BRACKET				
ITEM	QTY.	PART. NO.	DESCRIPTION	WEIGHT
1	1	CS00795	ANGLE, SAFETY CLIMB CABLE GUIDE SUPPORT	1.4#
2	1	C40126021	BOLT, 5/8 X 1 1/2 A325	0.3#
3	1	C40028003	NUT, ANCO 5/8" ø	0.1#
4	1	C40031003	FLATWASHER, 5/8" ø	0.1#
5	2	C40024004	BOLT ASSEMBLY, 3/8 X 1 1/2 GR. 5	0.2#
			TOTAL WEIGHT	2.1#

EACH KIT CONSISTS OF

(1) CABLE GUIDE MOUNTING BRACKET
(1) 5/8" X 1 1/2" BOLT FOR MOUNTING TO LEG
(1) 5/8" ANCO NUT FOR 5/8" BOLT
(1) 5/8" FLATWASHER
(2) 3/8"ø X 1 1/2" BOLT ASSEMBLY

UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS INCLUDE FINISHES AND ARE IN INCHES

TOLERANCES: FRACTIONS ± 1/16" ANGLES ± 1/2 DEG. DECIMALS ± .010"

MATERIAL:

TOLERANCES DO NOT APPLY TO RAW MATERIAL

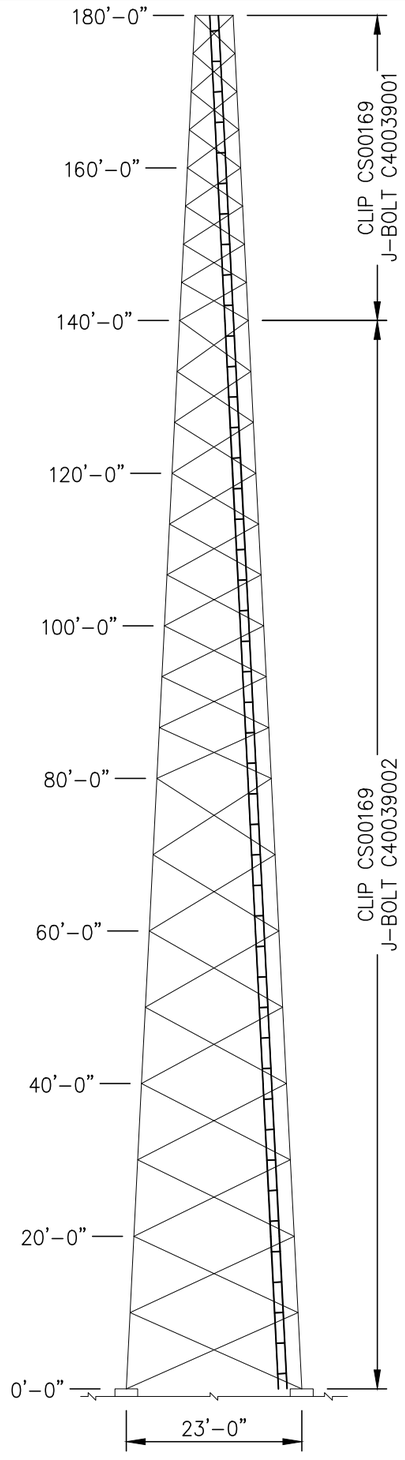
REV	DATE	DRW	CHK	DESCRIPTION
4	10/13/17	RWM	MWR	REVISED 3/8 DIAMETER WIRE ROPE VERBIAGE
3	10/6/11	CHH	RWM	REVISED MOUNTING BOLT WAS C40126019 & ADDED FLATWASHER C40031003
2	4/12/06	CHH	HHC	CHANGED PART NO. ITEM 2 (WAS C40998050).
1	2/17/06	MJM	ZAK	CORRECTED ITEM 3 PART NO. (WAS C40028004).

Sabre Industries™ INNOVATION DELIVERED

CONFIDENTIAL
This document and the information contained herein is the confidential trade secret property of Sabre Industries, Inc. ("Sabre") and must not be reproduced, copied or used, in whole or in part, for any purpose without the prior written consent of Sabre.
© 2022 Sabre Industries, Inc. All rights reserved.

3/8 DIAMETER WIRE ROPE SAFETY CLIMB CABLE GUIDE MOUNTING BRACKET

		SIZE	DRAWING NO.	REV
DATE	8/4/04	B	C30003001	4
DRAWN BY	CHH			
CHECKED BY	ZAK	SCALE None	PAGE 1 OF 1	



ELEVATION VIEW

WAVEGUIDE LADDER				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
1	18	CS00146	ANGLE, WAVEGUIDE LADDER RAIL 20 FT. W/4 FT. RUNG SPC	540
2	45	CS01619	ANGLE, WAVEGUIDE SUPPORT (6 HOLE)	95
3	16	CS00037	PLATE, LADDER SPLICE	6
4	42	CS00169	CLIP, LADDER ATTACHMENT	23
			TOTAL WEIGHT LBS	664

LADDER HARDWARE				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
5	34	C40039002	J–BOLT ASSEMBLY, 3/8 ø X 7 1/4 I.L.	12
6	8	C40039001	J–BOLT ASSEMBLY, 3/8 ø X 5 3/4 I.L.	2
7	122	C40024004	BOLT ASSEMBLY, 3/8 ø X 1 1/2 GRD 5	12
			TOTAL WEIGHT LBS	26

FIELD NOTES

1. FROM ELEVATION 0'–0" TO 140'–0" ATTACH WAVEGUIDE LADDER TO EACH TOWER DIAGONAL.
   FROM ELEVATION 140'–0" TO 180'–0" ATTACH WAVEGUIDE LADDER TO EVERY OTHER TOWER DIAGONAL.
2. SEE REFERENCE DWG. 9031861 FOR WAVEGUIDE LADDER INSTALLATION AND ATTACHMENT DETAIL.
3. SEE CUSTOMER REQUESTS FOR PROPER FACE POSITIONING OF ALL LADDERS.
4. WAVEGUIDE LADDERS SHOULD NEVER BE USED AS A CLIMBING OR RIGGING DEVICE.

UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS INCLUDE FINISHES AND ARE IN INCHES

TOLERANCES: FRACTIONS ± 1/16" ANGLES ± 1/2 DEG. DECIMALS ± .010"

MATERIAL:

TOLERANCES DO NOT APPLY TO RAW MATERIAL

REV	DATE	DRW	CHK	DESCRIPTION

Sabre Industries™ INNOVATION DELIVERED

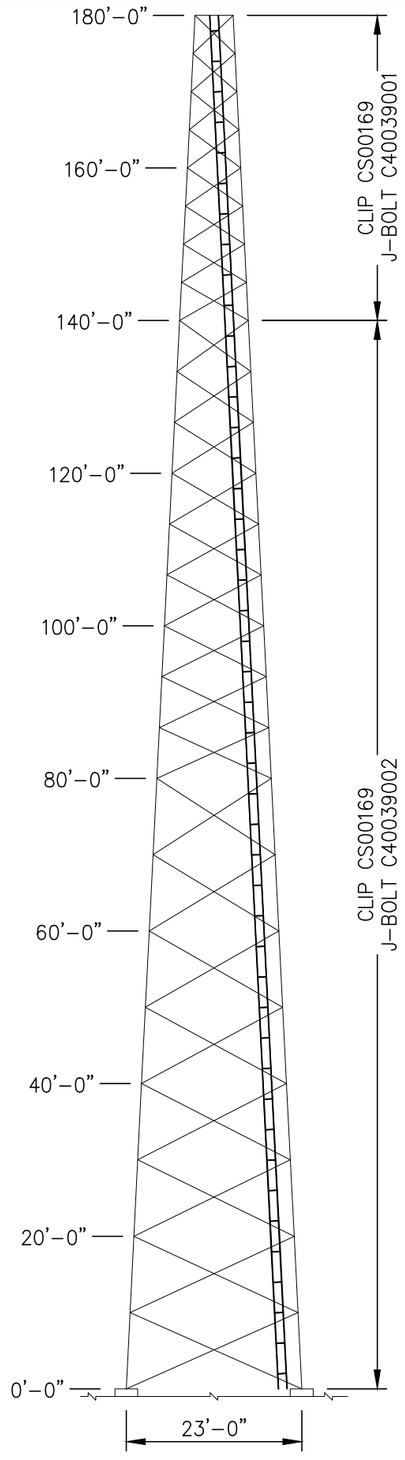
CONFIDENTIAL
This document and the information contained herein is the confidential trade secret property of Sabre Industries, Inc. ("Sabre") and must not be reproduced, copied or used, in whole or in part, for any purpose without the prior written consent of Sabre.
© 2025 Sabre Industries, Inc. All rights reserved.

W/G LADDER: 180 FT. MODEL S3TL–HD2

SITE: CROOKED FINGER, OR

CUSTOMER: MARION COUNTY OREGON

JOB NO. 563429		SIZE	DRAWING NO.	REV
DATE	8/7/25	B	563429–WG1	0
DRAWN BY	KMP			
CHECKED BY	ZAK		SCALE NONE	PAGE 1 OF 1



ELEVATION VIEW

WAVEGUIDE LADDER				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
1	18	CS00146	ANGLE, WAVEGUIDE LADDER RAIL 20 FT. W/4 FT. RUNG SPC	540
2	45	CS01619	ANGLE, WAVEGUIDE SUPPORT (6 HOLE)	95
3	16	CS00037	PLATE, LADDER SPLICE	6
4	42	CS00169	CLIP, LADDER ATTACHMENT	23
			TOTAL WEIGHT LBS	664

LADDER HARDWARE				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
5	34	C40039002	J–BOLT ASSEMBLY, 3/8 ø X 7 1/4 I.L.	12
6	8	C40039001	J–BOLT ASSEMBLY, 3/8 ø X 5 3/4 I.L.	2
7	122	C40024004	BOLT ASSEMBLY, 3/8 ø X 1 1/2 GRD 5	12
			TOTAL WEIGHT LBS	26

FIELD NOTES

1. FROM ELEVATION 0'–0" TO 140'–0" ATTACH WAVEGUIDE LADDER TO EACH TOWER DIAGONAL.
   FROM ELEVATION 140'–0" TO 180'–0" ATTACH WAVEGUIDE LADDER TO EVERY OTHER TOWER DIAGONAL.
2. SEE REFERENCE DWG. 9031861 FOR WAVEGUIDE LADDER INSTALLATION AND ATTACHMENT DETAIL.
3. SEE CUSTOMER REQUESTS FOR PROPER FACE POSITIONING OF ALL LADDERS.
4. WAVEGUIDE LADDERS SHOULD NEVER BE USED AS A CLIMBING OR RIGGING DEVICE.

UNLESS OTHERWISE SPECIFIED
ALL DIMENSIONS INCLUDE
FINISHES AND ARE IN INCHES

TOLERANCES: FRACTIONS ± 1/16"
ANGLES ± 1/2 DEG.
DECIMALS ± .010"

MATERIAL:

TOLERANCES DO NOT APPLY
TO RAW MATERIAL

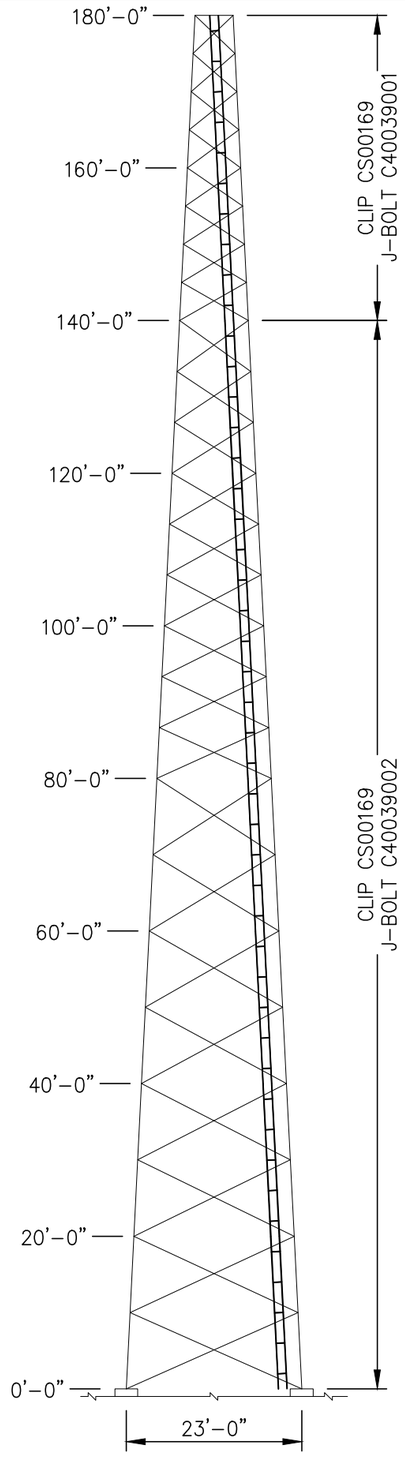
REV	DATE	DRW	CHK	DESCRIPTION

Sabre Industries™
INNOVATION DELIVERED

CONFIDENTIAL
This document and the information contained herein is the confidential trade secret property of Sabre Industries, Inc. ("Sabre") and must not be reproduced, copied or used, in whole or in part, for any purpose without the prior written consent of Sabre.
© 2025 Sabre Industries, Inc. All rights reserved.

W/G LADDER: 180 FT. MODEL S3TL–HD2
SITE: CROOKED FINGER, OR
CUSTOMER: MARION COUNTY OREGON

JOB NO. 563429		SIZE	DRAWING NO.	REV
DATE	8/7/25	B	563429–WG2	0
DRAWN BY	KMP			
CHECKED BY	ZAK		SCALE NONE	PAGE 1 OF 1



ELEVATION VIEW

WAVEGUIDE LADDER				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
1	18	CS00146	ANGLE, WAVEGUIDE LADDER RAIL 20 FT. W/4 FT. RUNG SPC	540
2	45	CS01619	ANGLE, WAVEGUIDE SUPPORT (6 HOLE)	95
3	16	CS00037	PLATE, LADDER SPLICE	6
4	42	CS00169	CLIP, LADDER ATTACHMENT	23
			TOTAL WEIGHT LBS	664

LADDER HARDWARE				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
5	34	C40039002	J–BOLT ASSEMBLY, 3/8 ø X 7 1/4 I.L.	12
6	8	C40039001	J–BOLT ASSEMBLY, 3/8 ø X 5 3/4 I.L.	2
7	122	C40024004	BOLT ASSEMBLY, 3/8 ø X 1 1/2 GRD 5	12
			TOTAL WEIGHT LBS	26

FIELD NOTES

1. FROM ELEVATION 0'–0" TO 140'–0" ATTACH WAVEGUIDE LADDER TO EACH TOWER DIAGONAL.
   FROM ELEVATION 140'–0" TO 180'–0" ATTACH WAVEGUIDE LADDER TO EVERY OTHER TOWER DIAGONAL.
2. SEE REFERENCE DWG. 9031861 FOR WAVEGUIDE LADDER INSTALLATION AND ATTACHMENT DETAIL.
3. SEE CUSTOMER REQUESTS FOR PROPER FACE POSITIONING OF ALL LADDERS.
4. WAVEGUIDE LADDERS SHOULD NEVER BE USED AS A CLIMBING OR RIGGING DEVICE.

UNLESS OTHERWISE SPECIFIED
ALL DIMENSIONS INCLUDE
FINISHES AND ARE IN INCHES

TOLERANCES: FRACTIONS ± 1/16"
ANGLES ± 1/2 DEG.
DECIMALS ± .010"

MATERIAL:

TOLERANCES DO NOT APPLY
TO RAW MATERIAL

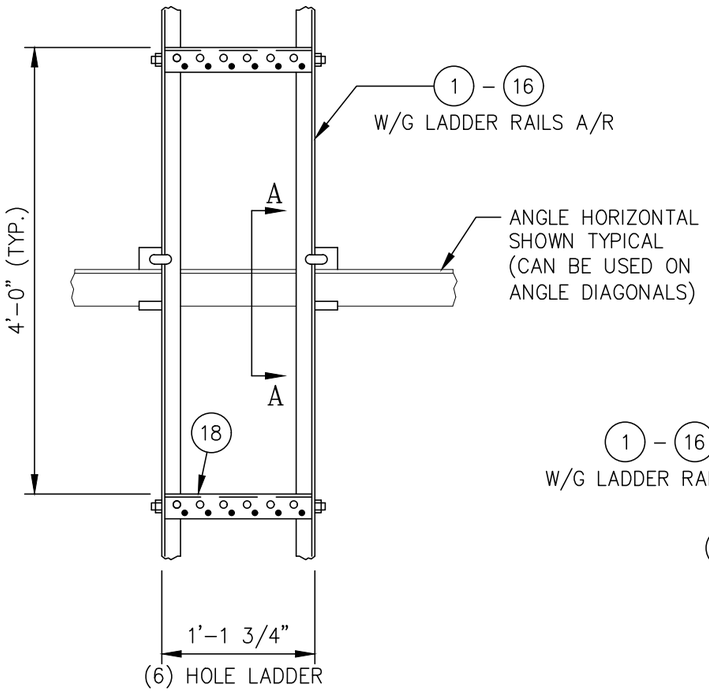
REV	DATE	DRW	CHK	DESCRIPTION

Sabre Industries™
INNOVATION DELIVERED

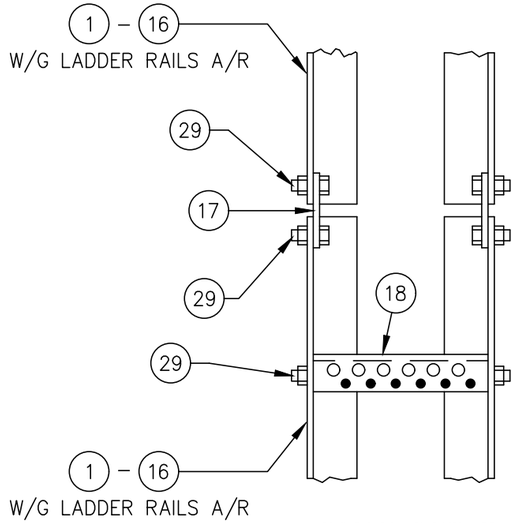
CONFIDENTIAL
This document and the information contained herein is the confidential trade secret property of Sabre Industries, Inc. ("Sabre") and must not be reproduced, copied or used, in whole or in part, for any purpose without the prior written consent of Sabre.
© 2025 Sabre Industries, Inc. All rights reserved.

W/G LADDER: 180 FT. MODEL S3TL–HD2
SITE: CROOKED FINGER, OR
CUSTOMER: MARION COUNTY OREGON

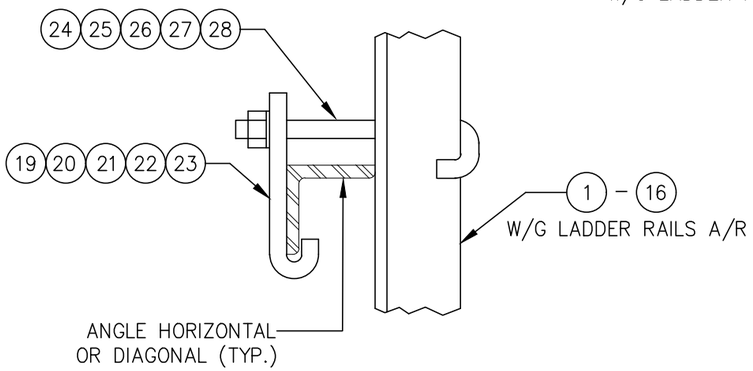
JOB NO. 563429		SIZE	DRAWING NO.	REV
DATE	8/7/25	B	563429–WG3	0
DRAWN BY	KMP			
CHECKED BY	ZAK		SCALE NONE	PAGE 1 OF 1



ELEVATION
(TYPICAL MOUNTING DETAIL)



SPLICE DETAIL



SECTION A–A

LIST OF MATERIAL

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
1	A/R	CS00146	ANGLE, WAVEGUIDE LADDER RAIL 20 FT.	
2	A/R	CS03607	ANGLE, WAVEGUIDE LADDER RAIL 19 FT.	
3	A/R	CS03608	ANGLE, WAVEGUIDE LADDER RAIL 18 FT.	
4	A/R	CS03402	ANGLE, WAVEGUIDE LADDER RAIL 17 FT.	
5	A/R	CS03609	ANGLE, WAVEGUIDE LADDER RAIL 16 FT.	
6	A/R	CS00147	ANGLE, WAVEGUIDE LADDER RAIL 15 FT.	
7	A/R	CS03621	ANGLE, WAVEGUIDE LADDER RAIL 14 FT.	
8	A/R	CS03610	ANGLE, WAVEGUIDE LADDER RAIL 13 FT.	
9	A/R	CS03611	ANGLE, WAVEGUIDE LADDER RAIL 12 FT.	
10	A/R	CS03612	ANGLE, WAVEGUIDE LADDER RAIL 11 FT.	
11	A/R	CS00148	ANGLE, WAVEGUIDE LADDER RAIL 10 FT.	
12	A/R	CS03613	ANGLE, WAVEGUIDE LADDER RAIL 9 FT.	
13	A/R	CS03444	ANGLE, WAVEGUIDE LADDER RAIL 8 FT.	
14	A/R	CS03614	ANGLE, WAVEGUIDE LADDER RAIL 7 FT.	
15	A/R	CS03615	ANGLE, WAVEGUIDE LADDER RAIL 6 FT.	
16	A/R	CS00149	ANGLE, WAVEGUIDE LADDER RAIL 5 FT.	
17	A/R	CS00037	PLATE, LADDER SPLICE	
18	A/R	CS01619	ANGLE WAVEGUIDE SUPPORT (6 HOLE)	
19	A/R	CS00169	CLIP, LADDER ATTACHMENT (1 1/2" – 4" ANGLES)	
20	A/R	CS00170	CLIP, LADDER ATTACHMENT (5" – 6" ANGLES: 3/8" THK. & UNDER)	
21	A/R	CS00171	CLIP, LADDER ATTACHMENT (1 1/2" – 6" ANGLES: 1/2" THK. & UNDER)	
22	A/R	CS00808	CLIP, LADDER ATTACHMENT (4" – 6" ANGLES: 1/2" TO 3/4" THK.)	
23	A/R	CS01212	CLIP, LADDER ATTACHMENT (8" ANGLES)	
24	A/R	C40039001	J–BOLT ASSY., 3/8 (1 1/2" – 2 1/2" ANGLES)	
25	A/R	C40039002	J–BOLT ASSY., 3/8 (3" – 4" ANGLES)	
26	A/R	C40039003	J–BOLT ASSY., 3/8 (5" – 6" ANGLES)	
27	A/R	C40039009	J–BOLT ASSY., 3/8 (3" – 6" ANGLES, 1/2" & 3/4" THK)	
28	A/R	C40039012	J–BOLT ASSY., 3/8 (8" ANGLES, 1/2" & 3/4" THK)	
29	A/R	C40024004	BOLT ASSEMBLY, 3/8 X 1 1/2 GR5	

"SEE JOB SPECIFIC BILL OF MATERIAL FOR QTY'S."

NOTE:
MAXIMUM SPACING OF LADDER CLIPS UP THE TOWER TO BE ±10'–0.

UNLESS OTHERWISE SPECIFIED
ALL DIMENSIONS INCLUDE
FINISHES AND ARE IN INCHES
TOLERANCES: FRACTIONS ± 1/16"
ANGLES ± 1/2 DEG.
DECIMALS ± .010"

MATERIAL:
TOLERANCES DO NOT APPLY
TO RAW MATERIAL

REV	DATE	DRW	CHK	DESCRIPTION
1	08/22/23	FJM	DLW	REVISED ITEM 7 (WAS CS03404)

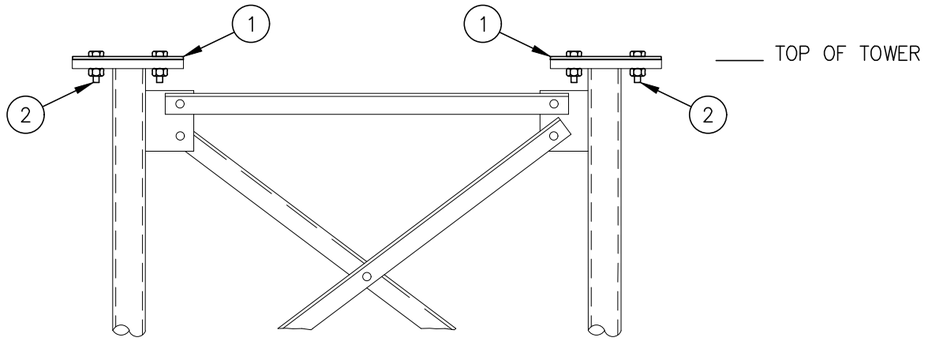
Sabre Industries™
INNOVATION DELIVERED

CONFIDENTIAL
This document and the information contained herein is the confidential trade secret property of Sabre Industries, Inc. ("Sabre") and must not be reproduced, copied or used, in whole or in part, for any purpose without the prior written consent of Sabre.
© 2021 Sabre Industries, Inc. All rights reserved.

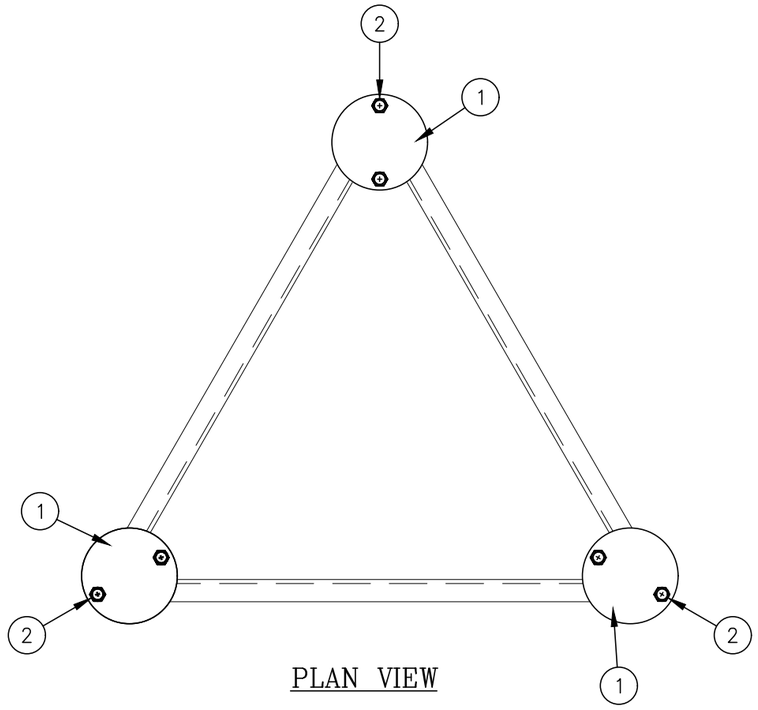
WAVEGUIDE LADDER INSTALLATION
6 HOLE RUNG – 7/16"ø & 3/4"ø
(CUSTOM LENGTH LADDER RAILS)

		SIZE	DRAWING NO.	REV
DATE	06/25/20	B	9031861	1
DRAWN BY	FJM			
CHECKED BY	DRL	SCALE None	PAGE 1 OF 1	

C30008022 LEG CAP KIT				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
1	3	CS01499	PLATE, LEG CAP (3/4" BOLTS ON A 6 1/2" B.C.)	6
2	6	C40026045	BOLT ASSEMBLY, 3/4 ø X 2 1/2 A325	5
			TOTAL WEIGHT LBS	11



ELEVATION VIEW



PLAN VIEW

UNLESS OTHERWISE SPECIFIED
ALL DIMENSIONS INCLUDE FINISHES AND ARE IN INCHES

TOLERANCES: FRACTIONS ± 1/16"
ANGLES ± 1/2 DEG.
DECIMALS ± .010"

MATERIAL:
FITS (6) 13/16"ø HOLES SPACED 60° APART ON A 6 1/2" BOLT CIRCLE

TOLERANCES DO NOT APPLY TO RAW MATERIAL

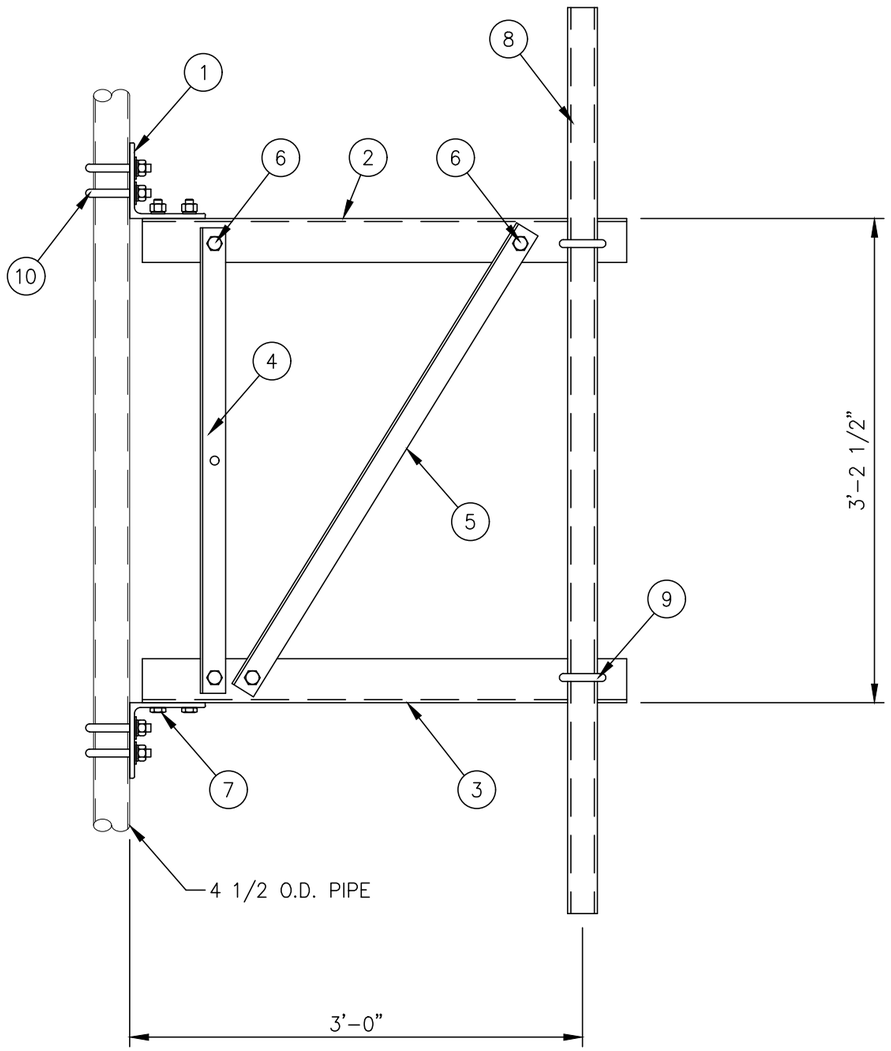
REV	DATE	DRW	CHK	DESCRIPTION

Sabre Industries™
INNOVATION DELIVERED

CONFIDENTIAL
This document and the information contained herein is the confidential trade secret property of Sabre Industries, Inc. ("Sabre") and must not be reproduced, copied or used, in whole or in part, for any purpose without the prior written consent of Sabre.
© 2021 Sabre Industries, Inc. All rights reserved.

LEG CAP INSTALLATION (S3TL–HD1) 3/4"ø BOLTS ON A 6 1/2" B.C. (1" SPLICE PLATE)

		SIZE	DRAWING NO.	REV
DATE	9/29/21	B	C30008022	0
DRAWN BY	MJM			
CHECKED BY	ZAK		SCALE None	PAGE 1 OF 1



C10151103 3 FT. SIDEARM ASSEMBLY			
1	CK00060	SIDEARM ANGLE KIT	78
1	– – –	MISC HARDWARE (FRAMING)	4
1	C10900105	PIPE ANTENNA MOUNTING KIT 2 3/8" ø X 5'-0	19
4	C40034032	U-BOLT ASSEMBLY 5/8" ø X 5 3/16 C-C	9
		TOTAL WEIGHT LBS	110

CK00060 KIT LIST OF MATERIAL				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
1	2	CS00067	ANGLE, BOOM SUPPORT	23
2	1	CS01223	ANGLE, TOP CHORD	19
3	1	CS01224	ANGLE, BOTTOM CHORD	19
4	1	CS00065	ANGLE, VERTICAL	8
5	1	CS01228	ANGLE, DIAGONAL	9
			TOTAL WEIGHT LBS	78

MISC HARDWARE (FRAMING)				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
6	4	C40026022	BOLT ASSEMBLY, 5/8 ø X 1 3/4 A325	2
7	4	C40026023	BOLT ASSEMBLY, 5/8 ø X 2 A325	2
			TOTAL WEIGHT LBS	4

C10900105 ANTENNA PIPE MOUNTING KIT				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
8	1	C10981223	ANTENNA MTG. PIPE 2 3/8" ø X 5'-0	16
9	2	C40034023	U-BOLT ASSEMBLY 5/8" ø X 3 1/16 C-C	3
			TOTAL WEIGHT LBS	19

MISC HARDWARE				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
10	4	C40034032	U-BOLT ASSEMBLY 5/8" ø X 5 3/16 C-C	9
			TOTAL WEIGHT LBS	9

NOTES:

1. IF THE MOUNT IS NOT ON THE STRAIGHT PORTION OF THE TOWER SEE SITE SPECIFIC PIPE MOUNT.
2. QUANTITIES SHOWN IN LIST OF MATERIALS ARE FOR ONE (1) SIDEARM ASSEMBLY ONLY.

UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS INCLUDE FINISHES AND ARE IN INCHES

TOLERANCES: FRACTIONS ± 1/16" ANGLES ± 1/2 DEG. DECIMALS ± .010"

MATERIAL:

TOLERANCES DO NOT APPLY TO RAW MATERIAL

REV	DATE	DRW	CHK	DESCRIPTION

Sabre Industries™ INNOVATION DELIVERED

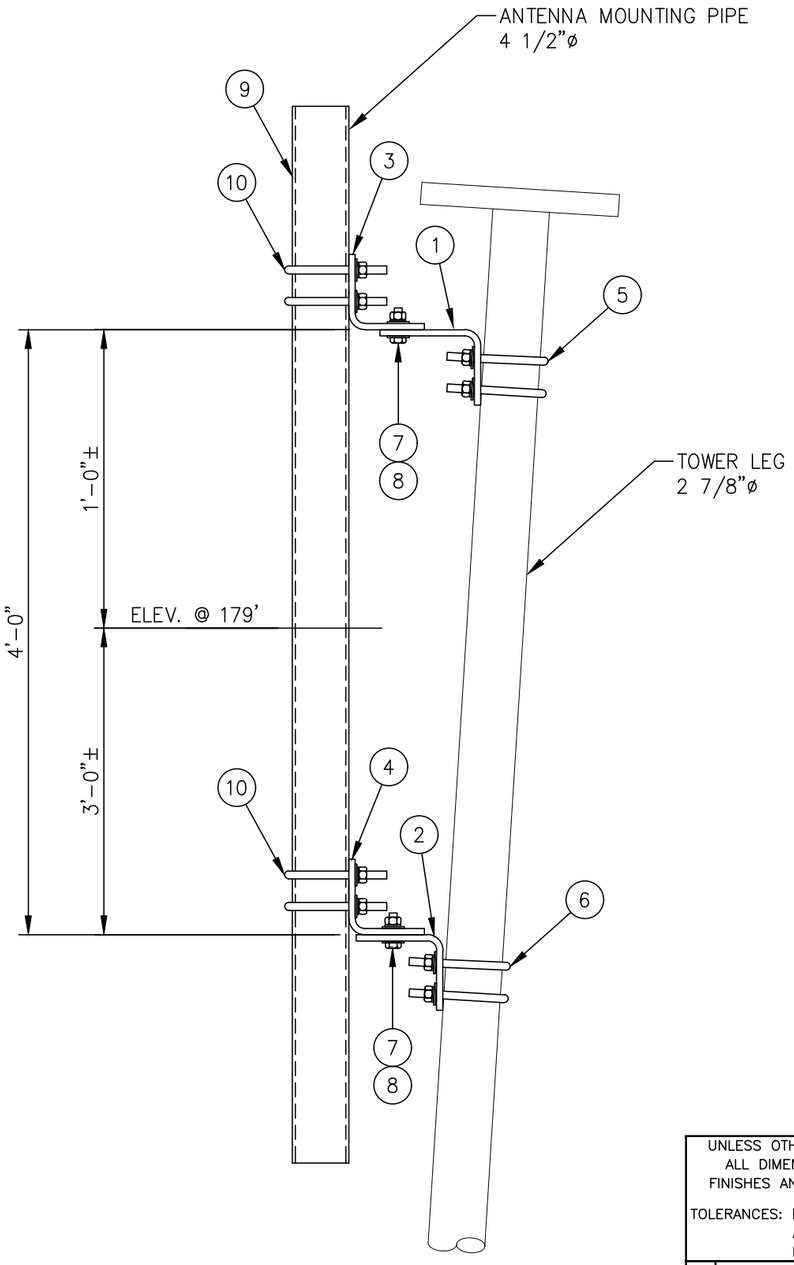
CONFIDENTIAL
This document and the information contained herein is the confidential trade secret property of Sabre Industries, Inc. ("Sabre") and must not be reproduced, copied or used, in whole or in part, for any purpose without the prior written consent of Sabre.
© 2025 Sabre Industries, Inc. All rights reserved.

3 FT. SIDEARM: 179' ELEVATION

SITE: CROOKED FINGER, OR

CUSTOMER: MARION COUNTY OREGON

JOB NO. 563429		SIZE	DRAWING NO.	REV
DATE	08/07/25	B	563429-SA1	0
DRAWN BY	KMP			
CHECKED BY	ZAK		SCALE NONE	PAGE 1 OF 1



ELEVATION VIEW

LIST OF MATERIALS FOR TAPERED LEG PIPE MOUNT KIT C10174018				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
1.	1	CS00216	TOP LEG MOUNT FOR 2 7/8 ø LEG	15
2.	1	CS00215	BOTTOM LEG MOUNT FOR 2 7/8 ø LEG	12
3.	1	CS00214	TOP PIPE MOUNT FOR 4 1/2 ø PIPE	15
4.	1	CS00215	BOTTOM PIPE MOUNT FOR 4 1/2 ø PIPE	12
5.	2	C40034025	U-BOLT ASSEMBLY 5/8 ø X 3 9/16 C-C (TOP LEG MOUNT)	4
6.	2	C40034025	U-BOLT ASSEMBLY 5/8 ø X 3 9/16 C-C (BOTTOM LEG MOUNT)	4
7.	4	C40026024	BOLT ASSEMBLY 5/8 ø X 2 1/4 A325	2
8.	8	C40031003	FLATWASHER, 5/8 ø (F436)	1
			KIT WEIGHT LBS	65

LIST OF ADDITIONAL MATERIALS				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
9.	1	C10981407	ANTENNA MTG. PIPE 4 1/2 ø X 7'-0	58
10.	4	C40034032	U-BOLT ASSEMBLY 5/8 ø X 5 3/16 C-C (PIPE MOUNTS)	9
			ADDITIONAL WEIGHT LBS	67

TOTAL WEIGHT LBS	132

UNLESS OTHERWISE SPECIFIED
ALL DIMENSIONS INCLUDE FINISHES AND ARE IN INCHES
TOLERANCES: FRACTIONS ± 1/16"
ANGLES ± 1/2 DEG.
DECIMALS ± .010"

MATERIAL:

TOLERANCES DO NOT APPLY TO RAW MATERIAL

REV	DATE	DRW	CHK	DESCRIPTION

Sabre Industries™
INNOVATION DELIVERED

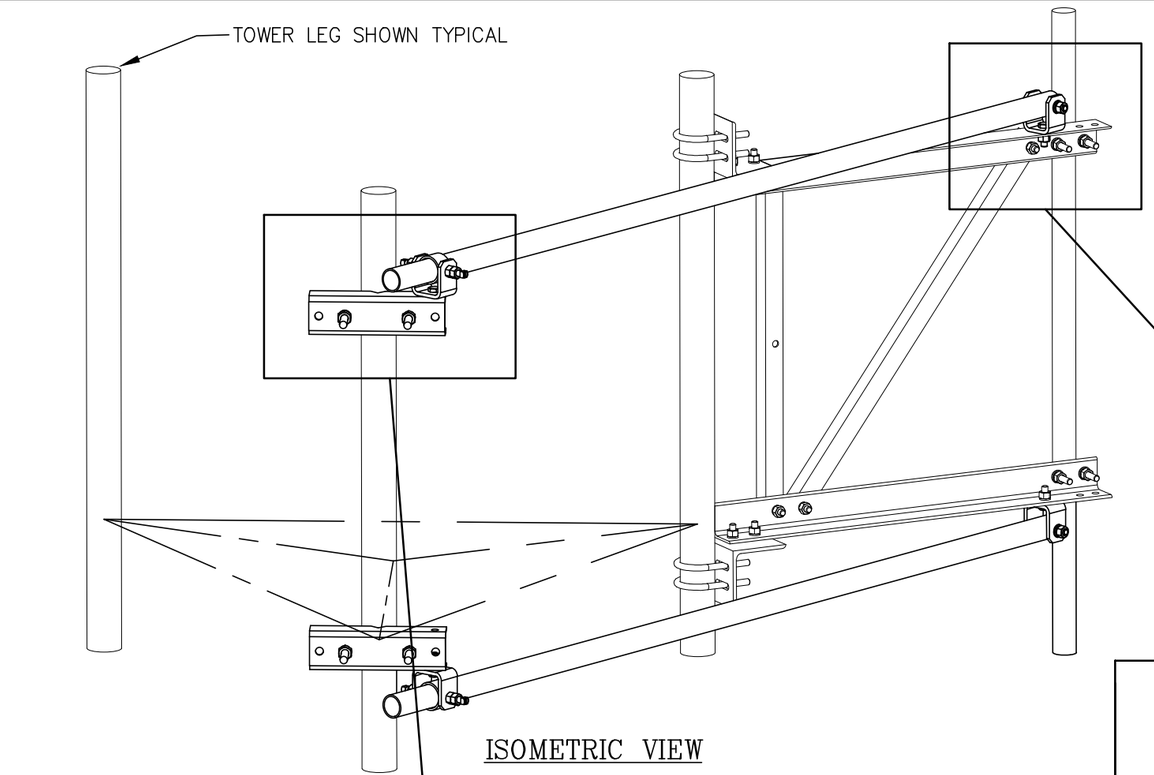
CONFIDENTIAL

This document and the information contained herein is the confidential trade secret property of Sabre Industries, Inc. ("Sabre") and must not be reproduced, copied or used, in whole or in part, for any purpose without the prior written consent of Sabre.
© 2025 Sabre Industries, Inc. All rights reserved.

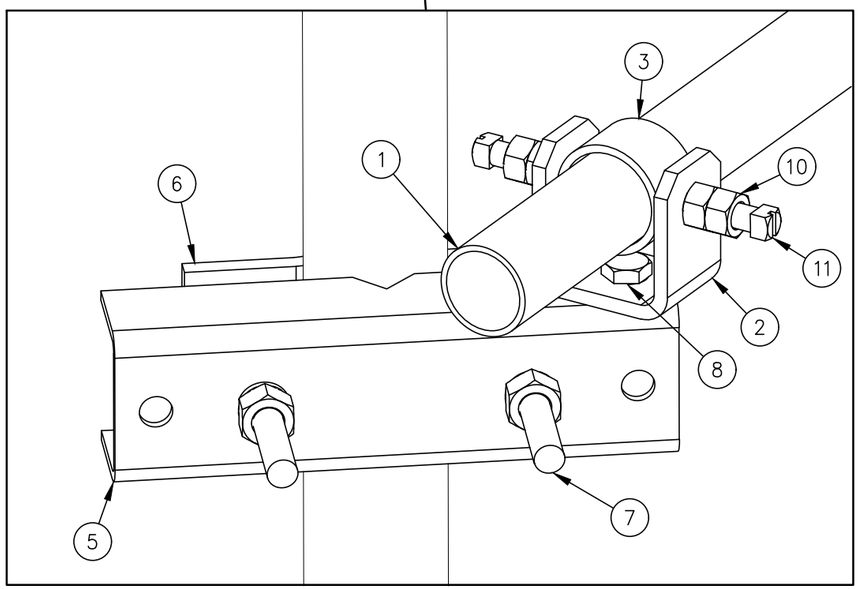
PIPE MOUNT FOR SIDEARM: 179' ELEVATION
SITE: CROOKED FINGER, OR
CUSTOMER: MARION COUNTY OREGON

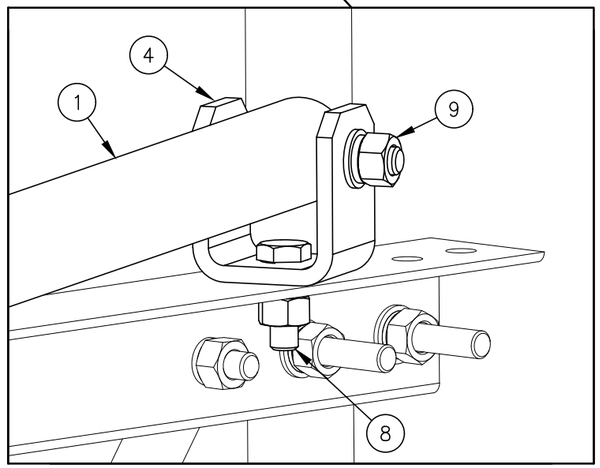
JOB NO. 563429		SIZE	DRAWING NO.		REV
DATE	8/7/25	B	563429-PM1		0
DRAWN BY	KMP				
CHECKED BY	ZAK			SCALE None	PAGE 1 OF 1

EXHIBIT K



ISOMETRIC VIEW





C10179001 SWIVEL KNUCKLE TIEBACK

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
1	1	CS00099	PIPE, 2 3/8" O.D. X 0.154 X 10'-0	38
2	1	CW00013	SWIVEL PLATE WELDMENT	3
3	1	CS00097	PIPE, SLEEVE 2 7/8 O.D. X W/0.203 X 0'-1 3/4	1
4	1	CS00098	BENT SWIVEL PLATE	3
5	1	CS01360	PLATE, MOUNTING BRACKET (FORMED CHANNEL)	9
6	1	CS01361	PLATE, 2 HOLE ADAPTER CLAMP	3
7	2	C40140001	BOLT ASSEMBLY, 3/4 X 10 A307 W/NUT, LKW, FLW	4
8	2	C40026023	BOLT ASSEMBLY, 5/8 ø X 2 A325	1
9	1	C40026033	BOLT ASSEMBLY, 5/8 ø X 4 1/2 A325	1
10	2	C40042007	HEX NUT, 5/8 A194 GRADE 2H	1
11	2	C40998007	SQ. HEAD SET SCREW, 5/8 X 2 1/2	1
			TOTAL WEIGHT LBS	65

QUANTITIES SHOWN ABOVE ARE FOR (1) SWIVEL KNUCKLE TIEBACK KIT ONLY.
(2) KITS ARE REQUIRED FOR THIS SIDEARM ASSEMBLY

UNLESS OTHERWISE SPECIFIED
ALL DIMENSIONS INCLUDE
FINISHES AND ARE IN INCHES

TOLERANCES: FRACTIONS ± 1/16"
ANGLES ± 1/2 DEG.
DECIMALS ± .010"

MATERIAL:

TOLERANCES DO NOT APPLY TO RAW MATERIAL

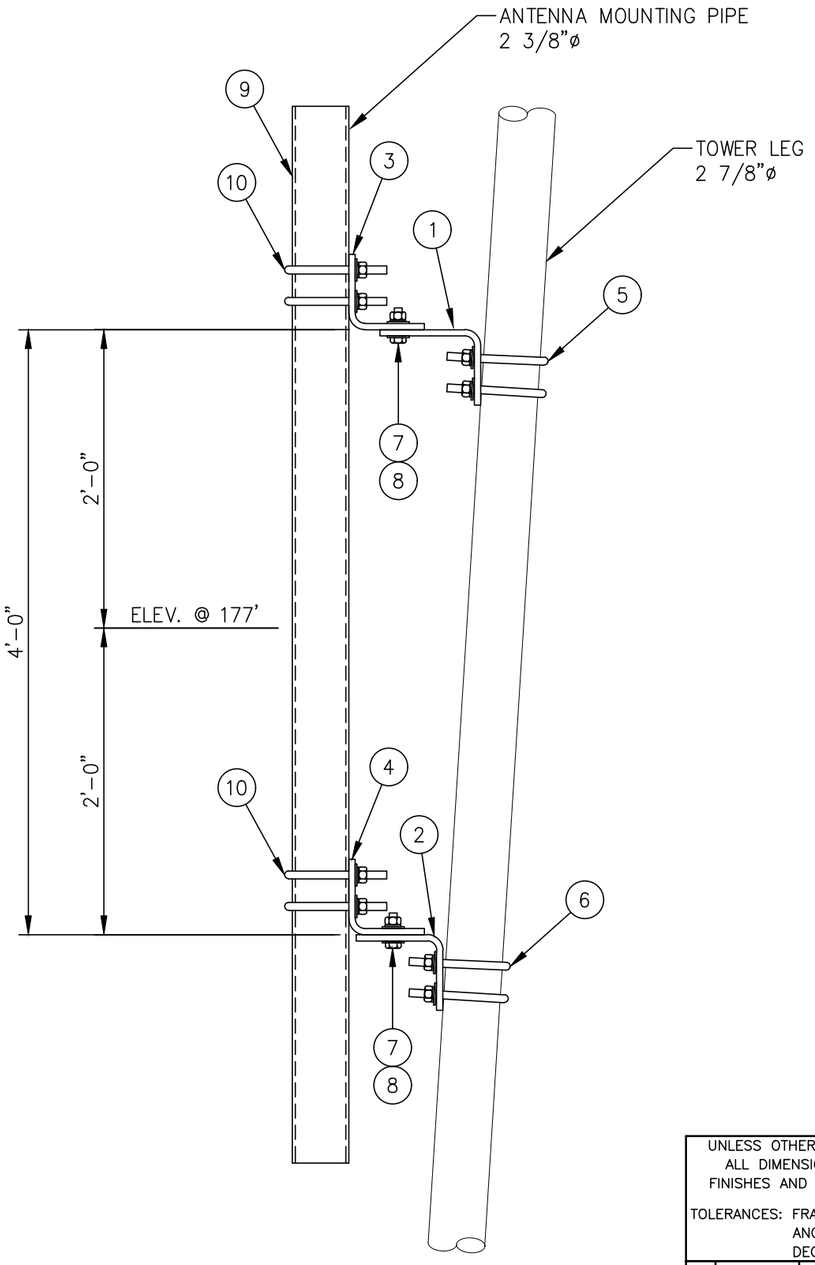
REV	DATE	DRW	CHK	DESCRIPTION

Sabre Industries™
INNOVATION DELIVERED

CONFIDENTIAL
This document and the information contained herein is the confidential trade secret property of Sabre Industries, Inc. ("Sabre") and must not be reproduced, copied or used, in whole or in part, for any purpose without the prior written consent of Sabre.
© 2025 Sabre Industries, Inc. All rights reserved.

SWIVEL KNUCKLE TIEBACKS: 179' ELEVATION
SITE: CROOKED FINGER, OR
CUSTOMER: MARION COUNTY OREGON

JOB NO. 563429		SIZE	DRAWING NO.	REV
DATE	08/07/25	B	563429-ST1	0
DRAWN BY	KMP			
CHECKED BY	ZAK		SCALE NONE	PAGE 1 OF 1



ELEVATION VIEW

LIST OF MATERIALS FOR TAPERED LEG FLUSH MOUNT KIT C10174018				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
1.	1	CS00216	TOP LEG MOUNT FOR 2 7/8 ø LEG	15
2.	1	CS00215	BOTTOM LEG MOUNT FOR 2 7/8 ø LEG	12
3.	1	CS00214	TOP PIPE MOUNT FOR 2 3/8 ø PIPE	15
4.	1	CS00215	BOTTOM PIPE MOUNT FOR 2 3/8 ø PIPE	12
5.	2	C40034025	U-BOLT ASSEMBLY 5/8 ø X 3 9/16 C-C (TOP LEG MOUNT)	4
6.	2	C40034025	U-BOLT ASSEMBLY 5/8 ø X 3 9/16 C-C (BOTTOM LEG MOUNT)	4
7.	4	C40026024	BOLT ASSEMBLY 5/8 ø X 2 1/4 A325	2
8.	8	C40031003	FLATWASHER, 5/8 ø (F436)	1
			KIT WEIGHT LBS	65

LIST OF ADDITIONAL MATERIALS				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
9.	1	C10981207	ANTENNA MTG. PIPE 2 3/8 ø X 7'-0	23
10.	4	C40034023	U-BOLT ASSEMBLY 5/8 ø X 3 1/16 C-C (PIPE MOUNTS)	7
			ADDITIONAL WEIGHT LBS	30

TOTAL WEIGHT LBS	95

UNLESS OTHERWISE SPECIFIED
ALL DIMENSIONS INCLUDE FINISHES AND ARE IN INCHES
TOLERANCES: FRACTIONS ± 1/16"
ANGLES ± 1/2 DEG.
DECIMALS ± .010"

MATERIAL:

TOLERANCES DO NOT APPLY TO RAW MATERIAL

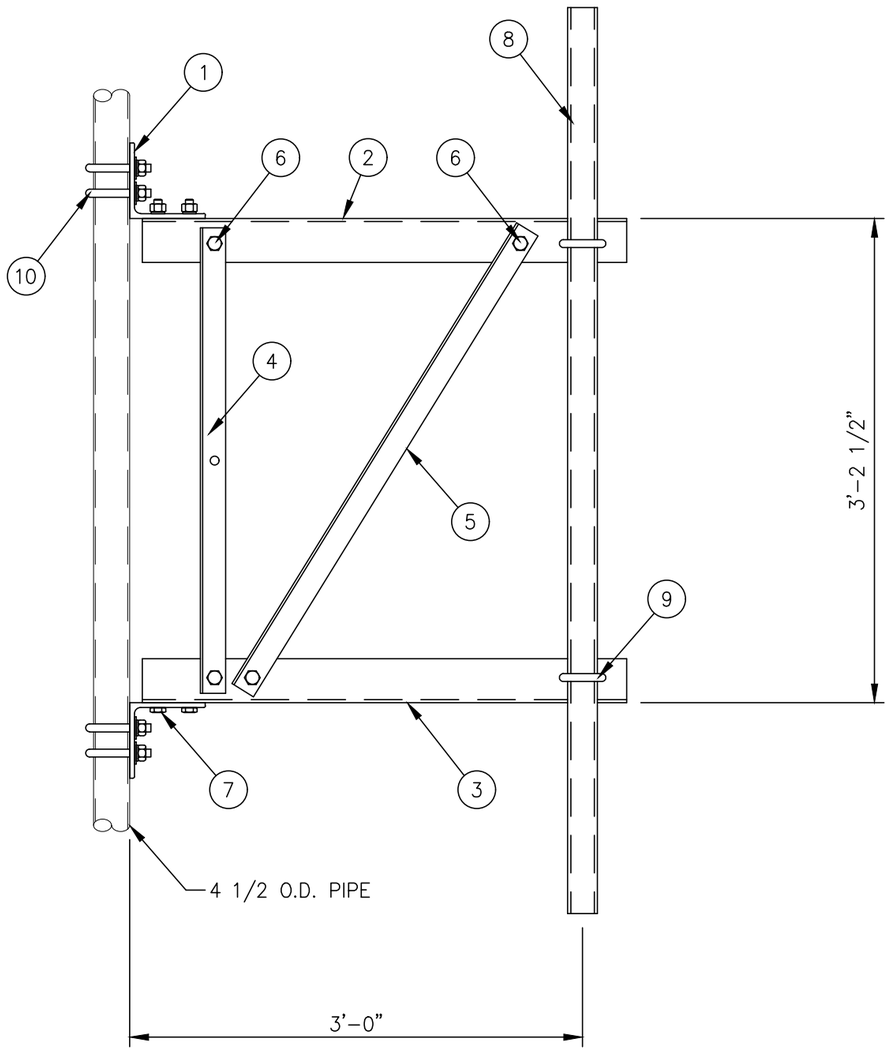
REV	DATE	DRW	CHK	DESCRIPTION

Sabre Industries™
INNOVATION DELIVERED

CONFIDENTIAL
This document and the information contained herein is the confidential trade secret property of Sabre Industries, Inc. ("Sabre") and must not be reproduced, copied or used, in whole or in part, for any purpose without the prior written consent of Sabre.
© 2025 Sabre Industries, Inc. All rights reserved.

FLUSH MOUNT: 177' ELEVATION
SITE: CROOKED FINGER, OR
CUSTOMER: MARION COUNTY OREGON

JOB NO. 563429		SIZE	DRAWING NO.	REV
DATE	8/7/25	B	563429-FM1	0
DRAWN BY	KMP			
CHECKED BY	ZAK		SCALE None	PAGE 1 OF 1



C10151103 3 FT. SIDEARM ASSEMBLY			
1	CK00060	SIDEARM ANGLE KIT	78
1	– – –	MISC HARDWARE (FRAMING)	4
1	C10900105	PIPE ANTENNA MOUNTING KIT 2 3/8" ø X 5'-0	19
4	C40034032	U-BOLT ASSEMBLY 5/8" ø X 5 3/16 C-C	9
		TOTAL WEIGHT LBS	110

CK00060 KIT LIST OF MATERIAL				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
1	2	CS00067	ANGLE, BOOM SUPPORT	23
2	1	CS01223	ANGLE, TOP CHORD	19
3	1	CS01224	ANGLE, BOTTOM CHORD	19
4	1	CS00065	ANGLE, VERTICAL	8
5	1	CS01228	ANGLE, DIAGONAL	9
			TOTAL WEIGHT LBS	78

MISC HARDWARE (FRAMING)				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
6	4	C40026022	BOLT ASSEMBLY, 5/8 ø X 1 3/4 A325	2
7	4	C40026023	BOLT ASSEMBLY, 5/8 ø X 2 A325	2
			TOTAL WEIGHT LBS	4

C10900105 ANTENNA PIPE MOUNTING KIT				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
8	1	C10981223	ANTENNA MTG. PIPE 2 3/8" ø X 5'-0	16
9	2	C40034023	U-BOLT ASSEMBLY 5/8" ø X 3 1/16 C-C	3
			TOTAL WEIGHT LBS	19

MISC HARDWARE				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
10	4	C40034032	U-BOLT ASSEMBLY 5/8" ø X 5 3/16 C-C	9
			TOTAL WEIGHT LBS	9

NOTES:

1. IF THE MOUNT IS NOT ON THE STRAIGHT PORTION OF THE TOWER SEE SITE SPECIFIC PIPE MOUNT.
2. QUANTITIES SHOWN IN LIST OF MATERIALS ARE FOR ONE (1) SIDEARM ASSEMBLY ONLY.

UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS INCLUDE FINISHES AND ARE IN INCHES

TOLERANCES: FRACTIONS ± 1/16" ANGLES ± 1/2 DEG. DECIMALS ± .010"

MATERIAL:

TOLERANCES DO NOT APPLY TO RAW MATERIAL

REV	DATE	DRW	CHK	DESCRIPTION

Sabre Industries™ INNOVATION DELIVERED

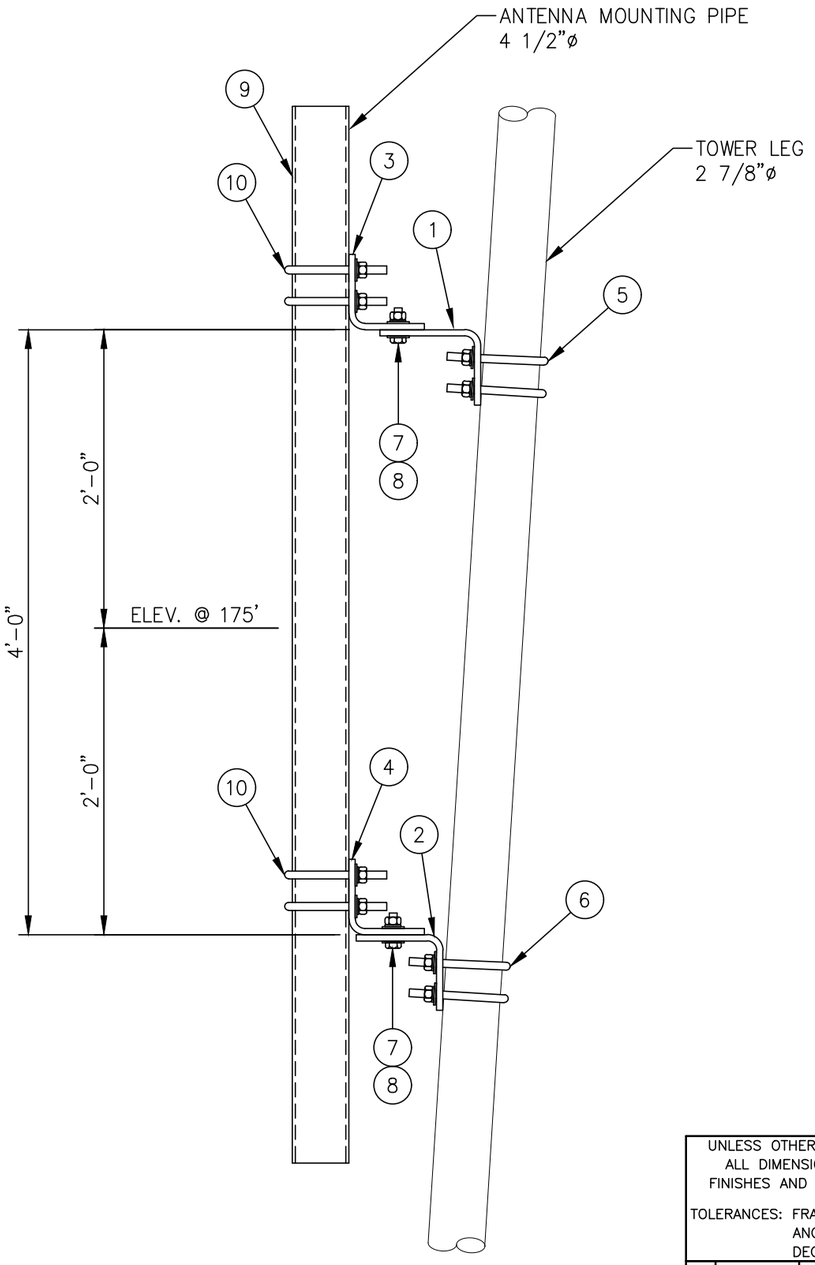
CONFIDENTIAL
This document and the information contained herein is the confidential trade secret property of Sabre Industries, Inc. ("Sabre") and must not be reproduced, copied or used, in whole or in part, for any purpose without the prior written consent of Sabre.
© 2025 Sabre Industries, Inc. All rights reserved.

3 FT. SIDEARMS: 175' ELEVATION

SITE: CROOKED FINGER, OR

CUSTOMER: MARION COUNTY OREGON

JOB NO. 563429		SIZE	DRAWING NO.	REV
DATE	08/07/25	B	563429-SA2	0
DRAWN BY	KMP			
CHECKED BY	ZAK		SCALE NONE	PAGE 1 OF 1



ELEVATION VIEW

LIST OF MATERIALS FOR TAPERED LEG PIPE MOUNT KIT C10174018				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
1.	1	CS00216	TOP LEG MOUNT FOR 2 7/8 ø LEG	15
2.	1	CS00215	BOTTOM LEG MOUNT FOR 2 7/8 ø LEG	12
3.	1	CS00214	TOP PIPE MOUNT FOR 4 1/2 ø PIPE	15
4.	1	CS00215	BOTTOM PIPE MOUNT FOR 4 1/2 ø PIPE	12
5.	2	C40034025	U-BOLT ASSEMBLY 5/8 ø X 3 9/16 C-C (TOP LEG MOUNT)	4
6.	2	C40034025	U-BOLT ASSEMBLY 5/8 ø X 3 9/16 C-C (BOTTOM LEG MOUNT)	4
7.	4	C40026024	BOLT ASSEMBLY 5/8 ø X 2 1/4 A325	2
8.	8	C40031003	FLATWASHER, 5/8 ø (F436)	1
			KIT WEIGHT LBS	65

LIST OF ADDITIONAL MATERIALS				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
9.	1	C10981407	ANTENNA MTG. PIPE 4 1/2 ø X 7'-0	58
10.	4	C40034032	U-BOLT ASSEMBLY 5/8 ø X 5 3/16 C-C (PIPE MOUNTS)	9
			ADDITIONAL WEIGHT LBS	67

TOTAL WEIGHT LBS	132

UNLESS OTHERWISE SPECIFIED
ALL DIMENSIONS INCLUDE FINISHES AND ARE IN INCHES
TOLERANCES: FRACTIONS ± 1/16"
ANGLES ± 1/2 DEG.
DECIMALS ± .010"

MATERIAL:

TOLERANCES DO NOT APPLY TO RAW MATERIAL

REV	DATE	DRW	CHK	DESCRIPTION

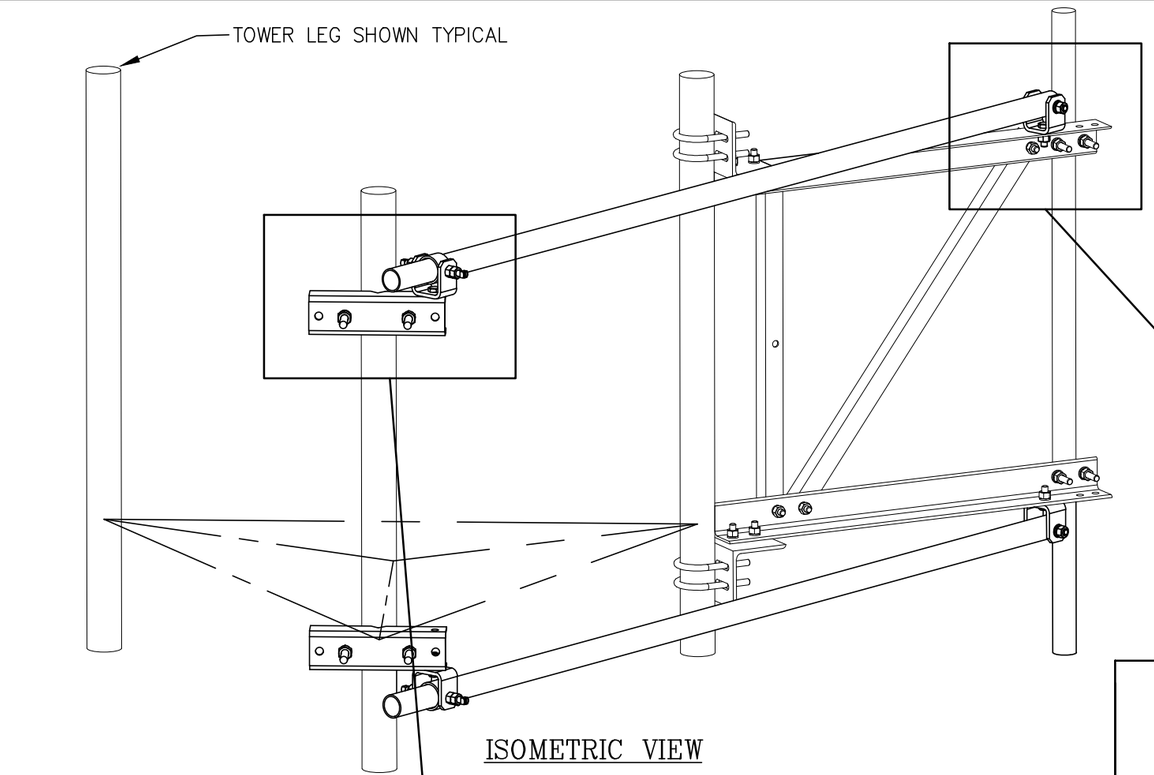
Sabre Industries™
INNOVATION DELIVERED

CONFIDENTIAL
This document and the information contained herein is the confidential trade secret property of Sabre Industries, Inc. ("Sabre") and must not be reproduced, copied or used, in whole or in part, for any purpose without the prior written consent of Sabre.
© 2025 Sabre Industries, Inc. All rights reserved.

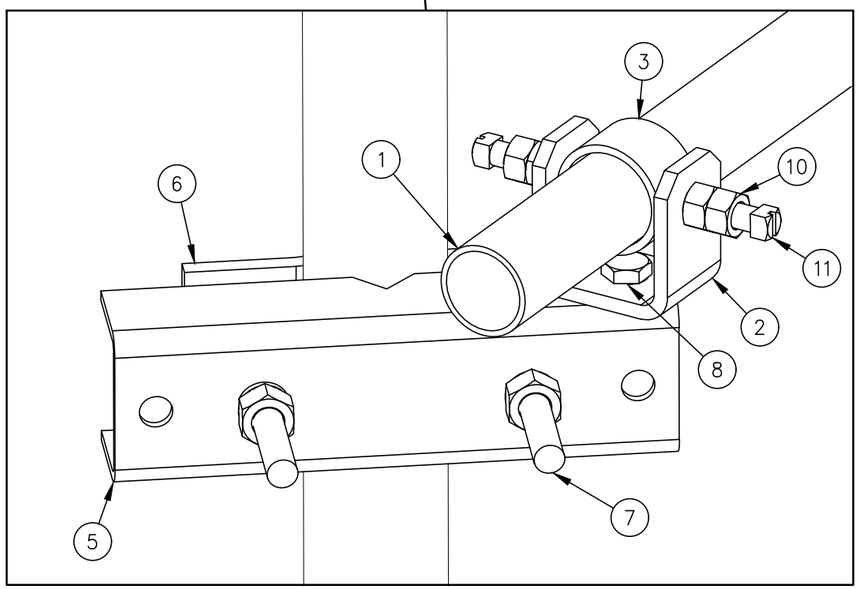
PIPE MOUNTS FOR SIDEARMS: 175' ELEVATION
SITE: CROOKED FINGER, OR
CUSTOMER: MARION COUNTY OREGON

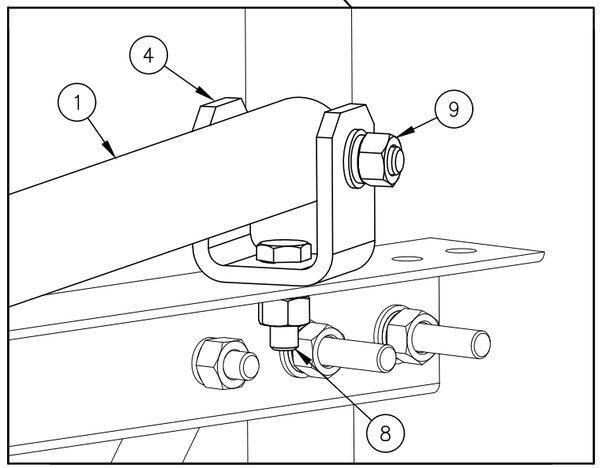
JOB NO. 563429		SIZE	DRAWING NO.		REV
DATE	8/7/25	B	563429-PM2		0
DRAWN BY	KMP			SCALE	PAGE
CHECKED BY	ZAK			None	1 OF 1

EXHIBIT K



ISOMETRIC VIEW





C10179002 SWIVEL KNUCKLE TIEBACK

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
1	1	CS02089	TIEBACK 2 3/8 X .134 X 13'-3"	43
2	1	CW00013	SWIVEL PLATE WELDMENT	3
3	1	CS00097	PIPE, SLEEVE 2 7/8 O.D. X W/0.203 X 0'-1 3/4	1
4	1	CS00098	BENT SWIVEL PLATE	3
5	1	CS01360	PLATE, MOUNTING BRACKET (FORMED CHANNEL)	9
6	1	CS01361	PLATE, 2 HOLE ADAPTER CLAMP	3
7	2	C40140001	BOLT ASSEMBLY, 3/4 X 10 A307 W/NUT, LKW, FLW	4
8	2	C40026023	BOLT ASSEMBLY, 5/8 ø X 2 A325	1
9	1	C40026033	BOLT ASSEMBLY, 5/8 ø X 4 1/2 A325	1
10	2	C40042007	HEX NUT, 5/8 A194 GRADE 2H	1
11	2	C40998007	SQ. HEAD SET SCREW, 5/8 X 2 1/2	1
			TOTAL WEIGHT LBS	70

QUANTITIES SHOWN ABOVE ARE FOR (1) SWIVEL KNUCKLE TIEBACK KIT ONLY.
(2) KITS ARE REQUIRED FOR THIS SIDEARM ASSEMBLY

UNLESS OTHERWISE SPECIFIED
ALL DIMENSIONS INCLUDE
FINISHES AND ARE IN INCHES

TOLERANCES: FRACTIONS ± 1/16"
ANGLES ± 1/2 DEG.
DECIMALS ± .010"

MATERIAL:

TOLERANCES DO NOT APPLY
TO RAW MATERIAL

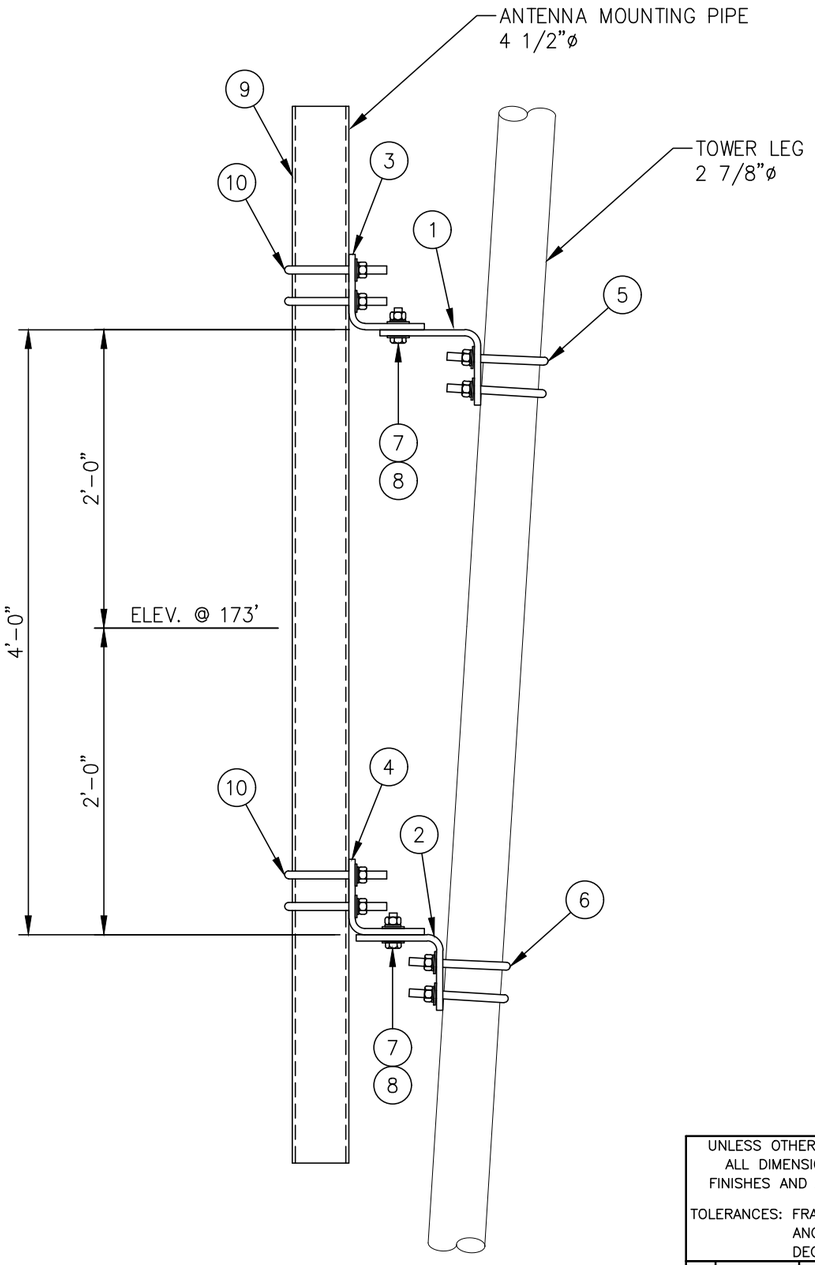
REV	DATE	DRW	CHK	DESCRIPTION

Sabre Industries™
INNOVATION DELIVERED

CONFIDENTIAL
This document and the information contained herein is the confidential trade secret property of Sabre Industries, Inc. ("Sabre") and must not be reproduced, copied or used, in whole or in part, for any purpose without the prior written consent of Sabre.
© 2025 Sabre Industries, Inc. All rights reserved.

SWIVEL KNUCKLE TIEBACKS: 175' ELEVATION
SITE: CROOKED FINGER, OR
CUSTOMER: MARION COUNTY OREGON

JOB NO. 563429		SIZE	DRAWING NO.	REV
DATE	08/07/25	B	563429-ST2	0
DRAWN BY	KMP			
CHECKED BY	ZAK		SCALE NONE	PAGE 1 OF 1



ELEVATION VIEW

LIST OF MATERIALS FOR TAPERED LEG PIPE MOUNT KIT C10174018				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
1.	1	CS00216	TOP LEG MOUNT FOR 2 7/8 ø LEG	15
2.	1	CS00215	BOTTOM LEG MOUNT FOR 2 7/8 ø LEG	12
3.	1	CS00214	TOP PIPE MOUNT FOR 4 1/2 ø PIPE	15
4.	1	CS00215	BOTTOM PIPE MOUNT FOR 4 1/2 ø PIPE	12
5.	2	C40034025	U-BOLT ASSEMBLY 5/8 ø X 3 9/16 C-C (TOP LEG MOUNT)	4
6.	2	C40034025	U-BOLT ASSEMBLY 5/8 ø X 3 9/16 C-C (BOTTOM LEG MOUNT)	4
7.	4	C40026024	BOLT ASSEMBLY 5/8 ø X 2 1/4 A325	2
8.	8	C40031003	FLATWASHER, 5/8 ø (F436)	1
			KIT WEIGHT LBS	65

LIST OF ADDITIONAL MATERIALS				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
9.	1	C10981407	ANTENNA MTG. PIPE 4 1/2 ø X 7'-0	58
10.	4	C40034032	U-BOLT ASSEMBLY 5/8 ø X 5 3/16 C-C (PIPE MOUNTS)	9
			ADDITIONAL WEIGHT LBS	67

TOTAL WEIGHT LBS	132

UNLESS OTHERWISE SPECIFIED
ALL DIMENSIONS INCLUDE FINISHES AND ARE IN INCHES

TOLERANCES: FRACTIONS ± 1/16"
ANGLES ± 1/2 DEG.
DECIMALS ± .010"

MATERIAL:

TOLERANCES DO NOT APPLY TO RAW MATERIAL

REV	DATE	DRW	CHK	DESCRIPTION

Sabre Industries™
INNOVATION DELIVERED

CONFIDENTIAL

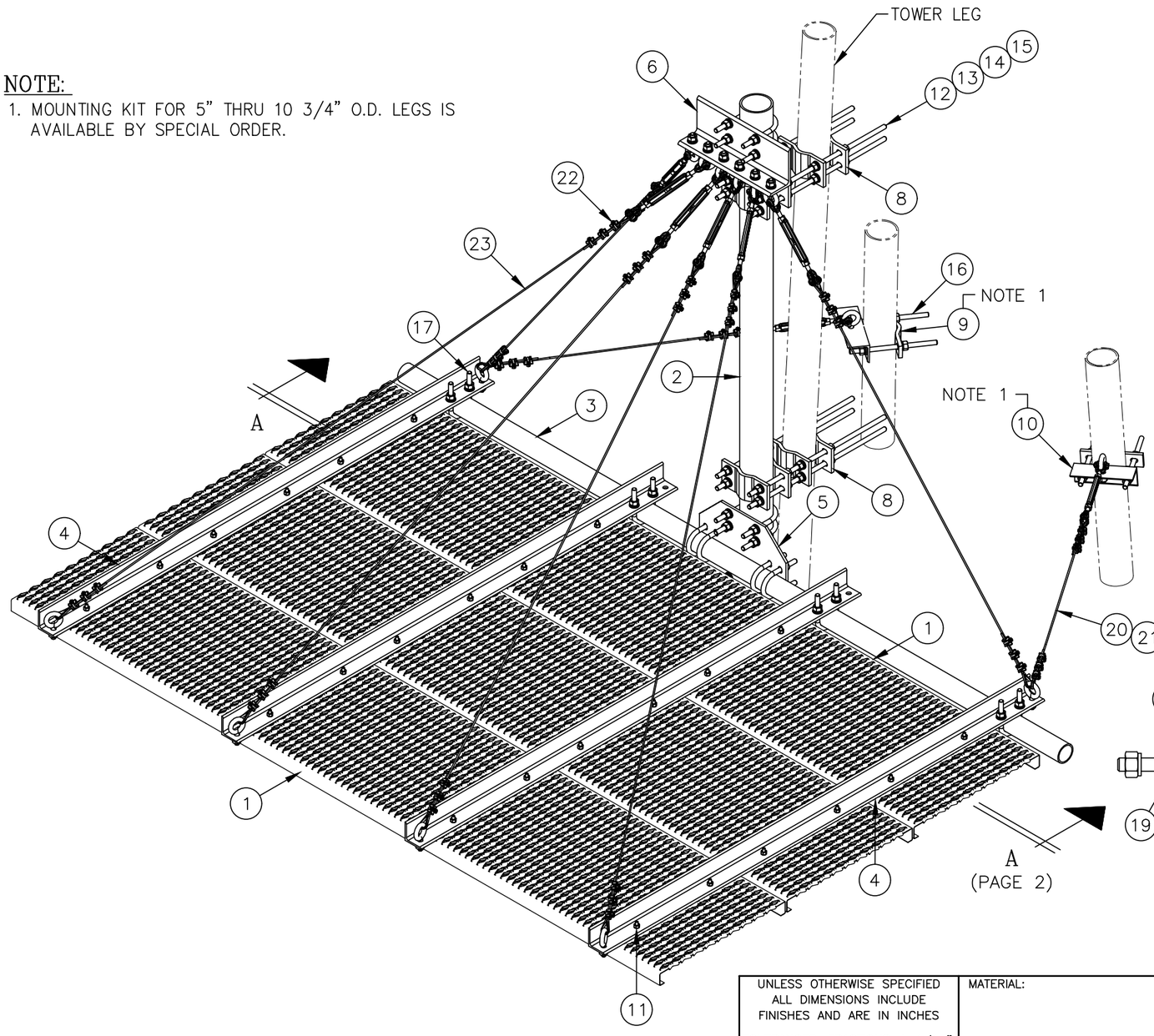
This document and the information contained herein is the confidential trade secret property of Sabre Industries, Inc. ("Sabre") and must not be reproduced, copied or used, in whole or in part, for any purpose without the prior written consent of Sabre.
© 2025 Sabre Industries, Inc. All rights reserved.

PIPE MOUNTS: 173' ELEVATION
SITE: CROOKED FINGER, OR
CUSTOMER: MARION COUNTY OREGON

JOB NO. 563429		SIZE	DRAWING NO.		REV
DATE	8/7/25	B	563429-PM3		0
DRAWN BY	KMP			SCALE	PAGE
CHECKED BY	ZAK			None	1 OF 1

NOTE:

1. MOUNTING KIT FOR 5" THRU 10 3/4" O.D. LEGS IS AVAILABLE BY SPECIAL ORDER.

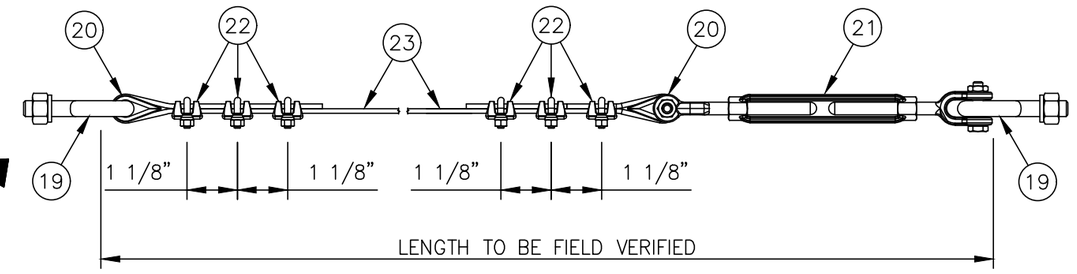


ISOMETRIC VIEW

(SEE PAGE 2 FOR MORE DETAILS)

C30085002 ICE SHIELD ASSEMBLY

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT
1.	3	C20137002	SAFETY GRATING, 2'-0 WIDE BY 10'-0 LONG	222
2.	1	C10981407	PIPE, 4 1/2" O.D. X W/0.180 X 7'-0	58
3.	1	C10901310	PIPE, 2 7/8" O.D. X W/0.203 X 10'-6	63
4.	4	CS00155	ANGLE, ICE SHIELD SUPPORT	143
5.	1	CS00156	PLATE, ICE SHIELD MOUNT	22
6.	1	CS01926	ANGLE, ICE SHIELD HANGER	19
7.	12	CS00158	PLATE, ICE SHIELD BACKUP	28
8.	8	CS00017	4 HOLE ADAPTER CLAMP 1 1/2" TO 5" O.D.	39
9.	2	CS00144	2 HOLE ADAPTER CLAMP 1 1/2" TO 5" O.D.	5
10.	2	CS01925	ANGLE, ICE SHIELD TIE BACK	7
11.	24	C40024006	BOLT ASSEMBLY, 3/8 ø X 2 GR 5	2
12.	16	C40042007	NUT, 5/8 ø A194 GRADE 2H	1
13.	16	C40030012	LOCKWASHER, 5/8 ø	1
14.	16	C40031003	FLATWASHER, 5/8 ø HARDENED ASTM F436	1
15.	8	C40099004	THREADED ROD ASS'Y, 5/8 ø X 2'-2 ASTM A193	22
16.	4	C40099002	THREADED ROD ASS'Y, 5/8 ø X 1'-0 ASTM A193	6
17.	8	C40034025	U-BOLT ASSEMBLY, 5/8 ø X 3 9/16" C-C	14
18.	6	C40034032	U-BOLT ASSEMBLY, 5/8 ø X 5 3/16" C-C	13
19.	14	C40079002	EYEBOLT ASSEMBLY, 5/8 ø X 1 3/4	8
20.	16	C40055011	THIMBLE, 3/16" STD	1
21.	8	C40051018	TURNBUCKLE, 1/2" X 6" J & J HDG	12
22.	48	C40056001	WIRE ROPE CLIP, 3/16"	5
23.	1	C30998120	AIRCRAFT CABLE, 3/16" X 120'-0	9
			TOTAL WEIGHT	701



TYPICAL CABLE ASSEMBLY

UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS INCLUDE FINISHES AND ARE IN INCHES

TOLERANCES: FRACTIONS ± 1/16" ANGLES ± 1/2 DEG. DECIMALS ± .010"

MATERIAL:

TOLERANCES DO NOT APPLY TO RAW MATERIAL

REV	DATE	DRW	CHK	DESCRIPTION
4	1/29/09	WRF	MC	REVISED PART NUMBERS OF ITEMS 6, 10, & EYEBOLTS WERE 3/8" & TURNB. WERE 1/4"
3	1/13/09	MLC	MC	REVISE PIPE (ITEM 2)
2	06/21/06	WRF	WMN	ADDED ISOMETRIC VIEW
1	4/4/03	KLE	DLW	REVISED PART NUMBERS

Sabre Industries™ INNOVATION DELIVERED

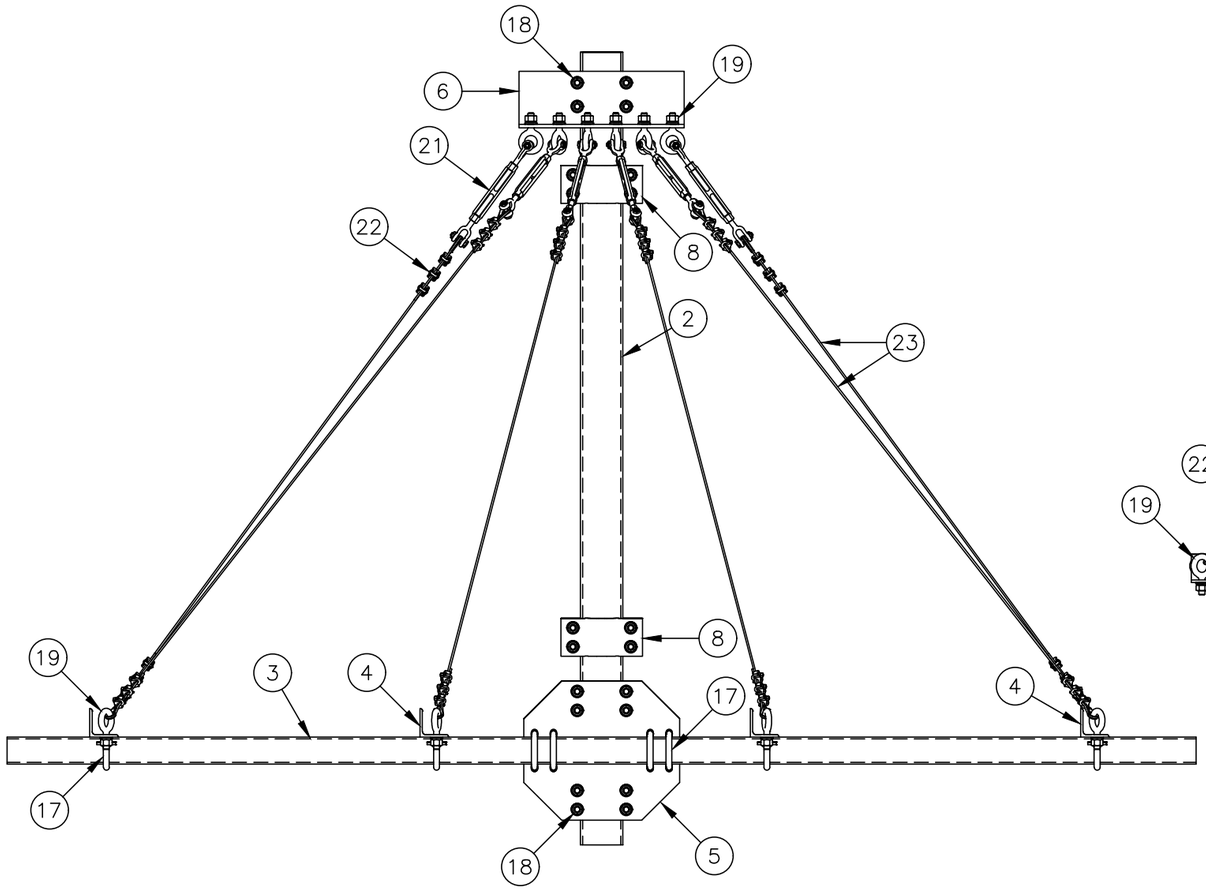
CONFIDENTIAL

This document and the information contained herein is the confidential trade secret property of Sabre Industries, Inc. ("Sabre") and must not be reproduced, copied or used, in whole or in part, for any purpose without the prior written consent of Sabre.

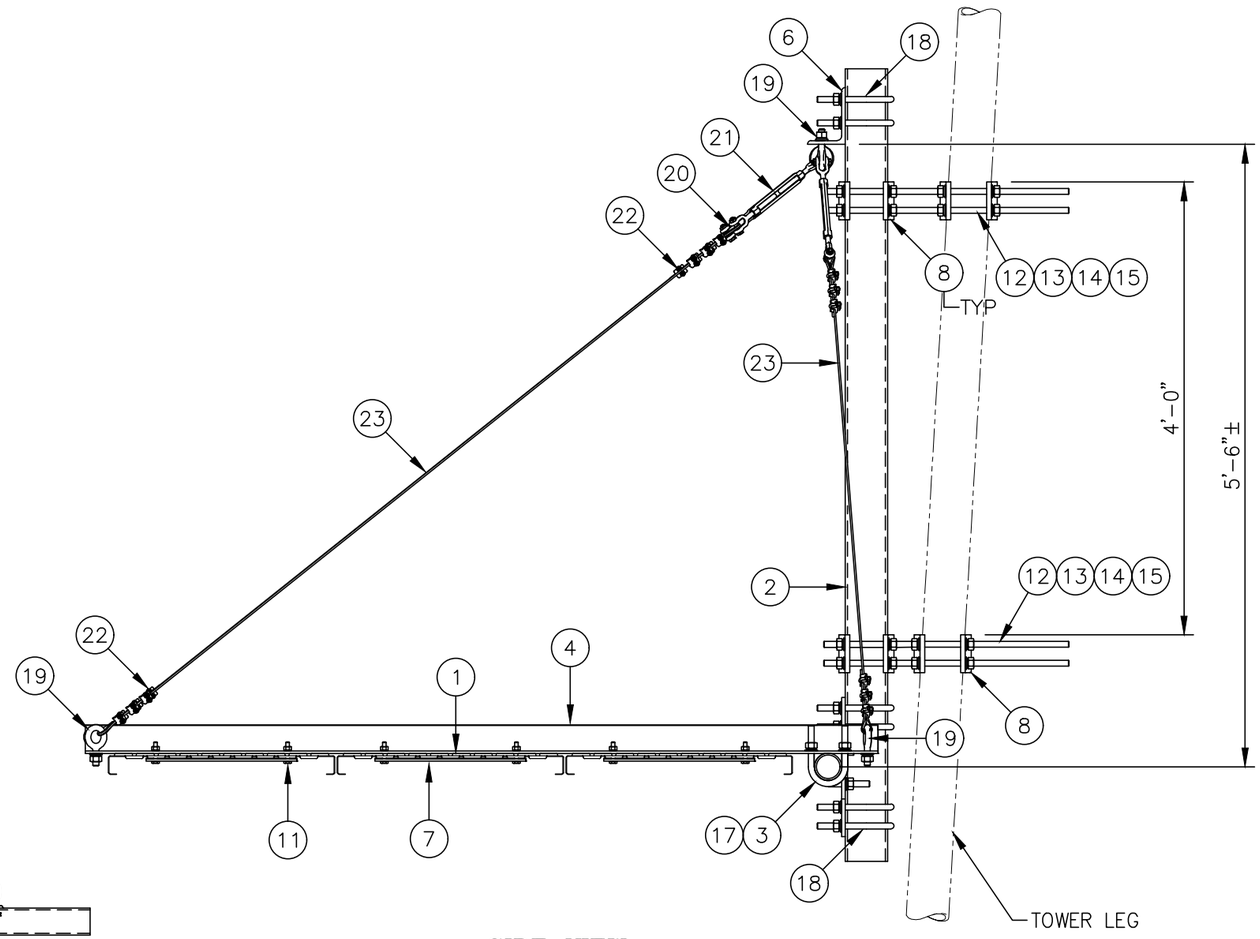
© 2022 Sabre Industries, Inc. All rights reserved.

ICE SHIELD ASSEMBLY FOR 6'-0 & 8'-0 DISH ANTENNA FITS 1 1/2 ø TO 5 ø LEGS

		SIZE	DRAWING NO.	REV
DATE	01/11/01	B	C30085002	4
DRAWN BY	BCT			
CHECKED BY	KLE		SCALE None	PAGE 1 OF 2



SECTION A–A
(GRATING REMOVED FOR CLARITY)



SIDE VIEW

REV	DATE	DRW	CHK	DESCRIPTION
4	1/29/09	WRF	MC	REVISED PART NUMBERS OF ITEMS 6, 10, & EYEBOLTS WERE 3/8" & TURNB. WERE 1/4"
3	1/13/09	MLC	MC	REVISE PIPE (ITEM 2)
2	06/21/06	WRF	WMN	ADDED ISOMETRIC VIEW
1	4/4/03	KLE	DLW	REVISED PART NUMBERS

UNLESS OTHERWISE SPECIFIED
ALL DIMENSIONS INCLUDE FINISHES AND ARE IN INCHES
TOLERANCES: FRACTIONS ± 1/16"
ANGLES ± 1/2 DEG.
DECIMALS ± .010"

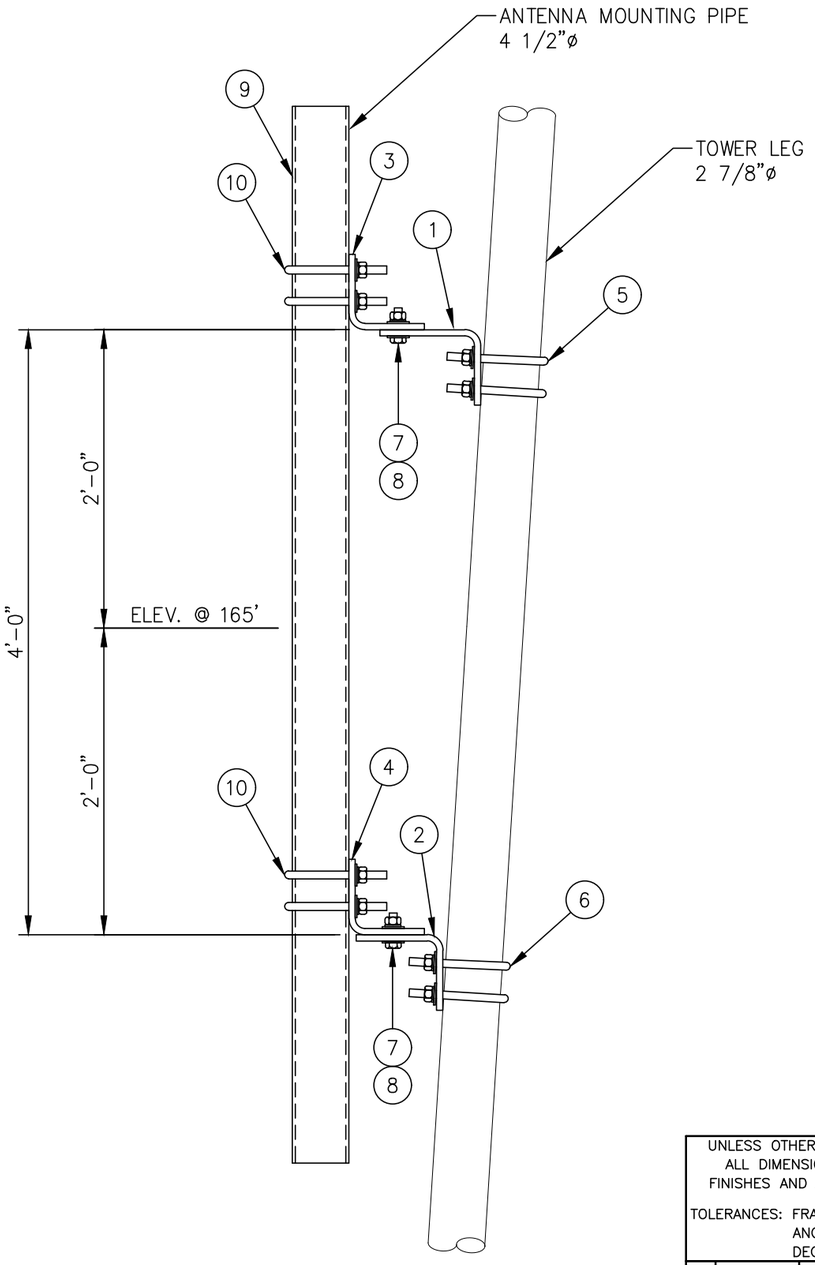
MATERIAL:
TOLERANCES DO NOT APPLY TO RAW MATERIAL

Sabre Industries™
INNOVATION DELIVERED

CONFIDENTIAL
This document and the information contained herein is the confidential trade secret property of Sabre Industries, Inc. ("Sabre") and must not be reproduced, copied or used, in whole or in part, for any purpose without the prior written consent of Sabre.
© 2022 Sabre Industries, Inc. All rights reserved.

ICE SHIELD ASSEMBLY
FOR 6'–0 & 8'–0 DISH ANTENNA
FITS 1 1/2 ø TO 5 ø LEGS

		SIZE	DRAWING NO.	REV
DATE	01/11/01	B	C30085002	4
DRAWN BY	BCT			
CHECKED BY	KLE	SCALE None	PAGE 2 OF 2	



ELEVATION VIEW

LIST OF MATERIALS FOR TAPERED LEG PIPE MOUNT KIT C10174018				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
1.	1	CS00216	TOP LEG MOUNT FOR 2 7/8 ø LEG	15
2.	1	CS00215	BOTTOM LEG MOUNT FOR 2 7/8 ø LEG	12
3.	1	CS00214	TOP PIPE MOUNT FOR 4 1/2 ø PIPE	15
4.	1	CS00215	BOTTOM PIPE MOUNT FOR 4 1/2 ø PIPE	12
5.	2	C40034025	U-BOLT ASSEMBLY 5/8 ø X 3 9/16 C-C (TOP LEG MOUNT)	4
6.	2	C40034025	U-BOLT ASSEMBLY 5/8 ø X 3 9/16 C-C (BOTTOM LEG MOUNT)	4
7.	4	C40026024	BOLT ASSEMBLY 5/8 ø X 2 1/4 A325	2
8.	8	C40031003	FLATWASHER, 5/8 ø (F436)	1
			KIT WEIGHT LBS	65

LIST OF ADDITIONAL MATERIALS				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
9.	1	C10981407	ANTENNA MTG. PIPE 4 1/2 ø X 7'-0	58
10.	4	C40034032	U-BOLT ASSEMBLY 5/8 ø X 5 3/16 C-C (PIPE MOUNTS)	9
			ADDITIONAL WEIGHT LBS	67

TOTAL WEIGHT LBS	132

UNLESS OTHERWISE SPECIFIED
ALL DIMENSIONS INCLUDE FINISHES AND ARE IN INCHES

TOLERANCES: FRACTIONS ± 1/16"
ANGLES ± 1/2 DEG.
DECIMALS ± .010"

MATERIAL:

TOLERANCES DO NOT APPLY TO RAW MATERIAL

REV	DATE	DRW	CHK	DESCRIPTION

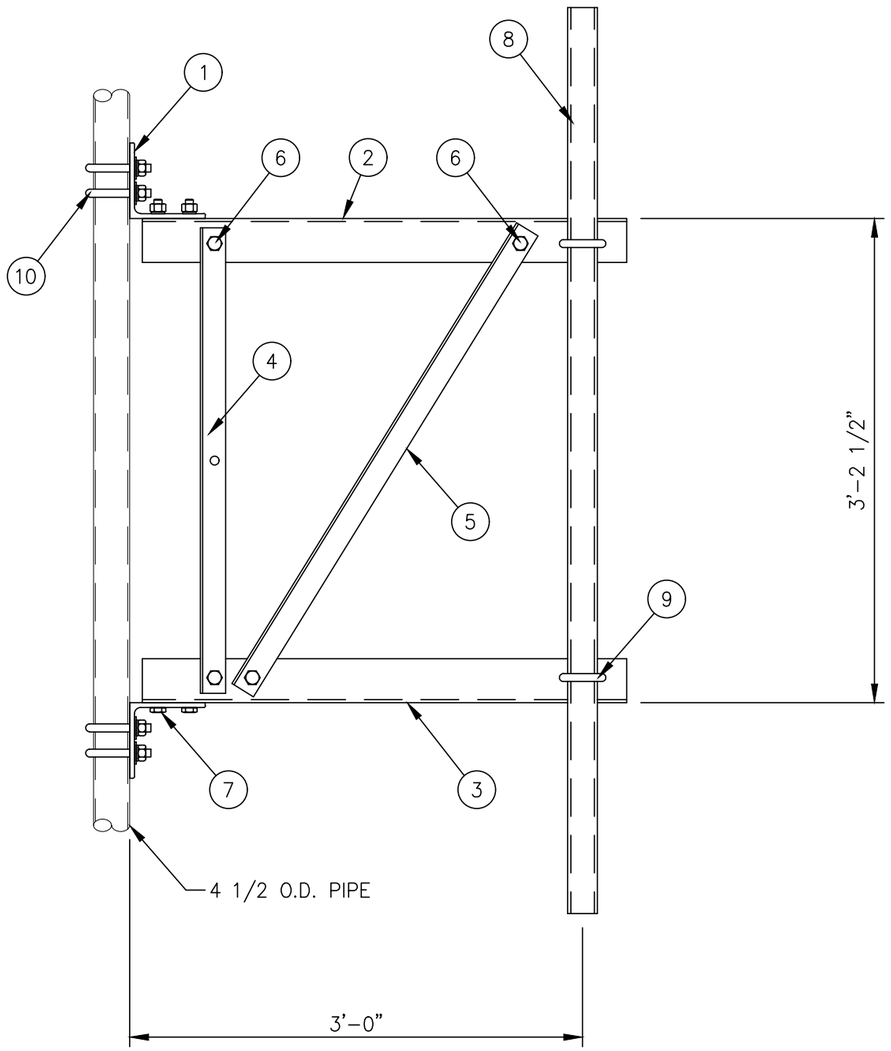
Sabre Industries™
INNOVATION DELIVERED

CONFIDENTIAL

This document and the information contained herein is the confidential trade secret property of Sabre Industries, Inc. ("Sabre") and must not be reproduced, copied or used, in whole or in part, for any purpose without the prior written consent of Sabre.
© 2025 Sabre Industries, Inc. All rights reserved.

PIPE MOUNT: 165' ELEVATION
SITE: CROOKED FINGER, OR
CUSTOMER: MARION COUNTY OREGON

JOB NO. 563429		SIZE	DRAWING NO.		REV
DATE	8/7/25	B	563429-PM4		0
DRAWN BY	KMP			SCALE	PAGE
CHECKED BY	ZAK			None	1 OF 1



C10151103 3 FT. SIDEARM ASSEMBLY			
1	CK00060	SIDEARM ANGLE KIT	78
1	– – –	MISC HARDWARE (FRAMING)	4
1	C10900105	PIPE ANTENNA MOUNTING KIT 2 3/8" ø X 5'-0	19
4	C40034032	U-BOLT ASSEMBLY 5/8" ø X 5 3/16 C-C	9
		TOTAL WEIGHT LBS	110

CK00060 KIT LIST OF MATERIAL				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
1	2	CS00067	ANGLE, BOOM SUPPORT	23
2	1	CS01223	ANGLE, TOP CHORD	19
3	1	CS01224	ANGLE, BOTTOM CHORD	19
4	1	CS00065	ANGLE, VERTICAL	8
5	1	CS01228	ANGLE, DIAGONAL	9
			TOTAL WEIGHT LBS	78

MISC HARDWARE (FRAMING)				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
6	4	C40026022	BOLT ASSEMBLY, 5/8 ø X 1 3/4 A325	2
7	4	C40026023	BOLT ASSEMBLY, 5/8 ø X 2 A325	2
			TOTAL WEIGHT LBS	4

C10900105 ANTENNA PIPE MOUNTING KIT				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
8	1	C10981223	ANTENNA MTG. PIPE 2 3/8" ø X 5'-0	16
9	2	C40034023	U-BOLT ASSEMBLY 5/8" ø X 3 1/16 C-C	3
			TOTAL WEIGHT LBS	19

MISC HARDWARE				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
10	4	C40034032	U-BOLT ASSEMBLY 5/8" ø X 5 3/16 C-C	9
			TOTAL WEIGHT LBS	9

NOTES:

1. IF THE MOUNT IS NOT ON THE STRAIGHT PORTION OF THE TOWER SEE SITE SPECIFIC PIPE MOUNT.
2. QUANTITIES SHOWN IN LIST OF MATERIALS ARE FOR ONE (1) SIDEARM ASSEMBLY ONLY.

UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS INCLUDE FINISHES AND ARE IN INCHES

TOLERANCES: FRACTIONS ± 1/16" ANGLES ± 1/2 DEG. DECIMALS ± .010"

MATERIAL:

TOLERANCES DO NOT APPLY TO RAW MATERIAL

REV	DATE	DRW	CHK	DESCRIPTION

Sabre Industries™ INNOVATION DELIVERED

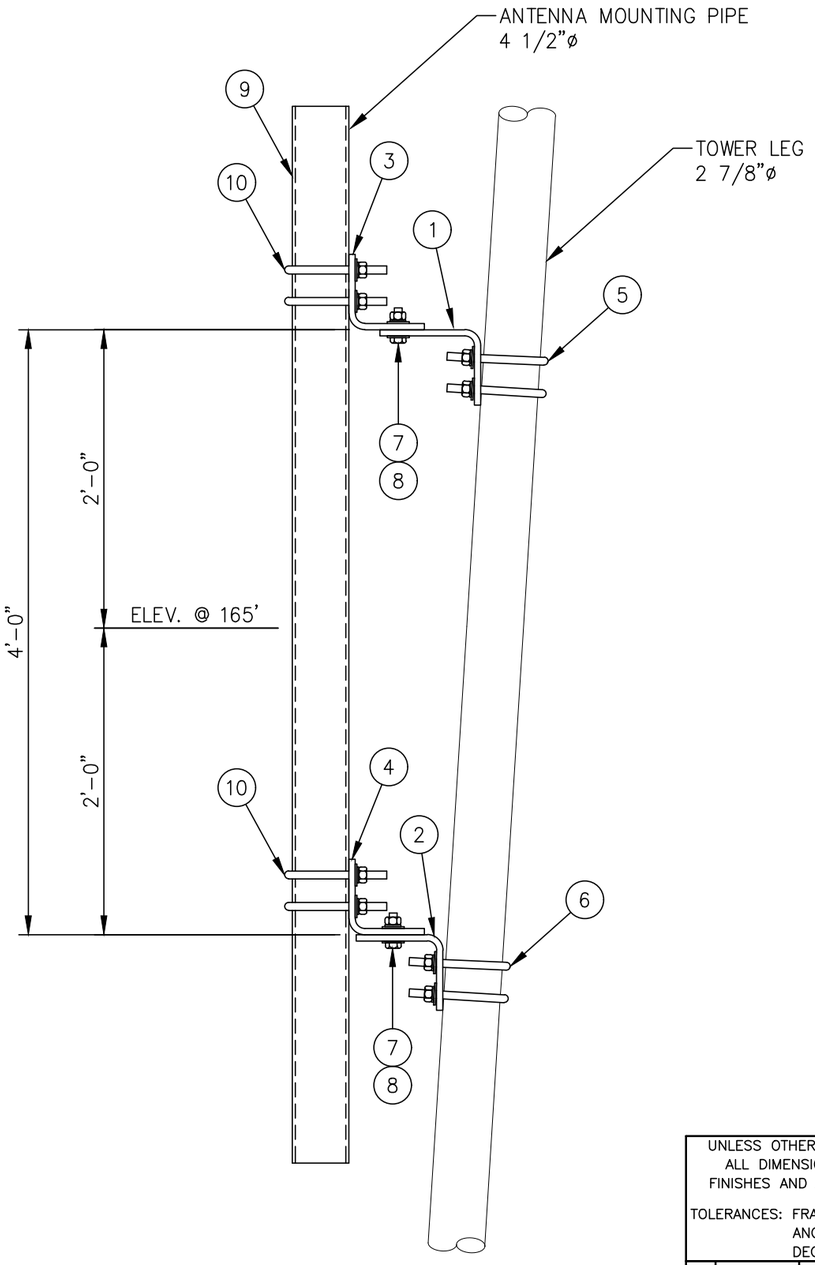
CONFIDENTIAL
This document and the information contained herein is the confidential trade secret property of Sabre Industries, Inc. ("Sabre") and must not be reproduced, copied or used, in whole or in part, for any purpose without the prior written consent of Sabre.
© 2025 Sabre Industries, Inc. All rights reserved.

3 FT. SIDEARM: 165' ELEVATION

SITE: CROOKED FINGER, OR

CUSTOMER: MARION COUNTY OREGON

JOB NO. 563429		SIZE	DRAWING NO.	REV
DATE	08/07/25	B	563429-SA3	0
DRAWN BY	KMP			
CHECKED BY	ZAK		SCALE NONE	PAGE 1 OF 1



ELEVATION VIEW

LIST OF MATERIALS FOR TAPERED LEG PIPE MOUNT KIT C10174018				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
1.	1	CS00216	TOP LEG MOUNT FOR 2 7/8 ø LEG	15
2.	1	CS00215	BOTTOM LEG MOUNT FOR 2 7/8 ø LEG	12
3.	1	CS00214	TOP PIPE MOUNT FOR 4 1/2 ø PIPE	15
4.	1	CS00215	BOTTOM PIPE MOUNT FOR 4 1/2 ø PIPE	12
5.	2	C40034025	U-BOLT ASSEMBLY 5/8 ø X 3 9/16 C-C (TOP LEG MOUNT)	4
6.	2	C40034025	U-BOLT ASSEMBLY 5/8 ø X 3 9/16 C-C (BOTTOM LEG MOUNT)	4
7.	4	C40026024	BOLT ASSEMBLY 5/8 ø X 2 1/4 A325	2
8.	8	C40031003	FLATWASHER, 5/8 ø (F436)	1
			KIT WEIGHT LBS	65

LIST OF ADDITIONAL MATERIALS				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
9.	1	C10981407	ANTENNA MTG. PIPE 4 1/2 ø X 7'-0	58
10.	4	C40034032	U-BOLT ASSEMBLY 5/8 ø X 5 3/16 C-C (PIPE MOUNTS)	9
			ADDITIONAL WEIGHT LBS	67

TOTAL WEIGHT LBS	132

UNLESS OTHERWISE SPECIFIED
ALL DIMENSIONS INCLUDE FINISHES AND ARE IN INCHES
TOLERANCES: FRACTIONS ± 1/16"
ANGLES ± 1/2 DEG.
DECIMALS ± .010"

MATERIAL:

TOLERANCES DO NOT APPLY TO RAW MATERIAL

REV	DATE	DRW	CHK	DESCRIPTION

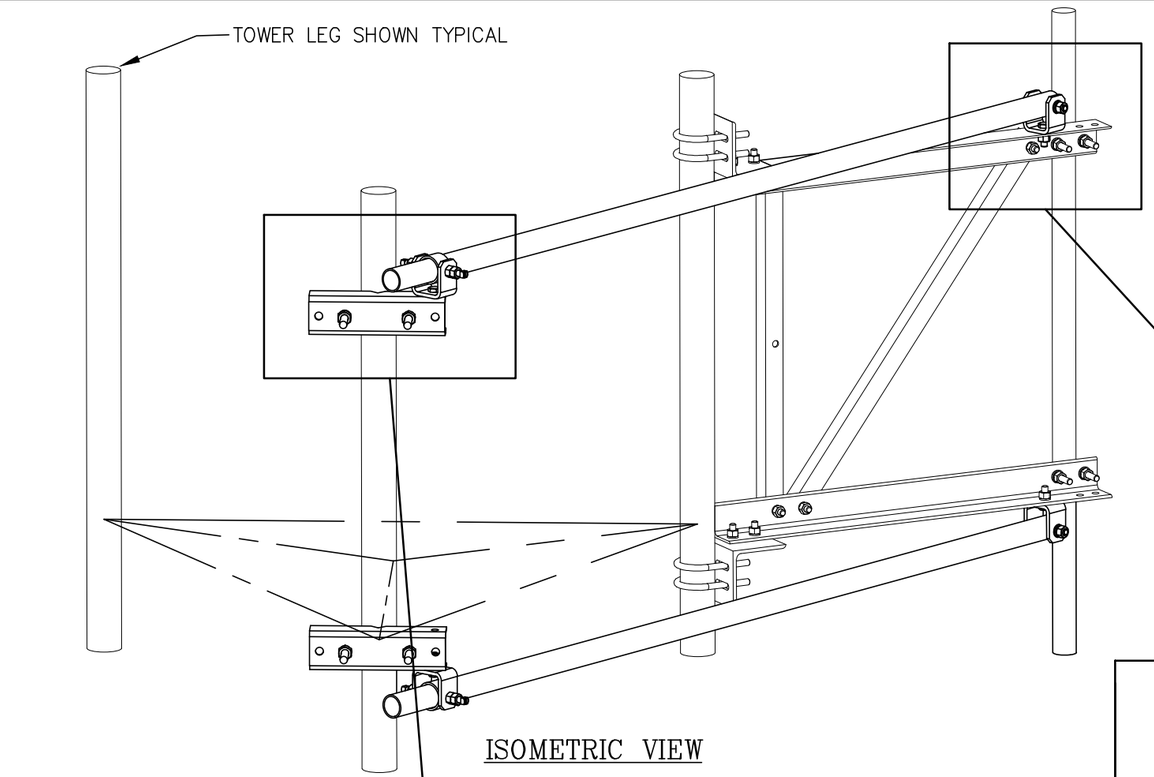
Sabre Industries™
INNOVATION DELIVERED

CONFIDENTIAL
This document and the information contained herein is the confidential trade secret property of Sabre Industries, Inc. ("Sabre") and must not be reproduced, copied or used, in whole or in part, for any purpose without the prior written consent of Sabre.
© 2025 Sabre Industries, Inc. All rights reserved.

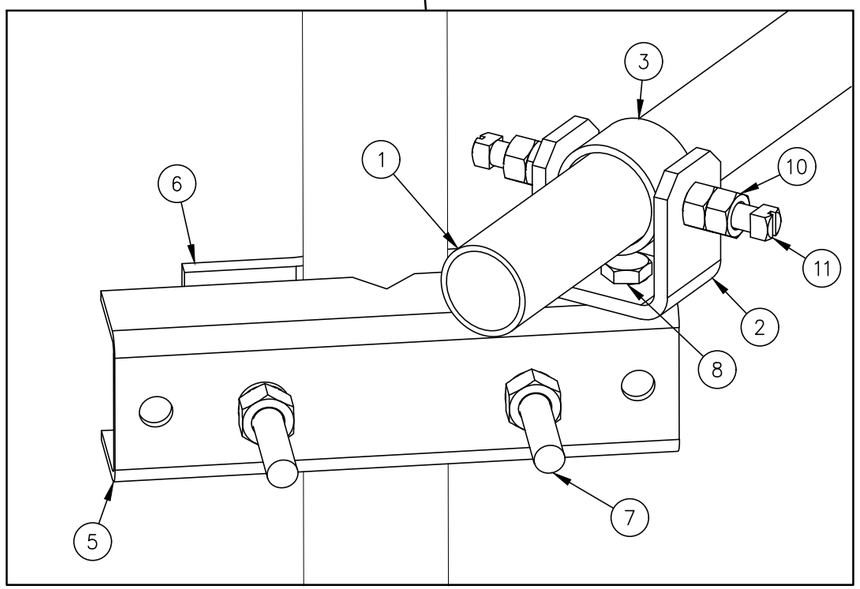
PIPE MOUNT FOR SIDEARM: 165' ELEVATION
SITE: CROOKED FINGER, OR
CUSTOMER: MARION COUNTY OREGON

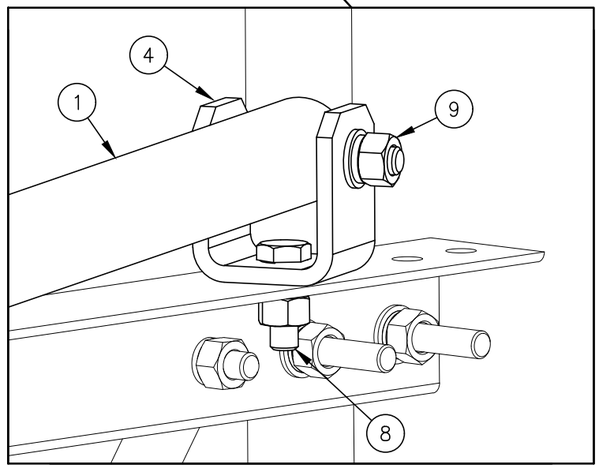
JOB NO. 563429		SIZE	DRAWING NO.		REV
DATE	8/7/25	B	563429-PM5		0
DRAWN BY	KMP			SCALE	PAGE
CHECKED BY	ZAK			None	1 OF 1

EXHIBIT K



ISOMETRIC VIEW





C10179002 SWIVEL KNUCKLE TIEBACK

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
1	1	CS02089	TIEBACK 2 3/8 X .134 X 13'-3"	43
2	1	CW00013	SWIVEL PLATE WELDMENT	3
3	1	CS00097	PIPE, SLEEVE 2 7/8 O.D. X W/0.203 X 0'-1 3/4	1
4	1	CS00098	BENT SWIVEL PLATE	3
5	1	CS01360	PLATE, MOUNTING BRACKET (FORMED CHANNEL)	9
6	1	CS01361	PLATE, 2 HOLE ADAPTER CLAMP	3
7	2	C40140001	BOLT ASSEMBLY, 3/4 X 10 A307 W/NUT, LKW, FLW	4
8	2	C40026023	BOLT ASSEMBLY, 5/8 ø X 2 A325	1
9	1	C40026033	BOLT ASSEMBLY, 5/8 ø X 4 1/2 A325	1
10	2	C40042007	HEX NUT, 5/8 A194 GRADE 2H	1
11	2	C40998007	SQ. HEAD SET SCREW, 5/8 X 2 1/2	1
			TOTAL WEIGHT LBS	70

QUANTITIES SHOWN ABOVE ARE FOR (1) SWIVEL KNUCKLE TIEBACK KIT ONLY.
(2) KITS ARE REQUIRED FOR THIS SIDEARM ASSEMBLY

UNLESS OTHERWISE SPECIFIED
ALL DIMENSIONS INCLUDE
FINISHES AND ARE IN INCHES

TOLERANCES: FRACTIONS ± 1/16"
ANGLES ± 1/2 DEG.
DECIMALS ± .010"

MATERIAL:

TOLERANCES DO NOT APPLY TO RAW MATERIAL

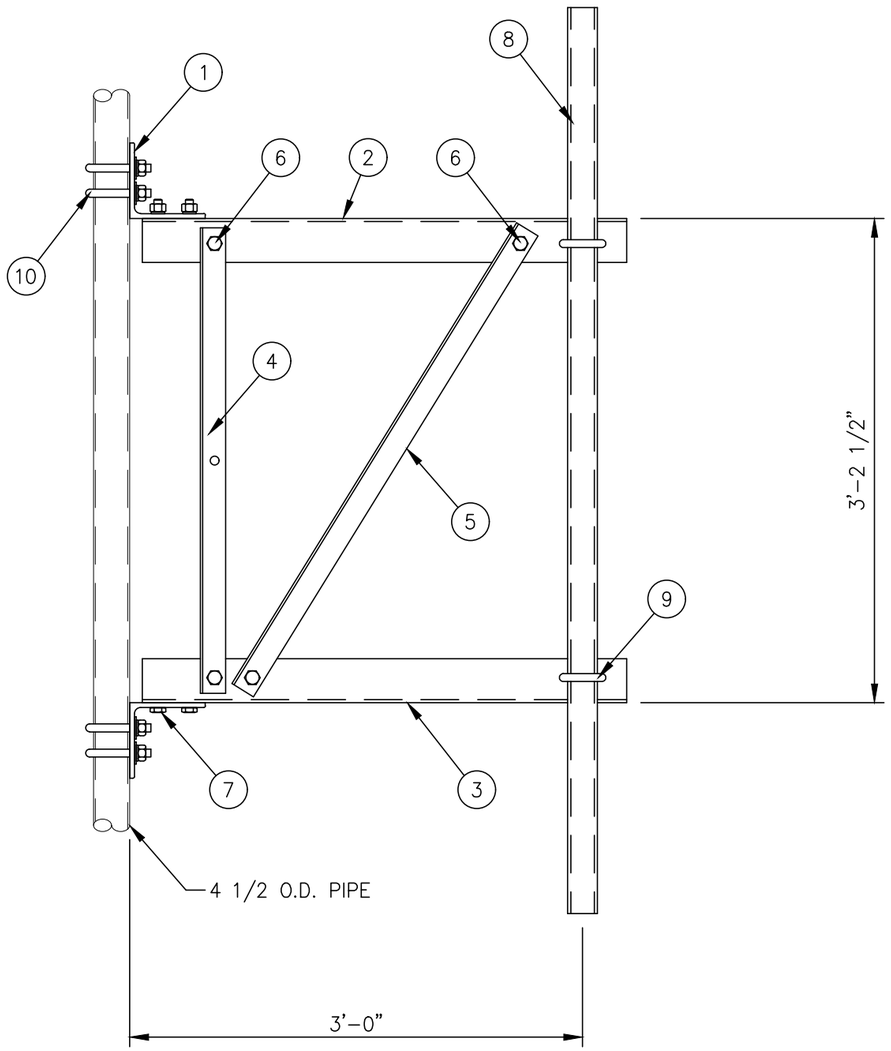
REV	DATE	DRW	CHK	DESCRIPTION

Sabre Industries™
INNOVATION DELIVERED

CONFIDENTIAL
This document and the information contained herein is the confidential trade secret property of Sabre Industries, Inc. ("Sabre") and must not be reproduced, copied or used, in whole or in part, for any purpose without the prior written consent of Sabre.
© 2025 Sabre Industries, Inc. All rights reserved.

SWIVEL KNUCKLE TIEBACKS: 165' ELEVATION
SITE: CROOKED FINGER, OR
CUSTOMER: MARION COUNTY OREGON

JOB NO. 563429		SIZE	DRAWING NO.	REV
DATE	08/07/25	B	563429-ST3	0
DRAWN BY	KMP			
CHECKED BY	ZAK		SCALE NONE	PAGE 1 OF 1



C10151103 3 FT. SIDEARM ASSEMBLY			
1	CK00060	SIDEARM ANGLE KIT	78
1	– – –	MISC HARDWARE (FRAMING)	4
1	C10900104	PIPE ANTENNA MOUNTING KIT 2 3/8" ø X 4'-0	16
4	C40034032	U-BOLT ASSEMBLY 5/8" ø X 5 3/16 C-C	9
		TOTAL WEIGHT LBS	107

CK00060 KIT LIST OF MATERIAL				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
1	2	CS00067	ANGLE, BOOM SUPPORT	23
2	1	CS01223	ANGLE, TOP CHORD	19
3	1	CS01224	ANGLE, BOTTOM CHORD	19
4	1	CS00065	ANGLE, VERTICAL	8
5	1	CS01228	ANGLE, DIAGONAL	9
			TOTAL WEIGHT LBS	78

MISC HARDWARE (FRAMING)				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
6	4	C40026022	BOLT ASSEMBLY, 5/8 ø X 1 3/4 A325	2
7	4	C40026023	BOLT ASSEMBLY, 5/8 ø X 2 A325	2
			TOTAL WEIGHT LBS	4

C10900104 ANTENNA PIPE MOUNTING KIT				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
8	1	C10981204	ANTENNA MTG. PIPE 2 3/8" ø X 4'-0	13
9	2	C40034023	U-BOLT ASSEMBLY 5/8" ø X 3 1/16 C-C	3
			TOTAL WEIGHT LBS	16

MISC HARDWARE				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
10	4	C40034032	U-BOLT ASSEMBLY 5/8" ø X 5 3/16 C-C	9
			TOTAL WEIGHT LBS	9

NOTES:

1. IF THE MOUNT IS NOT ON THE STRAIGHT PORTION OF THE TOWER SEE SITE SPECIFIC PIPE MOUNT.
2. QUANTITIES SHOWN IN LIST OF MATERIALS ARE FOR ONE (1) SIDEARM ASSEMBLY ONLY.

UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS INCLUDE FINISHES AND ARE IN INCHES

TOLERANCES: FRACTIONS ± 1/16" ANGLES ± 1/2 DEG. DECIMALS ± .010"

MATERIAL:

TOLERANCES DO NOT APPLY TO RAW MATERIAL

REV	DATE	DRW	CHK	DESCRIPTION

Sabre Industries™ INNOVATION DELIVERED

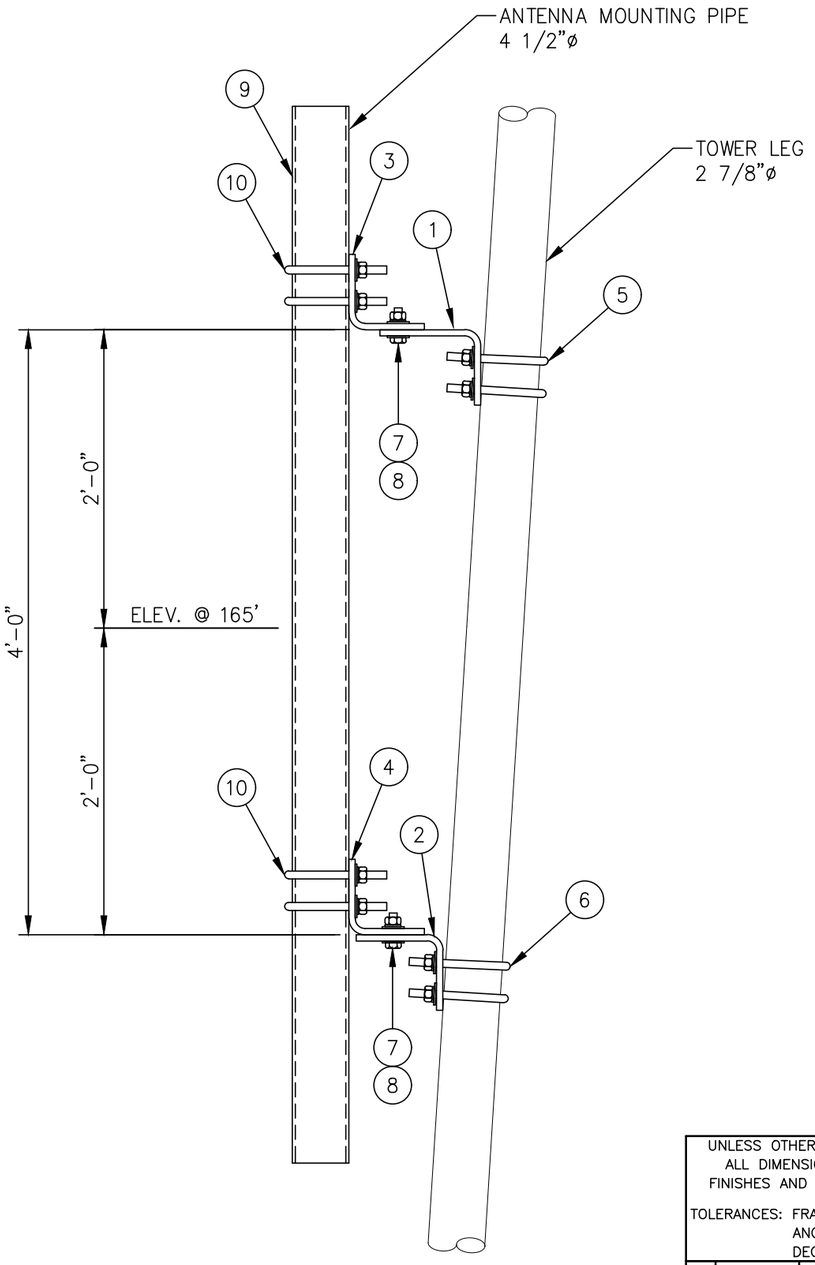
CONFIDENTIAL
This document and the information contained herein is the confidential trade secret property of Sabre Industries, Inc. ("Sabre") and must not be reproduced, copied or used, in whole or in part, for any purpose without the prior written consent of Sabre.
© 2025 Sabre Industries, Inc. All rights reserved.

3 FT. SIDEARM: 163' ELEVATION

SITE: CROOKED FINGER, OR

CUSTOMER: MARION COUNTY OREGON

JOB NO. 563429		SIZE	DRAWING NO.	REV
DATE	08/07/25	B	563429-SA4	0
DRAWN BY	KMP			
CHECKED BY	ZAK		SCALE NONE	PAGE 1 OF 1



ELEVATION VIEW

LIST OF MATERIALS FOR TAPERED LEG PIPE MOUNT KIT C10174018				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
1.	1	CS00216	TOP LEG MOUNT FOR 2 7/8 ø LEG	15
2.	1	CS00215	BOTTOM LEG MOUNT FOR 2 7/8 ø LEG	12
3.	1	CS00214	TOP PIPE MOUNT FOR 4 1/2 ø PIPE	15
4.	1	CS00215	BOTTOM PIPE MOUNT FOR 4 1/2 ø PIPE	12
5.	2	C40034025	U-BOLT ASSEMBLY 5/8 ø X 3 9/16 C-C (TOP LEG MOUNT)	4
6.	2	C40034025	U-BOLT ASSEMBLY 5/8 ø X 3 9/16 C-C (BOTTOM LEG MOUNT)	4
7.	4	C40026024	BOLT ASSEMBLY 5/8 ø X 2 1/4 A325	2
8.	8	C40031003	FLATWASHER, 5/8 ø (F436)	1
			KIT WEIGHT LBS	65

LIST OF ADDITIONAL MATERIALS				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
9.	1	C10981407	ANTENNA MTG. PIPE 4 1/2 ø X 7'-0	58
10.	4	C40034032	U-BOLT ASSEMBLY 5/8 ø X 5 3/16 C-C (PIPE MOUNTS)	9
			ADDITIONAL WEIGHT LBS	67

TOTAL WEIGHT LBS	132

UNLESS OTHERWISE SPECIFIED
ALL DIMENSIONS INCLUDE FINISHES AND ARE IN INCHES
TOLERANCES: FRACTIONS ± 1/16"
ANGLES ± 1/2 DEG.
DECIMALS ± .010"

MATERIAL:

TOLERANCES DO NOT APPLY TO RAW MATERIAL

REV	DATE	DRW	CHK	DESCRIPTION

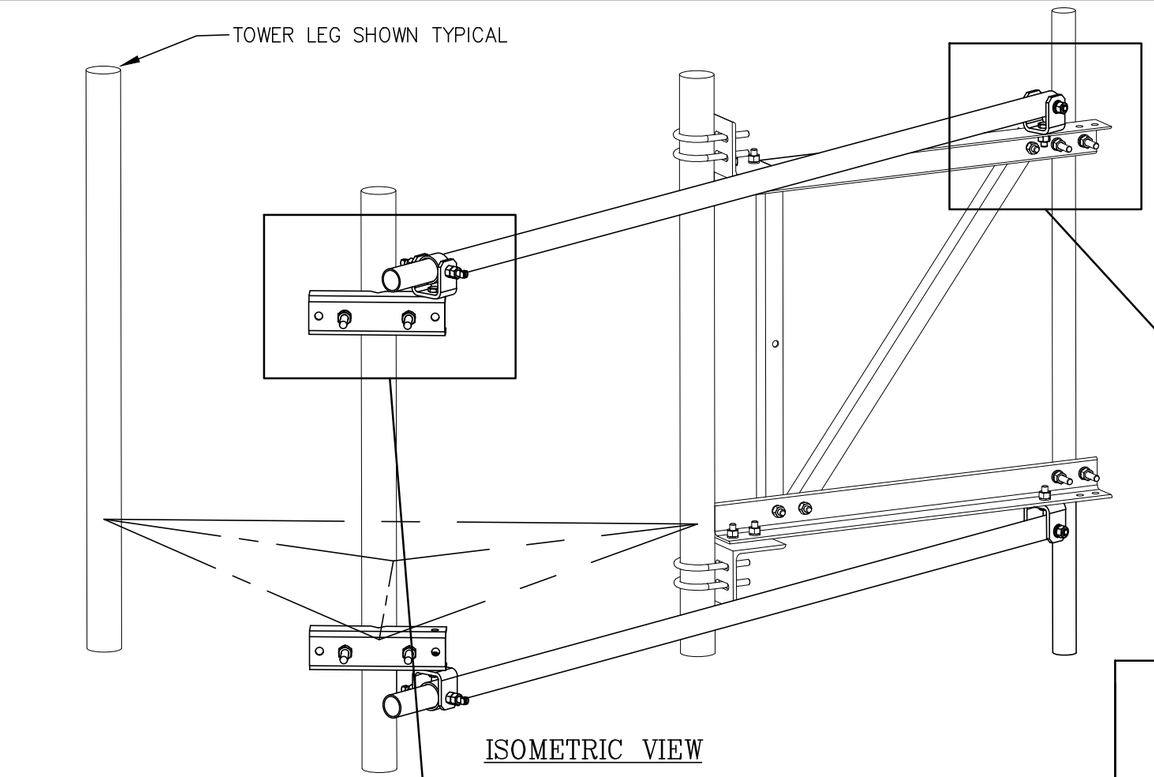
Sabre Industries™
INNOVATION DELIVERED

CONFIDENTIAL

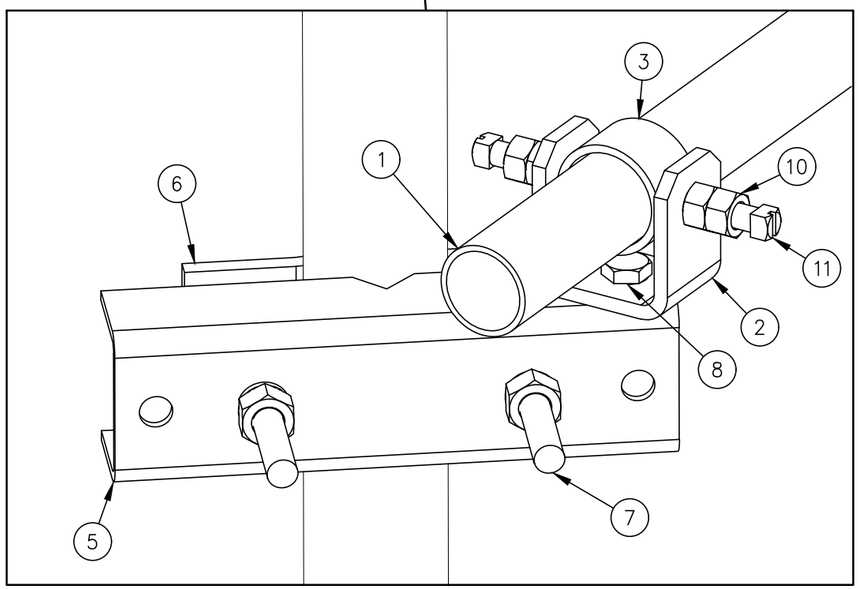
This document and the information contained herein is the confidential trade secret property of Sabre Industries, Inc. ("Sabre") and must not be reproduced, copied or used, in whole or in part, for any purpose without the prior written consent of Sabre.
© 2025 Sabre Industries, Inc. All rights reserved.

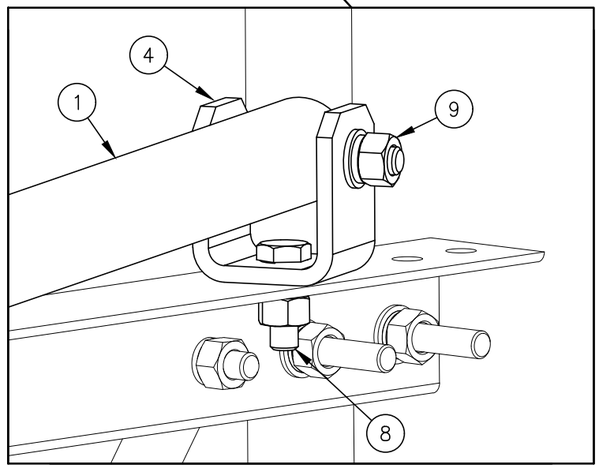
PIPE MOUNT FOR SIDEARM: 163' ELEVATION
SITE: CROOKED FINGER, OR
CUSTOMER: MARION COUNTY OREGON

JOB NO. 563429		SIZE	DRAWING NO.		REV
DATE	8/7/25	B	563429-PM6		0
DRAWN BY	KMP			SCALE	PAGE
CHECKED BY	ZAK			None	1 OF 1



ISOMETRIC VIEW





C10179002 SWIVEL KNUCKLE TIEBACK

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
1	1	CS02089	TIEBACK 2 3/8 X .134 X 13'-3"	43
2	1	CW00013	SWIVEL PLATE WELDMENT	3
3	1	CS00097	PIPE, SLEEVE 2 7/8 O.D. X W/0.203 X 0'-1 3/4	1
4	1	CS00098	BENT SWIVEL PLATE	3
5	1	CS01360	PLATE, MOUNTING BRACKET (FORMED CHANNEL)	9
6	1	CS01361	PLATE, 2 HOLE ADAPTER CLAMP	3
7	2	C40140001	BOLT ASSEMBLY, 3/4 X 10 A307 W/NUT, LKW, FLW	4
8	2	C40026023	BOLT ASSEMBLY, 5/8 ø X 2 A325	1
9	1	C40026033	BOLT ASSEMBLY, 5/8 ø X 4 1/2 A325	1
10	2	C40042007	HEX NUT, 5/8 A194 GRADE 2H	1
11	2	C40998007	SQ. HEAD SET SCREW, 5/8 X 2 1/2	1
			TOTAL WEIGHT LBS	70

QUANTITIES SHOWN ABOVE ARE FOR (1) SWIVEL KNUCKLE TIEBACK KIT ONLY.
(2) KITS ARE REQUIRED FOR THIS SIDEARM ASSEMBLY

UNLESS OTHERWISE SPECIFIED
ALL DIMENSIONS INCLUDE
FINISHES AND ARE IN INCHES

TOLERANCES: FRACTIONS ± 1/16"
ANGLES ± 1/2 DEG.
DECIMALS ± .010"

MATERIAL:

TOLERANCES DO NOT APPLY TO RAW MATERIAL

REV	DATE	DRW	CHK	DESCRIPTION

Sabre Industries™
INNOVATION DELIVERED

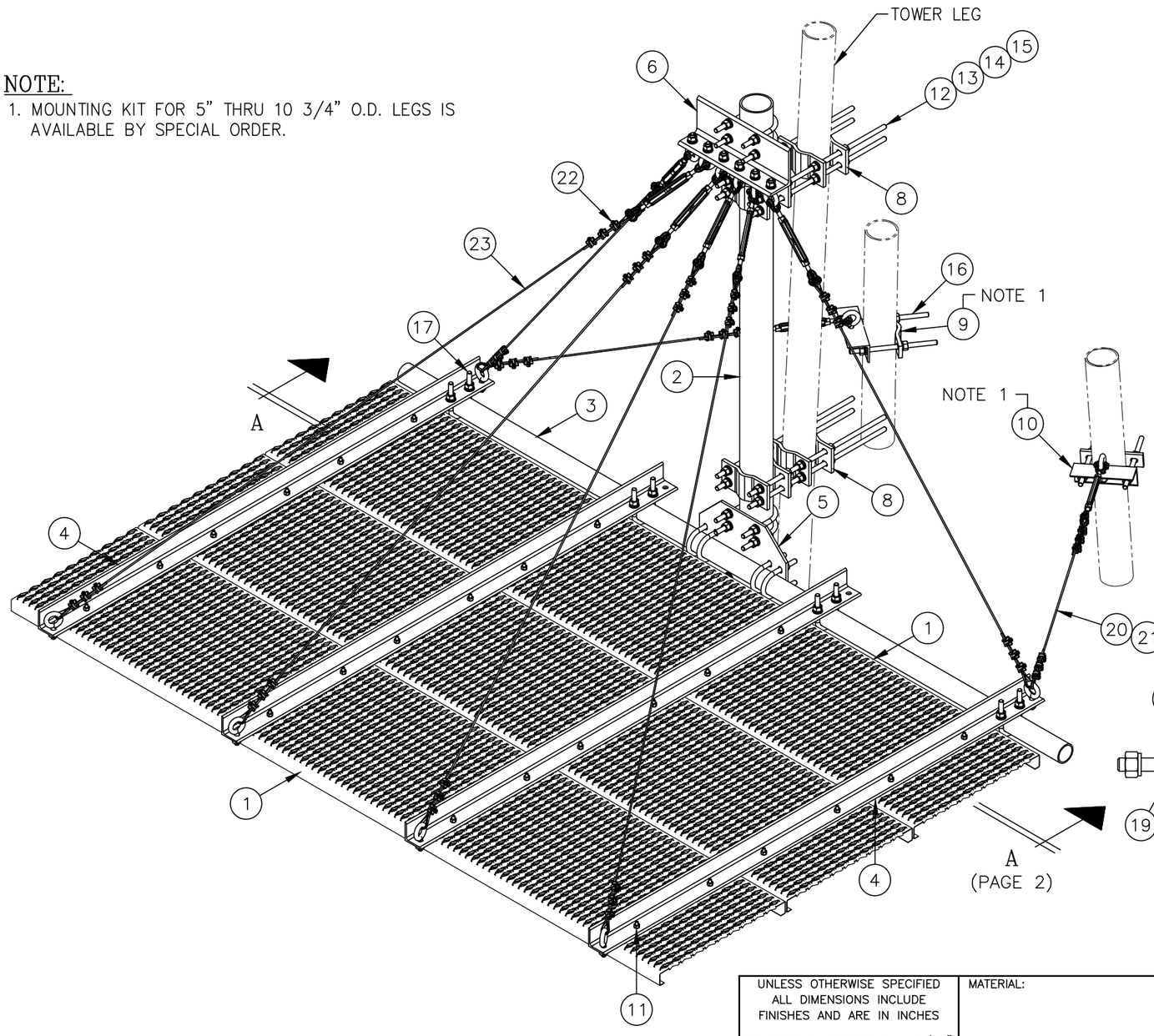
CONFIDENTIAL
This document and the information contained herein is the confidential trade secret property of Sabre Industries, Inc. ("Sabre") and must not be reproduced, copied or used, in whole or in part, for any purpose without the prior written consent of Sabre.
© 2025 Sabre Industries, Inc. All rights reserved.

SWIVEL KNUCKLE TIEBACKS: 163' ELEVATION
SITE: CROOKED FINGER, OR
CUSTOMER: MARION COUNTY OREGON

JOB NO. 563429		SIZE	DRAWING NO.	REV
DATE	08/07/25	B	563429-ST4	0
DRAWN BY	KMP			
CHECKED BY	ZAK		SCALE NONE	PAGE 1 OF 1

NOTE:

1. MOUNTING KIT FOR 5" THRU 10 3/4" O.D. LEGS IS AVAILABLE BY SPECIAL ORDER.

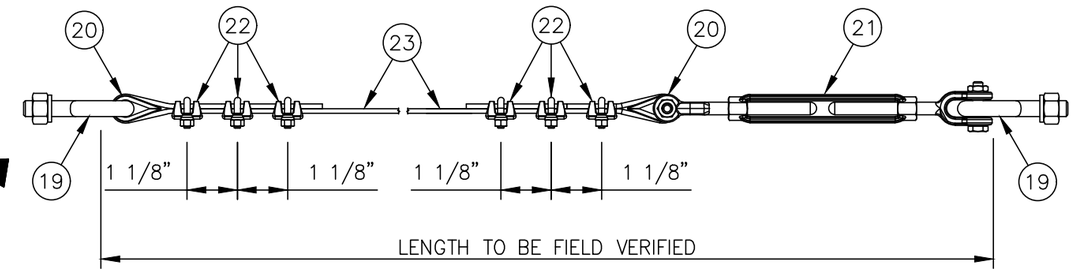


ISOMETRIC VIEW

(SEE PAGE 2 FOR MORE DETAILS)

C30085002 ICE SHIELD ASSEMBLY

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT
1.	3	C20137002	SAFETY GRATING, 2'-0 WIDE BY 10'-0 LONG	222
2.	1	C10981407	PIPE, 4 1/2" O.D. X W/0.180 X 7'-0	58
3.	1	C10901310	PIPE, 2 7/8" O.D. X W/0.203 X 10'-6	63
4.	4	CS00155	ANGLE, ICE SHIELD SUPPORT	143
5.	1	CS00156	PLATE, ICE SHIELD MOUNT	22
6.	1	CS01926	ANGLE, ICE SHIELD HANGER	19
7.	12	CS00158	PLATE, ICE SHIELD BACKUP	28
8.	8	CS00017	4 HOLE ADAPTER CLAMP 1 1/2" TO 5" O.D.	39
9.	2	CS00144	2 HOLE ADAPTER CLAMP 1 1/2" TO 5" O.D.	5
10.	2	CS01925	ANGLE, ICE SHIELD TIE BACK	7
11.	24	C40024006	BOLT ASSEMBLY, 3/8 ø X 2 GR 5	2
12.	16	C40042007	NUT, 5/8 ø A194 GRADE 2H	1
13.	16	C40030012	LOCKWASHER, 5/8 ø	1
14.	16	C40031003	FLATWASHER, 5/8 ø HARDENED ASTM F436	1
15.	8	C40099004	THREADED ROD ASS'Y, 5/8 ø X 2'-2 ASTM A193	22
16.	4	C40099002	THREADED ROD ASS'Y, 5/8 ø X 1'-0 ASTM A193	6
17.	8	C40034025	U-BOLT ASSEMBLY, 5/8 ø X 3 9/16" C-C	14
18.	6	C40034032	U-BOLT ASSEMBLY, 5/8 ø X 5 3/16" C-C	13
19.	14	C40079002	EYEBOLT ASSEMBLY, 5/8 ø X 1 3/4	8
20.	16	C40055011	THIMBLE, 3/16" STD	1
21.	8	C40051018	TURNBUCKLE, 1/2" X 6" J & J HDG	12
22.	48	C40056001	WIRE ROPE CLIP, 3/16"	5
23.	1	C30998120	AIRCRAFT CABLE, 3/16" X 120'-0	9
			TOTAL WEIGHT	701



TYPICAL CABLE ASSEMBLY

UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS INCLUDE FINISHES AND ARE IN INCHES

TOLERANCES: FRACTIONS ± 1/16" ANGLES ± 1/2 DEG. DECIMALS ± .010"

MATERIAL:

TOLERANCES DO NOT APPLY TO RAW MATERIAL

REV	DATE	DRW	CHK	DESCRIPTION
4	1/29/09	WRF	MC	REVISED PART NUMBERS OF ITEMS 6, 10, & EYEBOLTS WERE 3/8" & TURNB. WERE 1/4"
3	1/13/09	MLC	MC	REVISE PIPE (ITEM 2)
2	06/21/06	WRF	WMN	ADDED ISOMETRIC VIEW
1	4/4/03	KLE	DLW	REVISED PART NUMBERS

Sabre Industries™ INNOVATION DELIVERED

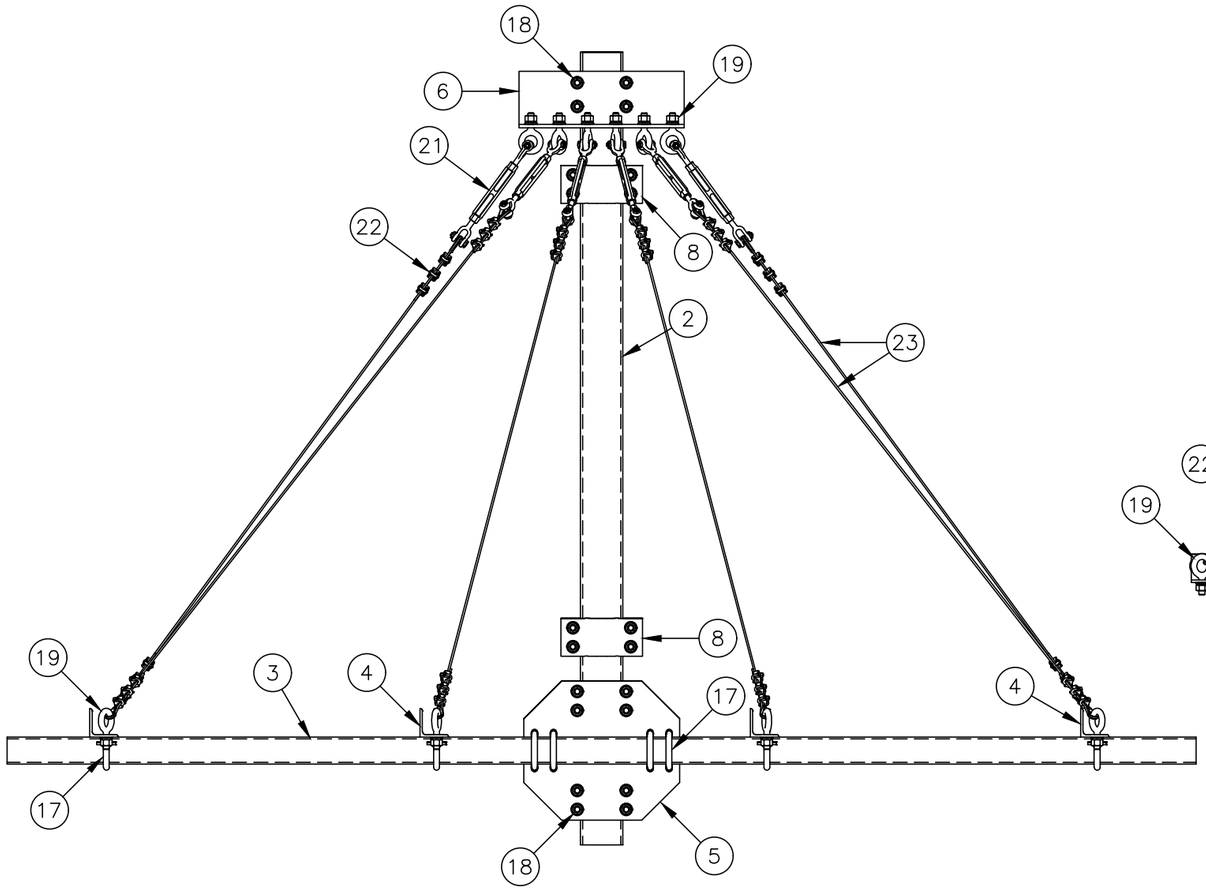
CONFIDENTIAL

This document and the information contained herein is the confidential trade secret property of Sabre Industries, Inc. ("Sabre") and must not be reproduced, copied or used, in whole or in part, for any purpose without the prior written consent of Sabre.

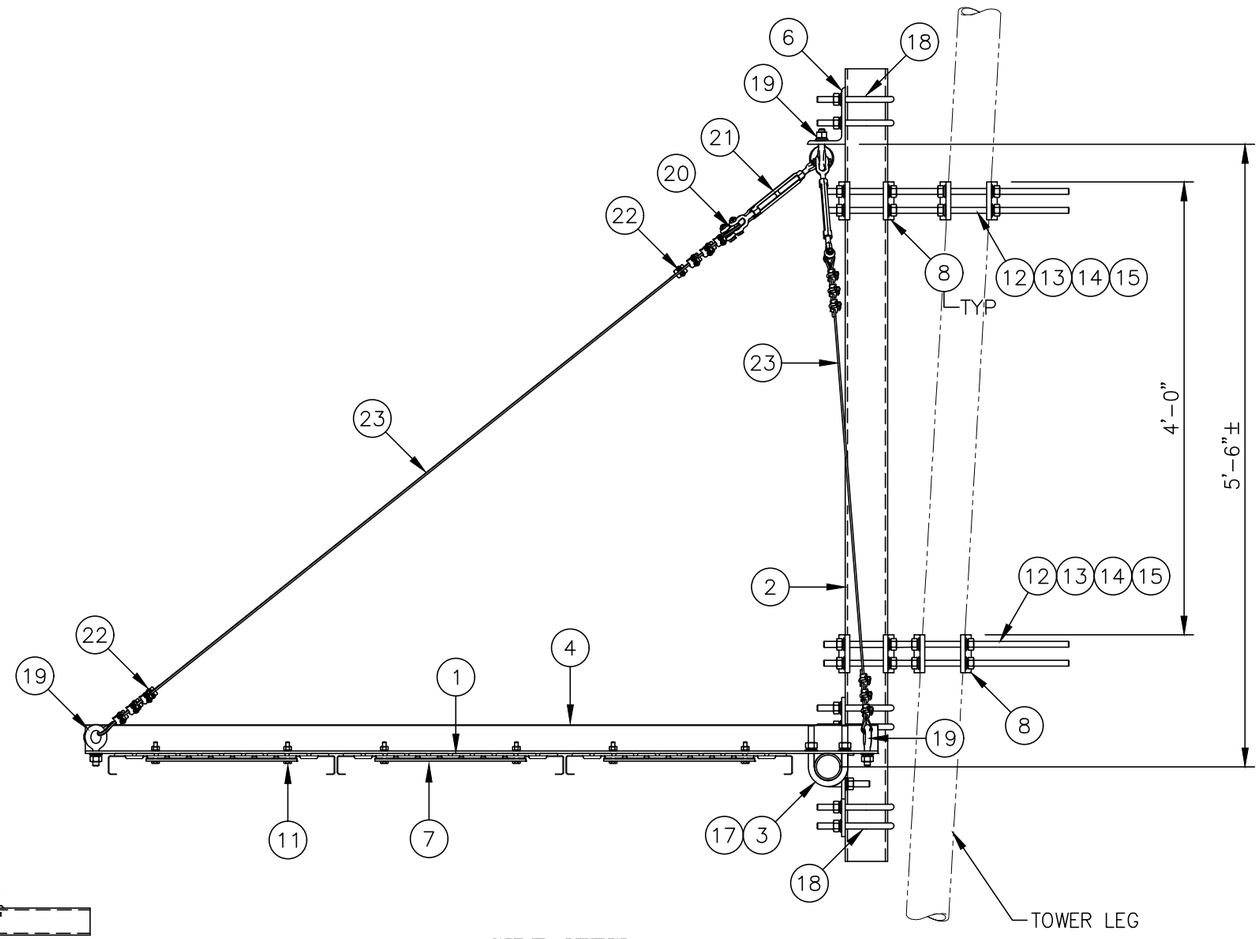
© 2022 Sabre Industries, Inc. All rights reserved.

ICE SHIELD ASSEMBLY FOR 6'-0 & 8'-0 DISH ANTENNA FITS 1 1/2 ø TO 5 ø LEGS

		SIZE	DRAWING NO.	REV
DATE	01/11/01	B	C30085002	4
DRAWN BY	BCT			
CHECKED BY	KLE		SCALE None	PAGE 1 OF 2



SECTION A–A
(GRATING REMOVED FOR CLARITY)



SIDE VIEW

REV	DATE	DRW	CHK	DESCRIPTION
4	1/29/09	WRF	MC	REVISED PART NUMBERS OF ITEMS 6, 10, & EYEBOLTS WERE 3/8" & TURNB. WERE 1/4"
3	1/13/09	MLC	MC	REVISE PIPE (ITEM 2)
2	06/21/06	WRF	WMN	ADDED ISOMETRIC VIEW
1	4/4/03	KLE	DLW	REVISED PART NUMBERS

UNLESS OTHERWISE SPECIFIED
ALL DIMENSIONS INCLUDE FINISHES AND ARE IN INCHES
TOLERANCES: FRACTIONS ± 1/16"
ANGLES ± 1/2 DEG.
DECIMALS ± .010"

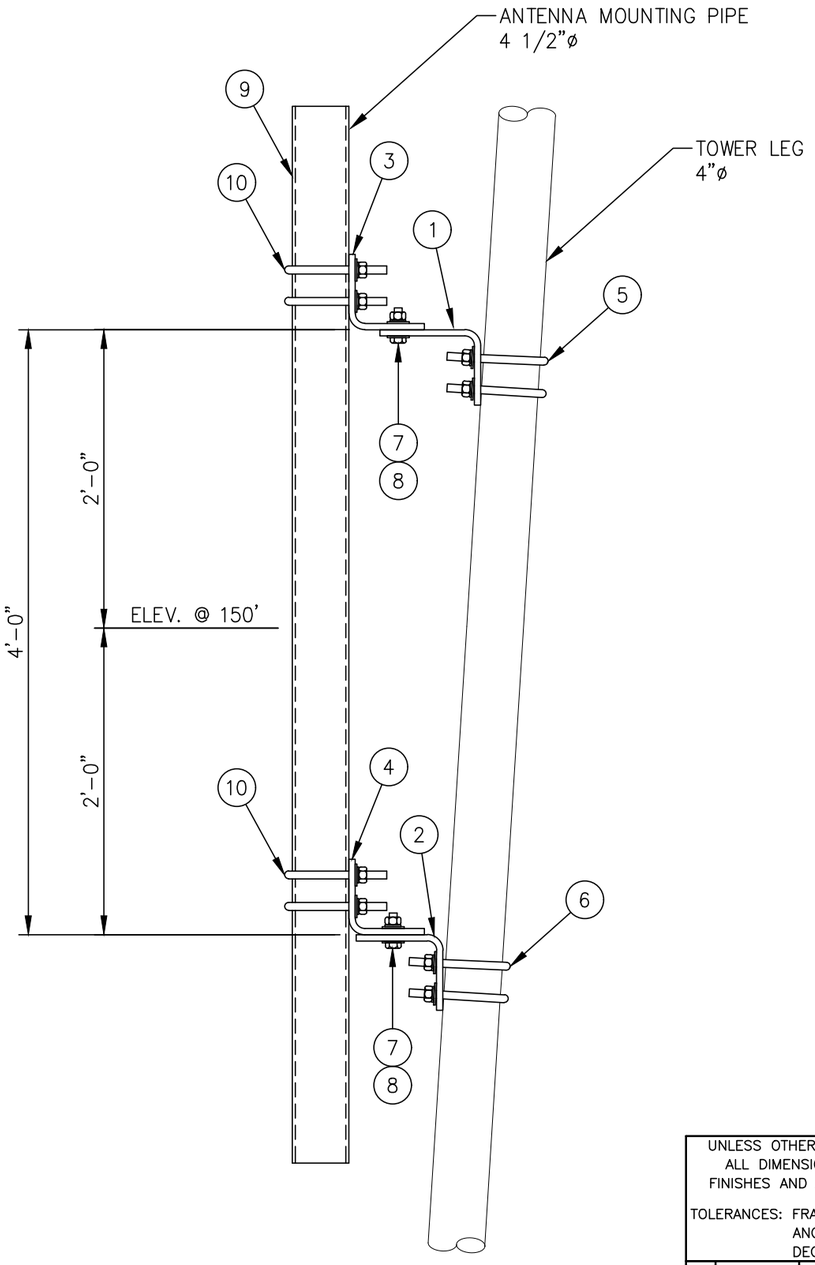
MATERIAL:
TOLERANCES DO NOT APPLY TO RAW MATERIAL

Sabre Industries™
INNOVATION DELIVERED

CONFIDENTIAL
This document and the information contained herein is the confidential trade secret property of Sabre Industries, Inc. ("Sabre") and must not be reproduced, copied or used, in whole or in part, for any purpose without the prior written consent of Sabre.
© 2022 Sabre Industries, Inc. All rights reserved.

ICE SHIELD ASSEMBLY
FOR 6'–0 & 8'–0 DISH ANTENNA
FITS 1 1/2 ø TO 5 ø LEGS

		SIZE	DRAWING NO.	REV
DATE	01/11/01	B	C30085002	4
DRAWN BY	BCT			
CHECKED BY	KLE	SCALE None	PAGE 2 OF 2	



ELEVATION VIEW

LIST OF MATERIALS FOR TAPERED LEG PIPE MOUNT KIT C10174036				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
1.	1	CS00216	TOP LEG MOUNT FOR 4 ø LEG	15
2.	1	CS00215	BOTTOM LEG MOUNT FOR 4 ø LEG	12
3.	1	CS00214	TOP PIPE MOUNT FOR 4 1/2 ø PIPE	15
4.	1	CS00215	BOTTOM PIPE MOUNT FOR 4 1/2 ø PIPE	12
5.	2	C40034030	U-BOLT ASSEMBLY 5/8 ø X 4 11/16 C-C (TOP LEG MOUNT)	4
6.	2	C40034030	U-BOLT ASSEMBLY 5/8 ø X 4 11/16 C-C (BOTTOM LEG MOUNT)	4
7.	4	C40026024	BOLT ASSEMBLY 5/8 ø X 2 1/4 A325	2
8.	8	C40031003	FLATWASHER, 5/8 ø (F436)	1
			KIT WEIGHT LBS	65

LIST OF ADDITIONAL MATERIALS				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
9.	1	C10981407	ANTENNA MTG. PIPE 4 1/2 ø X 7'-0	58
10.	4	C40034032	U-BOLT ASSEMBLY 5/8 ø X 5 3/16 C-C (PIPE MOUNTS)	9
			ADDITIONAL WEIGHT LBS	67

TOTAL WEIGHT LBS	132

UNLESS OTHERWISE SPECIFIED
ALL DIMENSIONS INCLUDE FINISHES AND ARE IN INCHES
TOLERANCES: FRACTIONS ± 1/16"
ANGLES ± 1/2 DEG.
DECIMALS ± .010"

MATERIAL:

TOLERANCES DO NOT APPLY TO RAW MATERIAL

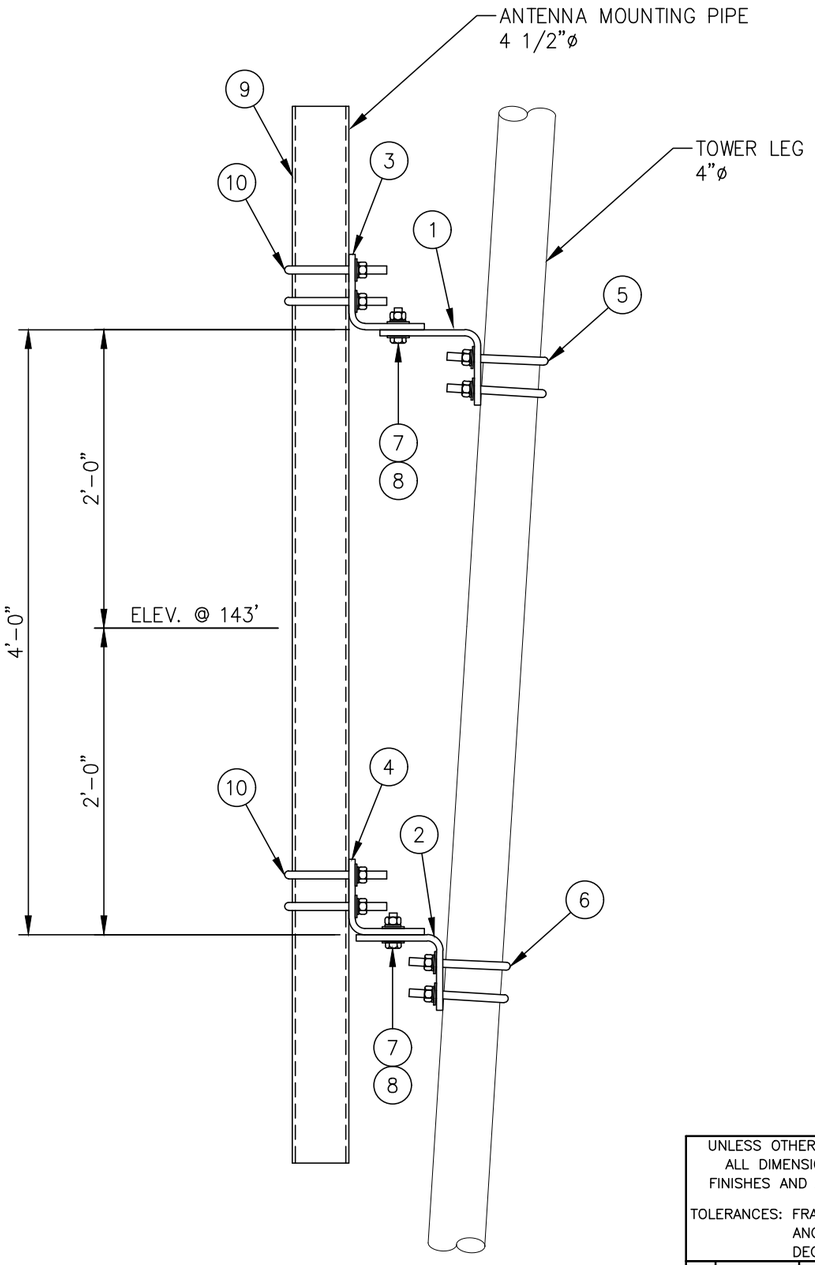
REV	DATE	DRW	CHK	DESCRIPTION

Sabre Industries™
INNOVATION DELIVERED

CONFIDENTIAL
This document and the information contained herein is the confidential trade secret property of Sabre Industries, Inc. ("Sabre") and must not be reproduced, copied or used, in whole or in part, for any purpose without the prior written consent of Sabre.
© 2025 Sabre Industries, Inc. All rights reserved.

PIPE MOUNTS: 150' ELEVATION
SITE: CROOKED FINGER, OR
CUSTOMER: MARION COUNTY OREGON

JOB NO. 563429		SIZE	DRAWING NO.		REV
DATE	8/7/25	B	563429-PM7		0
DRAWN BY	KMP			SCALE	PAGE
CHECKED BY	ZAK			None	1 OF 1



ELEVATION VIEW

LIST OF MATERIALS FOR TAPERED LEG PIPE MOUNT KIT C10174036				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
1.	1	CS00216	TOP LEG MOUNT FOR 4 ø LEG	15
2.	1	CS00215	BOTTOM LEG MOUNT FOR 4 ø LEG	12
3.	1	CS00214	TOP PIPE MOUNT FOR 4 1/2 ø PIPE	15
4.	1	CS00215	BOTTOM PIPE MOUNT FOR 4 1/2 ø PIPE	12
5.	2	C40034030	U-BOLT ASSEMBLY 5/8 ø X 4 11/16 C-C (TOP LEG MOUNT)	4
6.	2	C40034030	U-BOLT ASSEMBLY 5/8 ø X 4 11/16 C-C (BOTTOM LEG MOUNT)	4
7.	4	C40026024	BOLT ASSEMBLY 5/8 ø X 2 1/4 A325	2
8.	8	C40031003	FLATWASHER, 5/8 ø (F436)	1
			KIT WEIGHT LBS	65

LIST OF ADDITIONAL MATERIALS				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
9.	1	C10981407	ANTENNA MTG. PIPE 4 1/2 ø X 7'-0	58
10.	4	C40034032	U-BOLT ASSEMBLY 5/8 ø X 5 3/16 C-C (PIPE MOUNTS)	9
			ADDITIONAL WEIGHT LBS	67

TOTAL WEIGHT LBS	132

UNLESS OTHERWISE SPECIFIED
ALL DIMENSIONS INCLUDE FINISHES AND ARE IN INCHES

TOLERANCES: FRACTIONS ± 1/16"
ANGLES ± 1/2 DEG.
DECIMALS ± .010"

MATERIAL:

TOLERANCES DO NOT APPLY TO RAW MATERIAL

REV	DATE	DRW	CHK	DESCRIPTION

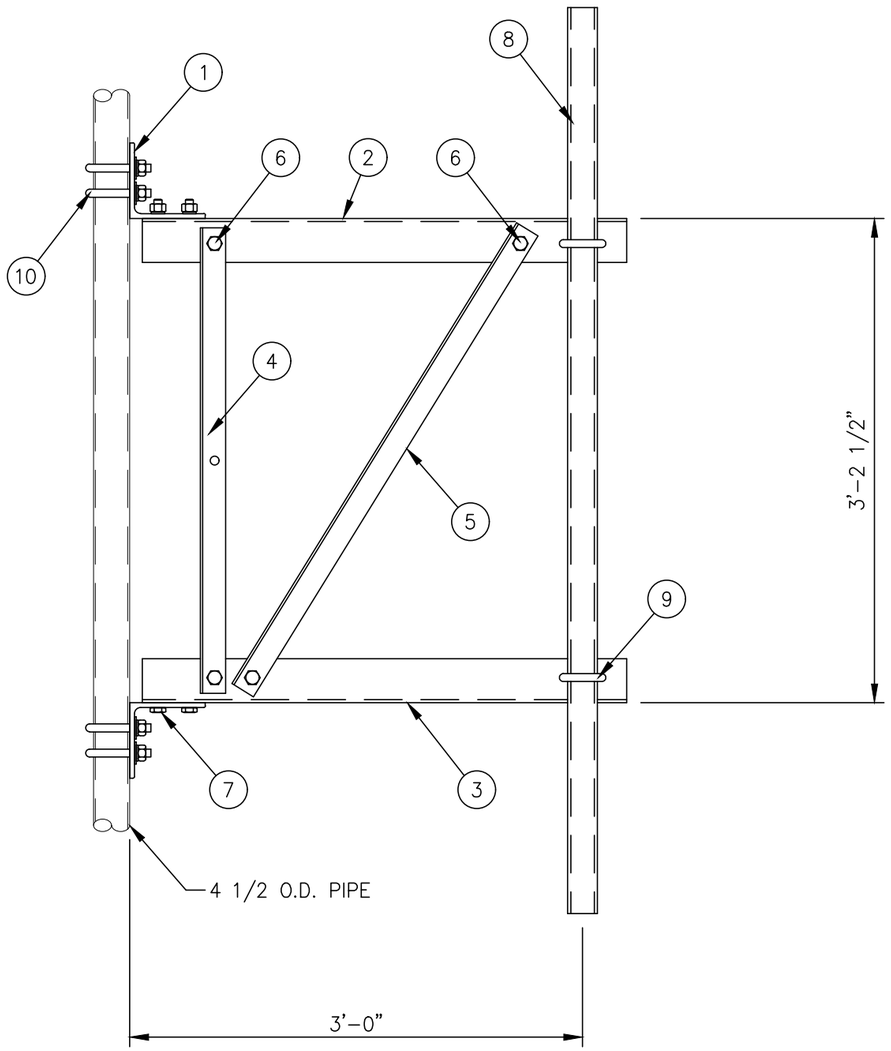
Sabre Industries™
INNOVATION DELIVERED

CONFIDENTIAL

This document and the information contained herein is the confidential trade secret property of Sabre Industries, Inc. ("Sabre") and must not be reproduced, copied or used, in whole or in part, for any purpose without the prior written consent of Sabre.
© 2025 Sabre Industries, Inc. All rights reserved.

PIPE MOUNT: 143' ELEVATION
SITE: CROOKED FINGER, OR
CUSTOMER: MARION COUNTY OREGON

JOB NO. 563429		SIZE	DRAWING NO.		REV
DATE	8/7/25	B	563429-PM8		0
DRAWN BY	KMP			SCALE	PAGE
CHECKED BY	ZAK			None	1 OF 1



C10151103 3 FT. SIDEARM ASSEMBLY			
1	CK00060	SIDEARM ANGLE KIT	78
1	– – –	MISC HARDWARE (FRAMING)	4
1	C10900105	PIPE ANTENNA MOUNTING KIT 2 3/8" ø X 5'-0	19
4	C40034032	U-BOLT ASSEMBLY 5/8" ø X 5 3/16 C-C	9
		TOTAL WEIGHT LBS	110

CK00060 KIT LIST OF MATERIAL				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
1	2	CS00067	ANGLE, BOOM SUPPORT	23
2	1	CS01223	ANGLE, TOP CHORD	19
3	1	CS01224	ANGLE, BOTTOM CHORD	19
4	1	CS00065	ANGLE, VERTICAL	8
5	1	CS01228	ANGLE, DIAGONAL	9
			TOTAL WEIGHT LBS	78

MISC HARDWARE (FRAMING)				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
6	4	C40026022	BOLT ASSEMBLY, 5/8 ø X 1 3/4 A325	2
7	4	C40026023	BOLT ASSEMBLY, 5/8 ø X 2 A325	2
			TOTAL WEIGHT LBS	4

C10900105 ANTENNA PIPE MOUNTING KIT				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
8	1	C10981223	ANTENNA MTG. PIPE 2 3/8" ø X 5'-0	16
9	2	C40034023	U-BOLT ASSEMBLY 5/8" ø X 3 1/16 C-C	3
			TOTAL WEIGHT LBS	19

MISC HARDWARE				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
10	4	C40034032	U-BOLT ASSEMBLY 5/8" ø X 5 3/16 C-C	9
			TOTAL WEIGHT LBS	9

NOTES:

1. IF THE MOUNT IS NOT ON THE STRAIGHT PORTION OF THE TOWER SEE SITE SPECIFIC PIPE MOUNT.
2. QUANTITIES SHOWN IN LIST OF MATERIALS ARE FOR ONE (1) SIDEARM ASSEMBLY ONLY.

UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS INCLUDE FINISHES AND ARE IN INCHES

TOLERANCES: FRACTIONS ± 1/16" ANGLES ± 1/2 DEG. DECIMALS ± .010"

MATERIAL:

TOLERANCES DO NOT APPLY TO RAW MATERIAL

REV	DATE	DRW	CHK	DESCRIPTION

Sabre Industries™ INNOVATION DELIVERED

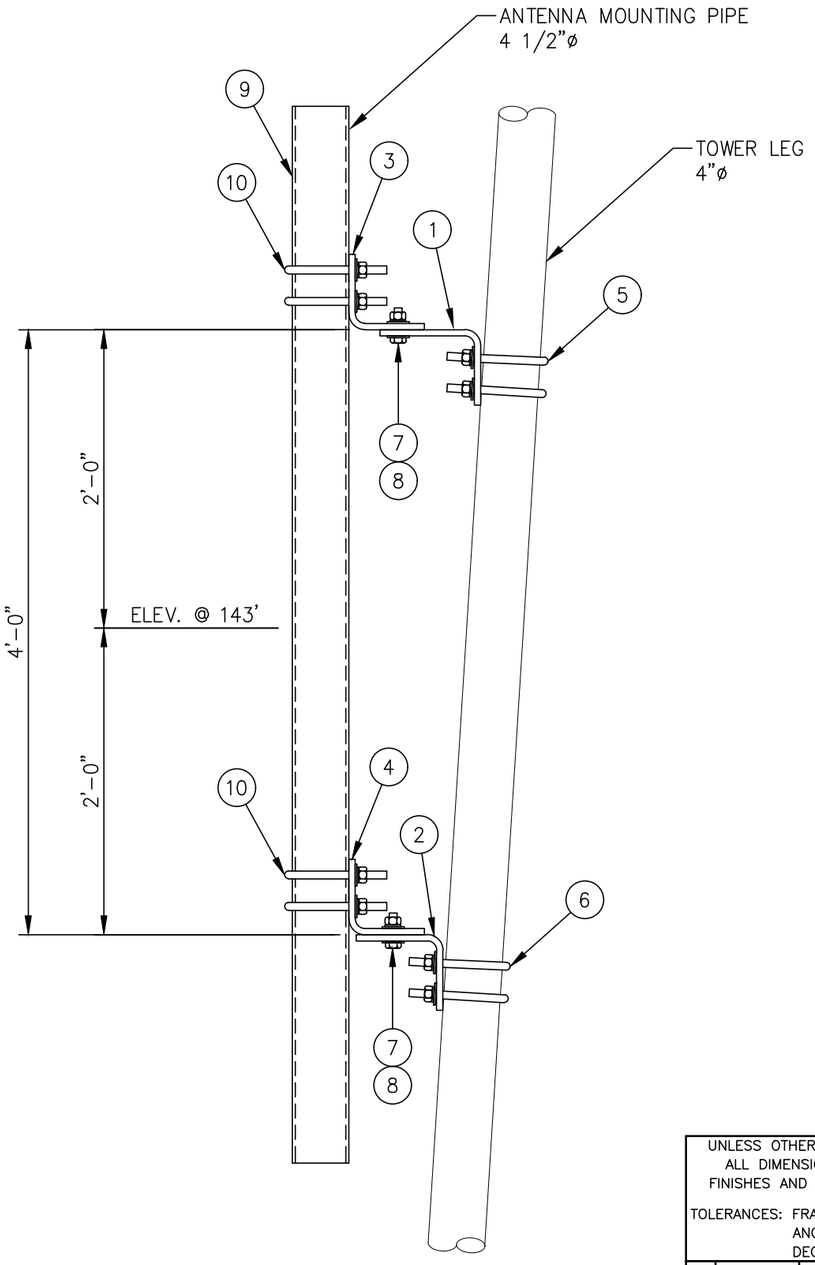
CONFIDENTIAL
This document and the information contained herein is the confidential trade secret property of Sabre Industries, Inc. ("Sabre") and must not be reproduced, copied or used, in whole or in part, for any purpose without the prior written consent of Sabre.
© 2025 Sabre Industries, Inc. All rights reserved.

3 FT. SIDEARM: 143' ELEVATION

SITE: CROOKED FINGER, OR

CUSTOMER: MARION COUNTY OREGON

JOB NO. 563429		SIZE	DRAWING NO.	REV
DATE	08/07/25	B	563429-SA5	0
DRAWN BY	KMP			
CHECKED BY	ZAK		SCALE NONE	PAGE 1 OF 1



ELEVATION VIEW

LIST OF MATERIALS FOR TAPERED LEG PIPE MOUNT KIT C10174036				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
1.	1	CS00216	TOP LEG MOUNT FOR 4 ø LEG	15
2.	1	CS00215	BOTTOM LEG MOUNT FOR 4 ø LEG	12
3.	1	CS00214	TOP PIPE MOUNT FOR 4 1/2 ø PIPE	15
4.	1	CS00215	BOTTOM PIPE MOUNT FOR 4 1/2 ø PIPE	12
5.	2	C40034030	U-BOLT ASSEMBLY 5/8 ø X 4 11/16 C-C (TOP LEG MOUNT)	4
6.	2	C40034030	U-BOLT ASSEMBLY 5/8 ø X 4 11/16 C-C (BOTTOM LEG MOUNT)	4
7.	4	C40026024	BOLT ASSEMBLY 5/8 ø X 2 1/4 A325	2
8.	8	C40031003	FLATWASHER, 5/8 ø (F436)	1
			KIT WEIGHT LBS	65

LIST OF ADDITIONAL MATERIALS				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
9.	1	C10981407	ANTENNA MTG. PIPE 4 1/2 ø X 7'-0	58
10.	4	C40034032	U-BOLT ASSEMBLY 5/8 ø X 5 3/16 C-C (PIPE MOUNTS)	9
			ADDITIONAL WEIGHT LBS	67

TOTAL WEIGHT LBS	132

UNLESS OTHERWISE SPECIFIED
ALL DIMENSIONS INCLUDE FINISHES AND ARE IN INCHES
TOLERANCES: FRACTIONS ± 1/16"
ANGLES ± 1/2 DEG.
DECIMALS ± .010"

MATERIAL:

TOLERANCES DO NOT APPLY TO RAW MATERIAL

REV	DATE	DRW	CHK	DESCRIPTION

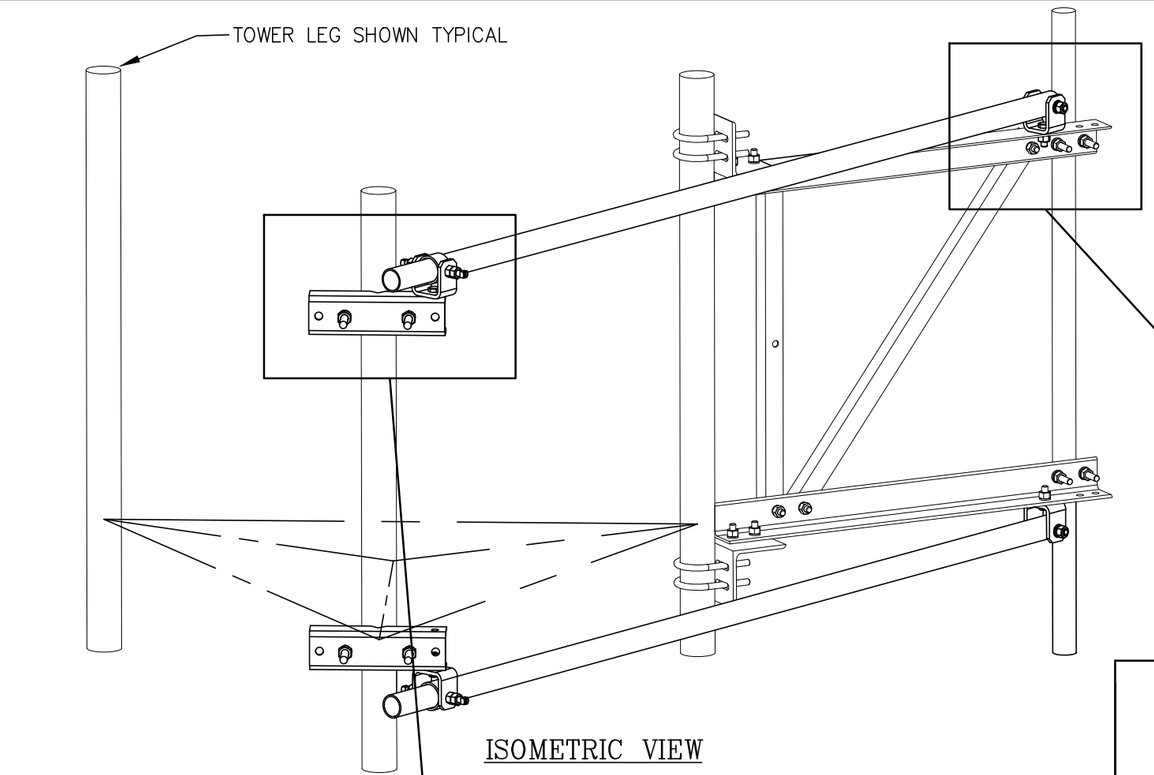
Sabre Industries™
INNOVATION DELIVERED

CONFIDENTIAL
This document and the information contained herein is the confidential trade secret property of Sabre Industries, Inc. ("Sabre") and must not be reproduced, copied or used, in whole or in part, for any purpose without the prior written consent of Sabre.
© 2025 Sabre Industries, Inc. All rights reserved.

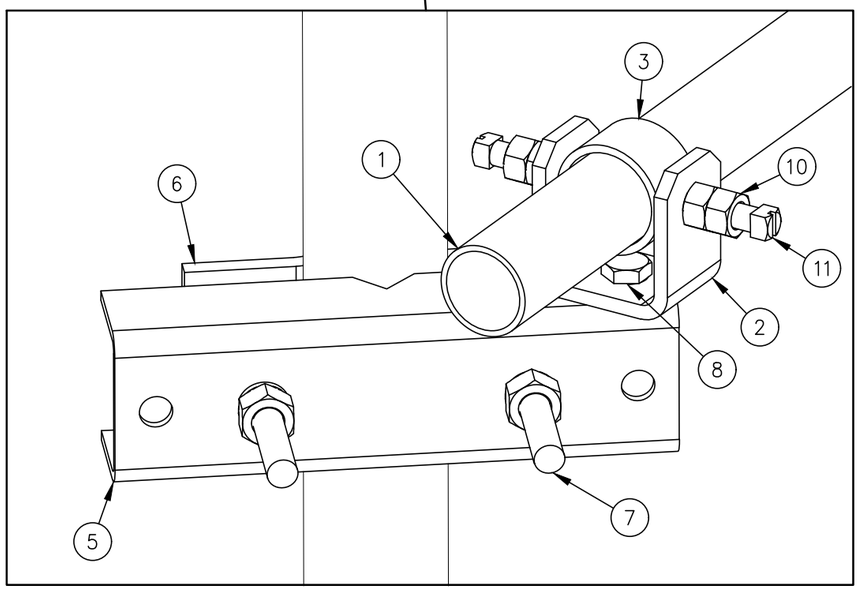
PIPE MOUNT FOR SIDEARM: 143' ELEVATION
SITE: CROOKED FINGER, OR
CUSTOMER: MARION COUNTY OREGON

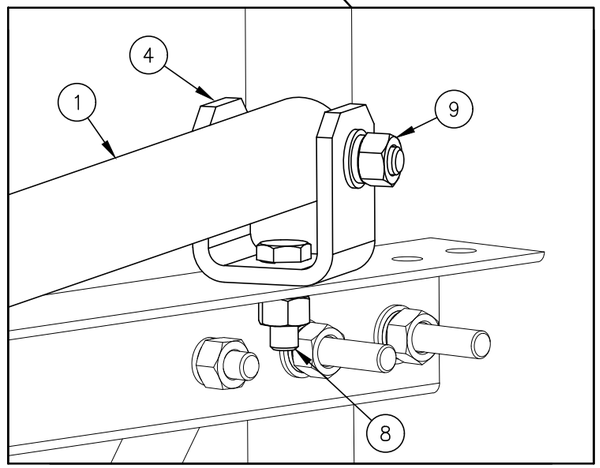
JOB NO. 563429		SIZE	DRAWING NO.		REV
DATE	8/7/25	B	563429-PM9		0
DRAWN BY	KMP			SCALE	PAGE
CHECKED BY	ZAK			None	1 OF 1

EXHIBIT K



ISOMETRIC VIEW





C10179002 SWIVEL KNUCKLE TIEBACK

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
1	1	CS02089	TIEBACK 2 3/8 X .134 X 13'-3"	43
2	1	CW00013	SWIVEL PLATE WELDMENT	3
3	1	CS00097	PIPE, SLEEVE 2 7/8 O.D. X W/0.203 X 0'-1 3/4	1
4	1	CS00098	BENT SWIVEL PLATE	3
5	1	CS01360	PLATE, MOUNTING BRACKET (FORMED CHANNEL)	9
6	1	CS01361	PLATE, 2 HOLE ADAPTER CLAMP	3
7	2	C40140001	BOLT ASSEMBLY, 3/4 X 10 A307 W/NUT, LKW, FLW	4
8	2	C40026023	BOLT ASSEMBLY, 5/8 ø X 2 A325	1
9	1	C40026033	BOLT ASSEMBLY, 5/8 ø X 4 1/2 A325	1
10	2	C40042007	HEX NUT, 5/8 A194 GRADE 2H	1
11	2	C40998007	SQ. HEAD SET SCREW, 5/8 X 2 1/2	1
			TOTAL WEIGHT LBS	70

QUANTITIES SHOWN ABOVE ARE FOR (1) SWIVEL KNUCKLE TIEBACK KIT ONLY.
(2) KITS ARE REQUIRED FOR THIS SIDEARM ASSEMBLY

UNLESS OTHERWISE SPECIFIED
ALL DIMENSIONS INCLUDE
FINISHES AND ARE IN INCHES

TOLERANCES: FRACTIONS ± 1/16"
ANGLES ± 1/2 DEG.
DECIMALS ± .010"

MATERIAL:

TOLERANCES DO NOT APPLY TO RAW MATERIAL

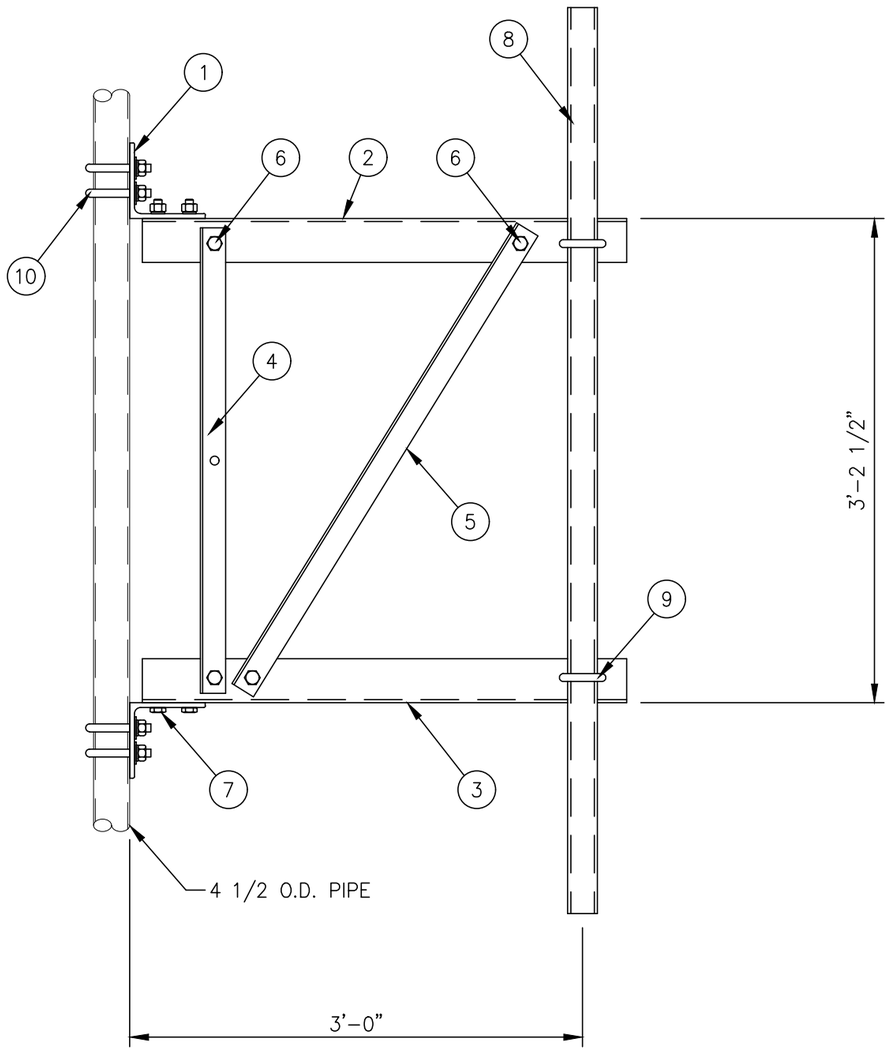
REV	DATE	DRW	CHK	DESCRIPTION

Sabre Industries™
INNOVATION DELIVERED

CONFIDENTIAL
This document and the information contained herein is the confidential trade secret property of Sabre Industries, Inc. ("Sabre") and must not be reproduced, copied or used, in whole or in part, for any purpose without the prior written consent of Sabre.
© 2025 Sabre Industries, Inc. All rights reserved.

SWIVEL KNUCKLE TIEBACKS: 143' ELEVATION
SITE: CROOKED FINGER, OR
CUSTOMER: MARION COUNTY OREGON

JOB NO. 563429		SIZE	DRAWING NO.	REV
DATE	08/07/25	B	563429-ST5	0
DRAWN BY	KMP			
CHECKED BY	ZAK		SCALE NONE	PAGE 1 OF 1



C10151103 3 FT. SIDEARM ASSEMBLY			
1	CK00060	SIDEARM ANGLE KIT	78
1	– – –	MISC HARDWARE (FRAMING)	4
1	C10900105	PIPE ANTENNA MOUNTING KIT 2 3/8" ø X 5'-0	19
4	C40034032	U-BOLT ASSEMBLY 5/8" ø X 5 3/16 C-C	9
		TOTAL WEIGHT LBS	110

CK00060 KIT LIST OF MATERIAL				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
1	2	CS00067	ANGLE, BOOM SUPPORT	23
2	1	CS01223	ANGLE, TOP CHORD	19
3	1	CS01224	ANGLE, BOTTOM CHORD	19
4	1	CS00065	ANGLE, VERTICAL	8
5	1	CS01228	ANGLE, DIAGONAL	9
			TOTAL WEIGHT LBS	78

MISC HARDWARE (FRAMING)				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
6	4	C40026022	BOLT ASSEMBLY, 5/8 ø X 1 3/4 A325	2
7	4	C40026023	BOLT ASSEMBLY, 5/8 ø X 2 A325	2
			TOTAL WEIGHT LBS	4

C10900105 ANTENNA PIPE MOUNTING KIT				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
8	1	C10981223	ANTENNA MTG. PIPE 2 3/8" ø X 5'-0	16
9	2	C40034023	U-BOLT ASSEMBLY 5/8" ø X 3 1/16 C-C	3
			TOTAL WEIGHT LBS	19

MISC HARDWARE				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
10	4	C40034032	U-BOLT ASSEMBLY 5/8" ø X 5 3/16 C-C	9
			TOTAL WEIGHT LBS	9

NOTES:

1. IF THE MOUNT IS NOT ON THE STRAIGHT PORTION OF THE TOWER SEE SITE SPECIFIC PIPE MOUNT.
2. QUANTITIES SHOWN IN LIST OF MATERIALS ARE FOR ONE (1) SIDEARM ASSEMBLY ONLY.

UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS INCLUDE FINISHES AND ARE IN INCHES

TOLERANCES: FRACTIONS ± 1/16" ANGLES ± 1/2 DEG. DECIMALS ± .010"

MATERIAL:

TOLERANCES DO NOT APPLY TO RAW MATERIAL

REV	DATE	DRW	CHK	DESCRIPTION

Sabre Industries™ INNOVATION DELIVERED

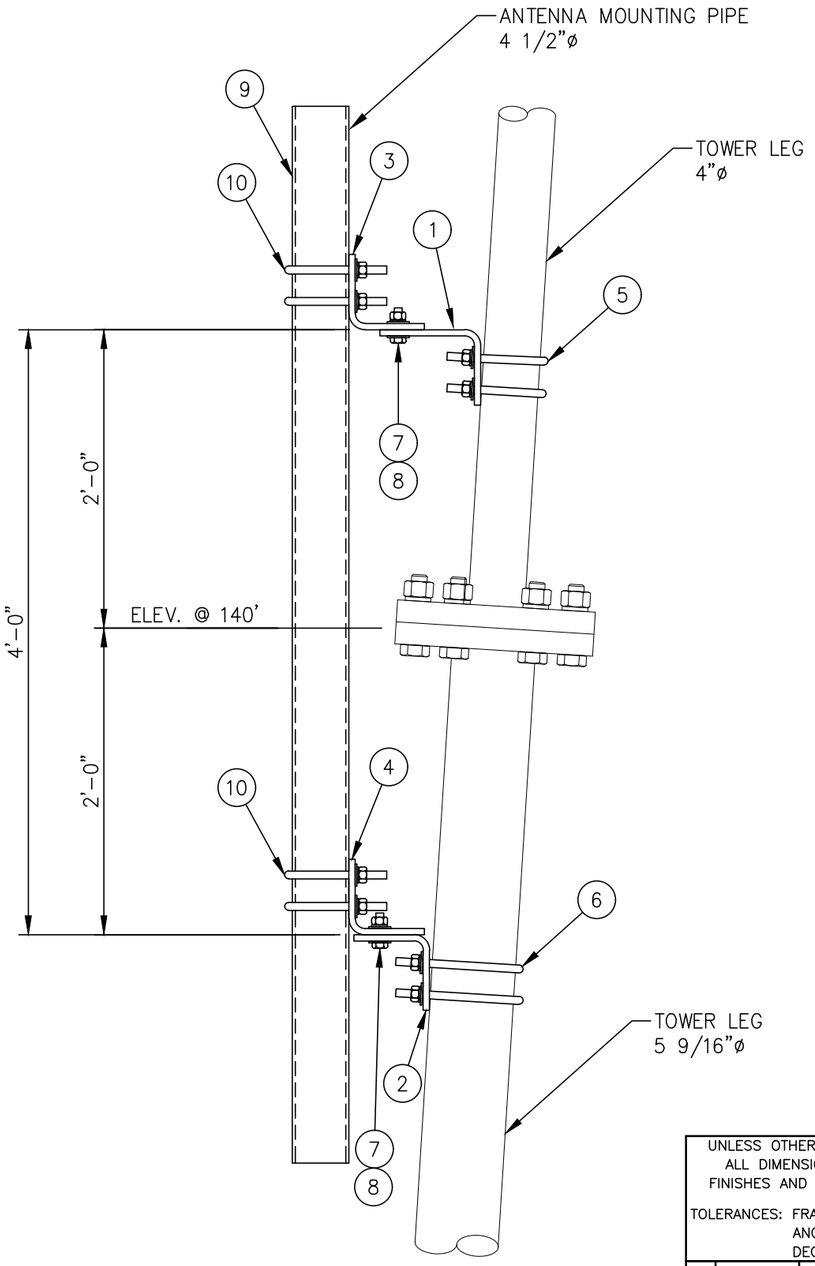
CONFIDENTIAL
This document and the information contained herein is the confidential trade secret property of Sabre Industries, Inc. ("Sabre") and must not be reproduced, copied or used, in whole or in part, for any purpose without the prior written consent of Sabre.
© 2025 Sabre Industries, Inc. All rights reserved.

3 FT. SIDEARM: 140' ELEVATION

SITE: CROOKED FINGER, OR

CUSTOMER: MARION COUNTY OREGON

JOB NO. 563429		SIZE	DRAWING NO.	REV
DATE	08/07/25	B	563429-SA6	0
DRAWN BY	KMP			
CHECKED BY	ZAK		SCALE NONE	PAGE 1 OF 1



ELEVATION VIEW

LIST OF MATERIALS FOR TAPERED LEG PIPE MOUNT KIT C10174053				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
1.	1	CS00217	TOP LEG MOUNT FOR 4 ø LEG	18
2.	1	CS00218	BOTTOM LEG MOUNT FOR 5 9/16 ø LEG	20
3.	1	CS00222	TOP PIPE MOUNT FOR 4 1/2 ø PIPE	18
4.	1	CS00215	BOTTOM PIPE MOUNT FOR 4 1/2 ø PIPE	12
5.	2	C40034030	U-BOLT ASSEMBLY 5/8 ø X 4 11/16 C-C (TOP LEG MOUNT)	4
6.	2	C40034035	U-BOLT ASSEMBLY 5/8 ø X 6 1/4 C-C (BOTTOM LEG MOUNT)	5
7.	4	C40026024	BOLT ASSEMBLY 5/8 ø X 2 1/4 A325	2
8.	8	C40031003	FLATWASHER, 5/8 ø (F436)	1
			KIT WEIGHT LBS	80

LIST OF ADDITIONAL MATERIALS				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
9.	1	C10981407	ANTENNA MTG. PIPE 4 1/2 ø X 7'-0	58
10.	4	C40034032	U-BOLT ASSEMBLY 5/8 ø X 5 3/16 C-C (PIPE MOUNTS)	9
			ADDITIONAL WEIGHT LBS	67

TOTAL WEIGHT LBS	147

UNLESS OTHERWISE SPECIFIED
ALL DIMENSIONS INCLUDE
FINISHES AND ARE IN INCHES

TOLERANCES: FRACTIONS ± 1/16"
ANGLES ± 1/2 DEG.
DECIMALS ± .010"

MATERIAL:

TOLERANCES DO NOT APPLY TO RAW MATERIAL

REV	DATE	DRW	CHK	DESCRIPTION

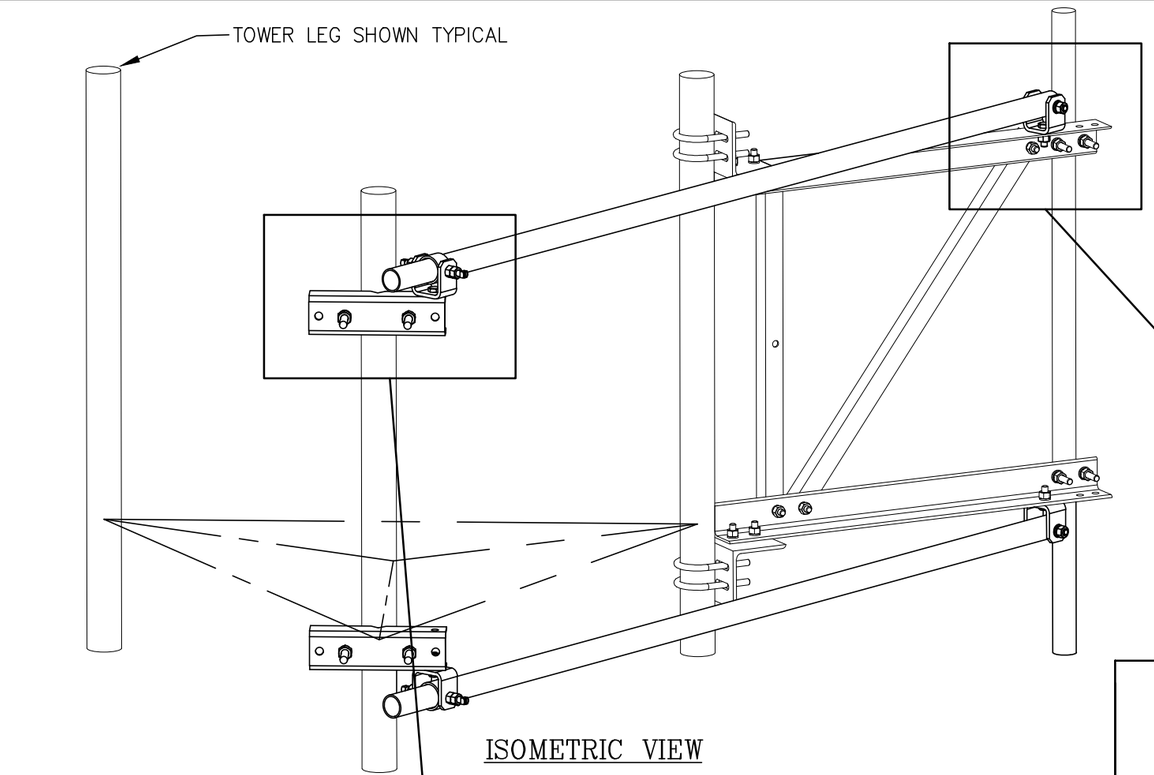
Sabre Industries™
INNOVATION DELIVERED

CONFIDENTIAL
This document and the information contained herein is the confidential trade secret property of Sabre Industries, Inc. ("Sabre") and must not be reproduced, copied or used, in whole or in part, for any purpose without the prior written consent of Sabre.
© 2025 Sabre Industries, Inc. All rights reserved.

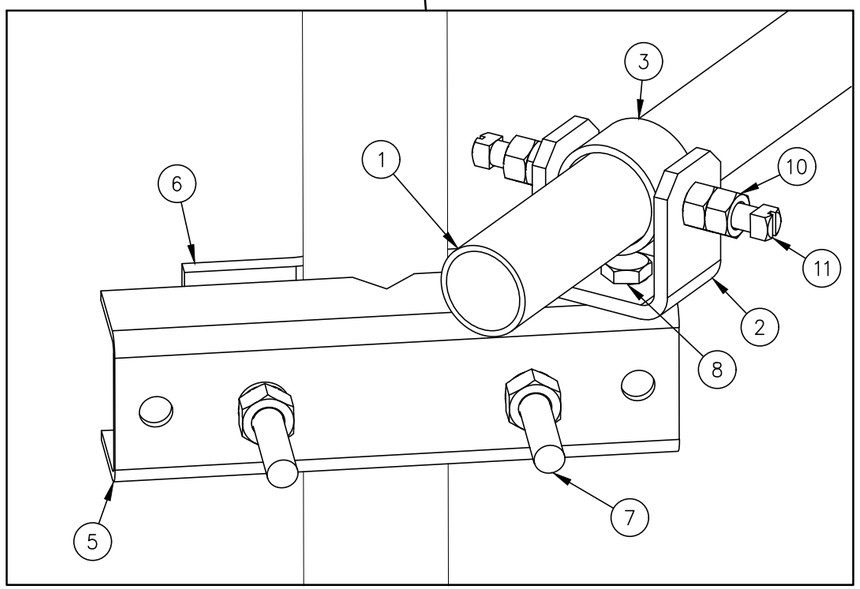
PIPE MOUNT FOR SIDEARM: 140' ELEVATION
SITE: CROOKED FINGER, OR
CUSTOMER: MARION COUNTY OREGON

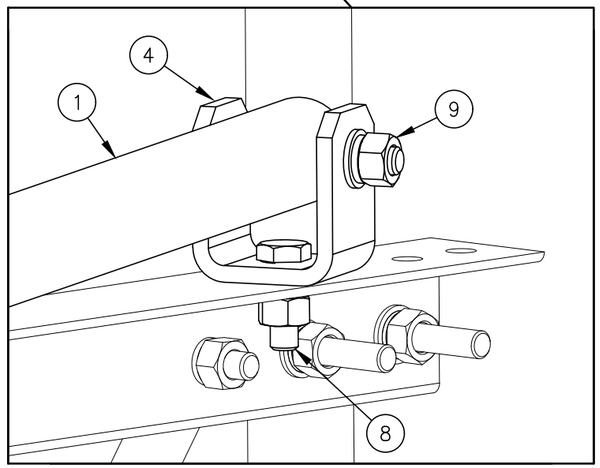
JOB NO. 563429		SIZE	DRAWING NO.	REV
DATE	8/7/25	B	563429-PM10	0
DRAWN BY	KMP			
CHECKED BY	ZAK		SCALE None	PAGE 1 OF 1

EXHIBIT K



ISOMETRIC VIEW





C10179011 SWIVEL KNUCKLE TIEBACK

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
1	1	CS00249	PIPE, 2 7/8 O.D. X W/0.203 X 15'-6	93
2	1	CW00022	SWIVEL PLATE WELDMENT	3
3	1	CS00092	PIPE, SLEEVE 3 1/2 O.D. X W/0.216 X 0'-1 3/4	1
4	1	CS00096	BENT SWIVEL PLATE	3
5	1	CS01360	PLATE, MOUNTING BRACKET (FORMED CHANNEL)	9
6	1	CS01361	PLATE, 2 HOLE ADAPTER CLAMP	3
7	2	C40140001	BOLT ASSEMBLY, 3/4 X 10 A307 W/NUT, LKW, FLW	4
8	2	C40026023	BOLT ASSEMBLY, 5/8 ø X 2 A325	1
9	1	C40026035	BOLT ASSEMBLY, 5/8 ø X 5 A325	1
10	2	C40042007	HEX NUT, 5/8 A194 GRADE 2H	1
11	2	C40998007	SQ. HEAD SET SCREW, 5/8 X 2 1/2	1
			TOTAL WEIGHT LBS	120

QUANTITIES SHOWN ABOVE ARE FOR (1) SWIVEL KNUCKLE TIEBACK KIT ONLY.
(2) KITS ARE REQUIRED FOR THIS SIDEARM ASSEMBLY

UNLESS OTHERWISE SPECIFIED
ALL DIMENSIONS INCLUDE
FINISHES AND ARE IN INCHES

TOLERANCES: FRACTIONS ± 1/16"
ANGLES ± 1/2 DEG.
DECIMALS ± .010"

MATERIAL:

TOLERANCES DO NOT APPLY
TO RAW MATERIAL

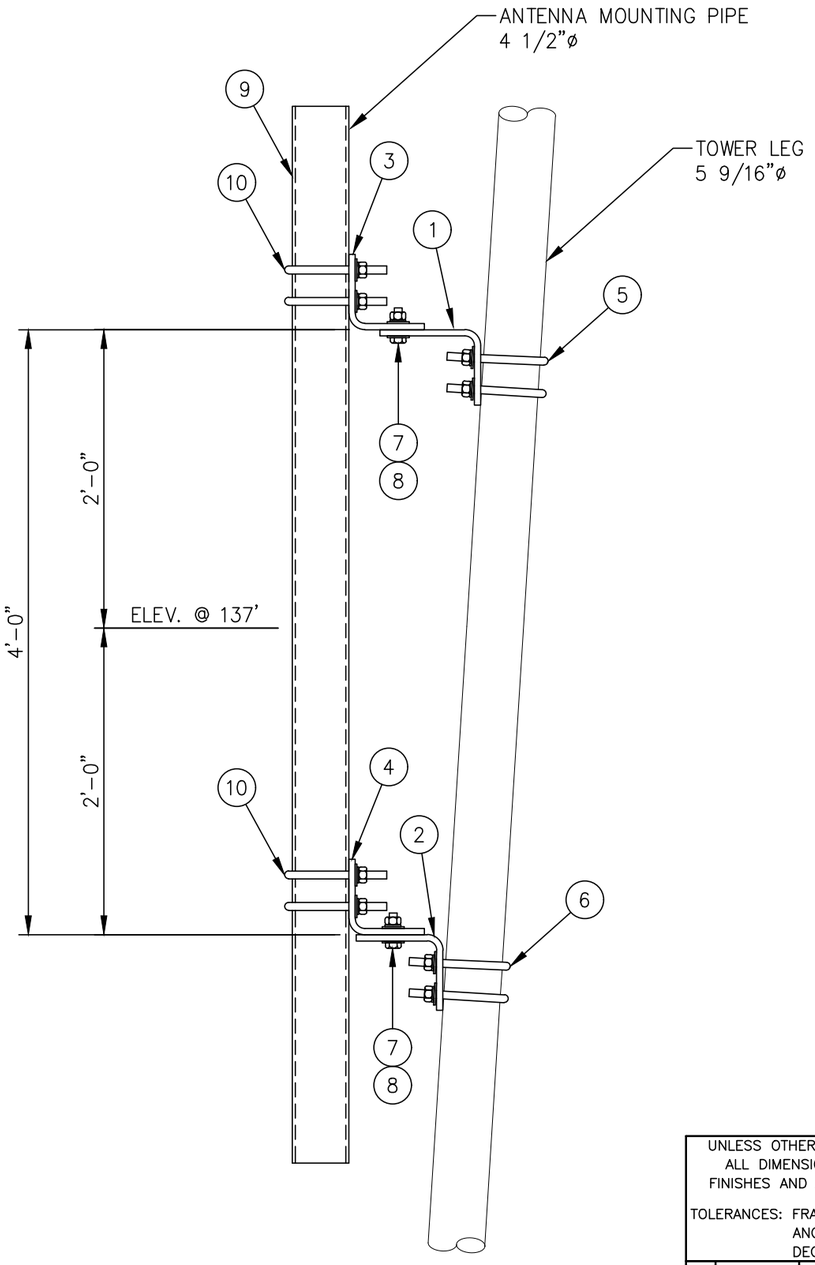
REV	DATE	DRW	CHK	DESCRIPTION

Sabre Industries™
INNOVATION DELIVERED

CONFIDENTIAL
This document and the information contained herein is the confidential trade secret property of Sabre Industries, Inc. ("Sabre") and must not be reproduced, copied or used, in whole or in part, for any purpose without the prior written consent of Sabre.
© 2025 Sabre Industries, Inc. All rights reserved.

SWIVEL KNUCKLE TIEBACKS: 140' ELEVATION
SITE: CROOKED FINGER, OR
CUSTOMER: MARION COUNTY OREGON

JOB NO. 563429		SIZE	DRAWING NO.	REV
DATE	08/07/25	B	563429-ST6	0
DRAWN BY	KMP			
CHECKED BY	ZAK		SCALE NONE	PAGE 1 OF 1



ELEVATION VIEW

LIST OF MATERIALS FOR TAPERED LEG PIPE MOUNT KIT C10174055				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
1.	1	CS00219	TOP LEG MOUNT FOR 5 9/16 ø LEG	24
2.	1	CS00218	BOTTOM LEG MOUNT FOR 5 9/16 ø LEG	20
3.	1	CS00214	TOP PIPE MOUNT FOR 4 1/2 ø PIPE	15
4.	1	CS00215	BOTTOM PIPE MOUNT FOR 4 1/2 ø PIPE	12
5.	2	C40034035	U-BOLT ASSEMBLY 5/8 ø X 6 1/4 C-C (TOP LEG MOUNT)	5
6.	2	C40034035	U-BOLT ASSEMBLY 5/8 ø X 6 1/4 C-C (BOTTOM LEG MOUNT)	5
7.	4	C40026024	BOLT ASSEMBLY 5/8 ø X 2 1/4 A325	2
8.	8	C40031003	FLATWASHER, 5/8 ø (F436)	1
			KIT WEIGHT LBS	84

LIST OF ADDITIONAL MATERIALS				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
9.	1	C10981407	ANTENNA MTG. PIPE 4 1/2 ø X 7'-0	58
10.	4	C40034032	U-BOLT ASSEMBLY 5/8 ø X 5 3/16 C-C (PIPE MOUNTS)	9
			ADDITIONAL WEIGHT LBS	67

TOTAL WEIGHT LBS	151

UNLESS OTHERWISE SPECIFIED
ALL DIMENSIONS INCLUDE FINISHES AND ARE IN INCHES

TOLERANCES: FRACTIONS ± 1/16"
ANGLES ± 1/2 DEG.
DECIMALS ± .010"

MATERIAL:

TOLERANCES DO NOT APPLY TO RAW MATERIAL

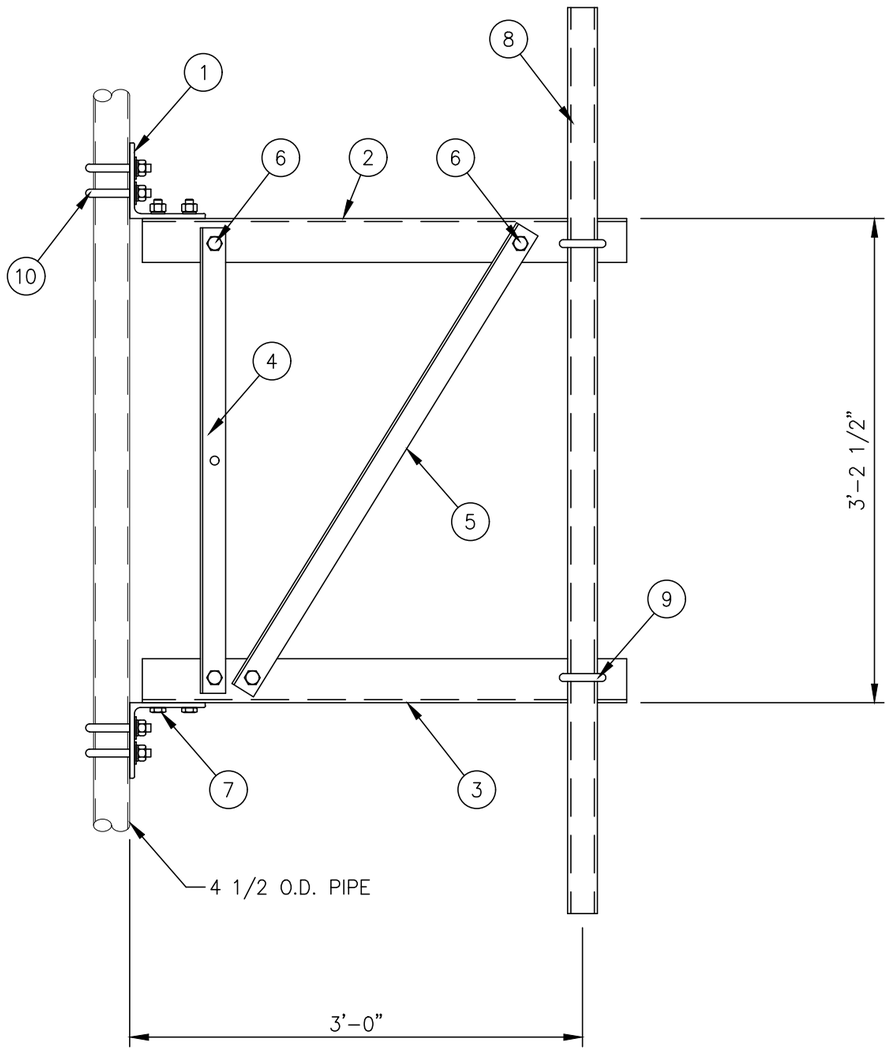
REV	DATE	DRW	CHK	DESCRIPTION

Sabre Industries™
INNOVATION DELIVERED

CONFIDENTIAL
This document and the information contained herein is the confidential trade secret property of Sabre Industries, Inc. ("Sabre") and must not be reproduced, copied or used, in whole or in part, for any purpose without the prior written consent of Sabre.
© 2025 Sabre Industries, Inc. All rights reserved.

PIPE MOUNT: 137' ELEVATION
SITE: CROOKED FINGER, OR
CUSTOMER: MARION COUNTY OREGON

JOB NO. 563429		SIZE	DRAWING NO.		REV
DATE	8/7/25	B	563429-PM11		0
DRAWN BY	KMP			SCALE	PAGE
CHECKED BY	ZAK			None	1 OF 1



C10151103 3 FT. SIDEARM ASSEMBLY			
1	CK00060	SIDEARM ANGLE KIT	78
1	– – –	MISC HARDWARE (FRAMING)	4
1	C10900104	PIPE ANTENNA MOUNTING KIT 2 3/8" ø X 4'-0	16
4	C40034032	U-BOLT ASSEMBLY 5/8" ø X 5 3/16 C-C	9
		TOTAL WEIGHT LBS	107

CK00060 KIT LIST OF MATERIAL				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
1	2	CS00067	ANGLE, BOOM SUPPORT	23
2	1	CS01223	ANGLE, TOP CHORD	19
3	1	CS01224	ANGLE, BOTTOM CHORD	19
4	1	CS00065	ANGLE, VERTICAL	8
5	1	CS01228	ANGLE, DIAGONAL	9
			TOTAL WEIGHT LBS	78

MISC HARDWARE (FRAMING)				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
6	4	C40026022	BOLT ASSEMBLY, 5/8 ø X 1 3/4 A325	2
7	4	C40026023	BOLT ASSEMBLY, 5/8 ø X 2 A325	2
			TOTAL WEIGHT LBS	4

C10900104 ANTENNA PIPE MOUNTING KIT				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
8	1	C10981204	ANTENNA MTG. PIPE 2 3/8" ø X 4'-0"	13
9	2	C40034023	U-BOLT ASSEMBLY 5/8" ø X 3 1/16 C-C	3
			TOTAL WEIGHT LBS	16

MISC HARDWARE				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
10	4	C40034032	U-BOLT ASSEMBLY 5/8" ø X 5 3/16 C-C	9
			TOTAL WEIGHT LBS	9

NOTES:

1. IF THE MOUNT IS NOT ON THE STRAIGHT PORTION OF THE TOWER SEE SITE SPECIFIC PIPE MOUNT.
2. QUANTITIES SHOWN IN LIST OF MATERIALS ARE FOR ONE (1) SIDEARM ASSEMBLY ONLY.

UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS INCLUDE FINISHES AND ARE IN INCHES

TOLERANCES: FRACTIONS ± 1/16" ANGLES ± 1/2 DEG. DECIMALS ± .010"

MATERIAL:

TOLERANCES DO NOT APPLY TO RAW MATERIAL

REV	DATE	DRW	CHK	DESCRIPTION

Sabre Industries™ INNOVATION DELIVERED

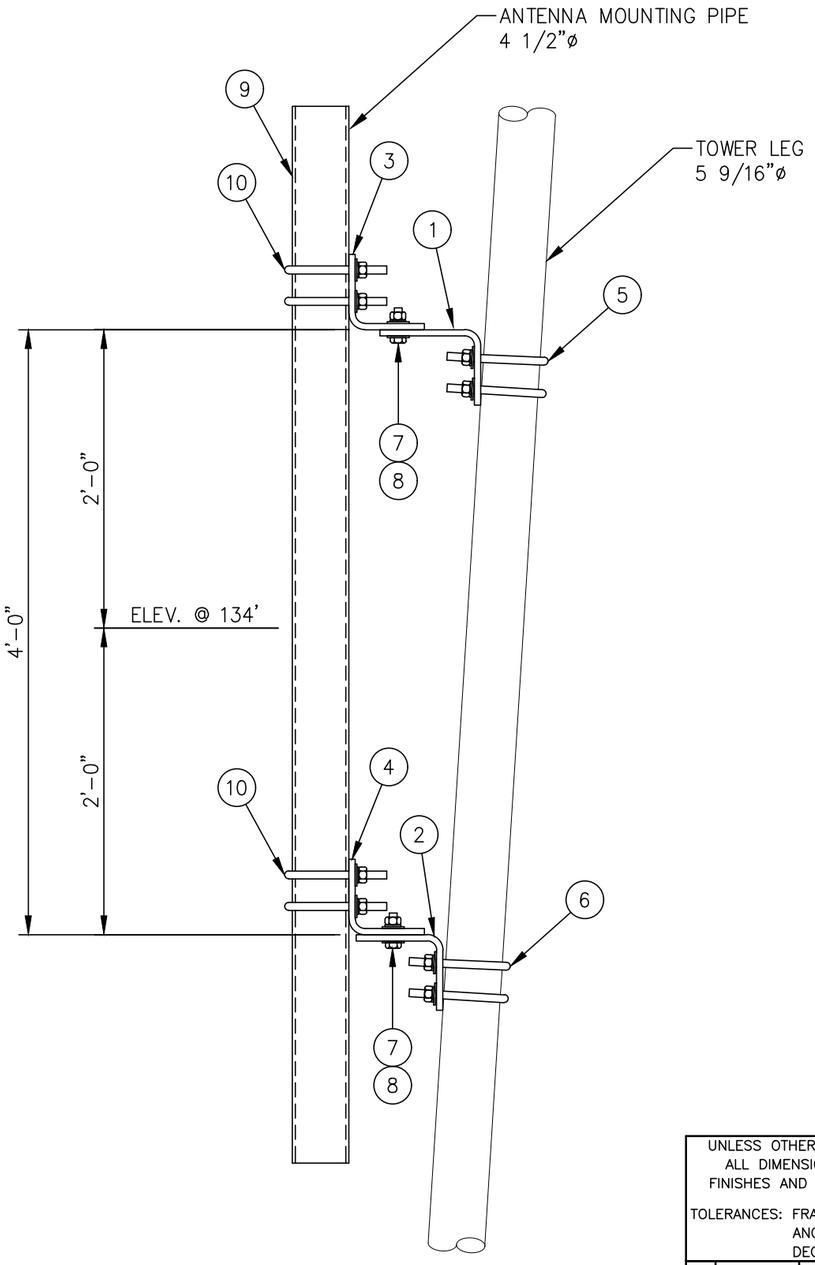
CONFIDENTIAL
This document and the information contained herein is the confidential trade secret property of Sabre Industries, Inc. ("Sabre") and must not be reproduced, copied or used, in whole or in part, for any purpose without the prior written consent of Sabre.
© 2025 Sabre Industries, Inc. All rights reserved.

3 FT. SIDEARM: 134' ELEVATION

SITE: CROOKED FINGER, OR

CUSTOMER: MARION COUNTY OREGON

JOB NO. 563429		SIZE	DRAWING NO.	REV
DATE	08/07/25	B	563429-SA7	0
DRAWN BY	KMP			
CHECKED BY	ZAK		SCALE NONE	PAGE 1 OF 1



ELEVATION VIEW

LIST OF MATERIALS FOR TAPERED LEG PIPE MOUNT KIT C10174055				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
1.	1	CS00219	TOP LEG MOUNT FOR 5 9/16 ø LEG	24
2.	1	CS00218	BOTTOM LEG MOUNT FOR 5 9/16 ø LEG	20
3.	1	CS00214	TOP PIPE MOUNT FOR 4 1/2 ø PIPE	15
4.	1	CS00215	BOTTOM PIPE MOUNT FOR 4 1/2 ø PIPE	12
5.	2	C40034035	U-BOLT ASSEMBLY 5/8 ø X 6 1/4 C-C (TOP LEG MOUNT)	5
6.	2	C40034035	U-BOLT ASSEMBLY 5/8 ø X 6 1/4 C-C (BOTTOM LEG MOUNT)	5
7.	4	C40026024	BOLT ASSEMBLY 5/8 ø X 2 1/4 A325	2
8.	8	C40031003	FLATWASHER, 5/8 ø (F436)	1
			KIT WEIGHT LBS	84

LIST OF ADDITIONAL MATERIALS				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
9.	1	C10981407	ANTENNA MTG. PIPE 4 1/2 ø X 7'-0	58
10.	4	C40034032	U-BOLT ASSEMBLY 5/8 ø X 5 3/16 C-C (PIPE MOUNTS)	9
			ADDITIONAL WEIGHT LBS	67

TOTAL WEIGHT LBS	151

UNLESS OTHERWISE SPECIFIED
ALL DIMENSIONS INCLUDE FINISHES AND ARE IN INCHES
TOLERANCES: FRACTIONS ± 1/16"
ANGLES ± 1/2 DEG.
DECIMALS ± .010"

MATERIAL:

TOLERANCES DO NOT APPLY TO RAW MATERIAL

REV	DATE	DRW	CHK	DESCRIPTION

Sabre Industries™
INNOVATION DELIVERED

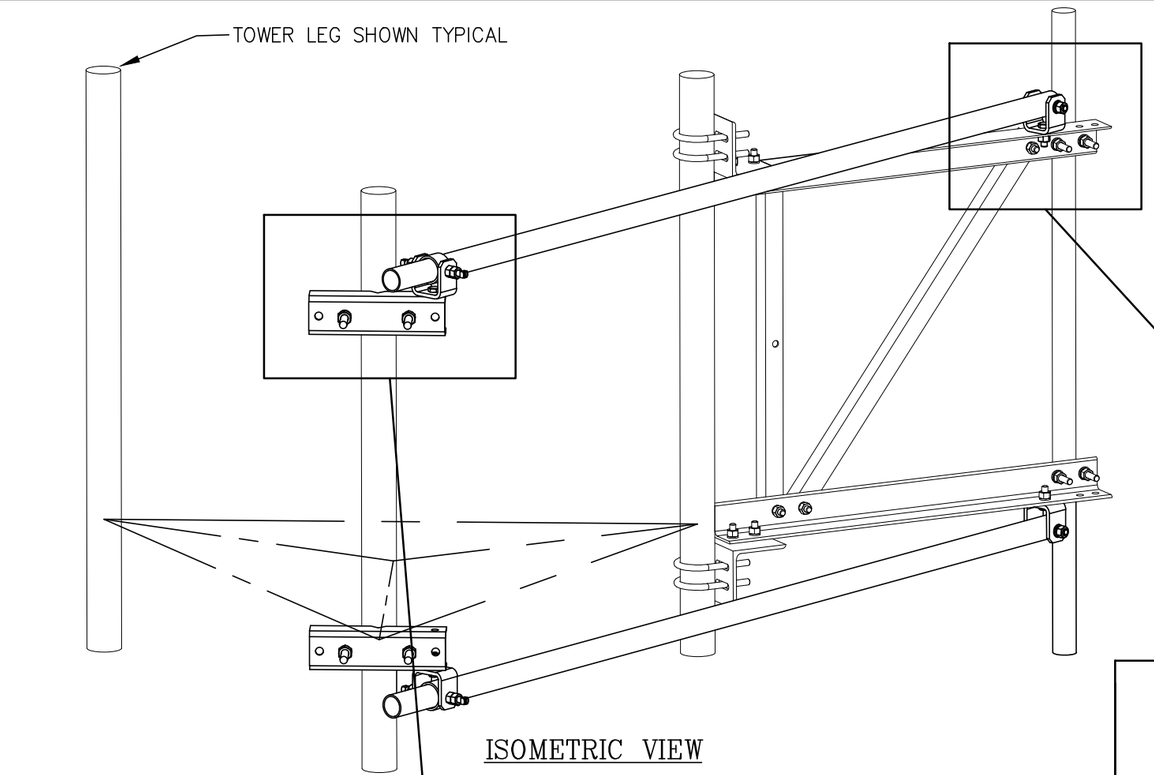
CONFIDENTIAL

This document and the information contained herein is the confidential trade secret property of Sabre Industries, Inc. ("Sabre") and must not be reproduced, copied or used, in whole or in part, for any purpose without the prior written consent of Sabre.
© 2025 Sabre Industries, Inc. All rights reserved.

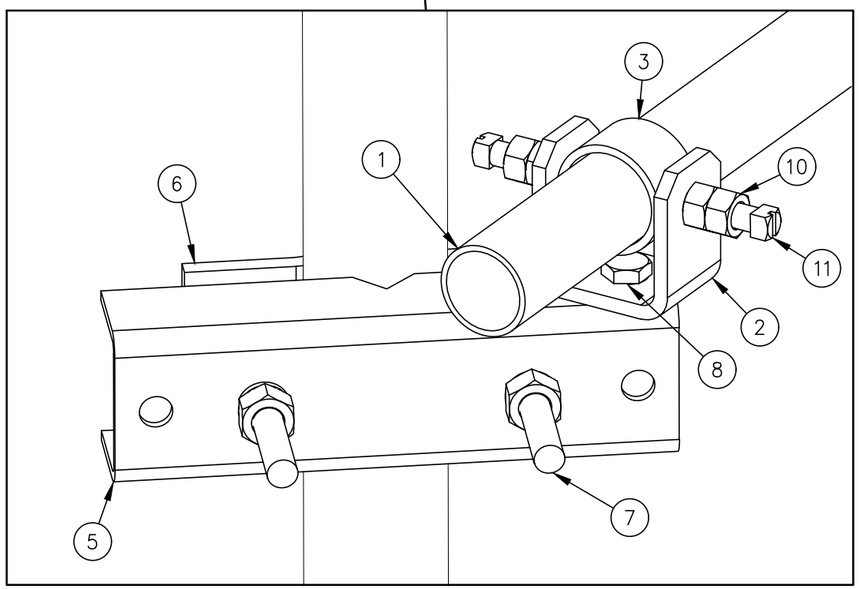
PIPE MOUNT FOR SIDEARM: 134' ELEVATION
SITE: CROOKED FINGER, OR
CUSTOMER: MARION COUNTY OREGON

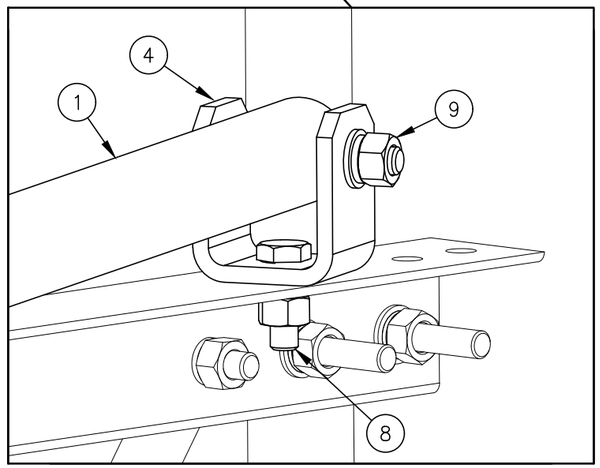
JOB NO. 563429		SIZE	DRAWING NO.		REV
DATE	8/7/25	B	563429-PM12		0
DRAWN BY	KMP			SCALE	PAGE
CHECKED BY	ZAK			None	1 OF 1

EXHIBIT K



ISOMETRIC VIEW





C10179011 SWIVEL KNUCKLE TIEBACK

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
1	1	CS00249	PIPE, 2 7/8 O.D. X W/0.203 X 15'-6	93
2	1	CW00022	SWIVEL PLATE WELDMENT	3
3	1	CS00092	PIPE, SLEEVE 3 1/2 O.D. X W/0.216 X 0'-1 3/4	1
4	1	CS00096	BENT SWIVEL PLATE	3
5	1	CS01360	PLATE, MOUNTING BRACKET (FORMED CHANNEL)	9
6	1	CS01361	PLATE, 2 HOLE ADAPTER CLAMP	3
7	2	C40140001	BOLT ASSEMBLY, 3/4 X 10 A307 W/NUT, LKW, FLW	4
8	2	C40026023	BOLT ASSEMBLY, 5/8 ø X 2 A325	1
9	1	C40026035	BOLT ASSEMBLY, 5/8 ø X 5 A325	1
10	2	C40042007	HEX NUT, 5/8 A194 GRADE 2H	1
11	2	C40998007	SQ. HEAD SET SCREW, 5/8 X 2 1/2	1
			TOTAL WEIGHT LBS	120

QUANTITIES SHOWN ABOVE ARE FOR (1) SWIVEL KNUCKLE TIEBACK KIT ONLY.
(2) KITS ARE REQUIRED FOR THIS SIDEARM ASSEMBLY

UNLESS OTHERWISE SPECIFIED
ALL DIMENSIONS INCLUDE
FINISHES AND ARE IN INCHES

TOLERANCES: FRACTIONS ± 1/16"
ANGLES ± 1/2 DEG.
DECIMALS ± .010"

MATERIAL:

TOLERANCES DO NOT APPLY
TO RAW MATERIAL

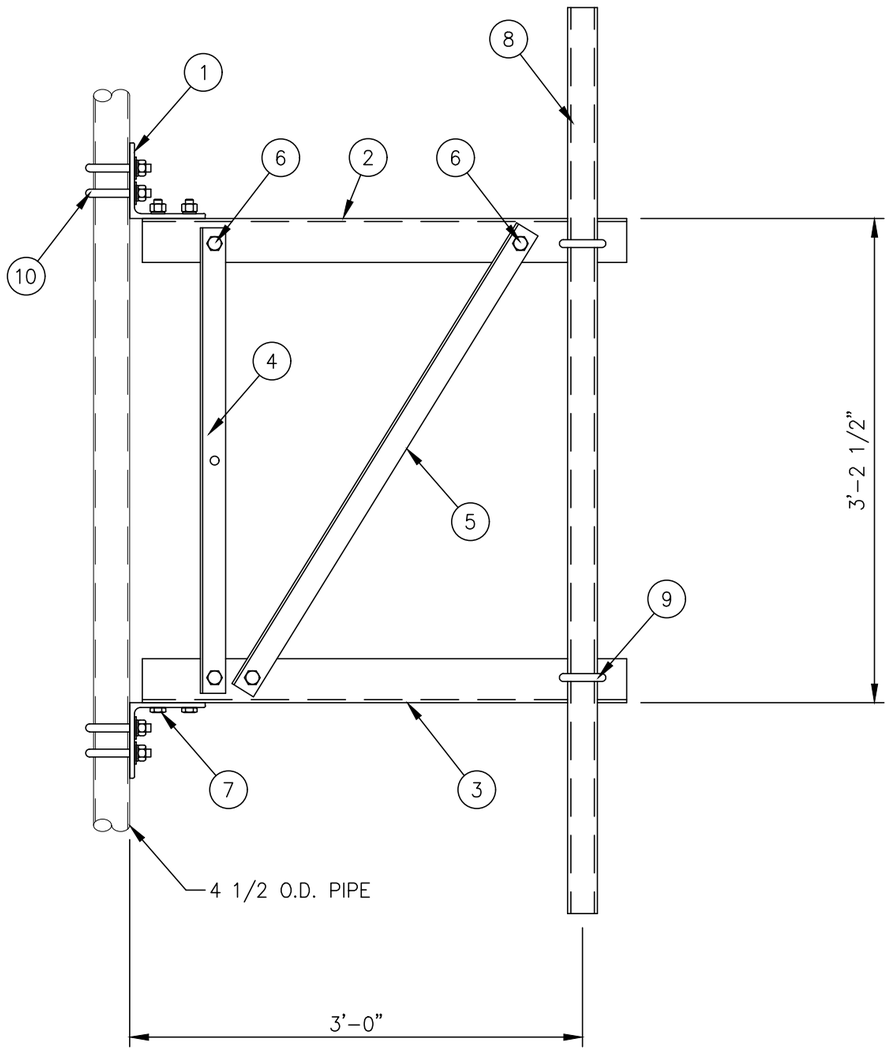
REV	DATE	DRW	CHK	DESCRIPTION

Sabre Industries™
INNOVATION DELIVERED

CONFIDENTIAL
This document and the information contained herein is the confidential trade secret property of Sabre Industries, Inc. ("Sabre") and must not be reproduced, copied or used, in whole or in part, for any purpose without the prior written consent of Sabre.
© 2025 Sabre Industries, Inc. All rights reserved.

SWIVEL KNUCKLE TIEBACKS: 134' ELEVATION
SITE: CROOKED FINGER, OR
CUSTOMER: MARION COUNTY OREGON

JOB NO. 563429		SIZE	DRAWING NO.	REV
DATE	08/07/25	B	563429-ST7	0
DRAWN BY	KMP			
CHECKED BY	ZAK	SCALE NONE	PAGE 1 OF 1	



C10151103 3 FT. SIDEARM ASSEMBLY			
1	CK00060	SIDEARM ANGLE KIT	78
1	– – –	MISC HARDWARE (FRAMING)	4
1	C10900105	PIPE ANTENNA MOUNTING KIT 2 3/8" ø X 5'-0	19
4	C40034032	U-BOLT ASSEMBLY 5/8" ø X 5 3/16 C-C	9
		TOTAL WEIGHT LBS	110

CK00060 KIT LIST OF MATERIAL				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
1	2	CS00067	ANGLE, BOOM SUPPORT	23
2	1	CS01223	ANGLE, TOP CHORD	19
3	1	CS01224	ANGLE, BOTTOM CHORD	19
4	1	CS00065	ANGLE, VERTICAL	8
5	1	CS01228	ANGLE, DIAGONAL	9
			TOTAL WEIGHT LBS	78

MISC HARDWARE (FRAMING)				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
6	4	C40026022	BOLT ASSEMBLY, 5/8 ø X 1 3/4 A325	2
7	4	C40026023	BOLT ASSEMBLY, 5/8 ø X 2 A325	2
			TOTAL WEIGHT LBS	4

C10900105 ANTENNA PIPE MOUNTING KIT				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
8	1	C10981223	ANTENNA MTG. PIPE 2 3/8" ø X 5'-0	16
9	2	C40034023	U-BOLT ASSEMBLY 5/8" ø X 3 1/16 C-C	3
			TOTAL WEIGHT LBS	19

MISC HARDWARE				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
10	4	C40034032	U-BOLT ASSEMBLY 5/8" ø X 5 3/16 C-C	9
			TOTAL WEIGHT LBS	9

NOTES:

1. IF THE MOUNT IS NOT ON THE STRAIGHT PORTION OF THE TOWER SEE SITE SPECIFIC PIPE MOUNT.
2. QUANTITIES SHOWN IN LIST OF MATERIALS ARE FOR ONE (1) SIDEARM ASSEMBLY ONLY.

UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS INCLUDE FINISHES AND ARE IN INCHES

TOLERANCES: FRACTIONS ± 1/16" ANGLES ± 1/2 DEG. DECIMALS ± .010"

MATERIAL:

TOLERANCES DO NOT APPLY TO RAW MATERIAL

REV	DATE	DRW	CHK	DESCRIPTION

Sabre Industries™ INNOVATION DELIVERED

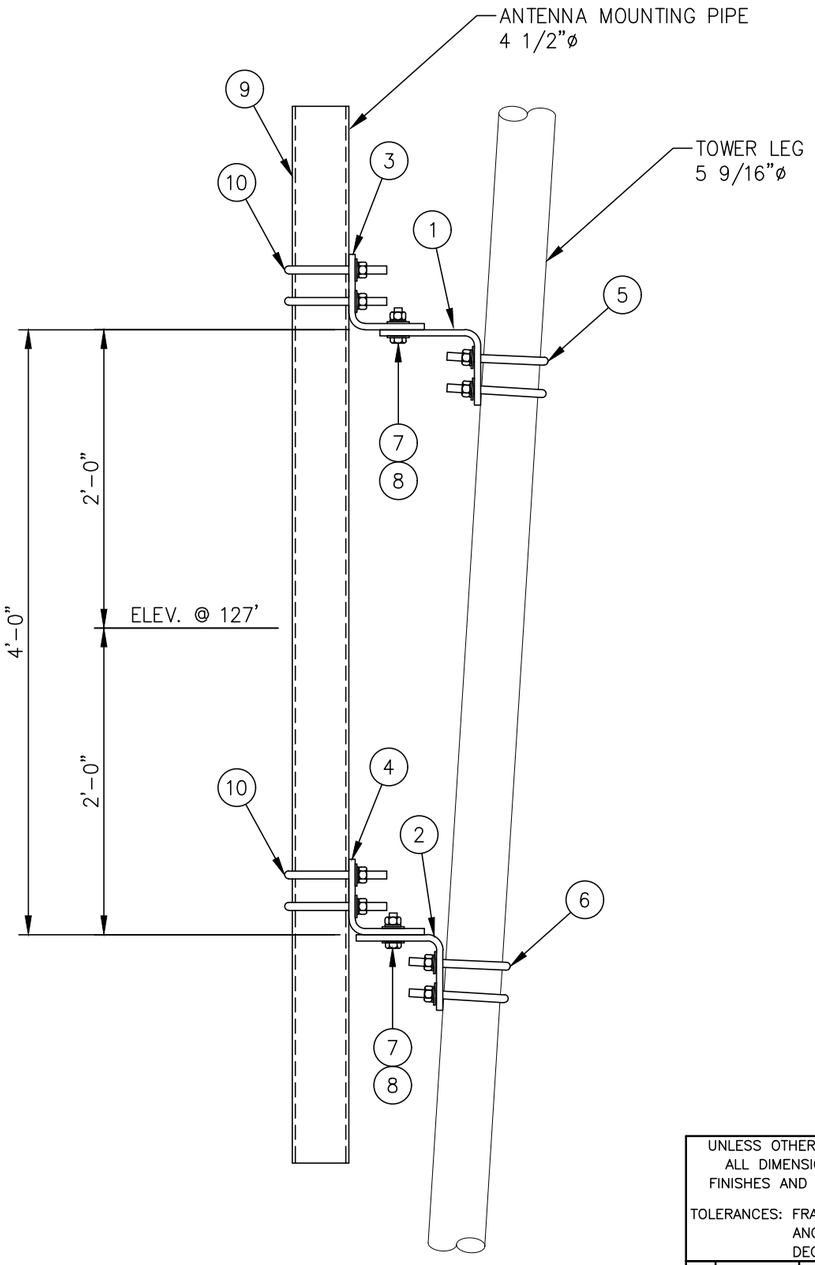
CONFIDENTIAL
This document and the information contained herein is the confidential trade secret property of Sabre Industries, Inc. ("Sabre") and must not be reproduced, copied or used, in whole or in part, for any purpose without the prior written consent of Sabre.
© 2025 Sabre Industries, Inc. All rights reserved.

3 FT. SIDEARM: 127' ELEVATION

SITE: CROOKED FINGER, OR

CUSTOMER: MARION COUNTY OREGON

JOB NO. 563429		SIZE	DRAWING NO.	REV
DATE	08/07/25	B	563429-SA8	0
DRAWN BY	KMP			
CHECKED BY	ZAK		SCALE NONE	PAGE 1 OF 1



ELEVATION VIEW

LIST OF MATERIALS FOR TAPERED LEG PIPE MOUNT KIT C10174055				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
1.	1	CS00219	TOP LEG MOUNT FOR 5 9/16 ø LEG	24
2.	1	CS00218	BOTTOM LEG MOUNT FOR 5 9/16 ø LEG	20
3.	1	CS00214	TOP PIPE MOUNT FOR 4 1/2 ø PIPE	15
4.	1	CS00215	BOTTOM PIPE MOUNT FOR 4 1/2 ø PIPE	12
5.	2	C40034035	U-BOLT ASSEMBLY 5/8 ø X 6 1/4 C-C (TOP LEG MOUNT)	5
6.	2	C40034035	U-BOLT ASSEMBLY 5/8 ø X 6 1/4 C-C (BOTTOM LEG MOUNT)	5
7.	4	C40026024	BOLT ASSEMBLY 5/8 ø X 2 1/4 A325	2
8.	8	C40031003	FLATWASHER, 5/8 ø (F436)	1
			KIT WEIGHT LBS	84

LIST OF ADDITIONAL MATERIALS				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
9.	1	C10981407	ANTENNA MTG. PIPE 4 1/2 ø X 7'-0	58
10.	4	C40034032	U-BOLT ASSEMBLY 5/8 ø X 5 3/16 C-C (PIPE MOUNTS)	9
			ADDITIONAL WEIGHT LBS	67

TOTAL WEIGHT LBS	151

UNLESS OTHERWISE SPECIFIED
ALL DIMENSIONS INCLUDE FINISHES AND ARE IN INCHES
TOLERANCES: FRACTIONS ± 1/16"
ANGLES ± 1/2 DEG.
DECIMALS ± .010"

MATERIAL:

TOLERANCES DO NOT APPLY TO RAW MATERIAL

REV	DATE	DRW	CHK	DESCRIPTION

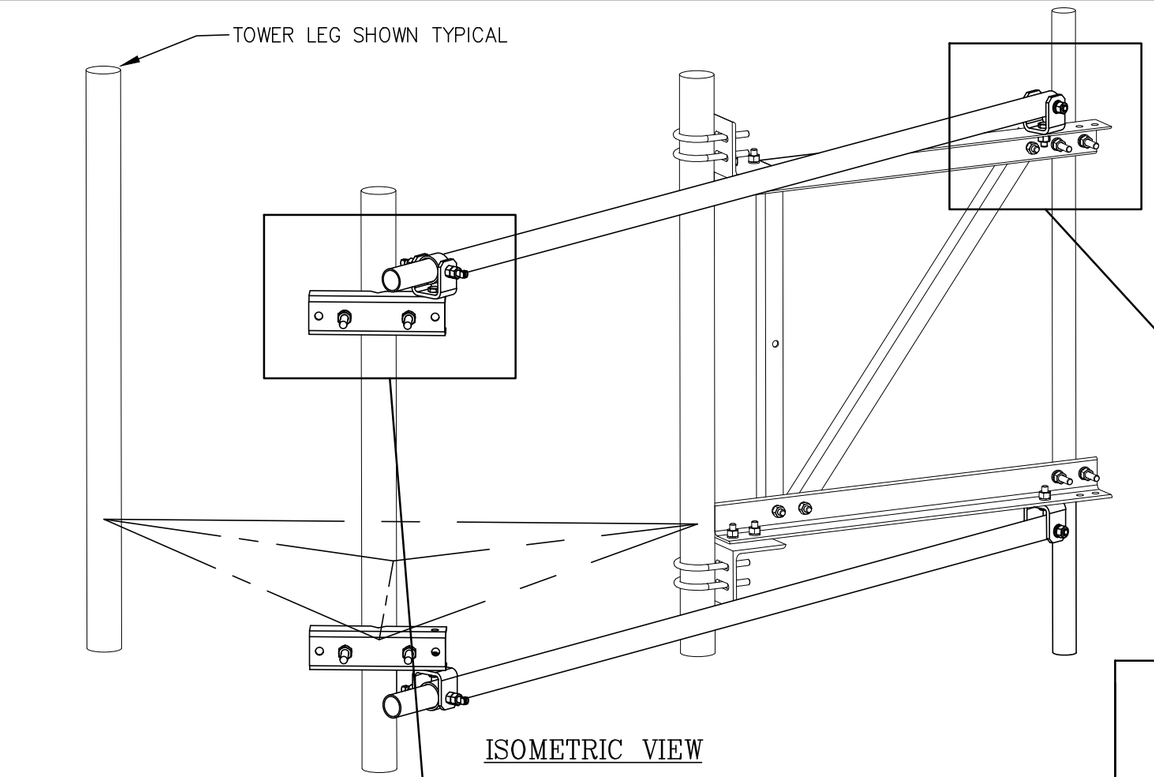
Sabre Industries™
INNOVATION DELIVERED

CONFIDENTIAL

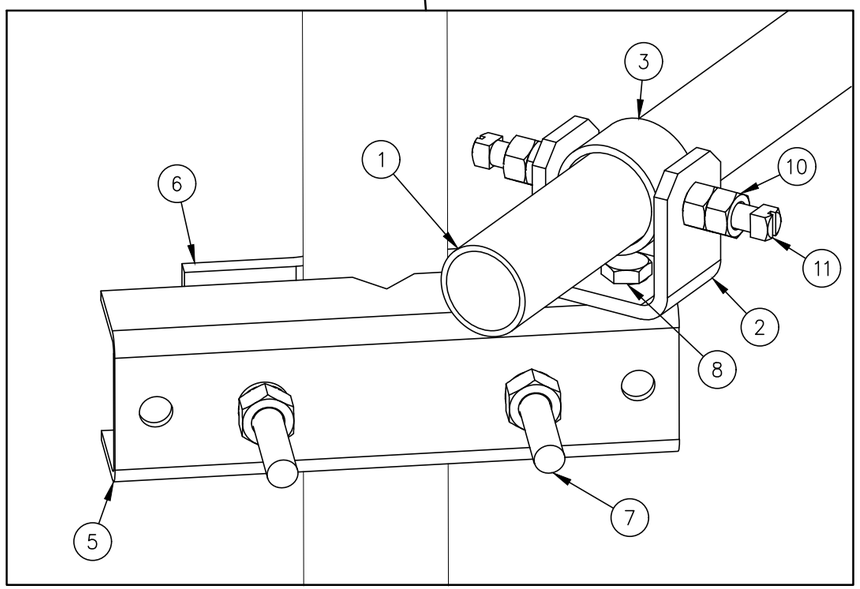
This document and the information contained herein is the confidential trade secret property of Sabre Industries, Inc. ("Sabre") and must not be reproduced, copied or used, in whole or in part, for any purpose without the prior written consent of Sabre.
© 2025 Sabre Industries, Inc. All rights reserved.

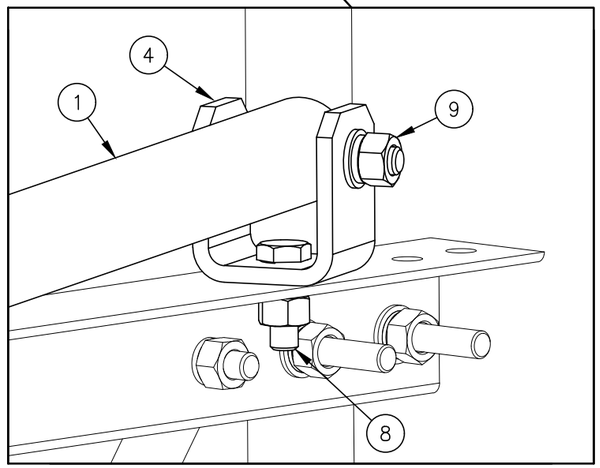
PIPE MOUNT FOR SIDEARM: 127' ELEVATION
SITE: CROOKED FINGER, OR
CUSTOMER: MARION COUNTY OREGON

JOB NO. 563429		SIZE	DRAWING NO.		REV
DATE	8/7/25	B	563429-PM13		0
DRAWN BY	KMP			SCALE	PAGE
CHECKED BY	ZAK			None	1 OF 1



ISOMETRIC VIEW





C10179011 SWIVEL KNUCKLE TIEBACK

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
1	1	CS00249	PIPE, 2 7/8 O.D. X W/0.203 X 15'-6	93
2	1	CW00022	SWIVEL PLATE WELDMENT	3
3	1	CS00092	PIPE, SLEEVE 3 1/2 O.D. X W/0.216 X 0'-1 3/4	1
4	1	CS00096	BENT SWIVEL PLATE	3
5	1	CS01360	PLATE, MOUNTING BRACKET (FORMED CHANNEL)	9
6	1	CS01361	PLATE, 2 HOLE ADAPTER CLAMP	3
7	2	C40140001	BOLT ASSEMBLY, 3/4 X 10 A307 W/NUT, LKW, FLW	4
8	2	C40026023	BOLT ASSEMBLY, 5/8 ø X 2 A325	1
9	1	C40026035	BOLT ASSEMBLY, 5/8 ø X 5 A325	1
10	2	C40042007	HEX NUT, 5/8 A194 GRADE 2H	1
11	2	C40998007	SQ. HEAD SET SCREW, 5/8 X 2 1/2	1
			TOTAL WEIGHT LBS	120

QUANTITIES SHOWN ABOVE ARE FOR (1) SWIVEL KNUCKLE TIEBACK KIT ONLY.
(2) KITS ARE REQUIRED FOR THIS SIDEARM ASSEMBLY

UNLESS OTHERWISE SPECIFIED
ALL DIMENSIONS INCLUDE
FINISHES AND ARE IN INCHES

TOLERANCES: FRACTIONS ± 1/16"
ANGLES ± 1/2 DEG.
DECIMALS ± .010"

MATERIAL:

TOLERANCES DO NOT APPLY TO RAW MATERIAL

REV	DATE	DRW	CHK	DESCRIPTION

Sabre Industries™
INNOVATION DELIVERED

CONFIDENTIAL
This document and the information contained herein is the confidential trade secret property of Sabre Industries, Inc. ("Sabre") and must not be reproduced, copied or used, in whole or in part, for any purpose without the prior written consent of Sabre.
© 2025 Sabre Industries, Inc. All rights reserved.

SWIVEL KNUCKLE TIEBACKS: 127' ELEVATION

SITE: CROOKED FINGER, OR

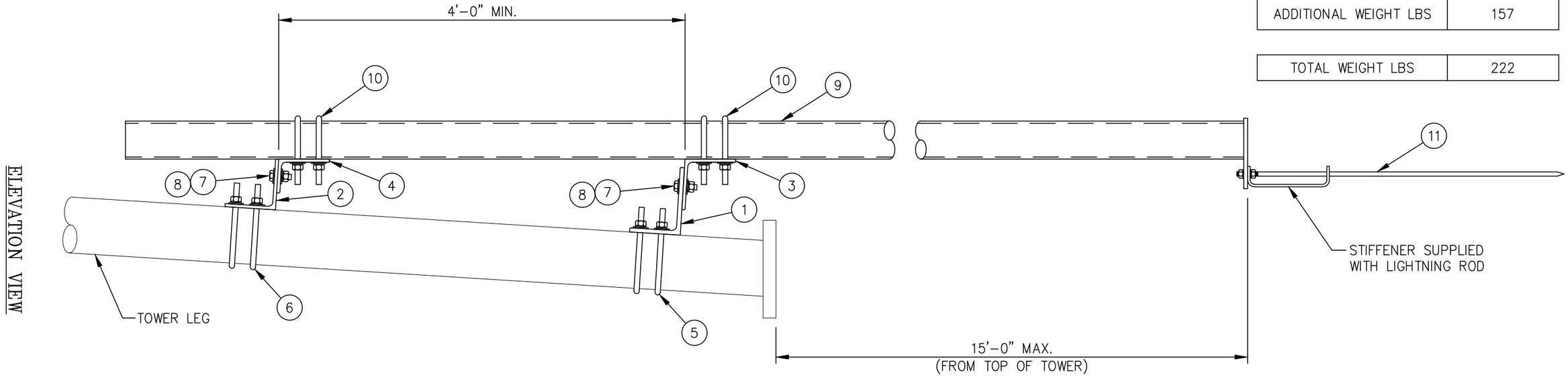
CUSTOMER: MARION COUNTY OREGON

JOB NO. 563429		SIZE	DRAWING NO.	REV
DATE	08/07/25	B	563429-ST8	0
DRAWN BY	KMP			
CHECKED BY	ZAK		SCALE NONE	PAGE 1 OF 1

LIST OF MATERIALS FOR TAPERED LEG PIPE MOUNT KIT C10174018				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
1.	1	CS00216	TOP LEG MOUNT FOR 2 7/8 ø LEG	15
2.	1	CS00215	BOTTOM LEG MOUNT FOR 2 7/8 ø LEG	12
3.	1	CS00214	TOP PIPE MOUNT FOR 2 7/8 ø PIPE	15
4.	1	CS00215	BOTTOM PIPE MOUNT FOR 2 7/8 ø PIPE	12
5.	2	C40034025	U-BOLT ASSEMBLY 5/8 ø X 3 9/16 C-C (TOP LEG MOUNT)	4
6.	2	C40034025	U-BOLT ASSEMBLY 5/8 ø X 3 9/16 C-C (BOTTOM LEG MOUNT)	4
7.	4	C40026024	BOLT ASSEMBLY 5/8 ø X 2 1/4 A325	2
8.	8	C40031003	FLATWASHER, 5/8 ø (F436)	1
			KIT WEIGHT LBS	65

LIST OF ADDITIONAL MATERIALS				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
9.	1	CW00032	LIGHTNING ROD EXTENSION 2 7/8 ø X 21'-0"	128
10.	4	C40034025	U-BOLT ASSEMBLY 5/8 ø X 3 9/16 C-C (PIPE MOUNTS)	7
11.	1 KIT	C30986004	LIGHTNING ROD ASSY 3/4 ø X 10'-0 CCS W/STIFFENER	22
			ADDITIONAL WEIGHT LBS	157

TOTAL WEIGHT LBS	222



ELEVATION VIEW

NOTE:
THE ASSEMBLY IS SHOWN ON THE OUTSIDE OF THE TOWER.
IT MAY ALSO BE MOUNTED ON THE INSIDE OF TOWER, IF NECESSARY.

UNLESS OTHERWISE SPECIFIED
ALL DIMENSIONS INCLUDE
FINISHES AND ARE IN INCHES

TOLERANCES: FRACTIONS ± 1/16"
ANGLES ± 1/2 DEG.
DECIMALS ± .010"

MATERIAL:

TOLERANCES DO NOT APPLY
TO RAW MATERIAL

REV	DATE	DRW	CHK	DESCRIPTION

Sabre Industries™
INNOVATION DELIVERED

CONFIDENTIAL
This document and the information contained herein is the confidential trade secret property of Sabre Industries, Inc. ("Sabre") and must not be reproduced, copied or used, in whole or in part, for any purpose without the prior written consent of Sabre.
© 2025 Sabre Industries, Inc. All rights reserved.

LIGHTNING ROD W/STIFFENER & EXTENSION
SITE: CROOKED FINGER, OR
CUSTOMER: MARION COUNTY OREGON

JOB NO. 563429		SIZE	DRAWING NO.	REV
DATE	8/7/25	B	563429-LR	0
DRAWN BY	KMP			
CHECKED BY	ZAK		SCALE None	PAGE 1 OF 1

BOLT INSTALLATION DETAILS:

1. INSTALLATION OF BOLTS: BOLTS FOR TOWERS AND ANTENNAS SHALL BE INSTALLED WITH THE NUTS FACING TO THE OUTSIDE AND/OR TO THE TOP OF THE TOWER, UNLESS PROHIBITED BY LACK OF CLEARANCE.

2. TIGHTENING OF BOLTS: ALL HIGH STRENGTH BOLTS SHALL BE TIGHTENED TO A SNUG-TIGHT CONDITION, AS DEFINED BY AISC.

3. NUT LOCKING DEVICE: ALL NUTS SHALL BE EQUIPPED WITH SOME TYPE OF NUT LOCKING DEVICE. SEE THE INDIVIDUAL DRAWINGS FOR THE TYPE OF NUT LOCKING DEVICE TO BE USED FOR EACH INDIVIDUAL APPLICATION.

UNLESS OTHERWISE SPECIFIED
ALL DIMENSIONS INCLUDE
FINISHES AND ARE IN INCHES

TOLERANCES: FRACTIONS ± 1/16"
ANGLES ± 1/2 DEG.
DECIMALS ± .010"

MATERIAL:

TOLERANCES DO NOT APPLY TO RAW MATERIAL

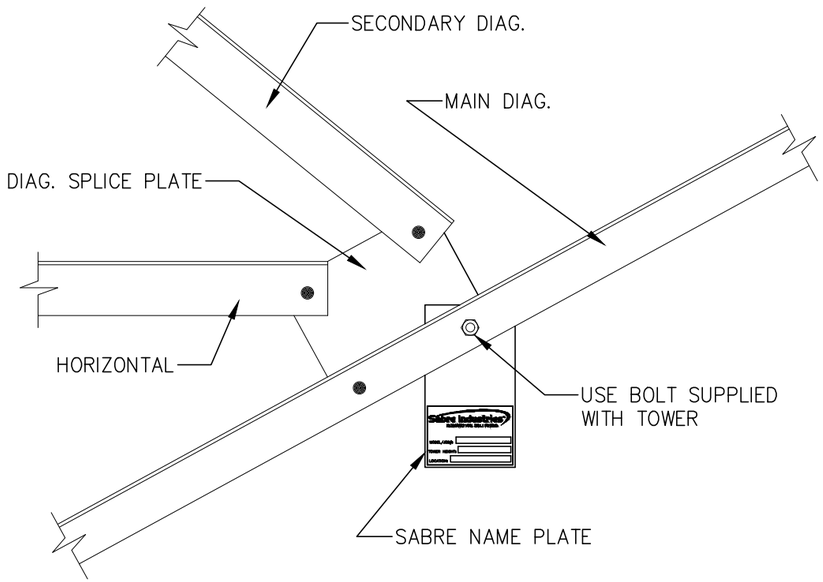
REV	DATE	DRW	CHK	DESCRIPTION
3	02/15/08	KLE	DLW	REVISED PER KEITH TINDALL
2	03/04/04	PSB	ZAK	REDRAWN ONTO "B" SIZE TITLEBLOCK.
1	03/06/01	JKW	PSB	REDRAWN IN AUTOCAD 2000i.

Sabre Industries™
INNOVATION DELIVERED

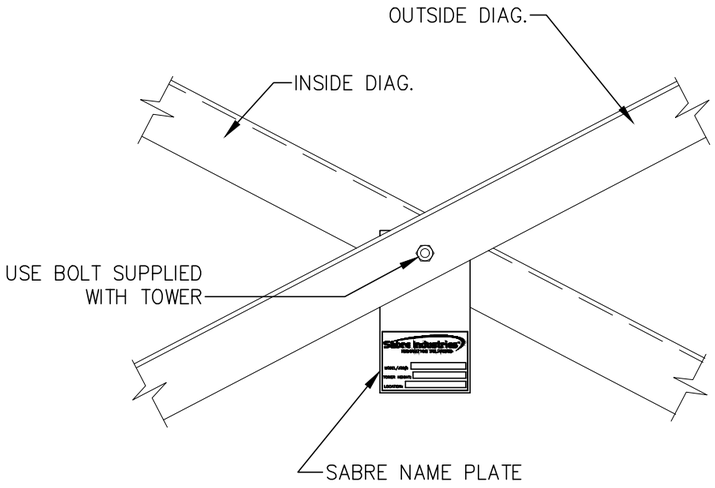
CONFIDENTIAL
This document and the information contained herein is the confidential trade secret property of Sabre Industries, Inc. ("Sabre") and must not be reproduced, copied or used, in whole or in part, for any purpose without the prior written consent of Sabre.
© 2022 Sabre Industries, Inc. All rights reserved.

BOLT INSTALLATION DETAILS

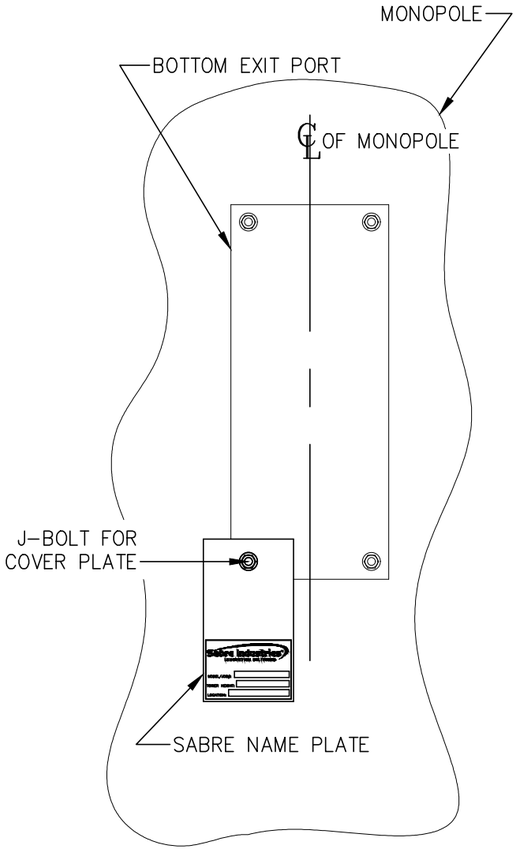
		SIZE	DRAWING NO.	REV
DATE	01/28/00	B	9014671	3
DRAWN BY	MJM			
CHECKED BY	KJT/DLW	SCALE None	PAGE 1 OF 1	



TYPICAL FOR MODEL S3TL, S4TL, S3R & S4R
SELF-SUPPORTING TOWER
(K-BRACE)

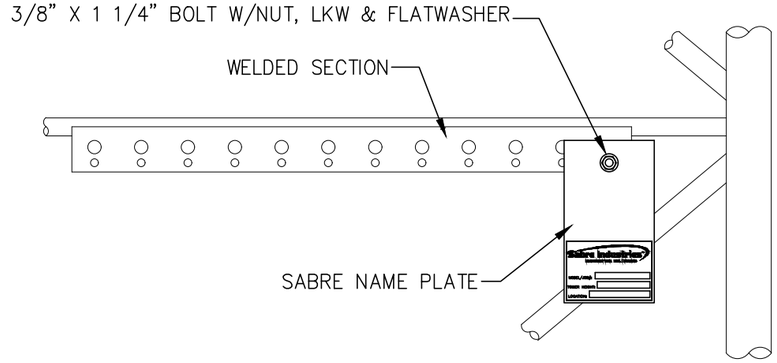


TYPICAL FOR MODEL S3TL, S4TL, S3R & S4R
SELF-SUPPORTING TOWER
(X-BRACE)

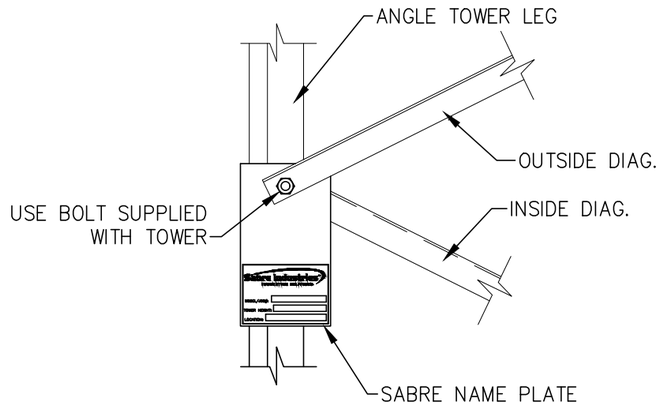


TYPICAL FOR MONOPOLE
STRUCTURE

NOTE:
NAME PLATE SHOULD BE MOUNTED AT
APPROXIMATELY EYE LEVEL WHEN POSSIBLE.



TYPICAL FOR MODEL 2400 / 3600 / 4400 / 4800 / 6000
WELDED GUYED TOWER



TYPICAL FOR MODEL 3000 / 3600 / 4800
ANGLE GUYED TOWER

UNLESS OTHERWISE SPECIFIED
ALL DIMENSIONS INCLUDE
FINISHES AND ARE IN INCHES

TOLERANCES: FRACTIONS ± 1/16"
ANGLES ± 1/2 DEG.
DECIMALS ± .010"

MATERIAL:

TOLERANCES DO NOT APPLY
TO RAW MATERIAL

REV	DATE	DRW	CHK	DESCRIPTION
7	05/25/21	FJM	DLW	UPDATED SABRE NAME PLATE LOGO
6	8/18/11	DSN	KTW	ADDED 4800 & 6000 WELDED GUYED TOWER.
5	3/30/04	MJM	ZAK	ADDED S4TL & S4R TO S.S. TOWER.
4	11/11/02	PSB	RGF	ADDED 2400 WELDED GUYED TOWER.
3	08/23/01	SMC	PSB	REVISED BOLT ON GUYED TOWER WAS 3/8 X 1"
				REVISED MONOPOLE INSTALLATION.
2	02/16/01	DEM	RGF	REDRAWN IN AUTOCAD 2000i
1	04/16/97	DEM	RGF	REDRAWN WITH NEW TITLE BLOCK

Sabre Industries™
INNOVATION DELIVERED

CONFIDENTIAL
This document and the information contained herein is the confidential trade secret property of Sabre Industries, Inc. ("Sabre") and must not be reproduced, copied or used, in whole or in part, for any purpose without the prior written consent of Sabre.
© 2022 Sabre Industries, Inc. All rights reserved.

OPTIONAL MOUNTING INSTALLATION
SABRE NAME PLATE

		SIZE	DRAWING NO.	REV
DATE	10/15/96	B	906956	7
DRAWN BY	DEM			
CHECKED BY	RGF	SCALE None	PAGE 1 OF 1	

NOTICE

ALL PARTS ARE TO BE INVENTORIED AND ANY
SHORTAGES REPORTED WITHIN 48 HOURS OF DELIVERY
TO THE CONTRACTING ERECTOR.

SHORTAGES REPORTED AFTER THIS TIME PERIOD WILL
BE CHARGED TO THE CONTRACTOR.

CALL 712-258-6690

TO REACH THE SABRE CONTRACTS DEPARTMENT.

AVISO

Todas las partes serán inventariadas y los faltantes reportados
por el contratista dentro de las 48 horas a partir de la entrega.

Los faltantes reportados después de 48 horas serán cargados al contratista.

Para aclaraciones llame a:

Sabre-Departamento de Contrataciones

(001) 712 258-6690

UNLESS OTHERWISE SPECIFIED
ALL DIMENSIONS INCLUDE
FINISHES AND ARE IN INCHES

TOLERANCES: FRACTIONS ± 1/16"
ANGLES ± 1/2 DEG.
DECIMALS ± .010"

MATERIAL:

TOLERANCES DO NOT APPLY
TO RAW MATERIAL

REV	DATE	DRW	CHK	DESCRIPTION
3	03/04/04	PSB	ZAK	REDRAWN ONTO "B" SIZE TITLEBLOCK.
2	02/25/02	CHH	RWM	ADDED SPANISH TEXT.
1	02/27/01	CHH	CE	REDRAWN IN AUTOCAD 2000i & UPDATED VERBAGE.

Sabre Industries™
INNOVATION DELIVERED

CONFIDENTIAL

This document and the information contained herein is the confidential trade secret property of Sabre Industries, Inc. ("Sabre") and must not be reproduced, copied or used, in whole or in part, for any purpose without the prior written consent of Sabre.
© 2022 Sabre Industries, Inc. All rights reserved.

INVENTORY REQUIREMENT SHEET

DATE	05/12/97
DRAWN BY	ZAK
CHECKED BY	JD

SIZE	DRAWING NO.	REV
B	907901	3

SCALE	PAGE
None	1 OF 1

EXHIBIT K

Sabre Industries™ INNOVATION DELIVERED

CUSTOMER : MARION COUNTY OREGON

SITE : CROOKED FINGER, OR

B.O.M. 180 FT. MODEL S3TL-HD2 SELF-SUPPORTING TOWER

PC=PIECE	OR=ORANGE
PLT=PALLET	WH=WHITE
BDL=BUNDLE	O/W=OR & WH
CRT=CRATE	N/R=NOT REQ'D
D=DRUM	SP=SPECIAL
BX=BOX	

ITEM NO.	NO. REQ'D.	DRAWING NUMBER	DRAWING REV	PART NO.	DESCRIPTION	TOTAL WEIGHT LBS.	PAINT	PACKING KIT	PACKING QTY OF PKG'S	PACKING PKG. NO.
1					**ANCHOR BOLTS AND TEMPLATES**					
2	18	C40041061	0	C40041061	ANCHOR BOLT ASSEMBLY, 1 3/4 Ø X 7'-3 (F1554 GR 105)	1305				
3					W/(5) NUTS 1 3/4 HEAVY HEX (A563 DH)					
4					(2) FLATWASHERS 1 3/4 (F436)					
5	6	C30139220	0	C30139220	PLATE, A.B. TEMPLATE 1 3/4"Ø A.B. ON 19"Ø B.C.	161				
6					**LEG TO LEG TEMPLATE MATERIAL**					
7	1 KIT			C30400341	LEG TO LEG TEMPLATE KIT, 23'-0 BASE SPREAD	517				
8					(6) 1 3/4"Ø A.B. ON A 19"Ø B.C.					
9										
10										
11										
12										
13										
14										
15										
16										
17										
18										
19										
20										

REV	DATE	DRW	CHK	DESCRIPTION

DATE	7/16/25	**JOB NO.**	563429
DRAWN BY	AWB	**PRINT NO.**	BOM-1
CHECKED BY	BWA	**PAGE**	1 OF 23

Sabre Industries™
INNOVATION DELIVERED

CUSTOMER : MARION COUNTY OREGON

SITE : CROOKED FINGER, OR

B.O.M. 180 FT. MODEL S3TL-HD2 SELF-SUPPORTING TOWER

PC=PIECE	OR=ORANGE
PLT=PALLET	WH=WHITE
BDL=BUNDLE	O/W=OR & WH
CRT=CRATE	N/R=NOT REQ'D
D=DRUM	SP=SPECIAL
BX=BOX	

ITEM NO.	NO. REQ'D.	DRAWING NUMBER	DRAWING REV	PART NO.	DESCRIPTION	TOTAL WEIGHT LBS.	PAINT	PACKING KIT	PACKING QTY OF PKG'S	PACKING PKG. NO.
1					**TOWER LEGS**					
2	3	15-T11611441	0	15-T11611441	SECT. 15 LEG 14 Ø X .500 X 20'-0 5/16 W/STEP BOLTS	5508				
3	3	14-T11611443	0	14-T11611443	SECT. 14 LEG 14 Ø X .500 X 20'-0 5/16 W/STEP BOLTS	5618				
4	3	13-T11611445	0	13-T11611445	SECT. 13 LEG 10 3/4 Ø X .500 X 20'-0 5/16 W/STEP BOLTS	4625				
5	3	12-T11610309	0	12-T11610309	SECT. 12 LEG 10 3/4 Ø X .500 X 20'-0 5/16 W/STEP BOLTS	4336				
6	3	11-T1169117	0	11-T1169117	SECT. 11 LEG 8 5/8 Ø X .500 X 20'-0 5/16 W/STEP BOLTS	3504				
7	3	10-T1169819	0	10-T1169819	SECT. 10 LEG 8 5/8 Ø X .322 X 20'-0 5/16 W/STEP BOLTS	2270				
8	3	09-T1169975	0	09-T1169975	SECT. 9 LEG 5 9/16 Ø X .375 X 20'-0 5/16 W/STEP BOLTS	1758				
9	1	08-T1168025	0	08-T1168025	SECT. 8 LEG 4 Ø X .318 X 20'-0 5/16 W/STEP BOLTS	373				
10	2	08-T1168026	0	08-T1168026	SECT. 8 LEG 4 Ø X .318 X 20'-0 5/16	735				
11	1	07-T1165503	0	07-T1165503	SECT. 7 LEG 2 7/8 Ø X .203 X 20'-0 5/16 W/STEP BOLTS	219				
12	2	07-T1165504	0	07-T1165504	SECT. 7 LEG 2 7/8 Ø X .203 X 20'-0 5/16	428				
13										
14										
15										
16										
17										
18										
19										
20										

REV	DATE	DRW	CHK	DESCRIPTION

DATE	8/7/25	**JOB NO.**	563429
DRAWN BY	KMP	**PRINT NO.**	BOM-1
CHECKED BY	ZAK	**PAGE**	2 OF 23

EXHIBIT K

CUSTOMER : MARION COUNTY OREGON

SITE : CROOKED FINGER, OR

B.O.M. 180 FT. MODEL S3TL-HD2 SELF-SUPPORTING TOWER

PC=PIECE	OR=ORANGE
PLT=PALLET	WH=WHITE
BDL=BUNDLE	O/W=OR & WH
CRT=CRATE	N/R=NOT REQ'D
D=DRUM	SP=SPECIAL
BX=BOX	

ITEM NO.	NO. REQ'D.	DRAWING NUMBER	DRAWING REV	PART NO.	DESCRIPTION	TOTAL WEIGHT LBS.	PAINT	PACKING KIT	PACKING QTY OF PKG'S	PACKING PKG. NO.
1					**TOWER BRACING**					
2	1 KIT				**BRACING #15-T8101794 SECTION 15**	3451				
3					**CONSISTING OF THE MATERIAL LISTED BELOW**					
4	6	TS11269	0	TS11269	ANGLE, DIAGONAL 6 X 4 X 3/8 X 22'-11 3/16	1760				
5	6	TS11270	0	TS11270	ANGLE, DIAGONAL 6 X 4 X 3/8 X 22'-0 7/16	1691				
6					**SPLICE BOLTS TOP OF SECTION 15**					
7	31			C40026115	BOLT ASSEMBLY, 1 1/2 Ø X 6 1/2 A325	188				
8	1 KIT				**HARDWARE #TK01256 SECTION 15**	72				
9					**CONSISTING OF THE MATERIAL LISTED BELOW**					
10	7			C40026099	BOLT ASSEMBLY, 1 1/8 Ø X 3 1/4 A325	15				
11	25			C40026097	BOLT ASSEMBLY, 1 1/8 Ø X 2 3/4 A325	50				
12	7	C40047014	0	C40047014	RINGFILL, 3/8 THICK - 1 1/8 Ø BOLT (3 X 3)	7				
13										
14										
15										
16										
17										
18										
19										
20										

REV	DATE	DRW	CHK	DESCRIPTION

DATE	8/7/25	**JOB NO.**	563429
DRAWN BY	KMP	**PRINT NO.**	BOM-1
CHECKED BY	ZAK	**PAGE**	3 OF 23

Sabre Industries™
INNOVATION DELIVERED

CUSTOMER : MARION COUNTY OREGON

SITE : CROOKED FINGER, OR

B.O.M. 180 FT. MODEL S3TL-HD2 SELF-SUPPORTING TOWER

PC=PIECE	OR=ORANGE
PLT=PALLET	WH=WHITE
BDL=BUNDLE	O/W=OR & WH
CRT=CRATE	N/R=NOT REQ'D
D=DRUM	SP=SPECIAL
BX=BOX	

ITEM NO.	NO. REQ'D.	DRAWING NUMBER	DRAWING REV	PART NO.	DESCRIPTION	TOTAL WEIGHT LBS.	PAINT	PACKING KIT	PACKING QTY OF PKG'S	PACKING PKG. NO.
1					**TOWER BRACING CONT'D**					
2	1 KIT				**BRACING #14-T8101795 SECTION 14**	3174				
3					**CONSISTING OF THE MATERIAL LISTED BELOW**					
4	6	TS11271	0	TS11271	ANGLE, DIAGONAL 6 X 4 X 3/8 X 21'-1 3/8	1621				
5	6	TS11272	0	TS11272	ANGLE, DIAGONAL 6 X 4 X 3/8 X 20'-2 7/8	1553				
6					**SPLICE BOLTS TOP OF SECTION 14**					
7	31			C40026166	BOLT ASSEMBLY, 1 1/2 Ø X 7 A325	196				
8	1 KIT				**HARDWARE #TK01256 SECTION 14**	72				
9					**CONSISTING OF THE MATERIAL LISTED BELOW**					
10	7			C40026099	BOLT ASSEMBLY, 1 1/8 Ø X 3 1/4 A325	15				
11	25			C40026097	BOLT ASSEMBLY, 1 1/8 Ø X 2 3/4 A325	50				
12	7	C40047014	0	C40047014	RINGFILL, 3/8 THICK - 1 1/8 Ø BOLT (3 X 3)	7				
13										
14										
15										
16										
17										
18										
19										
20										

REV	DATE	DRW	CHK	DESCRIPTION

DATE	8/7/25	**JOB NO.**	563429
DRAWN BY	KMP	**PRINT NO.**	BOM-1
CHECKED BY	ZAK	**PAGE**	4 OF 23

Sabre Industries™
INNOVATION DELIVERED

CUSTOMER : MARION COUNTY OREGON

SITE : CROOKED FINGER, OR

B.O.M. 180 FT. MODEL S3TL-HD2 SELF-SUPPORTING TOWER

PC=PIECE	OR=ORANGE
PLT=PALLET	WH=WHITE
BDL=BUNDLE	O/W=OR & WH
CRT=CRATE	N/R=NOT REQ'D
D=DRUM	SP=SPECIAL
BX=BOX	

ITEM NO.	NO. REQ'D.	DRAWING NUMBER	DRAWING REV	PART NO.	DESCRIPTION	TOTAL WEIGHT LBS.	PAINT	PACKING KIT	PACKING QTY OF PKG'S	PACKING PKG. NO.
1					**TOWER BRACING CONT'D**					
2	1 KIT				**BRACING #13-T8101796 SECTION 13**	2371				
3					**CONSISTING OF THE MATERIAL LISTED BELOW**					
4	6	TS11273	0	TS11273	ANGLE, DIAGONAL 4 X 4 X 3/8 X 19'-4 1/8	1239				
5	6	TS11274	0	TS11274	ANGLE, DIAGONAL 4 X 4 X 3/8 X 18'-5 15/16	1132				
6					**SPLICE BOLTS TOP OF SECTION 13**					
7	25			C40026115	BOLT ASSEMBLY, 1 1/2 Ø X 6 1/2 A325	152				
8	1 KIT				**HARDWARE #TK00353 SECTION 13**	54				
9					**CONSISTING OF THE MATERIAL LISTED BELOW**					
10	7			C40026073	BOLT ASSEMBLY, 1 Ø X 3 A325	12				
11	25			C40026071	BOLT ASSEMBLY, 1 Ø X 2 1/2 A325	41				
12	7			C40047007	RINGFILL, 3/8 THICK - 1 Ø BOLT	1				
13										
14										
15										
16										
17										
18										
19										
20										

REV	DATE	DRW	CHK	DESCRIPTION

DATE	8/7/25	**JOB NO.**	563429
DRAWN BY	KMP	**PRINT NO.**	BOM-1
CHECKED BY	ZAK	**PAGE**	5 OF 23

Sabre Industries™
INNOVATION DELIVERED

CUSTOMER : MARION COUNTY OREGON

SITE : CROOKED FINGER, OR

B.O.M. 180 FT. MODEL S3TL-HD2 SELF-SUPPORTING TOWER

PC=PIECE	OR=ORANGE
PLT=PALLET	WH=WHITE
BDL=BUNDLE	O/W=OR & WH
CRT=CRATE	N/R=NOT REQ'D
D=DRUM	SP=SPECIAL
BX=BOX	

ITEM NO.	NO. REQ'D.	DRAWING NUMBER	DRAWING REV	PART NO.	DESCRIPTION	TOTAL WEIGHT LBS.	PAINT	PACKING KIT	PACKING QTY OF PKG'S	PACKING PKG. NO.
1					**TOWER BRACING CONT'D**					
2	1 KIT				**BRACING #12-T8101797 SECTION 12**	1983				
3					**CONSISTING OF THE MATERIAL LISTED BELOW**					
4	6	TS11275	0	TS11275	ANGLE, DIAGONAL 4 X 3 1/2 X 3/8 X 17'-10 7/16	1015				
5	6	TS11276	0	TS11276	ANGLE, DIAGONAL 4 X 3 1/2 X 3/8 X 17'-0 9/16	968				
6					**SPLICE BOLTS TOP OF SECTION 12**					
7	25			C40026115	BOLT ASSEMBLY, 1 1/2 Ø X 6 1/2 A325	152				
8	1 KIT				**HARDWARE #TK00353 SECTION 12**	54				
9					**CONSISTING OF THE MATERIAL LISTED BELOW**					
10	7			C40026073	BOLT ASSEMBLY, 1 Ø X 3 A325	12				
11	25			C40026071	BOLT ASSEMBLY, 1 Ø X 2 1/2 A325	41				
12	7			C40047007	RINGFILL, 3/8 THICK - 1 Ø BOLT	1				
13										
14										
15										
16										
17										
18										
19										
20										

REV	DATE	DRW	CHK	DESCRIPTION

DATE	8/7/25	**JOB NO.**	563429
DRAWN BY	KMP	**PRINT NO.**	BOM-1
CHECKED BY	ZAK	**PAGE**	6 OF 23

Sabre Industries™
INNOVATION DELIVERED

CUSTOMER : MARION COUNTY OREGON

SITE : CROOKED FINGER, OR

B.O.M. 180 FT. MODEL S3TL-HD2 SELF-SUPPORTING TOWER

PC=PIECE	OR=ORANGE
PLT=PALLET	WH=WHITE
BDL=BUNDLE	O/W=OR & WH
CRT=CRATE	N/R=NOT REQ'D
D=DRUM	SP=SPECIAL
BX=BOX	

ITEM NO.	NO. REQ'D.	DRAWING NUMBER	DRAWING REV	PART NO.	DESCRIPTION	TOTAL WEIGHT LBS.	PAINT	PACKING KIT	PACKING QTY OF PKG'S	PACKING PKG. NO.
1					**TOWER BRACING CONT'D**					
2	1 KIT				**BRACING #11-T8101372 SECTION 11**	2397				
3					**CONSISTING OF THE MATERIAL LISTED BELOW**					
4	6	TS08563	0	TS08563	ANGLE, DIAGONAL 4 X 3 1/2 X 3/8 X 14'-7 7/8	832				
5	6	TS08562	0	TS08562	ANGLE, DIAGONAL 4 X 3 1/2 X 3/8 X 14'-0 13/16	799				
6	6	TS08561	0	TS08561	ANGLE, DIAGONAL 4 X 3 1/2 X 3/8 X 13'-5 13/16	766				
7					**SPLICE BOLTS TOP OF SECTION 11**					
8	19			C40026093	BOLT ASSEMBLY, 1 1/4 Ø X 5 A325	65				
9	1 KIT				**HARDWARE #TK00430 SECTION 11**	81				
10					**CONSISTING OF THE MATERIAL LISTED BELOW**					
11	10			C40026073	BOLT ASSEMBLY, 1 Ø X 3 A325	18				
12	38			C40026071	BOLT ASSEMBLY, 1 Ø X 2 1/2 A325	62				
13	10			C40047007	RINGFILL, 3/8 THICK - 1 Ø BOLT	1				
14										
15										
16										
17										
18										
19										
20										

REV	DATE	DRW	CHK	DESCRIPTION

DATE	8/7/25	**JOB NO.**	563429
DRAWN BY	KMP	**PRINT NO.**	BOM-1
CHECKED BY	ZAK	**PAGE**	7 OF 23

Sabre Industries™
INNOVATION DELIVERED

CUSTOMER : MARION COUNTY OREGON

SITE : CROOKED FINGER, OR

B.O.M. 180 FT. MODEL S3TL-HD2 SELF-SUPPORTING TOWER

PC=PIECE	OR=ORANGE
PLT=PALLET	WH=WHITE
BDL=BUNDLE	O/W=OR & WH
CRT=CRATE	N/R=NOT REQ'D
D=DRUM	SP=SPECIAL
BX=BOX	

ITEM NO.	NO. REQ'D.	DRAWING NUMBER	DRAWING REV	PART NO.	DESCRIPTION	TOTAL WEIGHT LBS.	PAINT	PACKING KIT	PACKING QTY OF PKG'S	PACKING PKG. NO.
1					**TOWER BRACING CONT'D**					
2	1 KIT				**BRACING #10-T8100820 SECTION 10**	1887				
3					**CONSISTING OF THE MATERIAL LISTED BELOW**					
4	6	TS05779	1	TS05779	ANGLE, DIAGONAL 4 X 4 X 5/16 X 12'-10 3/8	658				
5	6	TS05780	1	TS05780	ANGLE, DIAGONAL 4 X 4 X 5/16 X 12'-3 1/2	629				
6	6	TS05781	1	TS05781	ANGLE, DIAGONAL 4 X 4 X 5/16 X 11'-8 3/4	600				
7					**SPLICE BOLTS TOP OF SECTION 10**					
8	19			C40026094	BOLT ASSEMBLY, 1 1/4 Ø X 5 1/2 A325	69				
9	1 KIT				**HARDWARE #TK00437 SECTION 10**	79				
10					**CONSISTING OF THE MATERIAL LISTED BELOW**					
11	10			C40026072	BOLT ASSEMBLY, 1 Ø X 2 3/4 A325	17				
12	37			C40026071	BOLT ASSEMBLY, 1 Ø X 2 1/2 A325	61				
13	10			C40047010	RINGFILL, 1/2 THICK - 1 Ø BOLT	1				
14										
15										
16										
17										
18										
19										
20										

REV	DATE	DRW	CHK	DESCRIPTION

DATE	8/7/25	**JOB NO.**	563429
DRAWN BY	KMP	**PRINT NO.**	BOM-1
CHECKED BY	ZAK	**PAGE**	8 OF 23

Sabre Industries™
INNOVATION DELIVERED

CUSTOMER : MARION COUNTY OREGON

SITE : CROOKED FINGER, OR

B.O.M. 180 FT. MODEL S3TL-HD2 SELF-SUPPORTING TOWER

PC=PIECE	OR=ORANGE
PLT=PALLET	WH=WHITE
BDL=BUNDLE	O/W=OR & WH
CRT=CRATE	N/R=NOT REQ'D
D=DRUM	SP=SPECIAL
BX=BOX	

ITEM NO.	NO. REQ'D.	DRAWING NUMBER	DRAWING REV	PART NO.	DESCRIPTION	TOTAL WEIGHT LBS.	PAINT	PACKING KIT	PACKING QTY OF PKG'S	PACKING PKG. NO.
1					**TOWER BRACING CONT'D**					
2	1 KIT				**BRACING #09-T8100384 SECTION 09**	1612				
3					**CONSISTING OF THE MATERIAL LISTED BELOW**					
4	6	TS03786	1	TS03786	ANGLE, DIAGONAL 3 1/2 X 3 X 3/8 X 11'-5 3/8	564				
5	6	TS03787	1	TS03787	ANGLE, DIAGONAL 3 1/2 X 3 X 3/8 X 10'-10 13/16	537				
6	6	TS03788	1	TS03788	ANGLE, DIAGONAL 3 1/2 X 3 X 3/8 X 10'-4 7/16	511				
7					**SPLICE BOLTS TOP OF SECTION 09**					
8	19			C40026078	BOLT ASSEMBLY, 1 Ø X 4 1/4 A325	41				
9	1 KIT				**HARDWARE #TK00269 SECTION 09**	37				
10					**CONSISTING OF THE MATERIAL LISTED BELOW**					
11	10			C40026045	BOLT ASSEMBLY, 3/4 Ø X 2 1/2 A325	8				
12	38			C40026044	BOLT ASSEMBLY, 3/4 Ø X 2 1/4 A325	28				
13	10			C40047004	RINGFILL, 3/8 THICK - 3/4 Ø BOLT	1				
14										
15										
16										
17										
18										
19										
20										

REV	DATE	DRW	CHK	DESCRIPTION

DATE 8/7/25 **JOB NO.** 563429

DRAWN BY KMP **PRINT NO.** BOM-1

CHECKED BY ZAK **PAGE** 9 OF 23

CUSTOMER : MARION COUNTY OREGON

SITE : CROOKED FINGER, OR

B.O.M. 180 FT. MODEL S3TL-HD2 SELF-SUPPORTING TOWER

PC=PIECE	OR=ORANGE
PLT=PALLET	WH=WHITE
BDL=BUNDLE	O/W=OR & WH
CRT=CRATE	N/R=NOT REQ'D
D=DRUM	SP=SPECIAL
BX=BOX	

ITEM NO.	NO. REQ'D.	DRAWING NUMBER	DRAWING REV	PART NO.	DESCRIPTION	TOTAL WEIGHT LBS.	PAINT	PACKING KIT	PACKING QTY OF PKG'S	PACKING PKG. NO.
1					**TOWER BRACING CONT'D**					
2	1 KIT				**BRACING #08-T8100421 SECTION 08**	1256				
3					**CONSISTING OF THE MATERIAL LISTED BELOW**					
4	6	TS04017	1	TS04017	ANGLE, DIAGONAL 2 1/2 X 2 1/2 X 3/8 X 9'-1 13/16	337				
5	6	TS04018	1	TS04018	ANGLE, DIAGONAL 2 1/2 X 2 1/2 X 3/8 X 8'-8 11/16	322				
6	6	TS04019	1	TS04019	ANGLE, DIAGONAL 2 1/2 X 2 1/2 X 3/8 X 8'-3 5/8	306				
7	6	TS04020	1	TS04020	ANGLE, DIAGONAL 2 1/2 X 2 1/2 X 3/8 X 7'-10 11/16	291				
8					**SPLICE BOLTS TOP OF SECTION 08**					
9	19			C40026078	BOLT ASSEMBLY, 1 Ø X 4 1/4 A325	41				
10	1 KIT				**HARDWARE #TK00348 SECTION 08**	49				
11					**CONSISTING OF THE MATERIAL LISTED BELOW**					
12	13			C40026045	BOLT ASSEMBLY, 3/4 Ø X 2 1/2 A325	10				
13	50			C40026044	BOLT ASSEMBLY, 3/4 Ø X 2 1/4 A325	37				
14	13			C40047004	RINGFILL, 3/8 THICK - 3/4 Ø BOLT	2				
15										
16										
17										
18										
19										
20										

REV	DATE	DRW	CHK	DESCRIPTION

DATE 8/7/25 **JOB NO.** 563429

DRAWN BY KMP **PRINT NO.** BOM-1

CHECKED BY ZAK **PAGE** 10 OF 23

Sabre Industries™
INNOVATION DELIVERED

CUSTOMER : MARION COUNTY OREGON

SITE : CROOKED FINGER, OR

B.O.M. 180 FT. MODEL S3TL-HD2 SELF-SUPPORTING TOWER

PC=PIECE	OR=ORANGE
PLT=PALLET	WH=WHITE
BDL=BUNDLE	O/W=OR & WH
CRT=CRATE	N/R=NOT REQ'D
D=DRUM	SP=SPECIAL
BX=BOX	

ITEM NO.	NO. REQ'D.	DRAWING NUMBER	DRAWING REV	PART NO.	DESCRIPTION	TOTAL WEIGHT LBS.	PAINT	PACKING KIT	PACKING QTY OF PKG'S	PACKING PKG. NO.
1					**TOWER BRACING**					
2	1 KIT				**BRACING #07-T8100168 SECTION 07**	726				
3					**CONSISTING OF THE MATERIAL LISTED BELOW**					
4	6	TS02040	1	TS02040	ANGLE, DIAGONAL 2 X 2 X 5/16 X 7'-5 1/2	182				
5	6	TS02039	1	TS02039	ANGLE, DIAGONAL 2 X 2 X 5/16 X 7'-0 13/16	173				
6	6	TS02038	1	TS02038	ANGLE, DIAGONAL 2 X 2 X 5/16 X 6'-8 5/16	163				
7	6	TS02037	1	TS02037	ANGLE, DIAGONAL 2 X 2 X 5/16 X 6'-3 15/16	155				
8	3	TS02036	1	TS02036	ANGLE, HORIZONTAL 2 X 2 X 5/16 X 4'-4 3/8	53				
9	1 KIT				**HARDWARE #TK00146 SECTION 07**	35				
10					**CONSISTING OF THE MATERIAL LISTED BELOW**					
11	13			C40026024	BOLT ASSEMBLY, 5/8 Ø X 2 1/4 A325	7				
12	57			C40026023	BOLT ASSEMBLY, 5/8 Ø X 2 A325	26				
13	13			C40047003	RINGFILL, 3/8 THICK - 5/8 Ø BOLT	2				
14										
15										
16										
17										
18										
19										
20										

REV	DATE	DRW	CHK	DESCRIPTION

DATE 8/7/25 **JOB NO.** 563429

DRAWN BY KMP **PRINT NO.** BOM-1

CHECKED BY ZAK **PAGE** 11 OF 23

Sabre Industries™
INNOVATION DELIVERED

CUSTOMER : MARION COUNTY OREGON

SITE : CROOKED FINGER, OR

B.O.M. 180 FT. MODEL S3TL-HD2 SELF-SUPPORTING TOWER

PC=PIECE	OR=ORANGE
PLT=PALLET	WH=WHITE
BDL=BUNDLE	O/W=OR & WH
CRT=CRATE	N/R=NOT REQ'D
D=DRUM	SP=SPECIAL
BX=BOX	

ITEM NO.	NO. REQ'D.	DRAWING NUMBER	DRAWING REV	PART NO.	DESCRIPTION	TOTAL WEIGHT LBS.	PAINT	PACKING KIT	PACKING QTY OF PKG'S	PACKING PKG. NO.
1					**SAFETY CLIMB**					
2	1 KIT			C30012054	200' TUF-TUG SAFETY CLIMB MATERIAL	95				
3										
4										
5										
6										
7										
8										
9										
10										
11										
12										
13										
14										
15										
16										
17										
18										
19										
20										

REV	DATE	DRW	CHK	DESCRIPTION

DATE	8/7/25	**JOB NO.**	563429
DRAWN BY	KMP	**PRINT NO.**	BOM-1
CHECKED BY	ZAK	**PAGE**	12 OF 23

CUSTOMER : MARION COUNTY OREGON

SITE : CROOKED FINGER, OR

B.O.M. 180 FT. MODEL S3TL-HD2 SELF-SUPPORTING TOWER

PC=PIECE	OR=ORANGE
PLT=PALLET	WH=WHITE
BDL=BUNDLE	O/W=OR & WH
CRT=CRATE	N/R=NOT REQ'D
D=DRUM	SP=SPECIAL
BX=BOX	

ITEM NO.	NO. REQ'D.	DRAWING NUMBER	DRAWING REV	PART NO.	DESCRIPTION	TOTAL WEIGHT LBS.	PAINT	PACKING KIT	PACKING QTY OF PKG'S	PACKING PKG. NO.
1					**SAFETY CLIMB MATERIAL**					
2	1 KIT			C30011049	SAFETY CLIMB BOTTOM MOUNT (14"Ø)	37				
3	1 KIT			C30011004	SAFETY CLIMB TOP MOUNT (2 3/4"Ø - 2 7/8"Ø)	27				
4	8 KITS			C30003001	SAFETY CLIMB INTERMEDIATE MOUNT	17				
5					**CLIMBING/CONSTRUCTION STEP BOLTS**					
6	373			C40044017	STEP BOLT ASSEMBLY, 5/8 Ø X 7 H.D.G.	373				
7										
8										
9										
10										
11										
12										
13										
14										
15										
16										
17										
18										
19										
20										

REV	DATE	DRW	CHK	DESCRIPTION

DATE 8/11/25 **JOB NO.** 563429

DRAWN BY KMP **PRINT NO.** BOM-1

CHECKED BY ZAK **PAGE** 13 OF 23

EXHIBIT K

CUSTOMER : MARION COUNTY OREGON

SITE : CROOKED FINGER, OR

B.O.M. 180 FT. MODEL S3TL-HD2 SELF-SUPPORTING TOWER

PC=PIECE	OR=ORANGE
PLT=PALLET	WH=WHITE
BDL=BUNDLE	O/W=OR & WH
CRT=CRATE	N/R=NOT REQ'D
D=DRUM	SP=SPECIAL
BX=BOX	

ITEM NO.	NO. REQ'D.	DRAWING NUMBER	DRAWING REV	PART NO.	DESCRIPTION	TOTAL WEIGHT LBS.	PAINT	PACKING KIT	PACKING QTY OF PKG'S	PACKING PKG. NO.
1					**WAVEGUIDE LADDER (WG1)**					
2	18	CS00146	2	CS00146	ANGLE, WAVEGUIDE LADDER RAIL 20 FT. W/4 FT. RUNG SPC	540				
3	45	CS01619	0	CS01619	ANGLE, WAVEGUIDE SUPPORT (6 HOLE)	95				
4	18	CS00037	2	CS00037	PLATE, LADDER SPLICE	7				
5	46	CS00169	2	CS00169	CLIP, LADDER ATTACHMENT	25				
6					**WAVEGUIDE LADDER HARDWARE (WG1)**					
7	36			C40039002	J-BOLT ASSEMBLY, 3/8 Ø X 7 1/4 I.L.	13				
8	10			C40039001	J-BOLT ASSEMBLY, 3/8 Ø X 5 3/4 I.L.	3				
9	130			C40024004	BOLT ASSEMBLY, 3/8 Ø X 1 1/2 GRD 5	13				
10										
11										
12										
13										
14										
15										
16										
17										
18										
19										
20										

REV	DATE	DRW	CHK	DESCRIPTION

DATE	8/11/25	**JOB NO.**	563429
DRAWN BY	KMP	**PRINT NO.**	BOM-1
CHECKED BY	ZAK	**PAGE**	14 OF 23

Sabre Industries™
INNOVATION DELIVERED

CUSTOMER : MARION COUNTY OREGON

SITE : CROOKED FINGER, OR

B.O.M. 180 FT. MODEL S3TL-HD2 SELF-SUPPORTING TOWER

PC=PIECE	OR=ORANGE
PLT=PALLET	WH=WHITE
BDL=BUNDLE	O/W=OR & WH
CRT=CRATE	N/R=NOT REQ'D
D=DRUM	SP=SPECIAL
BX=BOX	

ITEM NO.	NO. REQ'D.	DRAWING NUMBER	DRAWING REV	PART NO.	DESCRIPTION	TOTAL WEIGHT LBS.	PAINT	PACKING KIT	PACKING QTY OF PKG'S	PACKING PKG. NO.
1					**WAVEGUIDE LADDER (WG2)**					
2	18	CS00146	2	CS00146	ANGLE, WAVEGUIDE LADDER RAIL 20 FT. W/4 FT. RUNG SPC	540				
3	45	CS01619	0	CS01619	ANGLE, WAVEGUIDE SUPPORT (6 HOLE)	95				
4	18	CS00037	2	CS00037	PLATE, LADDER SPLICE	7				
5	46	CS00169	2	CS00169	CLIP, LADDER ATTACHMENT	25				
6					**WAVEGUIDE LADDER HARDWARE (WG2)**					
7	36			C40039002	J-BOLT ASSEMBLY, 3/8 Ø X 7 1/4 I.L.	13				
8	10			C40039001	J-BOLT ASSEMBLY, 3/8 Ø X 5 3/4 I.L.	3				
9	130			C40024004	BOLT ASSEMBLY, 3/8 Ø X 1 1/2 GRD 5	13				
10										
11										
12										
13										
14										
15										
16										
17										
18										
19										
20										

REV	DATE	DRW	CHK	DESCRIPTION

DATE	8/11/25	**JOB NO.**	563429
DRAWN BY	KMP	**PRINT NO.**	BOM-1
CHECKED BY	ZAK	**PAGE**	15 OF 23

Sabre Industries™
INNOVATION DELIVERED

CUSTOMER : MARION COUNTY OREGON

SITE : CROOKED FINGER, OR

B.O.M. 180 FT. MODEL S3TL-HD2 SELF-SUPPORTING TOWER

PC=PIECE	OR=ORANGE
PLT=PALLET	WH=WHITE
BDL=BUNDLE	O/W=OR & WH
CRT=CRATE	N/R=NOT REQ'D
D=DRUM	SP=SPECIAL
BX=BOX	

ITEM NO.	NO. REQ'D.	DRAWING NUMBER	DRAWING REV	PART NO.	DESCRIPTION	TOTAL WEIGHT LBS.	PAINT	PACKING KIT	PACKING QTY OF PKG'S	PACKING PKG. NO.
1					**WAVEGUIDE LADDER (WG3)**					
2	18	CS00146	2	CS00146	ANGLE, WAVEGUIDE LADDER RAIL 20 FT. W/4 FT. RUNG SPC	540				
3	45	CS01619	0	CS01619	ANGLE, WAVEGUIDE SUPPORT (6 HOLE)	95				
4	18	CS00037	2	CS00037	PLATE, LADDER SPLICE	7				
5	46	CS00169	2	CS00169	CLIP, LADDER ATTACHMENT	25				
6					**WAVEGUIDE LADDER HARDWARE (WG3)**					
7	36			C40039002	J-BOLT ASSEMBLY, 3/8 Ø X 7 1/4 I.L.	13				
8	10			C40039001	J-BOLT ASSEMBLY, 3/8 Ø X 5 3/4 I.L.	3				
9	130			C40024004	BOLT ASSEMBLY, 3/8 Ø X 1 1/2 GRD 5	13				
10										
11										
12										
13										
14										
15										
16										
17										
18										
19										
20										

REV	DATE	DRW	CHK	DESCRIPTION

DATE	8/11/25	**JOB NO.**	563429
DRAWN BY	KMP	**PRINT NO.**	BOM-1
CHECKED BY	ZAK	**PAGE**	16 OF 23

Sabre Industries™
INNOVATION DELIVERED

CUSTOMER : MARION COUNTY OREGON

SITE : CROOKED FINGER, OR

B.O.M. 180 FT. MODEL S3TL-HD2 SELF-SUPPORTING TOWER

PC=PIECE	OR=ORANGE
PLT=PALLET	WH=WHITE
BDL=BUNDLE	O/W=OR & WH
CRT=CRATE	N/R=NOT REQ'D
D=DRUM	SP=SPECIAL
BX=BOX	

ITEM NO.	NO. REQ'D.	DRAWING NUMBER	DRAWING REV	PART NO.	DESCRIPTION	TOTAL WEIGHT LBS.	PAINT	PACKING KIT	PACKING QTY OF PKG'S	PACKING PKG. NO.
1					**LEG CAPS**					
2	1 KIT			C30008022	LEG CAP KIT, 3/4" BOLTS ON 6 1/2" B.C. (1" SPLICE PLATE)	11				
3					**3' SIDEARM MOUNT @ 179'**					
4	1 KIT			C10151103	3 FT. SIDEARM ASSEMBLY	82				
5	1			C10900105	PIPE ANTENNA MOUNTING KIT 2 3/8 Ø X 5'-0	22				
6	4			C40034032	U-BOLT ASSEMBLY 5/8 Ø X 5 3/16 C-C	9				
7					**Z-BRACKET PIPE MOUNT FOR SIDEARM @ 179'**					
8	1 KIT			C10174018	TAPERED LEG PIPE MOUNT KIT	64				
9	1			C10981407	ANTENNA MTG. PIPE 4 1/2 Ø X 7'-0	58				
10	4			C40034032	U-BOLT ASSEMBLY 5/8 Ø X 5 3/16 C-C	9				
11					**SWIVEL KNUCKLE TIEBACKS FOR SIDEARM @ 179'**					
12	2 KITS			C10179001	SWIVEL KNUCKLE TIEBACK KIT 2 3/8 Ø PIPE X 10'-0	118				
13					**Z-BRACKET FLUSH MOUNT @ 177'**					
14	1 KIT			C10174018	TAPERED LEG FLUSH MOUNT KIT	64				
15	1			C10981207	ANTENNA MTG. PIPE 2 3/8 Ø X 7'-0	23				
16	4			C40034023	U-BOLT ASSEMBLY 5/8 Ø X 3 1/16 C-C	5				
17					**3' SIDEARM MOUNTS @ 175'**					
18	2 KITS			C10151103	3 FT. SIDEARM ASSEMBLY	164				
19	2			C10900105	PIPE ANTENNA MOUNTING KIT 2 3/8 Ø X 5'-0	45				
20	8			C40034032	U-BOLT ASSEMBLY 5/8 Ø X 5 3/16 C-C	17				

REV	DATE	DRW	CHK	DESCRIPTION

DATE	8/11/25	**JOB NO.**	563429
DRAWN BY	KMP	**PRINT NO.**	BOM-1
CHECKED BY	ZAK	**PAGE**	17 OF 23

CUSTOMER : MARION COUNTY OREGON

SITE : CROOKED FINGER, OR

B.O.M. 180 FT. MODEL S3TL-HD2 SELF-SUPPORTING TOWER

PC=PIECE	OR=ORANGE
PLT=PALLET	WH=WHITE
BDL=BUNDLE	O/W=OR & WH
CRT=CRATE	N/R=NOT REQ'D
D=DRUM	SP=SPECIAL
BX=BOX	

ITEM NO.	NO. REQ'D.	DRAWING NUMBER	DRAWING REV	PART NO.	DESCRIPTION	TOTAL WEIGHT LBS.	PAINT	PACKING KIT	PACKING QTY OF PKG'S	PACKING PKG. NO.
1					**Z-BRACKET PIPE MOUNTS FOR SIDEARMS @ 175'**					
2	2 KITS			C10174018	TAPERED LEG PIPE MOUNT KIT	127				
3	2			C10981407	ANTENNA MTG. PIPE 4 1/2 Ø X 7'-0	116				
4	8			C40034032	U-BOLT ASSEMBLY 5/8 Ø X 5 3/16 C-C	17				
5					**SWIVEL KNUCKLE TIEBACKS FOR SIDEARMS @ 175'**					
6	4 KITS			C10179002	SWIVEL KNUCKLE TIEBACK KIT 2 3/8 Ø PIPE X 13'-3	280				
7					**Z-BRACKET PIPE MOUNTS @ 173'**					
8	3 KITS			C10174018	TAPERED LEG PIPE MOUNT KIT	191				
9	3			C10981407	ANTENNA MTG. PIPE 4 1/2 Ø X 7'-0	175				
10	12			C40034032	U-BOLT ASSEMBLY 5/8 Ø X 5 3/16 C-C	26				
11					**8 FT. PARABOLIC ANTENNA ICE SHIELD @ 170'**					
12	1 KIT			C30085002	PARABOLIC ANTENNA ICE SHIELD, 6'-8' ANTENNAS	701				
13					**Z-BRACKET PIPE MOUNT @ 165'**					
14	1 KIT			C10174018	TAPERED LEG PIPE MOUNT KIT	64				
15	1			C10981407	ANTENNA MTG. PIPE 4 1/2 Ø X 7'-0	58				
16	4			C40034032	U-BOLT ASSEMBLY 5/8 Ø X 5 3/16 C-C	9				
17					**3' SIDEARM MOUNT @ 165'**					
18	1 KIT			C10151103	3 FT. SIDEARM ASSEMBLY	82				
19	1			C10900105	PIPE ANTENNA MOUNTING KIT 2 3/8 Ø X 5'-0	22				
20	4			C40034032	U-BOLT ASSEMBLY 5/8 Ø X 5 3/16 C-C	9				

REV	DATE	DRW	CHK	DESCRIPTION

DATE	8/11/25	**JOB NO.**	563429
DRAWN BY	KMP	**PRINT NO.**	BOM-1
CHECKED BY	ZAK	**PAGE**	18 OF 23

Sabre Industries™
INNOVATION DELIVERED

CUSTOMER : MARION COUNTY OREGON

SITE : CROOKED FINGER, OR

B.O.M. 180 FT. MODEL S3TL-HD2 SELF-SUPPORTING TOWER

PC=PIECE	OR=ORANGE
PLT=PALLET	WH=WHITE
BDL=BUNDLE	O/W=OR & WH
CRT=CRATE	N/R=NOT REQ'D
D=DRUM	SP=SPECIAL
BX=BOX	

ITEM NO.	NO. REQ'D.	DRAWING NUMBER	DRAWING REV	PART NO.	DESCRIPTION	TOTAL WEIGHT LBS.	PAINT	PACKING KIT	PACKING QTY OF PKG'S	PACKING PKG. NO.
1					**Z-BRACKET PIPE MOUNT FOR SIDEARM @ 165'**					
2	1 KIT			C10174018	TAPERED LEG PIPE MOUNT KIT	64				
3	1			C10981407	ANTENNA MTG. PIPE 4 1/2 Ø X 7'-0	58				
4	4			C40034032	U-BOLT ASSEMBLY 5/8 Ø X 5 3/16 C-C	9				
5					**SWIVEL KNUCKLE TIEBACKS FOR SIDEARM @ 165'**					
6	2 KITS			C10179002	SWIVEL KNUCKLE TIEBACK KIT 2 3/8 Ø PIPE X 13'-3	140				
7					**3' SIDEARM MOUNT @ 163'**					
8	1 KIT			C10151103	3 FT. SIDEARM ASSEMBLY	82				
9	1			C10900104	PIPE ANTENNA MOUNTING KIT 2 3/8 Ø X 4'-0	19				
10	4			C40034032	U-BOLT ASSEMBLY 5/8 Ø X 5 3/16 C-C	9				
11					**Z-BRACKET PIPE MOUNT FOR SIDEARM @ 163'**					
12	1 KIT			C10174018	TAPERED LEG PIPE MOUNT KIT	64				
13	1			C10981407	ANTENNA MTG. PIPE 4 1/2 Ø X 7'-0	58				
14	4			C40034032	U-BOLT ASSEMBLY 5/8 Ø X 5 3/16 C-C	9				
15					**SWIVEL KNUCKLE TIEBACKS FOR SIDEARM @ 163'**					
16	2 KITS			C10179002	SWIVEL KNUCKLE TIEBACK KIT 2 3/8 Ø PIPE X 13'-3	140				
17					**8 FT. PARABOLIC ANTENNA ICE SHIELD @ 155'**					
18	2 KITS			C30085002	PARABOLIC ANTENNA ICE SHIELD, 6'-8' ANTENNAS	1402				
19										
20										

REV	DATE	DRW	CHK	DESCRIPTION

DATE	8/11/25	**JOB NO.**	563429
DRAWN BY	KMP	**PRINT NO.**	BOM-1
CHECKED BY	ZAK	**PAGE**	19 OF 23

Sabre Industries™
INNOVATION DELIVERED

CUSTOMER : MARION COUNTY OREGON

SITE : CROOKED FINGER, OR

B.O.M. 180 FT. MODEL S3TL-HD2 SELF-SUPPORTING TOWER

PC=PIECE	OR=ORANGE
PLT=PALLET	WH=WHITE
BDL=BUNDLE	O/W=OR & WH
CRT=CRATE	N/R=NOT REQ'D
D=DRUM	SP=SPECIAL
BX=BOX	

ITEM NO.	NO. REQ'D.	DRAWING NUMBER	DRAWING REV	PART NO.	DESCRIPTION	TOTAL WEIGHT LBS.	PAINT	PACKING KIT	PACKING QTY OF PKG'S	PACKING PKG. NO.
1					**Z-BRACKET PIPE MOUNTS @ 150'**					
2	2 KITS			C10174036	TAPERED LEG PIPE MOUNT KIT	129				
3	2			C10981407	ANTENNA MTG. PIPE 4 1/2 Ø X 7'-0	116				
4	8			C40034032	U-BOLT ASSEMBLY 5/8 Ø X 5 3/16 C-C	17				
5					**Z-BRACKET PIPE MOUNT @ 143'**					
6	1 KIT			C10174036	TAPERED LEG PIPE MOUNT KIT	65				
7	1			C10981407	ANTENNA MTG. PIPE 4 1/2 Ø X 7'-0	58				
8	4			C40034032	U-BOLT ASSEMBLY 5/8 Ø X 5 3/16 C-C	9				
9					**3' SIDEARM MOUNT @ 143'**					
10	1 KIT			C10151103	3 FT. SIDEARM ASSEMBLY	82				
11	1			C10900105	PIPE ANTENNA MOUNTING KIT 2 3/8 Ø X 5'-0	22				
12	4			C40034032	U-BOLT ASSEMBLY 5/8 Ø X 5 3/16 C-C	9				
13					**Z-BRACKET PIPE MOUNT FOR SIDEARM @ 143'**					
14	1 KIT			C10174036	TAPERED LEG PIPE MOUNT KIT	65				
15	1			C10981407	ANTENNA MTG. PIPE 4 1/2 Ø X 7'-0	58				
16	4			C40034032	U-BOLT ASSEMBLY 5/8 Ø X 5 3/16 C-C	9				
17					**SWIVEL KNUCKLE TIEBACKS FOR SIDEARM @ 143'**					
18	2 KITS			C10179002	SWIVEL KNUCKLE TIEBACK KIT 2 3/8 Ø PIPE X 13'-3	140				
19										
20										

REV	DATE	DRW	CHK	DESCRIPTION

DATE	8/11/25	**JOB NO.**	563429
DRAWN BY	KMP	**PRINT NO.**	BOM-1
CHECKED BY	ZAK	**PAGE**	20 OF 23

Sabre Industries™
INNOVATION DELIVERED

CUSTOMER : MARION COUNTY OREGON

SITE : CROOKED FINGER, OR

B.O.M. 180 FT. MODEL S3TL-HD2 SELF-SUPPORTING TOWER

PC=PIECE	OR=ORANGE
PLT=PALLET	WH=WHITE
BDL=BUNDLE	O/W=OR & WH
CRT=CRATE	N/R=NOT REQ'D
D=DRUM	SP=SPECIAL
BX=BOX	

ITEM NO.	NO. REQ'D.	DRAWING NUMBER	DRAWING REV	PART NO.	DESCRIPTION	TOTAL WEIGHT LBS.	PAINT	PACKING KIT	PACKING QTY OF PKG'S	PACKING PKG. NO.
1					**3' SIDEARM MOUNT @ 140'**					
2	1 KIT			C10151103	3 FT. SIDEARM ASSEMBLY	82				
3	1			C10900105	PIPE ANTENNA MOUNTING KIT 2 3/8 Ø X 5'-0	22				
4	4			C40034032	U-BOLT ASSEMBLY 5/8 Ø X 5 3/16 C-C	9				
5					**Z-BRACKET PIPE MOUNT FOR SIDEARM @ 140'**					
6	1 KIT			C10174053	TAPERED LEG PIPE MOUNT KIT	79				
7	1			C10981407	ANTENNA MTG. PIPE 4 1/2 Ø X 7'-0	58				
8	4			C40034032	U-BOLT ASSEMBLY 5/8 Ø X 5 3/16 C-C	9				
9					**SWIVEL KNUCKLE TIEBACKS FOR SIDEARM @ 140'**					
10	2 KITS			C10179011	SWIVEL KNUCKLE TIEBACK KIT 2 7/8 Ø PIPE X 15'-6	240				
11					**Z-BRACKET PIPE MOUNT @ 137'**					
12	1 KIT			C10174055	TAPERED LEG PIPE MOUNT KIT	83				
13	1			C10981407	ANTENNA MTG. PIPE 4 1/2 Ø X 7'-0	58				
14	4			C40034032	U-BOLT ASSEMBLY 5/8 Ø X 5 3/16 C-C	9				
15					**3' SIDEARM MOUNT @ 134'**					
16	1 KIT			C10151103	3 FT. SIDEARM ASSEMBLY	82				
17	1			C10900104	PIPE ANTENNA MOUNTING KIT 2 3/8 Ø X 4'-0	19				
18	4			C40034032	U-BOLT ASSEMBLY 5/8 Ø X 5 3/16 C-C	9				
19										
20										

REV	DATE	DRW	CHK	DESCRIPTION

DATE	8/11/25	**JOB NO.**	563429
DRAWN BY	KMP	**PRINT NO.**	BOM-1
CHECKED BY	ZAK	**PAGE**	21 OF 23

CUSTOMER : MARION COUNTY OREGON

SITE : CROOKED FINGER, OR

B.O.M. 180 FT. MODEL S3TL-HD2 SELF-SUPPORTING TOWER

PC=PIECE	OR=ORANGE
PLT=PALLET	WH=WHITE
BDL=BUNDLE	O/W=OR & WH
CRT=CRATE	N/R=NOT REQ'D
D=DRUM	SP=SPECIAL
BX=BOX	

ITEM NO.	NO. REQ'D.	DRAWING NUMBER	DRAWING REV	PART NO.	DESCRIPTION	TOTAL WEIGHT LBS.	PAINT	PACKING KIT	PACKING QTY OF PKG'S	PACKING PKG. NO.
1					**Z-BRACKET PIPE MOUNT FOR SIDEARM @ 134'**					
2	1 KIT			C10174055	TAPERED LEG PIPE MOUNT KIT	83				
3	1			C10981407	ANTENNA MTG. PIPE 4 1/2 Ø X 7'-0	58				
4	4			C40034032	U-BOLT ASSEMBLY 5/8 Ø X 5 3/16 C-C	9				
5					**SWIVEL KNUCKLE TIEBACKS FOR SIDEARM @ 134'**					
6	2 KITS			C10179011	SWIVEL KNUCKLE TIEBACK KIT 2 7/8 Ø PIPE X 15'-6	240				
7					**3' SIDEARM MOUNT @ 127'**					
8	1 KIT			C10151103	3 FT. SIDEARM ASSEMBLY	82				
9	1			C10900105	PIPE ANTENNA MOUNTING KIT 2 3/8 Ø X 5'-0	22				
10	4			C40034032	U-BOLT ASSEMBLY 5/8 Ø X 5 3/16 C-C	9				
11					**Z-BRACKET PIPE MOUNT FOR SIDEARM @ 127'**					
12	1 KIT			C10174055	TAPERED LEG PIPE MOUNT KIT	83				
13	1			C10981407	ANTENNA MTG. PIPE 4 1/2 Ø X 7'-0	58				
14	4			C40034032	U-BOLT ASSEMBLY 5/8 Ø X 5 3/16 C-C	9				
15					**SWIVEL KNUCKLE TIEBACKS FOR SIDEARM @ 127'**					
16	2 KITS			C10179011	SWIVEL KNUCKLE TIEBACK KIT 2 7/8 Ø PIPE X 15'-6	240				
17										
18										
19										
20										

REV	DATE	DRW	CHK	DESCRIPTION

DATE	8/11/25	**JOB NO.**	563429
DRAWN BY	KMP	**PRINT NO.**	BOM-1
CHECKED BY	ZAK	**PAGE**	22 OF 23

Sabre Industries
INNOVATION DELIVERED

CUSTOMER : MARION COUNTY OREGON

SITE : CROOKED FINGER, OR

B.O.M. 180 FT. MODEL S3TL-HD2 SELF-SUPPORTING TOWER

PC=PIECE	OR=ORANGE
PLT=PALLET	WH=WHITE
BDL=BUNDLE	O/W=OR & WH
CRT=CRATE	N/R=NOT REQ'D
D=DRUM	SP=SPECIAL
BX=BOX	

ITEM NO.	NO. REQ'D.	DRAWING NUMBER	DRAWING REV	PART NO.	DESCRIPTION	TOTAL WEIGHT LBS.	PAINT	PACKING KIT	PACKING QTY OF PKG'S	PACKING PKG. NO.
1					**LIGHTNING ROD**					
2	1 KIT			C10174018	TAPERED LEG PIPE MOUNT KIT	64				
3	1	CW00032	2	CW00032	LIGHTNING ROD EXTENSION 2 7/8 O.D. X 21'-0	128				
4	4			C40034025	U-BOLT ASSEMBLY 5/8 Ø X 3 9/16 C-C	7				
5	1 KIT			C30986004	LIGHTNING ROD ASSY 3/4 Ø X 10'-0 CCS W/STIFFENER	22				
6					**MISCELLANEOUS**					
7	1			C40068001	COLD GALVANIZING SPRAY	1				
8	1	CS00500	2	CS00500	TOWER NAME PLATE	1				
9										
10										
11										
12										
13										
14										
15										
16										
17										
18										
19										
20										

REV	DATE	DRW	CHK	DESCRIPTION

DATE	8/11/25	**JOB NO.**	563429
DRAWN BY	KMP	**PRINT NO.**	BOM-1
CHECKED BY	ZAK	**PAGE**	23 OF 23

EXHIBIT K

BLACK MOUNTAIN CONSULTING LLC
22566 SW Washington St., Ste. 209 Sherwood, OR 97140
503.625.2517
www.blkmountain.com

September 19, 2024

Black Mountain Project No. 240025-GEO

Cushing Civil Engineers
107 SE Washington Street, Suite 265
Portland, Oregon 97214

Attention: Mr. Kenny McManaway

Subject: Geotechnical Engineering Evaluation
Crooked Finger
3283 Crooked Finger Road NE
Scotts Mills, Oregon 97375

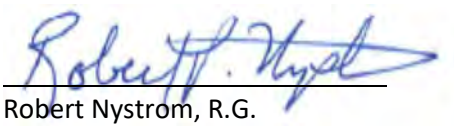
Black Mountain Consulting LLC (Black Mountain) is pleased to submit this report describing our recent geotechnical engineering evaluation for the Crooked Finger tower site. The purpose of our work was to interpret general surface and subsurface site conditions in order to provide recommendations for design and construction. Our scope of services was authorized by Cushing Civil Engineers (CCE) on behalf of Marion County Public Works (Marion County), and consisted of a literature review, subsurface exploration, geotechnical analyses, and report preparation.

We prepared this report in accordance with generally accepted geotechnical engineering practices at the time we prepared it, for the exclusive use of CCE, Marion County, and their agents, for specific application to this project. Use or reliance upon this report by a third party is at their own risk. Black Mountain does not make any representation or warranty, express or implied, to such other parties as to the accuracy or completeness of this report or the suitability of its use by such other parties for any purpose whatever, known or unknown, to Black Mountain.

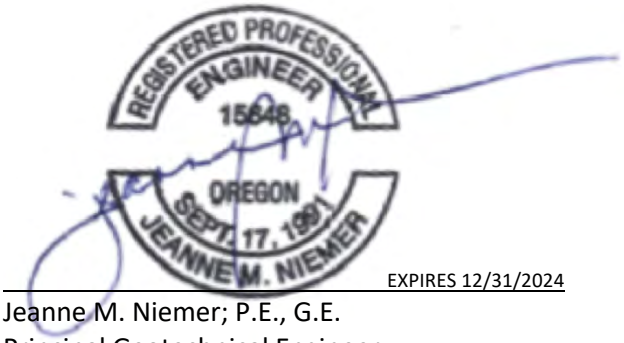
We appreciate the opportunity to be of service to you. If you have any questions, or if we can be of further assistance to you, please contact us at (503) 625.2517.

Respectfully Submitted,

Black Mountain Consulting LLC



Robert Nystrom, R.G.
Staff Geologist



EXPIRES 12/31/2024

Jeanne M. Niemer; P.E., G.E.
Principal Geotechnical Engineer

Attachment A — Figure 1 - Site Location Map
Figure 2 - Site & Exploration Plan

Attachment B — Subsurface Exploration Log

Cushing Civil Engineers
Geotechnical Engineering Evaluation

Crooked Finger
Scotts Mills, Oregon

240025-GEO
September 2024

PROJECT DESCRIPTION

The project is located at 3283 Crooked Finger Road NE, near Scotts Mills, Marion County, Oregon, as shown on the attached *Site Location Map,* Figure 1. The proposed project will consist of constructing a new approximately 180-foot emergency communications tower and installing ground equipment within two new equipment shelters.

SITE CONDITIONS

Regional Geology

The geology of the area consists of a complex group of basalt flows, tuffaceous sedimentary rocks, marine sedimentary rocks, landslide debris flows and alluvial sedimentary deposits. The region is characterized by hilly terrain slopes created by recurring lava flows from local volcanic vents and subsequent erosion by numerous streams. The planned communication compound is located on a unit of Middle to Late Miocene Epoch lava flows of basalt and andesite with hypersthene and olivine composition (Tbaa), (Peck, D.L., Griggs, A.B., Schlicker, H.G., Well, F.G., and Dole, H.M., 1964; Wise, W.S., 1969). Marine sedimentary and tuffaceous rocks (Tsm) composed of fossils, tuffaceous and arkosic sandstone, siltstone and sandstone deposits, as well as, Upper and Middle Eocene epoch deposits of tuffaceous marine sandstone and siltstone (Tss) (Walker, G.W. and MacLeod, N.S., 1991) are found throughout the region. Other units in the region consist of tuffaceous sedimentary rocks and volcanic conglomerates, pebble conglomerate, and air-fall tuffs (Tcss) (Walker, G.W. and MacLeod, N.S., 1991) and Miocene age basalt flows and smaller flows of andesite lava and breccia of the Columbia River Basalt Group (Tc) (Swanson and others, 1979). The basalt flows include submarine palagonitic tuff and pillow lava. Valleys in the region are filled with Holocene and Pleistocene age terrace, pediment and lag gravels, cobbles, and boulders mixed with clay, silt and sand (Qt) (Walker, G.W. and MacLeod, N.S., 1991) and Holocene age alluvial deposits (Qal) consisting of sand, gravel, and silt (Walker, G.W. and MacLeod, N.S., 1991). Quaternary sediments (Qs) composed of lacustrine and fluvial deposits fill the valleys on the western portion of this region. These sediments consist of unconsolidated to semi-consolidated lacustrine clay, silt, sand, and gravel and periodically include mudflow and fluvial deposits with discontinuous layers of peat (Piper, 1942, Allison, 1953, Wells and Peck, 1961).

Surface Conditions

The project site is located on a plateau that is developed as a tree farm. The site is vacant except for immature pine trees and is level.

Subsurface Conditions

We explored the subsurface conditions at the project site on September 16, 2024. Our exploration consisted of advancing one test pit as shown on the attached Site and Exploration Plan, Figure 2. We logged and classified the subsurface materials in general accordance with the Manual Visual Classification Method (ASTM D 2488).

We excavated TP-1 at the planned tower site and encountered approximately 3 feet of loose sand, gravel and cobbles mantling what we interpret to be weathered basalt (RH3-4) at about 3 feet below ground surface (bgs). We encountered moderately weathered vesicular basalt (RH2-3) at about 6 feet bgs and terminated our exploration, due to the extent of the reach of the excavator, at approximately 11 feet bgs on hard vesicular basalt.

We did not encounter groundwater at the time of our exploration. Well logs in the general area document static groundwater levels on the order of 30 to 70 feet bgs. Groundwater levels may fluctuate in response to changing precipitation patterns, off-site construction activities, and changes in site utilization.

SEISMIC HAZARD STUDY

Seismic Sources

There are three primary earthquake sources for this site: Cascadia Subduction Zone (CSZ) intraplate and interface earthquakes, and local crustal earthquakes that could occur in the North American Plate. CSZ intraplate earthquakes that could occur within the subducted Juan de Fuca plate are anticipated to have magnitudes on the order of 7.0 to 7.5, at a depth of about 40 to 60 km. This subduction is occurring beneath the North American Plate in the coastal regions between Vancouver Island and northern California. The subducting Juan de Fuca plate is mapped approximately 215 kilometers to the west of the site. They present a low-moderate hazard.

An interface event earthquake on the seismogenic portion of the interface between the Juan de Fuca Plate and the North American Plate is capable of generating earthquakes with a moment magnitude of between 8.5 and 9.0. A magnitude 8.5 is expected to correspond to an average 10 percent of being exceeded in 50 years, and a magnitude 9.0 corresponds to an average 2 percent of being exceeded in 50 years.

Local crustal earthquakes may occur from northeast-southwest trending faults in the region. The nearest known fault, the Mount Angel fault, is located approximately 1 kilometer southwest of the site. This northwest-southeast trending fault is classified as a reverse fault and is thought to have been the source of the 1993 Scotts Mills earthquake. The Mount Angel fault has a reported slip-rate of less than 0.2 mm/year (Yeats and others, 1996; Liberty and others., 1999; Wang and others., 2003; Madin and others, 2007).

CONCLUSIONS

The tower can be supported on a mat foundation that derives its support from the weathered basalt that we encountered below about five feet bgs.

Seismic Conditions

Based on our analysis of subsurface exploration logs and a review of published geologic maps, we interpret the on-site soil conditions to correspond to Site Class C, as defined by Chapter 20 of ASCE-7.

Site Specific Ground Motions

Our experience with ground motion modeling indicates that the site subsurface conditions are not susceptible to amplification beyond code spectra.

Liquefaction, Fault Rupture, Slope Stability and Tsunami Inundation

- The site soils are not susceptible to settlement from liquefaction during a design level earthquake.
- Because the nearest known fault is over six kilometers from the site, hazards from fault rupture are low.
- The site is located inland, outside of tsunami inundation areas.
- The site is relatively flat, and is therefore not susceptible to earthquake-induced slope instability.

Our specific recommendations are presented in the following sections.

GEOTECHNICAL DESIGN RECOMMENDATIONS

Seismic Design Parameters

Our recommended seismic design parameters are summarized in the table below, and were determined in accordance with ASCE/SEI 7-22.

Seismic Design Parameters		
	Short Period	**1 Second**
Mapped Spectral Acceleration Values	S_S=0.81	S_1=0.31
Site Soil Class	B/C	
Seismic Design Category	D	
Design Spectral Response Acceleration Parameters	S_{DS}=0.49	S_{D1}=0.21

For purposes of seismic site characterization, we extrapolated the soil conditions that we observed below the exploration termination depth, based on our knowledge of the regional geology.

Mat Foundation

The base of the mat foundation should be located at a minimum depth of five feet bgs, on the weathered basalt. After excavation to design grade, the subgrade should be cleaned of material loosened by excavation. Irregularities resulting from the excavation should be filled with sand, lean concrete, or other suitable material to produce a level bearing surface for the foundation.

We recommend using an ultimate static bearing capacity of 10,000 pounds per square foot (psf) for design of the foundation. In accordance with the provisions of the current EIA/TIA 222 code, this static bearing pressure does not incorporate a factor of safety. We estimate post construction settlements will be less than one inch. We estimate that the differential settlement will be approximately half of the total settlement.

Lateral loads acting on the foundations can be resisted by passive earth pressure on one side of the foundation and by friction along the soil-concrete interface at the base of the foundation. We recommend using an ultimate foundation base friction coefficient of 0.70 for the basalt. A passive earth pressure of 700 pounds per-cubic-foot (pcf), expressed as an equivalent fluid unit weight, may be used for that portion of the foundation embedded more than one foot below finished exterior subgrade elevation. These lateral resistance values do not incorporate a safety factor, in accordance with the provisions of the current EIA/TIA 222 code. In order to develop these capacities, concrete must be poured neat in excavations, the adjacent grade must be level, and the static ground water level must remain below the base of the footing throughout the year. The passive pressure within the upper foot of embedment should be neglected.

Eccentric loads and moments acting on the foundation produce a skewed bearing pressure distribution to the ground. The mat foundation should be sized so that the resultant load acts within the middle third of the foundation for one-way and two-way eccentric loading to maintain a compressive contact pressure along the base of the foundation. The maximum bearing pressure from the eccentric loading must be less than the allowable bearing pressure.

Uplift loads can be resisted by the self-weight of the mat and the backfill directly overlying the embedded mat foundation. The overlying soils can be re-used as backfill over the mat provided it is prepared and placed in accordance with recommendations contained in the Structural Fill section of this report. For preliminary design purposes, the total unit weight of the overlying soils can be assumed to be 100 pounds per cubic foot (pcf).

Excavations should be made in accordance with applicable Occupational Safety and Health Administration (OSHA) and state regulations. It is the contractor's responsibility to select the excavation and dewatering methods, to monitor the excavations for safety and to provide any shoring required to protect personnel and adjacent improvements.

Spread Footings

Lightly loaded structures such as the equipment shelter can be supported on spread footings. Continuous-wall and isolated-spread footings should be at least 18 and 24 inches wide, respectively. For frost protection, the footings should be located at least 24 inches below the lowest adjacent grades or deeper if required by local building code.

Footings should bear directly on the weathered basalt or on structural fill placed in accordance with our recommendations. Footings should be sized for an allowable bearing capacity of 2,500 psf. We estimate post construction settlements will be less than one inch for the above recommended bearing capacity. We estimate that the differential settlement will be approximately half of the total settlement. Our recommended bearing capacity is based on limiting settlements and includes a factor of safety of 3 against bearing capacity failure.

Lateral loads acting on the foundations can be resisted by passive earth pressures on the sides of the foundation and by friction along the soil-concrete interface at the base of the foundation. We recommend using an allowable passive earth pressure of 300 pounds per cubic foot (pcf) for foundations confined by the andesite or structural fill placed in accordance with our recommendations. The passive pressure within the upper two feet of embedment should be neglected. We recommend an allowable coefficient of friction of 0.36. In order to develop these capacities, concrete must be poured neat in excavations, the adjacent grade must be level, and the static ground water level must remain below the base of the footing throughout the year. These allowable lateral resistance values include a minimal factor of safety of 1.5.

Floor Slabs

We recommend a 6-inch-thick layer of imported granular structural fill be placed and compacted over the prepared subgrade. The granular fill should be placed in 6-inch-thick lifts and compacted to at least 95 percent of the maximum dry density, as determined by the American Society for Testing and Materials (ASTM) D 1557. A modulus of subgrade reaction value of 100 pounds per cubic inch (pci) may be used to design the floor slab.

Foundation Construction Considerations

A geotechnical engineer from Black Mountain (or their representative) should confirm suitable bearing conditions and evaluate the foundation subgrades. Observations should also confirm that loose or soft material, organics, unsuitable fill, or old topsoil zones were removed. Localized deepening of footing excavations may be required to penetrate any deleterious materials.

Because foundation stresses are transferred outward as well as downward into the bearing soils, all footing over-excavations should extend horizontally outward from the footing edge a distance equal to the one half the over-excavation depth for the structural backfill.

CONSTRUCTION RECOMMENDATIONS

Site Preparation

Clearing and Stripping: After surface and near-surface water sources have been controlled, the construction areas should be cleared and stripped of organic matter and other deleterious materials. Silt fences, hay bales, buffer zones of natural growth, sedimentation ponds, and granular haul roads should be used as required to reduce sediment transport during construction to acceptable levels.

Where present, fill and existing topsoil should be stripped and removed from proposed development locations and for a five-foot-margin around such areas. Based on our explorations, we anticipate the depth of stripping to be less than about a foot, although greater stripping depths may be required if deleterious materials are encountered. Deleterious materials encountered during site preparation should be removed from the subgrade soils and hauled off site for disposal. Stripped material should be transported off site for disposal or stockpiled for use in landscaped areas. If stripping operations occur during wet weather, a generally greater stripping depth might be required in order to remove disturbed moisture-sensitive soils; therefore, stripping is best performed during a period of dry weather.

Excavations: We anticipate that site grading will be minimal. Where required, temporary soil cuts associated with site excavations or regrading activities should be adequately sloped back to prevent sloughing and collapse, unless a shoring box or other suitable excavation side wall bracing is provided. It is the responsibility of the contractor to ensure that excavations are properly sloped or braced for worker safety protection, in accordance with OSHA safety guidelines.

Dewatering: Based on our subsurface exploration, we do not anticipate groundwater seepage within the tower mat excavation. If water is encountered, we anticipate that pumping from sumps located in the trench will likely be effective in removing water resulting from seepage or perched groundwater.

Final Grades: Final site grades should slope downward away from the structure at a minimum of two percent and runoff should be conveyed to a suitable drainage outlet. Additionally, the area surrounding the structure could be capped with concrete, asphalt or compacted, low-permeability soils to reduce surface water infiltration into the subsurface soils near the foundation.

Structural Fill

The following recommendations for structural fill are provided for design and construction purposes, if required.

Materials: Structural fill includes any fill materials placed under footings, pavements, or driveways and backfill over the embedded mat foundation. Typical materials used for structural fill include: clean, well-graded sand and gravel; clean sand; crushed rock; controlled-density fill (CDF); lean-mix concrete; and various soil mixtures of silt, sand, and gravel. Recycled concrete, asphalt, and glass derived from pulverized parent materials may also be used as structural fill when combined with an equal volume or more of silt, sand, and/or gravel. Use of the on-site soils as structural fill is also feasible.

Placement and Compaction: When used as structural fill, the on-site soils should be placed in lifts with a maximum thickness of 8 inches and compacted to not less than 92 percent of the material's maximum dry density, as determined by ASTM D-1557. The on-site soils should be moisture-conditioned to within 3 percent of the optimum moisture content (ASTM D-1557). If the on-site soils cannot be properly moisture-conditioned, we recommend using imported granular material for structural fill.

Imported granular structural fill should consist of angular pit or quarry run rock, crushed rock, or crushed gravel and sand that is fairly well graded between coarse and fine particle sizes. The fill should contain no organic matter or other deleterious materials, have a maximum particle size of one inch, and have less than 5 percent passing the U.S. No. 200 Sieve. In deep excavations, or where subgrade soils require stabilization, the particle size may be increased to four inches. The percentage of fines can be increased to 12 percent of the material passing the U.S. No. 200 Sieve if placed during dry weather and provided the fill material is moisture-conditioned, as necessary, for proper compaction. The material should be placed in lifts with a maximum uncompacted thickness of 12 inches and be compacted to not less than 95 percent of the maximum dry density, as determined by ASTM D-1557. During the wet season or when wet subgrade conditions exist, the initial lift thickness should be increased to 24 inches and should be compacted by rolling with a smooth-drum, nonvibratory roller.

CDF and lean-mix concrete do not require special placement or compaction procedures. Regardless of location or material, all structural fill should be placed over firm, unyielding subgrade soils. If earthwork takes place during freezing conditions, we recommend that all exposed subgrades be allowed to thaw and be recompacted prior to placing subsequent lifts of structural fill.

CONSTRUCTION OBSERVATIONS

Satisfactory earthwork performance depends on the quality of construction. Sufficient monitoring of the contractor's activities is a key part ensuring that work is completed in accordance with the construction drawings and specifications. We recommend that a representative from Black Mountain observe that the subsurface conditions are consistent with the anticipated conditions, and that foundation subgrades are suitable for placement of structural fill, rebar, or concrete for the new structures.

Some jurisdictions require a final letter of geotechnical compliance before they will provide a final permit. It is incumbent on the client to determine if a final letter of geotechnical compliance is required by the jurisdiction. If such a letter is required, a representative from Black Mountain MUST observe foundation subgrades PRIOR to concrete being poured for the foundation. If Black Mountain does not perform this observation, we cannot provide a final letter of geotechnical compliance, and a permit will not be eligible for final sign-off. ***It is the owner's responsibility to ensure that Black Mountain is notified in a timely manner (i.e., at least 48 hours prior to the required site observation) of the need for our services on site during construction.***

CLOSURE

We have prepared this report for use by the owner/developer and other members of the design and construction team for the proposed tower site. The opinions and recommendations contained within this report are not intended to be, nor should they be, construed as a warranty of subsurface conditions, but are forwarded to assist in the planning and design process.

We have made observations based on our explorations that indicate the soil conditions at only those specific locations and only to the depths penetrated. These observations do not necessarily reflect soil types, strata thickness, or water level variations that may exist in other locations. If subsurface conditions vary from those anticipated, Black Mountain will provide additional geotechnical recommendations, if necessary. The future performance and integrity of the improvements will depend largely on proper initial site preparation, drainage, and construction procedures. Observation by experienced geotechnical personnel should be considered an integral part of the construction process.

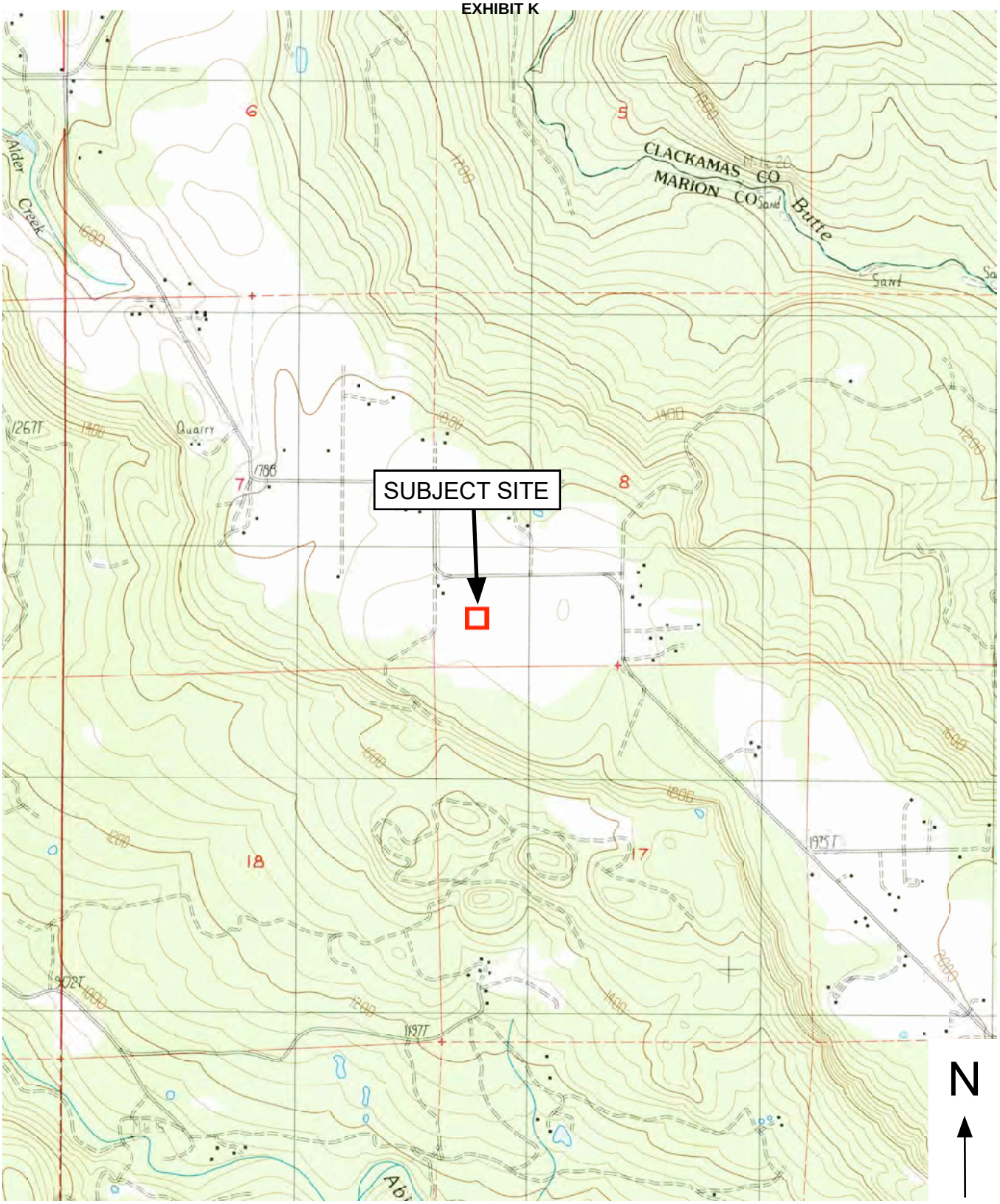
The conclusions and recommendations contained in this report are based on our understanding of the currently proposed project, as derived from written and verbal information supplied to us by the client. When the design is finalized, we recommend that our firm review to see that our recommendations have been interpreted and implemented as intended. If design changes are made, we request that we be retained to review our conclusions and recommendations and to provide a written modification or verification.

The scope of our services does not include services related to construction safety precautions, and our recommendations are not intended to direct the contractor's methods, techniques, sequences, or procedures, except as specifically described in our report for consideration in design. Within the limitations of scope, schedule, and budget, our services have been executed in accordance with the generally accepted practices in this area at the time this report was prepared. No warranty or other conditions, express or implied, should be understood.

ATTACHMENT A

FIGURES

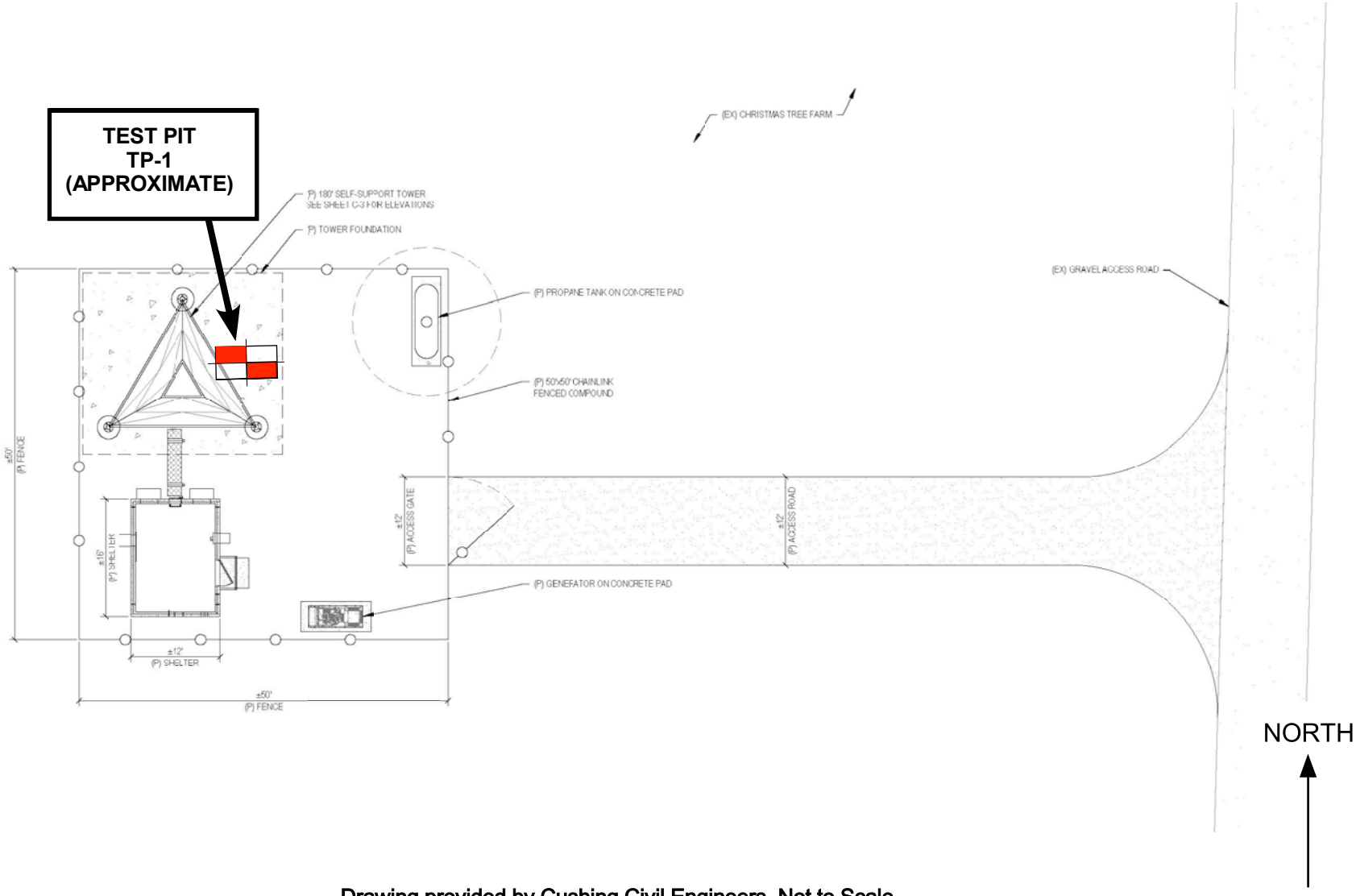
EXHIBIT K



Base Map Courtesy of U.S.G.S. Topographic Map "Elk Prairie, Oreg." (1985) Not to Scale

Black Mountain Consulting LLC 22566 SW Washington St., Ste. 209 Sherwood, OR 97140 TEL. 503.625-2517 | www.blkmountain.com	**FIGURE 1 -** Location Map	**Location** Crooked Finger 3283 Crooked Finger Road NE Scotts Mills, Oregon 97375
	Project : 240025	
	Client : Cushing Civil Engineers	**Date :** September 2024

EXHIBIT K



Drawing provided by Cushing Civil Engineers, Not to Scale

Black Mountain Consulting LLC
22566 SW Washington St., Ste. 209
Sherwood, OR 97140
TEL. 503.625-2517 | www.blkmountain.com

FIGURE 2 - Site & Exploration Plan

Project : 240025

Client : Cushing Civil Engineers

Location
Crooked Finger
3283 Crooked Finger Road NE
Scotts Mills, Oregon 97375

Date : September 2024

ATTACHMENT B

SUBSURFACE EXPLORATION LOG

EXHIBIT K

GEOTECHNICAL TEST PIT LOG

Black Mountain Consulting LLC
22566 SW Washington St., Suite 209
Sherwood, Oregon 97140
TEL:503.625.2517

PROJECT
Crooked Finger
Scotts Mills, Oregon 97375
Cushing Civil Engineers

Job Number: 240025

Test Pit No.: **TP-1**

Elevation Reference :
Ground Surface Elevation :

DEPTH (feet)		SAMPLE TYPE	SAMPLE NUMBER	POCKET PEN	TORVANE	GROUND WATER	OBSERVATIONS	TESTING
0	Loose, dry, brown, SAND (SW) and GRAVEL (GW), and COBBLES, fine roots to 2'						Caterpillar 304 T probe 6" to 9"	
			1				T probe 6" to 9"	
	Dense to very dense, weathered BASALT (RH3-4), closely fractured below 3'						T probe to 0"	
5							No sidewall caving to depth	
	becomes moderately weathered vesicular BASALT (RH2-3) below 6'		2					
10			3					
	Test pit terminated, due to extent of reach, at approximately 11 feet bgs. No groundwater, seeps or seams encountered at the time of exploration.							
15								
20								
25								

LEGEND

DATE Static Water Level

Perched Groundwater

Grab Sample

NWTPH-HCID VOCs Type of Analytical Testing Used

Test Pit Start Date: 9-16-24

Test Pit Completion Date: 9-16-24

Logged By: RN

EXHIBIT K

BLACK MOUNTAIN CONSULTING LLC
22566 SW Washington St., Ste. 209 Sherwood, OR 97140
503.625.2517
www.blkmountain.com

September 17, 2024

Black Mountain Project No. 240025-SRT

Cushing Civil Engineers
107 SE Washington Street, Suite 265
Portland, Oregon 97214

Attn: Mr. Kenny McManaway

Subject: Soil Resistivity Survey
Crooked Finger
3283 Crooked Finger Road NE
Scotts Mills, Oregon 97375

At your request, a representative of Black Mountain Consulting LLC (Black Mountain) visited the above referenced site on September 16, 2024 to perform soil resistivity testing. Two surveys were completed, at the approximate locations and orientations described in this report. We understand others will use these test results in their design of the antenna grounding system.

Please note that, due to high resistivity values at the lease area, a standard grounding design may not be appropriate and that a site-specific grounding design may be required.

We appreciate this opportunity to be of service.

Sincerely,

Black Mountain Consulting LLC

Robert Nystrom, R.G.
Staff Geologist

Methods:

The resistivity survey was completed using the Wenner Four-Electrode Method and the Miller Model 400A Soil Resistance Meter. The Wenner Four-Electrode Method requires that four metal electrodes be placed in a straight line, equal distance from one another. Each electrode is driven approximately 6 -12 inches below ground surface at 5, 10, 20, 30 and 40-foot spacing intervals. A current of known amperage is subsequently circulated into the soil through the end electrodes and the resulting voltage drop between the inner electrodes is measured, yielding the resistance (in ohms) of the soil. The correct unit for resistivity is the ohm-centimeter (Ω-cm). The following equation is used to calculate the resistivity (Ω-cm).

$$\rho = 191.5\, aR$$

Where:

ρ = soil resistance in ohm-cm (Ω-cm)

a = electrode separation (in feet)

R = resistance measured in ohms (Ω)

This method is in general accordance with ASTM method G57-06 (IEEE Standard 81).

Site Conditions:

The proposed lease area is located in a field developed for agricultural production (immature pine trees). There were no structures or underground utilities in the survey area. Two equally spaced electrode arrays were established on the subject property. Array 1 was configured along a N-S axis that extended through the lease area. Array 2 was configured along an E-W axis that also extended through the lease area.

Surficial soils consist of dry-damp fine sand. No standing water was observed in the area. Black Mountain conducted a geotechnical exploration near the tower site on September 16, 2024 and encountered fine sand and gravel that extended to about 3 feet below ground surface (bgs). Below about 3 feet bgs we encountered fractured basalt rock and we terminated our exploration in this material at about 11 feet bgs. No groundwater was encountered in the exploration. The depth to the fractured rock may undulate across the area and may have influenced the readings. There was sufficient space to perform 40-foot spacing on both arrays and the arrays were oriented approximately 90° to one another.

EXHIBIT K

Soil Resistivity Survey Results

Table 1: Soil Resistivity Data						
Site Name & Address:		**Crooked Finger, 3283 Crooked Finger Road NE, Scotts Mills, Oregon 97375**				
Company Performing Test (Include Name of Person & Date):		**Black Mountain Consulting LLC, Robert Nystrom, 9-16-2024**				
Test Instrument (Model #, Serial #, Date of Last Calibration):		**Miller Model 400A Soil Resistance Meter, #44500, Calibrated April 2024**				
Areas to be Measured	**Data Recordings**	**Distance Between Test Rods in Feet**				
		5	**10**	**20**	**30**	**40**
Array 1	Measured Resistance (Ω):	89	21	14	6.4	5.2
	Calculated Resistivity (Ω-cm):	85,218	40,215	53,620	36,768	39,832
Array 2	Measured Resistance (Ω):	130	31	14	5.5	4.6
	Calculated Resistivity (Ω-cm):	124,475	59,365	53,620	31,598	35,236
Area 3	Measured Resistance (Ω):					
	Calculated Resistivity (Ω-cm):					
Array 4	Measured Resistance (Ω):					
	Calculated Resistivity (Ω-cm):					
Additional Site Information						
Description of Soil as Seen as Site:		Sand and gravel, fractured basalt rock below 3'				
Soil Condition (Wet, Damp, or Dry):		Dry - Damp				
Weather:		Fog at time of survey: clear last 24 hours, 60° F				

BLACK MOUNTAIN CONSULTING LLC
22566 SW Washington St., Ste. 209 Sherwood, OR 97140
503.625.2517
www.blkmountain.com

September 19, 2024

Black Mountain Project No. 240026-GEO

Cushing Civil Engineers
107 SE Washington Street, Suite 265
Portland, Oregon 97214

Attention: Mr. Kenny McManaway

Subject: Geotechnical Engineering Evaluation
House Mountain
11.1 Miles SE of Drake Crossing
Mill City, Oregon 97360

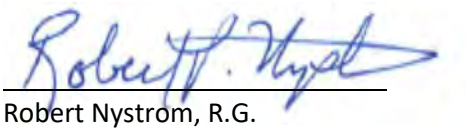
Black Mountain Consulting LLC (Black Mountain) is pleased to submit this report describing our recent geotechnical engineering evaluation for the House Mountain tower site. The purpose of our work was to interpret general surface and subsurface site conditions in order to provide recommendations for design and construction. Our scope of services was authorized by Cushing Civil Engineers (CCE) on behalf of Marion County Public Works (Marion County), and consisted of a literature review, subsurface exploration, geotechnical analyses, and report preparation.

We prepared this report in accordance with generally accepted geotechnical engineering practices at the time we prepared it, for the exclusive use of CCE, Marion County, and their agents, for specific application to this project. Use or reliance upon this report by a third party is at their own risk. Black Mountain does not make any representation or warranty, express or implied, to such other parties as to the accuracy or completeness of this report or the suitability of its use by such other parties for any purpose whatever, known or unknown, to Black Mountain.

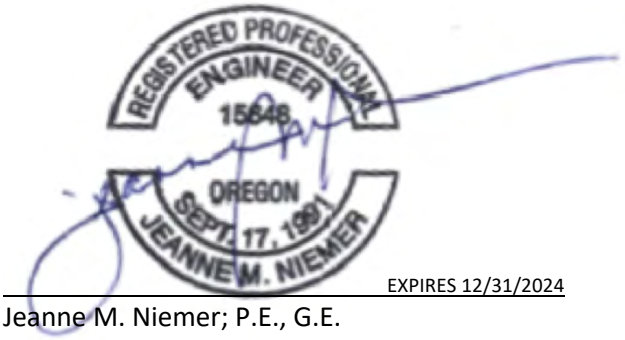
We appreciate the opportunity to be of service to you. If you have any questions, or if we can be of further assistance to you, please contact us at (503) 625.2517.

Respectfully Submitted,

Black Mountain Consulting LLC



Robert Nystrom, R.G.
Staff Geologist



EXPIRES 12/31/2024

Jeanne M. Niemer; P.E., G.E.
Principal Geotechnical Engineer

Attachment A — Figure 1 - Site Location Map
Figure 2 - Site & Exploration Plan

Attachment B — Subsurface Exploration Log

Cushing Civil Engineers
Geotechnical Engineering Evaluation

House Mountain
Mill City, Oregon

240026-GEO
September 2024

PROJECT DESCRIPTION

The project is located on House Mountain, near Mill City, Marion County, Oregon, as shown on the attached *Site Location Map,* Figure 1. The proposed project will consist of constructing a new approximately 180-foot emergency communications tower and installing ground equipment within two new equipment shelters. The existing tower and foundation will be removed prior to construction.

SITE CONDITIONS

Regional Geology

The geology of the area consists of a complex group of basalt flows, tuffaceous sedimentary rocks, intrusive rocks, landslide debris flows and alluvial sedimentary deposits. The region is characterized by hilly-mountainous terrain and steep slopes created by recurring lava flows from local volcanic vents and subsequent erosion by numerous streams. The planned communication compound is located on a unit of Middle to Late Miocene Epoch lava flows of basalt and andesite with hypersthene and olivine composition (Tbaa), (Peck, D.L., Griggs, A.B., Schlicker, H.G., Well, F.G., and Dole, H.M., 1964; Wise, W.S., 1969). Other units in the region consist of tuffaceous sedimentary rocks and volcanic conglomerates, pebble conglomerate, and air-fall tuffs (Tcss) (Walker, G.W. and MacLeod, N.S., 1991). Valleys in the region are filled with Holocene and Pleistocene age terrace, pediment and lag gravels, cobbles, and boulders mixed with clay, silt and sand (Qt) (Walker, G.W. and MacLeod, N.S., 1991) and Holocene age alluvial deposits (Qal) consisting of sand, gravel, and silt (Walker, G.W. and MacLeod, N.S., 1991). Due to steep slopes in the region, Pleistocene to Holocene age landslides and debris-flows (Qls), composed of slope wash and colluvium, are common throughout the region.

Surface Conditions

The project site is located near the top of a prominent peak and is adjacent to existing communication facilities. The site is occupied by an existing communication tower and is relatively level.

Subsurface Conditions

We explored the subsurface conditions at the project site on September 16, 2024. Our exploration consisted of advancing one test pit as shown on the attached Site and Exploration Plan, Figure 2. We logged and classified the subsurface materials in general accordance with the Manual Visual Classification Method (ASTM D 2488).

We excavated TP-1 at the planned tower site and encountered approximately 6 inches of dense sand and gravel (fill material) mantling basalt at about 6 inches below ground surface (bgs). We terminated our exploration, due to refusal, at approximately 1 foot bgs on very hard basalt (RH4).

We did not encounter groundwater at the time of our exploration. Due to the remote nature of the site, there were no reported groundwater wells in this area. Groundwater levels may fluctuate in response to changing precipitation patterns, off-site construction activities, and changes in site utilization.

SEISMIC HAZARD STUDY

Seismic Sources

There are three primary earthquake sources for this site: Cascadia Subduction Zone (CSZ) intraplate and interface earthquakes, and local crustal earthquakes that could occur in the North American Plate. CSZ intraplate earthquakes that could occur within the subducted Juan de Fuca plate are anticipated to have magnitudes on the order of 7.0 to 7.5, at a depth of about 40 to 60 km. This subduction is occurring beneath the North American Plate in the coastal regions between Vancouver Island and northern California. The subducting Juan de Fuca plate is mapped approximately 225 kilometers to the west of the site. They present a low-moderate hazard.

An interface event earthquake on the seismogenic portion of the interface between the Juan de Fuca Plate and the North American Plate is capable of generating earthquakes with a moment magnitude of between 8.5 and 9.0. A magnitude 8.5 is expected to correspond to an average 10 percent of being exceeded in 50 years, and a magnitude 9.0 corresponds to an average 2 percent of being exceeded in 50 years.

Local crustal earthquakes may occur from northeast-southwest trending faults in the region. The nearest known fault is an unnamed fault located approximately 6 kilometers south-southwest of the site. This fault is classified as a normal fault.

CONCLUSIONS

The tower can be supported on a mat foundation that derives its support from the basalt that we encountered about one foot bgs. Rock anchors can provide additional resistance against overturning, if required.

Seismic Conditions

Based on our analysis of subsurface exploration logs and a review of published geologic maps, we interpret the on-site soil conditions to correspond to Site Class B/C, as defined by Chapter 20 of ASCE-7.

Site Specific Ground Motions

Our experience with ground motion modeling indicates that the site subsurface conditions are not susceptible to amplification beyond code spectra.

Liquefaction, Fault Rupture, Slope Stability and Tsunami Inundation

- The site soils are not susceptible to settlement from liquefaction during a design level earthquake.
- Because the nearest known fault is over six kilometers from the site, hazards from fault rupture are low.
- The site is located inland, outside of tsunami inundation areas.
- The site is relatively flat, and is therefore not susceptible to earthquake-induced slope instability.

Our specific recommendations are presented in the following sections.

GEOTECHNICAL DESIGN RECOMMENDATIONS

Seismic Design Parameters

Our recommended seismic design parameters are summarized in the table below, and were determined in accordance with ASCE/SEI 7-22.

Seismic Design Parameters		
	Short Period	**1 Second**
Mapped Spectral Acceleration Values	S_S=0.71	S_1=0.28
Site Soil Class	B/C	
Seismic Design Category	D	
Design Spectral Response Acceleration Parameters	S_{DS}=0.43	S_{D1}=0.19

For purposes of seismic site characterization, we extrapolated the soil conditions that we observed below the exploration termination depth, based on our knowledge of the regional geology.

Mat Foundation

The base of the mat foundation should be located at a minimum depth of three feet bgs, on the basalt. After excavation to design grade, the subgrade should be cleaned of material loosened by excavation. Irregularities resulting from the excavation should be filled with sand, lean concrete, or other suitable material to produce a level bearing surface for the foundation.

We recommend using an ultimate static bearing capacity of 12,000 pounds per square foot (psf) for design of the foundation. In accordance with the provisions of the current EIA/TIA 222 code, this static bearing pressure does not incorporate a factor of safety. We estimate post construction settlements will be less than one inch. We estimate that the differential settlement will be approximately half of the total settlement.

Lateral loads acting on the foundations can be resisted by passive earth pressure on one side of the foundation and by friction along the soil-concrete interface at the base of the foundation. We recommend using an ultimate foundation base friction coefficient of 0.72 for the basalt. A passive earth pressure of 900 pounds per-cubic-foot (pcf), expressed as an equivalent fluid unit weight, may be used for that portion of the foundation embedded more than one foot below finished exterior subgrade elevation. These lateral resistance values do not incorporate a safety factor, in accordance with the provisions of the current EIA/TIA 222 code. In order to develop these capacities, concrete must be poured neat in excavations, the adjacent grade must be level, and the static ground water level must remain below the base of the footing throughout the year. The passive pressure within the upper foot of embedment should be neglected.

Eccentric loads and moments acting on the foundation produce a skewed bearing pressure distribution to the ground. The mat foundation should be sized so that the resultant load acts within the middle third of the foundation for one-way and two-way eccentric loading to maintain a compressive contact pressure along the base of the foundation. The maximum bearing pressure from the eccentric loading must be less than the allowable bearing pressure.

Uplift loads can be resisted by the self-weight of the mat and the backfill directly overlying the embedded mat foundation. The overlying soils can be re-used as backfill over the mat provided it is prepared and

placed in accordance with recommendations contained in the Structural Fill section of this report. For preliminary design purposes, the total unit weight of the overlying soils can be assumed to be 100 pounds per cubic foot (pcf). We anticipate that rock anchors may be required to resist overturning.

Excavations should be made in accordance with applicable Occupational Safety and Health Administration (OSHA) and state regulations. It is the contractor's responsibility to select the excavation and dewatering methods, to monitor the excavations for safety and to provide any shoring required to protect personnel and adjacent improvements.

Rock Anchors

Rock anchors should be installed a minimum of 10 feet into the hard basalt. We recommend using an allowable grout/ground interface bond strength of 60 psi for design. The upper two feet of embedment should be ignored for design purposes. The allowable grout/ground bond strength includes a factor of safety of 3. Rock anchors should be designed to meet the loading conditions as specified by the structural engineer.

Rock anchors should consist of steel bars installed in the center of a grouted drill hole. Steel bars should consist of #8 or larger deformed thread bar, in accordance with ASTM A 615, Grade 60 minimum and should be epoxy coated or hot dip galvanized for corrosion protection. The drill hole should be cleaned of deleterious material prior to placement of grout and steel and should be a minimum of one inch larger than the anchor diameter or as needed to provide sufficient cover between the ground and steel. Centralizers should be placed along the steel bar at a minimum of three feet from the bottom of the steel bar and three feet from the top of the steel bar with a maximum spacing of 10 feet. Centralizers should be fabricated from schedule 40 PVC pipe, steel, or material non-detrimental to the reinforcing steel. Grout properties and mix design as specified by the structural engineer.

Installation records for each rock anchor should include, at a minimum, drilling equipment and procedures, ground conditions during drilling, anchor number, anchor design load, type and size of reinforcing steel, total anchor length, and grout properties.

Verification Tests: We recommend that pre-production verification testing be performed on at least one anchor to verify the design of the anchor system and the construction methods proposed prior to installing the remaining production anchors. We should review the results of the verification test prior to beginning installation of the remaining anchors. The maximum verification test load should be 200 percent of the design load, as established by the structural engineer.

Proof Tests: Proof tests should be performed on the remaining anchors to verify consistent ground conditions and construction performance. The maximum proof test load should be 120 percent of the design load.

We recommend that a representative from Black Mountain be present for the duration of rock anchor construction and testing.

Spread Footings

Lightly loaded structures such as the equipment shelter can be supported on spread footings. Continuous-wall and isolated-spread footings should be at least 18 and 24 inches wide, respectively. For frost protection, the footings should be located at least 24 inches below the lowest adjacent grades or deeper if required by local building code.

Footings should bear directly on the basalt or on structural fill placed in accordance with our recommendations. Footings should be sized for an allowable bearing capacity of 2,500 psf. We estimate post construction settlements will be less than one inch for the above recommended bearing capacity. We estimate that the differential settlement will be approximately half of the total settlement. Our recommended bearing capacity is based on limiting settlements and includes a factor of safety of 3 against bearing capacity failure.

Lateral loads acting on the foundations can be resisted by passive earth pressures on the sides of the foundation and by friction along the soil-concrete interface at the base of the foundation. We recommend using an allowable passive earth pressure of 300 pounds per cubic foot (pcf) for foundations confined by the basalt or structural fill placed in accordance with our recommendations. The passive pressure within the upper two feet of embedment should be neglected. We recommend an allowable coefficient of friction of 0.36. In order to develop these capacities, concrete must be poured neat in excavations, the adjacent grade must be level, and the static ground water level must remain below the base of the footing throughout the year. These allowable lateral resistance values include a minimal factor of safety of 1.5.

Floor Slabs

We recommend a 6-inch-thick layer of imported granular structural fill be placed and compacted over the prepared subgrade. The granular fill should be placed in 6-inch-thick lifts and compacted to at least 95 percent of the maximum dry density, as determined by the American Society for Testing and Materials (ASTM) D 1557. A modulus of subgrade reaction value of 100 pounds per cubic inch (pci) may be used to design the floor slab.

Foundation Construction Considerations

A geotechnical engineer from Black Mountain (or their representative) should confirm suitable bearing conditions and evaluate the foundation subgrades. Observations should also confirm that loose or soft material, organics, unsuitable fill, or old topsoil zones were removed. Localized deepening of footing excavations may be required to penetrate any deleterious materials.

Because foundation stresses are transferred outward as well as downward into the bearing soils, all footing over-excavations should extend horizontally outward from the footing edge a distance equal to the one half the over-excavation depth for the structural backfill.

CONSTRUCTION RECOMMENDATIONS

Site Preparation

Clearing and Stripping: After surface and near-surface water sources have been controlled, the construction areas should be cleared and stripped of organic matter and other deleterious materials. Silt fences, hay bales, buffer zones of natural growth, sedimentation ponds, and granular haul roads should be used as required to reduce sediment transport during construction to acceptable levels.

Where present, fill and existing topsoil should be stripped and removed from proposed development locations and for a five-foot-margin around such areas. Based on our explorations, we anticipate the

depth of stripping to be less than about a foot, although greater stripping depths may be required if deleterious materials are encountered. Deleterious materials encountered during site preparation should be removed from the subgrade soils and hauled off site for disposal. Stripped material should be transported off site for disposal or stockpiled for use in landscaped areas. If stripping operations occur during wet weather, a generally greater stripping depth might be required in order to remove disturbed moisture-sensitive soils; therefore, stripping is best performed during a period of dry weather.

Excavations: We anticipate that site grading will be minimal. Where required, temporary soil cuts associated with site excavations or regrading activities should be adequately sloped back to prevent sloughing and collapse, unless a shoring box or other suitable excavation side wall bracing is provided. It is the responsibility of the contractor to ensure that excavations are properly sloped or braced for worker safety protection, in accordance with OSHA safety guidelines.

Dewatering: Based on our subsurface exploration, we do not anticipate groundwater seepage within the tower mat excavation. If water is encountered, we anticipate that pumping from sumps located in the trench will likely be effective in removing water resulting from seepage or perched groundwater.

Final Grades: Final site grades should slope downward away from the structure at a minimum of two percent and runoff should be conveyed to a suitable drainage outlet. Additionally, the area surrounding the structure could be capped with concrete, asphalt or compacted, low-permeability soils to reduce surface water infiltration into the subsurface soils near the foundation.

Structural Fill

The following recommendations for structural fill are provided for design and construction purposes, if required.

Materials: Structural fill includes any fill materials placed under footings, pavements, or driveways and backfill over the embedded mat foundation. Typical materials used for structural fill include: clean, well-graded sand and gravel; clean sand; crushed rock; controlled-density fill (CDF); lean-mix concrete; and various soil mixtures of silt, sand, and gravel. Recycled concrete, asphalt, and glass derived from pulverized parent materials may also be used as structural fill when combined with an equal volume or more of silt, sand, and/or gravel. Use of the on-site soils as structural fill is also feasible.

Placement and Compaction: When used as structural fill, the on-site soils should be placed in lifts with a maximum thickness of 8 inches and compacted to not less than 92 percent of the material's maximum dry density, as determined by ASTM D-1557. The on-site soils should be moisture-conditioned to within 3 percent of the optimum moisture content (ASTM D-1557). If the on-site soils cannot be properly moisture-conditioned, we recommend using imported granular material for structural fill.

Imported granular structural fill should consist of angular pit or quarry run rock, crushed rock, or crushed gravel and sand that is fairly well graded between coarse and fine particle sizes. The fill should contain no organic matter or other deleterious materials, have a maximum particle size of one inch, and have less than 5 percent passing the U.S. No. 200 Sieve. In deep excavations, or where subgrade soils require stabilization, the particle size may be increased to four inches. The percentage of fines can be increased to 12 percent of the material passing the U.S. No. 200 Sieve if placed during dry weather and provided the fill material is moisture-conditioned, as necessary, for proper compaction. The material should be placed in lifts with a maximum uncompacted thickness of 12 inches and be compacted to not less than 95 percent

of the maximum dry density, as determined by ASTM D-1557. During the wet season or when wet subgrade conditions exist, the initial lift thickness should be increased to 24 inches and should be compacted by rolling with a smooth-drum, nonvibratory roller.

CDF and lean-mix concrete do not require special placement or compaction procedures. Regardless of location or material, all structural fill should be placed over firm, unyielding subgrade soils. If earthwork takes place during freezing conditions, we recommend that all exposed subgrades be allowed to thaw and be recompacted prior to placing subsequent lifts of structural fill.

CONSTRUCTION OBSERVATIONS

Satisfactory earthwork performance depends on the quality of construction. Sufficient monitoring of the contractor's activities is a key part ensuring that work is completed in accordance with the construction drawings and specifications. We recommend that a representative from Black Mountain observe that the subsurface conditions are consistent with the anticipated conditions, and that foundation subgrades are suitable for placement of structural fill, rebar, or concrete for the new structures.

Some jurisdictions require a final letter of geotechnical compliance before they will provide a final permit. It is incumbent on the client to determine if a final letter of geotechnical compliance is required by the jurisdiction. If such a letter is required, a representative from Black Mountain MUST observe foundation subgrades PRIOR to concrete being poured for the foundation. If Black Mountain does not perform this observation, we cannot provide a final letter of geotechnical compliance, and a permit will not be eligible for final sign-off. ***It is the owner's responsibility to ensure that Black Mountain is notified in a timely manner (i.e., at least 48 hours prior to the required site observation) of the need for our services on site during construction.***

CLOSURE

We have prepared this report for use by the owner/developer and other members of the design and construction team for the proposed tower site. The opinions and recommendations contained within this report are not intended to be, nor should they be, construed as a warranty of subsurface conditions, but are forwarded to assist in the planning and design process.

We have made observations based on our explorations that indicate the soil conditions at only those specific locations and only to the depths penetrated. These observations do not necessarily reflect soil types, strata thickness, or water level variations that may exist in other locations. If subsurface conditions vary from those anticipated, Black Mountain will provide additional geotechnical recommendations, if necessary. The future performance and integrity of the improvements will depend largely on proper initial site preparation, drainage, and construction procedures. Observation by experienced geotechnical personnel should be considered an integral part of the construction process.

The conclusions and recommendations contained in this report are based on our understanding of the currently proposed project, as derived from written and verbal information supplied to us by the client. When the design is finalized, we recommend that our firm review to see that our recommendations have been interpreted and implemented as intended. If design changes are made, we request that we be

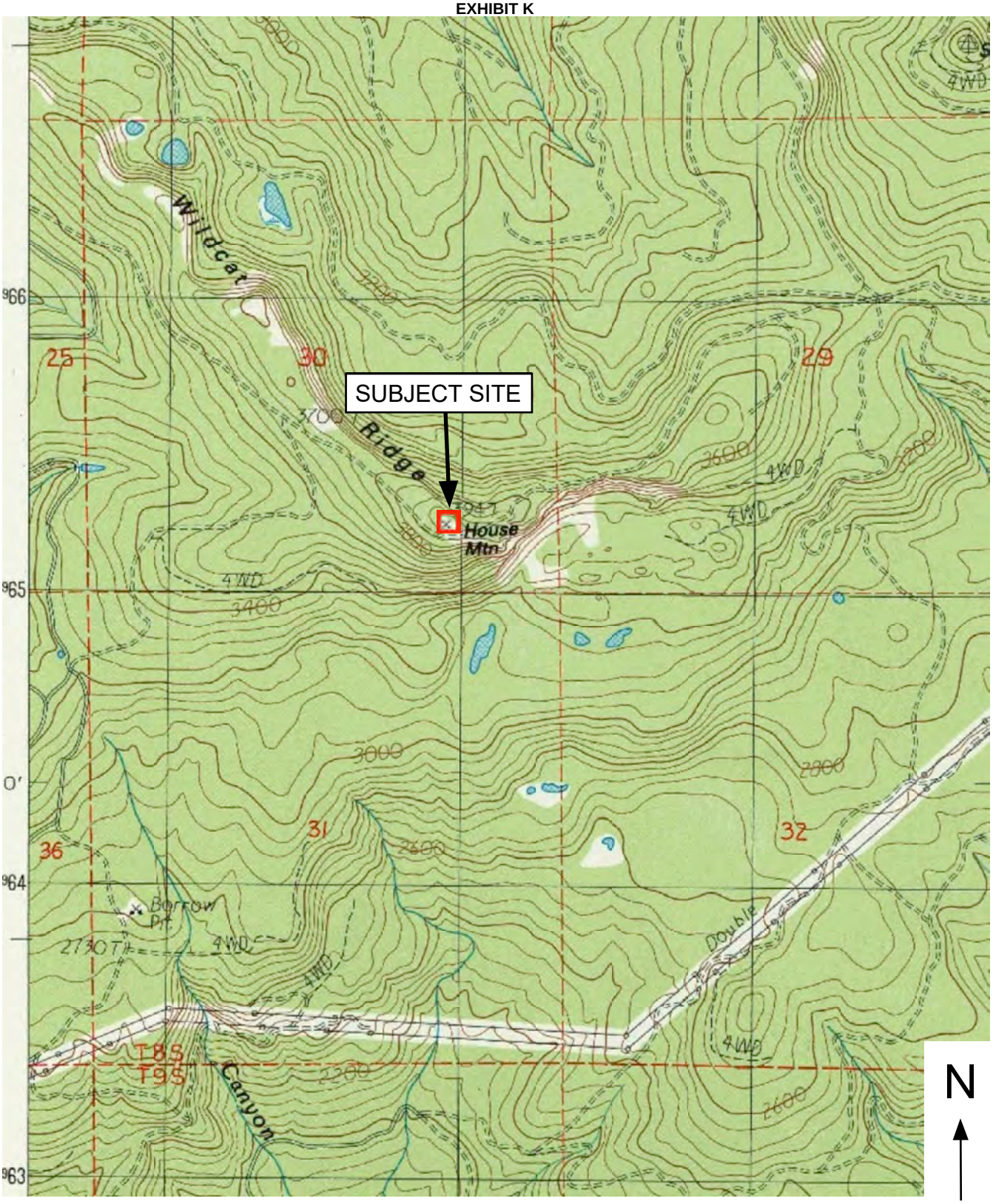
retained to review our conclusions and recommendations and to provide a written modification or verification.

The scope of our services does not include services related to construction safety precautions, and our recommendations are not intended to direct the contractor's methods, techniques, sequences, or procedures, except as specifically described in our report for consideration in design. Within the limitations of scope, schedule, and budget, our services have been executed in accordance with the generally accepted practices in this area at the time this report was prepared. No warranty or other conditions, express or implied, should be understood.

ATTACHMENT A

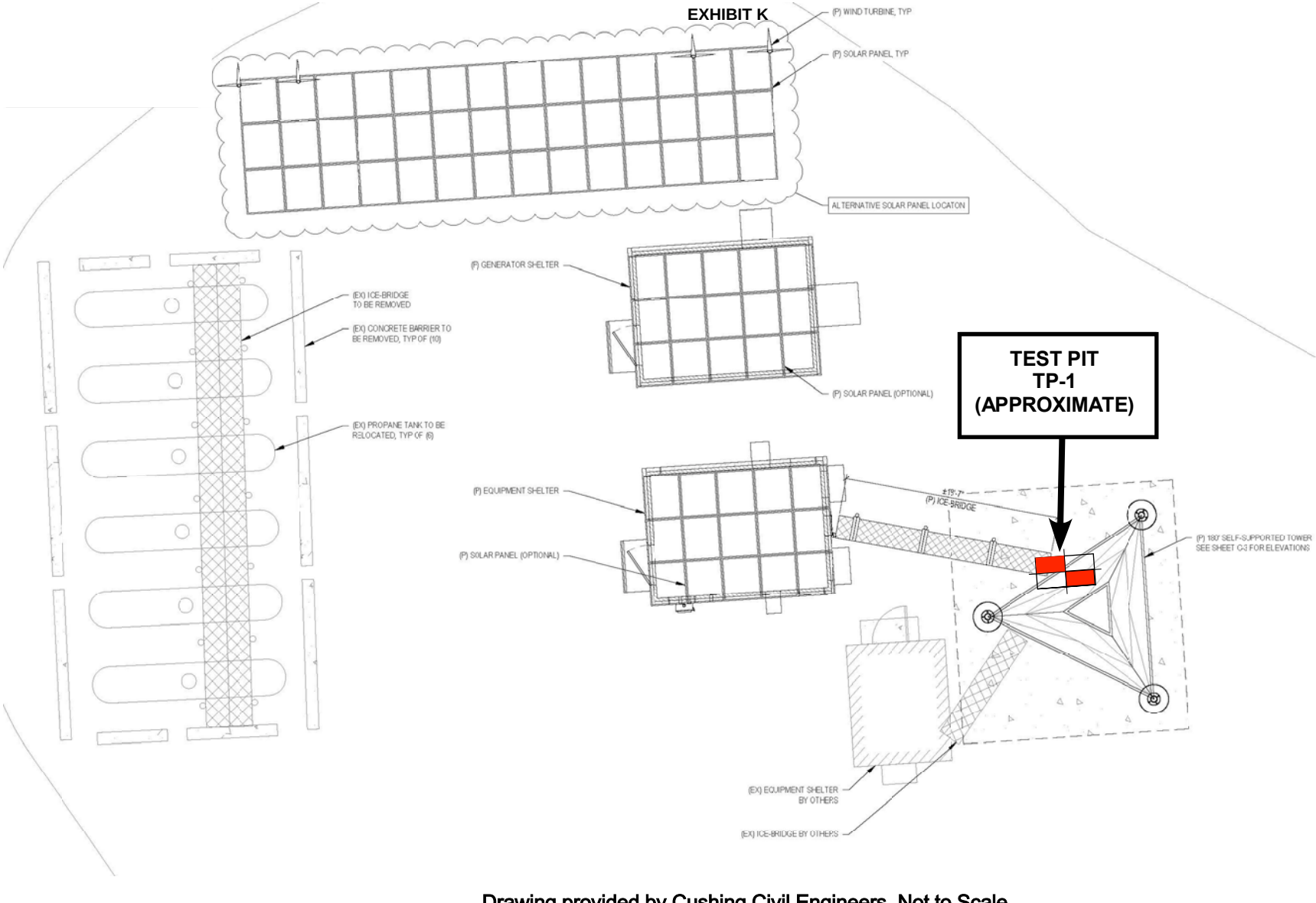
FIGURES

EXHIBIT K



Base Map Courtesy of U.S.G.S. Topographic Map "Mill City North, Oreg." (1985) Not to Scale

Black Mountain Consulting LLC 22566 SW Washington St., Ste. 209 Sherwood, OR 97140 TEL. 503.625-2517 | www.blkmountain.com	**FIGURE 1 -** Location Map	**Location** House Mountain 11.1 Miles SE of Drake Crossing Mill City, Oregon 97360
	Project : 240026	
	Client : Cushing Civil Engineers	**Date :** September 2024



Drawing provided by Cushing Civil Engineers, Not to Scale

Black Mountain Consulting LLC
22566 SW Washington St., Ste. 209
Sherwood, OR 97140
TEL. 503.625-2517 | www.blkmountain.com

FIGURE 2 - Site & Exploration Plan

Project : 240026

Client : Cushing Civil Engineers

Location
House Mountain
11.1 Miles SE of Drake Crossing
Mill City, Oregon 97360

Date : September 2024

ATTACHMENT B

SUBSURFACE EXPLORATION LOG

EXHIBIT K

GEOTECHNICAL TEST PIT LOG

Black Mountain Consulting LLC
22566 SW Washington St., Suite 209
Sherwood, Oregon 97140
TEL:503.625.2517

PROJECT
House Mountain
Mill City, Oregon 97360
Cushing Civil Engineers

Job Number: 240026

Test Pit No.: **TP-1**

Elevation Reference :
Ground Surface Elevation :

DEPTH (feet)		SAMPLE TYPE	SAMPLE NUMBER	POCKET PEN	TORVANE	GROUND WATER	OBSERVATIONS	TESTING
0	Dense, dry-damp, gray, SAND (SP) and GRAVEL (GP), fill material						Caterpillar 304	
	RK - Very hard, BASALT, (RH4) below 6"		1				BASALT undulates across the area	
	Test pit terminated, due to refusal, at approximately 12 inches bgs. No groundwater, seeps or seams encountered at the time of exploration.							
5								
10								
15								
20								
25								

LEGEND

DATE Static Water Level

Perched Groundwater

Grab Sample

NWTPH-HCID VOCs Type of Analytical Testing Used

Test Pit Start Date: 9-16-24

Test Pit Completion Date: 9-16-24

Logged By: RN

EXHIBIT K

BLACK MOUNTAIN CONSULTING LLC
22566 SW Washington St., Ste. 209 Sherwood, OR 97140
503.625.2517
www.blkmountain.com

September 17, 2024

Black Mountain Project No. 240026-SRT

Cushing Civil Engineers
107 SE Washington Street, Suite 265
Portland, Oregon 97214

Attn: Mr. Kenny McManaway

Subject: Soil Resistivity Survey
House Mountain
11.1 Miles SE of Drake Crossing
Mill City, Oregon 97360

At your request, a representative of Black Mountain Consulting LLC (Black Mountain) visited the above referenced site on September 16, 2024 to perform soil resistivity testing. Two surveys were completed, at the approximate locations and orientations described in this report. We understand others will use these test results in their design of the antenna grounding system.

Please note that, due to high resistivity values at the site, a standard grounding design may not be appropriate and that a site-specific grounding design may be required.

We appreciate this opportunity to be of service.

Sincerely,

Black Mountain Consulting LLC

Robert Nystrom, R.G.
Staff Geologist

Methods:

The resistivity survey was completed using the Wenner Four-Electrode Method and the Miller Model 400A Soil Resistance Meter. The Wenner Four-Electrode Method requires that four metal electrodes be placed in a straight line, equal distance from one another. Each electrode is driven approximately 6 -12 inches below ground surface at 5, 10, 20, 30 and 40-foot spacing intervals. A current of known amperage is subsequently circulated into the soil through the end electrodes and the resulting voltage drop between the inner electrodes is measured, yielding the resistance (in ohms) of the soil. The correct unit for resistivity is the ohm-centimeter (Ω-cm). The following equation is used to calculate the resistivity (Ω-cm).

$$\rho = 191.5\, aR$$

Where:

ρ = soil resistance in ohm-cm (Ω-cm)

a = electrode separation (in feet)

R = resistance measured in ohms (Ω)

This method is in general accordance with ASTM method G57-06 (IEEE Standard 81).

Site Conditions:

Two equally spaced electrode arrays were established on the subject property. Due to adjacent steep slopes, Array 1 was configured along a N-S axis placed approximately 115 feet west of the planned communication tower and was limited by sloping terrain. Array 2 was configured along an E-W axis that was placed approximately 120 feet south of the planned tower location.

The planned communication tower is located adjacent to a group of communication equipment buildings. The equipment buildings are located at the top of a prominent peak surrounded by steep slopes and the site is located on shallow undulating basalt bedrock that has been graded approximately level. There were no underground utilities in the area.

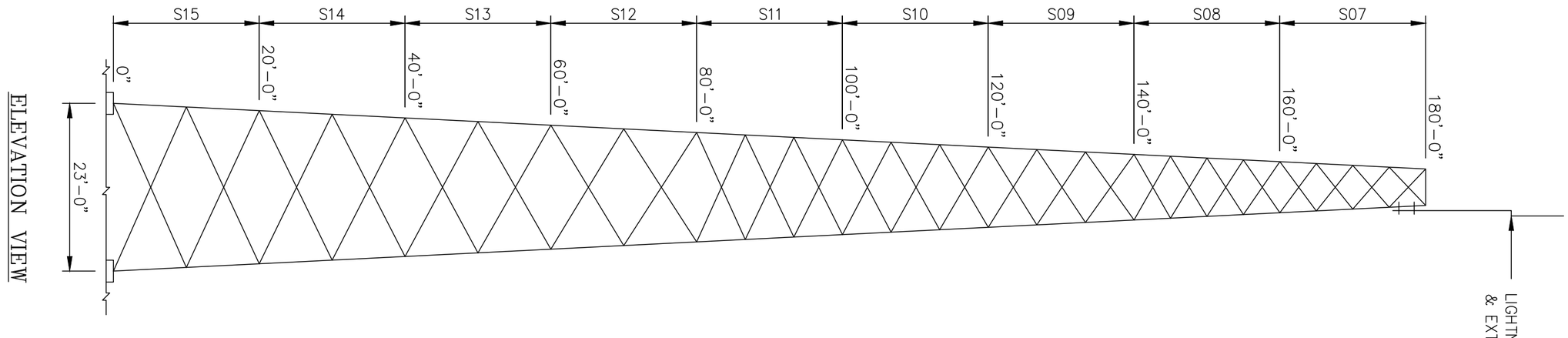
Arrays 1 and 2 were placed on gentle slopes that likely consist of material derived from previous grading activity. Surficial soils consist of sand and gravel (basalt) with shallow basalt bedrock throughout the area. There was no standing water was observed in the area. Black Mountain conducted a geotechnical exploration at the tower site on September 16, 2024 and encountered basalt bedrock at 1 foot below ground surface (bgs). We terminated our exploration, due to refusal, at approximately 1 foot bgs on the basalt bedrock. Groundwater was not encountered at the time of the exploration. Due to the adjacent slopes, Arrays 1 was limited to 30-foot spacing. There was sufficient space to perform 40-foot spacing on Array 2. The arrays were oriented approximately 90° to each other.

EXHIBIT K

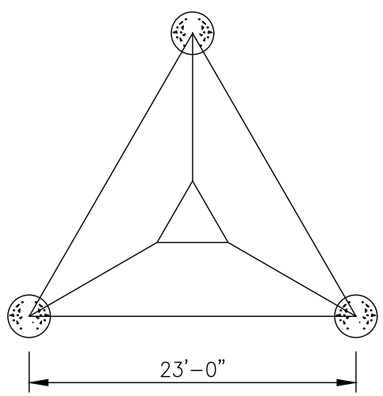
Soil Resistivity Survey Results

Table 1: Soil Resistivity Data						
Site Name & Address:		**House Mountain, 11.1 Miles SE of Drake Crossing, Mill City, Oregon 97360**				
Company Performing Test (Include Name of Person & Date):		**Black Mountain Consulting LLC, Robert Nystrom, 9-16-2024**				
Test Instrument (Model #, Serial #, Date of Last Calibration):		**Miller Model 400A Soil Resistance Meter, #44500, Calibrated April 2024**				
Areas to be Measured	**Data Recordings**	**Distance Between Test Rods in Feet**				
		5	**10**	**20**	**30**	**40**
Array 1	Measured Resistance (Ω):	990	380	98	78	-
	Calculated Resistivity (Ω-cm):	947,925	727,700	375,340	448,110	-
Array 2	Measured Resistance (Ω):	910	300	150	79	81
	Calculated Resistivity (Ω-cm):	871,325	574,500	574,500	453,855	620,460
Area 3	Measured Resistance (Ω):					
	Calculated Resistivity (Ω-cm):					
Array 4	Measured Resistance (Ω):					
	Calculated Resistivity (Ω-cm):					
Additional Site Information						
Description of Soil as Seen as Site:		Sand and gravel (derived from grading activity), shallow basalt bedrock undulates throughout the area				
Soil Condition (Wet, Damp, or Dry):		dry-damp				
Weather:		Clear at time of survey: scattered showers last 24 hours, 65° F				

LEGS	14.00 OD X .500		10.75 OD X .500		8.625 OD X .500	8.625 OD X .322	5.563 OD X .375	4.000 OD X .318	2.875 OD X .203
DIAGONALS	L 6 X 4 X 3/8 (SLV)		L 4 X 4 X 3/8	L 4 X 3 1/2 X 3/8 (SLV)		L 4 X 4 X 5/16	A	B	L 2 X 2 X 5/16
HORIZONTALS	NONE								L 2 X 2 X 5/16
BAYS/SECTION	2 BAYS				3 BAYS			4 BAYS	
SECTION WEIGHT	9219 LBS.	9060 LBS.	7202 LBS.	6525 LBS.	6047 LBS.	4305 LBS.	3448 LBS.	2454 LBS.	1408 LBS.



ELEVATION VIEW



PLAN VIEW

MATERIAL LIST	
A	L 3 1/2 X 3 X 3/8 (SLV)
B	L 2 1/2 X 2 1/2 X 3/8

UNLESS OTHERWISE SPECIFIED
ALL DIMENSIONS INCLUDE
FINISHES AND ARE IN INCHES

TOLERANCES: FRACTIONS ± 1/16"
ANGLES ± 1/2 DEG.
DECIMALS ± .010"

MATERIAL:

TOLERANCES DO NOT APPLY TO RAW MATERIAL

REV	DATE	DRW	CHK	DESCRIPTION

Sabre Industries™
INNOVATION DELIVERED

CONFIDENTIAL
This document and the information contained herein is the confidential trade secret property of Sabre Industries, Inc. ("Sabre") and must not be reproduced, copied or used, in whole or in part, for any purpose without the prior written consent of Sabre.
© 2025 Sabre Industries, Inc. All rights reserved.

MASTER: 180 FT. MODEL S3TL-HD2
SITE: LOWER PROSPECT, OR
CUSTOMER: MARION COUNTY OREGON

JOB NO. 563426		SIZE	DRAWING NO.	REV
DATE	08/07/25	B	563426-MS	0
DRAWN BY	KMP			
CHECKED BY	ZAK		SCALE NONE	PAGE 1 OF 3

DRAWING LIST

563426-F1 . . . . . CAISSON FOUNDATION
C30400341 . . . . . LEG TO LEG TEMPLATE
9030714 . . . . . TOWER BASE INSTALLATION
563426-S15 . . . . . SECTION 0 FT. – 20 FT.
563426-S14 . . . . . SECTION 20 FT. – 40 FT.
563426-S13 . . . . . SECTION 40 FT. – 60 FT.
563426-S12 . . . . . SECTION 60 FT. – 80 FT.
563426-S11 . . . . . SECTION 80 FT. – 100 FT.
563426-S10 . . . . . SECTION 100 FT. – 120 FT.
563426-S09 . . . . . SECTION 120 FT. – 140 FT.
563426-S08 . . . . . SECTION 140 FT. – 160 FT.
563426-S07 . . . . . SECTION 160 FT. – 180 FT.
563426-SB1 . . . . . STEP BOLT ATTACHMENT INSTALLATION
C30011-1 . . . . . SAFETY CLIMB BOTTOM MOUNTING BRACKET
C30011-2 . . . . . SAFETY CLIMB TOP MOUNTING BRACKET
C30003001 . . . . . SAFETY CLIMB INTERMEDIATE BRACKET
SEE MANUAL W/KIT . . . . . CABLE SAFETY CLIMB DEVICE
563426-WG1 . . . . . WAVEGUIDE LADDER INSTALLATION
563426-WG2 . . . . . WAVEGUIDE LADDER INSTALLATION
563426-WG3 . . . . . WAVEGUIDE LADDER INSTALLATION
9031861 . . . . . WAVEGUIDE LADDER
C30008022 . . . . . TOWER LEG CAP KIT
563426-SA1 . . . . . 3' SIDEARM @ 179'
563426-PM1 . . . . . 4 1/2 O.D. PIPE MOUNT KIT FOR SIDEARM @ 179'
563426-ST1 . . . . . SWIVEL KNUCKLE TIEBACK KITS FOR SIDEARM @ 179'
563426-FM1 . . . . . 2 3/8 O.D. FLUSH MOUNT KIT @ 177'
563426-SA2 . . . . . 3' SIDEARMS @ 175'
563426-PM2 . . . . . 4 1/2 O.D. PIPE MOUNT KITS FOR SIDEARMS @ 175'
563426-ST2 . . . . . SWIVEL KNUCKLE TIEBACK KITS FOR SIDEARMS @ 175'
563426-PM3 . . . . . 4 1/2 O.D. PIPE MOUNT KITS @ 173'
C30085002 . . . . . 8' ICE SHIELD ASSEMBLY @ 170'
563426-PM4 . . . . . 4 1/2 O.D. PIPE MOUNT KIT @ 165'
563426-SA3 . . . . . 3' SIDEARMS @ 165'
563426-PM5 . . . . . 4 1/2 O.D. PIPE MOUNT KITS FOR SIDEARMS @ 165'
563426-ST3 . . . . . SWIVEL KNUCKLE TIEBACK KITS FOR SIDEARMS @ 165'
C30085002 . . . . . 8' ICE SHIELD ASSEMBLIES @ 155'
563426-PM6 . . . . . 4 1/2 O.D. PIPE MOUNT KITS @ 150'
563426-PM7 . . . . . 4 1/2 O.D. PIPE MOUNT KIT @ 143'
563426-SA4 . . . . . 3' SIDEARM @ 143'
563426-PM8 . . . . . 4 1/2 O.D. PIPE MOUNT KIT FOR SIDEARM @ 143'
563426-ST4 . . . . . SWIVEL KNUCKLE TIEBACK KITS FOR SIDEARM @ 143'
563426-SA5 . . . . . 3' SIDEARM @ 140'
563426-PM9 . . . . . 4 1/2 O.D. PIPE MOUNT KIT FOR SIDEARM @ 140'
563426-ST5 . . . . . SWIVEL KNUCKLE TIEBACK KITS FOR SIDEARM @ 140'
563426-PM10 . . . . . 4 1/2 O.D. PIPE MOUNT KIT @ 137'
563426-SA6 . . . . . 3' SIDEARM @ 134'
563426-PM11 . . . . . 4 1/2 O.D. PIPE MOUNT KIT FOR SIDEARM @ 134'
563426-ST6 . . . . . SWIVEL KNUCKLE TIEBACK KITS FOR SIDEARM @ 134'
563426-SA7 . . . . . 3' SIDEARM @ 127'
563426-PM12 . . . . . 4 1/2 O.D. PIPE MOUNT KIT FOR SIDEARM @ 127'
563426-ST7 . . . . . SWIVEL KNUCKLE TIEBACK KITS FOR SIDEARM @ 127'
563426-LR . . . . . LIGHTNING ROD W/STIFFENER & EXTENSION
9014671 . . . . . BOLT INSTALLATION
906956 . . . . . TOWER NAME PLATE
907901 . . . . . INVENTORY REQUIREMENT SHEET
BOM-1 . . . . . BILL OF MATERIAL

TOWER DESIGN INFORMATION

THIS ERECTION DRAWING PACKAGE IS BASED ON THE STRUCTURAL DESIGN REPORT NO. 563426.

THIS TOWER DESIGN ALSO MEETS OR EXCEEDS THE REQUIREMENTS OF THE 2022 OREGON STRUCTURAL SPECIALTY CODE.

DESIGN CRITERIA – ANSI/TIA-222-H	
WIND SPEED (NO ICE)	108 MPH
WIND SPEED (ICE)	30 MPH
DESIGN ICE THICKNESS	1.00 IN
RISK CATEGORY	IV
EXPOSURE CATEGORY	C
TOPOGRAPHIC FACTOR PROCEDURE	METHOD 2 (RIGOROUS)
TOPOGRAPHIC FEATURE	ESCARPMENT (DOWNWIND)
CREST HEIGHT	850 FT
LENGTH OF TOPOGRAPHIC FEATURE	5900 FT
HORIZONTAL DISTANCE FROM STRUCTURE TO CREST	2600 FT
GROUND ELEVATION	1005 FT
SEISMIC IMPORTANCE FACTOR, Ie	1.50
0.2-SEC SPECTRAL RESPONSE, Ss	0.847 g
1-SEC SPECTRAL RESPONSE, S1	0.431 g
SITE CLASS	E
SEISMIC DESIGN CATEGORY	D
BASIC SEISMIC FORCE-RESISTING SYSTEM	TELECOMMUNICATION TOWER (TRUSS: STEEL)

UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS INCLUDE FINISHES AND ARE IN INCHES
TOLERANCES: FRACTIONS ± 1/16" ANGLES ± 1/2 DEG. DECIMALS ± .010"

MATERIAL:
TOLERANCES DO NOT APPLY TO RAW MATERIAL

REV	DATE	DRW	CHK	DESCRIPTION

Sabre Industries™ INNOVATION DELIVERED

CONFIDENTIAL
This document and the information contained herein is the confidential trade secret property of Sabre Industries, Inc. ("Sabre") and must not be reproduced, copied or used, in whole or in part, for any purpose without the prior written consent of Sabre.
© 2025 Sabre Industries, Inc. All rights reserved.

MASTER: 180 FT. MODEL S3TL-HD2
SITE: LOWER PROSPECT, OR
CUSTOMER: MARION COUNTY OREGON

JOB NO. 563426		SIZE	DRAWING NO.	REV
DATE	08/07/25	B	563426-MS	0
DRAWN BY	KMP			
CHECKED BY	ZAK		SCALE NONE	PAGE 2 OF 3

DESIGNED APPURTENANCE LOADING

ELEV.	ANTENNAS
189.62'	(1) DB224A
186.22'	(1) SC479-HF1LDF
185'	(1) EXTENDIBLE LIGHTNING ROD
184.14'	(1) CC807-09
182.22'	(3) SC479-HF1LDF
179'	3FT SIDEARM
179'	3FT SIDEARM
179'	3FT SIDEARM
177'	FLUSH MOUNT
177'	(1) 429-83H-01
175'	(2) 3FT SIDEARMS
173'	(2) LEG DISH MOUNT
173'	LEG DISH MOUNT
173'	(1) 1' H.P. DISH
173'	(2) VHLP2-23-2GR/B
170'	(1) 6' ICE SHIELD
168.46'	(1) OA20-67-DIN
167.21'	(1) SE414-SWBPALDF(DXX)
166.5'	(1) 7' X 2" WHIP
165'	3FT SIDEARM
165'	3FT SIDEARM
165'	LEG DISH MOUNT
165'	LEG DISH MOUNT

ELEV.	ANTENNAS
165'	(1) UHX8-59
165'	(1) VHLPX6-6W-6WH
163'	3FT SIDEARM
155'	(1) 6' ICE SHIELD
155'	(1) 6' ICE SHIELD
150'	(2) LEG DISH MOUNT
150'	(2) VHLPX6-6W-6WH
143'	3FT SIDEARM
143'	LEG DISH MOUNT
143'	(1) 3' X 1' X 3IN PANEL
143'	(1) VHLPX6-6W-6WH
140'	3FT SIDEARM
140'	(1) 3' X 1' X 3IN PANEL
137.5'	(1) 7' X 2" WHIP
137'	LEG DISH MOUNT
137'	(1) VHLPX4-11W/A
134'	3FT SIDEARM
130.5'	(1) 7' X 2" WHIP
129.5'	(1) DB404-B
127'	3FT SIDEARM
127'	3FT SIDEARM
120'	3 EHD V-BOOM - 12FT FACE - 3FT STANDOFF
120'	(12) 80010992

UNLESS OTHERWISE SPECIFIED
ALL DIMENSIONS INCLUDE
FINISHES AND ARE IN INCHES

TOLERANCES: FRACTIONS ± 1/16"
ANGLES ± 1/2 DEG.
DECIMALS ± .010"

MATERIAL:

TOLERANCES DO NOT APPLY TO RAW MATERIAL

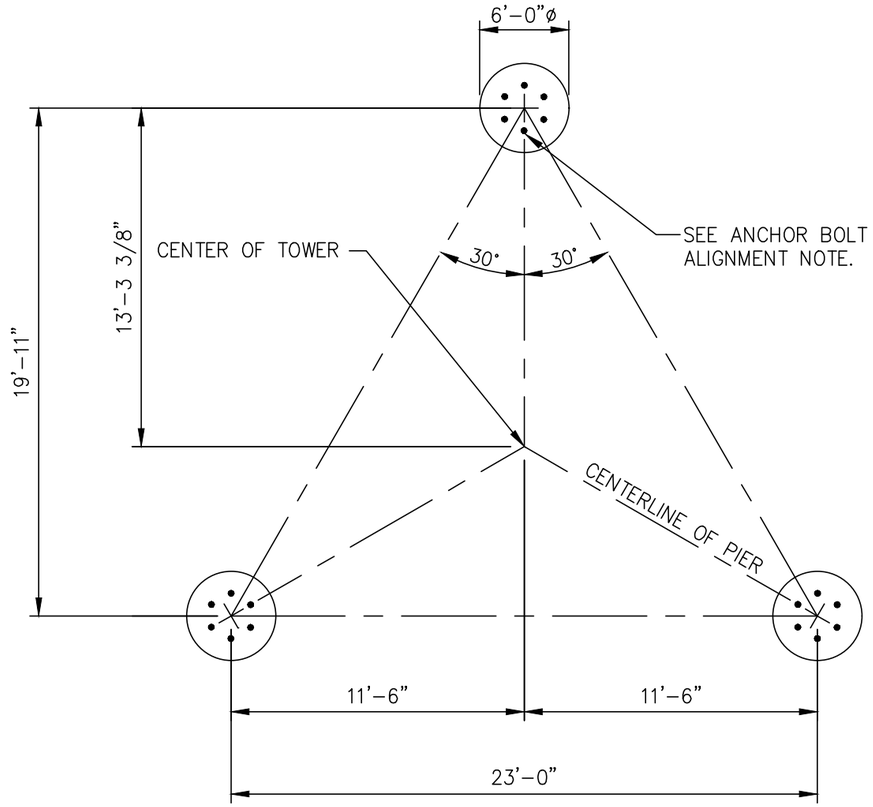
REV	DATE	DRW	CHK	DESCRIPTION

Sabre Industries™
INNOVATION DELIVERED

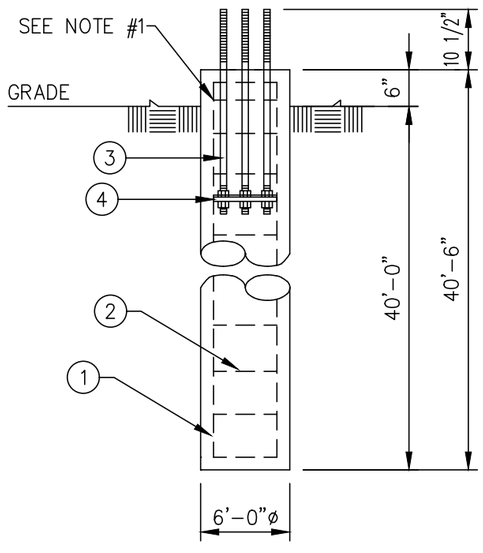
CONFIDENTIAL
This document and the information contained herein is the confidential trade secret property of Sabre Industries, Inc. ("Sabre") and must not be reproduced, copied or used, in whole or in part, for any purpose without the prior written consent of Sabre.
© 2025 Sabre Industries, Inc. All rights reserved.

MASTER: 180 FT. MODEL S3TL-HD2
SITE: LOWER PROSPECT, OR
CUSTOMER: MARION COUNTY OREGON

JOB NO. 563426		SIZE	DRAWING NO.	REV
DATE	08/07/25	B	563426-MS	0
DRAWN BY	KMP			
CHECKED BY	ZAK		SCALE NONE	PAGE 3 OF 3



PLAN VIEW



ELEVATION VIEW

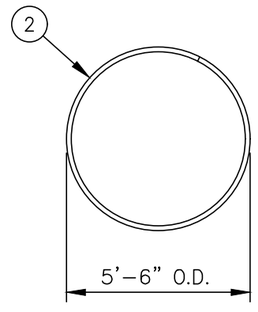
REINFORCING STEEL SCHEDULE								
ITEM	LOCATION	NO. REQ'D.	BAR SPC'G.	SIZE	CUT LGTH.	TOTAL LGTH.	TOTAL WT.	SHAPE
①	PIER VERTICAL REINFORCING	54	EQUALLY SPACED	#10	40'-0"	2160'-0"	9294 LBS.	STRAIGHT
②	PIER TIES	126	SPACED 12" C/C	#4	18'-6"	2331'-0"	1557 LBS.	◯
						TOTAL REBAR WT.	10851 LBS.	

ANCHOR BOLT SCHEDULE				
ITEM	PART NO.	NO. REQ'D.	ANCHOR BOLT SIZE	SPACING
③	C40041061	18	1 3/4"ø X 7'-3"	EQUALLY SPACED

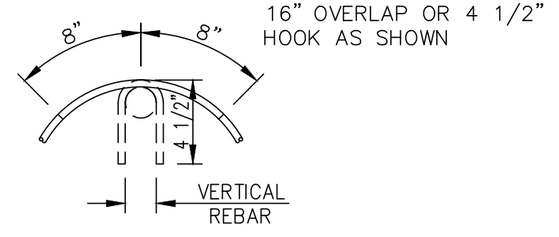
TEMPLATE SCHEDULE			
ITEM	PART NO.	NO. REQ'D.	BOLT CIRCLE
④	C30139220	6	1'-7"

CONCRETE REQ'D	
PER PIER	42.41 CU. YDS.
TOTAL	127.23 CU. YDS.

SEE PAGE 2 FOR GENERAL NOTES



REBAR DETAIL
(PIER TIES)



PIER TIE HOOK DETAIL

UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS INCLUDE FINISHES AND ARE IN INCHES TOLERANCES: FRACTIONS ± 1/16" ANGLES ± 1/2 DEG. DECIMALS ± .010"	MATERIAL: TOLERANCES DO NOT APPLY TO RAW MATERIAL

REV	DATE	DRW	CHK	DESCRIPTION

Sabre Industries™
INNOVATION DELIVERED

CONFIDENTIAL
This document and the information contained herein is the confidential trade secret property of Sabre Industries, Inc. ("Sabre") and must not be reproduced, copied or used, in whole or in part, for any purpose without the prior written consent of Sabre.
© 2025 Sabre Industries, Inc. All rights reserved.

FOUNDATION: 180 FT. MODEL S3TL-HD2
SITE: LOWER PROSPECT, OR
CUSTOMER: MARION COUNTY OREGON

JOB NO. 563426		SIZE	DRAWING NO.	REV
DATE	07/02/25	B	563426-F1	0
DRAWN BY	CK			
CHECKED BY	KC		SCALE NONE	PAGE 1 OF 2

GENERAL NOTES

1. CONCRETE SHALL HAVE A MINIMUM 28-DAY COMPRESSIVE STRENGTH OF 4,500 PSI, IN ACCORDANCE WITH ACI 318-19. (2 REBAR TIES REQ'D IN THE TOP 5")
2. REBAR TO CONFORM TO ASTM SPECIFICATION A615 GRADE 60.
3. ALL REBAR TO HAVE A MINIMUM OF 3" CONCRETE COVER.
4. ALL EXPOSED CONCRETE CORNERS TO BE CHAMFERED 3/4".
5. THE FOUNDATION DESIGN IS BASED ON THE GEOTECHNICAL REPORT BY BLACK MOUNTAIN CONSULTING, LLC, PROJECT 250013-GEO, DATED APRIL 7, 2025.
6. SEE THE GEOTECHNICAL REPORT FOR DRILLED PIER INSTALLATION REQUIREMENTS, IF SPECIFIED.
7. THE BOTTOM ANCHOR BOLT TEMPLATE SHALL BE POSITIONED AS CLOSELY AS POSSIBLE TO THE BOTTOM OF THE ANCHOR BOLTS.
8. THIS FOUNDATION IS DESIGNED FOR A MAX CAPACITY RATIO OF 70%.
9. DISTANCE BETWEEN CENTER OF ANCHOR BOLT CAGE AND THE CENTER OF THE PIER NOT TO EXCEED 1/2" WITHOUT APPROVAL FROM ENGINEER OF RECORD.
10. ONE ANCHOR BOLT MUST BE ALIGNED DIRECTLY WITH THE CENTER OF THE TOWER (TYPICAL).

BASE REACTIONS - ANSI/TIA-222-H (WIND/ICE)

TOTAL FOUNDATION		INDIVIDUAL FOOTING	
SHEAR (KIPS)	65.66	SHEAR (KIPS)	38.7
AXIAL (KIPS)	147.99	COMPRESSION (KIPS)	355
MOMENT (FT-KIPS)	6721	UPLIFT (KIPS)	310

BASE REACTIONS - ANSI/TIA-222-H (SEISMIC)

TOTAL FOUNDATION		INDIVIDUAL FOOTING	
SHEAR (KIPS)	24.15	SHEAR (KIPS)	17.2
AXIAL (KIPS)	91.05	COMPRESSION (KIPS)	169
MOMENT (FT-KIPS)	2754	UPLIFT (KIPS)	121

UNLESS OTHERWISE SPECIFIED
ALL DIMENSIONS INCLUDE FINISHES AND ARE IN INCHES
TOLERANCES: FRACTIONS ± 1/16"
ANGLES ± 1/2 DEG.
DECIMALS ± .010"

MATERIAL:
TOLERANCES DO NOT APPLY TO RAW MATERIAL

REV	DATE	DRW	CHK	DESCRIPTION

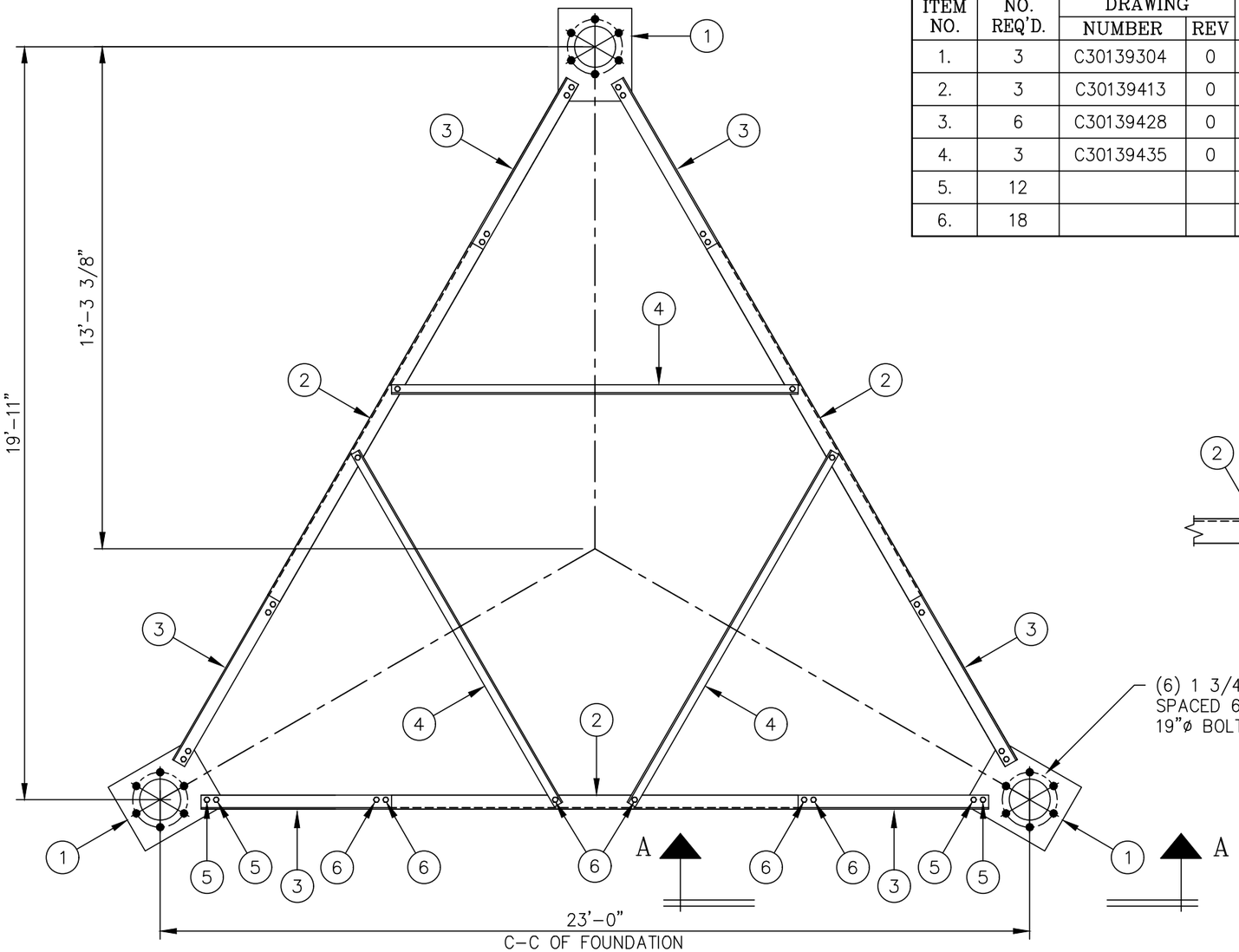
Sabre Industries™
INNOVATION DELIVERED

CONFIDENTIAL
This document and the information contained herein is the confidential trade secret property of Sabre Industries, Inc. ("Sabre") and must not be reproduced, copied or used, in whole or in part, for any purpose without the prior written consent of Sabre.
© 2025 Sabre Industries, Inc. All rights reserved.

FOUNDATION: 180 FT. MODEL S3TL-HD2
SITE: LOWER PROSPECT, OR
CUSTOMER: MARION COUNTY OREGON

JOB NO. 563426		SIZE	DRAWING NO.	REV
DATE	07/02/25	B	563426-F1	0
DRAWN BY	CK			
CHECKED BY	KC		SCALE NONE	PAGE 2 OF 2

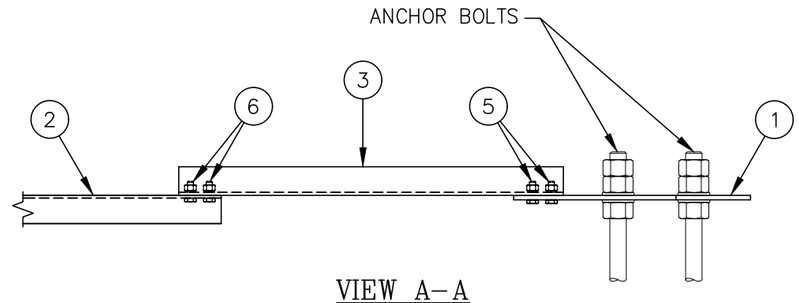
EXHIBIT K



PLAN VIEW

C30400341 LEG TO LEG TEMPLATE

ITEM NO.	NO. REQ'D.	DRAWING NUMBER	DRAWING REV	PART NO.	DESCRIPTION	WEIGHT LBS.	PAINT
1.	3	C30139304	0	C30139304	PLATE, ANCHOR BOLT TEMPLATE 1 3/4"ø A.B. ON 19"ø B.C.	155	N/R
2.	3	C30139413	0	C30139413	ANGLE, TEMPLATE SUPPORT, 3 X 3 X 3/16 X 10'-0	111	N/R
3.	6	C30139428	0	C30139428	ANGLE, TEMPLATE SUPPORT, 3 X 3 X 3/16 X 6'-1 3/4	136	N/R
4.	3	C30139435	0	C30139435	ANGLE, TEMPLATE SUPPORT, 2 1/2 X 2 1/2 X 3/16 X 11'-0	101	N/R
5.	12			C40026023	BOLT ASSEMBLY, 5/8 ø X 2 A325	6	
6.	18			C40026022	BOLT ASSEMBLY, 5/8 ø X 1 3/4 A325	8	
					TOTAL WEIGHT IN LBS.	517	



VIEW A-A

NOTE:

1. ALWAYS COMPARE THE DIMENSIONS SHOWN ON THIS DRAWING WITH THE PROPER CONCRETE FOUNDATION DRAWING, PRIOR TO PLACING CONCRETE.
2. ONE ANCHOR BOLT MUST BE ALIGNED DIRECTLY WITH THE CENTER OF THE TOWER (TYPICAL AT ALL (3) LEGS).
3. VERIFY ANCHOR BOLT CIRCLE CENTER-TO-CENTER SPACING ON ALL (3) FACES AND ALIGNMENT OF ANCHOR BOLTS WITH THE CENTER OF THE TOWER AT ALL (3) LEGS PRIOR TO PLACING CONCRETE.
4. PROVIDE NECESSARY SUPPORT TO ELIMINATE ANY MOVEMENT DURING CONCRETE PLACEMENT AND CURING.

UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS INCLUDE FINISHES AND ARE IN INCHES

TOLERANCES: FRACTIONS ± 1/16" ANGLES ± 1/2 DEG. DECIMALS ± .010"

MATERIAL:

TOLERANCES DO NOT APPLY TO RAW MATERIAL

REV	DATE	DRW	CHK	DESCRIPTION
1	07/02/25	GCK	KCG	REMOVED TOWER SERIES DESIGNATION.

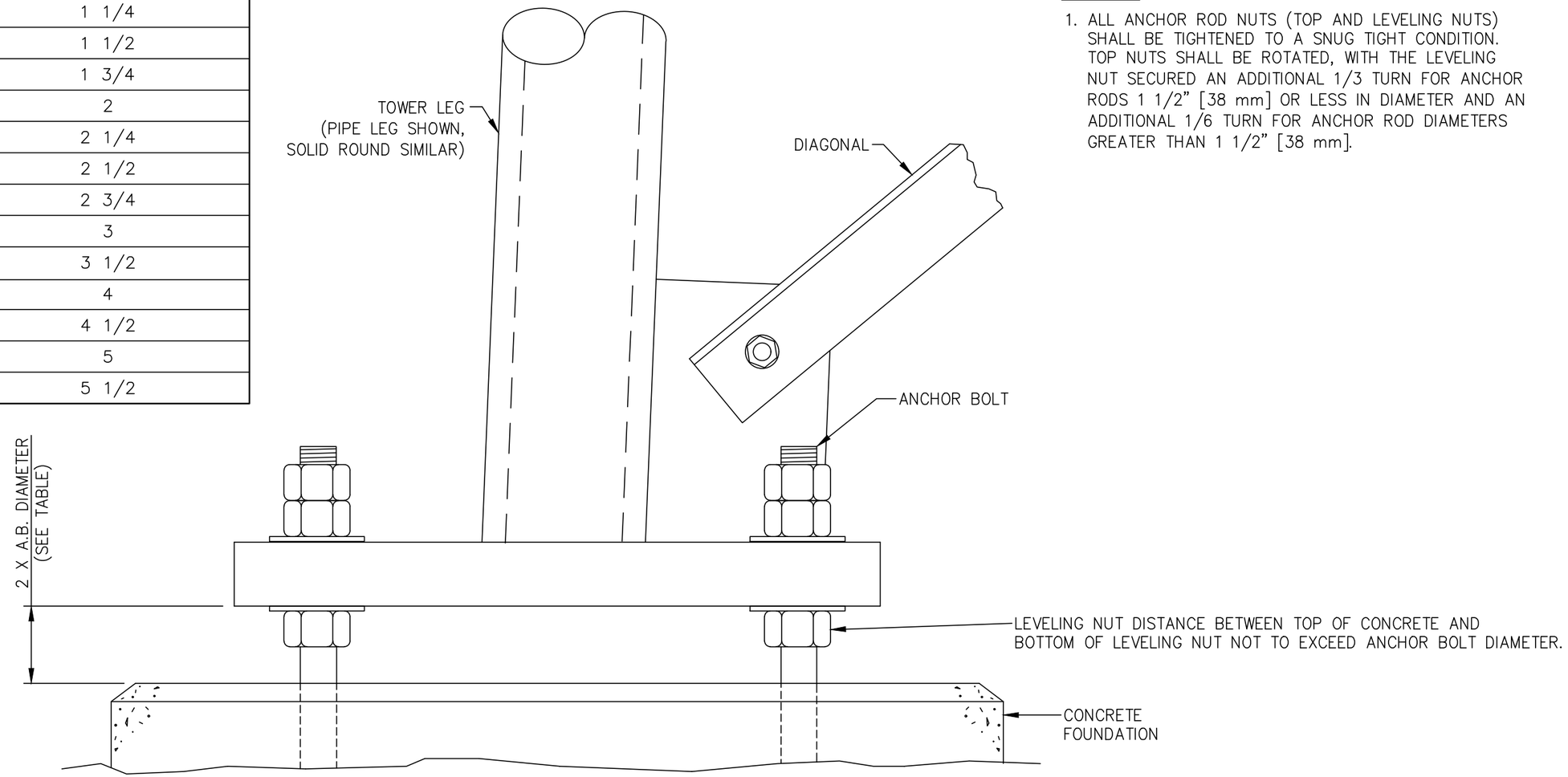
Sabre Industries™
INNOVATION DELIVERED

CONFIDENTIAL
This document and the information contained herein is the confidential trade secret property of Sabre Industries, Inc. ("Sabre") and must not be reproduced, copied or used, in whole or in part, for any purpose without the prior written consent of Sabre.
© 2022 Sabre Industries, Inc. All rights reserved.

LEG TO LEG TEMPLATE INSTALLATION FOR MODEL S3TL SECTION 15 BASE SPREAD 23'-0" C-C OF FOUNDATION (6) 1 3/4"ø A.B. ON A 19"ø B.C.

		SIZE	DRAWING NO.	REV
DATE	02/14/20	B	C30400341	1
DRAWN BY	DRL			
CHECKED BY	LRD		SCALE None	PAGE 1 OF 1

TABLE	
ANCHOR BOLT DIAMETER (in)	MAXIMUM SPACE (in)
1/2	1
5/8	1 1/4
3/4	1 1/2
7/8	1 3/4
1	2
1 1/8	2 1/4
1 1/4	2 1/2
1 3/8	2 3/4
1 1/2	3
1 3/4	3 1/2
2	4
2 1/4	4 1/2
2 1/2	5
2 3/4	5 1/2



ELEVATION VIEW

NOTES:

1. ALL ANCHOR ROD NUTS (TOP AND LEVELING NUTS) SHALL BE TIGHTENED TO A SNUG TIGHT CONDITION. TOP NUTS SHALL BE ROTATED, WITH THE LEVELING NUT SECURED AN ADDITIONAL 1/3 TURN FOR ANCHOR RODS 1 1/2" [38 mm] OR LESS IN DIAMETER AND AN ADDITIONAL 1/6 TURN FOR ANCHOR ROD DIAMETERS GREATER THAN 1 1/2" [38 mm].

UNLESS OTHERWISE SPECIFIED
ALL DIMENSIONS INCLUDE
FINISHES AND ARE IN INCHES

TOLERANCES: FRACTIONS ± 1/16"
ANGLES ± 1/2 DEG.
DECIMALS ± .010"

MATERIAL:

TOLERANCES DO NOT APPLY
TO RAW MATERIAL

REV	DATE	DRW	CHK	DESCRIPTION
2	10/13/17	RWM	MWR	ADDED ANCHOR BOLT TABLE, REVISED LEVELING NUT
				CALL OUT AND ADDED TIGHTENING NOTE #1.
1	1/6/12	DSN	RWM	REVISED BASE PLATE TO FND. GAP

Sabre Industries™
INNOVATION DELIVERED

CONFIDENTIAL
This document and the information contained herein is the confidential trade secret property of Sabre Industries, Inc. ("Sabre") and must not be reproduced, copied or used, in whole or in part, for any purpose without the prior written consent of Sabre.
© 2022 Sabre Industries, Inc. All rights reserved.

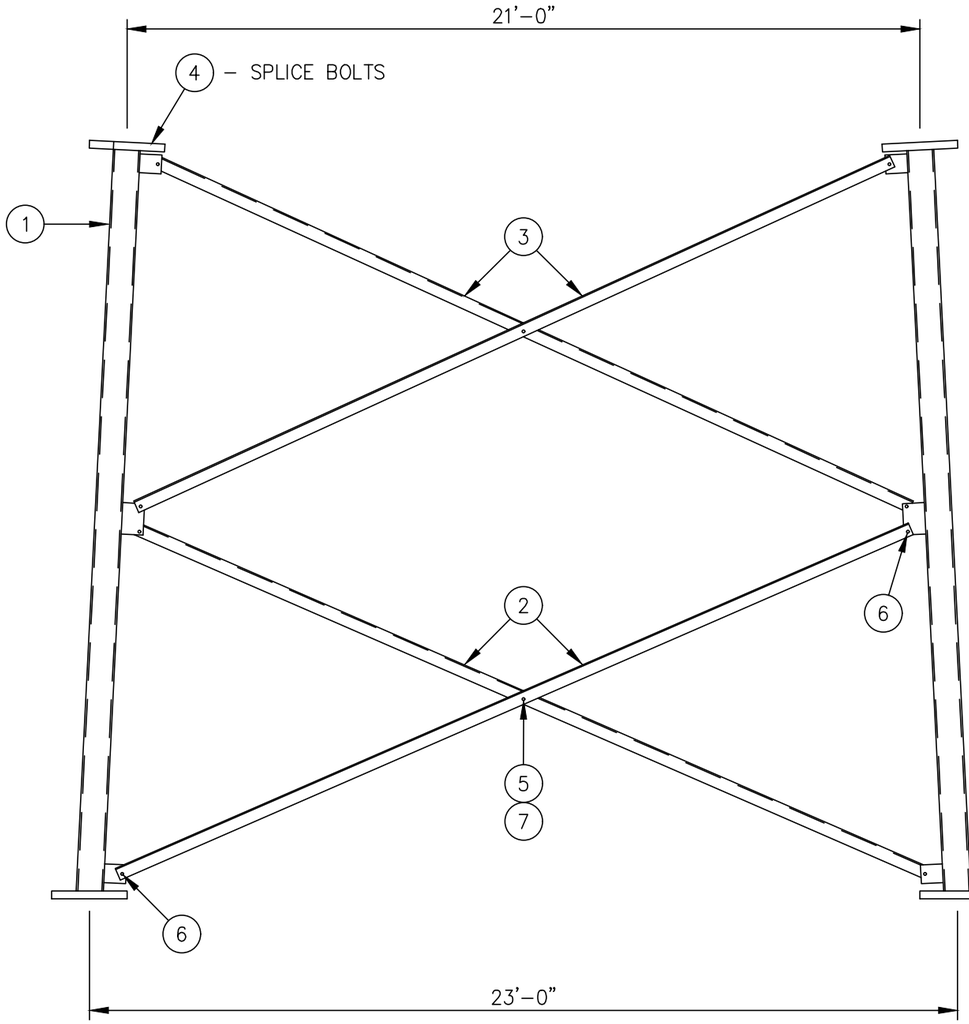
TOWER BASE INSTALLATION

DATE	11/24/09
DRAWN BY	RWM
CHECKED BY	MWR

SIZE	DRAWING NO.	REV
B	9030714	2

SCALE	PAGE
None	1 OF 1

EXHIBIT K



(6) 1 3/4"ø ANCHOR BOLTS ON A 19"ø BOLT CIRCLE.

ELEVATION VIEW

LIST OF MATERIAL

15–LEGS

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
1	3	15–T11611441	SECT. 15 LEG 14 ø X .500 X 20'–0 5/16 W/STEP BOLTS	5508
			TOTAL WEIGHT LBS	5508

15–T8101794 BRACING KIT

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
2	6	TS11269	ANGLE, DIAGONAL 6 X 4 X 3/8 X 22'–11 3/16	1760
3	6	TS11270	ANGLE, DIAGONAL 6 X 4 X 3/8 X 22'–0 7/16	1691
			TOTAL WEIGHT LBS	3451

SPLICE BOLTS

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
4	31	C40026115	BOLT ASSEMBLY, 1 1/2 ø X 6 1/2 A325	188
			TOTAL WEIGHT LBS	188

TK01256 HARDWARE KIT

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
5	7	C40026099	BOLT ASSEMBLY, 1 1/8 ø X 3 1/4 A325	15
6	25	C40026097	BOLT ASSEMBLY, 1 1/8 ø X 2 3/4 A325	50
7	7	C40047014	RINGFILL, 3/8 THICK – 1 1/8 ø BOLT	7
			TOTAL WEIGHT LBS	72

TOTAL SECTION WEIGHT – INCLUDES 3 LEGS, BRACING AND HARDWARE KIT	9219

FIELD NOTES

1. THE PART NUMBERS FOR ALL LEGS ARE LOCATED AT THE TOP OF EACH PART.
2. STEP BOLTS PROVIDED FOR (3) LEGS.

UNLESS OTHERWISE SPECIFIED
ALL DIMENSIONS INCLUDE FINISHES AND ARE IN INCHES

TOLERANCES: FRACTIONS ± 1/16"
ANGLES ± 1/2 DEG.
DECIMALS ± .010"

MATERIAL:

TOLERANCES DO NOT APPLY TO RAW MATERIAL

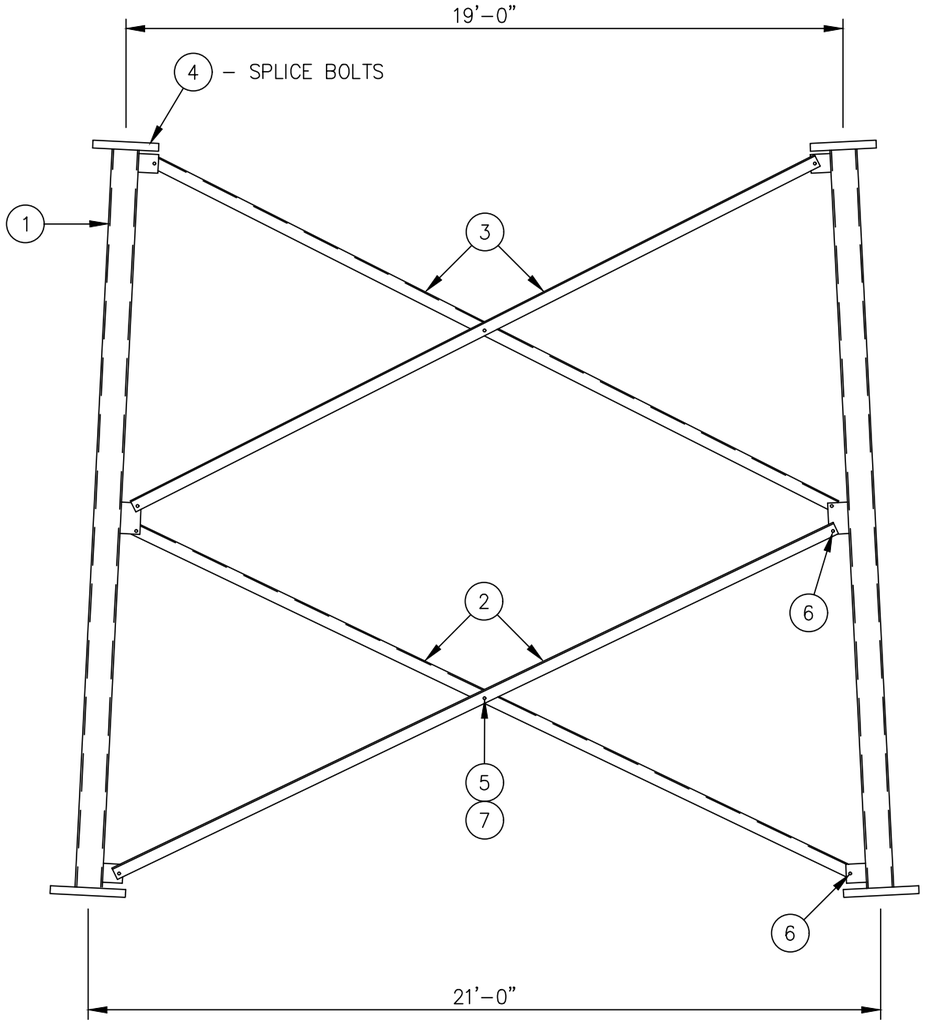
REV	DATE	DRW	CHK	DESCRIPTION

Sabre Industries™
INNOVATION DELIVERED

CONFIDENTIAL
This document and the information contained herein is the confidential trade secret property of Sabre Industries, Inc. ("Sabre") and must not be reproduced, copied or used, in whole or in part, for any purpose without the prior written consent of Sabre.
© 2025 Sabre Industries, Inc. All rights reserved.

SECTION ERECTION: 15 15–T8101794
SITE: LOWER PROSPECT, OR
CUSTOMER: MARION COUNTY OREGON

JOB NO. 563426		SIZE	DRAWING NO.	REV
DATE	07/30/25	B	563426–S15	0
DRAWN BY	KMP			
CHECKED BY	ZAK		SCALE None	PAGE 1 OF 1



ELEVATION VIEW

LIST OF MATERIAL

14 LEGS

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
1	3	14–T11611443	SECT. 14 LEG 14 ø X .500 X 20'–0 5/16 W/STEP BOLTS	5618
			TOTAL WEIGHT LBS	5618

14–T8101795 BRACING KIT

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
2	6	TS11271	ANGLE, DIAGONAL 6 X 4 X 3/8 X 21'–1 3/8	1621
3	6	TS11272	ANGLE, DIAGONAL 6 X 4 X 3/8 X 20'–2 7/8	1553
			TOTAL WEIGHT LBS	3174

SPLICE BOLTS

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
4	31	C40026166	BOLT ASSEMBLY, 1 1/2 ø X 7 A325	196
			TOTAL WEIGHT LBS	196

TK01256 HARDWARE KIT

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
5	7	C40026099	BOLT ASSEMBLY, 1 1/8 ø X 3 1/4 A325	15
6	25	C40026097	BOLT ASSEMBLY, 1 1/8 ø X 2 3/4 A325	50
7	7	C40047014	RINGFILL, 3/8 THICK – 1 1/8 ø BOLT	7
			TOTAL WEIGHT LBS	72

TOTAL SECTION WEIGHT – INCLUDES 3 LEGS, BRACING AND HARDWARE KIT	9060

FIELD NOTES

1. THE PART NUMBERS FOR ALL LEGS ARE LOCATED AT THE TOP OF EACH PART.
2. STEP BOLTS PROVIDED FOR (3) LEGS.

UNLESS OTHERWISE SPECIFIED
ALL DIMENSIONS INCLUDE FINISHES AND ARE IN INCHES

TOLERANCES: FRACTIONS ± 1/16"
ANGLES ± 1/2 DEG.
DECIMALS ± .010"

MATERIAL:

TOLERANCES DO NOT APPLY TO RAW MATERIAL

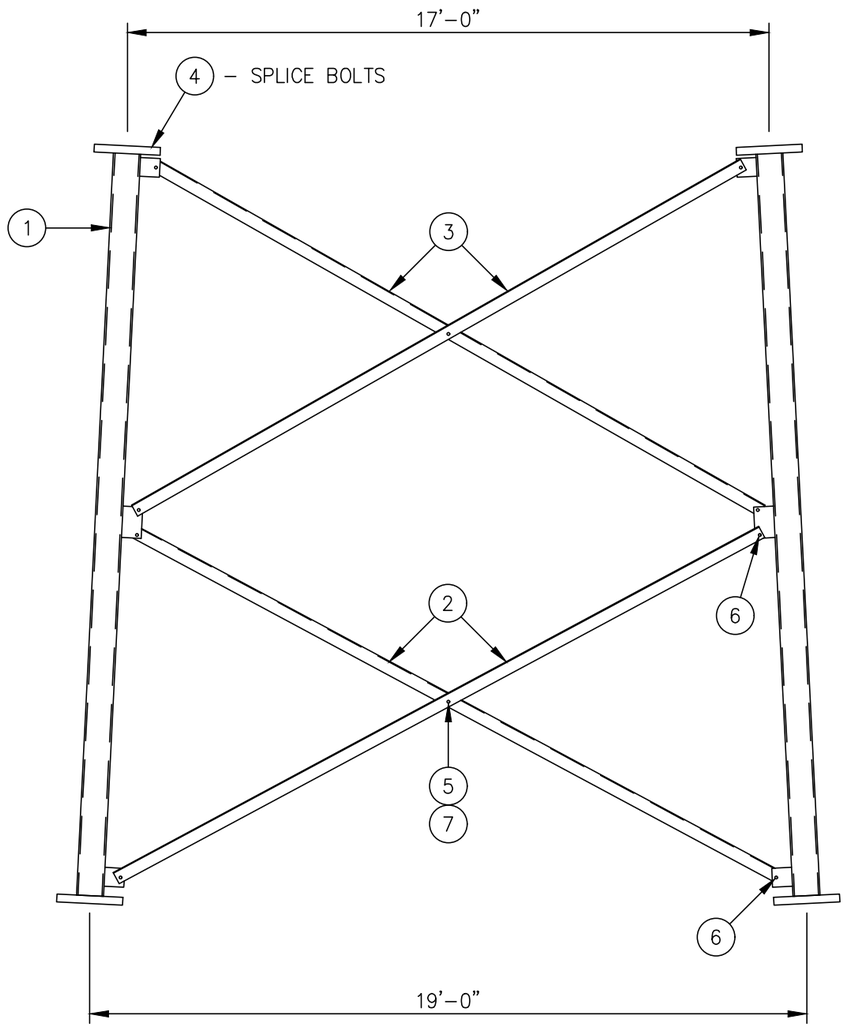
REV	DATE	DRW	CHK	DESCRIPTION

Sabre Industries™
INNOVATION DELIVERED

CONFIDENTIAL
This document and the information contained herein is the confidential trade secret property of Sabre Industries, Inc. ("Sabre") and must not be reproduced, copied or used, in whole or in part, for any purpose without the prior written consent of Sabre.
© 2025 Sabre Industries, Inc. All rights reserved.

SECTION ERECTION: 14 14–T8101795
SITE: LOWER PROSPECT, OR
CUSTOMER: MARION COUNTY OREGON

JOB NO. 563426		SIZE	DRAWING NO.	REV
DATE	07/31/25	B	563426–S14	0
DRAWN BY	KMP			
CHECKED BY	ZAK		SCALE NONE	PAGE 1 OF 1



ELEVATION VIEW

LIST OF MATERIAL

13–LEGS

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
1	3	13–T11611445	SECT. 13 LEG 10 3/4ø X .500 X 20'–0 5/16 W/STEP BOLTS	4625
			TOTAL WEIGHT LBS	4625

13–T8101796 BRACING KIT

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
2	6	TS11273	ANGLE, DIAGONAL 4 X 4 X 3/8 X 19'–4 1/8	1239
3	6	TS11274	ANGLE, DIAGONAL 4 X 4 X 3/8 X 18'–5 15/16	1132
			TOTAL WEIGHT LBS	2371

SPLICE BOLTS

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
4	25	C40026115	BOLT ASSEMBLY, 1 1/2 ø X 6 1/2 A325	152
			TOTAL WEIGHT LBS	152

TK00353 HARDWARE KIT

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
5	7	C40026073	BOLT ASSEMBLY, 1 ø X 3 A325	12
6	25	C40026071	BOLT ASSEMBLY, 1 ø X 2 1/2 A325	41
7	7	C40047007	RINGFILL, 3/8 THICK – 1 ø BOLT	1
			TOTAL WEIGHT LBS	54

TOTAL SECTION WEIGHT – INCLUDES 3 LEGS, BRACING AND HARDWARE KIT	7202

FIELD NOTES

1. THE PART NUMBERS FOR ALL LEGS ARE LOCATED AT THE TOP OF EACH PART.
2. STEP BOLTS PROVIDED FOR (3) LEGS.

UNLESS OTHERWISE SPECIFIED
ALL DIMENSIONS INCLUDE
FINISHES AND ARE IN INCHES

TOLERANCES: FRACTIONS ± 1/16"
ANGLES ± 1/2 DEG.
DECIMALS ± .010"

MATERIAL:

TOLERANCES DO NOT APPLY TO RAW MATERIAL

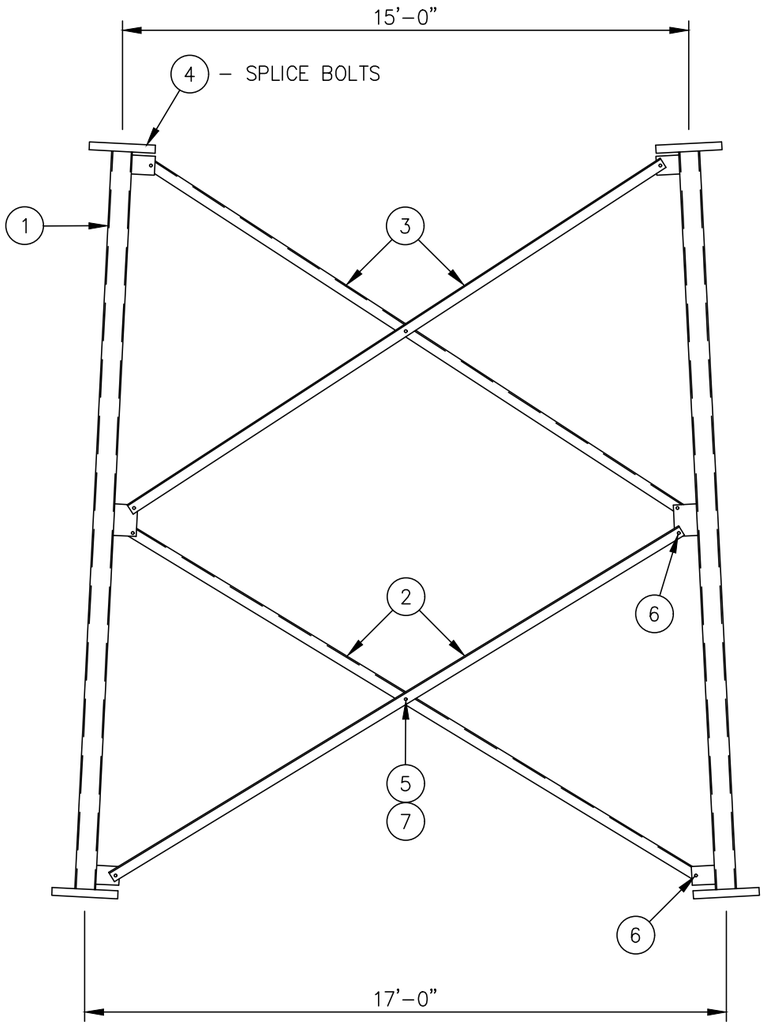
REV	DATE	DRW	CHK	DESCRIPTION

Sabre Industries™
INNOVATION DELIVERED

CONFIDENTIAL
This document and the information contained herein is the confidential trade secret property of Sabre Industries, Inc. ("Sabre") and must not be reproduced, copied or used, in whole or in part, for any purpose without the prior written consent of Sabre.
© 2025 Sabre Industries, Inc. All rights reserved.

SECTION ERECTION: 13 13–T8101796
SITE: LOWER PROSPECT, OR
CUSTOMER: MARION COUNTY OREGON

JOB NO. 563426		SIZE	DRAWING NO.	REV
DATE	07/31/25	B	563426–S13	0
DRAWN BY	KMP			
CHECKED BY	ZAK		SCALE NONE	PAGE 1 OF 1



ELEVATION VIEW

LIST OF MATERIAL

12 LEGS

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
1	3	12–T11610309	SECT. 12 LEG 10 3/4 ø X .500 X 20'–0 5/16 W/STEP BOLTS	4336
			TOTAL WEIGHT LBS	4336

12–T8101797 BRACING KIT

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
2	6	TS11275	ANGLE, DIAGONAL 4 X 3 1/2 X 3/8 X 17'–10 7/16	1015
3	6	TS11276	ANGLE, DIAGONAL 4 X 3 1/2 X 3/8 X 17'–0 9/16	968
			TOTAL WEIGHT LBS	1983

SPLICE BOLTS

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
4	25	C40026115	BOLT ASSEMBLY, 1 1/2 ø X 6 1/2 A325	152
			TOTAL WEIGHT LBS	152

TK00353 HARDWARE KIT

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
5	7	C40026073	BOLT ASSEMBLY, 1 ø X 3 A325	12
6	25	C40026071	BOLT ASSEMBLY, 1 ø X 2 1/2 A325	41
7	7	C40047007	RINGFILL, 3/8 THICK – 1" ø BOLT	1
			TOTAL WEIGHT LBS	54

TOTAL SECTION WEIGHT – INCLUDES 3 LEGS, BRACING AND HARDWARE KIT	6525

FIELD NOTES

1. THE PART NUMBERS FOR ALL LEGS ARE LOCATED AT THE TOP OF EACH PART.
2. STEP BOLTS PROVIDED FOR (3) LEGS.

UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS INCLUDE FINISHES AND ARE IN INCHES

TOLERANCES: FRACTIONS ± 1/16" ANGLES ± 1/2 DEG. DECIMALS ± .010"

MATERIAL:

TOLERANCES DO NOT APPLY TO RAW MATERIAL

REV	DATE	DRW	CHK	DESCRIPTION

Sabre Industries™ INNOVATION DELIVERED

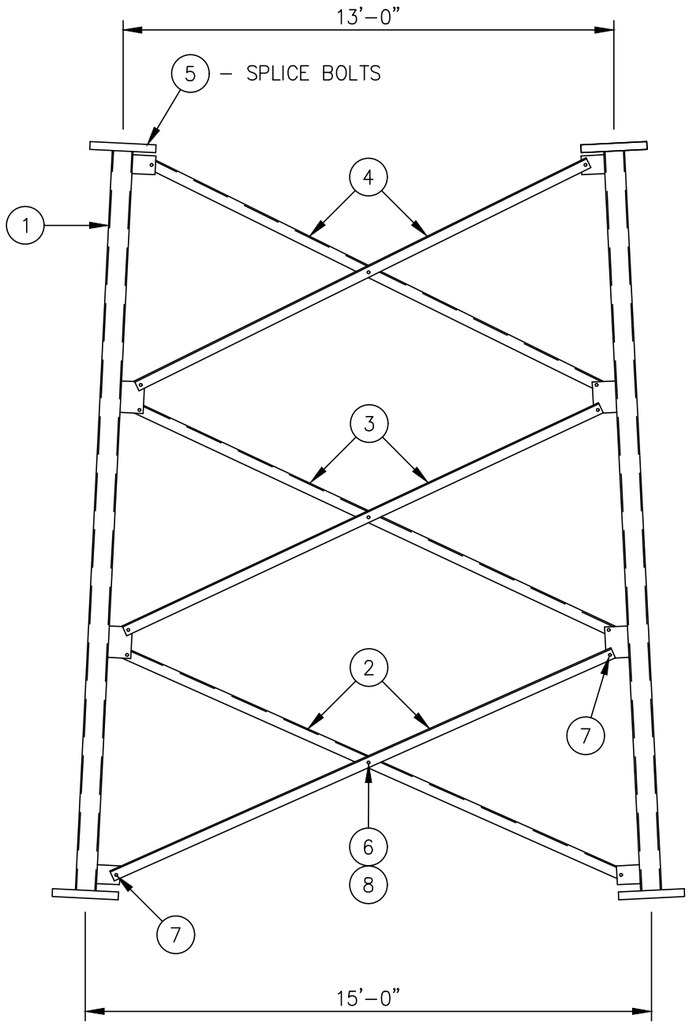
CONFIDENTIAL
This document and the information contained herein is the confidential trade secret property of Sabre Industries, Inc. ("Sabre") and must not be reproduced, copied or used, in whole or in part, for any purpose without the prior written consent of Sabre.
© 2025 Sabre Industries, Inc. All rights reserved.

SECTION ERECTION: 12 12–T8101797

SITE: LOWER PROSPECT, OR

CUSTOMER: MARION COUNTY OREGON

JOB NO. 563426		SIZE	DRAWING NO.	REV
DATE	07/31/25	B	563426–S12	0
DRAWN BY	KMP			
CHECKED BY	ZAK		SCALE NONE	PAGE 1 OF 1



ELEVATION VIEW

LIST OF MATERIAL

11–LEGS

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
1	3	11–T1169117	SECT. 11 LEG 8 5/8 ø X .500 X 20'–0 5/16	3504
			TOTAL WEIGHT LBS	3504

11–T8101372 BRACING KIT

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
2	6	TS08563	ANGLE, DIAGONAL 4 X 3 1/2 X 3/8 X 14'–7 7/8	832
3	6	TS08562	ANGLE, DIAGONAL 4 X 3 1/2 X 3/8 X 14'–0 13/16	799
4	6	TS08561	ANGLE, DIAGONAL 4 X 3 1/2 X 3/8 X 13'–5 13/16	766
			TOTAL WEIGHT LBS	2397

SPLICE BOLTS

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
5	19	C40026093	BOLT ASSEMBLY, 1 1/4 ø X 5 A325	65
			TOTAL WEIGHT LBS	65

TK00430 HARDWARE KIT

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
6	10	C40026073	BOLT ASSEMBLY, 1 ø X 3 A325	18
7	38	C40026071	BOLT ASSEMBLY, 1 ø X 2 1/2 A325	62
8	10	C40047007	RINGFILL, 3/8 THICK – 1 ø BOLT	1
			TOTAL WEIGHT LBS	81

TOTAL SECTION WEIGHT – INCLUDES 3 LEGS, BRACING AND HARDWARE KIT	6047

FIELD NOTES

1. THE PART NUMBERS FOR ALL LEGS ARE LOCATED AT THE TOP OF EACH PART.
2. STEP BOLTS PROVIDED FOR (3) LEGS.

UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS INCLUDE FINISHES AND ARE IN INCHES

TOLERANCES: FRACTIONS ± 1/16" ANGLES ± 1/2 DEG. DECIMALS ± .010"

MATERIAL:

TOLERANCES DO NOT APPLY TO RAW MATERIAL

REV	DATE	DRW	CHK	DESCRIPTION

Sabre Industries™ INNOVATION DELIVERED

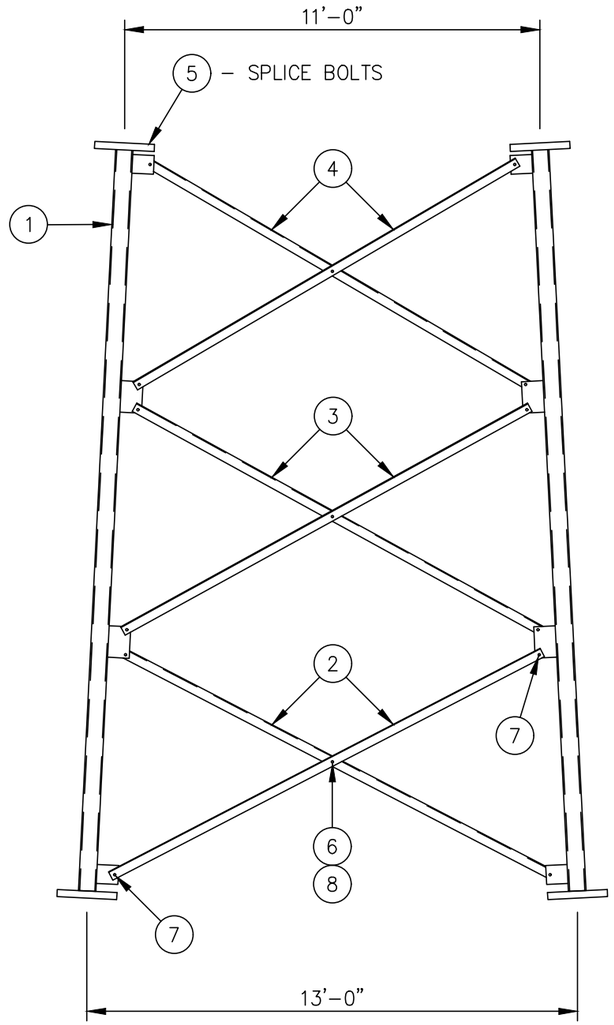
CONFIDENTIAL
This document and the information contained herein is the confidential trade secret property of Sabre Industries, Inc. ("Sabre") and must not be reproduced, copied or used, in whole or in part, for any purpose without the prior written consent of Sabre.
© 2025 Sabre Industries, Inc. All rights reserved.

SECTION ERECTION: 11 11–T8101372

SITE: LOWER PROSPECT, OR

CUSTOMER: MARION COUNTY OREGON

JOB NO. 563426		SIZE	DRAWING NO.	REV
DATE	07/31/25	B	563426–S11	0
DRAWN BY	KMP			
CHECKED BY	ZAK		SCALE None	PAGE 1 OF 1



ELEVATION VIEW

LIST OF MATERIAL

10–LEGS

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
1	3	10–T1169819	SECT. 10 LEG 8 5/8ø X .322 X 20'–0 5/16 W/STEP BOLTS	2270
			TOTAL WEIGHT LBS	2270

10–T8100820 BRACING KIT

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
2	6	TS05779	ANGLE, DIAGONAL 4 X 4 X 5/16 X 12'–10 3/8	658
3	6	TS05780	ANGLE, DIAGONAL 4 X 4 X 5/16 X 12'–3 1/2	629
4	6	TS05781	ANGLE, DIAGONAL 4 X 4 X 5/16 X 11'–8 3/4	600
			TOTAL WEIGHT LBS	1887

SPLICE BOLTS

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
5	19	C40026094	BOLT ASSEMBLY, 1 1/4 ø X 5 1/2 A325	69
			TOTAL WEIGHT LBS	69

TK00437 HARDWARE KIT

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
6	10	C40026072	BOLT ASSEMBLY, 1 ø X 2 3/4 A325	17
7	37	C40026071	BOLT ASSEMBLY, 1 ø X 2 1/2 A325	61
8	10	C40047010	RINGFILL, 1/2 THICK – 1 ø BOLT	1
			TOTAL WEIGHT LBS	79

TOTAL SECTION WEIGHT – INCLUDES (3) LEGS, BRACING AND HARDWARE KIT	4305

FIELD NOTES

1. THE PART NUMBERS FOR ALL LEGS AND DIAGONALS ARE LOCATED AT THE TOP OF EACH PART.
2. STEP BOLTS PROVIDED FOR (3) LEGS.

UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS INCLUDE FINISHES AND ARE IN INCHES

TOLERANCES: FRACTIONS ± 1/16" ANGLES ± 1/2 DEG. DECIMALS ± .010"

MATERIAL:

TOLERANCES DO NOT APPLY TO RAW MATERIAL

REV	DATE	DRW	CHK	DESCRIPTION

Sabre Industries™ INNOVATION DELIVERED

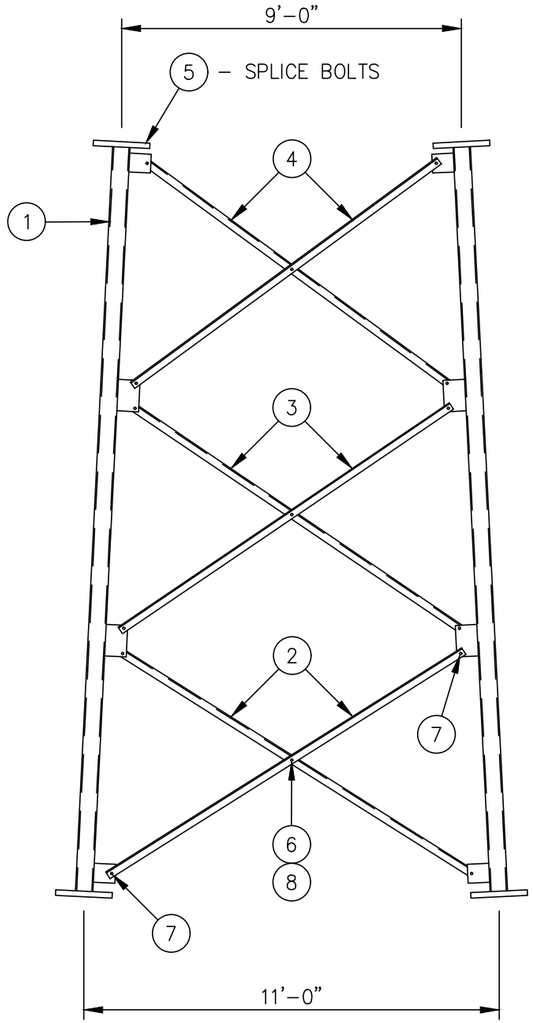
CONFIDENTIAL
This document and the information contained herein is the confidential trade secret property of Sabre Industries, Inc. ("Sabre") and must not be reproduced, copied or used, in whole or in part, for any purpose without the prior written consent of Sabre.
© 2025 Sabre Industries, Inc. All rights reserved.

SECTION ERECTION: 10 10–T8100820

SITE: LOWER PROSPECT, OR

CUSTOMER: MARION COUNTY OREGON

JOB NO. 563426		SIZE	DRAWING NO.	REV
DATE	07/31/25	B	563426–S10	0
DRAWN BY	KMP			
CHECKED BY	ZAK		SCALE None	PAGE 1 OF 1



ELEVATION VIEW

LIST OF MATERIAL

09–LEGS

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
1	3	09–T1169975	SECT. 9 LEG 5 9/16ø X .375 X 20'–0 5/16 W/STEP BOLTS	1758
			TOTAL WEIGHT LBS	1758

09–T8100384 BRACING KIT

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
2	6	TS03786	ANGLE, DIAGONAL 3 1/2 X 3 X 3/8 X 11'–5 3/8	564
3	6	TS03787	ANGLE, DIAGONAL 3 1/2 X 3 X 3/8 X 10'–10 13/16	537
4	6	TS03788	ANGLE, DIAGONAL 3 1/2 X 3 X 3/8 X 10'–4 7/16	511
			TOTAL WEIGHT LBS	1612

SPLICE BOLTS

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
5	19	C40026078	BOLT ASSEMBLY, 1 ø X 4 1/4 A325	41
			TOTAL WEIGHT LBS	41

TK00269 HARDWARE KIT

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
6	10	C40026045	BOLT ASSEMBLY, 3/4 ø X 2 1/2 A325	8
7	38	C40026044	BOLT ASSEMBLY, 3/4 ø X 2 1/4 A325	28
8	10	C40047004	RINGFILL, 3/8 THICK – 3/4 ø BOLT	1
			TOTAL WEIGHT LBS	37

TOTAL SECTION WEIGHT – INCLUDES 3 LEGS, BRACING AND HARDWARE KIT	3448

FIELD NOTES

1. THE PART NUMBERS FOR ALL LEGS ARE LOCATED AT THE TOP OF EACH PART.
2. STEP BOLTS PROVIDED FOR (3) LEG ONLY.

UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS INCLUDE FINISHES AND ARE IN INCHES

TOLERANCES: FRACTIONS ± 1/16" ANGLES ± 1/2 DEG. DECIMALS ± .010"

MATERIAL:

TOLERANCES DO NOT APPLY TO RAW MATERIAL

REV	DATE	DRW	CHK	DESCRIPTION

Sabre Industries™ INNOVATION DELIVERED

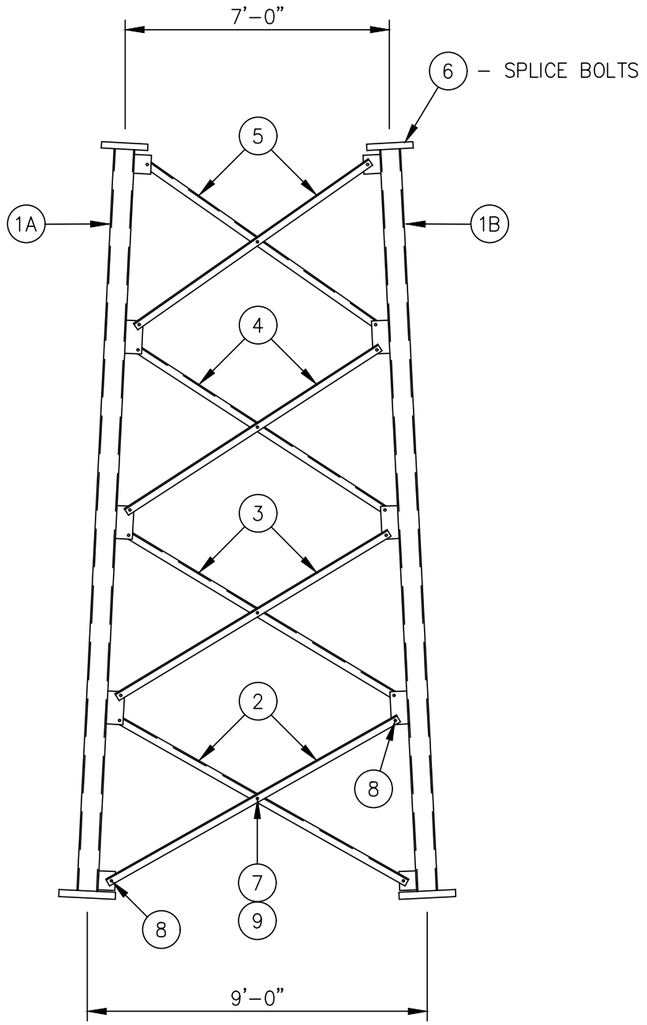
CONFIDENTIAL
This document and the information contained herein is the confidential trade secret property of Sabre Industries, Inc. ("Sabre") and must not be reproduced, copied or used, in whole or in part, for any purpose without the prior written consent of Sabre.
© 2025 Sabre Industries, Inc. All rights reserved.

SECTION ERECTION: 09 09–T8100384

SITE: LOWER PROSPECT, OR

CUSTOMER: MARION COUNTY OREGON

JOB NO. 563426		SIZE	DRAWING NO.	REV
DATE	07/31/25	B	563426–S09	0
DRAWN BY	KMP			
CHECKED BY	ZAK		SCALE NONE	PAGE 1 OF 1



ELEVATION VIEW

LIST OF MATERIAL

08–LEGS

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
1A	1	08–T1168025	SECT.8 LEG 4 ø X .318 X 20'–0 5/16 W/ STEP BOLTS	373
1B	2	08–T1168026	SECT.8 LEG 4 ø X .318 X 20'–0 5/16	735
			TOTAL WEIGHT LBS	1108

08–T8100421 BRACING KIT

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
2	6	TS04017	ANGLE, DIAGONAL 2 1/2 X 2 1/2 X 3/8 X 9'–1 13/16	337
3	6	TS04018	ANGLE, DIAGONAL 2 1/2 X 2 1/2 X 3/8 X 8'–8 11/16	322
4	6	TS04019	ANGLE, DIAGONAL 2 1/2 X 2 1/2 X 3/8 X 8'–3 5/8	306
5	6	TS04020	ANGLE, DIAGONAL 2 1/2 X 2 1/2 X 3/8 X 7'–10 11/16	291
			TOTAL WEIGHT LBS	1256

SPLICE BOLTS

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
6	19	C40026078	BOLT ASSEMBLY, 1 ø X 4 1/4 A325	41
			TOTAL WEIGHT LBS	41

TK00348 HARDWARE KIT

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
7	13	C40026045	BOLT ASSEMBLY, 3/4 ø X 2 1/2 A325	10
8	50	C40026044	BOLT ASSEMBLY, 3/4 ø X 2 1/4 A325	37
9	13	C40047004	RINGFILL, 3/8 THICK – 3/4 ø BOLT	2
			TOTAL WEIGHT LBS	49

TOTAL SECTION WEIGHT – INCLUDES 3 LEGS, BRACING AND HARDWARE KIT	2454

FIELD NOTES

1. THE PART NUMBERS FOR ALL LEGS ARE LOCATED AT THE TOP OF EACH PART.
2. STEP BOLTS PROVIDED FOR (1) LEG ONLY.

UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS INCLUDE FINISHES AND ARE IN INCHES

TOLERANCES: FRACTIONS ± 1/16" ANGLES ± 1/2 DEG. DECIMALS ± .010"

MATERIAL:

TOLERANCES DO NOT APPLY TO RAW MATERIAL

REV	DATE	DRW	CHK	DESCRIPTION

Sabre Industries™ INNOVATION DELIVERED

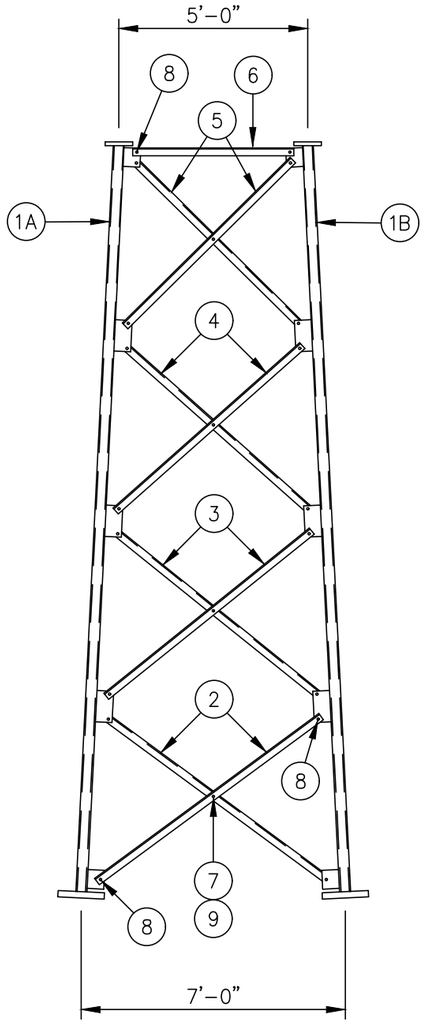
CONFIDENTIAL
This document and the information contained herein is the confidential trade secret property of Sabre Industries, Inc. ("Sabre") and must not be reproduced, copied or used, in whole or in part, for any purpose without the prior written consent of Sabre.
© 2025 Sabre Industries, Inc. All rights reserved.

SECTION ERECTION: 08 08–T8100421

SITE: LOWER PROSPECT, OR

CUSTOMER: MARION COUNTY OREGON

JOB NO. 563426		SIZE	DRAWING NO.	REV
DATE	07/31/25	B	563426–S08	0
DRAWN BY	KMP			
CHECKED BY	ZAK		SCALE NONE	PAGE 1 OF 1



ELEVATION VIEW

LIST OF MATERIAL

07-LEGS

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
1A	1	07-T1165503	SECT. 7 LEG 2 7/8ø X .203 X 20'-0 5/16 W/STEP BOLTS	219
1B	2	07-T1165504	SECT. 7 LEG 2 7/8ø X .203 X 20'-0 5/16	428
			TOTAL WEIGHT LBS	647

07-T8100168 BRACING KIT

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
2	6	TS02040	ANGLE, DIAGONAL 2 X 2 X 5/16 X 7'-5 1/2	182
3	6	TS02039	ANGLE, DIAGONAL 2 X 2 X 5/16 X 7'-0 13/16	173
4	6	TS02038	ANGLE, DIAGONAL 2 X 2 X 5/16 X 6'-8 5/16	163
5	6	TS02037	ANGLE, DIAGONAL 2 X 2 X 5/16 X 6'-3 15/16	155
6	3	TS02036	ANGLE, HORIZONTAL 2 X 2 X 5/16 X 4'-4 3/8	53
			TOTAL WEIGHT LBS	726

TK00146 HARDWARE KIT

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
7	13	C40026024	BOLT ASSEMBLY, 5/8 ø X 2 1/4 A325	7
8	57	C40026023	BOLT ASSEMBLY, 5/8 ø X 2 A325	26
9	13	C40047003	RINGFILL, 3/8 THICK - 5/8 ø BOLT	2
			TOTAL WEIGHT LBS	35

TOTAL SECTION WEIGHT - INCLUDES 3 LEGS, BRACING AND HARDWARE KIT	1408

FIELD NOTES

1. THE PART NUMBERS FOR ALL LEGS ARE LOCATED AT THE TOP OF EACH PART.
2. STEP BOLTS PROVIDED FOR (1) LEG ONLY.

UNLESS OTHERWISE SPECIFIED
ALL DIMENSIONS INCLUDE
FINISHES AND ARE IN INCHES

TOLERANCES: FRACTIONS ± 1/16"
ANGLES ± 1/2 DEG.
DECIMALS ± .010"

MATERIAL:

TOLERANCES DO NOT APPLY TO RAW MATERIAL

REV	DATE	DRW	CHK	DESCRIPTION

Sabre Industries™
INNOVATION DELIVERED

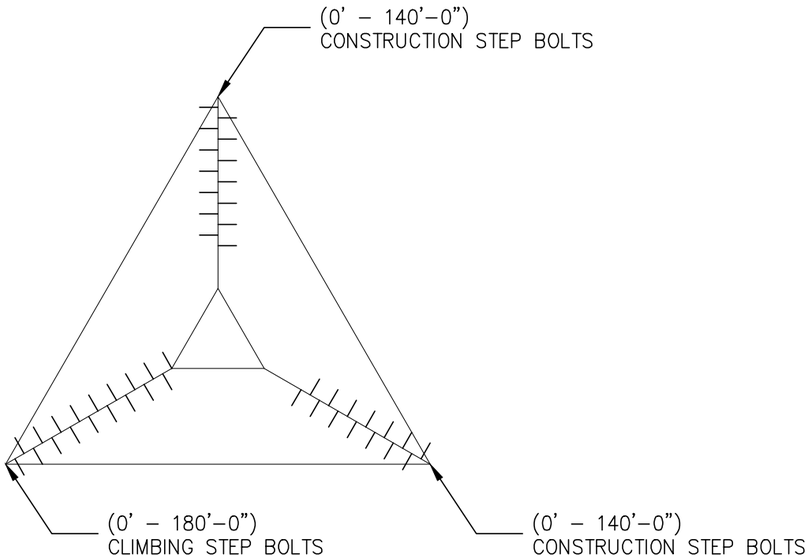
CONFIDENTIAL
This document and the information contained herein is the confidential trade secret property of Sabre Industries, Inc. ("Sabre") and must not be reproduced, copied or used, in whole or in part, for any purpose without the prior written consent of Sabre.
© 2025 Sabre Industries, Inc. All rights reserved.

SECTION ERECTION: 07 07-T8100168
SITE: LOWER PROSPECT, OR
CUSTOMER: MARION COUNTY OREGON

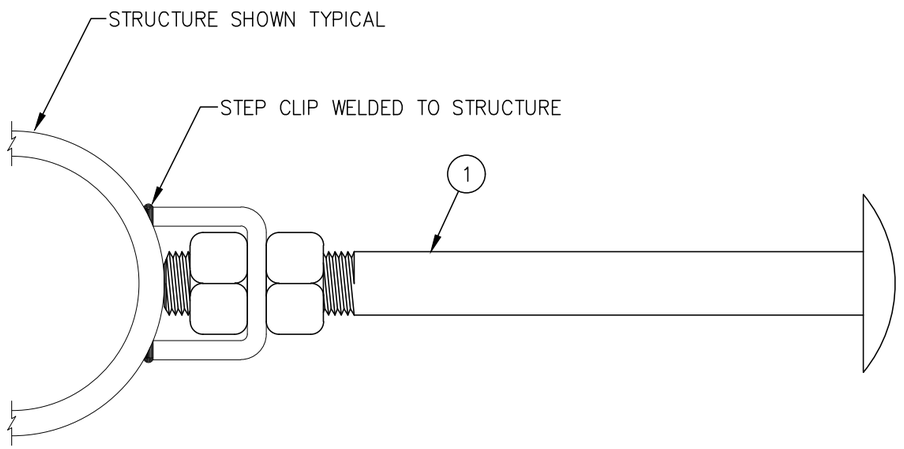
JOB NO. 563426		SIZE	DRAWING NO.	REV
DATE	07/31/25	B	563426-S07	0
DRAWN BY	KMP			
CHECKED BY	ZAK		SCALE NONE	PAGE 1 OF 1

FIELD NOTE:
SEE CUSTOMER REQUESTS FOR PROPER LEG POSITIONING OF ALL STEP BOLTS.

CLIMBING/CONSTRUCTION STEP BOLTS				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
1	368	C40044017	STEP BOLT ASSEMBLY, 5/8 ø X 7 H.D.G.	368
			TOTAL WEIGHT LBS	368



TOWER PLAN VIEW



NOTE:
STEP BOLTS PROVIDED FOR CONSTRUCTION PURPOSES ARE FOR EXPERIENCED TOWER ERECTORS ONLY AND SHOULD NEVER BE USED WITHOUT PROPER SAFETY EQUIPMENT. FOR STEP BOLTS SUPPLIED AS A FORM OF CLIMBING IN TYPICAL COMMUNICATION ACTIVITY, SABRE INDUSTRIES RECOMMENDS A FALL PROTECTION PLAN BE COMPLETED BY A COMPETENT PERSON AND FOLLOWED FOR EACH CLIMB.

UNLESS OTHERWISE SPECIFIED
ALL DIMENSIONS INCLUDE FINISHES AND ARE IN INCHES
TOLERANCES: FRACTIONS ± 1/16"
ANGLES ± 1/2 DEG.
DECIMALS ± .010"

MATERIAL:
TOLERANCES DO NOT APPLY TO RAW MATERIAL

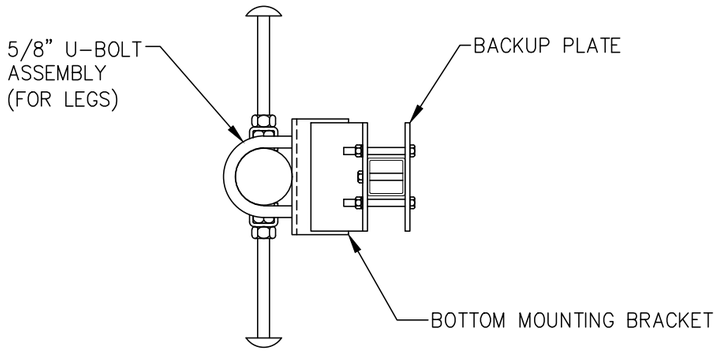
REV	DATE	DRW	CHK	DESCRIPTION

Sabre Industries™
INNOVATION DELIVERED

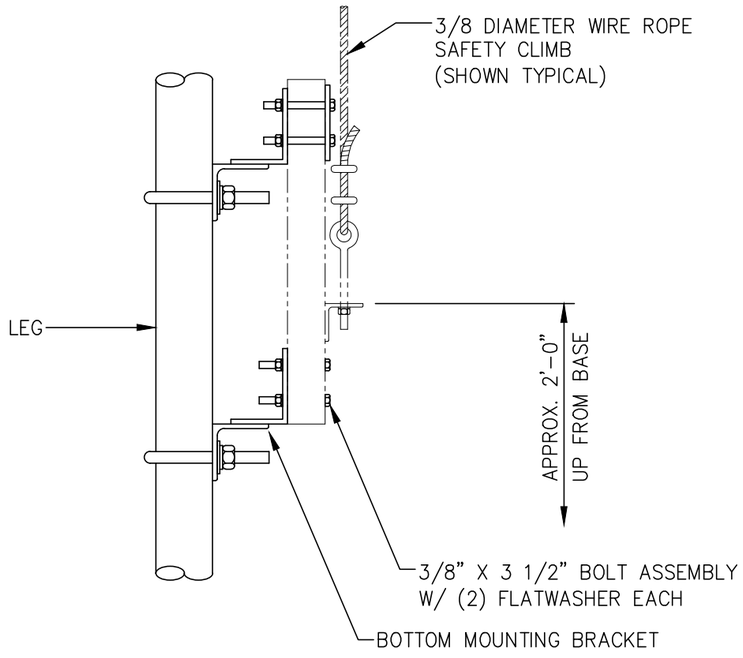
CONFIDENTIAL
This document and the information contained herein is the confidential trade secret property of Sabre Industries, Inc. ("Sabre") and must not be reproduced, copied or used, in whole or in part, for any purpose without the prior written consent of Sabre.
© 2025 Sabre Industries, Inc. All rights reserved.

STEP BOLT ATTACHMENT INSTALLATION:
SITE: LOWER PROSPECT, OR
CUSTOMER: MARION COUNTY OREGON

JOB NO. 563426		SIZE	DRAWING NO.	REV
DATE	08/07/25	B	563426–SB1	0
DRAWN BY	KMP			
CHECKED BY	ZAK		SCALE NONE	PAGE 1 OF 1



PLAN



ELEVATION

EACH KIT CONSISTS OF:

(2) BOTTOM MOUNTING BRACKET
(1) BACKUP PLATE
(2) 5/8" U-BOLT ASSEMBLY FOR MOUNTING TO LEG
(6) 3/8"ø X 3 1/2" BOLT ASSEMBLY
(12) 3/8"ø FLATWASHER

BOTTOM MOUNTING BRACKET KITS

KIT NUMBER	LEG DIAMETER	5/8" U-BOLT ASSEMBLY	3/8" BOLT ASSEMBLY	3/8"ø FLATWASHER	BOTTOM MOUNTING BRACKET	BACKUP PLATE	KIT WEIGHT
C30011054	1 1/4"	C40034041	C40024012	C40031001	CW00346	CS00167	16.2#
C30011055	1 1/2"	C40034020	C40024012	C40031001	CW00346	CS00167	16.4#
C30011056	1 3/4"	C40034021	C40024012	C40031001	CW00346	CS00167	16.5#
C30011031	2"	C40034022	C40024012	C40031001	CW00049	CS00167	17.0#
C30011032	2 1/4" OR 2 3/8"	C40034023	C40024012	C40031001	CW00049	CS00167	17.1#
C30011033	2 1/2"	C40034024	C40024012	C40031001	CW00049	CS00167	17.2#
C30011034	2 3/4" OR 2 7/8"	C40034025	C40024012	C40031001	CW00049	CS00167	17.3#
C30011035	3"	C40034026	C40024012	C40031001	CW00049	CS00167	17.4#
C30011036	3 1/4"	C40034027	C40024012	C40031001	CW00050	CS00167	18.5#
C30011037	3 1/2"	C40034028	C40024012	C40031001	CW00050	CS00167	18.6#
C30011038	3 3/4"	C40034029	C40024012	C40031001	CW00050	CS00167	18.8#
C30011039	4"	C40034030	C40024012	C40031001	CW00050	CS00167	18.9#
C30011040	4 1/4"	C40034031	C40024012	C40031001	CW00050	CS00167	19.0#
C30011041	4 1/2"	C40034032	C40024012	C40031001	CW00051	CS00167	20.3#
C30011042	4 3/4"	C40034033	C40024012	C40031001	CW00051	CS00167	20.4#
C30011043	5"	C40034034	C40024012	C40031001	CW00051	CS00167	20.5#
C30011044	5 1/4" – 5 9/16"	C40034035	C40024012	C40031001	CW00052	CS00167	21.9#
C30011057	5 3/4"	C40034044	C40024012	C40031001	CW00052	CS00167	22.0#
C30011058	6"	C40034064	C40024012	C40031001	CW00052	CS00167	22.0#
C30011053	6 1/4"	C40034068	C40024012	C40031001	CW00052	CS00167	22.1#
C30011045	6 5/8"	C40034036	C40024012	C40031001	CW00052	CS00167	22.3#
C30011059	6 3/4"	C40034093	C40024012	C40031001	CW00204	CS00167	23.2#
C30011050	7 OR 7 1/4"	C40034065	C40024012	C40031001	CW00204	CS00167	25.0#
C30011060	7 1/2"	C40034127	C40024012	C40031001	CW00204	CS00167	23.7#
C30011104	7 3/4"	C40034099	C40024012	C40031001	CW00204	CS00167	23.8#
C30011046	8 5/8"	C40034037	C40024012	C40031001	CW00053	CS00167	33.0#
C30011062	8 3/4"	C40034152	C40024012	C40031001	CW01346	CS00167	30.9#
C30011063	9"	C40034200	C40024012	C40031001	CW01362	CS00167	31.5#
C30011061	9 1/2" OR 9 5/8"	C40034130	C40024012	C40031001	CW01242	CS00167	29.3#
C30011047	10 3/4"	C40034038	C40024012	C40031001	CW00054	CS00167	35.4#
C30011048	12 3/4"	C40034039	C40024012	C40031001	CW00053	CS00167	34.9#
C30011049	14"	C40034040	C40024012	C40031001	CW00054	CS00167	36.9#
C30011051	16"	C40034042	C40024012	C40031001	CW00208	CS00167	42.6#
C30011052	18"	C40034043	C40024012	C40031001	CW00208	CS00167	43.5#

REV	DATE	DRW	CHK	DESCRIPTION
14	10/13/17	RWM	MWR	REVISED 3/8 DIAMETER WIRE ROPE VERBIAGE
13	8/14/17	DPJ	ZAK	ADDED KIT FOR 9" O.D. LEG.
12	4/24/17	DPJ	ZAK	ADDED KIT FOR 8 3/4" O.D. LEG.
11	9/30/14	DPJ	ZAK	ADDED KIT FOR 9 1/2" & 9 5/8" O.D. LEGS.
10	5/22/14	KLE	EK	ADDED KIT FOR 7 1/2" O.D. LEG.
9	10/10/11	DPJ	CE	ADDED KIT FOR 7 3/4" O.D. LEG.
8	7/26/11	DPJ	CHH	ADDED KIT FOR 6 3/4" O.D. LEG.
7	5/29/08	DPJ	ZAK	ADDED KIT FOR 6" O.D. LEG.
6	4/29/08	LRS	CE	ADDED KIT FOR 5 3/4" O.D. LEG.
5	3/03/08	LRS	ZAK	ADDED KIT FOR 6 1/4" O.D. LEG
4	1/10/08	LRS	CE	CHANGED LEG DIAMETER FOR C30011044 KIT (WAS 5 1/2" OR 5 9/16")
3	12/27/04	DLW	DEL	ADDED KITS FOR 1 1/4" TO 1 3/4" O.D. LEGS.
2	3/3/04	KLE	DLW	ADDED KITS FOR 16" O.D. & 18" O.D. LEGS.
1	2/19/04	KLE	DLW	ADDED C30011050 & ADDED LEADING ZERO.

UNLESS OTHERWISE SPECIFIED
ALL DIMENSIONS INCLUDE FINISHES AND ARE IN INCHES
TOLERANCES: FRACTIONS ± 1/16"
ANGLES ± 1/2 DEG.
DECIMALS ± .010"

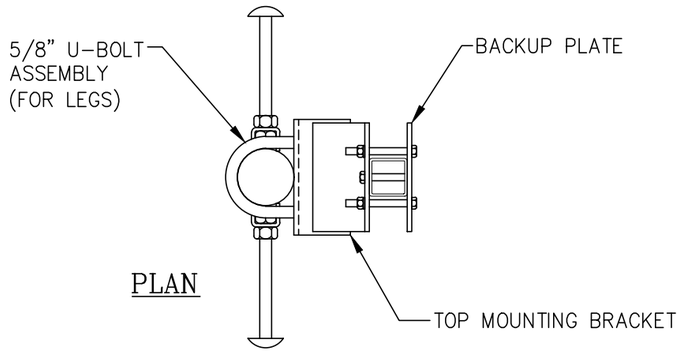
MATERIAL:
TOLERANCES DO NOT APPLY TO RAW MATERIAL

Sabre Industries™
INNOVATION DELIVERED

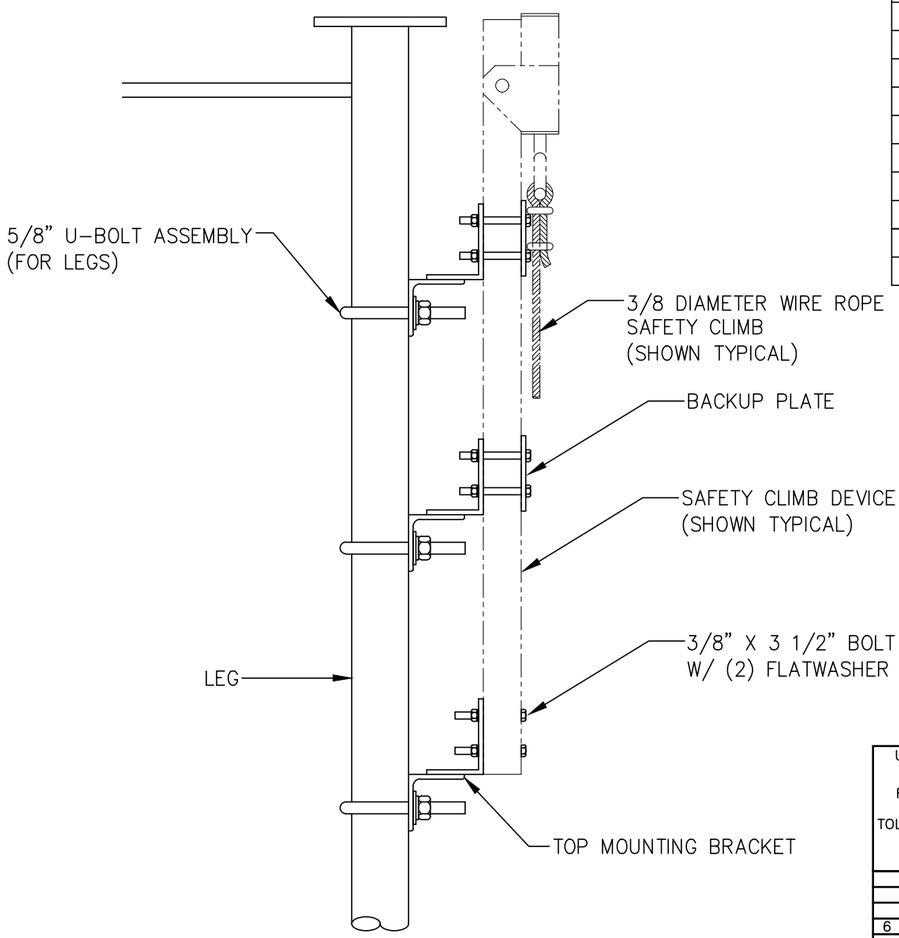
CONFIDENTIAL
This document and the information contained herein is the confidential trade secret property of Sabre Industries, Inc. ("Sabre") and must not be reproduced, copied or used, in whole or in part, for any purpose without the prior written consent of Sabre.
© 2022 Sabre Industries, Inc. All rights reserved.

3/8 DIAMETER WIRE ROPE SAFETY CLIMB BOTTOM MOUNTING BRACKET

		SIZE	DRAWING NO.	REV
DATE	4/11/02	B	C30011-1	14
DRAWN BY	KLE			
CHECKED BY	DLW	SCALE None	PAGE 1 OF 1	



PLAN



ELEVATION

TOP MOUNTING BRACKET KITS

KIT NUMBER	LEG DIAMETER	5/8" U-BOLT ASSEMBLY	3/8" BOLT ASSEMBLY	3/8"ø FLATWASHER	TOP MOUNTING BRACKET	BACKUP PLATE	KIT WEIGHT
C30011017	1 1/4"	C40034041	C40024012	C40031001	CW00346	CS00167	25.3#
C30011018	1 1/2"	C40034020	C40024012	C40031001	CW00346	CS00167	25.6#
C30011019	1 3/4"	C40034021	C40024012	C40031001	CW00346	CS00167	25.8#
C30011001	2"	C40034022	C40024012	C40031001	CW00049	CS00167	26.5#
C30011002	2 1/4" OR 2 3/8"	C40034023	C40024012	C40031001	CW00049	CS00167	26.8#
C30011003	2 1/2"	C40034024	C40024012	C40031001	CW00049	CS00167	26.9#
C30011004	2 3/4" OR 2 7/8"	C40034025	C40024012	C40031001	CW00049	CS00167	27.1#
C30011005	3"	C40034026	C40024012	C40031001	CW00049	CS00167	27.2#
C30011006	3 1/4"	C40034027	C40024012	C40031001	CW00050	CS00167	28.9#
C30011007	3 1/2"	C40034028	C40024012	C40031001	CW00050	CS00167	29.1#
C30011008	3 3/4"	C40034029	C40024012	C40031001	CW00050	CS00167	29.2#
C30011009	4"	C40034030	C40024012	C40031001	CW00050	CS00167	29.4#
C30011010	4 1/4"	C40034031	C40024012	C40031001	CW00050	CS00167	29.6#
C30011011	4 1/2"	C40034032	C40024012	C40031001	CW00051	CS00167	31.6#
C30011012	4 3/4"	C40034033	C40024012	C40031001	CW00051	CS00167	31.8#
C30011013	5"	C40034034	C40024012	C40031001	CW00051	CS00167	31.9#
C30011014	5 1/2" OR 5 9/16"	C40034035	C40024012	C40031001	CW00052	CS00167	34.0#
C30011015	6 5/8"	C40034036	C40024012	C40031001	CW00052	CS00167	34.6#
C30011020	8 5/8"	C40034037	C40024012	C40031001	CW00053	CS00167	50.5#
C30011021	12 3/4"	C40034039	C40024012	C40031001	CW00053	CS00167	53.4#

NOTES:

1. MOUNTING BRACKET SHOULD BE INSTALLED IN A MANNER THAT WILL ENSURE THE WIRE ROPE WILL NOT BE DAMAGED.
2. IF THERE IS A MOUNT AT THE TOP OF THE TOWER THAT WOULD INTERFERE WITH THE BRACKET OR SAFETY CLIMB, THE TOP MOUNTING BRACKET SHOULD BE INSTALLED JUST BELOW THE MOUNT.

EACH KIT CONSISTS OF

(3) TOP MOUNTING BRACKET
(2) BACKUP PLATE
(3) 5/8" U-BOLT ASSEMBLY FOR MOUNTING TO LEG
(10) 3/8"ø X 3 1/2" BOLT ASSEMBLY
(20) 3/8"ø FLATWASHER

UNLESS OTHERWISE SPECIFIED
ALL DIMENSIONS INCLUDE FINISHES AND ARE IN INCHES
TOLERANCES: FRACTIONS ± 1/16"
ANGLES ± 1/2 DEG.
DECIMALS ± .010"

MATERIAL:
TOLERANCES DO NOT APPLY TO RAW MATERIAL

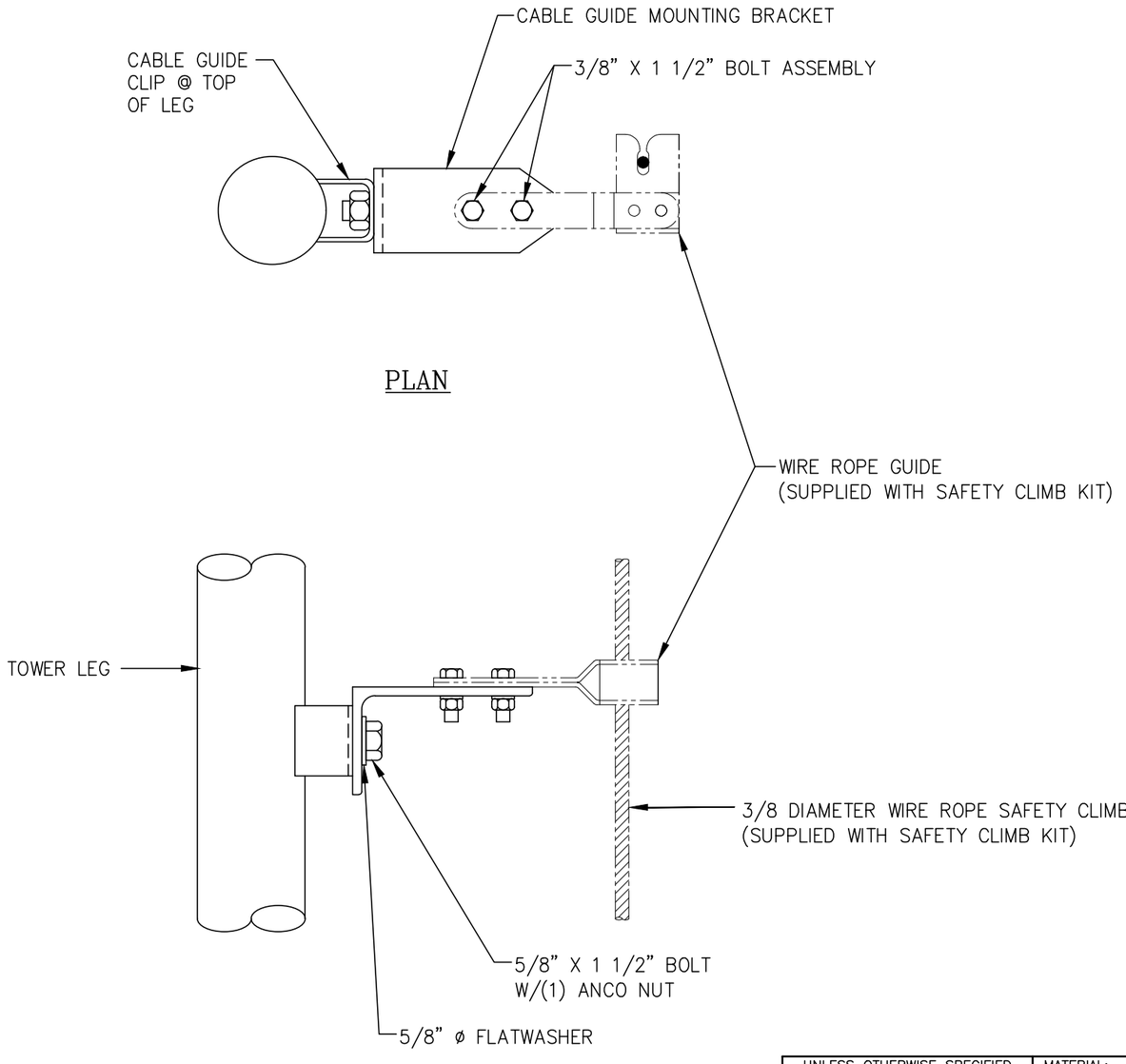
REV	DATE	DRW	CHK	DESCRIPTION
6	10/13/17	RWM	MWR	REVISED 3/8 DIAMETER WIRE ROPE VERBIAGE AND REVISED/ADDED NOTES.
5	7/2/10	CHH	HHC	ADDED KIT FOR 12 3/4" O.D. LEG.
4	11/2/09	DPJ	ZAK	ADDED KIT FOR 8 5/8" O.D. LEG.
3	12/27/04	DLW	DEL	ADDED KITS FOR 1 1/4" TO 1 3/4" O.D. LEGS
2	3/4/04	KLE	KLE	REMOVED DASHES
1	2/19/04	KLE	DLW	ADDED LEADING ZERO

Sabre Industries™
INNOVATION DELIVERED

CONFIDENTIAL
This document and the information contained herein is the confidential trade secret property of Sabre Industries, Inc. ("Sabre") and must not be reproduced, copied or used, in whole or in part, for any purpose without the prior written consent of Sabre.
© 2022 Sabre Industries, Inc. All rights reserved.

3/8 DIAMETER WIRE ROPE SAFETY CLIMB TOP MOUNTING BRACKET

		SIZE	DRAWING NO.	REV
DATE	4/12/02	B	C30011-2	6
DRAWN BY	KLE			
CHECKED BY	DLW	SCALE None	PAGE 1 OF 1	



C30003001 SAFETY CLIMB CABLE GUIDE MOUNTING BRACKET				
ITEM	QTY.	PART. NO.	DESCRIPTION	WEIGHT
1	1	CS00795	ANGLE, SAFETY CLIMB CABLE GUIDE SUPPORT	1.4#
2	1	C40126021	BOLT, 5/8 X 1 1/2 A325	0.3#
3	1	C40028003	NUT, ANCO 5/8" ø	0.1#
4	1	C40031003	FLATWASHER, 5/8" ø	0.1#
5	2	C40024004	BOLT ASSEMBLY, 3/8 X 1 1/2 GR. 5	0.2#
			TOTAL WEIGHT	2.1#

EACH KIT CONSISTS OF

(1) CABLE GUIDE MOUNTING BRACKET
(1) 5/8" X 1 1/2" BOLT FOR MOUNTING TO LEG
(1) 5/8" ANCO NUT FOR 5/8" BOLT
(1) 5/8" FLATWASHER
(2) 3/8"ø X 1 1/2" BOLT ASSEMBLY

UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS INCLUDE FINISHES AND ARE IN INCHES

TOLERANCES: FRACTIONS ± 1/16" ANGLES ± 1/2 DEG. DECIMALS ± .010"

MATERIAL:

TOLERANCES DO NOT APPLY TO RAW MATERIAL

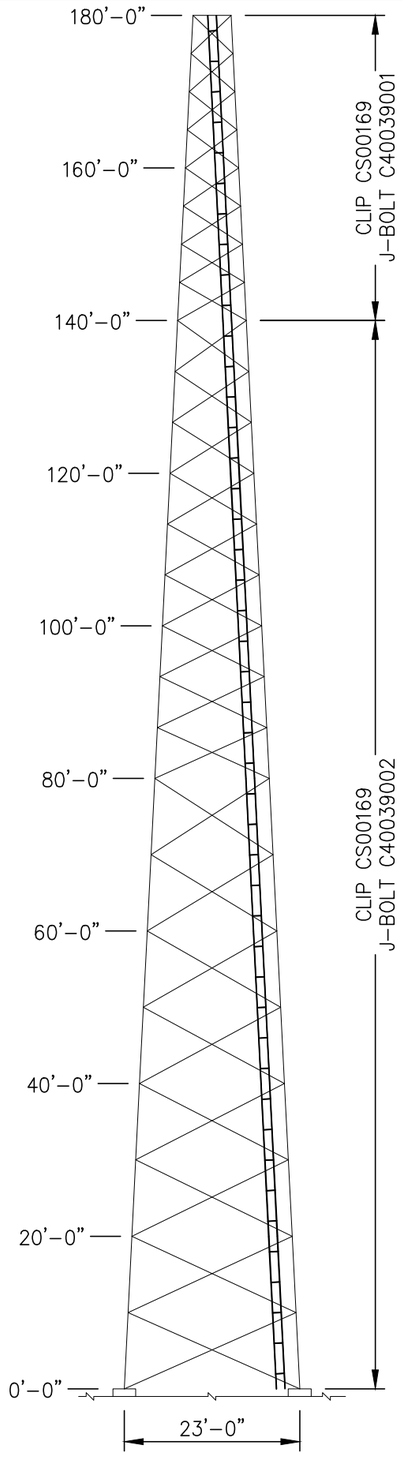
REV	DATE	DRW	CHK	DESCRIPTION
4	10/13/17	RWM	MWR	REVISED 3/8 DIAMETER WIRE ROPE VERBIAGE
3	10/6/11	CHH	RWM	REVISED MOUNTING BOLT WAS C40126019 & ADDED FLATWASHER C40031003
2	4/12/06	CHH	HHC	CHANGED PART NO. ITEM 2 (WAS C40998050).
1	2/17/06	MJM	ZAK	CORRECTED ITEM 3 PART NO. (WAS C40028004).

Sabre Industries™ INNOVATION DELIVERED

CONFIDENTIAL
This document and the information contained herein is the confidential trade secret property of Sabre Industries, Inc. ("Sabre") and must not be reproduced, copied or used, in whole or in part, for any purpose without the prior written consent of Sabre.
© 2022 Sabre Industries, Inc. All rights reserved.

3/8 DIAMETER WIRE ROPE SAFETY CLIMB CABLE GUIDE MOUNTING BRACKET

		SIZE	DRAWING NO.	REV
DATE	8/4/04	B	C30003001	4
DRAWN BY	CHH			
CHECKED BY	ZAK	SCALE None	PAGE 1 OF 1	



ELEVATION VIEW

WAVEGUIDE LADDER				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
1	18	CS00146	ANGLE, WAVEGUIDE LADDER RAIL 20 FT. W/4 FT. RUNG SPC	540
2	45	CS01619	ANGLE, WAVEGUIDE SUPPORT (6 HOLE)	95
3	16	CS00037	PLATE, LADDER SPLICE	6
4	42	CS00169	CLIP, LADDER ATTACHMENT	23
			TOTAL WEIGHT LBS	664

LADDER HARDWARE				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
5	34	C40039002	J–BOLT ASSEMBLY, 3/8 ø X 7 1/4 I.L.	12
6	8	C40039001	J–BOLT ASSEMBLY, 3/8 ø X 5 3/4 I.L.	2
7	122	C40024004	BOLT ASSEMBLY, 3/8 ø X 1 1/2 GRD 5	12
			TOTAL WEIGHT LBS	26

FIELD NOTES

1. FROM ELEVATION 0'–0" TO 140'–0" ATTACH WAVEGUIDE LADDER TO EACH TOWER DIAGONAL.
   FROM ELEVATION 140'–0" TO 180'–0" ATTACH WAVEGUIDE LADDER TO EVERY OTHER TOWER DIAGONAL.
2. SEE REFERENCE DWG. 9031861 FOR WAVEGUIDE LADDER INSTALLATION AND ATTACHMENT DETAIL.
3. SEE CUSTOMER REQUESTS FOR PROPER FACE POSITIONING OF ALL LADDERS.
4. WAVEGUIDE LADDERS SHOULD NEVER BE USED AS A CLIMBING OR RIGGING DEVICE.

UNLESS OTHERWISE SPECIFIED
ALL DIMENSIONS INCLUDE
FINISHES AND ARE IN INCHES

TOLERANCES: FRACTIONS ± 1/16"
ANGLES ± 1/2 DEG.
DECIMALS ± .010"

MATERIAL:

TOLERANCES DO NOT APPLY
TO RAW MATERIAL

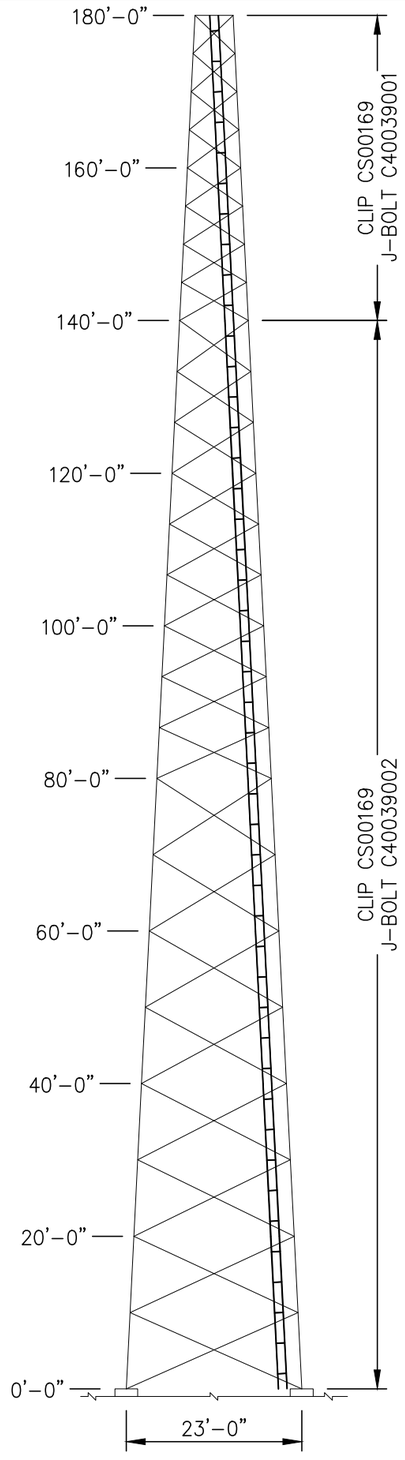
REV	DATE	DRW	CHK	DESCRIPTION

Sabre Industries™
INNOVATION DELIVERED

CONFIDENTIAL
This document and the information contained herein is the confidential trade secret property of Sabre Industries, Inc. ("Sabre") and must not be reproduced, copied or used, in whole or in part, for any purpose without the prior written consent of Sabre.
© 2025 Sabre Industries, Inc. All rights reserved.

W/G LADDER: 180 FT. MODEL S3TL–HD2
SITE: LOWER PROSPECT, OR
CUSTOMER: MARION COUNTY OREGON

JOB NO. 563426		SIZE	DRAWING NO.	REV
DATE	8/7/25	B	563426–WG1	0
DRAWN BY	KMP		SCALE NONE	PAGE 1 OF 1
CHECKED BY	ZAK			



ELEVATION VIEW

WAVEGUIDE LADDER				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
1	18	CS00146	ANGLE, WAVEGUIDE LADDER RAIL 20 FT. W/4 FT. RUNG SPC	540
2	45	CS01619	ANGLE, WAVEGUIDE SUPPORT (6 HOLE)	95
3	16	CS00037	PLATE, LADDER SPLICE	6
4	42	CS00169	CLIP, LADDER ATTACHMENT	23
			TOTAL WEIGHT LBS	664

LADDER HARDWARE				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
5	34	C40039002	J–BOLT ASSEMBLY, 3/8 ø X 7 1/4 I.L.	12
6	8	C40039001	J–BOLT ASSEMBLY, 3/8 ø X 5 3/4 I.L.	2
7	122	C40024004	BOLT ASSEMBLY, 3/8 ø X 1 1/2 GRD 5	12
			TOTAL WEIGHT LBS	26

FIELD NOTES

1. FROM ELEVATION 0'–0" TO 140'–0" ATTACH WAVEGUIDE LADDER TO EACH TOWER DIAGONAL.
   FROM ELEVATION 140'–0" TO 180'–0" ATTACH WAVEGUIDE LADDER TO EVERY OTHER TOWER DIAGONAL.
2. SEE REFERENCE DWG. 9031861 FOR WAVEGUIDE LADDER INSTALLATION AND ATTACHMENT DETAIL.
3. SEE CUSTOMER REQUESTS FOR PROPER FACE POSITIONING OF ALL LADDERS.
4. WAVEGUIDE LADDERS SHOULD NEVER BE USED AS A CLIMBING OR RIGGING DEVICE.

UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS INCLUDE FINISHES AND ARE IN INCHES

TOLERANCES: FRACTIONS ± 1/16" ANGLES ± 1/2 DEG. DECIMALS ± .010"

MATERIAL:

TOLERANCES DO NOT APPLY TO RAW MATERIAL

REV	DATE	DRW	CHK	DESCRIPTION

Sabre Industries™ INNOVATION DELIVERED

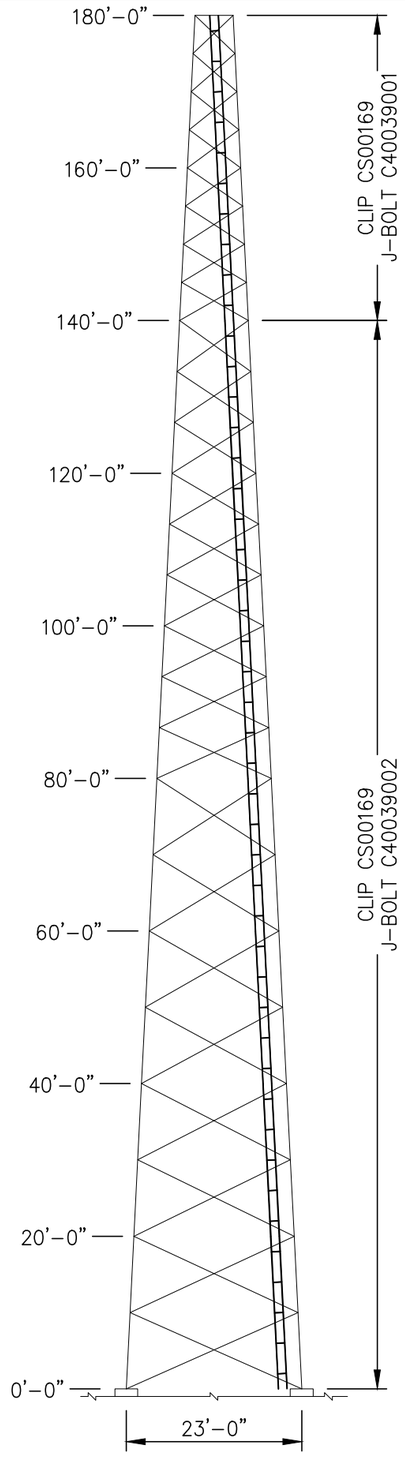
CONFIDENTIAL
This document and the information contained herein is the confidential trade secret property of Sabre Industries, Inc. ("Sabre") and must not be reproduced, copied or used, in whole or in part, for any purpose without the prior written consent of Sabre.
© 2025 Sabre Industries, Inc. All rights reserved.

W/G LADDER: 180 FT. MODEL S3TL–HD2

SITE: LOWER PROSPECT, OR

CUSTOMER: MARION COUNTY OREGON

JOB NO. 563426		SIZE	DRAWING NO.	REV
DATE	8/7/25	B	563426–WG2	0
DRAWN BY	KMP		SCALE NONE	PAGE 1 OF 1
CHECKED BY	ZAK			



ELEVATION VIEW

WAVEGUIDE LADDER				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
1	18	CS00146	ANGLE, WAVEGUIDE LADDER RAIL 20 FT. W/4 FT. RUNG SPC	540
2	45	CS01619	ANGLE, WAVEGUIDE SUPPORT (6 HOLE)	95
3	16	CS00037	PLATE, LADDER SPLICE	6
4	42	CS00169	CLIP, LADDER ATTACHMENT	23
			TOTAL WEIGHT LBS	664

LADDER HARDWARE				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
5	34	C40039002	J–BOLT ASSEMBLY, 3/8 ø X 7 1/4 I.L.	12
6	8	C40039001	J–BOLT ASSEMBLY, 3/8 ø X 5 3/4 I.L.	2
7	122	C40024004	BOLT ASSEMBLY, 3/8 ø X 1 1/2 GRD 5	12
			TOTAL WEIGHT LBS	26

FIELD NOTES

1. FROM ELEVATION 0'–0" TO 140'–0" ATTACH WAVEGUIDE LADDER TO EACH TOWER DIAGONAL.
   FROM ELEVATION 140'–0" TO 180'–0" ATTACH WAVEGUIDE LADDER TO EVERY OTHER TOWER DIAGONAL.
2. SEE REFERENCE DWG. 9031861 FOR WAVEGUIDE LADDER INSTALLATION AND ATTACHMENT DETAIL.
3. SEE CUSTOMER REQUESTS FOR PROPER FACE POSITIONING OF ALL LADDERS.
4. WAVEGUIDE LADDERS SHOULD NEVER BE USED AS A CLIMBING OR RIGGING DEVICE.

UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS INCLUDE FINISHES AND ARE IN INCHES

TOLERANCES: FRACTIONS ± 1/16" ANGLES ± 1/2 DEG. DECIMALS ± .010"

MATERIAL:

TOLERANCES DO NOT APPLY TO RAW MATERIAL

REV	DATE	DRW	CHK	DESCRIPTION

Sabre Industries™ INNOVATION DELIVERED

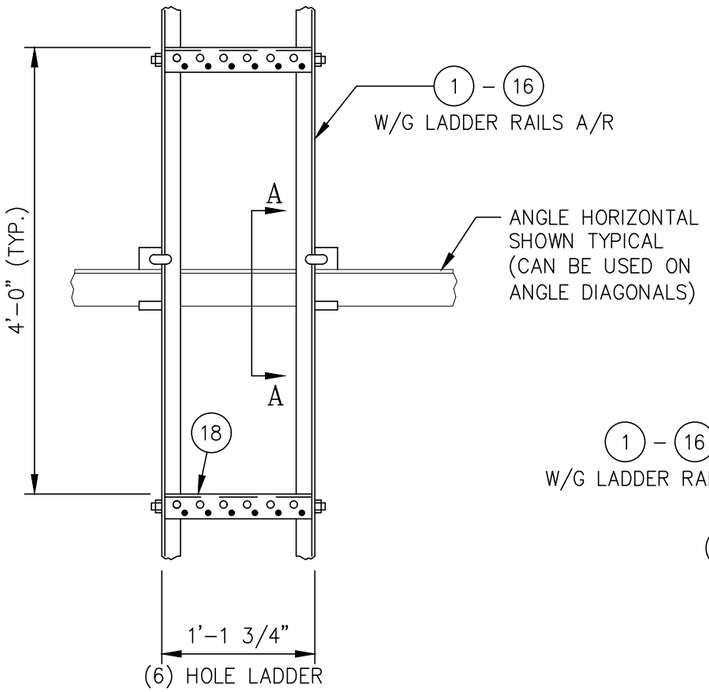
CONFIDENTIAL
This document and the information contained herein is the confidential trade secret property of Sabre Industries, Inc. ("Sabre") and must not be reproduced, copied or used, in whole or in part, for any purpose without the prior written consent of Sabre.
© 2025 Sabre Industries, Inc. All rights reserved.

W/G LADDER: 180 FT. MODEL S3TL–HD2

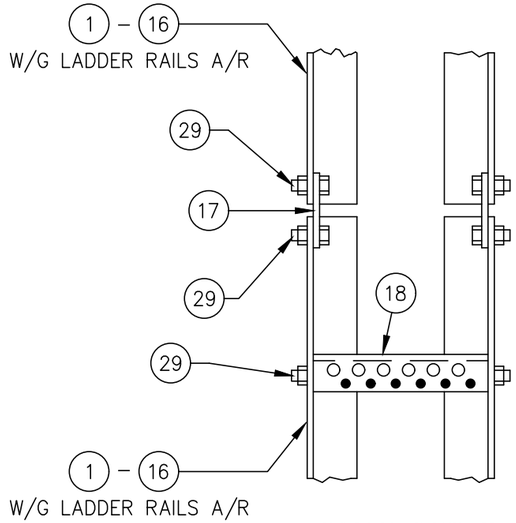
SITE: LOWER PROSPECT, OR

CUSTOMER: MARION COUNTY OREGON

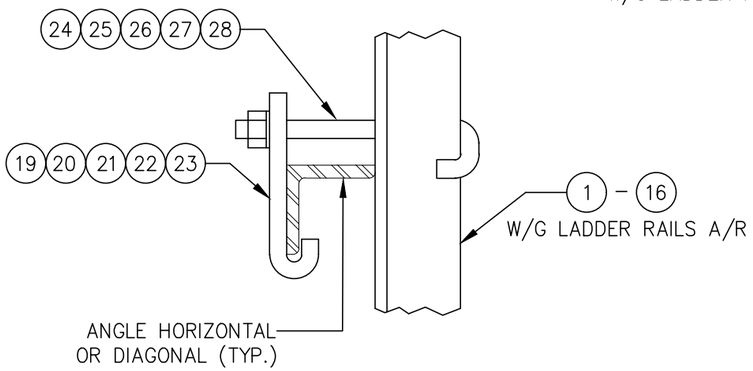
JOB NO. 563426		SIZE	DRAWING NO.	REV
DATE	8/7/25	B	563426–WG3	0
DRAWN BY	KMP		SCALE NONE	PAGE 1 OF 1
CHECKED BY	ZAK			



ELEVATION
(TYPICAL MOUNTING DETAIL)



SPLICE DETAIL



SECTION A–A

LIST OF MATERIAL

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
1	A/R	CS00146	ANGLE, WAVEGUIDE LADDER RAIL 20 FT.	
2	A/R	CS03607	ANGLE, WAVEGUIDE LADDER RAIL 19 FT.	
3	A/R	CS03608	ANGLE, WAVEGUIDE LADDER RAIL 18 FT.	
4	A/R	CS03402	ANGLE, WAVEGUIDE LADDER RAIL 17 FT.	
5	A/R	CS03609	ANGLE, WAVEGUIDE LADDER RAIL 16 FT.	
6	A/R	CS00147	ANGLE, WAVEGUIDE LADDER RAIL 15 FT.	
7	A/R	CS03621	ANGLE, WAVEGUIDE LADDER RAIL 14 FT.	
8	A/R	CS03610	ANGLE, WAVEGUIDE LADDER RAIL 13 FT.	
9	A/R	CS03611	ANGLE, WAVEGUIDE LADDER RAIL 12 FT.	
10	A/R	CS03612	ANGLE, WAVEGUIDE LADDER RAIL 11 FT.	
11	A/R	CS00148	ANGLE, WAVEGUIDE LADDER RAIL 10 FT.	
12	A/R	CS03613	ANGLE, WAVEGUIDE LADDER RAIL 9 FT.	
13	A/R	CS03444	ANGLE, WAVEGUIDE LADDER RAIL 8 FT.	
14	A/R	CS03614	ANGLE, WAVEGUIDE LADDER RAIL 7 FT.	
15	A/R	CS03615	ANGLE, WAVEGUIDE LADDER RAIL 6 FT.	
16	A/R	CS00149	ANGLE, WAVEGUIDE LADDER RAIL 5 FT.	
17	A/R	CS00037	PLATE, LADDER SPLICE	
18	A/R	CS01619	ANGLE WAVEGUIDE SUPPORT (6 HOLE)	
19	A/R	CS00169	CLIP, LADDER ATTACHMENT (1 1/2" – 4" ANGLES)	
20	A/R	CS00170	CLIP, LADDER ATTACHMENT (5" – 6" ANGLES: 3/8" THK. & UNDER)	
21	A/R	CS00171	CLIP, LADDER ATTACHMENT (1 1/2" – 6" ANGLES: 1/2" THK. & UNDER)	
22	A/R	CS00808	CLIP, LADDER ATTACHMENT (4" – 6" ANGLES: 1/2" TO 3/4" THK.)	
23	A/R	CS01212	CLIP, LADDER ATTACHMENT (8" ANGLES)	
24	A/R	C40039001	J–BOLT ASSY., 3/8 (1 1/2" – 2 1/2" ANGLES)	
25	A/R	C40039002	J–BOLT ASSY., 3/8 (3" – 4" ANGLES)	
26	A/R	C40039003	J–BOLT ASSY., 3/8 (5" – 6" ANGLES)	
27	A/R	C40039009	J–BOLT ASSY., 3/8 (3" – 6" ANGLES, 1/2" & 3/4" THK)	
28	A/R	C40039012	J–BOLT ASSY., 3/8 (8" ANGLES, 1/2" & 3/4" THK)	
29	A/R	C40024004	BOLT ASSEMBLY, 3/8 X 1 1/2 GR5	

"SEE JOB SPECIFIC BILL OF MATERIAL FOR QTY'S."

NOTE:
MAXIMUM SPACING OF LADDER CLIPS UP THE TOWER TO BE ±10'–0.

UNLESS OTHERWISE SPECIFIED
ALL DIMENSIONS INCLUDE
FINISHES AND ARE IN INCHES
TOLERANCES: FRACTIONS ± 1/16"
ANGLES ± 1/2 DEG.
DECIMALS ± .010"

MATERIAL:
TOLERANCES DO NOT APPLY
TO RAW MATERIAL

REV	DATE	DRW	CHK	DESCRIPTION
1	08/22/23	FJM	DLW	REVISED ITEM 7 (WAS CS03404)

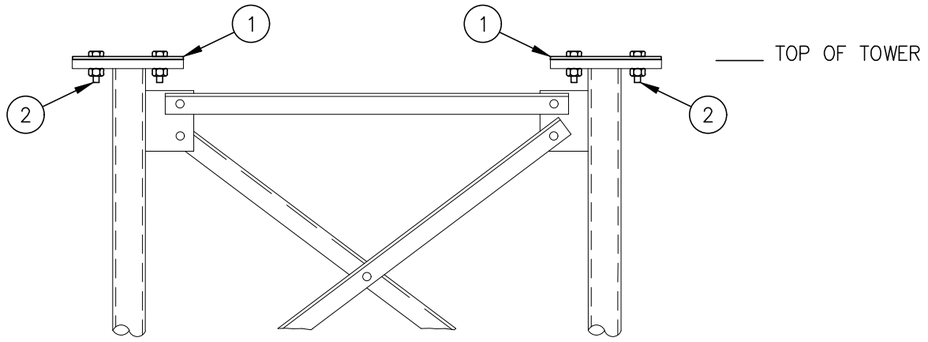
Sabre Industries™
INNOVATION DELIVERED

CONFIDENTIAL
This document and the information contained herein is the confidential trade secret property of Sabre Industries, Inc. ("Sabre") and must not be reproduced, copied or used, in whole or in part, for any purpose without the prior written consent of Sabre.
© 2021 Sabre Industries, Inc. All rights reserved.

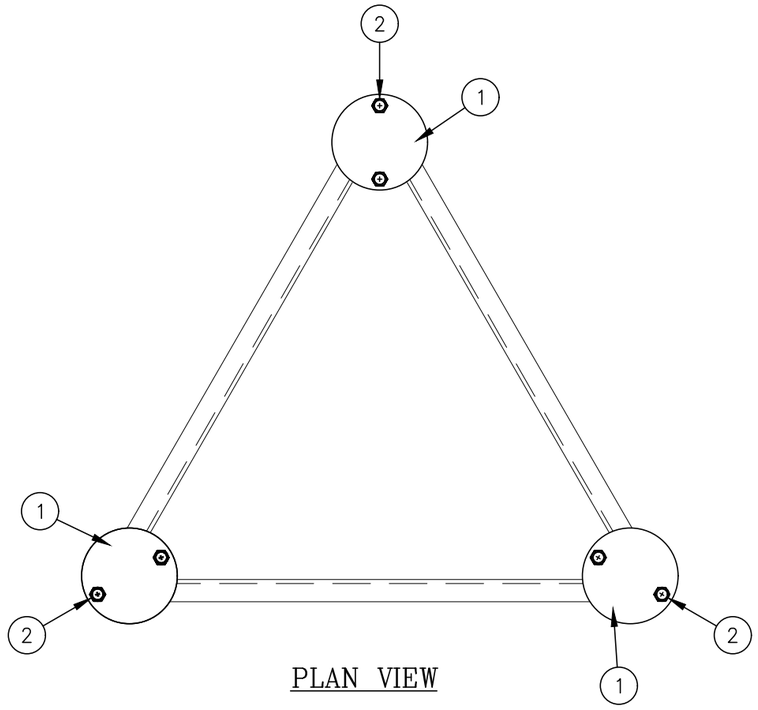
WAVEGUIDE LADDER INSTALLATION
6 HOLE RUNG – 7/16"ø & 3/4"ø
(CUSTOM LENGTH LADDER RAILS)

		SIZE	DRAWING NO.	REV
DATE	06/25/20	B	9031861	1
DRAWN BY	FJM			
CHECKED BY	DRL	SCALE None	PAGE 1 OF 1	

C30008022 LEG CAP KIT				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
1	3	CS01499	PLATE, LEG CAP (3/4" BOLTS ON A 6 1/2" B.C.)	6
2	6	C40026045	BOLT ASSEMBLY, 3/4 ø X 2 1/2 A325	5
			TOTAL WEIGHT LBS	11



ELEVATION VIEW



PLAN VIEW

UNLESS OTHERWISE SPECIFIED
ALL DIMENSIONS INCLUDE FINISHES AND ARE IN INCHES

TOLERANCES: FRACTIONS ± 1/16"
ANGLES ± 1/2 DEG.
DECIMALS ± .010"

MATERIAL:
FITS (6) 13/16"ø HOLES SPACED 60° APART ON A 6 1/2" BOLT CIRCLE

TOLERANCES DO NOT APPLY TO RAW MATERIAL

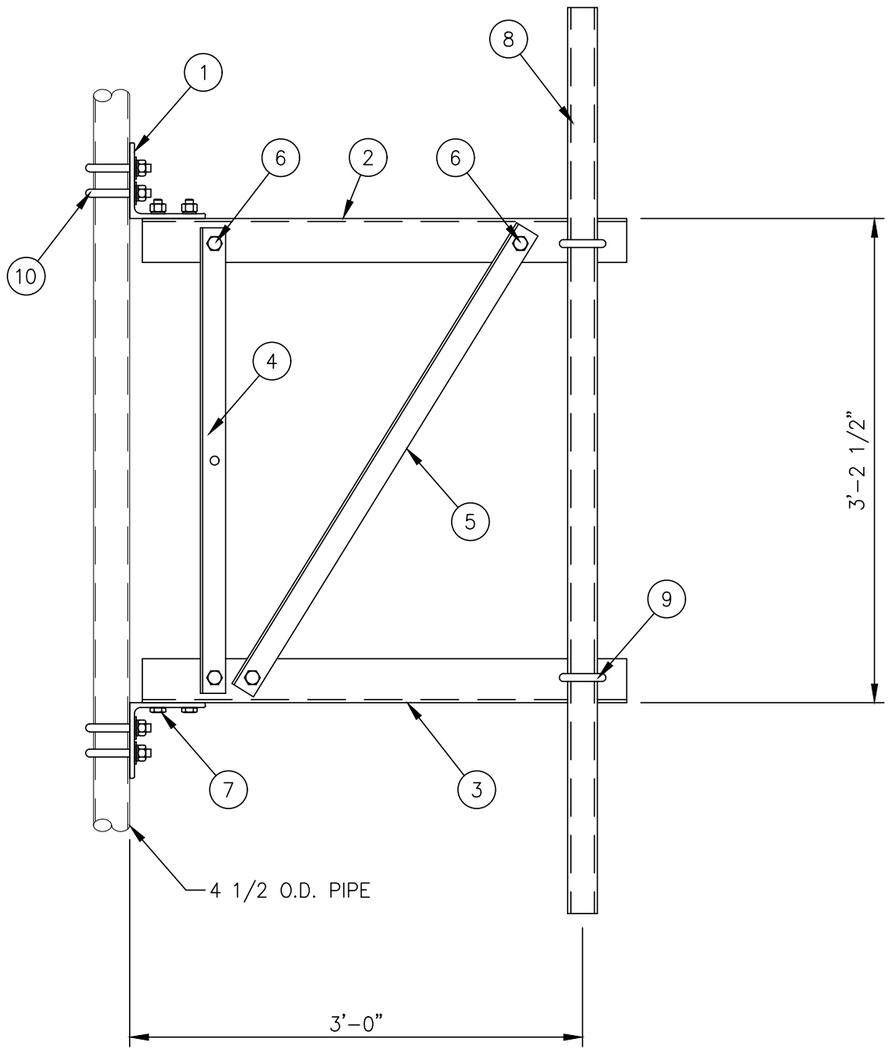
REV	DATE	DRW	CHK	DESCRIPTION

Sabre Industries™
INNOVATION DELIVERED

CONFIDENTIAL
This document and the information contained herein is the confidential trade secret property of Sabre Industries, Inc. ("Sabre") and must not be reproduced, copied or used, in whole or in part, for any purpose without the prior written consent of Sabre.
© 2021 Sabre Industries, Inc. All rights reserved.

LEG CAP INSTALLATION (S3TL–HD1) 3/4"ø BOLTS ON A 6 1/2" B.C. (1" SPLICE PLATE)

		SIZE	DRAWING NO.	REV
DATE	9/29/21	B	C30008022	0
DRAWN BY	MJM			
CHECKED BY	ZAK		SCALE None	PAGE 1 OF 1



C10151103 3 FT. SIDEARM ASSEMBLY			
1	CK00060	SIDEARM ANGLE KIT	78
1	– – –	MISC HARDWARE (FRAMING)	4
1	C10900105	PIPE ANTENNA MOUNTING KIT 2 3/8" ø X 5'-0	19
4	C40034032	U-BOLT ASSEMBLY 5/8" ø X 5 3/16 C-C	9
		TOTAL WEIGHT LBS	110

CK00060 KIT LIST OF MATERIAL				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
1	2	CS00067	ANGLE, BOOM SUPPORT	23
2	1	CS01223	ANGLE, TOP CHORD	19
3	1	CS01224	ANGLE, BOTTOM CHORD	19
4	1	CS00065	ANGLE, VERTICAL	8
5	1	CS01228	ANGLE, DIAGONAL	9
			TOTAL WEIGHT LBS	78

MISC HARDWARE (FRAMING)				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
6	4	C40026022	BOLT ASSEMBLY, 5/8 ø X 1 3/4 A325	2
7	4	C40026023	BOLT ASSEMBLY, 5/8 ø X 2 A325	2
			TOTAL WEIGHT LBS	4

C10900105 ANTENNA PIPE MOUNTING KIT				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
8	1	C10981223	ANTENNA MTG. PIPE 2 3/8" ø X 5'-0	16
9	2	C40034023	U-BOLT ASSEMBLY 5/8" ø X 3 1/16 C-C	3
			TOTAL WEIGHT LBS	19

MISC HARDWARE				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
10	4	C40034032	U-BOLT ASSEMBLY 5/8" ø X 5 3/16 C-C	9
			TOTAL WEIGHT LBS	9

NOTES:

1. IF THE MOUNT IS NOT ON THE STRAIGHT PORTION OF THE TOWER SEE SITE SPECIFIC PIPE MOUNT.
2. QUANTITIES SHOWN IN LIST OF MATERIALS ARE FOR ONE (1) SIDEARM ASSEMBLY ONLY.

UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS INCLUDE FINISHES AND ARE IN INCHES

TOLERANCES: FRACTIONS ± 1/16" ANGLES ± 1/2 DEG. DECIMALS ± .010"

MATERIAL:

TOLERANCES DO NOT APPLY TO RAW MATERIAL

REV	DATE	DRW	CHK	DESCRIPTION

Sabre Industries™ INNOVATION DELIVERED

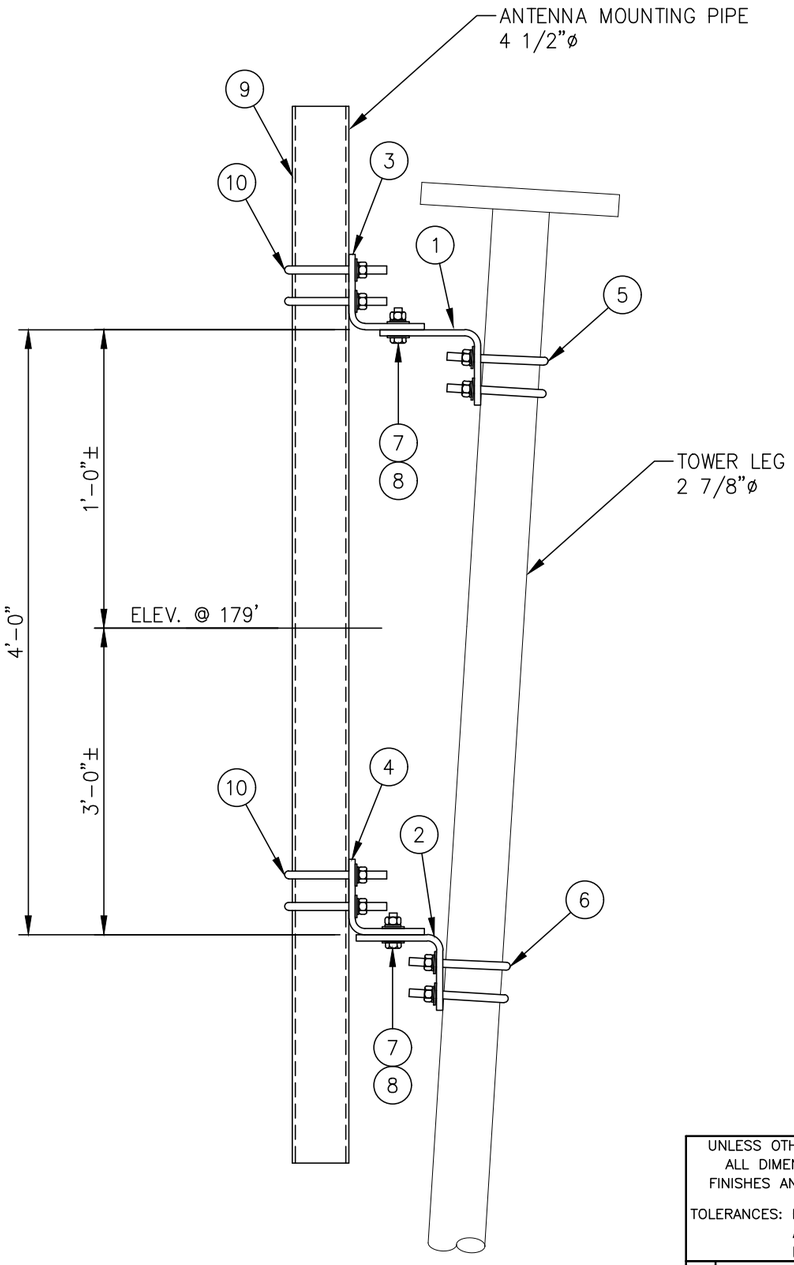
CONFIDENTIAL
This document and the information contained herein is the confidential trade secret property of Sabre Industries, Inc. ("Sabre") and must not be reproduced, copied or used, in whole or in part, for any purpose without the prior written consent of Sabre.
© 2025 Sabre Industries, Inc. All rights reserved.

3 FT. SIDEARM: 179' ELEVATION

SITE: LOWER PROSPECT, OR

CUSTOMER: MARION COUNTY OREGON

JOB NO. 563426		SIZE	DRAWING NO.	REV
DATE	08/07/25	B	563426-SA1	0
DRAWN BY	KMP			
CHECKED BY	ZAK		SCALE NONE	PAGE 1 OF 1



ELEVATION VIEW

LIST OF MATERIALS FOR TAPERED LEG PIPE MOUNT KIT C10174018				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
1.	1	CS00216	TOP LEG MOUNT FOR 2 7/8 ø LEG	15
2.	1	CS00215	BOTTOM LEG MOUNT FOR 2 7/8 ø LEG	12
3.	1	CS00214	TOP PIPE MOUNT FOR 4 1/2 ø PIPE	15
4.	1	CS00215	BOTTOM PIPE MOUNT FOR 4 1/2 ø PIPE	12
5.	2	C40034025	U-BOLT ASSEMBLY 5/8 ø X 3 9/16 C-C (TOP LEG MOUNT)	4
6.	2	C40034025	U-BOLT ASSEMBLY 5/8 ø X 3 9/16 C-C (BOTTOM LEG MOUNT)	4
7.	4	C40026024	BOLT ASSEMBLY 5/8 ø X 2 1/4 A325	2
8.	8	C40031003	FLATWASHER, 5/8 ø (F436)	1
			KIT WEIGHT LBS	65

LIST OF ADDITIONAL MATERIALS				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
9.	1	C10981407	ANTENNA MTG. PIPE 4 1/2 ø X 7'-0	58
10.	4	C40034032	U-BOLT ASSEMBLY 5/8 ø X 5 3/16 C-C (PIPE MOUNTS)	9
			ADDITIONAL WEIGHT LBS	67

TOTAL WEIGHT LBS	132

UNLESS OTHERWISE SPECIFIED
ALL DIMENSIONS INCLUDE FINISHES AND ARE IN INCHES
TOLERANCES: FRACTIONS ± 1/16"
ANGLES ± 1/2 DEG.
DECIMALS ± .010"

MATERIAL:

TOLERANCES DO NOT APPLY TO RAW MATERIAL

REV	DATE	DRW	CHK	DESCRIPTION

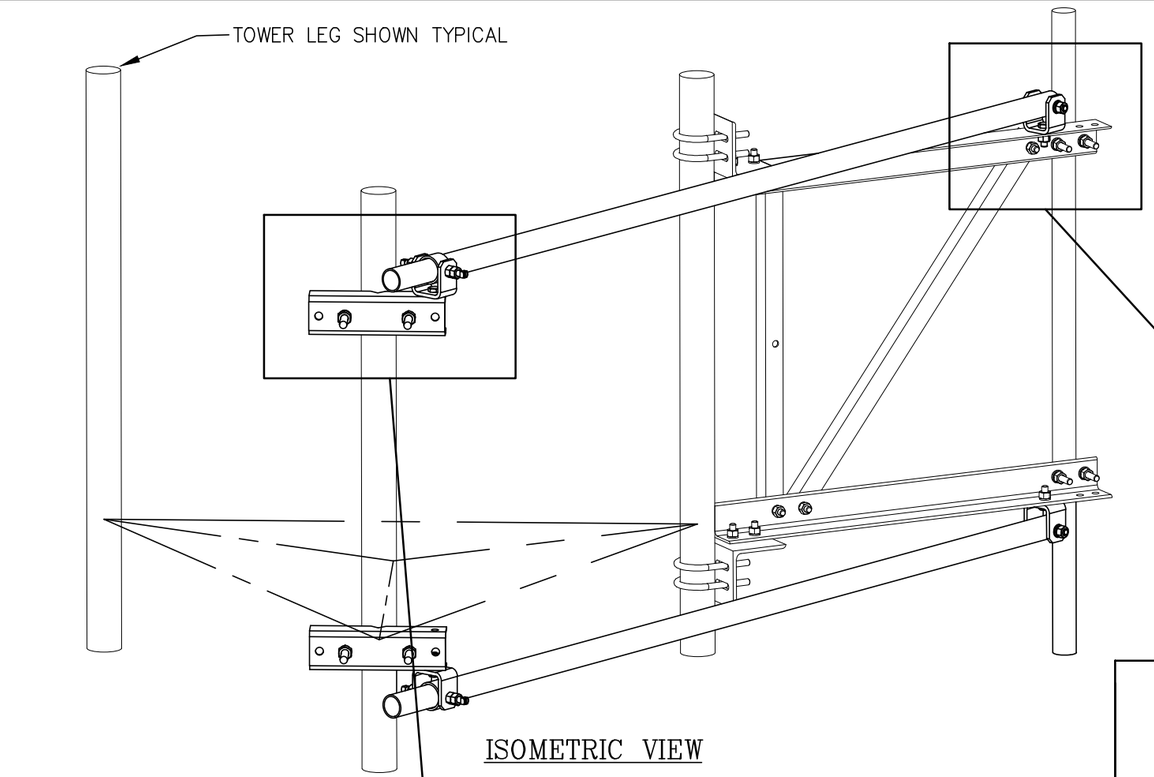
Sabre Industries™
INNOVATION DELIVERED

CONFIDENTIAL

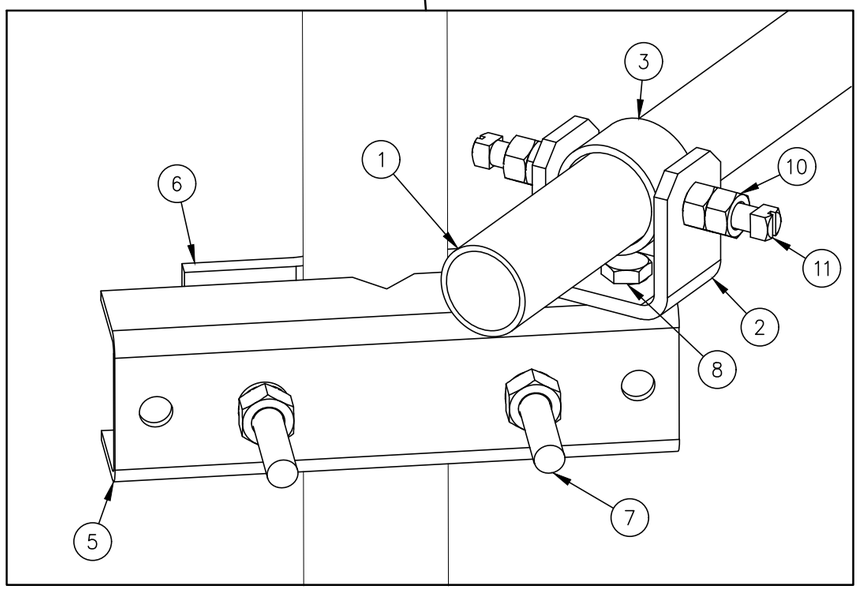
This document and the information contained herein is the confidential trade secret property of Sabre Industries, Inc. ("Sabre") and must not be reproduced, copied or used, in whole or in part, for any purpose without the prior written consent of Sabre.
© 2025 Sabre Industries, Inc. All rights reserved.

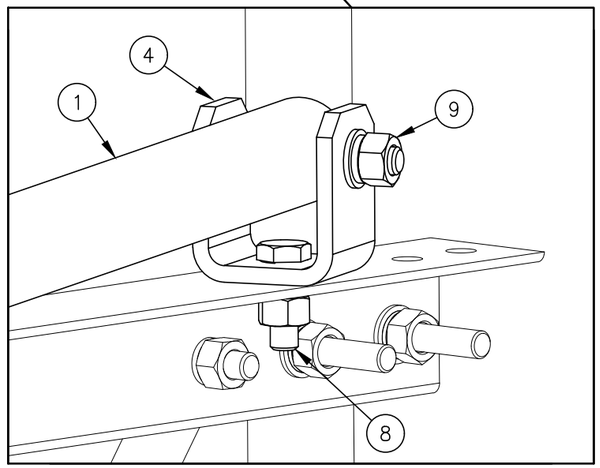
PIPE MOUNT FOR SIDEARM: 179' ELEVATION
SITE: LOWER PROSPECT, OR
CUSTOMER: MARION COUNTY OREGON

JOB NO. 563426		SIZE	DRAWING NO.		REV
DATE	8/7/25	B	563426-PM1		0
DRAWN BY	KMP			SCALE	PAGE
CHECKED BY	ZAK			None	1 OF 1



ISOMETRIC VIEW





C10179001 SWIVEL KNUCKLE TIEBACK

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
1	1	CS00099	PIPE, 2 3/8" O.D. X 0.154 X 10'-0	38
2	1	CW00013	SWIVEL PLATE WELDMENT	3
3	1	CS00097	PIPE, SLEEVE 2 7/8 O.D. X W/0.203 X 0'-1 3/4	1
4	1	CS00098	BENT SWIVEL PLATE	3
5	1	CS01360	PLATE, MOUNTING BRACKET (FORMED CHANNEL)	9
6	1	CS01361	PLATE, 2 HOLE ADAPTER CLAMP	3
7	2	C40140001	BOLT ASSEMBLY, 3/4 X 10 A307 W/NUT, LKW, FLW	4
8	2	C40026023	BOLT ASSEMBLY, 5/8 ø X 2 A325	1
9	1	C40026033	BOLT ASSEMBLY, 5/8 ø X 4 1/2 A325	1
10	2	C40042007	HEX NUT, 5/8 A194 GRADE 2H	1
11	2	C40998007	SQ. HEAD SET SCREW, 5/8 X 2 1/2	1
			TOTAL WEIGHT LBS	65

QUANTITIES SHOWN ABOVE ARE FOR (1) SWIVEL KNUCKLE TIEBACK KIT ONLY.
(2) KITS ARE REQUIRED FOR THIS SIDEARM ASSEMBLY

UNLESS OTHERWISE SPECIFIED
ALL DIMENSIONS INCLUDE
FINISHES AND ARE IN INCHES

TOLERANCES: FRACTIONS ± 1/16"
ANGLES ± 1/2 DEG.
DECIMALS ± .010"

MATERIAL:

TOLERANCES DO NOT APPLY TO RAW MATERIAL

REV	DATE	DRW	CHK	DESCRIPTION

Sabre Industries™
INNOVATION DELIVERED

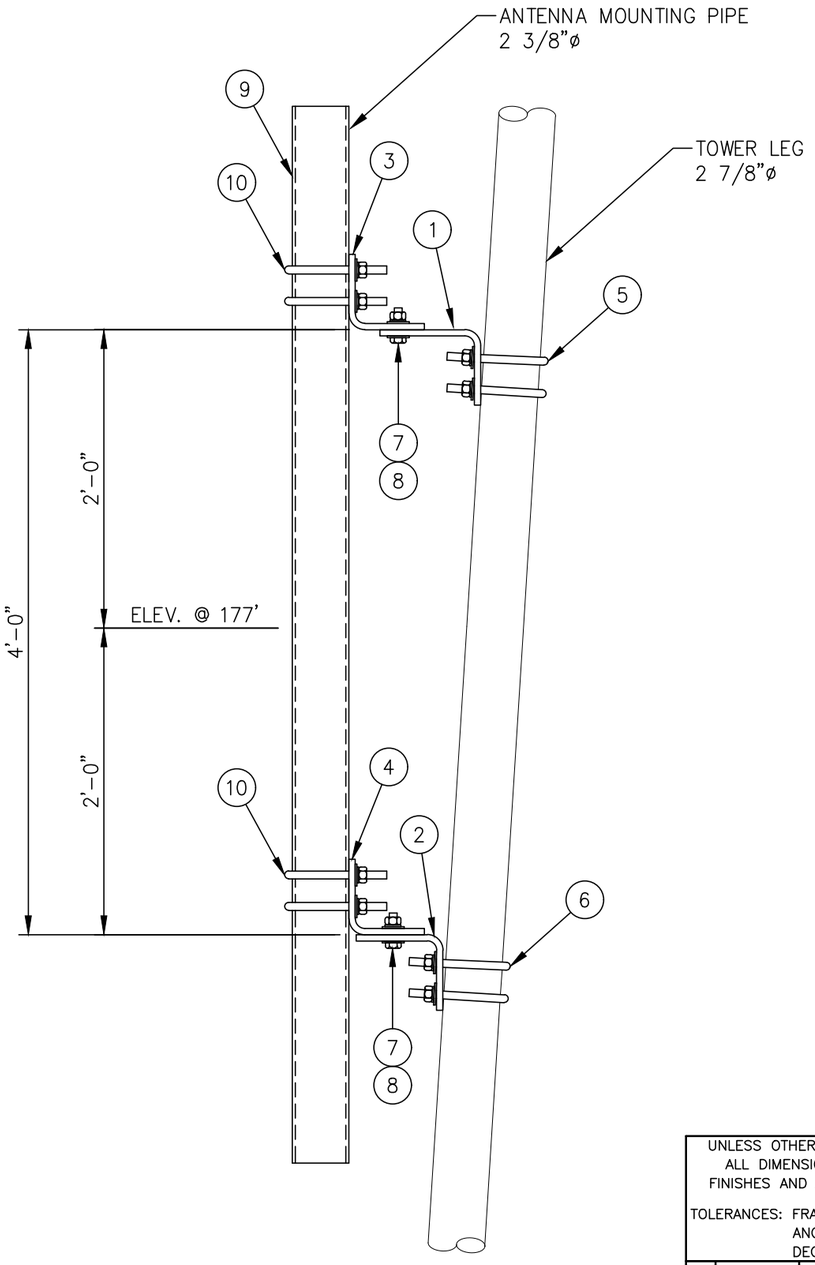
CONFIDENTIAL
This document and the information contained herein is the confidential trade secret property of Sabre Industries, Inc. ("Sabre") and must not be reproduced, copied or used, in whole or in part, for any purpose without the prior written consent of Sabre.
© 2025 Sabre Industries, Inc. All rights reserved.

SWIVEL KNUCKLE TIEBACKS: 179' ELEVATION

SITE: LOWER PROSPECT, OR

CUSTOMER: MARION COUNTY OREGON

JOB NO. 563426		SIZE	DRAWING NO.	REV
DATE	08/07/25	B	563426-ST1	0
DRAWN BY	KMP			
CHECKED BY	ZAK		SCALE NONE	PAGE 1 OF 1



ELEVATION VIEW

LIST OF MATERIALS FOR TAPERED LEG FLUSH MOUNT KIT C10174018				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
1.	1	CS00216	TOP LEG MOUNT FOR 2 7/8 ø LEG	15
2.	1	CS00215	BOTTOM LEG MOUNT FOR 2 7/8 ø LEG	12
3.	1	CS00214	TOP PIPE MOUNT FOR 2 3/8 ø PIPE	15
4.	1	CS00215	BOTTOM PIPE MOUNT FOR 2 3/8 ø PIPE	12
5.	2	C40034025	U-BOLT ASSEMBLY 5/8 ø X 3 9/16 C-C (TOP LEG MOUNT)	4
6.	2	C40034025	U-BOLT ASSEMBLY 5/8 ø X 3 9/16 C-C (BOTTOM LEG MOUNT)	4
7.	4	C40026024	BOLT ASSEMBLY 5/8 ø X 2 1/4 A325	2
8.	8	C40031003	FLATWASHER, 5/8 ø (F436)	1
			KIT WEIGHT LBS	65

LIST OF ADDITIONAL MATERIALS				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
9.	1	C10981207	ANTENNA MTG. PIPE 2 3/8 ø X 7'-0	23
10.	4	C40034023	U-BOLT ASSEMBLY 5/8 ø X 3 1/16 C-C (PIPE MOUNTS)	7
			ADDITIONAL WEIGHT LBS	30

TOTAL WEIGHT LBS	95

UNLESS OTHERWISE SPECIFIED
ALL DIMENSIONS INCLUDE FINISHES AND ARE IN INCHES
TOLERANCES: FRACTIONS ± 1/16"
ANGLES ± 1/2 DEG.
DECIMALS ± .010"

MATERIAL:

TOLERANCES DO NOT APPLY TO RAW MATERIAL

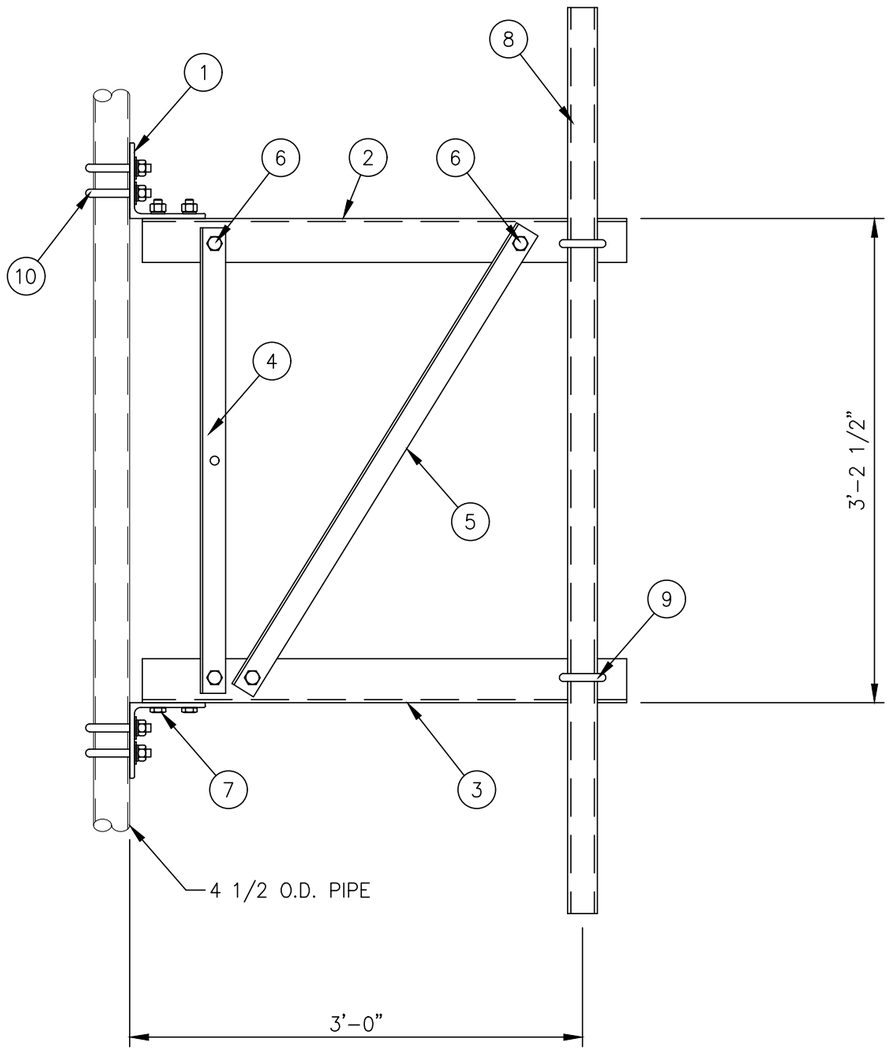
REV	DATE	DRW	CHK	DESCRIPTION

Sabre Industries™
INNOVATION DELIVERED

CONFIDENTIAL
This document and the information contained herein is the confidential trade secret property of Sabre Industries, Inc. ("Sabre") and must not be reproduced, copied or used, in whole or in part, for any purpose without the prior written consent of Sabre.
© 2025 Sabre Industries, Inc. All rights reserved.

FLUSH MOUNT: 177' ELEVATION
SITE: LOWER PROSPECT, OR
CUSTOMER: MARION COUNTY OREGON

JOB NO. 563426		SIZE	DRAWING NO.	REV
DATE	8/7/25	B	563426-FM1	0
DRAWN BY	KMP			
CHECKED BY	ZAK		SCALE None	PAGE 1 OF 1



C10151103 3 FT. SIDEARM ASSEMBLY			
1	CK00060	SIDEARM ANGLE KIT	78
1	– – –	MISC HARDWARE (FRAMING)	4
1	C10900105	PIPE ANTENNA MOUNTING KIT 2 3/8" ø X 5'-0	19
4	C40034032	U-BOLT ASSEMBLY 5/8" ø X 5 3/16 C-C	9
		TOTAL WEIGHT LBS	110

CK00060 KIT LIST OF MATERIAL				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
1	2	CS00067	ANGLE, BOOM SUPPORT	23
2	1	CS01223	ANGLE, TOP CHORD	19
3	1	CS01224	ANGLE, BOTTOM CHORD	19
4	1	CS00065	ANGLE, VERTICAL	8
5	1	CS01228	ANGLE, DIAGONAL	9
			TOTAL WEIGHT LBS	78

MISC HARDWARE (FRAMING)				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
6	4	C40026022	BOLT ASSEMBLY, 5/8 ø X 1 3/4 A325	2
7	4	C40026023	BOLT ASSEMBLY, 5/8 ø X 2 A325	2
			TOTAL WEIGHT LBS	4

C10900105 ANTENNA PIPE MOUNTING KIT				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
8	1	C10981223	ANTENNA MTG. PIPE 2 3/8" ø X 5'-0	16
9	2	C40034023	U-BOLT ASSEMBLY 5/8" ø X 3 1/16 C-C	3
			TOTAL WEIGHT LBS	19

MISC HARDWARE				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
10	4	C40034032	U-BOLT ASSEMBLY 5/8" ø X 5 3/16 C-C	9
			TOTAL WEIGHT LBS	9

NOTES:

1. IF THE MOUNT IS NOT ON THE STRAIGHT PORTION OF THE TOWER SEE SITE SPECIFIC PIPE MOUNT.
2. QUANTITIES SHOWN IN LIST OF MATERIALS ARE FOR ONE (1) SIDEARM ASSEMBLY ONLY.

UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS INCLUDE FINISHES AND ARE IN INCHES

TOLERANCES: FRACTIONS ± 1/16" ANGLES ± 1/2 DEG. DECIMALS ± .010"

MATERIAL:

TOLERANCES DO NOT APPLY TO RAW MATERIAL

REV	DATE	DRW	CHK	DESCRIPTION

Sabre Industries™ INNOVATION DELIVERED

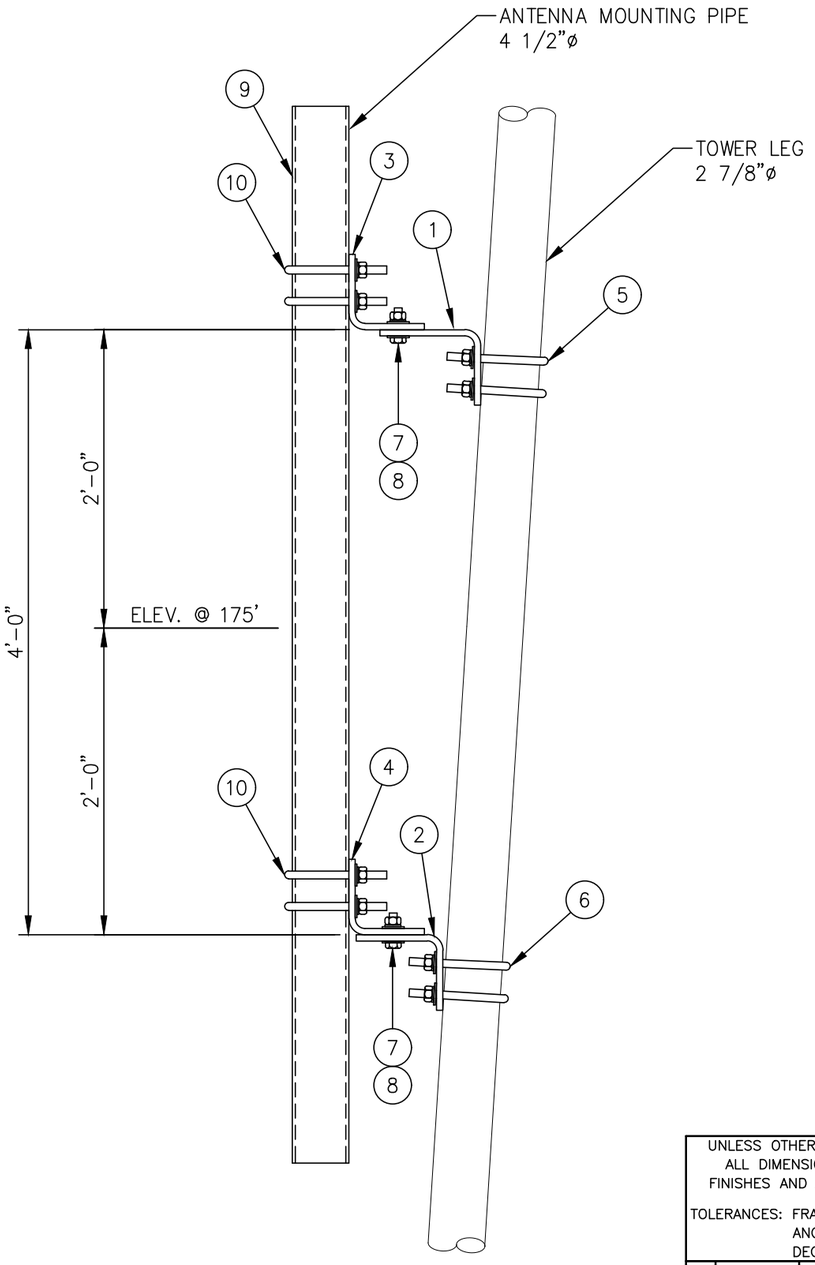
CONFIDENTIAL
This document and the information contained herein is the confidential trade secret property of Sabre Industries, Inc. ("Sabre") and must not be reproduced, copied or used, in whole or in part, for any purpose without the prior written consent of Sabre.
© 2025 Sabre Industries, Inc. All rights reserved.

3 FT. SIDEARMS: 175' ELEVATION

SITE: LOWER PROSPECT, OR

CUSTOMER: MARION COUNTY OREGON

JOB NO. 563426		SIZE	DRAWING NO.	REV
DATE	08/07/25	B	563426-SA2	0
DRAWN BY	KMP			
CHECKED BY	ZAK		SCALE NONE	PAGE 1 OF 1



ELEVATION VIEW

LIST OF MATERIALS FOR TAPERED LEG PIPE MOUNT KIT C10174018				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
1.	1	CS00216	TOP LEG MOUNT FOR 2 7/8 ø LEG	15
2.	1	CS00215	BOTTOM LEG MOUNT FOR 2 7/8 ø LEG	12
3.	1	CS00214	TOP PIPE MOUNT FOR 4 1/2 ø PIPE	15
4.	1	CS00215	BOTTOM PIPE MOUNT FOR 4 1/2 ø PIPE	12
5.	2	C40034025	U-BOLT ASSEMBLY 5/8 ø X 3 9/16 C-C (TOP LEG MOUNT)	4
6.	2	C40034025	U-BOLT ASSEMBLY 5/8 ø X 3 9/16 C-C (BOTTOM LEG MOUNT)	4
7.	4	C40026024	BOLT ASSEMBLY 5/8 ø X 2 1/4 A325	2
8.	8	C40031003	FLATWASHER, 5/8 ø (F436)	1
			KIT WEIGHT LBS	65

LIST OF ADDITIONAL MATERIALS				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
9.	1	C10981407	ANTENNA MTG. PIPE 4 1/2 ø X 7'-0	58
10.	4	C40034032	U-BOLT ASSEMBLY 5/8 ø X 5 3/16 C-C (PIPE MOUNTS)	9
			ADDITIONAL WEIGHT LBS	67

TOTAL WEIGHT LBS	132

UNLESS OTHERWISE SPECIFIED
ALL DIMENSIONS INCLUDE FINISHES AND ARE IN INCHES
TOLERANCES: FRACTIONS ± 1/16"
ANGLES ± 1/2 DEG.
DECIMALS ± .010"

MATERIAL:

TOLERANCES DO NOT APPLY TO RAW MATERIAL

REV	DATE	DRW	CHK	DESCRIPTION

Sabre Industries™
INNOVATION DELIVERED

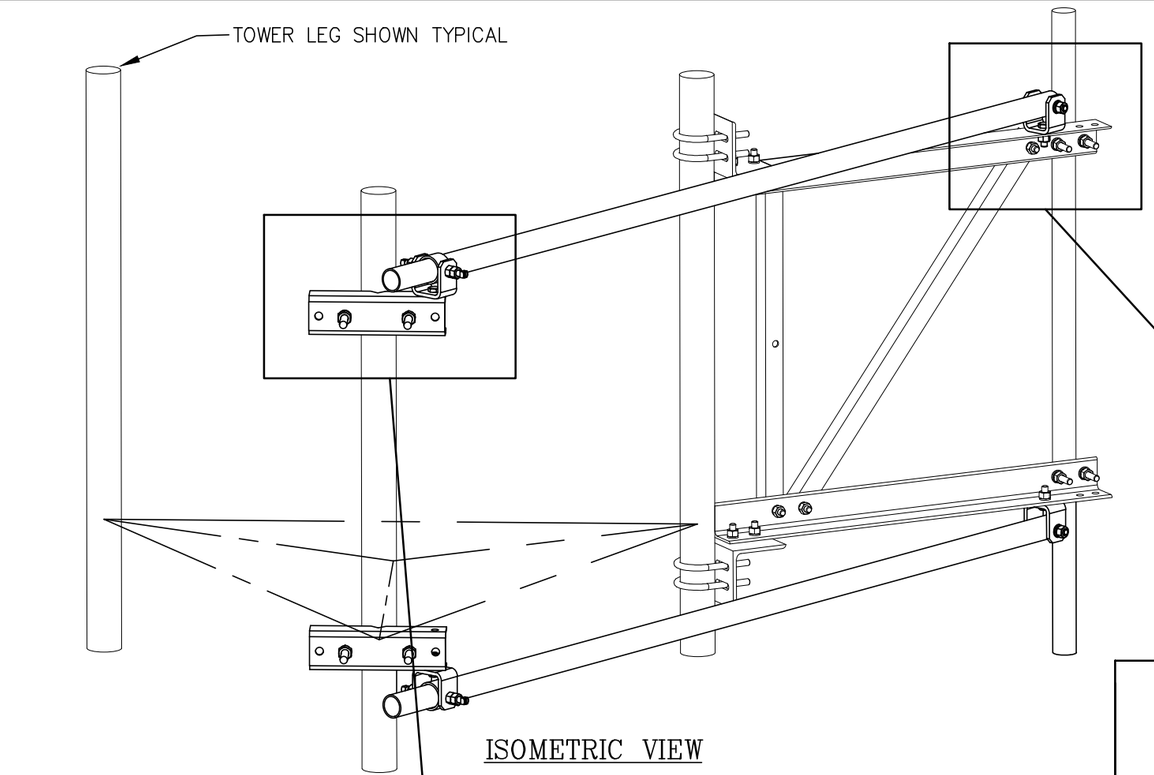
CONFIDENTIAL

This document and the information contained herein is the confidential trade secret property of Sabre Industries, Inc. ("Sabre") and must not be reproduced, copied or used, in whole or in part, for any purpose without the prior written consent of Sabre.
© 2025 Sabre Industries, Inc. All rights reserved.

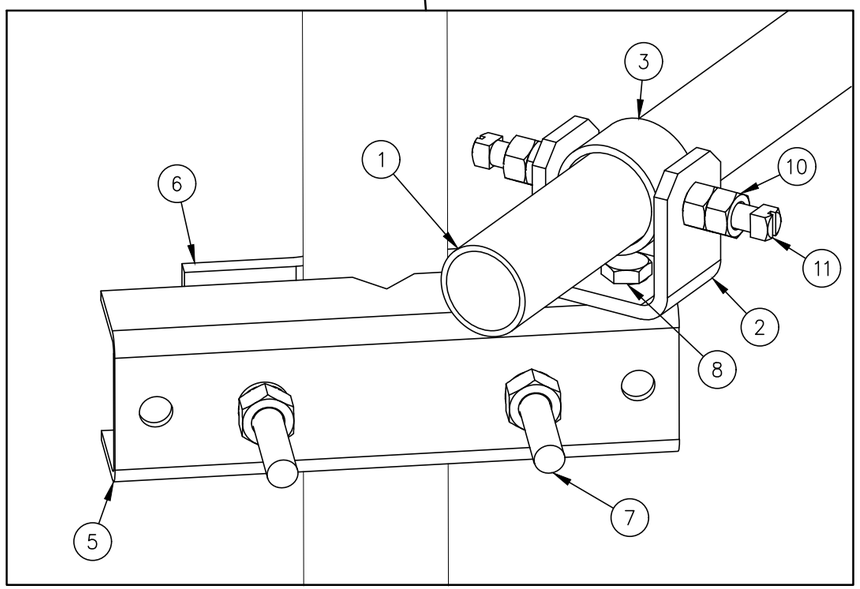
PIPE MOUNTS FOR SIDEARMS: 175' ELEVATION
SITE: LOWER PROSPECT, OR
CUSTOMER: MARION COUNTY OREGON

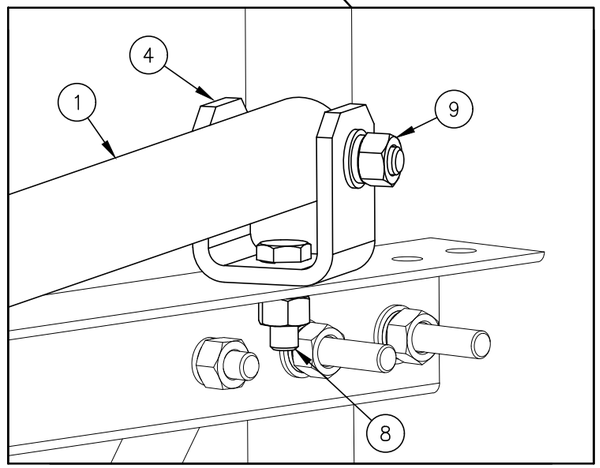
JOB NO. 563426		SIZE	DRAWING NO.		REV
DATE	8/7/25	B	563426-PM2		0
DRAWN BY	KMP			SCALE	PAGE
CHECKED BY	ZAK			None	1 OF 1

EXHIBIT K



ISOMETRIC VIEW





C10179002 SWIVEL KNUCKLE TIEBACK

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
1	1	CS02089	TIEBACK 2 3/8 X .134 X 13'-3"	43
2	1	CW00013	SWIVEL PLATE WELDMENT	3
3	1	CS00097	PIPE, SLEEVE 2 7/8 O.D. X W/0.203 X 0'-1 3/4	1
4	1	CS00098	BENT SWIVEL PLATE	3
5	1	CS01360	PLATE, MOUNTING BRACKET (FORMED CHANNEL)	9
6	1	CS01361	PLATE, 2 HOLE ADAPTER CLAMP	3
7	2	C40140001	BOLT ASSEMBLY, 3/4 X 10 A307 W/NUT, LKW, FLW	4
8	2	C40026023	BOLT ASSEMBLY, 5/8 ø X 2 A325	1
9	1	C40026033	BOLT ASSEMBLY, 5/8 ø X 4 1/2 A325	1
10	2	C40042007	HEX NUT, 5/8 A194 GRADE 2H	1
11	2	C40998007	SQ. HEAD SET SCREW, 5/8 X 2 1/2	1
			TOTAL WEIGHT LBS	70

QUANTITIES SHOWN ABOVE ARE FOR (1) SWIVEL KNUCKLE TIEBACK KIT ONLY.
(2) KITS ARE REQUIRED FOR THIS SIDEARM ASSEMBLY

UNLESS OTHERWISE SPECIFIED
ALL DIMENSIONS INCLUDE
FINISHES AND ARE IN INCHES

TOLERANCES: FRACTIONS ± 1/16"
ANGLES ± 1/2 DEG.
DECIMALS ± .010"

MATERIAL:

TOLERANCES DO NOT APPLY
TO RAW MATERIAL

REV	DATE	DRW	CHK	DESCRIPTION

Sabre Industries™
INNOVATION DELIVERED

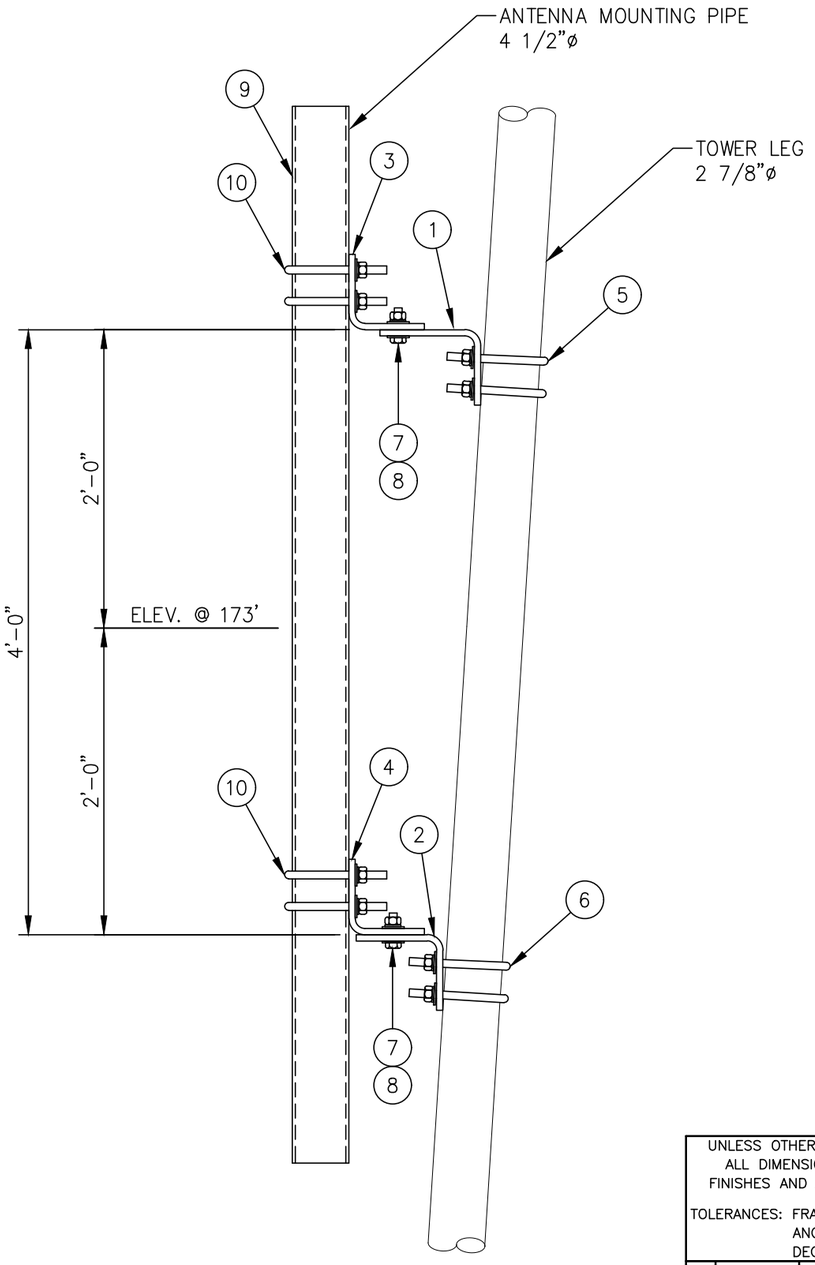
CONFIDENTIAL
This document and the information contained herein is the confidential trade secret property of Sabre Industries, Inc. ("Sabre") and must not be reproduced, copied or used, in whole or in part, for any purpose without the prior written consent of Sabre.
© 2025 Sabre Industries, Inc. All rights reserved.

SWIVEL KNUCKLE TIEBACKS: 175' ELEVATION

SITE: LOWER PROSPECT, OR

CUSTOMER: MARION COUNTY OREGON

JOB NO. 563426		SIZE	DRAWING NO.	REV
DATE	08/07/25	B	563426-ST2	0
DRAWN BY	KMP			
CHECKED BY	ZAK		SCALE NONE	PAGE 1 OF 1



ELEVATION VIEW

LIST OF MATERIALS FOR TAPERED LEG PIPE MOUNT KIT C10174018				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
1.	1	CS00216	TOP LEG MOUNT FOR 2 7/8 ø LEG	15
2.	1	CS00215	BOTTOM LEG MOUNT FOR 2 7/8 ø LEG	12
3.	1	CS00214	TOP PIPE MOUNT FOR 4 1/2 ø PIPE	15
4.	1	CS00215	BOTTOM PIPE MOUNT FOR 4 1/2 ø PIPE	12
5.	2	C40034025	U-BOLT ASSEMBLY 5/8 ø X 3 9/16 C-C (TOP LEG MOUNT)	4
6.	2	C40034025	U-BOLT ASSEMBLY 5/8 ø X 3 9/16 C-C (BOTTOM LEG MOUNT)	4
7.	4	C40026024	BOLT ASSEMBLY 5/8 ø X 2 1/4 A325	2
8.	8	C40031003	FLATWASHER, 5/8 ø (F436)	1
			KIT WEIGHT LBS	65

LIST OF ADDITIONAL MATERIALS				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
9.	1	C10981407	ANTENNA MTG. PIPE 4 1/2 ø X 7'-0	58
10.	4	C40034032	U-BOLT ASSEMBLY 5/8 ø X 5 3/16 C-C (PIPE MOUNTS)	9
			ADDITIONAL WEIGHT LBS	67

TOTAL WEIGHT LBS	132

UNLESS OTHERWISE SPECIFIED
ALL DIMENSIONS INCLUDE FINISHES AND ARE IN INCHES
TOLERANCES: FRACTIONS ± 1/16"
ANGLES ± 1/2 DEG.
DECIMALS ± .010"

MATERIAL:

TOLERANCES DO NOT APPLY TO RAW MATERIAL

REV	DATE	DRW	CHK	DESCRIPTION

Sabre Industries™
INNOVATION DELIVERED

CONFIDENTIAL

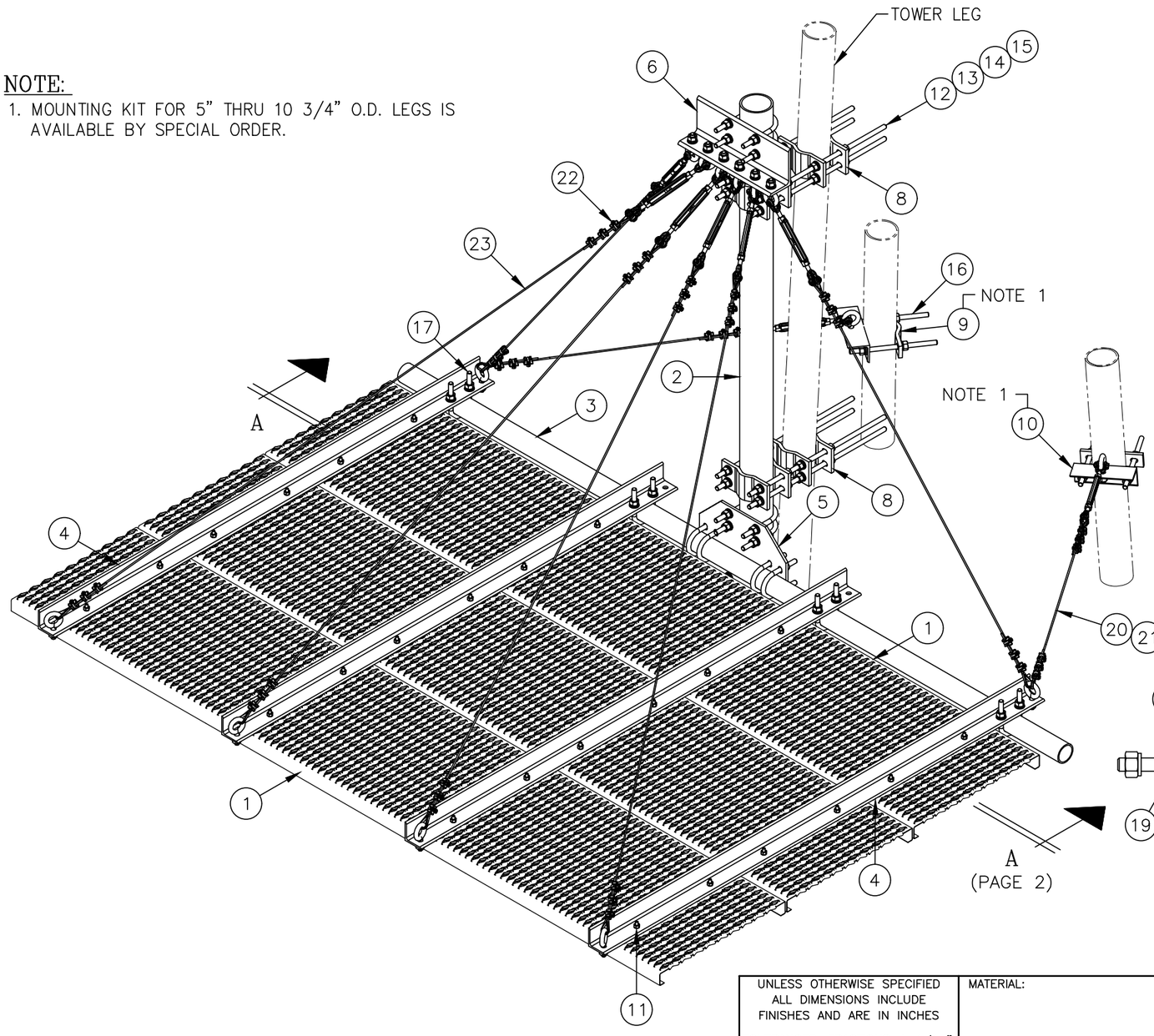
This document and the information contained herein is the confidential trade secret property of Sabre Industries, Inc. ("Sabre") and must not be reproduced, copied or used, in whole or in part, for any purpose without the prior written consent of Sabre.
© 2025 Sabre Industries, Inc. All rights reserved.

PIPE MOUNTS: 173' ELEVATION
SITE: LOWER PROSPECT, OR
CUSTOMER: MARION COUNTY OREGON

JOB NO. 563426		SIZE	DRAWING NO.		REV
DATE	8/7/25	B	563426-PM3		0
DRAWN BY	KMP			SCALE	PAGE
CHECKED BY	ZAK			None	1 OF 1

NOTE:

1. MOUNTING KIT FOR 5" THRU 10 3/4" O.D. LEGS IS AVAILABLE BY SPECIAL ORDER.

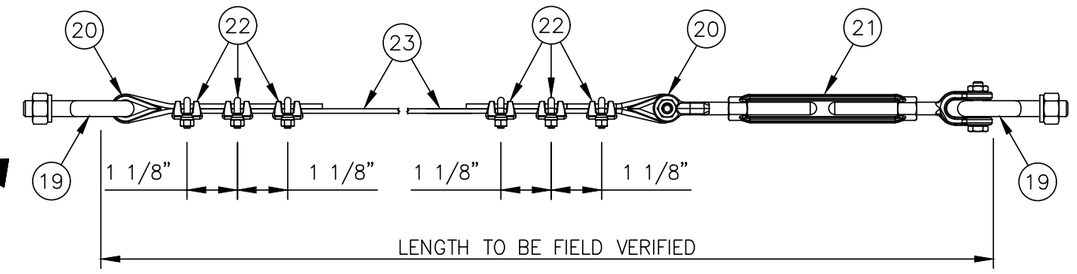


ISOMETRIC VIEW

(SEE PAGE 2 FOR MORE DETAILS)

C30085002 ICE SHIELD ASSEMBLY

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT
1.	3	C20137002	SAFETY GRATING, 2'-0 WIDE BY 10'-0 LONG	222
2.	1	C10981407	PIPE, 4 1/2" O.D. X W/0.180 X 7'-0	58
3.	1	C10901310	PIPE, 2 7/8" O.D. X W/0.203 X 10'-6	63
4.	4	CS00155	ANGLE, ICE SHIELD SUPPORT	143
5.	1	CS00156	PLATE, ICE SHIELD MOUNT	22
6.	1	CS01926	ANGLE, ICE SHIELD HANGER	19
7.	12	CS00158	PLATE, ICE SHIELD BACKUP	28
8.	8	CS00017	4 HOLE ADAPTER CLAMP 1 1/2" TO 5" O.D.	39
9.	2	CS00144	2 HOLE ADAPTER CLAMP 1 1/2" TO 5" O.D.	5
10.	2	CS01925	ANGLE, ICE SHIELD TIE BACK	7
11.	24	C40024006	BOLT ASSEMBLY, 3/8 ø X 2 GR 5	2
12.	16	C40042007	NUT, 5/8 ø A194 GRADE 2H	1
13.	16	C40030012	LOCKWASHER, 5/8 ø	1
14.	16	C40031003	FLATWASHER, 5/8 ø HARDENED ASTM F436	1
15.	8	C40099004	THREADED ROD ASS'Y, 5/8 ø X 2'-2 ASTM A193	22
16.	4	C40099002	THREADED ROD ASS'Y, 5/8 ø X 1'-0 ASTM A193	6
17.	8	C40034025	U-BOLT ASSEMBLY, 5/8 ø X 3 9/16" C-C	14
18.	6	C40034032	U-BOLT ASSEMBLY, 5/8 ø X 5 3/16" C-C	13
19.	14	C40079002	EYEBOLT ASSEMBLY, 5/8 ø X 1 3/4	8
20.	16	C40055011	THIMBLE, 3/16" STD	1
21.	8	C40051018	TURNBUCKLE, 1/2" X 6" J & J HDG	12
22.	48	C40056001	WIRE ROPE CLIP, 3/16"	5
23.	1	C30998120	AIRCRAFT CABLE, 3/16" X 120'-0	9
			TOTAL WEIGHT	701



TYPICAL CABLE ASSEMBLY

UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS INCLUDE FINISHES AND ARE IN INCHES

TOLERANCES: FRACTIONS ± 1/16" ANGLES ± 1/2 DEG. DECIMALS ± .010"

MATERIAL:

TOLERANCES DO NOT APPLY TO RAW MATERIAL

REV	DATE	DRW	CHK	DESCRIPTION
4	1/29/09	WRF	MC	REVISED PART NUMBERS OF ITEMS 6, 10, & EYEBOLTS WERE 3/8" & TURNB. WERE 1/4"
3	1/13/09	MLC	MC	REVISE PIPE (ITEM 2)
2	06/21/06	WRF	WMN	ADDED ISOMETRIC VIEW
1	4/4/03	KLE	DLW	REVISED PART NUMBERS

Sabre Industries™ INNOVATION DELIVERED

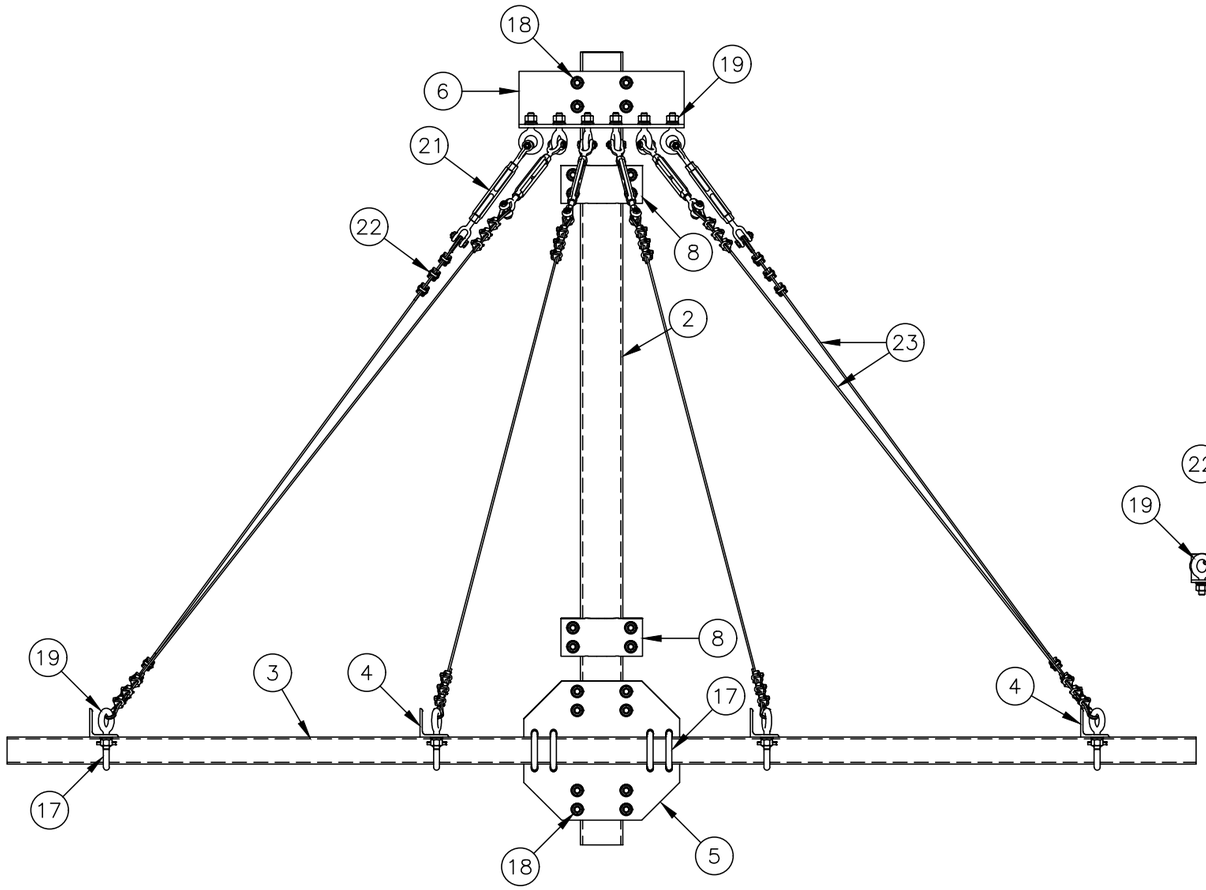
CONFIDENTIAL

This document and the information contained herein is the confidential trade secret property of Sabre Industries, Inc. ("Sabre") and must not be reproduced, copied or used, in whole or in part, for any purpose without the prior written consent of Sabre.

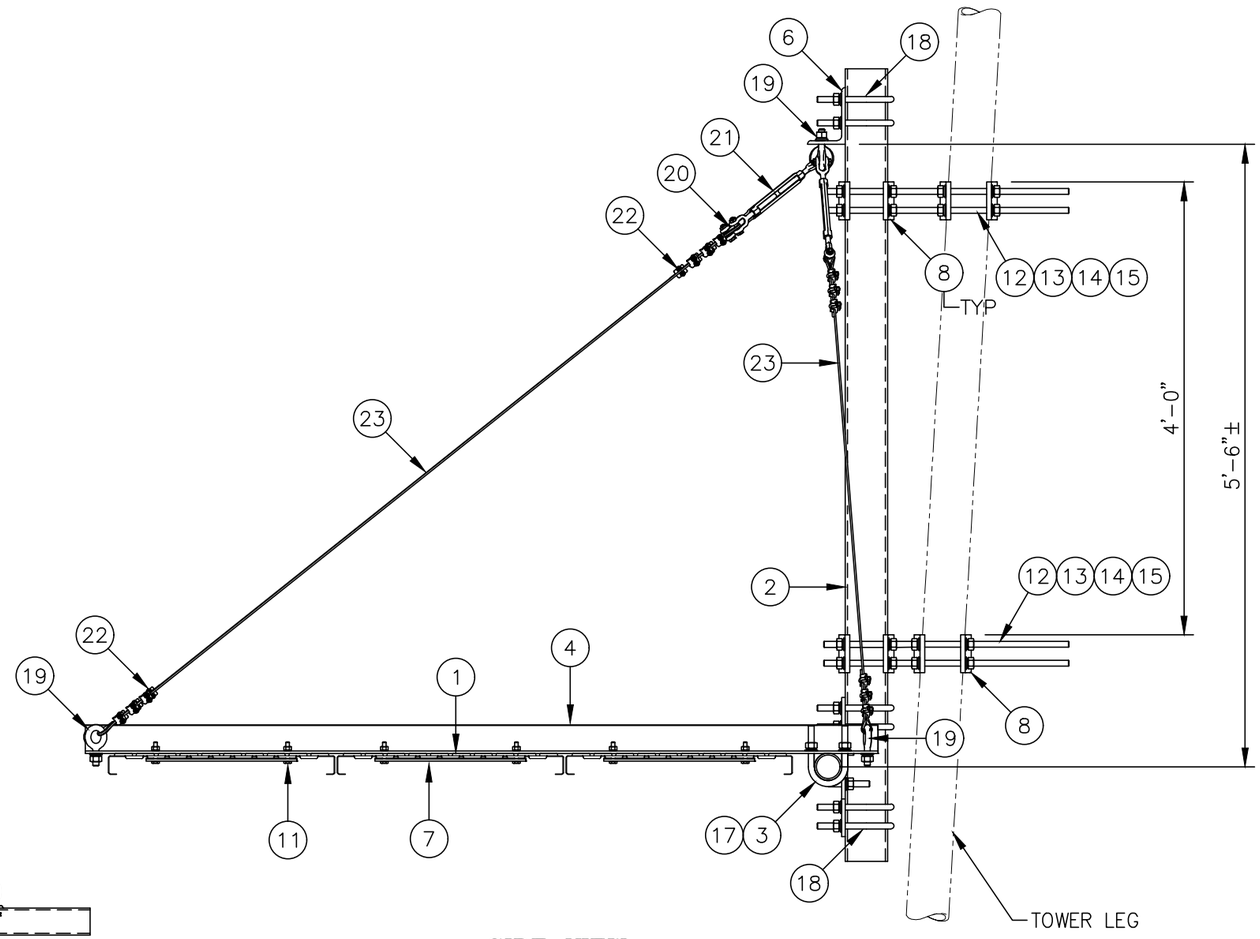
© 2022 Sabre Industries, Inc. All rights reserved.

ICE SHIELD ASSEMBLY FOR 6'-0 & 8'-0 DISH ANTENNA FITS 1 1/2 ø TO 5 ø LEGS

		SIZE	DRAWING NO.	REV
DATE	01/11/01	B	C30085002	4
DRAWN BY	BCT			
CHECKED BY	KLE		SCALE None	PAGE 1 OF 2



SECTION A–A
(GRATING REMOVED FOR CLARITY)



SIDE VIEW

REV	DATE	DRW	CHK	DESCRIPTION
4	1/29/09	WRF	MC	REVISED PART NUMBERS OF ITEMS 6, 10, & EYEBOLTS WERE 3/8" & TURNB. WERE 1/4"
3	1/13/09	MLC	MC	REVISE PIPE (ITEM 2)
2	06/21/06	WRF	WMN	ADDED ISOMETRIC VIEW
1	4/4/03	KLE	DLW	REVISED PART NUMBERS

UNLESS OTHERWISE SPECIFIED
ALL DIMENSIONS INCLUDE FINISHES AND ARE IN INCHES
TOLERANCES: FRACTIONS ± 1/16"
ANGLES ± 1/2 DEG.
DECIMALS ± .010"

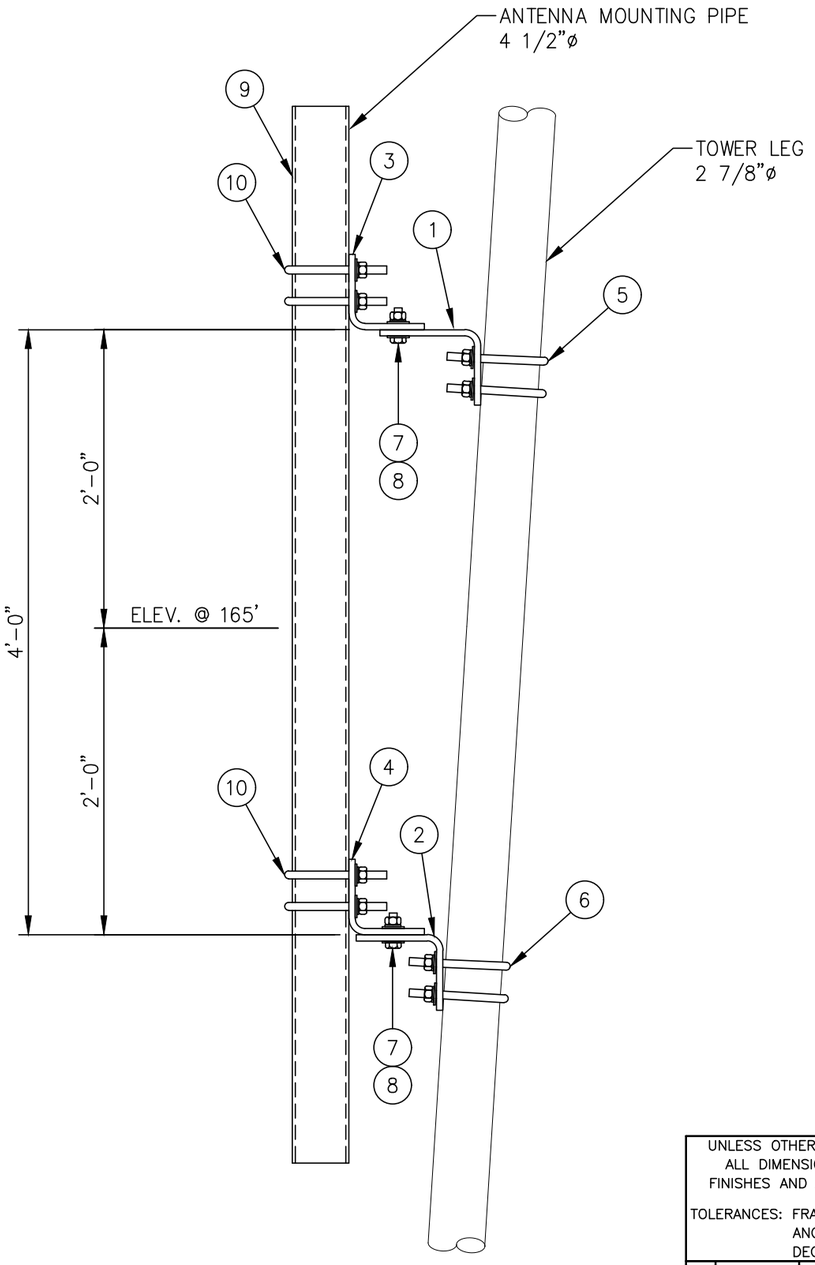
MATERIAL:
TOLERANCES DO NOT APPLY TO RAW MATERIAL

Sabre Industries™
INNOVATION DELIVERED

CONFIDENTIAL
This document and the information contained herein is the confidential trade secret property of Sabre Industries, Inc. ("Sabre") and must not be reproduced, copied or used, in whole or in part, for any purpose without the prior written consent of Sabre.
© 2022 Sabre Industries, Inc. All rights reserved.

ICE SHIELD ASSEMBLY
FOR 6'–0 & 8'–0 DISH ANTENNA
FITS 1 1/2 ø TO 5 ø LEGS

		SIZE	DRAWING NO.	REV
DATE	01/11/01	B	C30085002	4
DRAWN BY	BCT			
CHECKED BY	KLE	SCALE None	PAGE 2 OF 2	



ELEVATION VIEW

LIST OF MATERIALS FOR TAPERED LEG PIPE MOUNT KIT C10174018				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
1.	1	CS00216	TOP LEG MOUNT FOR 2 7/8 ø LEG	15
2.	1	CS00215	BOTTOM LEG MOUNT FOR 2 7/8 ø LEG	12
3.	1	CS00214	TOP PIPE MOUNT FOR 4 1/2 ø PIPE	15
4.	1	CS00215	BOTTOM PIPE MOUNT FOR 4 1/2 ø PIPE	12
5.	2	C40034025	U-BOLT ASSEMBLY 5/8 ø X 3 9/16 C-C (TOP LEG MOUNT)	4
6.	2	C40034025	U-BOLT ASSEMBLY 5/8 ø X 3 9/16 C-C (BOTTOM LEG MOUNT)	4
7.	4	C40026024	BOLT ASSEMBLY 5/8 ø X 2 1/4 A325	2
8.	8	C40031003	FLATWASHER, 5/8 ø (F436)	1
			KIT WEIGHT LBS	65

LIST OF ADDITIONAL MATERIALS				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
9.	1	C10981407	ANTENNA MTG. PIPE 4 1/2 ø X 7'-0	58
10.	4	C40034032	U-BOLT ASSEMBLY 5/8 ø X 5 3/16 C-C (PIPE MOUNTS)	9
			ADDITIONAL WEIGHT LBS	67

TOTAL WEIGHT LBS	132

UNLESS OTHERWISE SPECIFIED
ALL DIMENSIONS INCLUDE FINISHES AND ARE IN INCHES
TOLERANCES: FRACTIONS ± 1/16"
ANGLES ± 1/2 DEG.
DECIMALS ± .010"

MATERIAL:

TOLERANCES DO NOT APPLY TO RAW MATERIAL

REV	DATE	DRW	CHK	DESCRIPTION

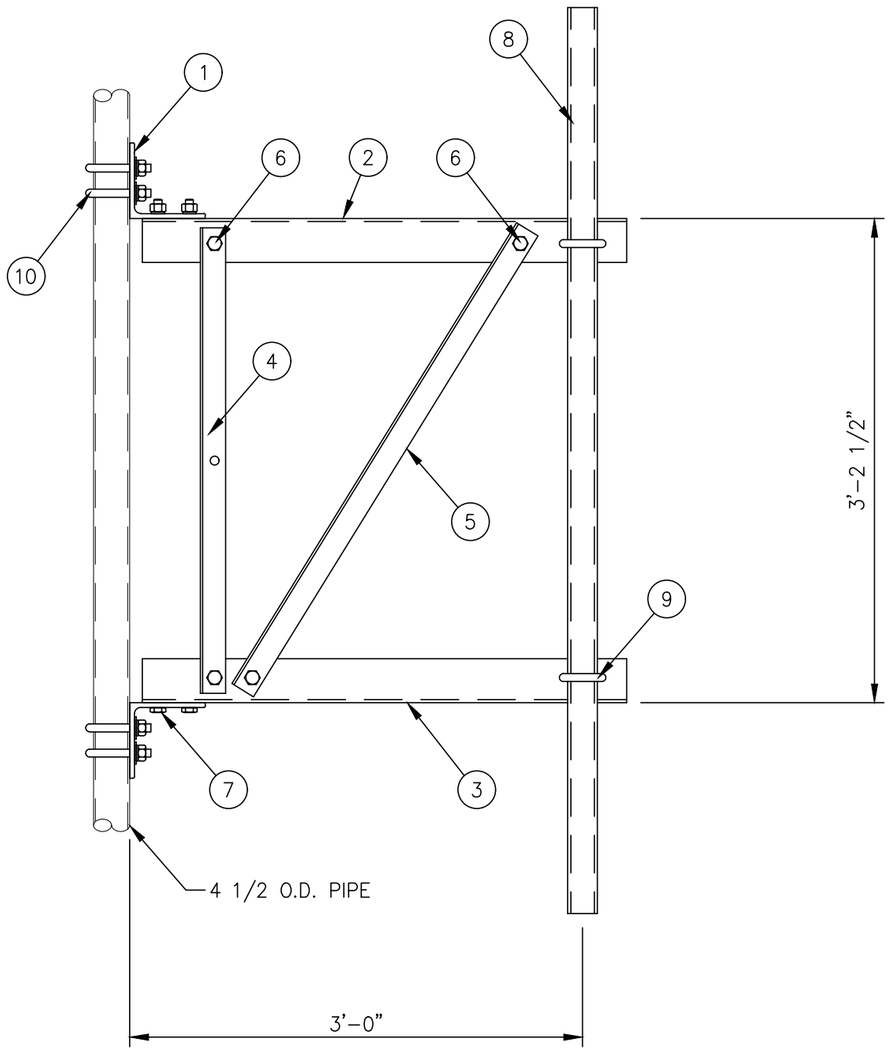
Sabre Industries™
INNOVATION DELIVERED

CONFIDENTIAL

This document and the information contained herein is the confidential trade secret property of Sabre Industries, Inc. ("Sabre") and must not be reproduced, copied or used, in whole or in part, for any purpose without the prior written consent of Sabre.
© 2025 Sabre Industries, Inc. All rights reserved.

PIPE MOUNT: 165' ELEVATION
SITE: LOWER PROSPECT, OR
CUSTOMER: MARION COUNTY OREGON

JOB NO. 563426		SIZE	DRAWING NO.		REV
DATE	8/7/25	B	563426-PM4		0
DRAWN BY	KMP			SCALE	PAGE
CHECKED BY	ZAK			None	1 OF 1



C10151103 3 FT. SIDEARM ASSEMBLY			
1	CK00060	SIDEARM ANGLE KIT	78
1	– – –	MISC HARDWARE (FRAMING)	4
1	C10900105	PIPE ANTENNA MOUNTING KIT 2 3/8" ø X 5'-0	19
4	C40034032	U-BOLT ASSEMBLY 5/8" ø X 5 3/16 C-C	9
		TOTAL WEIGHT LBS	110

CK00060 KIT LIST OF MATERIAL				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
1	2	CS00067	ANGLE, BOOM SUPPORT	23
2	1	CS01223	ANGLE, TOP CHORD	19
3	1	CS01224	ANGLE, BOTTOM CHORD	19
4	1	CS00065	ANGLE, VERTICAL	8
5	1	CS01228	ANGLE, DIAGONAL	9
			TOTAL WEIGHT LBS	78

MISC HARDWARE (FRAMING)				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
6	4	C40026022	BOLT ASSEMBLY, 5/8 ø X 1 3/4 A325	2
7	4	C40026023	BOLT ASSEMBLY, 5/8 ø X 2 A325	2
			TOTAL WEIGHT LBS	4

C10900105 ANTENNA PIPE MOUNTING KIT				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
8	1	C10981223	ANTENNA MTG. PIPE 2 3/8" ø X 5'-0	16
9	2	C40034023	U-BOLT ASSEMBLY 5/8" ø X 3 1/16 C-C	3
			TOTAL WEIGHT LBS	19

MISC HARDWARE				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
10	4	C40034032	U-BOLT ASSEMBLY 5/8" ø X 5 3/16 C-C	9
			TOTAL WEIGHT LBS	9

NOTES:

1. IF THE MOUNT IS NOT ON THE STRAIGHT PORTION OF THE TOWER SEE SITE SPECIFIC PIPE MOUNT.
2. QUANTITIES SHOWN IN LIST OF MATERIALS ARE FOR ONE (1) SIDEARM ASSEMBLY ONLY.

UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS INCLUDE FINISHES AND ARE IN INCHES

TOLERANCES: FRACTIONS ± 1/16" ANGLES ± 1/2 DEG. DECIMALS ± .010"

MATERIAL:

TOLERANCES DO NOT APPLY TO RAW MATERIAL

REV	DATE	DRW	CHK	DESCRIPTION

Sabre Industries™ INNOVATION DELIVERED

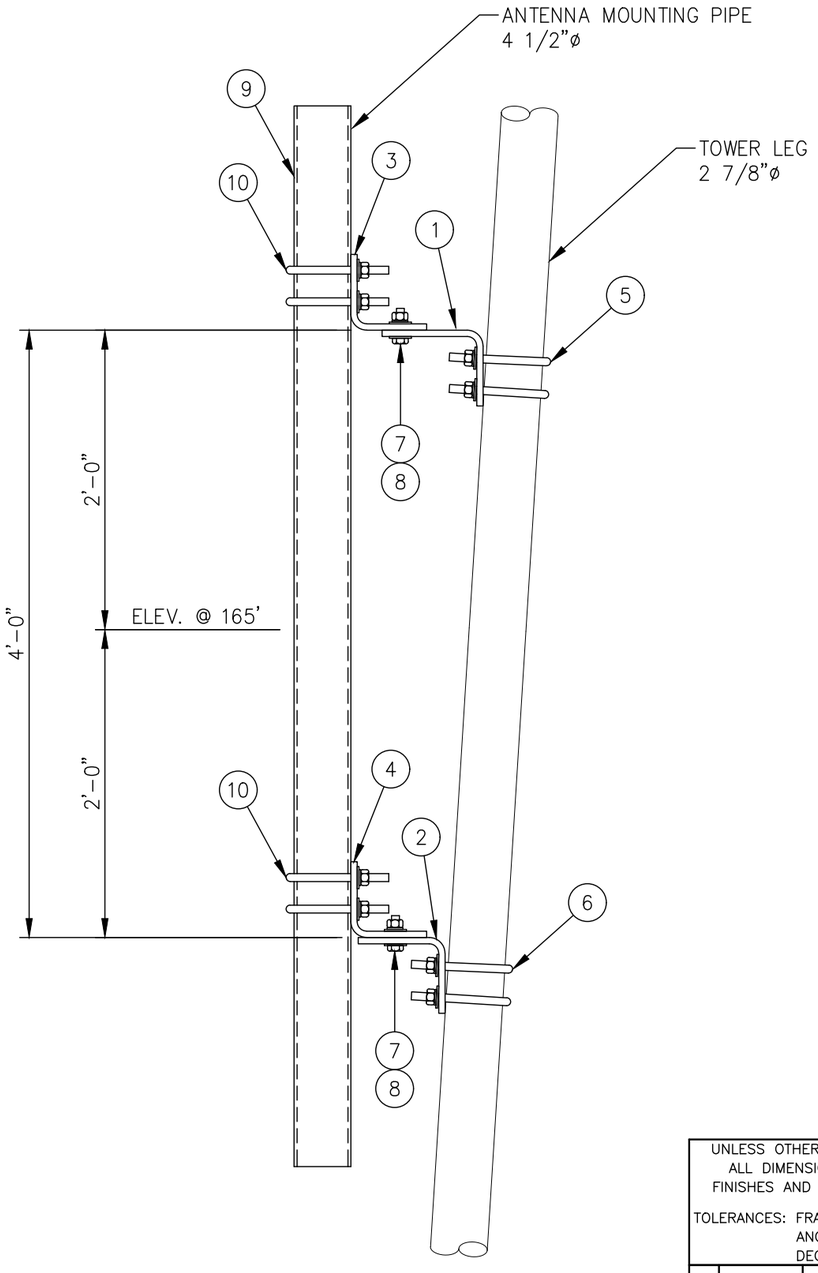
CONFIDENTIAL
This document and the information contained herein is the confidential trade secret property of Sabre Industries, Inc. ("Sabre") and must not be reproduced, copied or used, in whole or in part, for any purpose without the prior written consent of Sabre.
© 2025 Sabre Industries, Inc. All rights reserved.

3 FT. SIDEARMS: 165' ELEVATION

SITE: LOWER PROSPECT, OR

CUSTOMER: MARION COUNTY OREGON

JOB NO. 563426		SIZE	DRAWING NO.	REV
DATE	08/07/25	B	563426-SA3	0
DRAWN BY	KMP			
CHECKED BY	ZAK		SCALE NONE	PAGE 1 OF 1



ELEVATION VIEW

LIST OF MATERIALS FOR TAPERED LEG PIPE MOUNT KIT C10174018				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
1.	1	CS00216	TOP LEG MOUNT FOR 2 7/8 ø LEG	15
2.	1	CS00215	BOTTOM LEG MOUNT FOR 2 7/8 ø LEG	12
3.	1	CS00214	TOP PIPE MOUNT FOR 4 1/2 ø PIPE	15
4.	1	CS00215	BOTTOM PIPE MOUNT FOR 4 1/2 ø PIPE	12
5.	2	C40034025	U-BOLT ASSEMBLY 5/8 ø X 3 9/16 C-C (TOP LEG MOUNT)	4
6.	2	C40034025	U-BOLT ASSEMBLY 5/8 ø X 3 9/16 C-C (BOTTOM LEG MOUNT)	4
7.	4	C40026024	BOLT ASSEMBLY 5/8 ø X 2 1/4 A325	2
8.	8	C40031003	FLATWASHER, 5/8 ø (F436)	1
			KIT WEIGHT LBS	65

LIST OF ADDITIONAL MATERIALS				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
9.	1	C10981407	ANTENNA MTG. PIPE 4 1/2 ø X 7'-0	58
10.	4	C40034032	U-BOLT ASSEMBLY 5/8 ø X 5 3/16 C-C (PIPE MOUNTS)	9
			ADDITIONAL WEIGHT LBS	67

TOTAL WEIGHT LBS	132

UNLESS OTHERWISE SPECIFIED
ALL DIMENSIONS INCLUDE
FINISHES AND ARE IN INCHES

TOLERANCES: FRACTIONS ± 1/16"
ANGLES ± 1/2 DEG.
DECIMALS ± .010"

MATERIAL:

TOLERANCES DO NOT APPLY TO RAW MATERIAL

REV	DATE	DRW	CHK	DESCRIPTION

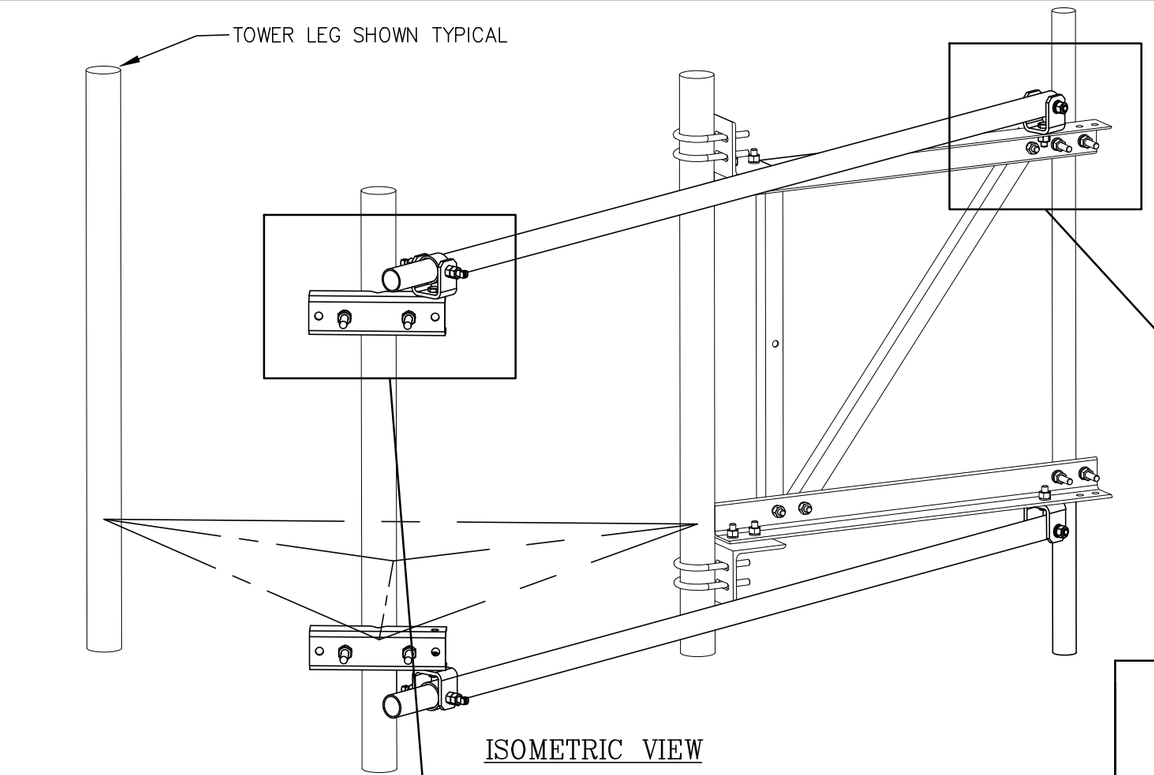
Sabre Industries™
INNOVATION DELIVERED

CONFIDENTIAL
This document and the information contained herein is the confidential trade secret property of Sabre Industries, Inc. ("Sabre") and must not be reproduced, copied or used, in whole or in part, for any purpose without the prior written consent of Sabre.
© 2025 Sabre Industries, Inc. All rights reserved.

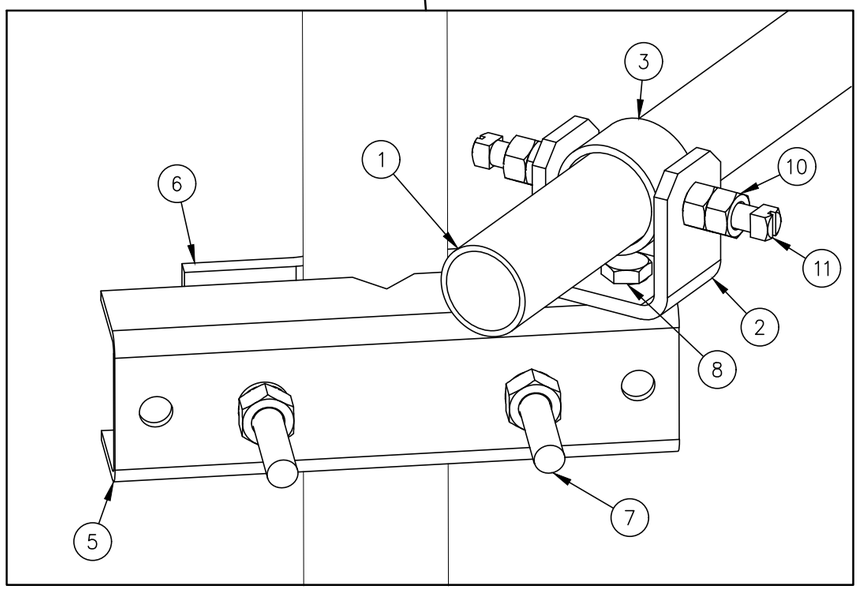
PIPE MOUNTS FOR SIDEARMS: 165' ELEVATION
SITE: LOWER PROSPECT, OR
CUSTOMER: MARION COUNTY OREGON

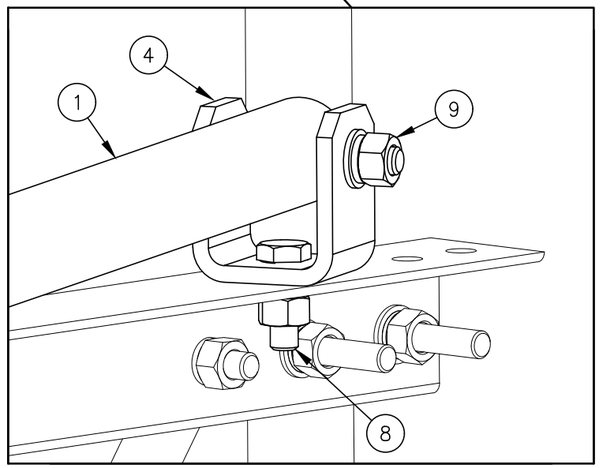
JOB NO. 563426		SIZE	DRAWING NO.	REV
DATE	8/7/25	B	563426-PM5	0
DRAWN BY	KMP		SCALE	PAGE
CHECKED BY	ZAK		None	1 OF 1

EXHIBIT K



ISOMETRIC VIEW





C10179002 SWIVEL KNUCKLE TIEBACK

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
1	1	CS02089	TIEBACK 2 3/8 X .134 X 13'-3"	43
2	1	CW00013	SWIVEL PLATE WELDMENT	3
3	1	CS00097	PIPE, SLEEVE 2 7/8 O.D. X W/0.203 X 0'-1 3/4	1
4	1	CS00098	BENT SWIVEL PLATE	3
5	1	CS01360	PLATE, MOUNTING BRACKET (FORMED CHANNEL)	9
6	1	CS01361	PLATE, 2 HOLE ADAPTER CLAMP	3
7	2	C40140001	BOLT ASSEMBLY, 3/4 X 10 A307 W/NUT, LKW, FLW	4
8	2	C40026023	BOLT ASSEMBLY, 5/8 ø X 2 A325	1
9	1	C40026033	BOLT ASSEMBLY, 5/8 ø X 4 1/2 A325	1
10	2	C40042007	HEX NUT, 5/8 A194 GRADE 2H	1
11	2	C40998007	SQ. HEAD SET SCREW, 5/8 X 2 1/2	1
			TOTAL WEIGHT LBS	70

QUANTITIES SHOWN ABOVE ARE FOR (1) SWIVEL KNUCKLE TIEBACK KIT ONLY.
(2) KITS ARE REQUIRED FOR THIS SIDEARM ASSEMBLY

UNLESS OTHERWISE SPECIFIED
ALL DIMENSIONS INCLUDE
FINISHES AND ARE IN INCHES

TOLERANCES: FRACTIONS ± 1/16"
ANGLES ± 1/2 DEG.
DECIMALS ± .010"

MATERIAL:

TOLERANCES DO NOT APPLY
TO RAW MATERIAL

REV	DATE	DRW	CHK	DESCRIPTION

Sabre Industries™
INNOVATION DELIVERED

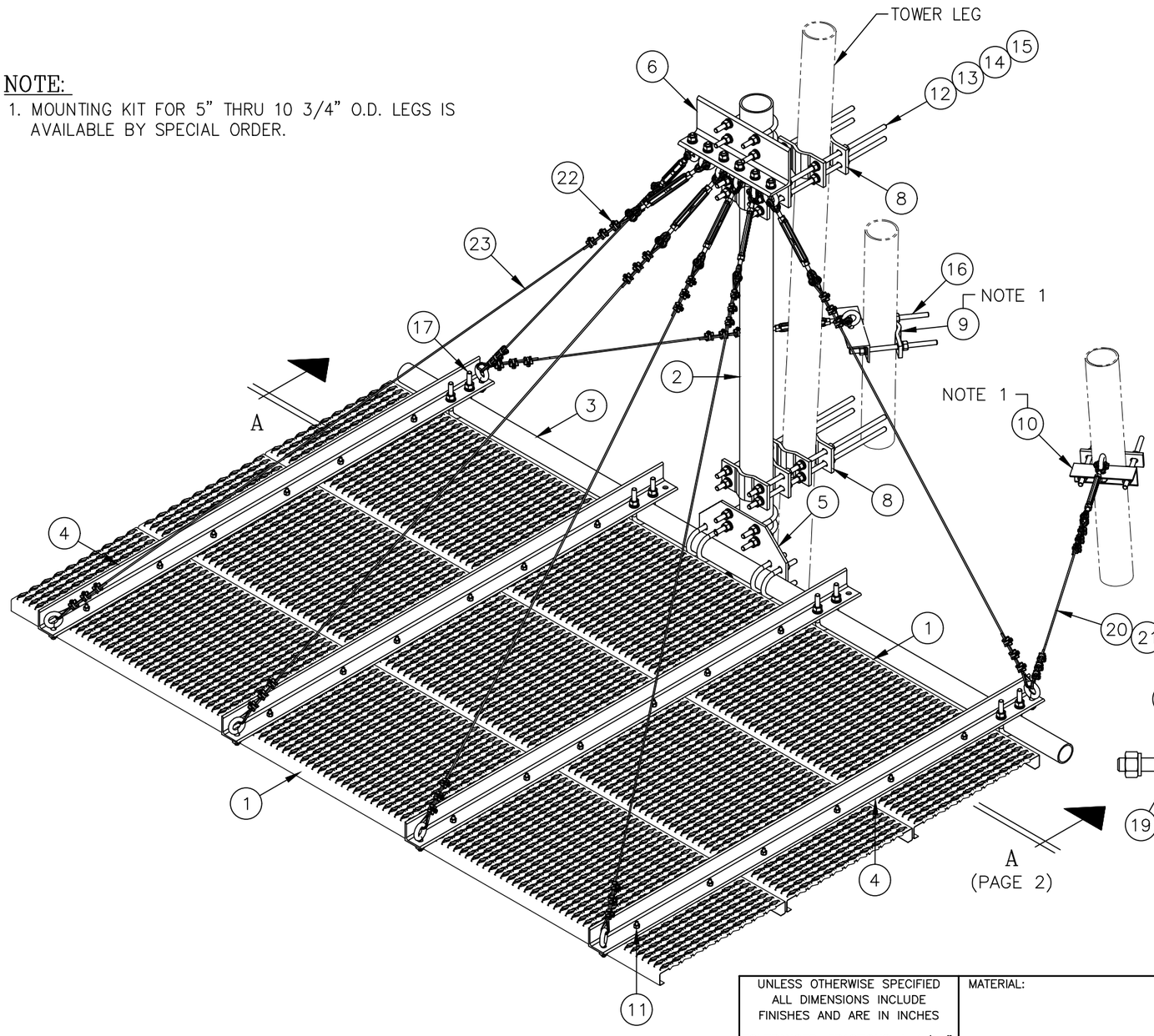
CONFIDENTIAL
This document and the information contained herein is the confidential trade secret property of Sabre Industries, Inc. ("Sabre") and must not be reproduced, copied or used, in whole or in part, for any purpose without the prior written consent of Sabre.
© 2025 Sabre Industries, Inc. All rights reserved.

SWIVEL KNUCKLE TIEBACKS: 165' ELEVATION
SITE: LOWER PROSPECT, OR
CUSTOMER: MARION COUNTY OREGON

JOB NO. 563426		SIZE	DRAWING NO.	REV
DATE	08/07/25	B	563426-ST3	0
DRAWN BY	KMP			
CHECKED BY	ZAK		SCALE NONE	PAGE 1 OF 1

NOTE:

1. MOUNTING KIT FOR 5" THRU 10 3/4" O.D. LEGS IS AVAILABLE BY SPECIAL ORDER.

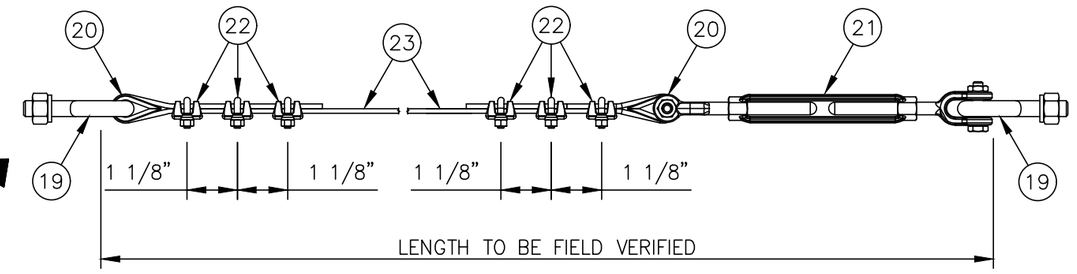


ISOMETRIC VIEW

(SEE PAGE 2 FOR MORE DETAILS)

C30085002 ICE SHIELD ASSEMBLY

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT
1.	3	C20137002	SAFETY GRATING, 2'-0 WIDE BY 10'-0 LONG	222
2.	1	C10981407	PIPE, 4 1/2" O.D. X W/0.180 X 7'-0	58
3.	1	C10901310	PIPE, 2 7/8" O.D. X W/0.203 X 10'-6	63
4.	4	CS00155	ANGLE, ICE SHIELD SUPPORT	143
5.	1	CS00156	PLATE, ICE SHIELD MOUNT	22
6.	1	CS01926	ANGLE, ICE SHIELD HANGER	19
7.	12	CS00158	PLATE, ICE SHIELD BACKUP	28
8.	8	CS00017	4 HOLE ADAPTER CLAMP 1 1/2" TO 5" O.D.	39
9.	2	CS00144	2 HOLE ADAPTER CLAMP 1 1/2" TO 5" O.D.	5
10.	2	CS01925	ANGLE, ICE SHIELD TIE BACK	7
11.	24	C40024006	BOLT ASSEMBLY, 3/8 ø X 2 GR 5	2
12.	16	C40042007	NUT, 5/8 ø A194 GRADE 2H	1
13.	16	C40030012	LOCKWASHER, 5/8 ø	1
14.	16	C40031003	FLATWASHER, 5/8 ø HARDENED ASTM F436	1
15.	8	C40099004	THREADED ROD ASS'Y, 5/8 ø X 2'-2 ASTM A193	22
16.	4	C40099002	THREADED ROD ASS'Y, 5/8 ø X 1'-0 ASTM A193	6
17.	8	C40034025	U-BOLT ASSEMBLY, 5/8 ø X 3 9/16" C-C	14
18.	6	C40034032	U-BOLT ASSEMBLY, 5/8 ø X 5 3/16" C-C	13
19.	14	C40079002	EYEBOLT ASSEMBLY, 5/8 ø X 1 3/4	8
20.	16	C40055011	THIMBLE, 3/16" STD	1
21.	8	C40051018	TURNBUCKLE, 1/2" X 6" J & J HDG	12
22.	48	C40056001	WIRE ROPE CLIP, 3/16"	5
23.	1	C30998120	AIRCRAFT CABLE, 3/16" X 120'-0	9
			TOTAL WEIGHT	701



TYPICAL CABLE ASSEMBLY

UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS INCLUDE FINISHES AND ARE IN INCHES

TOLERANCES: FRACTIONS ± 1/16" ANGLES ± 1/2 DEG. DECIMALS ± .010"

MATERIAL:

TOLERANCES DO NOT APPLY TO RAW MATERIAL

REV	DATE	DRW	CHK	DESCRIPTION
4	1/29/09	WRF	MC	REVISED PART NUMBERS OF ITEMS 6, 10, & EYEBOLTS WERE 3/8" & TURNB. WERE 1/4"
3	1/13/09	MLC	MC	REVISE PIPE (ITEM 2)
2	06/21/06	WRF	WMN	ADDED ISOMETRIC VIEW
1	4/4/03	KLE	DLW	REVISED PART NUMBERS

Sabre Industries™ INNOVATION DELIVERED

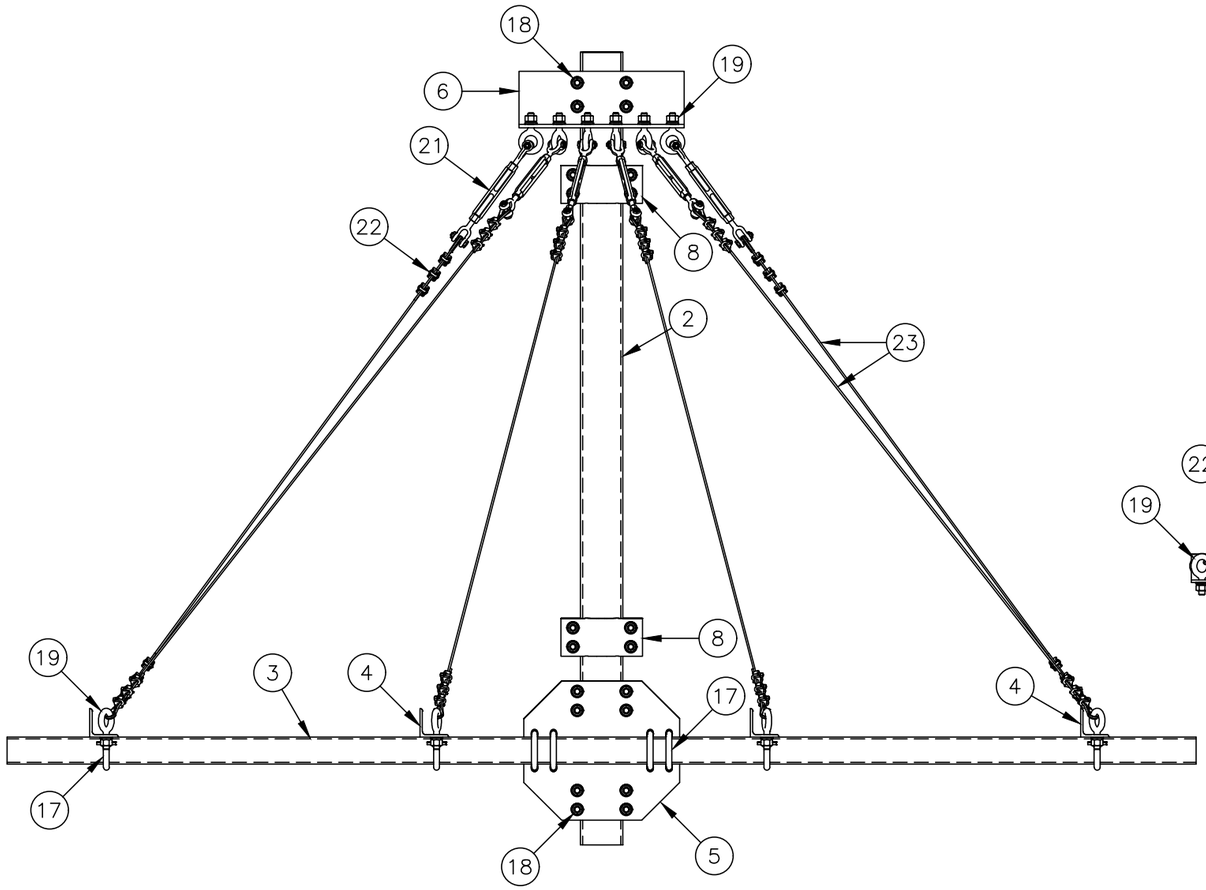
CONFIDENTIAL

This document and the information contained herein is the confidential trade secret property of Sabre Industries, Inc. ("Sabre") and must not be reproduced, copied or used, in whole or in part, for any purpose without the prior written consent of Sabre.

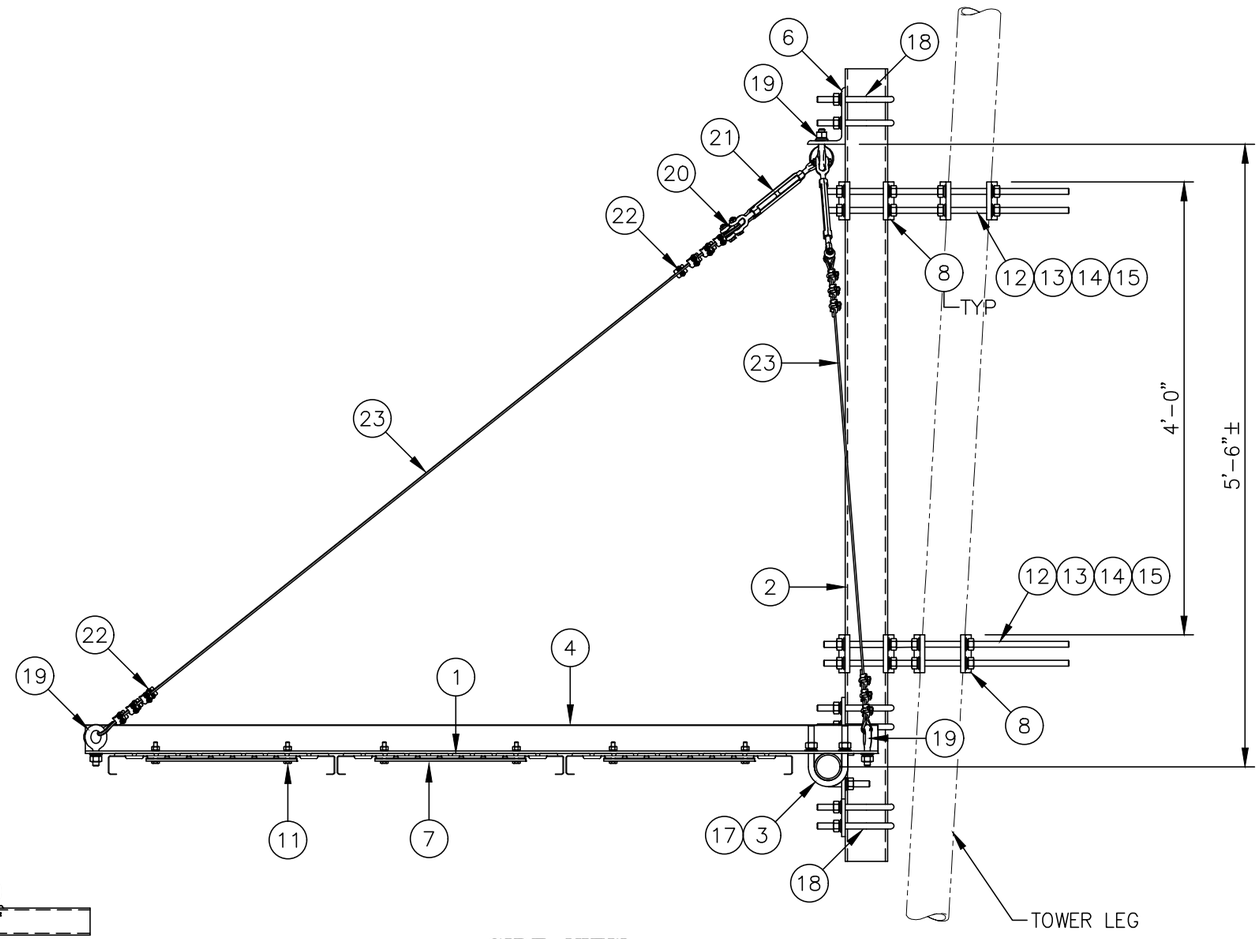
© 2022 Sabre Industries, Inc. All rights reserved.

ICE SHIELD ASSEMBLY FOR 6'-0 & 8'-0 DISH ANTENNA FITS 1 1/2 ø TO 5 ø LEGS

		SIZE	DRAWING NO.	REV
DATE	01/11/01	B	C30085002	4
DRAWN BY	BCT			
CHECKED BY	KLE		SCALE None	PAGE 1 OF 2



SECTION A–A
(GRATING REMOVED FOR CLARITY)



SIDE VIEW

REV	DATE	DRW	CHK	DESCRIPTION
4	1/29/09	WRF	MC	REVISED PART NUMBERS OF ITEMS 6, 10, & EYEBOLTS WERE 3/8" & TURNB. WERE 1/4"
3	1/13/09	MLC	MC	REVISE PIPE (ITEM 2)
2	06/21/06	WRF	WMN	ADDED ISOMETRIC VIEW
1	4/4/03	KLE	DLW	REVISED PART NUMBERS

UNLESS OTHERWISE SPECIFIED
ALL DIMENSIONS INCLUDE FINISHES AND ARE IN INCHES
TOLERANCES: FRACTIONS ± 1/16"
ANGLES ± 1/2 DEG.
DECIMALS ± .010"

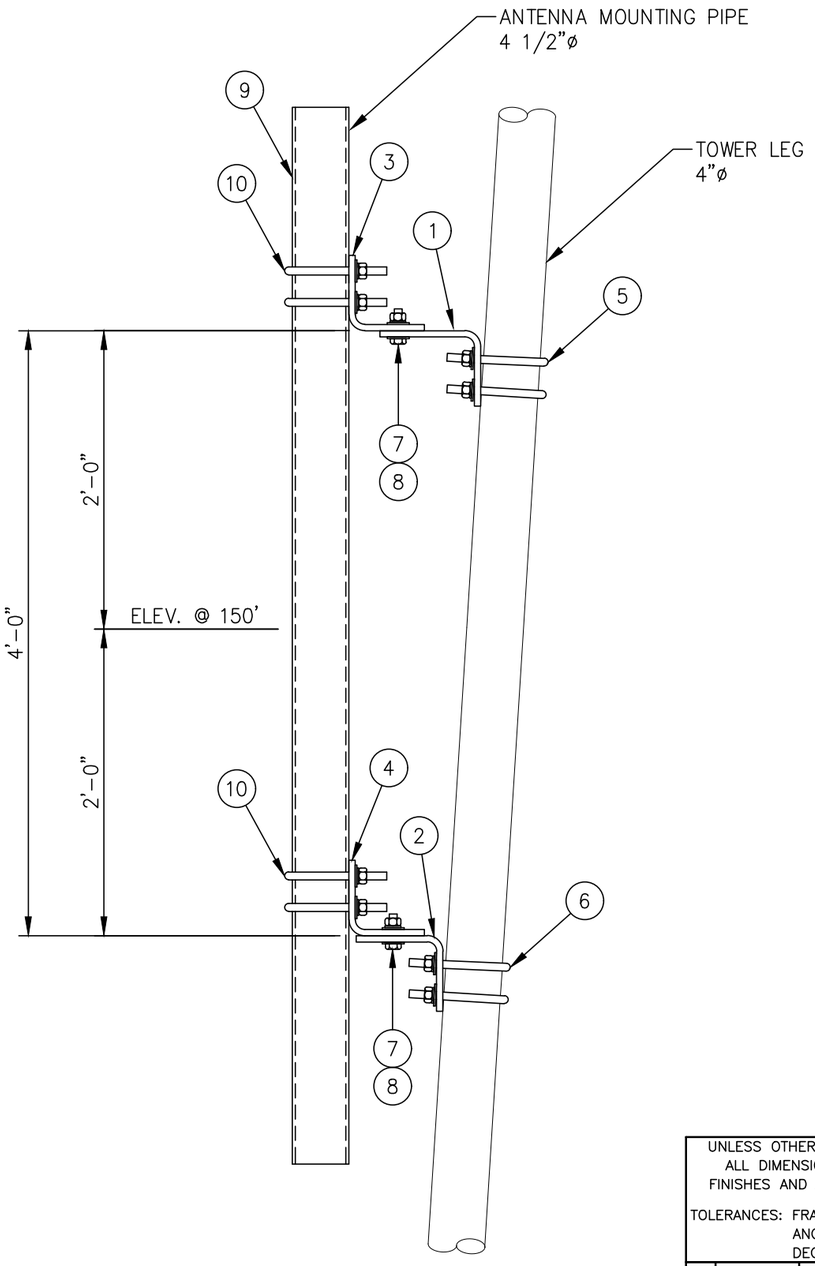
MATERIAL:
TOLERANCES DO NOT APPLY TO RAW MATERIAL

Sabre Industries™
INNOVATION DELIVERED

CONFIDENTIAL
This document and the information contained herein is the confidential trade secret property of Sabre Industries, Inc. ("Sabre") and must not be reproduced, copied or used, in whole or in part, for any purpose without the prior written consent of Sabre.
© 2022 Sabre Industries, Inc. All rights reserved.

ICE SHIELD ASSEMBLY
FOR 6'–0 & 8'–0 DISH ANTENNA
FITS 1 1/2 ø TO 5 ø LEGS

		SIZE	DRAWING NO.	REV
DATE	01/11/01	B	C30085002	4
DRAWN BY	BCT			
CHECKED BY	KLE	SCALE None	PAGE 2 OF 2	



ELEVATION VIEW

LIST OF MATERIALS FOR TAPERED LEG PIPE MOUNT KIT C10174036				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
1.	1	CS00216	TOP LEG MOUNT FOR 4 ø LEG	15
2.	1	CS00215	BOTTOM LEG MOUNT FOR 4 ø LEG	12
3.	1	CS00214	TOP PIPE MOUNT FOR 4 1/2 ø PIPE	15
4.	1	CS00215	BOTTOM PIPE MOUNT FOR 4 1/2 ø PIPE	12
5.	2	C40034030	U-BOLT ASSEMBLY 5/8 ø X 4 11/16 C-C (TOP LEG MOUNT)	4
6.	2	C40034030	U-BOLT ASSEMBLY 5/8 ø X 4 11/16 C-C (BOTTOM LEG MOUNT)	4
7.	4	C40026024	BOLT ASSEMBLY 5/8 ø X 2 1/4 A325	2
8.	8	C40031003	FLATWASHER, 5/8 ø (F436)	1
			KIT WEIGHT LBS	65

LIST OF ADDITIONAL MATERIALS				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
9.	1	C10981407	ANTENNA MTG. PIPE 4 1/2 ø X 7'-0	58
10.	4	C40034032	U-BOLT ASSEMBLY 5/8 ø X 5 3/16 C-C (PIPE MOUNTS)	9
			ADDITIONAL WEIGHT LBS	67

TOTAL WEIGHT LBS	132

UNLESS OTHERWISE SPECIFIED
ALL DIMENSIONS INCLUDE FINISHES AND ARE IN INCHES
TOLERANCES: FRACTIONS ± 1/16"
ANGLES ± 1/2 DEG.
DECIMALS ± .010"

MATERIAL:

TOLERANCES DO NOT APPLY TO RAW MATERIAL

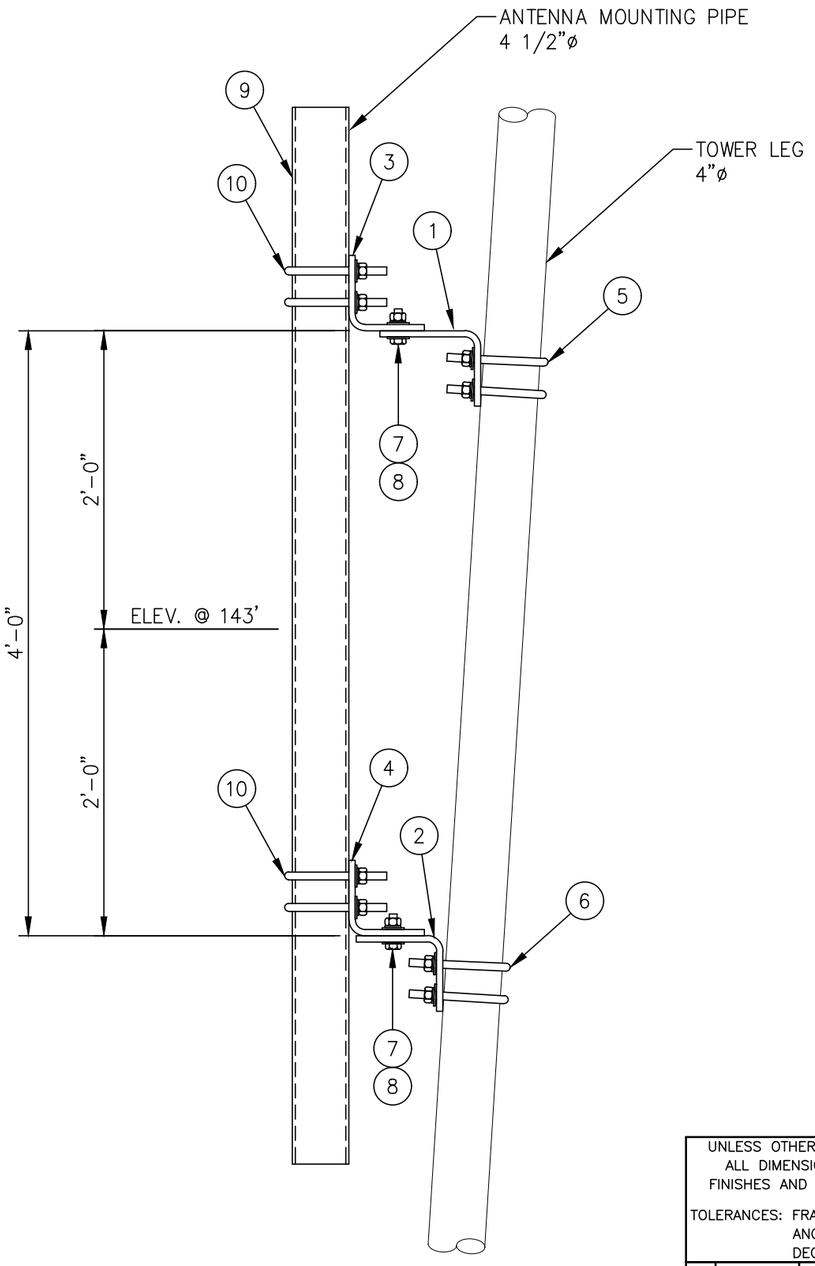
REV	DATE	DRW	CHK	DESCRIPTION

Sabre Industries™
INNOVATION DELIVERED

CONFIDENTIAL
This document and the information contained herein is the confidential trade secret property of Sabre Industries, Inc. ("Sabre") and must not be reproduced, copied or used, in whole or in part, for any purpose without the prior written consent of Sabre.
© 2025 Sabre Industries, Inc. All rights reserved.

PIPE MOUNTS: 150' ELEVATION
SITE: LOWER PROSPECT, OR
CUSTOMER: MARION COUNTY OREGON

JOB NO. 563426		SIZE	DRAWING NO.	REV
DATE	8/7/25	B	563426-PM6	0
DRAWN BY	KMP			
CHECKED BY	ZAK		SCALE None	PAGE 1 OF 1



ELEVATION VIEW

LIST OF MATERIALS FOR TAPERED LEG PIPE MOUNT KIT C10174036				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
1.	1	CS00216	TOP LEG MOUNT FOR 4 ø LEG	15
2.	1	CS00215	BOTTOM LEG MOUNT FOR 4 ø LEG	12
3.	1	CS00214	TOP PIPE MOUNT FOR 4 1/2 ø PIPE	15
4.	1	CS00215	BOTTOM PIPE MOUNT FOR 4 1/2 ø PIPE	12
5.	2	C40034030	U-BOLT ASSEMBLY 5/8 ø X 4 11/16 C-C (TOP LEG MOUNT)	4
6.	2	C40034030	U-BOLT ASSEMBLY 5/8 ø X 4 11/16 C-C (BOTTOM LEG MOUNT)	4
7.	4	C40026024	BOLT ASSEMBLY 5/8 ø X 2 1/4 A325	2
8.	8	C40031003	FLATWASHER, 5/8 ø (F436)	1
			KIT WEIGHT LBS	65

LIST OF ADDITIONAL MATERIALS				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
9.	1	C10981407	ANTENNA MTG. PIPE 4 1/2 ø X 7'-0	58
10.	4	C40034032	U-BOLT ASSEMBLY 5/8 ø X 5 3/16 C-C (PIPE MOUNTS)	9
			ADDITIONAL WEIGHT LBS	67

TOTAL WEIGHT LBS	132

UNLESS OTHERWISE SPECIFIED
ALL DIMENSIONS INCLUDE FINISHES AND ARE IN INCHES

TOLERANCES: FRACTIONS ± 1/16"
ANGLES ± 1/2 DEG.
DECIMALS ± .010"

MATERIAL:

TOLERANCES DO NOT APPLY TO RAW MATERIAL

REV	DATE	DRW	CHK	DESCRIPTION

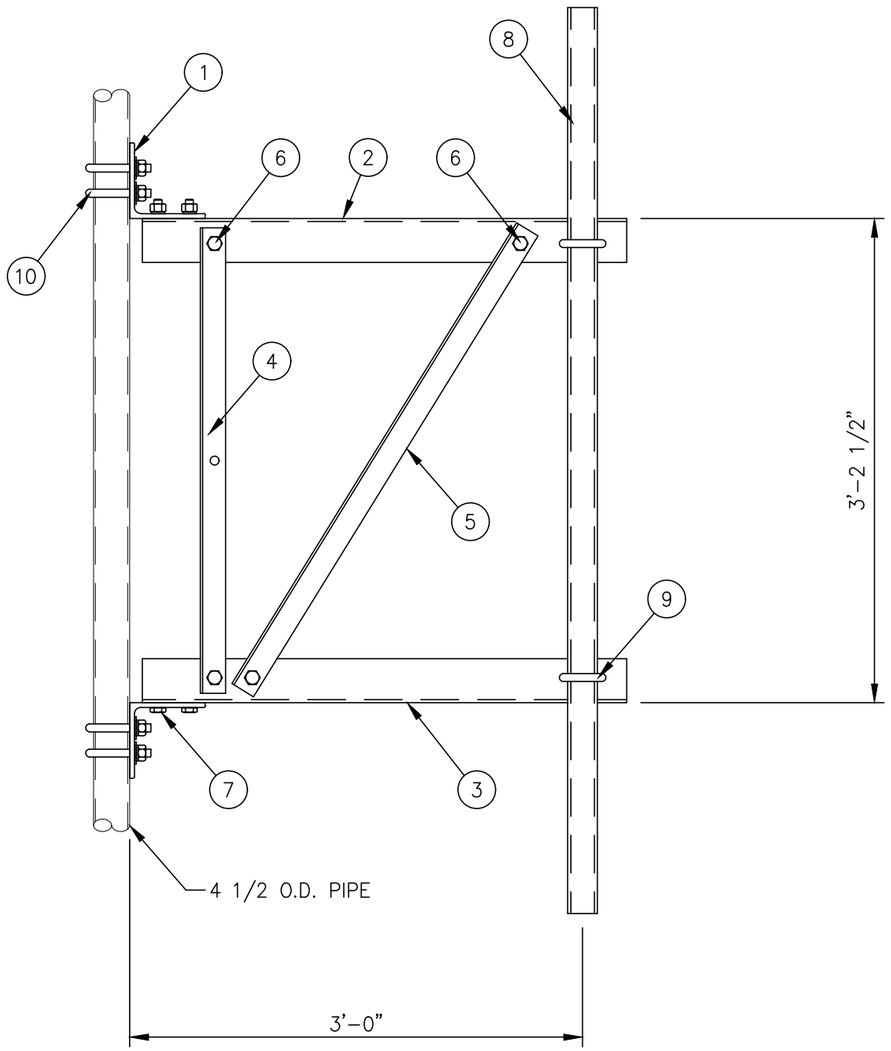
Sabre Industries™
INNOVATION DELIVERED

CONFIDENTIAL

This document and the information contained herein is the confidential trade secret property of Sabre Industries, Inc. ("Sabre") and must not be reproduced, copied or used, in whole or in part, for any purpose without the prior written consent of Sabre.
© 2025 Sabre Industries, Inc. All rights reserved.

PIPE MOUNT: 143' ELEVATION
SITE: LOWER PROSPECT, OR
CUSTOMER: MARION COUNTY OREGON

JOB NO. 563426		SIZE	DRAWING NO.		REV
DATE	8/7/25	B	563426-PM7		0
DRAWN BY	KMP			SCALE	PAGE
CHECKED BY	ZAK			None	1 OF 1



C10151103 3 FT. SIDEARM ASSEMBLY			
1	CK00060	SIDEARM ANGLE KIT	78
1	– – –	MISC HARDWARE (FRAMING)	4
1	C10900105	PIPE ANTENNA MOUNTING KIT 2 3/8" ø X 5'-0	19
4	C40034032	U-BOLT ASSEMBLY 5/8" ø X 5 3/16 C-C	9
		TOTAL WEIGHT LBS	110

CK00060 KIT LIST OF MATERIAL				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
1	2	CS00067	ANGLE, BOOM SUPPORT	23
2	1	CS01223	ANGLE, TOP CHORD	19
3	1	CS01224	ANGLE, BOTTOM CHORD	19
4	1	CS00065	ANGLE, VERTICAL	8
5	1	CS01228	ANGLE, DIAGONAL	9
			TOTAL WEIGHT LBS	78

MISC HARDWARE (FRAMING)				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
6	4	C40026022	BOLT ASSEMBLY, 5/8 ø X 1 3/4 A325	2
7	4	C40026023	BOLT ASSEMBLY, 5/8 ø X 2 A325	2
			TOTAL WEIGHT LBS	4

C10900105 ANTENNA PIPE MOUNTING KIT				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
8	1	C10981223	ANTENNA MTG. PIPE 2 3/8" ø X 5'-0	16
9	2	C40034023	U-BOLT ASSEMBLY 5/8" ø X 3 1/16 C-C	3
			TOTAL WEIGHT LBS	19

MISC HARDWARE				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
10	4	C40034032	U-BOLT ASSEMBLY 5/8" ø X 5 3/16 C-C	9
			TOTAL WEIGHT LBS	9

NOTES:

1. IF THE MOUNT IS NOT ON THE STRAIGHT PORTION OF THE TOWER SEE SITE SPECIFIC PIPE MOUNT.
2. QUANTITIES SHOWN IN LIST OF MATERIALS ARE FOR ONE (1) SIDEARM ASSEMBLY ONLY.

UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS INCLUDE FINISHES AND ARE IN INCHES

TOLERANCES: FRACTIONS ± 1/16" ANGLES ± 1/2 DEG. DECIMALS ± .010"

MATERIAL:

TOLERANCES DO NOT APPLY TO RAW MATERIAL

REV	DATE	DRW	CHK	DESCRIPTION

Sabre Industries™ INNOVATION DELIVERED

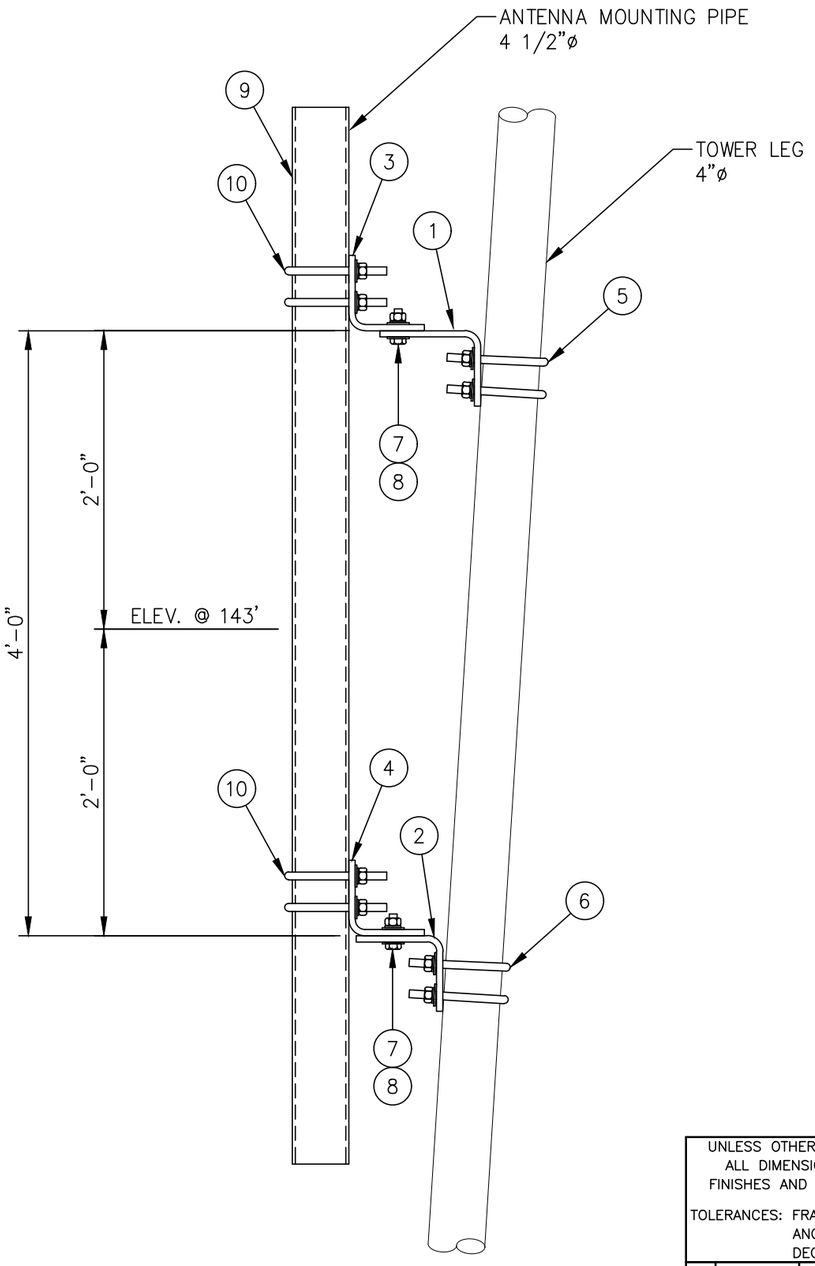
CONFIDENTIAL
This document and the information contained herein is the confidential trade secret property of Sabre Industries, Inc. ("Sabre") and must not be reproduced, copied or used, in whole or in part, for any purpose without the prior written consent of Sabre.
© 2025 Sabre Industries, Inc. All rights reserved.

3 FT. SIDEARM: 143' ELEVATION

SITE: LOWER PROSPECT, OR

CUSTOMER: MARION COUNTY OREGON

JOB NO. 563426		SIZE	DRAWING NO.	REV
DATE	08/07/25	B	563426-SA4	0
DRAWN BY	KMP			
CHECKED BY	ZAK		SCALE NONE	PAGE 1 OF 1



ELEVATION VIEW

LIST OF MATERIALS FOR TAPERED LEG PIPE MOUNT KIT C10174036				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
1.	1	CS00216	TOP LEG MOUNT FOR 4 ø LEG	15
2.	1	CS00215	BOTTOM LEG MOUNT FOR 4 ø LEG	12
3.	1	CS00214	TOP PIPE MOUNT FOR 4 1/2 ø PIPE	15
4.	1	CS00215	BOTTOM PIPE MOUNT FOR 4 1/2 ø PIPE	12
5.	2	C40034030	U-BOLT ASSEMBLY 5/8 ø X 4 11/16 C-C (TOP LEG MOUNT)	4
6.	2	C40034030	U-BOLT ASSEMBLY 5/8 ø X 4 11/16 C-C (BOTTOM LEG MOUNT)	4
7.	4	C40026024	BOLT ASSEMBLY 5/8 ø X 2 1/4 A325	2
8.	8	C40031003	FLATWASHER, 5/8 ø (F436)	1
			KIT WEIGHT LBS	65

LIST OF ADDITIONAL MATERIALS				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
9.	1	C10981407	ANTENNA MTG. PIPE 4 1/2 ø X 7'-0	58
10.	4	C40034032	U-BOLT ASSEMBLY 5/8 ø X 5 3/16 C-C (PIPE MOUNTS)	9
			ADDITIONAL WEIGHT LBS	67

TOTAL WEIGHT LBS	132

UNLESS OTHERWISE SPECIFIED
ALL DIMENSIONS INCLUDE FINISHES AND ARE IN INCHES
TOLERANCES: FRACTIONS ± 1/16"
ANGLES ± 1/2 DEG.
DECIMALS ± .010"

MATERIAL:

TOLERANCES DO NOT APPLY TO RAW MATERIAL

REV	DATE	DRW	CHK	DESCRIPTION

Sabre Industries™
INNOVATION DELIVERED

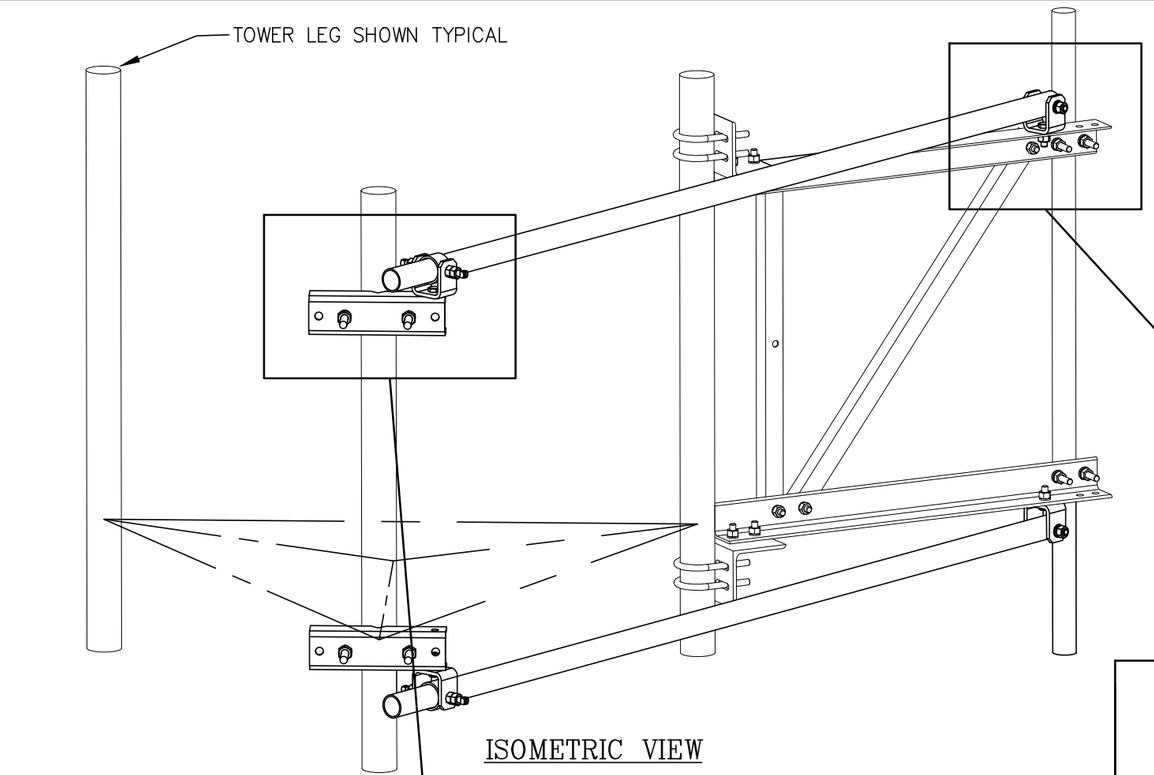
CONFIDENTIAL

This document and the information contained herein is the confidential trade secret property of Sabre Industries, Inc. ("Sabre") and must not be reproduced, copied or used, in whole or in part, for any purpose without the prior written consent of Sabre.
© 2025 Sabre Industries, Inc. All rights reserved.

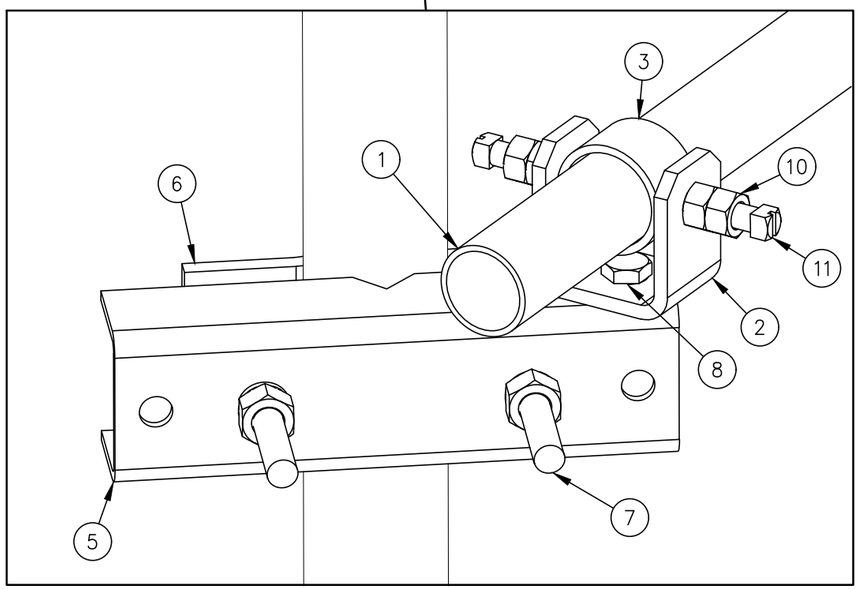
PIPE MOUNT FOR SIDEARM: 143' ELEVATION
SITE: LOWER PROSPECT, OR
CUSTOMER: MARION COUNTY OREGON

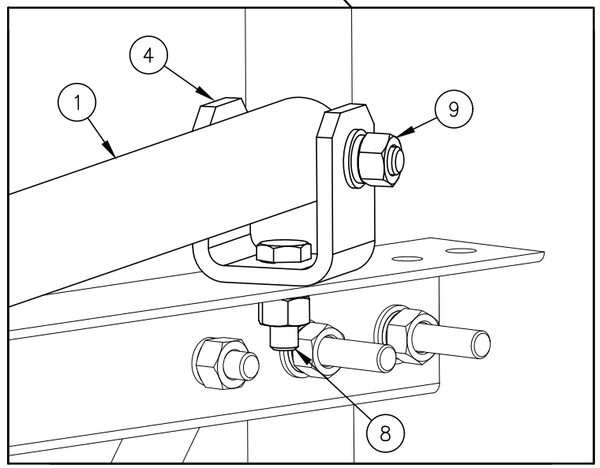
JOB NO. 563426		SIZE	DRAWING NO.		REV
DATE	8/7/25	B	563426-PM8		0
DRAWN BY	KMP			SCALE	PAGE
CHECKED BY	ZAK			None	1 OF 1

EXHIBIT K



ISOMETRIC VIEW





C10179002 SWIVEL KNUCKLE TIEBACK

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
1	1	CS02089	TIEBACK 2 3/8 X .134 X 13'-3"	43
2	1	CW00013	SWIVEL PLATE WELDMENT	3
3	1	CS00097	PIPE, SLEEVE 2 7/8 O.D. X W/0.203 X 0'-1 3/4	1
4	1	CS00098	BENT SWIVEL PLATE	3
5	1	CS01360	PLATE, MOUNTING BRACKET (FORMED CHANNEL)	9
6	1	CS01361	PLATE, 2 HOLE ADAPTER CLAMP	3
7	2	C40140001	BOLT ASSEMBLY, 3/4 X 10 A307 W/NUT, LKW, FLW	4
8	2	C40026023	BOLT ASSEMBLY, 5/8 ø X 2 A325	1
9	1	C40026033	BOLT ASSEMBLY, 5/8 ø X 4 1/2 A325	1
10	2	C40042007	HEX NUT, 5/8 A194 GRADE 2H	1
11	2	C40998007	SQ. HEAD SET SCREW, 5/8 X 2 1/2	1
			TOTAL WEIGHT LBS	70

QUANTITIES SHOWN ABOVE ARE FOR (1) SWIVEL KNUCKLE TIEBACK KIT ONLY.
(2) KITS ARE REQUIRED FOR THIS SIDEARM ASSEMBLY

UNLESS OTHERWISE SPECIFIED
ALL DIMENSIONS INCLUDE
FINISHES AND ARE IN INCHES

TOLERANCES: FRACTIONS ± 1/16"
ANGLES ± 1/2 DEG.
DECIMALS ± .010"

MATERIAL:

TOLERANCES DO NOT APPLY
TO RAW MATERIAL

REV	DATE	DRW	CHK	DESCRIPTION

Sabre Industries™
INNOVATION DELIVERED

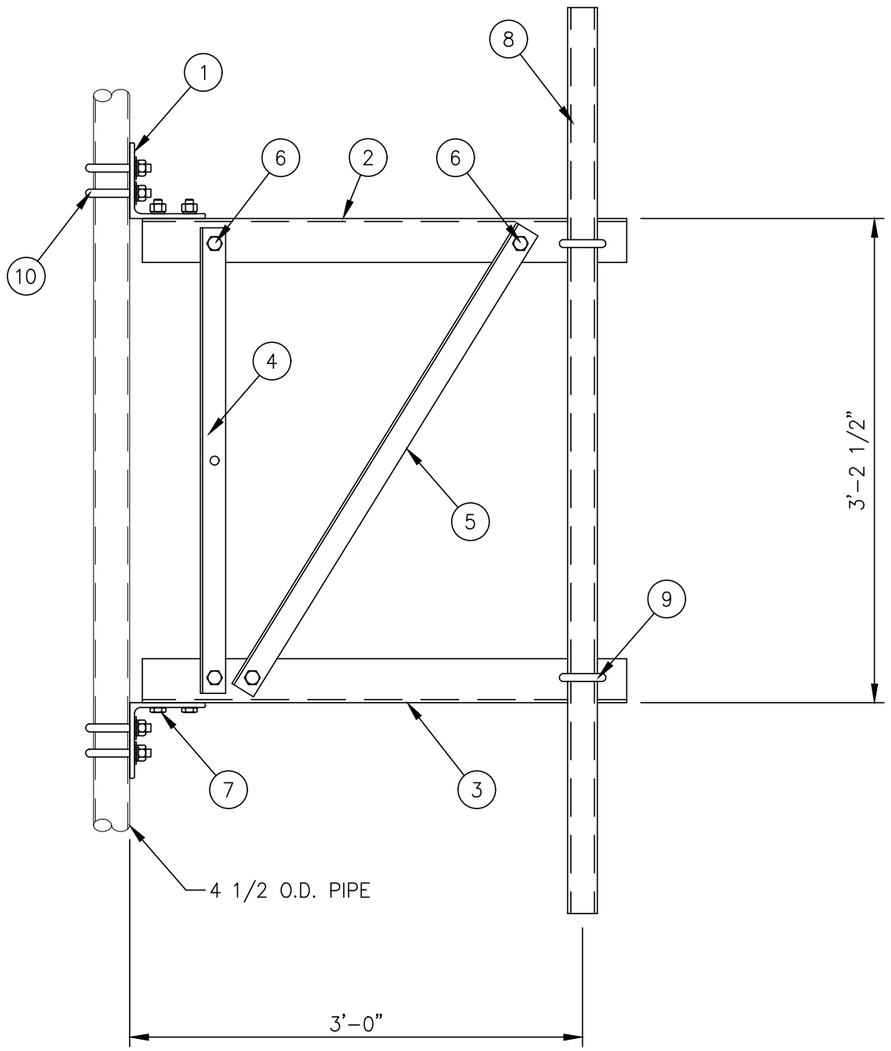
CONFIDENTIAL
This document and the information contained herein is the confidential trade secret property of Sabre Industries, Inc. ("Sabre") and must not be reproduced, copied or used, in whole or in part, for any purpose without the prior written consent of Sabre.
© 2025 Sabre Industries, Inc. All rights reserved.

SWIVEL KNUCKLE TIEBACKS: 143' ELEVATION

SITE: LOWER PROSPECT, OR

CUSTOMER: MARION COUNTY OREGON

JOB NO. 563426		SIZE	DRAWING NO.	REV
DATE	08/07/25	B	563426-ST4	0
DRAWN BY	KMP			
CHECKED BY	ZAK		SCALE NONE	PAGE 1 OF 1



C10151103 3 FT. SIDEARM ASSEMBLY			
1	CK00060	SIDEARM ANGLE KIT	78
1	– – –	MISC HARDWARE (FRAMING)	4
1	C10900105	PIPE ANTENNA MOUNTING KIT 2 3/8" ø X 5'-0	19
4	C40034032	U-BOLT ASSEMBLY 5/8" ø X 5 3/16 C-C	9
		TOTAL WEIGHT LBS	110

CK00060 KIT LIST OF MATERIAL				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
1	2	CS00067	ANGLE, BOOM SUPPORT	23
2	1	CS01223	ANGLE, TOP CHORD	19
3	1	CS01224	ANGLE, BOTTOM CHORD	19
4	1	CS00065	ANGLE, VERTICAL	8
5	1	CS01228	ANGLE, DIAGONAL	9
			TOTAL WEIGHT LBS	78

MISC HARDWARE (FRAMING)				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
6	4	C40026022	BOLT ASSEMBLY, 5/8 ø X 1 3/4 A325	2
7	4	C40026023	BOLT ASSEMBLY, 5/8 ø X 2 A325	2
			TOTAL WEIGHT LBS	4

C10900105 ANTENNA PIPE MOUNTING KIT				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
8	1	C10981223	ANTENNA MTG. PIPE 2 3/8" ø X 5'-0	16
9	2	C40034023	U-BOLT ASSEMBLY 5/8" ø X 3 1/16 C-C	3
			TOTAL WEIGHT LBS	19

MISC HARDWARE				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
10	4	C40034032	U-BOLT ASSEMBLY 5/8" ø X 5 3/16 C-C	9
			TOTAL WEIGHT LBS	9

NOTES:

1. IF THE MOUNT IS NOT ON THE STRAIGHT PORTION OF THE TOWER SEE SITE SPECIFIC PIPE MOUNT.
2. QUANTITIES SHOWN IN LIST OF MATERIALS ARE FOR ONE (1) SIDEARM ASSEMBLY ONLY.

UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS INCLUDE FINISHES AND ARE IN INCHES

TOLERANCES: FRACTIONS ± 1/16" ANGLES ± 1/2 DEG. DECIMALS ± .010"

MATERIAL:

TOLERANCES DO NOT APPLY TO RAW MATERIAL

REV	DATE	DRW	CHK	DESCRIPTION

Sabre Industries™ INNOVATION DELIVERED

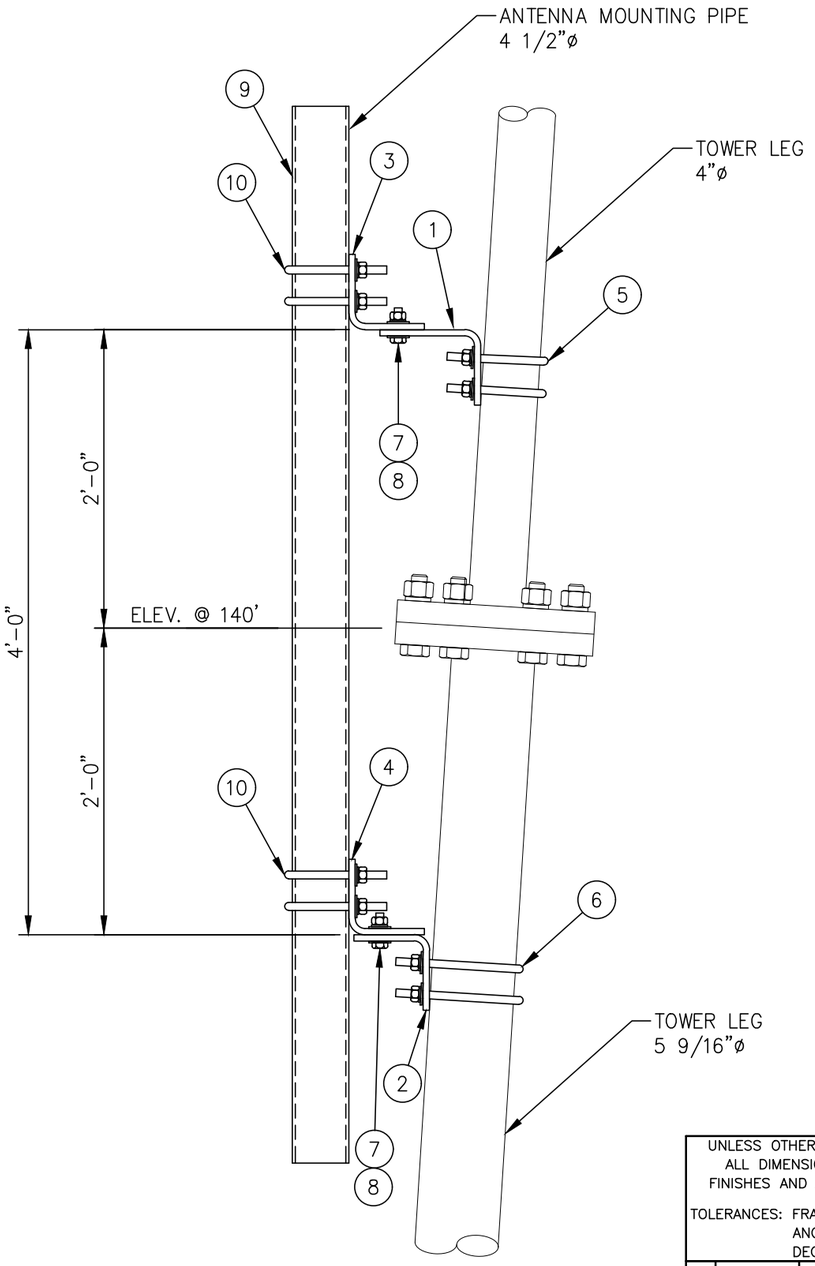
CONFIDENTIAL
This document and the information contained herein is the confidential trade secret property of Sabre Industries, Inc. ("Sabre") and must not be reproduced, copied or used, in whole or in part, for any purpose without the prior written consent of Sabre.
© 2025 Sabre Industries, Inc. All rights reserved.

3 FT. SIDEARM: 140' ELEVATION

SITE: LOWER PROSPECT, OR

CUSTOMER: MARION COUNTY OREGON

JOB NO. 563426		SIZE	DRAWING NO.	REV
DATE	08/07/25	B	563426-SA5	0
DRAWN BY	KMP			
CHECKED BY	ZAK		SCALE NONE	PAGE 1 OF 1



ELEVATION VIEW

LIST OF MATERIALS FOR TAPERED LEG PIPE MOUNT KIT C10174053				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
1.	1	CS00217	TOP LEG MOUNT FOR 4 ø LEG	18
2.	1	CS00218	BOTTOM LEG MOUNT FOR 5 9/16 ø LEG	20
3.	1	CS00222	TOP PIPE MOUNT FOR 4 1/2 ø PIPE	18
4.	1	CS00215	BOTTOM PIPE MOUNT FOR 4 1/2 ø PIPE	12
5.	2	C40034030	U-BOLT ASSEMBLY 5/8 ø X 4 11/16 C-C (TOP LEG MOUNT)	4
6.	2	C40034035	U-BOLT ASSEMBLY 5/8 ø X 6 1/4 C-C (BOTTOM LEG MOUNT)	5
7.	4	C40026024	BOLT ASSEMBLY 5/8 ø X 2 1/4 A325	2
8.	8	C40031003	FLATWASHER, 5/8 ø (F436)	1
			KIT WEIGHT LBS	80

LIST OF ADDITIONAL MATERIALS				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
9.	1	C10981407	ANTENNA MTG. PIPE 4 1/2 ø X 7'-0	58
10.	4	C40034032	U-BOLT ASSEMBLY 5/8 ø X 5 3/16 C-C (PIPE MOUNTS)	9
			ADDITIONAL WEIGHT LBS	67

TOTAL WEIGHT LBS	147

UNLESS OTHERWISE SPECIFIED
ALL DIMENSIONS INCLUDE
FINISHES AND ARE IN INCHES

TOLERANCES: FRACTIONS ± 1/16"
ANGLES ± 1/2 DEG.
DECIMALS ± .010"

MATERIAL:

TOLERANCES DO NOT APPLY TO RAW MATERIAL

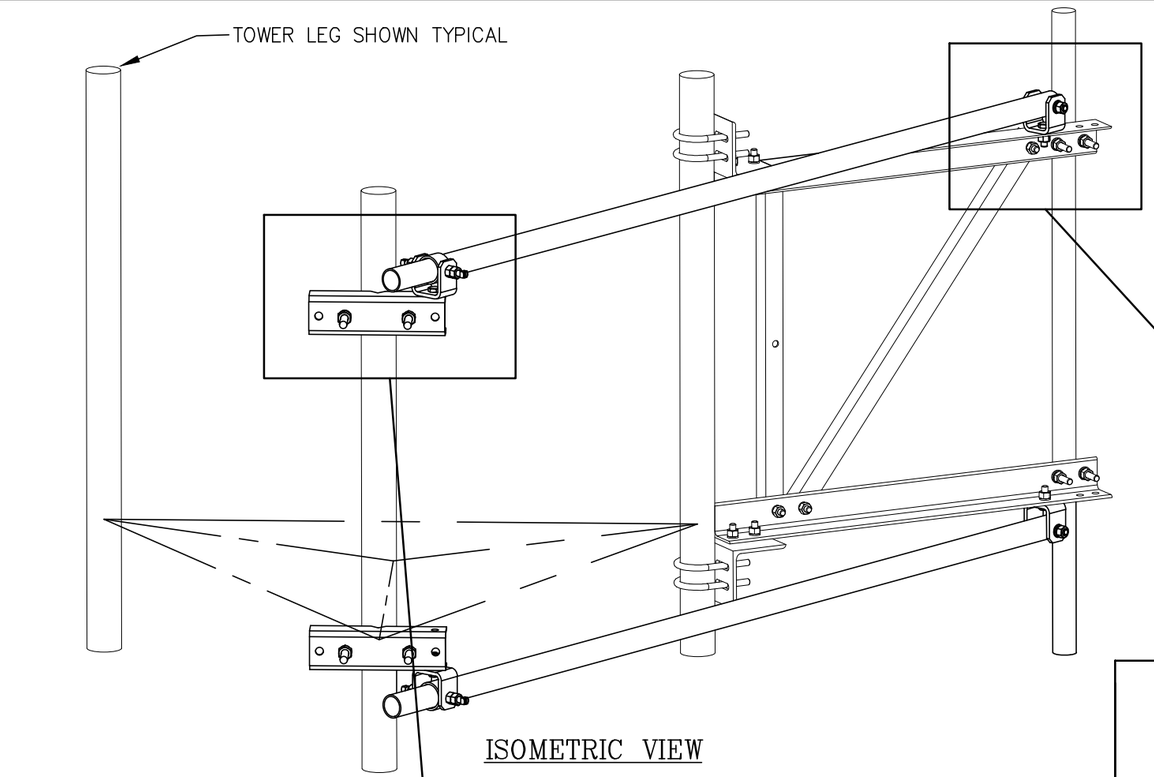
REV	DATE	DRW	CHK	DESCRIPTION

Sabre Industries™
INNOVATION DELIVERED

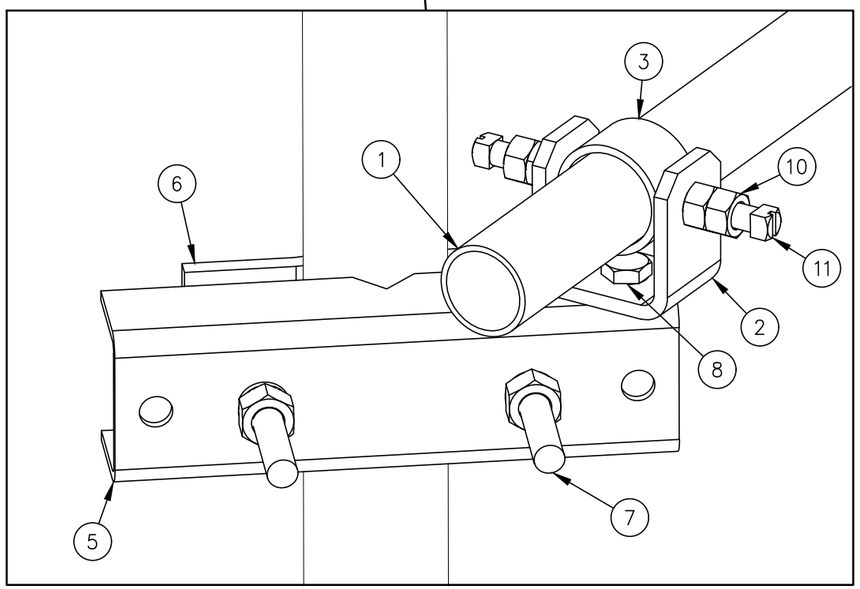
CONFIDENTIAL
This document and the information contained herein is the confidential trade secret property of Sabre Industries, Inc. ("Sabre") and must not be reproduced, copied or used, in whole or in part, for any purpose without the prior written consent of Sabre.
© 2025 Sabre Industries, Inc. All rights reserved.

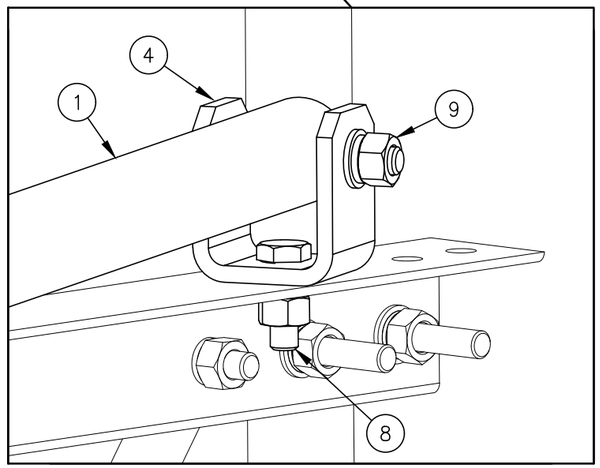
PIPE MOUNT FOR SIDEARM: 140' ELEVATION
SITE: LOWER PROSPECT, OR
CUSTOMER: MARION COUNTY OREGON

JOB NO. 563426		SIZE	DRAWING NO.	REV
DATE	8/7/25	B	563426-PM9	0
DRAWN BY	KMP			
CHECKED BY	ZAK		SCALE None	PAGE 1 OF 1



ISOMETRIC VIEW





C10179011 SWIVEL KNUCKLE TIEBACK

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
1	1	CS00249	PIPE, 2 7/8 O.D. X W/0.203 X 15'-6	93
2	1	CW00022	SWIVEL PLATE WELDMENT	3
3	1	CS00092	PIPE, SLEEVE 3 1/2 O.D. X W/0.216 X 0'-1 3/4	1
4	1	CS00096	BENT SWIVEL PLATE	3
5	1	CS01360	PLATE, MOUNTING BRACKET (FORMED CHANNEL)	9
6	1	CS01361	PLATE, 2 HOLE ADAPTER CLAMP	3
7	2	C40140001	BOLT ASSEMBLY, 3/4 X 10 A307 W/NUT, LKW, FLW	4
8	2	C40026023	BOLT ASSEMBLY, 5/8 ø X 2 A325	1
9	1	C40026035	BOLT ASSEMBLY, 5/8 ø X 5 A325	1
10	2	C40042007	HEX NUT, 5/8 A194 GRADE 2H	1
11	2	C40998007	SQ. HEAD SET SCREW, 5/8 X 2 1/2	1
			TOTAL WEIGHT LBS	120

QUANTITIES SHOWN ABOVE ARE FOR (1) SWIVEL KNUCKLE TIEBACK KIT ONLY.
(2) KITS ARE REQUIRED FOR THIS SIDEARM ASSEMBLY

UNLESS OTHERWISE SPECIFIED
ALL DIMENSIONS INCLUDE
FINISHES AND ARE IN INCHES

TOLERANCES: FRACTIONS ± 1/16"
ANGLES ± 1/2 DEG.
DECIMALS ± .010"

MATERIAL:

TOLERANCES DO NOT APPLY TO RAW MATERIAL

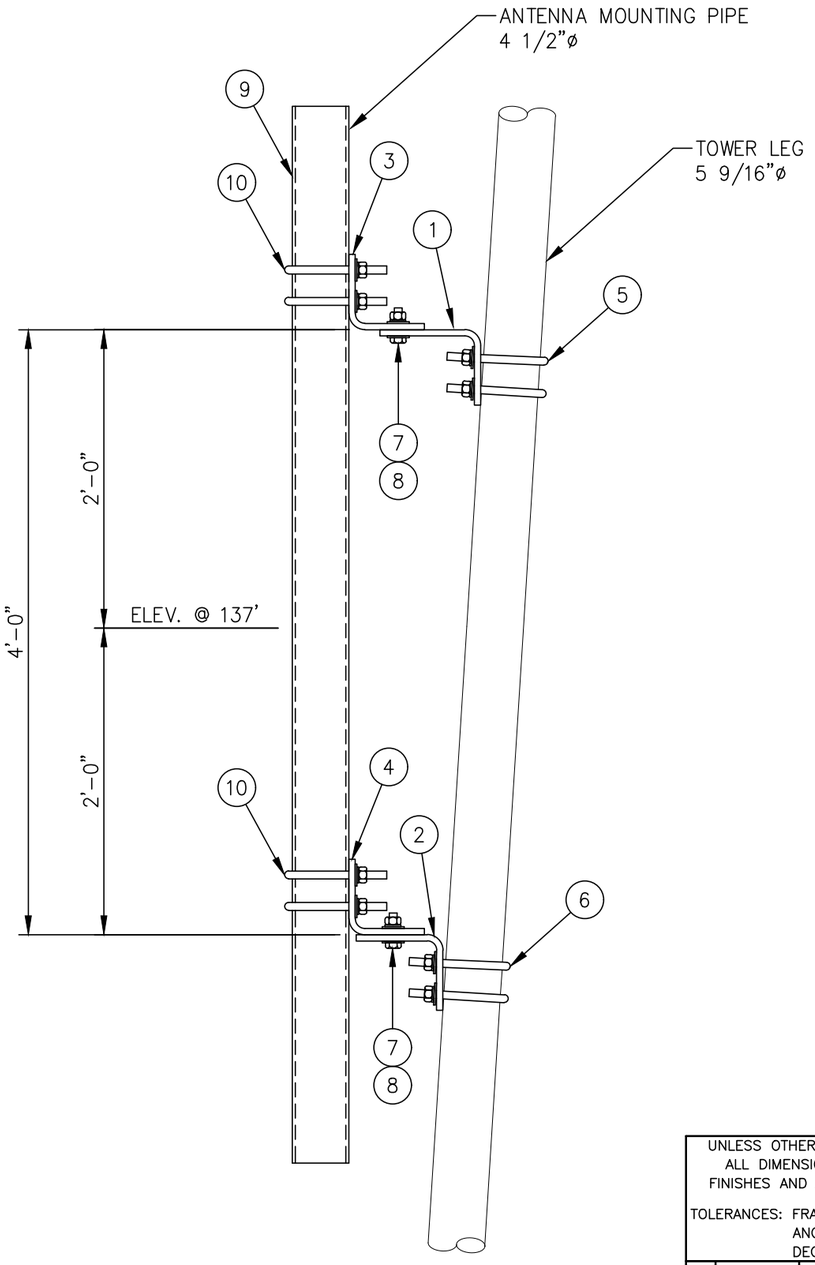
REV	DATE	DRW	CHK	DESCRIPTION

Sabre Industries™
INNOVATION DELIVERED

CONFIDENTIAL
This document and the information contained herein is the confidential trade secret property of Sabre Industries, Inc. ("Sabre") and must not be reproduced, copied or used, in whole or in part, for any purpose without the prior written consent of Sabre.
© 2025 Sabre Industries, Inc. All rights reserved.

SWIVEL KNUCKLE TIEBACKS: 140' ELEVATION
SITE: LOWER PROSPECT, OR
CUSTOMER: MARION COUNTY OREGON

JOB NO. 563426		SIZE	DRAWING NO.	REV
DATE	08/07/25	B	563426-ST5	0
DRAWN BY	KMP			
CHECKED BY	ZAK		SCALE NONE	PAGE 1 OF 1



ELEVATION VIEW

LIST OF MATERIALS FOR TAPERED LEG PIPE MOUNT KIT C10174055				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
1.	1	CS00219	TOP LEG MOUNT FOR 5 9/16 ø LEG	24
2.	1	CS00218	BOTTOM LEG MOUNT FOR 5 9/16 ø LEG	20
3.	1	CS00214	TOP PIPE MOUNT FOR 4 1/2 ø PIPE	15
4.	1	CS00215	BOTTOM PIPE MOUNT FOR 4 1/2 ø PIPE	12
5.	2	C40034035	U-BOLT ASSEMBLY 5/8 ø X 6 1/4 C-C (TOP LEG MOUNT)	5
6.	2	C40034035	U-BOLT ASSEMBLY 5/8 ø X 6 1/4 C-C (BOTTOM LEG MOUNT)	5
7.	4	C40026024	BOLT ASSEMBLY 5/8 ø X 2 1/4 A325	2
8.	8	C40031003	FLATWASHER, 5/8 ø (F436)	1
			KIT WEIGHT LBS	84

LIST OF ADDITIONAL MATERIALS				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
9.	1	C10981407	ANTENNA MTG. PIPE 4 1/2 ø X 7'-0	58
10.	4	C40034032	U-BOLT ASSEMBLY 5/8 ø X 5 3/16 C-C (PIPE MOUNTS)	9
			ADDITIONAL WEIGHT LBS	67

TOTAL WEIGHT LBS	151

UNLESS OTHERWISE SPECIFIED
ALL DIMENSIONS INCLUDE FINISHES AND ARE IN INCHES

TOLERANCES: FRACTIONS ± 1/16"
ANGLES ± 1/2 DEG.
DECIMALS ± .010"

MATERIAL:

TOLERANCES DO NOT APPLY TO RAW MATERIAL

REV	DATE	DRW	CHK	DESCRIPTION

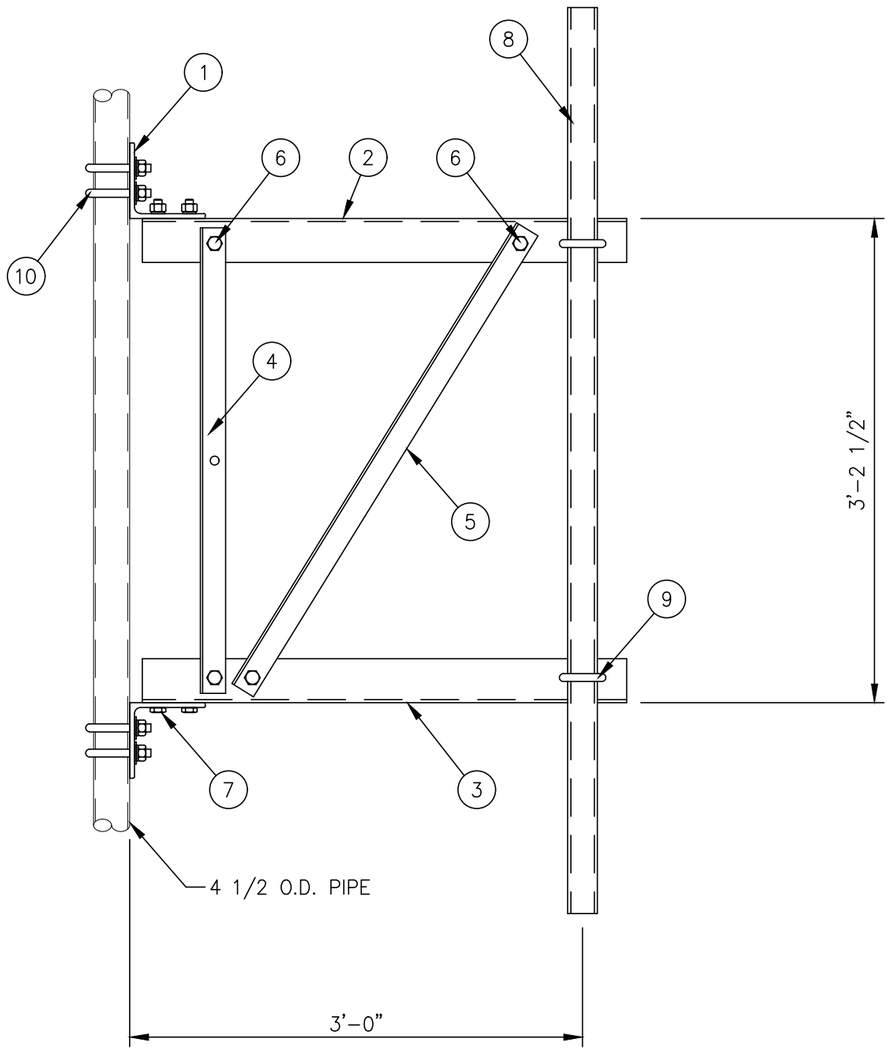
Sabre Industries™
INNOVATION DELIVERED

CONFIDENTIAL

This document and the information contained herein is the confidential trade secret property of Sabre Industries, Inc. ("Sabre") and must not be reproduced, copied or used, in whole or in part, for any purpose without the prior written consent of Sabre.
© 2025 Sabre Industries, Inc. All rights reserved.

PIPE MOUNT: 137' ELEVATION
SITE: LOWER PROSPECT, OR
CUSTOMER: MARION COUNTY OREGON

JOB NO. 563426		SIZE	DRAWING NO.		REV
DATE	8/7/25	B	563426-PM10		0
DRAWN BY	KMP			SCALE	PAGE
CHECKED BY	ZAK			None	1 OF 1



C10151103 3 FT. SIDEARM ASSEMBLY			
1	CK00060	SIDEARM ANGLE KIT	78
1	– – –	MISC HARDWARE (FRAMING)	4
1	C10900104	PIPE ANTENNA MOUNTING KIT 2 3/8" ø X 4'-0	16
4	C40034032	U-BOLT ASSEMBLY 5/8" ø X 5 3/16 C-C	9
		TOTAL WEIGHT LBS	107

CK00060 KIT LIST OF MATERIAL				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
1	2	CS00067	ANGLE, BOOM SUPPORT	23
2	1	CS01223	ANGLE, TOP CHORD	19
3	1	CS01224	ANGLE, BOTTOM CHORD	19
4	1	CS00065	ANGLE, VERTICAL	8
5	1	CS01228	ANGLE, DIAGONAL	9
			TOTAL WEIGHT LBS	78

MISC HARDWARE (FRAMING)				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
6	4	C40026022	BOLT ASSEMBLY, 5/8 ø X 1 3/4 A325	2
7	4	C40026023	BOLT ASSEMBLY, 5/8 ø X 2 A325	2
			TOTAL WEIGHT LBS	4

C10900104 ANTENNA PIPE MOUNTING KIT				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
8	1	C10981204	ANTENNA MTG. PIPE 2 3/8" ø X 4'-0"	13
9	2	C40034023	U-BOLT ASSEMBLY 5/8" ø X 3 1/16 C-C	3
			TOTAL WEIGHT LBS	16

MISC HARDWARE				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
10	4	C40034032	U-BOLT ASSEMBLY 5/8" ø X 5 3/16 C-C	9
			TOTAL WEIGHT LBS	9

NOTES:

1. IF THE MOUNT IS NOT ON THE STRAIGHT PORTION OF THE TOWER SEE SITE SPECIFIC PIPE MOUNT.
2. QUANTITIES SHOWN IN LIST OF MATERIALS ARE FOR ONE (1) SIDEARM ASSEMBLY ONLY.

UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS INCLUDE FINISHES AND ARE IN INCHES

TOLERANCES: FRACTIONS ± 1/16" ANGLES ± 1/2 DEG. DECIMALS ± .010"

MATERIAL:

TOLERANCES DO NOT APPLY TO RAW MATERIAL

REV	DATE	DRW	CHK	DESCRIPTION

Sabre Industries™ INNOVATION DELIVERED

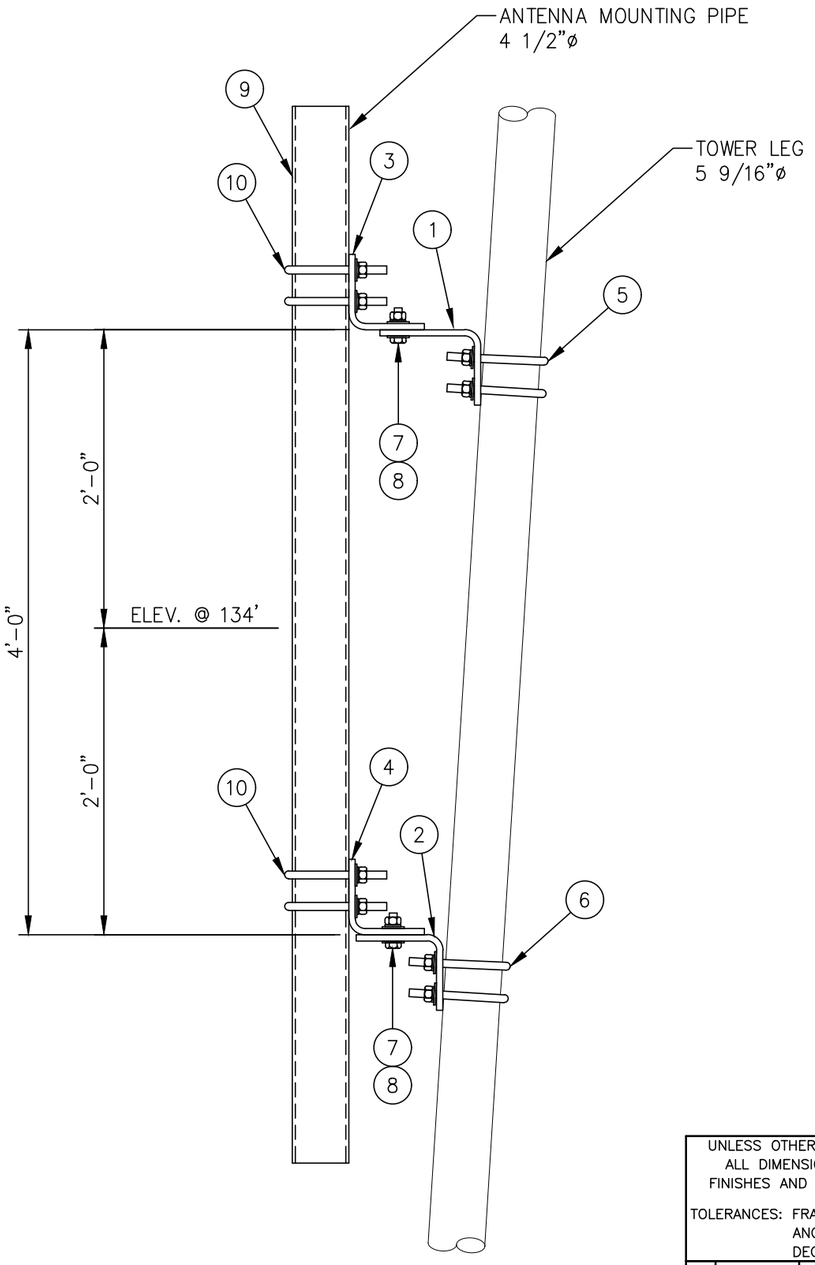
CONFIDENTIAL
This document and the information contained herein is the confidential trade secret property of Sabre Industries, Inc. ("Sabre") and must not be reproduced, copied or used, in whole or in part, for any purpose without the prior written consent of Sabre.
© 2025 Sabre Industries, Inc. All rights reserved.

3 FT. SIDEARM: 134' ELEVATION

SITE: LOWER PROSPECT, OR

CUSTOMER: MARION COUNTY OREGON

JOB NO. 563426		SIZE	DRAWING NO.	REV
DATE	08/07/25	B	563426-SA6	0
DRAWN BY	KMP			
CHECKED BY	ZAK		SCALE NONE	PAGE 1 OF 1



ELEVATION VIEW

LIST OF MATERIALS FOR TAPERED LEG PIPE MOUNT KIT C10174055				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
1.	1	CS00219	TOP LEG MOUNT FOR 5 9/16 ø LEG	24
2.	1	CS00218	BOTTOM LEG MOUNT FOR 5 9/16 ø LEG	20
3.	1	CS00214	TOP PIPE MOUNT FOR 4 1/2 ø PIPE	15
4.	1	CS00215	BOTTOM PIPE MOUNT FOR 4 1/2 ø PIPE	12
5.	2	C40034035	U-BOLT ASSEMBLY 5/8 ø X 6 1/4 C-C (TOP LEG MOUNT)	5
6.	2	C40034035	U-BOLT ASSEMBLY 5/8 ø X 6 1/4 C-C (BOTTOM LEG MOUNT)	5
7.	4	C40026024	BOLT ASSEMBLY 5/8 ø X 2 1/4 A325	2
8.	8	C40031003	FLATWASHER, 5/8 ø (F436)	1
			KIT WEIGHT LBS	84

LIST OF ADDITIONAL MATERIALS				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
9.	1	C10981407	ANTENNA MTG. PIPE 4 1/2 ø X 7'-0	58
10.	4	C40034032	U-BOLT ASSEMBLY 5/8 ø X 5 3/16 C-C (PIPE MOUNTS)	9
			ADDITIONAL WEIGHT LBS	67

TOTAL WEIGHT LBS	151

UNLESS OTHERWISE SPECIFIED
ALL DIMENSIONS INCLUDE FINISHES AND ARE IN INCHES
TOLERANCES: FRACTIONS ± 1/16"
ANGLES ± 1/2 DEG.
DECIMALS ± .010"

MATERIAL:

TOLERANCES DO NOT APPLY TO RAW MATERIAL

REV	DATE	DRW	CHK	DESCRIPTION

Sabre Industries™
INNOVATION DELIVERED

CONFIDENTIAL

This document and the information contained herein is the confidential trade secret property of Sabre Industries, Inc. ("Sabre") and must not be reproduced, copied or used, in whole or in part, for any purpose without the prior written consent of Sabre.
© 2025 Sabre Industries, Inc. All rights reserved.

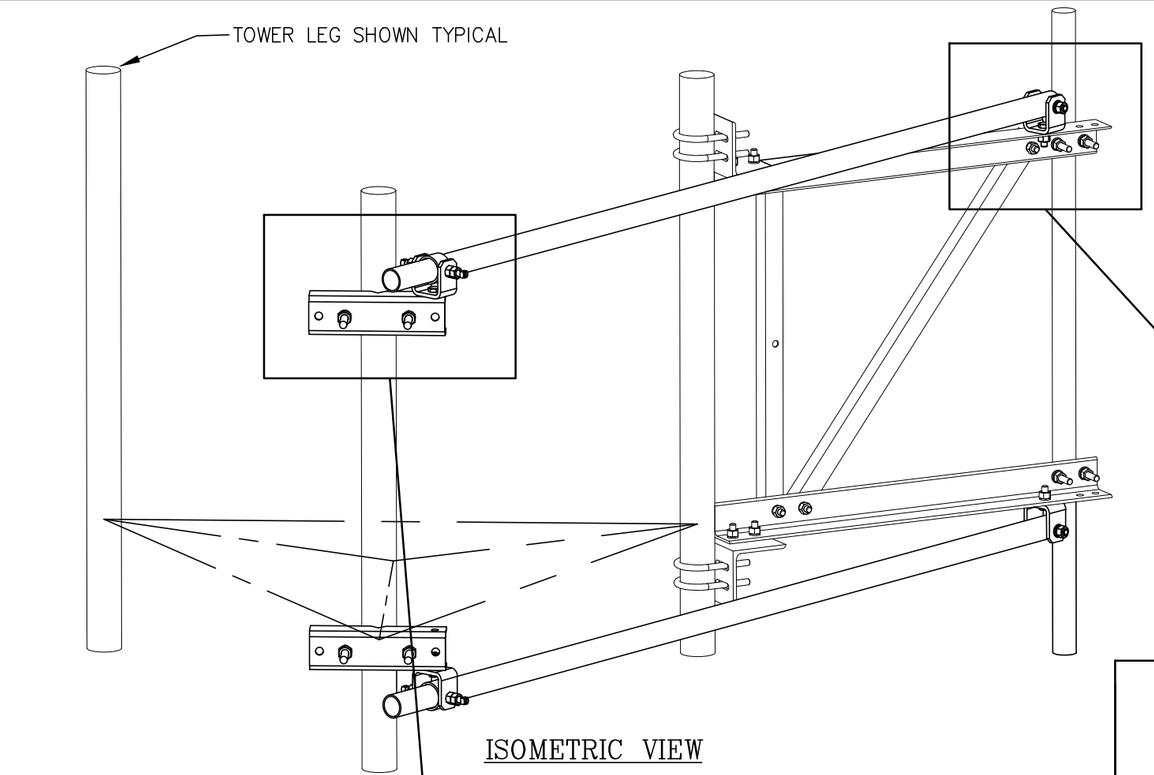
PIPE MOUNT FOR SIDEARM: 134' ELEVATION

SITE: LOWER PROSPECT, OR

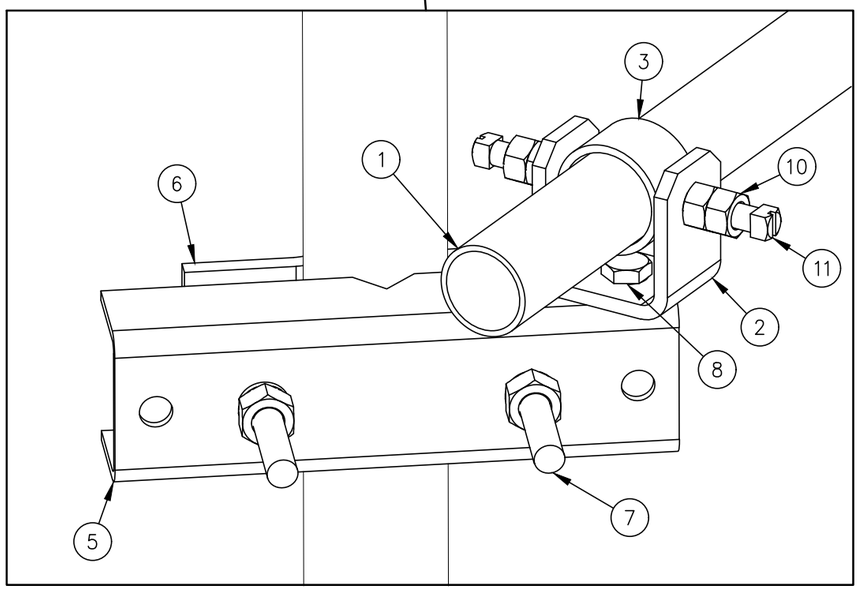
CUSTOMER: MARION COUNTY OREGON

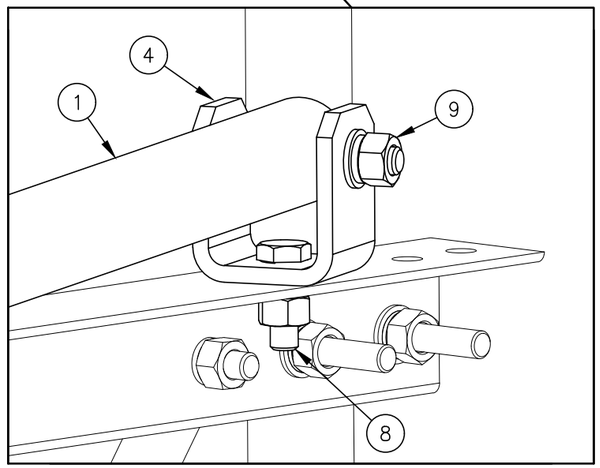
JOB NO. 563426		SIZE	DRAWING NO.	REV
DATE	8/7/25	B	563426-PM11	0
DRAWN BY	KMP			
CHECKED BY	ZAK		SCALE None	PAGE 1 OF 1

EXHIBIT K



ISOMETRIC VIEW





C10179011 SWIVEL KNUCKLE TIEBACK

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
1	1	CS00249	PIPE, 2 7/8 O.D. X W/0.203 X 15'-6	93
2	1	CW00022	SWIVEL PLATE WELDMENT	3
3	1	CS00092	PIPE, SLEEVE 3 1/2 O.D. X W/0.216 X 0'-1 3/4	1
4	1	CS00096	BENT SWIVEL PLATE	3
5	1	CS01360	PLATE, MOUNTING BRACKET (FORMED CHANNEL)	9
6	1	CS01361	PLATE, 2 HOLE ADAPTER CLAMP	3
7	2	C40140001	BOLT ASSEMBLY, 3/4 X 10 A307 W/NUT, LKW, FLW	4
8	2	C40026023	BOLT ASSEMBLY, 5/8 ø X 2 A325	1
9	1	C40026035	BOLT ASSEMBLY, 5/8 ø X 5 A325	1
10	2	C40042007	HEX NUT, 5/8 A194 GRADE 2H	1
11	2	C40998007	SQ. HEAD SET SCREW, 5/8 X 2 1/2	1
			TOTAL WEIGHT LBS	120

QUANTITIES SHOWN ABOVE ARE FOR (1) SWIVEL KNUCKLE TIEBACK KIT ONLY.
(2) KITS ARE REQUIRED FOR THIS SIDEARM ASSEMBLY

UNLESS OTHERWISE SPECIFIED
ALL DIMENSIONS INCLUDE
FINISHES AND ARE IN INCHES

TOLERANCES: FRACTIONS ± 1/16"
ANGLES ± 1/2 DEG.
DECIMALS ± .010"

MATERIAL:

TOLERANCES DO NOT APPLY
TO RAW MATERIAL

REV	DATE	DRW	CHK	DESCRIPTION

Sabre Industries™
INNOVATION DELIVERED

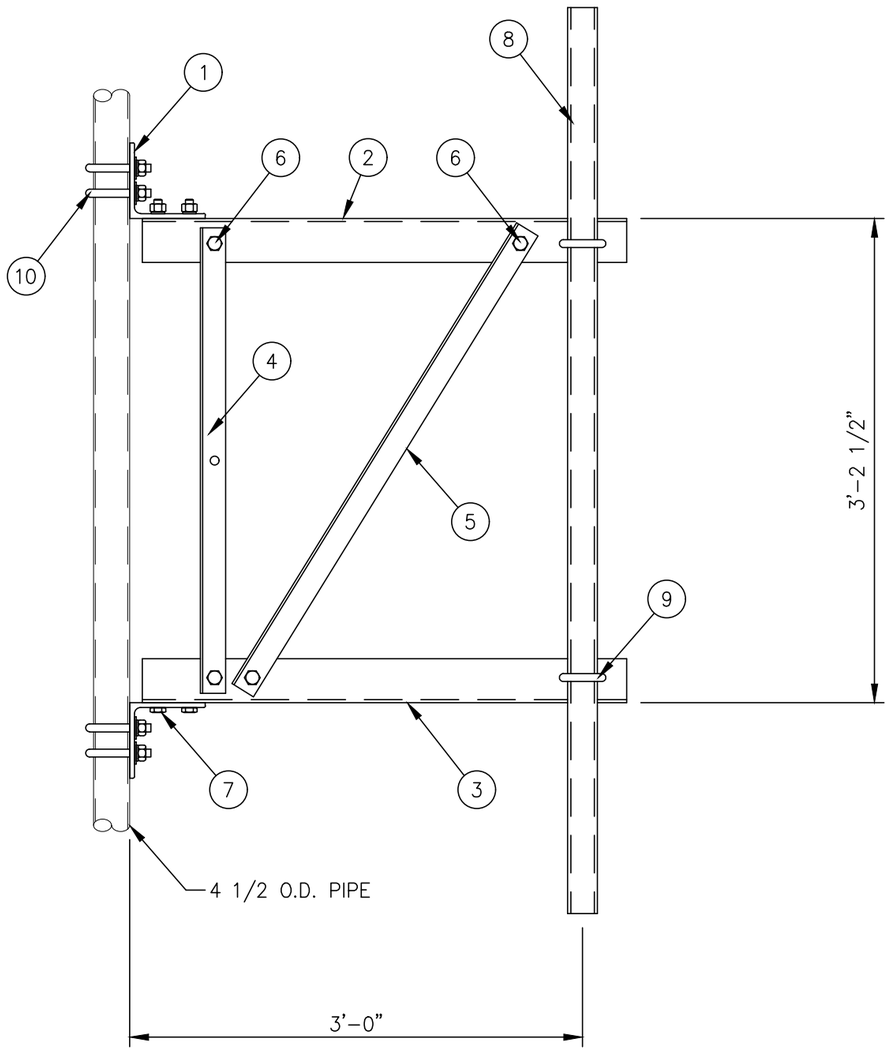
CONFIDENTIAL
This document and the information contained herein is the confidential trade secret property of Sabre Industries, Inc. ("Sabre") and must not be reproduced, copied or used, in whole or in part, for any purpose without the prior written consent of Sabre.
© 2025 Sabre Industries, Inc. All rights reserved.

SWIVEL KNUCKLE TIEBACKS: 134' ELEVATION

SITE: LOWER PROSPECT, OR

CUSTOMER: MARION COUNTY OREGON

JOB NO. 563426		SIZE	DRAWING NO.	REV
DATE	08/07/25	B	563426-ST6	0
DRAWN BY	KMP			
CHECKED BY	ZAK		SCALE NONE	PAGE 1 OF 1



C10151103 3 FT. SIDEARM ASSEMBLY			
1	CK00060	SIDEARM ANGLE KIT	78
1	– – –	MISC HARDWARE (FRAMING)	4
1	C10900105	PIPE ANTENNA MOUNTING KIT 2 3/8" ø X 5'-0	19
4	C40034032	U-BOLT ASSEMBLY 5/8" ø X 5 3/16 C-C	9
		TOTAL WEIGHT LBS	110

CK00060 KIT LIST OF MATERIAL				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
1	2	CS00067	ANGLE, BOOM SUPPORT	23
2	1	CS01223	ANGLE, TOP CHORD	19
3	1	CS01224	ANGLE, BOTTOM CHORD	19
4	1	CS00065	ANGLE, VERTICAL	8
5	1	CS01228	ANGLE, DIAGONAL	9
			TOTAL WEIGHT LBS	78

MISC HARDWARE (FRAMING)				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
6	4	C40026022	BOLT ASSEMBLY, 5/8 ø X 1 3/4 A325	2
7	4	C40026023	BOLT ASSEMBLY, 5/8 ø X 2 A325	2
			TOTAL WEIGHT LBS	4

C10900105 ANTENNA PIPE MOUNTING KIT				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
8	1	C10981223	ANTENNA MTG. PIPE 2 3/8" ø X 5'-0	16
9	2	C40034023	U-BOLT ASSEMBLY 5/8" ø X 3 1/16 C-C	3
			TOTAL WEIGHT LBS	19

MISC HARDWARE				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
10	4	C40034032	U-BOLT ASSEMBLY 5/8" ø X 5 3/16 C-C	9
			TOTAL WEIGHT LBS	9

NOTES:

1. IF THE MOUNT IS NOT ON THE STRAIGHT PORTION OF THE TOWER SEE SITE SPECIFIC PIPE MOUNT.
2. QUANTITIES SHOWN IN LIST OF MATERIALS ARE FOR ONE (1) SIDEARM ASSEMBLY ONLY.

UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS INCLUDE FINISHES AND ARE IN INCHES

TOLERANCES: FRACTIONS ± 1/16" ANGLES ± 1/2 DEG. DECIMALS ± .010"

MATERIAL:

TOLERANCES DO NOT APPLY TO RAW MATERIAL

REV	DATE	DRW	CHK	DESCRIPTION

Sabre Industries™ INNOVATION DELIVERED

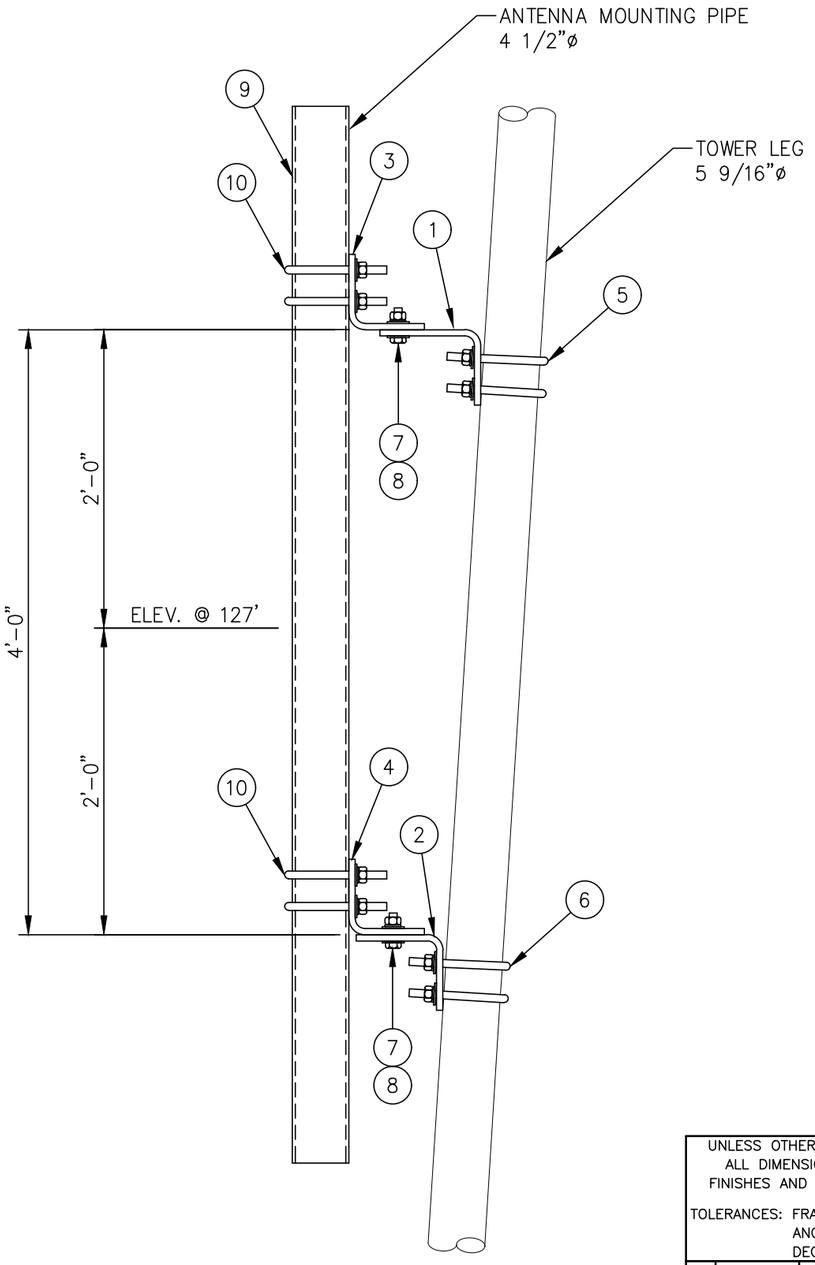
CONFIDENTIAL
This document and the information contained herein is the confidential trade secret property of Sabre Industries, Inc. ("Sabre") and must not be reproduced, copied or used, in whole or in part, for any purpose without the prior written consent of Sabre.
© 2025 Sabre Industries, Inc. All rights reserved.

3 FT. SIDEARM: 127' ELEVATION

SITE: LOWER PROSPECT, OR

CUSTOMER: MARION COUNTY OREGON

JOB NO. 563426		SIZE	DRAWING NO.	REV
DATE	08/07/25	B	563426-SA7	0
DRAWN BY	KMP			
CHECKED BY	ZAK		SCALE NONE	PAGE 1 OF 1



ELEVATION VIEW

LIST OF MATERIALS FOR TAPERED LEG PIPE MOUNT KIT C10174055				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
1.	1	CS00219	TOP LEG MOUNT FOR 5 9/16 ø LEG	24
2.	1	CS00218	BOTTOM LEG MOUNT FOR 5 9/16 ø LEG	20
3.	1	CS00214	TOP PIPE MOUNT FOR 4 1/2 ø PIPE	15
4.	1	CS00215	BOTTOM PIPE MOUNT FOR 4 1/2 ø PIPE	12
5.	2	C40034035	U-BOLT ASSEMBLY 5/8 ø X 6 1/4 C-C (TOP LEG MOUNT)	5
6.	2	C40034035	U-BOLT ASSEMBLY 5/8 ø X 6 1/4 C-C (BOTTOM LEG MOUNT)	5
7.	4	C40026024	BOLT ASSEMBLY 5/8 ø X 2 1/4 A325	2
8.	8	C40031003	FLATWASHER, 5/8 ø (F436)	1
			KIT WEIGHT LBS	84

LIST OF ADDITIONAL MATERIALS				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
9.	1	C10981407	ANTENNA MTG. PIPE 4 1/2 ø X 7'-0	58
10.	4	C40034032	U-BOLT ASSEMBLY 5/8 ø X 5 3/16 C-C (PIPE MOUNTS)	9
			ADDITIONAL WEIGHT LBS	67

TOTAL WEIGHT LBS	151

UNLESS OTHERWISE SPECIFIED
ALL DIMENSIONS INCLUDE FINISHES AND ARE IN INCHES
TOLERANCES: FRACTIONS ± 1/16"
ANGLES ± 1/2 DEG.
DECIMALS ± .010"

MATERIAL:

TOLERANCES DO NOT APPLY TO RAW MATERIAL

REV	DATE	DRW	CHK	DESCRIPTION

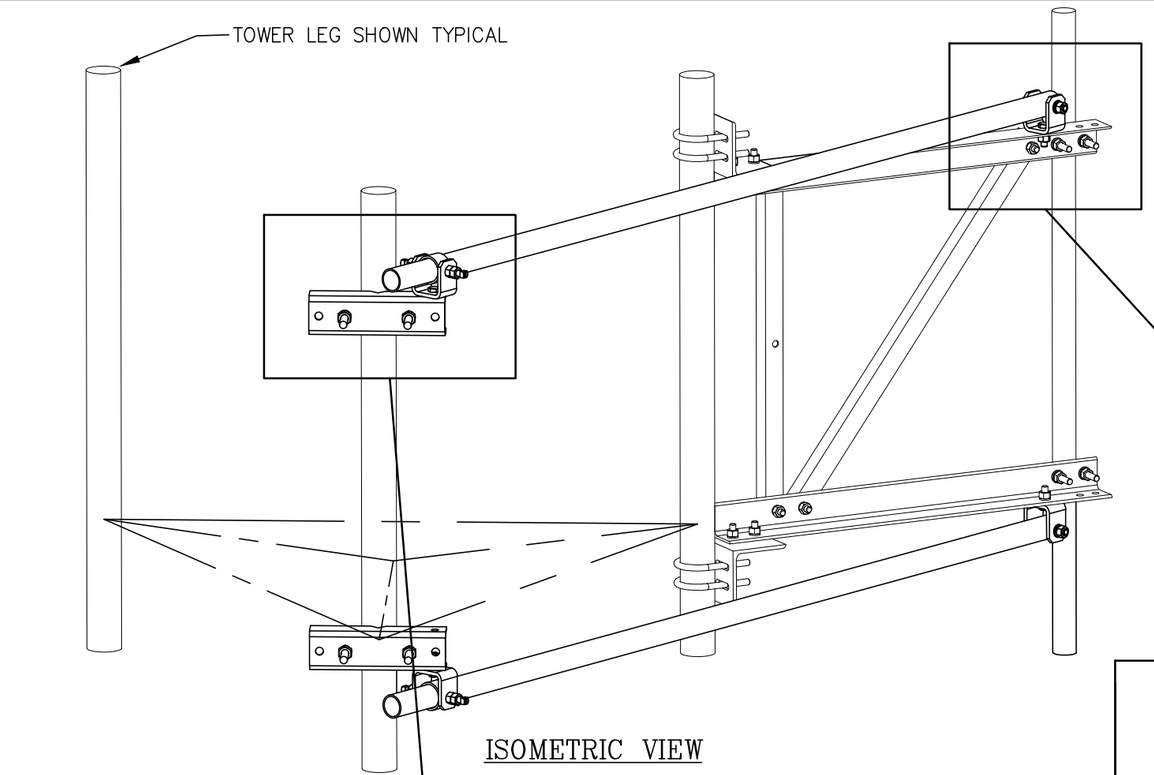
Sabre Industries™
INNOVATION DELIVERED

CONFIDENTIAL
This document and the information contained herein is the confidential trade secret property of Sabre Industries, Inc. ("Sabre") and must not be reproduced, copied or used, in whole or in part, for any purpose without the prior written consent of Sabre.
© 2025 Sabre Industries, Inc. All rights reserved.

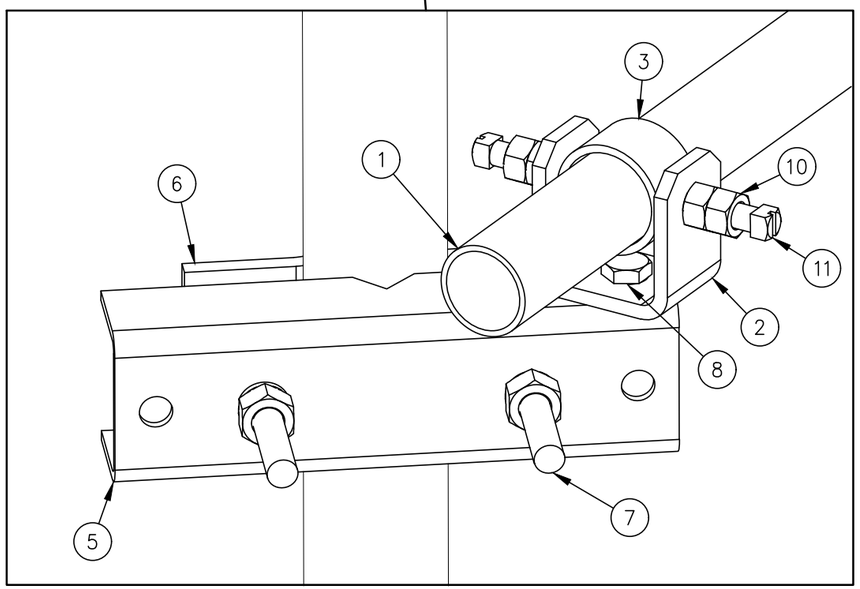
PIPE MOUNT FOR SIDEARM: 127' ELEVATION
SITE: LOWER PROSPECT, OR
CUSTOMER: MARION COUNTY OREGON

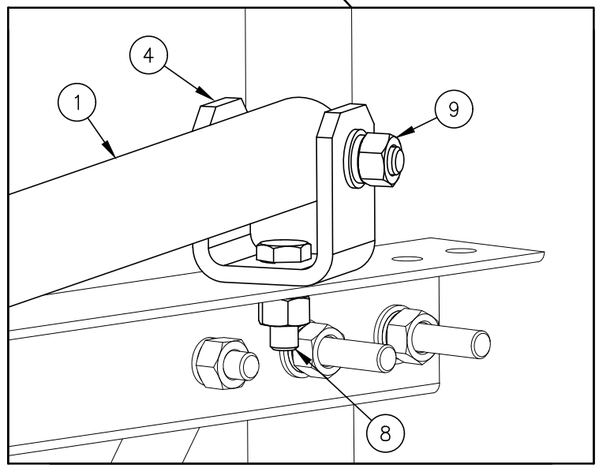
JOB NO. 563426		SIZE	DRAWING NO.	REV
DATE	8/7/25	B	563426-PM12	0
DRAWN BY	KMP			
CHECKED BY	ZAK		SCALE None	PAGE 1 OF 1

EXHIBIT K



ISOMETRIC VIEW





C10179011 SWIVEL KNUCKLE TIEBACK

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
1	1	CS00249	PIPE, 2 7/8 O.D. X W/0.203 X 15'-6	93
2	1	CW00022	SWIVEL PLATE WELDMENT	3
3	1	CS00092	PIPE, SLEEVE 3 1/2 O.D. X W/0.216 X 0'-1 3/4	1
4	1	CS00096	BENT SWIVEL PLATE	3
5	1	CS01360	PLATE, MOUNTING BRACKET (FORMED CHANNEL)	9
6	1	CS01361	PLATE, 2 HOLE ADAPTER CLAMP	3
7	2	C40140001	BOLT ASSEMBLY, 3/4 X 10 A307 W/NUT, LKW, FLW	4
8	2	C40026023	BOLT ASSEMBLY, 5/8 ø X 2 A325	1
9	1	C40026035	BOLT ASSEMBLY, 5/8 ø X 5 A325	1
10	2	C40042007	HEX NUT, 5/8 A194 GRADE 2H	1
11	2	C40998007	SQ. HEAD SET SCREW, 5/8 X 2 1/2	1
			TOTAL WEIGHT LBS	120

QUANTITIES SHOWN ABOVE ARE FOR (1) SWIVEL KNUCKLE TIEBACK KIT ONLY.
(2) KITS ARE REQUIRED FOR THIS SIDEARM ASSEMBLY

UNLESS OTHERWISE SPECIFIED
ALL DIMENSIONS INCLUDE
FINISHES AND ARE IN INCHES

TOLERANCES: FRACTIONS ± 1/16"
ANGLES ± 1/2 DEG.
DECIMALS ± .010"

MATERIAL:

TOLERANCES DO NOT APPLY
TO RAW MATERIAL

REV	DATE	DRW	CHK	DESCRIPTION

Sabre Industries™
INNOVATION DELIVERED

CONFIDENTIAL
This document and the information contained herein is the confidential trade secret property of Sabre Industries, Inc. ("Sabre") and must not be reproduced, copied or used, in whole or in part, for any purpose without the prior written consent of Sabre.
© 2025 Sabre Industries, Inc. All rights reserved.

SWIVEL KNUCKLE TIEBACKS: 127' ELEVATION

SITE: LOWER PROSPECT, OR

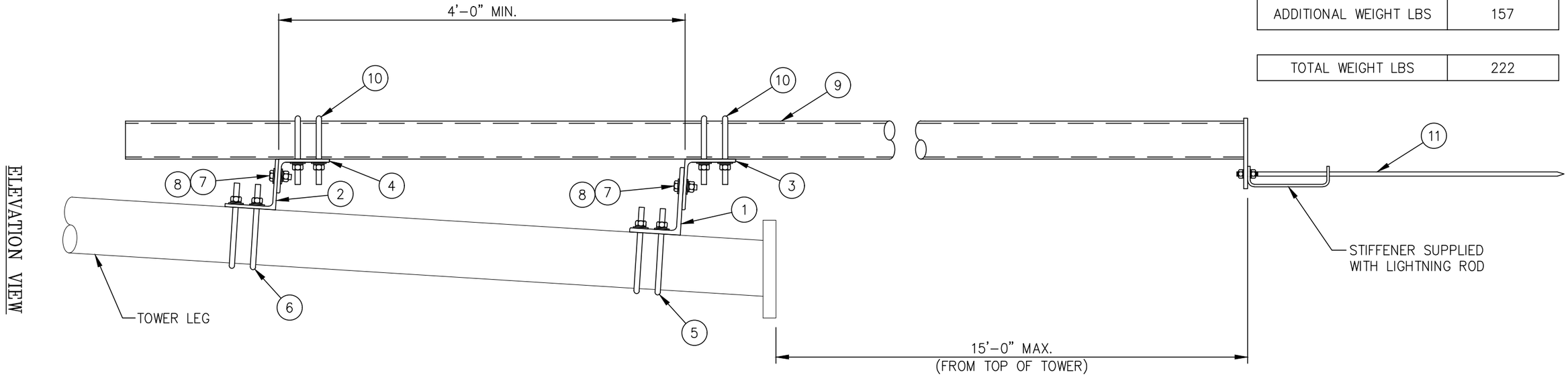
CUSTOMER: MARION COUNTY OREGON

JOB NO. 563426		SIZE	DRAWING NO.	REV
DATE	08/07/25	B	563426-ST7	0
DRAWN BY	KMP			
CHECKED BY	ZAK		SCALE NONE	PAGE 1 OF 1

LIST OF MATERIALS FOR TAPERED LEG PIPE MOUNT KIT C10174018				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
1.	1	CS00216	TOP LEG MOUNT FOR 2 7/8 ø LEG	15
2.	1	CS00215	BOTTOM LEG MOUNT FOR 2 7/8 ø LEG	12
3.	1	CS00214	TOP PIPE MOUNT FOR 2 7/8 ø PIPE	15
4.	1	CS00215	BOTTOM PIPE MOUNT FOR 2 7/8 ø PIPE	12
5.	2	C40034025	U-BOLT ASSEMBLY 5/8 ø X 3 9/16 C-C (TOP LEG MOUNT)	4
6.	2	C40034025	U-BOLT ASSEMBLY 5/8 ø X 3 9/16 C-C (BOTTOM LEG MOUNT)	4
7.	4	C40026024	BOLT ASSEMBLY 5/8 ø X 2 1/4 A325	2
8.	8	C40031003	FLATWASHER, 5/8 ø (F436)	1
			KIT WEIGHT LBS	65

LIST OF ADDITIONAL MATERIALS				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
9.	1	CW00032	LIGHTNING ROD EXTENSION 2 7/8 ø X 21'-0"	128
10.	4	C40034025	U-BOLT ASSEMBLY 5/8 ø X 3 9/16 C-C (PIPE MOUNTS)	7
11.	1 KIT	C30986004	LIGHTNING ROD ASSY 3/4 ø X 10'-0 CCS W/STIFFENER	22
			ADDITIONAL WEIGHT LBS	157

TOTAL WEIGHT LBS	222



NOTE:
THE ASSEMBLY IS SHOWN ON THE OUTSIDE OF THE TOWER.
IT MAY ALSO BE MOUNTED ON THE INSIDE OF TOWER, IF NECESSARY.

UNLESS OTHERWISE SPECIFIED
ALL DIMENSIONS INCLUDE
FINISHES AND ARE IN INCHES

TOLERANCES: FRACTIONS ± 1/16"
ANGLES ± 1/2 DEG.
DECIMALS ± .010"

MATERIAL:

TOLERANCES DO NOT APPLY
TO RAW MATERIAL

REV	DATE	DRW	CHK	DESCRIPTION

Sabre Industries™
INNOVATION DELIVERED

CONFIDENTIAL
This document and the information contained herein is the confidential trade secret property of Sabre Industries, Inc. ("Sabre") and must not be reproduced, copied or used, in whole or in part, for any purpose without the prior written consent of Sabre.
© 2025 Sabre Industries, Inc. All rights reserved.

LIGHTNING ROD W/STIFFENER & EXTENSION
SITE: LOWER PROSPECT, OR
CUSTOMER: MARION COUNTY OREGON

JOB NO. 563426		SIZE	DRAWING NO.	REV
DATE	8/7/25	B	563426-LR	0
DRAWN BY	KMP			
CHECKED BY	ZAK		SCALE None	PAGE 1 OF 1

BOLT INSTALLATION DETAILS:

1. INSTALLATION OF BOLTS: BOLTS FOR TOWERS AND ANTENNAS SHALL BE INSTALLED WITH THE NUTS FACING TO THE OUTSIDE AND/OR TO THE TOP OF THE TOWER, UNLESS PROHIBITED BY LACK OF CLEARANCE.

2. TIGHTENING OF BOLTS: ALL HIGH STRENGTH BOLTS SHALL BE TIGHTENED TO A SNUG-TIGHT CONDITION, AS DEFINED BY AISC.

3. NUT LOCKING DEVICE: ALL NUTS SHALL BE EQUIPPED WITH SOME TYPE OF NUT LOCKING DEVICE. SEE THE INDIVIDUAL DRAWINGS FOR THE TYPE OF NUT LOCKING DEVICE TO BE USED FOR EACH INDIVIDUAL APPLICATION.

UNLESS OTHERWISE SPECIFIED
ALL DIMENSIONS INCLUDE
FINISHES AND ARE IN INCHES

TOLERANCES: FRACTIONS ± 1/16"
ANGLES ± 1/2 DEG.
DECIMALS ± .010"

MATERIAL:

TOLERANCES DO NOT APPLY TO RAW MATERIAL

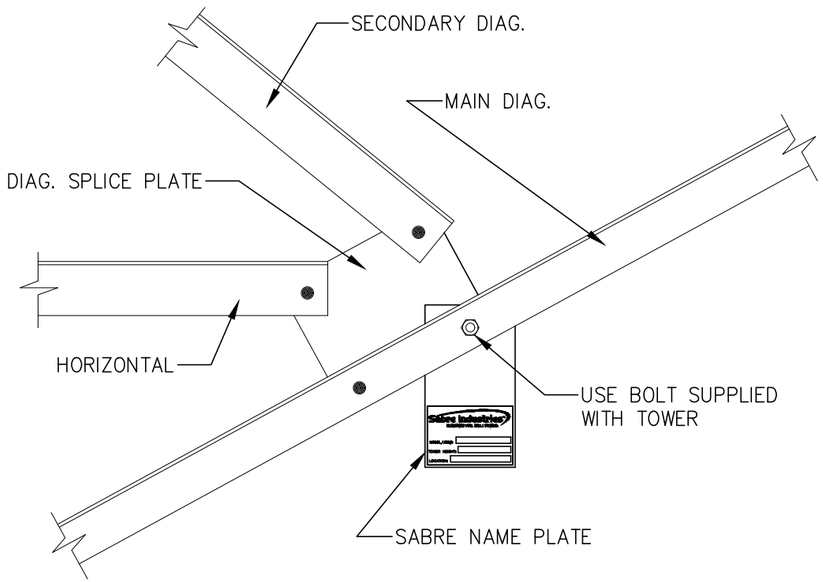
REV	DATE	DRW	CHK	DESCRIPTION
3	02/15/08	KLE	DLW	REVISED PER KEITH TINDALL
2	03/04/04	PSB	ZAK	REDRAWN ONTO "B" SIZE TITLEBLOCK.
1	03/06/01	JKW	PSB	REDRAWN IN AUTOCAD 2000i.

Sabre Industries™
INNOVATION DELIVERED

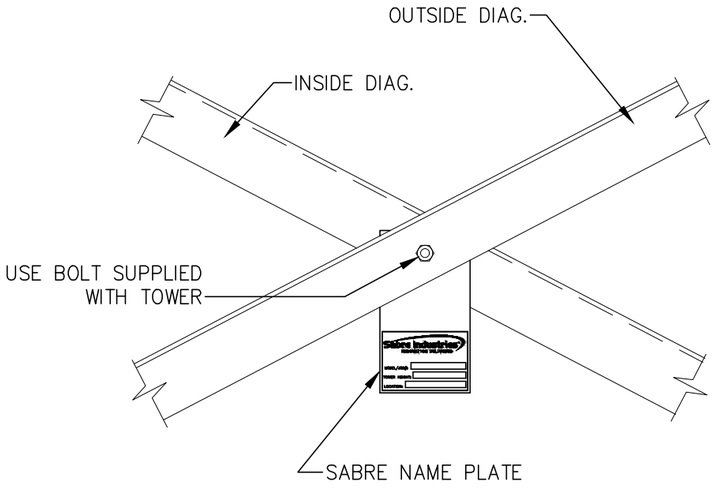
CONFIDENTIAL
This document and the information contained herein is the confidential trade secret property of Sabre Industries, Inc. ("Sabre") and must not be reproduced, copied or used, in whole or in part, for any purpose without the prior written consent of Sabre.
© 2022 Sabre Industries, Inc. All rights reserved.

BOLT INSTALLATION DETAILS

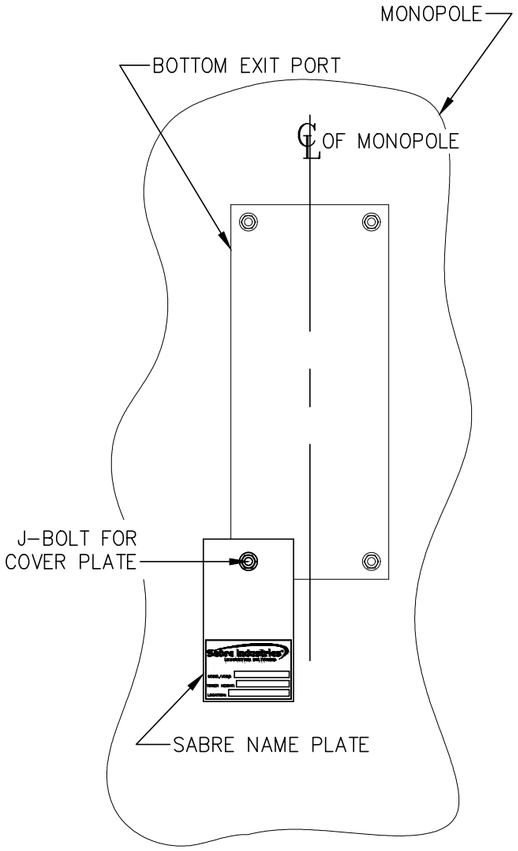
		SIZE	DRAWING NO.	REV
DATE	01/28/00	B	9014671	3
DRAWN BY	MJM			
CHECKED BY	KJT/DLW	SCALE None	PAGE 1 OF 1	



TYPICAL FOR MODEL S3TL, S4TL, S3R & S4R
SELF-SUPPORTING TOWER
(K-BRACE)

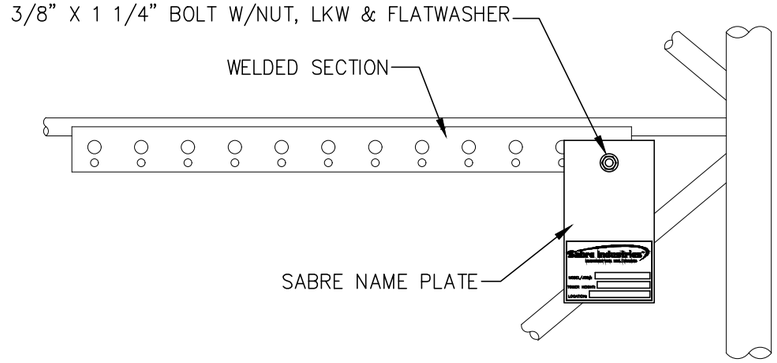


TYPICAL FOR MODEL S3TL, S4TL, S3R & S4R
SELF-SUPPORTING TOWER
(X-BRACE)

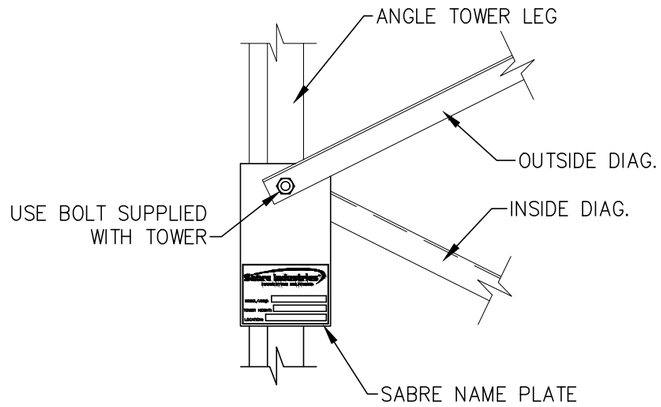


TYPICAL FOR MONOPOLE
STRUCTURE

NOTE:
NAME PLATE SHOULD BE MOUNTED AT
APPROXIMATELY EYE LEVEL WHEN POSSIBLE.



TYPICAL FOR MODEL 2400 / 3600 / 4400 / 4800 / 6000
WELDED GUYED TOWER



TYPICAL FOR MODEL 3000 / 3600 / 4800
ANGLE GUYED TOWER

UNLESS OTHERWISE SPECIFIED
ALL DIMENSIONS INCLUDE
FINISHES AND ARE IN INCHES

TOLERANCES: FRACTIONS ± 1/16"
ANGLES ± 1/2 DEG.
DECIMALS ± .010"

MATERIAL:

TOLERANCES DO NOT APPLY
TO RAW MATERIAL

REV	DATE	DRW	CHK	DESCRIPTION
7	05/25/21	FJM	DLW	UPDATED SABRE NAME PLATE LOGO
6	8/18/11	DSN	KTW	ADDED 4800 & 6000 WELDED GUYED TOWER.
5	3/30/04	MJM	ZAK	ADDED S4TL & S4R TO S.S. TOWER.
4	11/11/02	PSB	RGF	ADDED 2400 WELDED GUYED TOWER.
3	08/23/01	SMC	PSB	REVISED BOLT ON GUYED TOWER WAS 3/8 X 1"
				REVISED MONOPOLE INSTALLATION.
2	02/16/01	DEM	RGF	REDRAWN IN AUTOCAD 2000i
1	04/16/97	DEM	RGF	REDRAWN WITH NEW TITLE BLOCK

Sabre Industries™
INNOVATION DELIVERED

CONFIDENTIAL
This document and the information contained herein is the confidential trade secret property of Sabre Industries, Inc. ("Sabre") and must not be reproduced, copied or used, in whole or in part, for any purpose without the prior written consent of Sabre.
© 2022 Sabre Industries, Inc. All rights reserved.

OPTIONAL MOUNTING INSTALLATION
SABRE NAME PLATE

		SIZE	DRAWING NO.	REV
DATE	10/15/96	B	906956	7
DRAWN BY	DEM			
CHECKED BY	RGF	SCALE None	PAGE 1 OF 1	

NOTICE

ALL PARTS ARE TO BE INVENTORIED AND ANY
SHORTAGES REPORTED WITHIN 48 HOURS OF DELIVERY
TO THE CONTRACTING ERECTOR.

SHORTAGES REPORTED AFTER THIS TIME PERIOD WILL
BE CHARGED TO THE CONTRACTOR.

CALL 712-258-6690

TO REACH THE SABRE CONTRACTS DEPARTMENT.

AVISO

Todas las partes serán inventariadas y los faltantes reportados
por el contratista dentro de las 48 horas a partir de la entrega.

Los faltantes reportados después de 48 horas serán cargados al contratista.

Para aclaraciones llame a:

Sabre-Departamento de Contrataciones

(001) 712 258-6690

UNLESS OTHERWISE SPECIFIED
ALL DIMENSIONS INCLUDE
FINISHES AND ARE IN INCHES

TOLERANCES: FRACTIONS ± 1/16"
ANGLES ± 1/2 DEG.
DECIMALS ± .010"

MATERIAL:

TOLERANCES DO NOT APPLY
TO RAW MATERIAL

REV	DATE	DRW	CHK	DESCRIPTION
3	03/04/04	PSB	ZAK	REDRAWN ONTO "B" SIZE TITLEBLOCK.
2	02/25/02	CHH	RWM	ADDED SPANISH TEXT.
1	02/27/01	CHH	CE	REDRAWN IN AUTOCAD 2000i & UPDATED VERBAGE.

Sabre Industries™
INNOVATION DELIVERED

CONFIDENTIAL

This document and the information contained herein is the confidential trade secret property of Sabre Industries, Inc. ("Sabre") and must not be reproduced, copied or used, in whole or in part, for any purpose without the prior written consent of Sabre.
© 2022 Sabre Industries, Inc. All rights reserved.

INVENTORY REQUIREMENT SHEET

DATE	05/12/97
DRAWN BY	ZAK
CHECKED BY	JD

SIZE	DRAWING NO.	REV
B	907901	3

SCALE	PAGE
None	1 OF 1

EXHIBIT K

CUSTOMER : MARION COUNTY OREGON

SITE : LOWER PROSPECT, OR

B.O.M. 180 FT. MODEL S3TL-HD2 SELF-SUPPORTING TOWER

PC=PIECE	OR=ORANGE
PLT=PALLET	WH=WHITE
BDL=BUNDLE	O/W=OR & WH
CRT=CRATE	N/R=NOT REQ'D
D=DRUM	SP=SPECIAL
BX=BOX	

ITEM NO.	NO. REQ'D.	DRAWING NUMBER	DRAWING REV	PART NO.	DESCRIPTION	TOTAL WEIGHT LBS.	PAINT	PACKING KIT	PACKING QTY OF PKG'S	PACKING PKG. NO.
1					**ANCHOR BOLTS AND TEMPLATES**					
2	18	C40041061	0	C40041061	ANCHOR BOLT ASSEMBLY, 1 3/4 Ø X 7'-3 (F1554 GR 105)	1305				
3					W/(5) NUTS 1 3/4 HEAVY HEX (A563 DH)					
4					(2) FLATWASHERS 1 3/4 (F436)					
5	6	C30139220	0	C30139220	PLATE, A.B. TEMPLATE 1 3/4"Ø A.B. ON 19"Ø B.C.	161				
6					**LEG TO LEG TEMPLATE MATERIAL**					
7	1 KIT			C30400341	LEG TO LEG TEMPLATE KIT, 23'-0 BASE SPREAD	517				
8					(6) 1 3/4"Ø A.B. ON A 19"Ø B.C.					
9										
10										
11										
12										
13										
14										
15										
16										
17										
18										
19										
20										

REV	DATE	DRW	CHK	DESCRIPTION

DATE	7/2/25	**JOB NO.**	563426
DRAWN BY	GCK	**PRINT NO.**	BOM-1
CHECKED BY	KCG	**PAGE**	1 OF 22

Sabre Industries™
INNOVATION DELIVERED

CUSTOMER : MARION COUNTY OREGON

SITE : LOWER PROSPECT, OR

B.O.M. 180 FT. MODEL S3TL-HD2 SELF-SUPPORTING TOWER

PC=PIECE	OR=ORANGE
PLT=PALLET	WH=WHITE
BDL=BUNDLE	O/W=OR & WH
CRT=CRATE	N/R=NOT REQ'D
D=DRUM	SP=SPECIAL
BX=BOX	

ITEM NO.	NO. REQ'D.	DRAWING NUMBER	DRAWING REV	PART NO.	DESCRIPTION	TOTAL WEIGHT LBS.	PAINT	PACKING KIT	PACKING QTY OF PKG'S	PACKING PKG. NO.
1					**TOWER LEGS**					
2	3	15-T11611441	0	15-T11611441	SECT. 15 LEG 14 Ø X .500 X 20'-0 5/16 W/STEP BOLTS	5508				
3	3	14-T11611443	0	14-T11611443	SECT. 14 LEG 14 Ø X .500 X 20'-0 5/16 W/STEP BOLTS	5618				
4	3	13-T11611445	0	13-T11611445	SECT. 13 LEG 10 3/4 Ø X .500 X 20'-0 5/16 W/STEP BOLTS	4625				
5	3	12-T11610309	0	12-T11610309	SECT. 12 LEG 10 3/4 Ø X .500 X 20'-0 5/16 W/STEP BOLTS	4336				
6	3	11-T1169117	0	11-T1169117	SECT. 11 LEG 8 5/8 Ø X .500 X 20'-0 5/16 W/STEP BOLTS	3504				
7	3	10-T1169819	0	10-T1169819	SECT. 10 LEG 8 5/8 Ø X .322 X 20'-0 5/16 W/STEP BOLTS	2270				
8	3	09-T1169975	0	09-T1169975	SECT. 9 LEG 5 9/16 Ø X .375 X 20'-0 5/16 W/STEP BOLTS	1758				
9	1	08-T1168025	0	08-T1168025	SECT. 8 LEG 4 Ø X .318 X 20'-0 5/16 W/STEP BOLTS	373				
10	2	08-T1168026	0	08-T1168026	SECT. 8 LEG 4 Ø X .318 X 20'-0 5/16	735				
11	1	07-T1165503	0	07-T1165503	SECT. 7 LEG 2 7/8 Ø X .203 X 20'-0 5/16 W/STEP BOLTS	219				
12	2	07-T1165504	0	07-T1165504	SECT. 7 LEG 2 7/8 Ø X .203 X 20'-0 5/16	428				
13										
14										
15										
16										
17										
18										
19										
20										

REV	DATE	DRW	CHK	DESCRIPTION

DATE	8/7/25	**JOB NO.**	563426
DRAWN BY	KMP	**PRINT NO.**	BOM-1
CHECKED BY	ZAK	**PAGE**	2 OF 22

EXHIBIT K

CUSTOMER : MARION COUNTY OREGON

SITE : LOWER PROSPECT, OR

B.O.M. 180 FT. MODEL S3TL-HD2 SELF-SUPPORTING TOWER

PC=PIECE	OR=ORANGE
PLT=PALLET	WH=WHITE
BDL=BUNDLE	O/W=OR & WH
CRT=CRATE	N/R=NOT REQ'D
D=DRUM	SP=SPECIAL
BX=BOX	

PACKING

ITEM NO.	NO. REQ'D.	DRAWING NUMBER	DRAWING REV	PART NO.	DESCRIPTION	TOTAL WEIGHT LBS.	PAINT	KIT	QTY OF PKG'S	PKG. NO.
1					**TOWER BRACING**					
2	1 KIT				**BRACING #15-T8101794 SECTION 15**	3451				
3					**CONSISTING OF THE MATERIAL LISTED BELOW**					
4	6	TS11269	0	TS11269	ANGLE, DIAGONAL 6 X 4 X 3/8 X 22'-11 3/16	1760				
5	6	TS11270	0	TS11270	ANGLE, DIAGONAL 6 X 4 X 3/8 X 22'-0 7/16	1691				
6					**SPLICE BOLTS TOP OF SECTION 15**					
7	31			C40026115	BOLT ASSEMBLY, 1 1/2 Ø X 6 1/2 A325	188				
8	1 KIT				**HARDWARE #TK01256 SECTION 15**	72				
9					**CONSISTING OF THE MATERIAL LISTED BELOW**					
10	7			C40026099	BOLT ASSEMBLY, 1 1/8 Ø X 3 1/4 A325	15				
11	25			C40026097	BOLT ASSEMBLY, 1 1/8 Ø X 2 3/4 A325	50				
12	7	C40047014	0	C40047014	RINGFILL, 3/8 THICK - 1 1/8 Ø BOLT (3 X 3)	7				
13										
14										
15										
16										
17										
18										
19										
20										

REV	DATE	DRW	CHK	DESCRIPTION

DATE 8/7/25 **JOB NO.** 563426

DRAWN BY KMP **PRINT NO.** BOM-1

CHECKED BY ZAK **PAGE** 3 OF 22

CUSTOMER : MARION COUNTY OREGON

SITE : LOWER PROSPECT, OR

B.O.M. 180 FT. MODEL S3TL-HD2 SELF-SUPPORTING TOWER

PC=PIECE	OR=ORANGE
PLT=PALLET	WH=WHITE
BDL=BUNDLE	O/W=OR & WH
CRT=CRATE	N/R=NOT REQ'D
D=DRUM	SP=SPECIAL
BX=BOX	

ITEM NO.	NO. REQ'D.	DRAWING NUMBER	DRAWING REV	PART NO.	DESCRIPTION	TOTAL WEIGHT LBS.	PAINT	PACKING KIT	PACKING QTY OF PKG'S	PACKING PKG. NO.
1					**TOWER BRACING CONT'D**					
2	1 KIT				**BRACING #14-T8101795 SECTION 14**	3174				
3					**CONSISTING OF THE MATERIAL LISTED BELOW**					
4	6	TS11271	0	TS11271	ANGLE, DIAGONAL 6 X 4 X 3/8 X 21'-1 3/8	1621				
5	6	TS11272	0	TS11272	ANGLE, DIAGONAL 6 X 4 X 3/8 X 20'-2 7/8	1553				
6					**SPLICE BOLTS TOP OF SECTION 14**					
7	31			C40026166	BOLT ASSEMBLY, 1 1/2 Ø X 7 A325	196				
8	1 KIT				**HARDWARE #TK01256 SECTION 14**	72				
9					**CONSISTING OF THE MATERIAL LISTED BELOW**					
10	7			C40026099	BOLT ASSEMBLY, 1 1/8 Ø X 3 1/4 A325	15				
11	25			C40026097	BOLT ASSEMBLY, 1 1/8 Ø X 2 3/4 A325	50				
12	7	C40047014	0	C40047014	RINGFILL, 3/8 THICK - 1 1/8 Ø BOLT (3 X 3)	7				
13										
14										
15										
16										
17										
18										
19										
20										

REV	DATE	DRW	CHK	DESCRIPTION

DATE	8/7/25	**JOB NO.**	563426
DRAWN BY	KMP	**PRINT NO.**	BOM-1
CHECKED BY	ZAK	**PAGE**	4 OF 22

Sabre Industries™
INNOVATION DELIVERED

CUSTOMER : MARION COUNTY OREGON

SITE : LOWER PROSPECT, OR

B.O.M. 180 FT. MODEL S3TL-HD2 SELF-SUPPORTING TOWER

PC=PIECE	OR=ORANGE
PLT=PALLET	WH=WHITE
BDL=BUNDLE	O/W=OR & WH
CRT=CRATE	N/R=NOT REQ'D
D=DRUM	SP=SPECIAL
BX=BOX	

ITEM NO.	NO. REQ'D.	DRAWING NUMBER	DRAWING REV	PART NO.	DESCRIPTION	TOTAL WEIGHT LBS.	PAINT	PACKING KIT	PACKING QTY OF PKG'S	PACKING PKG. NO.
1					**TOWER BRACING CONT'D**					
2	1 KIT				**BRACING #13-T8101796 SECTION 13**	2371				
3					**CONSISTING OF THE MATERIAL LISTED BELOW**					
4	6	TS11273	0	TS11273	ANGLE, DIAGONAL 4 X 4 X 3/8 X 19'-4 1/8	1239				
5	6	TS11274	0	TS11274	ANGLE, DIAGONAL 4 X 4 X 3/8 X 18'-5 15/16	1132				
6					**SPLICE BOLTS TOP OF SECTION 13**					
7	25			C40026115	BOLT ASSEMBLY, 1 1/2 Ø X 6 1/2 A325	152				
8	1 KIT				**HARDWARE #TK00353 SECTION 13**	54				
9					**CONSISTING OF THE MATERIAL LISTED BELOW**					
10	7			C40026073	BOLT ASSEMBLY, 1 Ø X 3 A325	12				
11	25			C40026071	BOLT ASSEMBLY, 1 Ø X 2 1/2 A325	41				
12	7			C40047007	RINGFILL, 3/8 THICK - 1 Ø BOLT	1				
13										
14										
15										
16										
17										
18										
19										
20										

REV	DATE	DRW	CHK	DESCRIPTION

DATE	8/7/25	**JOB NO.**	563426
DRAWN BY	KMP	**PRINT NO.**	BOM-1
CHECKED BY	ZAK	**PAGE**	5 OF 22

Sabre Industries™ INNOVATION DELIVERED

CUSTOMER : MARION COUNTY OREGON

SITE : LOWER PROSPECT, OR

B.O.M. 180 FT. MODEL S3TL-HD2 SELF-SUPPORTING TOWER

PC=PIECE	OR=ORANGE
PLT=PALLET	WH=WHITE
BDL=BUNDLE	O/W=OR & WH
CRT=CRATE	N/R=NOT REQ'D
D=DRUM	SP=SPECIAL
BX=BOX	

ITEM NO.	NO. REQ'D.	DRAWING NUMBER	DRAWING REV	PART NO.	DESCRIPTION	TOTAL WEIGHT LBS.	PAINT	PACKING KIT	PACKING QTY OF PKG'S	PACKING PKG. NO.
1					**TOWER BRACING CONT'D**					
2	1 KIT				**BRACING #12-T8101797 SECTION 12**	1983				
3					**CONSISTING OF THE MATERIAL LISTED BELOW**					
4	6	TS11275	0	TS11275	ANGLE, DIAGONAL 4 X 3 1/2 X 3/8 X 17'-10 7/16	1015				
5	6	TS11276	0	TS11276	ANGLE, DIAGONAL 4 X 3 1/2 X 3/8 X 17'-0 9/16	968				
6					**SPLICE BOLTS TOP OF SECTION 12**					
7	25			C40026115	BOLT ASSEMBLY, 1 1/2 Ø X 6 1/2 A325	152				
8	1 KIT				**HARDWARE #TK00353 SECTION 12**	54				
9					**CONSISTING OF THE MATERIAL LISTED BELOW**					
10	7			C40026073	BOLT ASSEMBLY, 1 Ø X 3 A325	12				
11	25			C40026071	BOLT ASSEMBLY, 1 Ø X 2 1/2 A325	41				
12	7			C40047007	RINGFILL, 3/8 THICK - 1 Ø BOLT	1				
13										
14										
15										
16										
17										
18										
19										
20										

REV	DATE	DRW	CHK	DESCRIPTION

DATE	8/7/25	**JOB NO.**	563426
DRAWN BY	KMP	**PRINT NO.**	BOM-1
CHECKED BY	ZAK	**PAGE**	6 OF 22

Sabre Industries™
INNOVATION DELIVERED

CUSTOMER : MARION COUNTY OREGON

SITE : LOWER PROSPECT, OR

B.O.M. 180 FT. MODEL S3TL-HD2 SELF-SUPPORTING TOWER

PC=PIECE	OR=ORANGE
PLT=PALLET	WH=WHITE
BDL=BUNDLE	O/W=OR & WH
CRT=CRATE	N/R=NOT REQ'D
D=DRUM	SP=SPECIAL
BX=BOX	

ITEM NO.	NO. REQ'D.	DRAWING NUMBER	DRAWING REV	PART NO.	DESCRIPTION	TOTAL WEIGHT LBS.	PAINT	PACKING KIT	PACKING QTY OF PKG'S	PACKING PKG. NO.
1					**TOWER BRACING CONT'D**					
2	1 KIT				**BRACING #11-T8101372 SECTION 11**	2397				
3					**CONSISTING OF THE MATERIAL LISTED BELOW**					
4	6	TS08563	0	TS08563	ANGLE, DIAGONAL 4 X 3 1/2 X 3/8 X 14'-7 7/8	832				
5	6	TS08562	0	TS08562	ANGLE, DIAGONAL 4 X 3 1/2 X 3/8 X 14'-0 13/16	799				
6	6	TS08561	0	TS08561	ANGLE, DIAGONAL 4 X 3 1/2 X 3/8 X 13'-5 13/16	766				
7					**SPLICE BOLTS TOP OF SECTION 11**					
8	19			C40026093	BOLT ASSEMBLY, 1 1/4 Ø X 5 A325	65				
9	1 KIT				**HARDWARE #TK00430 SECTION 11**	81				
10					**CONSISTING OF THE MATERIAL LISTED BELOW**					
11	10			C40026073	BOLT ASSEMBLY, 1 Ø X 3 A325	18				
12	38			C40026071	BOLT ASSEMBLY, 1 Ø X 2 1/2 A325	62				
13	10			C40047007	RINGFILL, 3/8 THICK - 1 Ø BOLT	1				
14										
15										
16										
17										
18										
19										
20										

REV	DATE	DRW	CHK	DESCRIPTION

DATE	8/7/25	**JOB NO.**	563426
DRAWN BY	KMP	**PRINT NO.**	BOM-1
CHECKED BY	ZAK	**PAGE**	7 OF 22

Sabre Industries™ INNOVATION DELIVERED

CUSTOMER : MARION COUNTY OREGON

SITE : LOWER PROSPECT, OR

B.O.M. 180 FT. MODEL S3TL-HD2 SELF-SUPPORTING TOWER

PC=PIECE	OR=ORANGE
PLT=PALLET	WH=WHITE
BDL=BUNDLE	O/W=OR & WH
CRT=CRATE	N/R=NOT REQ'D
D=DRUM	SP=SPECIAL
BX=BOX	

ITEM NO.	NO. REQ'D.	DRAWING NUMBER	DRAWING REV	PART NO.	DESCRIPTION	TOTAL WEIGHT LBS.	PAINT	PACKING KIT	PACKING QTY OF PKG'S	PACKING PKG. NO.
1					**TOWER BRACING CONT'D**					
2	1 KIT				**BRACING #10-T8100820 SECTION 10**	1887				
3					**CONSISTING OF THE MATERIAL LISTED BELOW**					
4	6	TS05779	1	TS05779	ANGLE, DIAGONAL 4 X 4 X 5/16 X 12'-10 3/8	658				
5	6	TS05780	1	TS05780	ANGLE, DIAGONAL 4 X 4 X 5/16 X 12'-3 1/2	629				
6	6	TS05781	1	TS05781	ANGLE, DIAGONAL 4 X 4 X 5/16 X 11'-8 3/4	600				
7					**SPLICE BOLTS TOP OF SECTION 10**					
8	19			C40026094	BOLT ASSEMBLY, 1 1/4 Ø X 5 1/2 A325	69				
9	1 KIT				**HARDWARE #TK00437 SECTION 10**	79				
10					**CONSISTING OF THE MATERIAL LISTED BELOW**					
11	10			C40026072	BOLT ASSEMBLY, 1 Ø X 2 3/4 A325	17				
12	37			C40026071	BOLT ASSEMBLY, 1 Ø X 2 1/2 A325	61				
13	10			C40047010	RINGFILL, 1/2 THICK - 1 Ø BOLT	1				
14										
15										
16										
17										
18										
19										
20										

REV	DATE	DRW	CHK	DESCRIPTION

DATE	8/7/25	**JOB NO.**	563426
DRAWN BY	KMP	**PRINT NO.**	BOM-1
CHECKED BY	ZAK	**PAGE**	8 OF 22

Sabre Industries™
INNOVATION DELIVERED

CUSTOMER : MARION COUNTY OREGON

SITE : LOWER PROSPECT, OR

B.O.M. 180 FT. MODEL S3TL-HD2 SELF-SUPPORTING TOWER

PC=PIECE	OR=ORANGE
PLT=PALLET	WH=WHITE
BDL=BUNDLE	O/W=OR & WH
CRT=CRATE	N/R=NOT REQ'D
D=DRUM	SP=SPECIAL
BX=BOX	

ITEM NO.	NO. REQ'D.	DRAWING NUMBER	DRAWING REV	PART NO.	DESCRIPTION	TOTAL WEIGHT LBS.	PAINT	PACKING KIT	PACKING QTY OF PKG'S	PACKING PKG. NO.
1					**TOWER BRACING CONT'D**					
2	1 KIT				**BRACING #09-T8100384 SECTION 09**	1612				
3					**CONSISTING OF THE MATERIAL LISTED BELOW**					
4	6	TS03786	1	TS03786	ANGLE, DIAGONAL 3 1/2 X 3 X 3/8 X 11'-5 3/8	564				
5	6	TS03787	1	TS03787	ANGLE, DIAGONAL 3 1/2 X 3 X 3/8 X 10'-10 13/16	537				
6	6	TS03788	1	TS03788	ANGLE, DIAGONAL 3 1/2 X 3 X 3/8 X 10'-4 7/16	511				
7					**SPLICE BOLTS TOP OF SECTION 09**					
8	19			C40026078	BOLT ASSEMBLY, 1 Ø X 4 1/4 A325	41				
9	1 KIT				**HARDWARE #TK00269 SECTION 09**	37				
10					**CONSISTING OF THE MATERIAL LISTED BELOW**					
11	10			C40026045	BOLT ASSEMBLY, 3/4 Ø X 2 1/2 A325	8				
12	38			C40026044	BOLT ASSEMBLY, 3/4 Ø X 2 1/4 A325	28				
13	10			C40047004	RINGFILL, 3/8 THICK - 3/4 Ø BOLT	1				
14										
15										
16										
17										
18										
19										
20										

REV	DATE	DRW	CHK	DESCRIPTION

DATE	8/7/25	**JOB NO.**	563426
DRAWN BY	KMP	**PRINT NO.**	BOM-1
CHECKED BY	ZAK	**PAGE**	9 OF 22

Sabre Industries™
INNOVATION DELIVERED

CUSTOMER : MARION COUNTY OREGON

SITE : LOWER PROSPECT, OR

B.O.M. 180 FT. MODEL S3TL-HD2 SELF-SUPPORTING TOWER

PC=PIECE	OR=ORANGE
PLT=PALLET	WH=WHITE
BDL=BUNDLE	O/W=OR & WH
CRT=CRATE	N/R=NOT REQ'D
D=DRUM	SP=SPECIAL
BX=BOX	

ITEM NO.	NO. REQ'D.	DRAWING NUMBER	DRAWING REV	PART NO.	DESCRIPTION	TOTAL WEIGHT LBS.	PAINT	PACKING KIT	PACKING QTY OF PKG'S	PACKING PKG. NO.
1					**TOWER BRACING CONT'D**					
2	1 KIT				**BRACING #08-T8100421 SECTION 08**	1256				
3					**CONSISTING OF THE MATERIAL LISTED BELOW**					
4	6	TS04017	1	TS04017	ANGLE, DIAGONAL 2 1/2 X 2 1/2 X 3/8 X 9'-1 13/16	337				
5	6	TS04018	1	TS04018	ANGLE, DIAGONAL 2 1/2 X 2 1/2 X 3/8 X 8'-8 11/16	322				
6	6	TS04019	1	TS04019	ANGLE, DIAGONAL 2 1/2 X 2 1/2 X 3/8 X 8'-3 5/8	306				
7	6	TS04020	1	TS04020	ANGLE, DIAGONAL 2 1/2 X 2 1/2 X 3/8 X 7'-10 11/16	291				
8					**SPLICE BOLTS TOP OF SECTION 08**					
9	19			C40026078	BOLT ASSEMBLY, 1 Ø X 4 1/4 A325	41				
10	1 KIT				**HARDWARE #TK00348 SECTION 08**	49				
11					**CONSISTING OF THE MATERIAL LISTED BELOW**					
12	13			C40026045	BOLT ASSEMBLY, 3/4 Ø X 2 1/2 A325	10				
13	50			C40026044	BOLT ASSEMBLY, 3/4 Ø X 2 1/4 A325	37				
14	13			C40047004	RINGFILL, 3/8 THICK - 3/4 Ø BOLT	2				
15										
16										
17										
18										
19										
20										

REV	DATE	DRW	CHK	DESCRIPTION

DATE	8/7/25	**JOB NO.**	563426
DRAWN BY	KMP	**PRINT NO.**	BOM-1
CHECKED BY	ZAK	**PAGE**	10 OF 22

Sabre Industries™
INNOVATION DELIVERED

CUSTOMER : MARION COUNTY OREGON

SITE : LOWER PROSPECT, OR

B.O.M. 180 FT. MODEL S3TL-HD2 SELF-SUPPORTING TOWER

PC=PIECE	OR=ORANGE
PLT=PALLET	WH=WHITE
BDL=BUNDLE	O/W=OR & WH
CRT=CRATE	N/R=NOT REQ'D
D=DRUM	SP=SPECIAL
BX=BOX	

ITEM NO.	NO. REQ'D.	DRAWING NUMBER	DRAWING REV	PART NO.	DESCRIPTION	TOTAL WEIGHT LBS.	PAINT	PACKING KIT	PACKING QTY OF PKG'S	PACKING PKG. NO.
1					**TOWER BRACING**					
2	1 KIT				**BRACING #07-T8100168 SECTION 07**	726				
3					**CONSISTING OF THE MATERIAL LISTED BELOW**					
4	6	TS02040	1	TS02040	ANGLE, DIAGONAL 2 X 2 X 5/16 X 7'-5 1/2	182				
5	6	TS02039	1	TS02039	ANGLE, DIAGONAL 2 X 2 X 5/16 X 7'-0 13/16	173				
6	6	TS02038	1	TS02038	ANGLE, DIAGONAL 2 X 2 X 5/16 X 6'-8 5/16	163				
7	6	TS02037	1	TS02037	ANGLE, DIAGONAL 2 X 2 X 5/16 X 6'-3 15/16	155				
8	3	TS02036	1	TS02036	ANGLE, HORIZONTAL 2 X 2 X 5/16 X 4'-4 3/8	53				
9	1 KIT				**HARDWARE #TK00146 SECTION 07**	35				
10					**CONSISTING OF THE MATERIAL LISTED BELOW**					
11	13			C40026024	BOLT ASSEMBLY, 5/8 Ø X 2 1/4 A325	7				
12	57			C40026023	BOLT ASSEMBLY, 5/8 Ø X 2 A325	26				
13	13			C40047003	RINGFILL, 3/8 THICK - 5/8 Ø BOLT	2				
14										
15										
16										
17										
18										
19										
20										

REV	DATE	DRW	CHK	DESCRIPTION

DATE	8/7/25	**JOB NO.**	563426
DRAWN BY	KMP	**PRINT NO.**	BOM-1
CHECKED BY	ZAK	**PAGE**	11 OF 22

Sabre Industries™
INNOVATION DELIVERED

CUSTOMER : MARION COUNTY OREGON

SITE : LOWER PROSPECT, OR

B.O.M. 180 FT. MODEL S3TL-HD2 SELF-SUPPORTING TOWER

PC=PIECE	OR=ORANGE
PLT=PALLET	WH=WHITE
BDL=BUNDLE	O/W=OR & WH
CRT=CRATE	N/R=NOT REQ'D
D=DRUM	SP=SPECIAL
BX=BOX	

ITEM NO.	NO. REQ'D.	DRAWING NUMBER	DRAWING REV	PART NO.	DESCRIPTION	TOTAL WEIGHT LBS.	PAINT	PACKING KIT	PACKING QTY OF PKG'S	PACKING PKG. NO.
1					**SAFETY CLIMB**					
2	1 KIT			C30012054	200' TUF-TUG SAFETY CLIMB MATERIAL	95				
3										
4										
5										
6										
7										
8										
9										
10										
11										
12										
13										
14										
15										
16										
17										
18										
19										
20										

REV	DATE	DRW	CHK	DESCRIPTION

DATE	8/7/25	**JOB NO.**	563426
DRAWN BY	KMP	**PRINT NO.**	BOM-1
CHECKED BY	ZAK	**PAGE**	12 OF 22

EXHIBIT K

CUSTOMER : MARION COUNTY OREGON

SITE : LOWER PROSPECT, OR

B.O.M. 180 FT. MODEL S3TL-HD2 SELF-SUPPORTING TOWER

PC=PIECE	OR=ORANGE
PLT=PALLET	WH=WHITE
BDL=BUNDLE	O/W=OR & WH
CRT=CRATE	N/R=NOT REQ'D
D=DRUM	SP=SPECIAL
BX=BOX	

ITEM NO.	NO. REQ'D.	DRAWING NUMBER	DRAWING REV	PART NO.	DESCRIPTION	TOTAL WEIGHT LBS.	PAINT	PACKING KIT	PACKING QTY OF PKG'S	PACKING PKG. NO.
1					**SAFETY CLIMB MATERIAL**					
2	1 KIT			C30011049	SAFETY CLIMB BOTTOM MOUNT (14"Ø)	37				
3	1 KIT			C30011004	SAFETY CLIMB TOP MOUNT (2 3/4"Ø - 2 7/8"Ø)	27				
4	8 KITS			C30003001	SAFETY CLIMB INTERMEDIATE MOUNT	17				
5					**CLIMBING/CONSTRUCTION STEP BOLTS**					
6	373			C40044017	STEP BOLT ASSEMBLY, 5/8 Ø X 7 H.D.G.	373				
7										
8										
9										
10										
11										
12										
13										
14										
15										
16										
17										
18										
19										
20										

REV	DATE	DRW	CHK	DESCRIPTION

DATE	8/11/25	**JOB NO.**	563426
DRAWN BY	KMP	**PRINT NO.**	BOM-1
CHECKED BY	ZAK	**PAGE**	13 OF 22

EXHIBIT K

CUSTOMER : MARION COUNTY OREGON

SITE : LOWER PROSPECT, OR

B.O.M. 180 FT. MODEL S3TL-HD2 SELF-SUPPORTING TOWER

PC=PIECE	OR=ORANGE
PLT=PALLET	WH=WHITE
BDL=BUNDLE	O/W=OR & WH
CRT=CRATE	N/R=NOT REQ'D
D=DRUM	SP=SPECIAL
BX=BOX	

ITEM NO.	NO. REQ'D.	DRAWING NUMBER	DRAWING REV	PART NO.	DESCRIPTION	TOTAL WEIGHT LBS.	PAINT	PACKING KIT	PACKING QTY OF PKG'S	PACKING PKG. NO.
1					**WAVEGUIDE LADDER (WG1)**					
2	18	CS00146	2	CS00146	ANGLE, WAVEGUIDE LADDER RAIL 20 FT. W/4 FT. RUNG SPC	540				
3	45	CS01619	0	CS01619	ANGLE, WAVEGUIDE SUPPORT (6 HOLE)	95				
4	18	CS00037	2	CS00037	PLATE, LADDER SPLICE	7				
5	46	CS00169	2	CS00169	CLIP, LADDER ATTACHMENT	25				
6					**WAVEGUIDE LADDER HARDWARE (WG1)**					
7	36			C40039002	J-BOLT ASSEMBLY, 3/8 Ø X 7 1/4 I.L.	13				
8	10			C40039001	J-BOLT ASSEMBLY, 3/8 Ø X 5 3/4 I.L.	3				
9	130			C40024004	BOLT ASSEMBLY, 3/8 Ø X 1 1/2 GRD 5	13				
10										
11										
12										
13										
14										
15										
16										
17										
18										
19										
20										

REV	DATE	DRW	CHK	DESCRIPTION

DATE	8/11/25	**JOB NO.**	563426
DRAWN BY	KMP	**PRINT NO.**	BOM-1
CHECKED BY	ZAK	**PAGE**	14 OF 22

Sabre Industries™
INNOVATION DELIVERED

CUSTOMER : MARION COUNTY OREGON

SITE : LOWER PROSPECT, OR

B.O.M. 180 FT. MODEL S3TL-HD2 SELF-SUPPORTING TOWER

PC=PIECE	OR=ORANGE
PLT=PALLET	WH=WHITE
BDL=BUNDLE	O/W=OR & WH
CRT=CRATE	N/R=NOT REQ'D
D=DRUM	SP=SPECIAL
BX=BOX	

ITEM NO.	NO. REQ'D.	DRAWING NUMBER	DRAWING REV	PART NO.	DESCRIPTION	TOTAL WEIGHT LBS.	PAINT	PACKING KIT	PACKING QTY OF PKG'S	PACKING PKG. NO.
1					**WAVEGUIDE LADDER (WG2)**					
2	18	CS00146	2	CS00146	ANGLE, WAVEGUIDE LADDER RAIL 20 FT. W/4 FT. RUNG SPC	540				
3	45	CS01619	0	CS01619	ANGLE, WAVEGUIDE SUPPORT (6 HOLE)	95				
4	18	CS00037	2	CS00037	PLATE, LADDER SPLICE	7				
5	46	CS00169	2	CS00169	CLIP, LADDER ATTACHMENT	25				
6					**WAVEGUIDE LADDER HARDWARE (WG2)**					
7	36			C40039002	J-BOLT ASSEMBLY, 3/8 Ø X 7 1/4 I.L.	13				
8	10			C40039001	J-BOLT ASSEMBLY, 3/8 Ø X 5 3/4 I.L.	3				
9	130			C40024004	BOLT ASSEMBLY, 3/8 Ø X 1 1/2 GRD 5	13				
10										
11										
12										
13										
14										
15										
16										
17										
18										
19										
20										

REV	DATE	DRW	CHK	DESCRIPTION

DATE	8/11/25	**JOB NO.**	563426
DRAWN BY	KMP	**PRINT NO.**	BOM-1
CHECKED BY	ZAK	**PAGE**	15 OF 22

Sabre Industries™
INNOVATION DELIVERED

CUSTOMER : MARION COUNTY OREGON

SITE : LOWER PROSPECT, OR

B.O.M. 180 FT. MODEL S3TL-HD2 SELF-SUPPORTING TOWER

PC=PIECE	OR=ORANGE
PLT=PALLET	WH=WHITE
BDL=BUNDLE	O/W=OR & WH
CRT=CRATE	N/R=NOT REQ'D
D=DRUM	SP=SPECIAL
BX=BOX	

ITEM NO.	NO. REQ'D.	DRAWING NUMBER	DRAWING REV	PART NO.	DESCRIPTION	TOTAL WEIGHT LBS.	PAINT	PACKING KIT	PACKING QTY OF PKG'S	PACKING PKG. NO.
1					**WAVEGUIDE LADDER (WG3)**					
2	18	CS00146	2	CS00146	ANGLE, WAVEGUIDE LADDER RAIL 20 FT. W/4 FT. RUNG SPC	540				
3	45	CS01619	0	CS01619	ANGLE, WAVEGUIDE SUPPORT (6 HOLE)	95				
4	18	CS00037	2	CS00037	PLATE, LADDER SPLICE	7				
5	46	CS00169	2	CS00169	CLIP, LADDER ATTACHMENT	25				
6					**WAVEGUIDE LADDER HARDWARE (WG3)**					
7	36			C40039002	J-BOLT ASSEMBLY, 3/8 Ø X 7 1/4 I.L.	13				
8	10			C40039001	J-BOLT ASSEMBLY, 3/8 Ø X 5 3/4 I.L.	3				
9	130			C40024004	BOLT ASSEMBLY, 3/8 Ø X 1 1/2 GRD 5	13				
10										
11										
12										
13										
14										
15										
16										
17										
18										
19										
20										

REV	DATE	DRW	CHK	DESCRIPTION

DATE	8/11/25	**JOB NO.**	563426
DRAWN BY	KMP	**PRINT NO.**	BOM-1
CHECKED BY	ZAK	**PAGE**	16 OF 22

Sabre Industries™
INNOVATION DELIVERED

CUSTOMER : MARION COUNTY OREGON

SITE : LOWER PROSPECT, OR

B.O.M. 180 FT. MODEL S3TL-HD2 SELF-SUPPORTING TOWER

PC=PIECE	OR=ORANGE
PLT=PALLET	WH=WHITE
BDL=BUNDLE	O/W=OR & WH
CRT=CRATE	N/R=NOT REQ'D
D=DRUM	SP=SPECIAL
BX=BOX	

ITEM NO.	NO. REQ'D.	DRAWING NUMBER	DRAWING REV	PART NO.	DESCRIPTION	TOTAL WEIGHT LBS.	PAINT	PACKING KIT	PACKING QTY OF PKG'S	PACKING PKG. NO.
1					**LEG CAPS**					
2	1 KIT			C30008022	LEG CAP KIT, 3/4" BOLTS ON 6 1/2" B.C. (1" SPLICE PLATE)	11				
3					**3' SIDEARM MOUNT @ 179'**					
4	1 KIT			C10151103	3 FT. SIDEARM ASSEMBLY	82				
5	1			C10900105	PIPE ANTENNA MOUNTING KIT 2 3/8 Ø X 5'-0	22				
6	4			C40034032	U-BOLT ASSEMBLY 5/8 Ø X 5 3/16 C-C	9				
7					**Z-BRACKET PIPE MOUNT FOR SIDEARM @ 179'**					
8	1 KIT			C10174018	TAPERED LEG PIPE MOUNT KIT	64				
9	1			C10981407	ANTENNA MTG. PIPE 4 1/2 Ø X 7'-0	58				
10	4			C40034032	U-BOLT ASSEMBLY 5/8 Ø X 5 3/16 C-C	9				
11					**SWIVEL KNUCKLE TIEBACKS FOR SIDEARM @ 179'**					
12	2 KITS			C10179001	SWIVEL KNUCKLE TIEBACK KIT 2 3/8 Ø PIPE X 10'-0	118				
13					**Z-BRACKET FLUSH MOUNT @ 177'**					
14	1 KIT			C10174018	TAPERED LEG FLUSH MOUNT KIT	64				
15	1			C10981207	ANTENNA MTG. PIPE 2 3/8 Ø X 7'-0	23				
16	4			C40034023	U-BOLT ASSEMBLY 5/8 Ø X 3 1/16 C-C	5				
17					**3' SIDEARM MOUNTS @ 175'**					
18	2 KITS			C10151103	3 FT. SIDEARM ASSEMBLY	164				
19	2			C10900105	PIPE ANTENNA MOUNTING KIT 2 3/8 Ø X 5'-0	45				
20	8			C40034032	U-BOLT ASSEMBLY 5/8 Ø X 5 3/16 C-C	17				

REV	DATE	DRW	CHK	DESCRIPTION

DATE	8/11/25	**JOB NO.**	563426
DRAWN BY	KMP	**PRINT NO.**	BOM-1
CHECKED BY	ZAK	**PAGE**	17 OF 22

Sabre Industries™
INNOVATION DELIVERED

CUSTOMER : MARION COUNTY OREGON

SITE : LOWER PROSPECT, OR

B.O.M. 180 FT. MODEL S3TL-HD2 SELF-SUPPORTING TOWER

PC=PIECE	OR=ORANGE
PLT=PALLET	WH=WHITE
BDL=BUNDLE	O/W=OR & WH
CRT=CRATE	N/R=NOT REQ'D
D=DRUM	SP=SPECIAL
BX=BOX	

ITEM NO.	NO. REQ'D.	DRAWING NUMBER	DRAWING REV	PART NO.	DESCRIPTION	TOTAL WEIGHT LBS.	PAINT	PACKING KIT	PACKING QTY OF PKG'S	PACKING PKG. NO.
1					**Z-BRACKET PIPE MOUNTS FOR SIDEARMS @ 175'**					
2	2 KITS			C10174018	TAPERED LEG PIPE MOUNT KIT	127				
3	2			C10981407	ANTENNA MTG. PIPE 4 1/2 Ø X 7'-0	116				
4	8			C40034032	U-BOLT ASSEMBLY 5/8 Ø X 5 3/16 C-C	17				
5					**SWIVEL KNUCKLE TIEBACKS FOR SIDEARMS @ 175'**					
6	4 KITS			C10179002	SWIVEL KNUCKLE TIEBACK KIT 2 3/8 Ø PIPE X 13'-3	280				
7					**Z-BRACKET PIPE MOUNTS @ 173'**					
8	3 KITS			C10174018	TAPERED LEG PIPE MOUNT KIT	191				
9	3			C10981407	ANTENNA MTG. PIPE 4 1/2 Ø X 7'-0	175				
10	12			C40034032	U-BOLT ASSEMBLY 5/8 Ø X 5 3/16 C-C	26				
11					**8 FT. PARABOLIC ANTENNA ICE SHIELD @ 170'**					
12	1 KIT			C30085002	PARABOLIC ANTENNA ICE SHIELD, 6'-8' ANTENNAS	701				
13					**Z-BRACKET PIPE MOUNT @ 165'**					
14	1 KIT			C10174018	TAPERED LEG PIPE MOUNT KIT	64				
15	1			C10981407	ANTENNA MTG. PIPE 4 1/2 Ø X 7'-0	58				
16	4			C40034032	U-BOLT ASSEMBLY 5/8 Ø X 5 3/16 C-C	9				
17					**3' SIDEARM MOUNTS @ 165'**					
18	2 KITS			C10151103	3 FT. SIDEARM ASSEMBLY	164				
19	2			C10900105	PIPE ANTENNA MOUNTING KIT 2 3/8 Ø X 5'-0	45				
20	8			C40034032	U-BOLT ASSEMBLY 5/8 Ø X 5 3/16 C-C	17				

REV	DATE	DRW	CHK	DESCRIPTION

DATE	8/11/25	**JOB NO.**	563426
DRAWN BY	KMP	**PRINT NO.**	BOM-1
CHECKED BY	ZAK	**PAGE**	18 OF 22

Sabre Industries™
INNOVATION DELIVERED

CUSTOMER : MARION COUNTY OREGON

SITE : LOWER PROSPECT, OR

B.O.M. 180 FT. MODEL S3TL-HD2 SELF-SUPPORTING TOWER

PC=PIECE	OR=ORANGE
PLT=PALLET	WH=WHITE
BDL=BUNDLE	O/W=OR & WH
CRT=CRATE	N/R=NOT REQ'D
D=DRUM	SP=SPECIAL
BX=BOX	

ITEM NO.	NO. REQ'D.	DRAWING NUMBER	DRAWING REV	PART NO.	DESCRIPTION	TOTAL WEIGHT LBS.	PAINT	PACKING KIT	PACKING QTY OF PKG'S	PACKING PKG. NO.
1					**Z-BRACKET PIPE MOUNTS FOR SIDEARMS @ 165'**					
2	2 KITS			C10174018	TAPERED LEG PIPE MOUNT KIT	127				
3	2			C10981407	ANTENNA MTG. PIPE 4 1/2 Ø X 7'-0	116				
4	8			C40034032	U-BOLT ASSEMBLY 5/8 Ø X 5 3/16 C-C	17				
5					**SWIVEL KNUCKLE TIEBACKS FOR SIDEARMS @ 165'**					
6	4 KITS			C10179002	SWIVEL KNUCKLE TIEBACK KIT 2 3/8 Ø PIPE X 13'-3	280				
7					**8 FT. PARABOLIC ANTENNA ICE SHIELD @ 155'**					
8	2 KITS			C30085002	PARABOLIC ANTENNA ICE SHIELD, 6'-8' ANTENNAS	1402				
9					**Z-BRACKET PIPE MOUNTS @ 150'**					
10	2 KITS			C10174036	TAPERED LEG PIPE MOUNT KIT	129				
11	2			C10981407	ANTENNA MTG. PIPE 4 1/2 Ø X 7'-0	116				
12	8			C40034032	U-BOLT ASSEMBLY 5/8 Ø X 5 3/16 C-C	17				
13					**Z-BRACKET PIPE MOUNT @ 143'**					
14	1 KIT			C10174036	TAPERED LEG PIPE MOUNT KIT	65				
15	1			C10981407	ANTENNA MTG. PIPE 4 1/2 Ø X 7'-0	58				
16	4			C40034032	U-BOLT ASSEMBLY 5/8 Ø X 5 3/16 C-C	9				
17					**3' SIDEARM MOUNT @ 143'**					
18	1 KIT			C10151103	3 FT. SIDEARM ASSEMBLY	82				
19	1			C10900105	PIPE ANTENNA MOUNTING KIT 2 3/8 Ø X 5'-0	22				
20	4			C40034032	U-BOLT ASSEMBLY 5/8 Ø X 5 3/16 C-C	9				

REV	DATE	DRW	CHK	DESCRIPTION

DATE	8/11/25	**JOB NO.**	563426
DRAWN BY	KMP	**PRINT NO.**	BOM-1
CHECKED BY	ZAK	**PAGE**	19 OF 22

Sabre Industries™
INNOVATION DELIVERED

CUSTOMER : MARION COUNTY OREGON

SITE : LOWER PROSPECT, OR

B.O.M. 180 FT. MODEL S3TL-HD2 SELF-SUPPORTING TOWER

PC=PIECE	OR=ORANGE
PLT=PALLET	WH=WHITE
BDL=BUNDLE	O/W=OR & WH
CRT=CRATE	N/R=NOT REQ'D
D=DRUM	SP=SPECIAL
BX=BOX	

ITEM NO.	NO. REQ'D.	DRAWING NUMBER	DRAWING REV	PART NO.	DESCRIPTION	TOTAL WEIGHT LBS.	PAINT	PACKING KIT	PACKING QTY OF PKG'S	PACKING PKG. NO.
1					**Z-BRACKET PIPE MOUNT FOR SIDEARM @ 143'**					
2	1 KIT			C10174036	TAPERED LEG PIPE MOUNT KIT	65				
3	1			C10981407	ANTENNA MTG. PIPE 4 1/2 Ø X 7'-0	58				
4	4			C40034032	U-BOLT ASSEMBLY 5/8 Ø X 5 3/16 C-C	9				
5					**SWIVEL KNUCKLE TIEBACKS FOR SIDEARM @ 143'**					
6	2 KITS			C10179002	SWIVEL KNUCKLE TIEBACK KIT 2 3/8 Ø PIPE X 13'-3	140				
7					**3' SIDEARM MOUNT @ 140'**					
8	1 KIT			C10151103	3 FT. SIDEARM ASSEMBLY	82				
9	1			C10900105	PIPE ANTENNA MOUNTING KIT 2 3/8 Ø X 5'-0	22				
10	4			C40034032	U-BOLT ASSEMBLY 5/8 Ø X 5 3/16 C-C	9				
11					**Z-BRACKET PIPE MOUNT FOR SIDEARM @ 140'**					
12	1 KIT			C10174053	TAPERED LEG PIPE MOUNT KIT	79				
13	1			C10981407	ANTENNA MTG. PIPE 4 1/2 Ø X 7'-0	58				
14	4			C40034032	U-BOLT ASSEMBLY 5/8 Ø X 5 3/16 C-C	9				
15					**SWIVEL KNUCKLE TIEBACKS FOR SIDEARM @ 140'**					
16	2 KITS			C10179011	SWIVEL KNUCKLE TIEBACK KIT 2 7/8 Ø PIPE X 15'-6	240				
17					**Z-BRACKET PIPE MOUNT @ 137'**					
18	1 KIT			C10174055	TAPERED LEG PIPE MOUNT KIT	83				
19	1			C10981407	ANTENNA MTG. PIPE 4 1/2 Ø X 7'-0	58				
20	4			C40034032	U-BOLT ASSEMBLY 5/8 Ø X 5 3/16 C-C	9				

REV	DATE	DRW	CHK	DESCRIPTION

DATE 8/11/25 **JOB NO.** 563426

DRAWN BY KMP **PRINT NO.** BOM-1

CHECKED BY ZAK **PAGE** 20 OF 22

Sabre Industries™
INNOVATION DELIVERED

CUSTOMER : MARION COUNTY OREGON

SITE : LOWER PROSPECT, OR

B.O.M. 180 FT. MODEL S3TL-HD2 SELF-SUPPORTING TOWER

PC=PIECE	OR=ORANGE
PLT=PALLET	WH=WHITE
BDL=BUNDLE	O/W=OR & WH
CRT=CRATE	N/R=NOT REQ'D
D=DRUM	SP=SPECIAL
BX=BOX	

ITEM NO.	NO. REQ'D.	DRAWING NUMBER	DRAWING REV	PART NO.	DESCRIPTION	TOTAL WEIGHT LBS.	PAINT	PACKING KIT	PACKING QTY OF PKG'S	PACKING PKG. NO.
1					**3' SIDEARM MOUNT @ 134'**					
2	1 KIT			C10151103	3 FT. SIDEARM ASSEMBLY	82				
3	1			C10900104	PIPE ANTENNA MOUNTING KIT 2 3/8 Ø X 4'-0	19				
4	4			C40034032	U-BOLT ASSEMBLY 5/8 Ø X 5 3/16 C-C	9				
5					**Z-BRACKET PIPE MOUNT FOR SIDEARM @ 134'**					
6	1 KIT			C10174055	TAPERED LEG PIPE MOUNT KIT	83				
7	1			C10981407	ANTENNA MTG. PIPE 4 1/2 Ø X 7'-0	58				
8	4			C40034032	U-BOLT ASSEMBLY 5/8 Ø X 5 3/16 C-C	9				
9					**SWIVEL KNUCKLE TIEBACKS FOR SIDEARM @ 134'**					
10	2 KITS			C10179011	SWIVEL KNUCKLE TIEBACK KIT 2 7/8 Ø PIPE X 15'-6	240				
11					**3' SIDEARM MOUNT @ 127'**					
12	1 KIT			C10151103	3 FT. SIDEARM ASSEMBLY	82				
13	1			C10900105	PIPE ANTENNA MOUNTING KIT 2 3/8 Ø X 5'-0	22				
14	4			C40034032	U-BOLT ASSEMBLY 5/8 Ø X 5 3/16 C-C	9				
15					**Z-BRACKET PIPE MOUNT FOR SIDEARM @ 127'**					
16	1 KIT			C10174055	TAPERED LEG PIPE MOUNT KIT	83				
17	1			C10981407	ANTENNA MTG. PIPE 4 1/2 Ø X 7'-0	58				
18	4			C40034032	U-BOLT ASSEMBLY 5/8 Ø X 5 3/16 C-C	9				
19					**SWIVEL KNUCKLE TIEBACKS FOR SIDEARM @ 127'**					
20	2 KITS			C10179011	SWIVEL KNUCKLE TIEBACK KIT 2 7/8 Ø PIPE X 15'-6	240				

REV	DATE	DRW	CHK	DESCRIPTION

DATE 8/11/25 **JOB NO.** 563426

DRAWN BY KMP **PRINT NO.** BOM-1

CHECKED BY ZAK **PAGE** 21 OF 22

EXHIBIT K

CUSTOMER : MARION COUNTY OREGON

SITE : LOWER PROSPECT, OR

B.O.M. 180 FT. MODEL S3TL-HD2 SELF-SUPPORTING TOWER

PC=PIECE	OR=ORANGE
PLT=PALLET	WH=WHITE
BDL=BUNDLE	O/W=OR & WH
CRT=CRATE	N/R=NOT REQ'D
D=DRUM	SP=SPECIAL
BX=BOX	

ITEM NO.	NO. REQ'D.	DRAWING NUMBER	DRAWING REV	PART NO.	DESCRIPTION	TOTAL WEIGHT LBS.	PAINT	PACKING KIT	PACKING QTY OF PKG'S	PACKING PKG. NO.
1					**LIGHTNING ROD**					
2	1 KIT			C10174018	TAPERED LEG PIPE MOUNT KIT	64				
3	1	CW00032	2	CW00032	LIGHTNING ROD EXTENSION 2 7/8 O.D. X 21'-0	128				
4	4			C40034025	U-BOLT ASSEMBLY 5/8 Ø X 3 9/16 C-C	7				
5	1 KIT			C30986004	LIGHTNING ROD ASSY 3/4 Ø X 10'-0 CCS W/STIFFENER	22				
6					**MISCELLANEOUS**					
7	1			C40068001	COLD GALVANIZING SPRAY	1				
8	1	CS00500	2	CS00500	TOWER NAME PLATE	1				
9										
10										
11										
12										
13										
14										
15										
16										
17										
18										
19										
20										

REV	DATE	DRW	CHK	DESCRIPTION

DATE 8/11/25 **JOB NO.** 563426

DRAWN BY KMP **PRINT NO.** BOM-1

CHECKED BY ZAK **PAGE** 22 OF 22

BLACK MOUNTAIN CONSULTING LLC
PO Box 291, Clackamas, OR 97015
503.625.2517
www.blkmountain.com

April 7, 2025

Black Mountain Project No. 250013-GEO

Cushing Civil Engineers
107 SE Washington Street, Suite 265
Portland, Oregon 97214

Attention: Mr. Kenny McManaway

Subject: Geotechnical Engineering Evaluation
Lower Prospect
3950 Cole Road South
Salem, Oregon 97306

Black Mountain Consulting LLC (Black Mountain) is pleased to submit this report describing our recent geotechnical engineering evaluation for the Lower Prospect tower site. The purpose of our work was to interpret general surface and subsurface site conditions in order to provide recommendations for design and construction. Our scope of services was authorized by Cushing Civil Engineers (CCE) on behalf of Marion County Public Works (Marion County), and consisted of a literature review, subsurface exploration, geotechnical analyses, and report preparation.

We prepared this report in accordance with generally accepted geotechnical engineering practices at the time we prepared it, for the exclusive use of CCE, Marion County, and their agents, for specific application to this project. Use or reliance upon this report by a third party is at their own risk. Black Mountain does not make any representation or warranty, express or implied, to such other parties as to the accuracy or completeness of this report or the suitability of its use by such other parties for any purpose whatever, known or unknown, to Black Mountain.

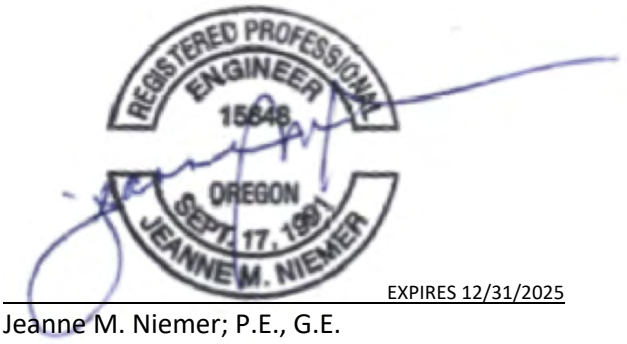
We appreciate the opportunity to be of service to you. If you have any questions, or if we can be of further assistance to you, please contact us at (503) 625.2517.

Respectfully Submitted,

Black Mountain Consulting LLC



Robert Nystrom, R.G.
Staff Geologist



EXPIRES 12/31/2025

Jeanne M. Niemer; P.E., G.E.
Principal Geotechnical Engineer

Attachment A — Figure 1 - Site Location Map
Figure 2 - Site & Exploration Plan

Attachment B — Subsurface Exploration Log

Cushing Civil Engineers
Geotechnical Engineering Evaluation

Lower Prospect
Salem, Oregon

250013-GEO
April 2025

PROJECT DESCRIPTION

The project is located at 3950 Cole Road South, near Salem, Marion County, Oregon, as shown on the attached *Site Location Map,* Figure 1. The proposed project will consist of constructing a new approximately 180-foot emergency communications tower adjacent to an existing equipment shelter. An existing tower and foundation will be removed after construction of the new tower.

SITE CONDITIONS

Regional Geology

The geology of the area consists of a complex group of basalt flows, tuffaceous sedimentary rocks, landslide debris flows and alluvial sedimentary deposits. The region is characterized by hilly terrain and steep slopes created by recurring lava flows from local volcanic vents and subsequent erosion by numerous streams. The planned compound is located on a unit of middle Miocene age Wanapum Basalt (Tcw) (Walker, G.W. and MacLeod, N.S., 1991). Adjoining units consist of Marine sedimentary and tuffaceous rocks (Tsm) composed of fossils, tuffaceous and arkosic sandstone, siltstone and sandstone deposits, as well as Pleistocene to Holocene age landslides and debris-flows (Qls), composed of slope wash and colluvium. Quaternary age sediments (Qs) composed of lacustrine and fluvial deposits that fill the valleys in this region. These sediments consist of unconsolidated to semi-consolidated lacustrine clay, silt, sand, and gravel and periodically include mudflow and fluvial deposits with discontinuous layers of peat (Piper, 1942, Allison, 1953, Wells and Peck, 1961). Valleys in the region are filled with Holocene and Pleistocene age terrace, pediment and lag gravels, cobbles, and boulders mixed with clay, silt and sand (Qt) (Walker, G.W. and MacLeod, N.S., 1991) and Holocene age alluvial deposits (Qal) consisting of sand, gravel, and silt (Walker, G.W. and MacLeod, N.S., 1991). Other smaller units in the region consist of tuffaceous sedimentary rocks and volcanic conglomerates, pebble conglomerate, and air-fall tuffs (Tcss) (Walker, G.W. and MacLeod, N.S., 1991) and Upper and Middle Eocene epoch deposits of tuffaceous marine sandstone and siltstone (Tss) (Walker, G.W. and MacLeod, N.S., 1991).

Surface Conditions

The project site is located near the top of a broad plateau adjacent to an existing communication facility. The site is vacant and level.

Subsurface Conditions

We explored the subsurface conditions at the project site on April 1, 2025. Our exploration consisted of advancing one boring using solid-stem drilling methods as shown on the attached Site and Exploration Plan, Figure 2. We logged and classified the subsurface materials in general accordance with the Manual Visual Classification Method (ASTM D 2488).

We encountered approximately 41.5 feet of loose to medium dense fine sand with varying amounts of silt. We terminated our exploration on the medium dense fine sand at about 41.5 feet below ground surface (bgs).

We encountered perched groundwater at about 17 feet bgs at the time of our exploration. A well log issued for a well installed on the adjacent east parcel documents static groundwater on the order of 70 feet bgs. Groundwater levels may fluctuate in response to changing precipitation patterns, off-site construction activities, and changes in site utilization.

SEISMIC HAZARD STUDY

Seismic Sources

There are three primary earthquake sources for this site: Cascadia Subduction Zone (CSZ) intraplate and interface earthquakes, and local crustal earthquakes that could occur in the North American Plate. CSZ intraplate earthquakes that could occur within the subducted Juan de Fuca plate are anticipated to have magnitudes on the order of 7.0 to 7.5, at a depth of about 40 to 60 km. This subduction is occurring beneath the North American Plate in the coastal regions between Vancouver Island and northern California. The subducting Juan de Fuca plate is mapped approximately 190 kilometers west of the site. They present a low-moderate hazard.

An interface event earthquake on the seismogenic portion of the interface between the Juan de Fuca Plate and the North American Plate is capable of generating earthquakes with a moment magnitude of between 8.5 and 9.0. A magnitude 8.5 is expected to correspond to an average 10 percent of being exceeded in 50 years, and a magnitude 9.0 corresponds to an average 2 percent of being exceeded in 50 years.

Local crustal earthquakes may occur from northeast-southwest trending faults in the region. The nearest known fault is the Salem-Eola Homocline located approximately 0.8 kilometers southwest of the site. This fault is classified as a homocline (uplifted blocks of rock) that has a reported possible slip rate of less than 0.2 mm/year.

CONCLUSIONS

The tower can be supported on a drilled pier foundation that derives its support from the medium dense to dense sand that we encountered below 30 feet.

Seismic Conditions

Based on our analysis of subsurface exploration logs and a review of published geologic maps, we interpret the on-site soil conditions to correspond to Site Class DE, as defined by ASCE/SEI 7-22.

Site Specific Ground Motions

Our experience with ground motion modeling indicates that the site subsurface conditions are not susceptible to amplification beyond code spectra.

Liquefaction, Fault Rupture, Slope Stability and Tsunami Inundation

- Based on the depth to groundwater, the site soils are not susceptible to settlement from liquefaction during a design level earthquake.
- Because the nearest known fault is over six kilometers from the site, hazards from fault rupture are low.
- The site is located inland, outside of tsunami inundation areas.
- The site is relatively flat, and is therefore not susceptible to earthquake-induced slope instability.

Our specific recommendations are presented in the following sections.

GEOTECHNICAL DESIGN RECOMMENDATIONS

Seismic Design Parameters

Our recommended seismic design parameters are summarized in the table below, and were determined in accordance with ASCE/SEI 7-22.

Seismic Design Parameters		
	Short Period	**1 Second**
Mapped Spectral Acceleration Values	S_S= 0.99	S_1=0.41
Site Soil Class	DE	
Seismic Design Category	D	
Design Spectral Response Acceleration Parameters	S_{DS}=0.91	S_{D1}=0.76

For purposes of seismic site characterization, we extrapolated the soil conditions that we observed below the exploration termination depth, based on our knowledge of the regional geology.

Drilled Pier Design Recommendations

Axial Capacity – Skin Friction:

For frictional resistance along the shaft of the drilled pier, acting both downward and in uplift, we recommend using the ultimate skin friction values listed below. We recommend that frictional resistance be neglected in the uppermost 2 feet below the ground surface. The ultimate skin friction values presented do not include a safety factor, in accordance with the provisions of the current EIA/TIA 222 code.

Ultimate Skin Friction	
Depth (feet)	**Skin Friction (psf)**
0-2	0
2-30	500
30-42	900

Axial Capacity – End Bearing:

We recommend that the drilled pier be located a minimum depth of 35 feet bgs. For vertical compressive soil bearing capacity, we recommend using the unit end bearing capacities presented below, where B is the diameter of the pier in feet and D is the depth into the bearing layer in feet, in accordance with the current EIA/TIA 222 code. *This ultimate end bearing capacity does not include a safety factor.*

Ultimate End Bearing Capacity		
Depth (feet)	**Bearing Capacity (tsf)**	**Limiting Point Resistance (tsf)**
35-42	12 D/B	20

Notes: D = the embedment depth (in feet) into the bearing layer. B = pier diameter (feet).

Drilled Pier Lateral Capacity

Passive Earth Pressure Method: The passive earth pressure method is a simplified approach that is generally used to estimate an allowable lateral load capacity based on soil wedge failure theory. Although the lateral deflection associated with the soil wedge failure may be estimated, design lateral deflections using the passive earth pressure method should be considered approximate, due to the simplified nature of the method. A lateral deflection on the order of one-half inch would be required to mobilize the passive pressure presented below. Our recommended passive earth pressures for the soil layers encountered at this site are presented in the table below and do not include a safety factor. They may be assumed to act over an area measuring two pier diameters wide by eight pier diameters deep.

Ultimate Lateral Passive Earth Pressures	
Depth (feet)	**Passive Pressure (pcf)**
0-2	0
2-30	400
30-42	750

For analyzing deflection, shear, bending moment, and soil response with respect to depth, in nonlinear soils under lateral loading using the computer program LPile, we recommend using the parameters shown below.

L-Pile Input Parameters

Soil Type	**Depth (ft)**	**Effective Unit Weight (pcf)**	**Strain e50**	**Undrained Shear Strength (psf)**	**Friction Angle (deg)**
Sand	2-30	100	-	-	32
Sand	30-42	115	-	-	36

Drilled Pier Construction Considerations:

We did not encounter static groundwater at the time of our exploration, but did encounter perched water at about 17 feet bgs. Groundwater levels may fluctuate in response to changing precipitation patterns, off-site construction activities, and changes in site utilization.

The drilling contractor should be prepared to clean out the bottom of the pier excavation if loose soil is observed or suspected, with or without the presence of slurry or groundwater. As a minimum, we recommend that the drilling contractor have a cleanout bucket on site to remove loose soils and/or mud from the bottom of the pier. If groundwater is present and abundant within the pier hole, we recommend that the foundation concrete be tremied from the bottom of the hole to displace the water and minimize the risk of contaminating the concrete mix. We recommend that concrete be placed by tremie methods if more than three inches of water has accumulated in the excavation.

Spread Footings

Lightly loaded structures such as the equipment shelter can be supported on spread footings. Continuous-wall and isolated-spread footings should be at least 18 and 24 inches wide, respectively. For frost protection, the footings should be located at least 24 inches below the lowest adjacent grades or deeper if required by local building code.

Footings should bear on the native loose sand that is recompacted to a medium dense state or better, or on imported structural fill placed in accordance with our recommendations. Footings bearing on the sand or structural fill should be sized for an allowable bearing capacity of 2,000 psf. We estimate post construction settlements will be less than one inch for the above recommended bearing capacity. We estimate that the differential settlement will be approximately half of the total settlement. Our recommended bearing capacity is based on limiting settlements and includes a factor of safety of 3 against bearing capacity failure.

Lateral loads acting on the foundations can be resisted by passive earth pressures on the sides of the foundation and by friction along the soil-concrete interface at the base of the foundation. We recommend using an allowable passive earth pressure of 300 pounds per cubic foot (pcf) for foundations confined by the sand or structural fill placed in accordance with our recommendations. The passive pressure within the upper two feet of embedment should be neglected. We recommend an allowable coefficient of friction of 0.30. In order to develop these capacities, concrete must be poured neat in excavations, the adjacent grade must be level, and the static ground water level must remain below the base of the footing throughout the year. These allowable lateral resistance values include a minimal factor of safety of 1.5.

Floor Slabs

We recommend a 6-inch-thick layer of imported granular structural fill be placed and compacted over the prepared subgrade. The granular fill should be placed in 6-inch-thick lifts and compacted to at least 95 percent of the maximum dry density, as determined by the American Society for Testing and Materials (ASTM) D 1557. A modulus of subgrade reaction value of 75 pounds per cubic inch (pci) may be used to design the floor slab.

Foundation Construction Considerations

A geotechnical engineer from Black Mountain (or their representative) should confirm suitable bearing conditions and evaluate the foundation subgrades. Observations should also confirm that loose or soft material, organics, unsuitable fill, or old topsoil zones were removed. Localized deepening of footing excavations may be required to penetrate any deleterious materials.

Because foundation stresses are transferred outward as well as downward into the bearing soils, all footing over-excavations should extend horizontally outward from the footing edge a distance equal to the one half the over-excavation depth for the structural backfill.

CONSTRUCTION RECOMMENDATIONS

Site Preparation

Clearing and Stripping: After surface and near-surface water sources have been controlled, the construction areas should be cleared and stripped of organic matter and other deleterious materials. Silt fences, hay bales, buffer zones of natural growth, sedimentation ponds, and granular haul roads should be used as required to reduce sediment transport during construction to acceptable levels.

Where present, fill and existing topsoil should be stripped and removed from proposed development locations and for a five-foot-margin around such areas. Based on our explorations, we anticipate the depth of stripping to be less than about a foot, although greater stripping depths may be required if deleterious materials are encountered. Deleterious materials encountered during site preparation should be removed from the subgrade soils and hauled off site for disposal. Stripped material should be transported off site for disposal or stockpiled for use in landscaped areas. If stripping operations occur during wet weather, a generally greater stripping depth might be required in order to remove disturbed moisture-sensitive soils; therefore, stripping is best performed during a period of dry weather.

Excavations: We anticipate that site grading will be minimal. Where required, temporary soil cuts associated with site excavations or regrading activities should be adequately sloped back to prevent sloughing and collapse, unless a shoring box or other suitable excavation side wall bracing is provided. It is the responsibility of the contractor to ensure that excavations are properly sloped or braced for worker safety protection, in accordance with OSHA safety guidelines.

Dewatering: Based on our subsurface exploration, we do not anticipate groundwater seepage within the tower mat excavation. If water is encountered, we anticipate that pumping from sumps located in the trench will likely be effective in removing water resulting from seepage or perched groundwater.

Final Grades: Final site grades should slope downward away from the structure at a minimum of two percent and runoff should be conveyed to a suitable drainage outlet. Additionally, the area surrounding the structure could be capped with concrete, asphalt or compacted, low-permeability soils to reduce surface water infiltration into the subsurface soils near the foundation.

Structural Fill

The following recommendations for structural fill are provided for design and construction purposes, if required.

Materials: Structural fill includes any fill materials placed under footings, pavements, or driveways and backfill over the embedded mat foundation. Typical materials used for structural fill include: clean, well-graded sand and gravel; clean sand; crushed rock; controlled-density fill (CDF); lean-mix concrete; and various soil mixtures of silt, sand, and gravel. Recycled concrete, asphalt, and glass derived from pulverized parent materials may also be used as structural fill when combined with an equal volume or more of silt, sand, and/or gravel. Use of the on-site soils as structural fill is also feasible.

Placement and Compaction: When used as structural fill, the on-site soils should be placed in lifts with a maximum thickness of 8 inches and compacted to not less than 92 percent of the material's maximum dry density, as determined by ASTM D-1557. The on-site soils should be moisture-conditioned to within 3 percent of the optimum moisture content (ASTM D-1557). If the on-site soils cannot be properly moisture-conditioned, we recommend using imported granular material for structural fill.

Imported granular structural fill should consist of angular pit or quarry run rock, crushed rock, or crushed gravel and sand that is fairly well graded between coarse and fine particle sizes. The fill should contain no organic matter or other deleterious materials, have a maximum particle size of one inch, and have less than 5 percent passing the U.S. No. 200 Sieve. In deep excavations, or where subgrade soils require stabilization, the particle size may be increased to four inches. The percentage of fines can be increased to 12 percent of the material passing the U.S. No. 200 Sieve if placed during dry weather and provided the

fill material is moisture-conditioned, as necessary, for proper compaction. The material should be placed in lifts with a maximum uncompacted thickness of 12 inches and be compacted to not less than 95 percent of the maximum dry density, as determined by ASTM D-1557. During the wet season or when wet subgrade conditions exist, the initial lift thickness should be increased to 24 inches and should be compacted by rolling with a smooth-drum, nonvibratory roller.

CDF and lean-mix concrete do not require special placement or compaction procedures. Regardless of location or material, all structural fill should be placed over firm, unyielding subgrade soils. If earthwork takes place during freezing conditions, we recommend that all exposed subgrades be allowed to thaw and be recompacted prior to placing subsequent lifts of structural fill.

CONSTRUCTION OBSERVATIONS

Satisfactory earthwork performance depends on the quality of construction. Sufficient monitoring of the contractor's activities is a key part ensuring that work is completed in accordance with the construction drawings and specifications. We recommend that a representative from Black Mountain observe that the subsurface conditions are consistent with the anticipated conditions, and that foundation subgrades are suitable for placement of structural fill, rebar, or concrete for the new structures.

Some jurisdictions require a final letter of geotechnical compliance before they will provide a final permit. It is incumbent on the client to determine if a final letter of geotechnical compliance is required by the jurisdiction. If such a letter is required, a representative from Black Mountain MUST observe foundation subgrades PRIOR to concrete being poured for the foundation. If Black Mountain does not perform this observation, we cannot provide a final letter of geotechnical compliance, and a permit will not be eligible for final sign-off. ***It is the owner's responsibility to ensure that Black Mountain is notified in a timely manner (i.e., at least 48 hours prior to the required site observation) of the need for our services on site during construction.***

CLOSURE

We have prepared this report for use by the owner/developer and other members of the design and construction team for the proposed tower site. The opinions and recommendations contained within this report are not intended to be, nor should they be, construed as a warranty of subsurface conditions, but are forwarded to assist in the planning and design process.

We have made observations based on our explorations that indicate the soil conditions at only those specific locations and only to the depths penetrated. These observations do not necessarily reflect soil types, strata thickness, or water level variations that may exist in other locations. If subsurface conditions vary from those anticipated, Black Mountain will provide additional geotechnical recommendations, if necessary. The future performance and integrity of the improvements will depend largely on proper initial site preparation, drainage, and construction procedures. Observation by experienced geotechnical personnel should be considered an integral part of the construction process.

The conclusions and recommendations contained in this report are based on our understanding of the currently proposed project, as derived from written and verbal information that the client supplied to us. When the design is finalized, we recommend that our firm review to see that our recommendations have

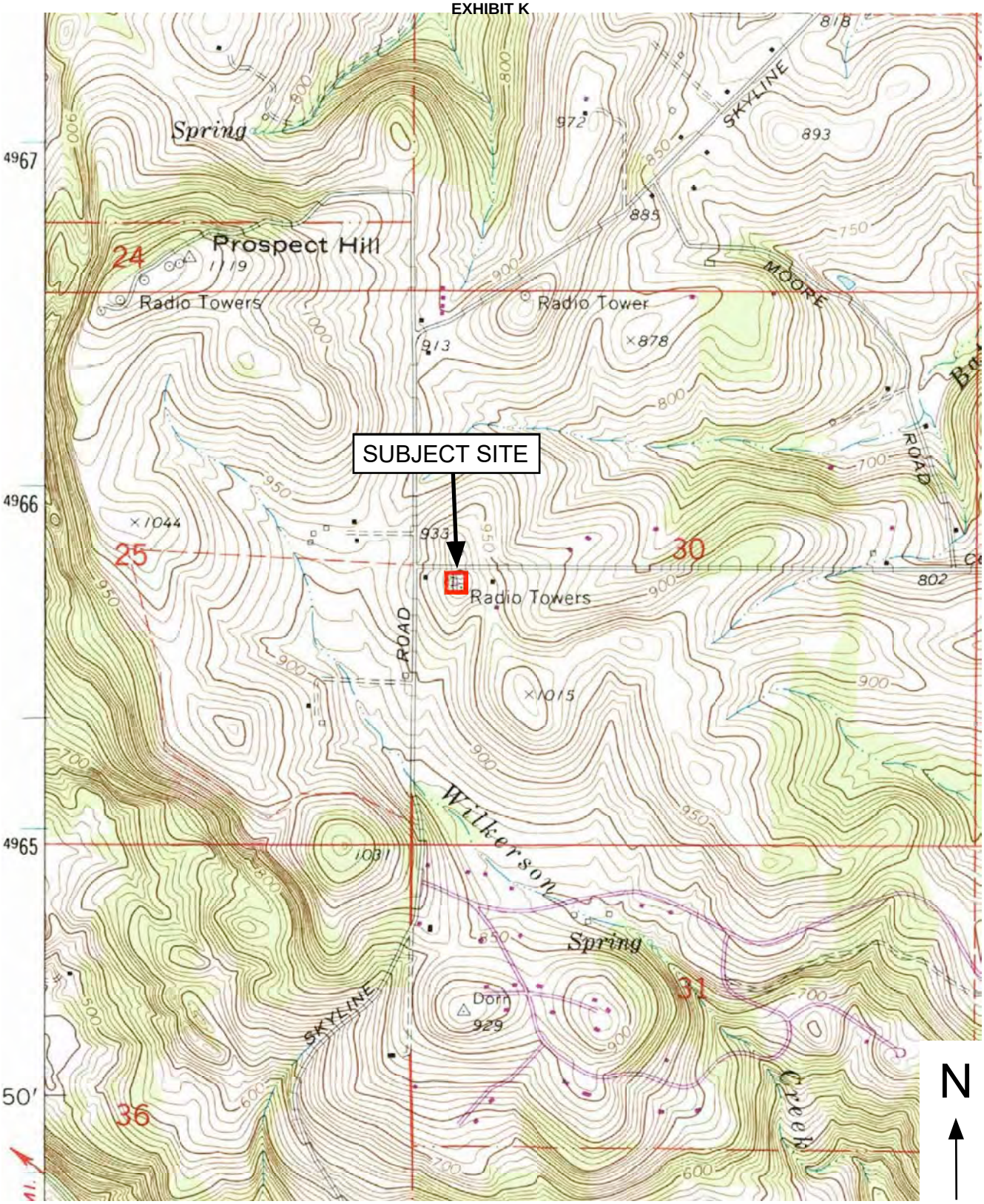
been interpreted and implemented as intended. If design changes are made, we request that we be retained to review our conclusions and recommendations and to provide a written modification or verification.

The scope of our services does not include services related to construction safety precautions, and our recommendations are not intended to direct the contractor's methods, techniques, sequences, or procedures, except as specifically described in our report for consideration in design. Within the limitations of scope, schedule, and budget, our services have been executed in accordance with the generally accepted practices in this area at the time this report was prepared. No warranty or other conditions, express or implied, should be understood.

ATTACHMENT A

FIGURES

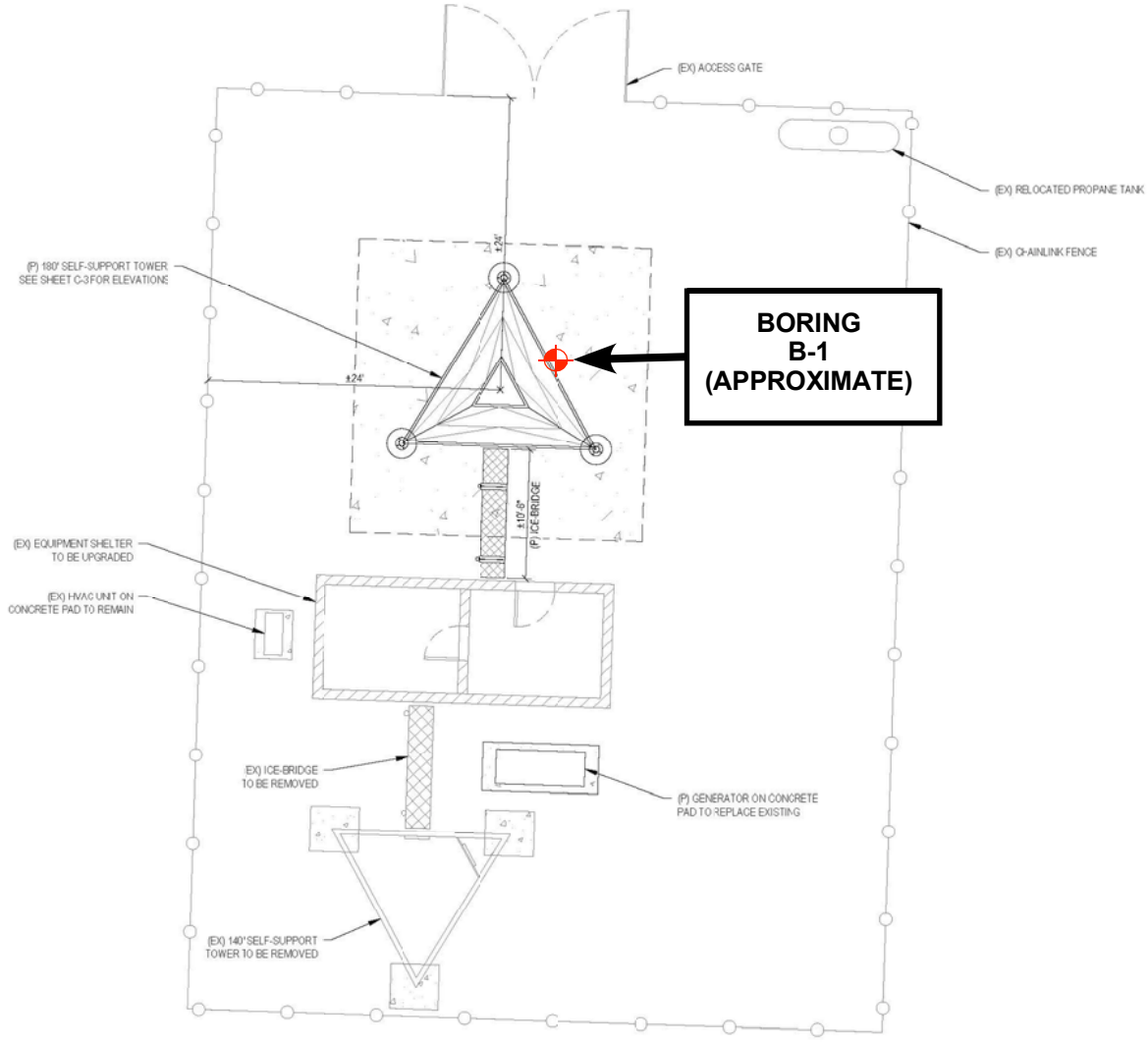
EXHIBIT K



Base Map Courtesy of U.S.G.S. Topographic Map "Sydney, Oreg." (1970, photorevised 1986) Not to Scale

Black Mountain Consulting LLC PO Box 291 Clackamas, OR 97015 TEL. 503.625-2517 | www.blkmountain.com	**FIGURE 1 -** Location Map	**Location** Lower Prospect 3850 Cole Road South Salem, Oregon 97306
	Project : 250013	
	Client : Cushing Civil Engineers	**Date :** April 2025

EXHIBIT K



Drawing provided by Cushing Civil Engineers, Not to Scale

Black Mountain Consulting LLC PO Box 291 Clackamas, OR 97015 TEL. 503.625-2517 | www.blkmountain.com	**FIGURE 2 -** Site & Exploration Plan	**Location** Lower Prospect 3850 Cole Road South Salem, Oregon 97306
	Project : 250013	
	Client : Cushing Civil Engineers	**Date :** April 2025

ATTACHMENT B

SUBSURFACE EXPLORATION LOG

EXHIBIT K

BORING LOG

Black Mountain Consulting LLC
PO Box 291
Clackamas, Oregon 97015
TEL:503.625.2517

PROJECT : Lower Prospect
Salem, Oregon 97306
Cushing Civil Engineers

Job Number: 250013-GEO

Boring No.: **B-1**

Elevation Reference :
Ground Surface Elevation :

Well Completed : N.A.
Casing Elevation : N.A.

DEPTH (feet)		SAMPLE TYPE	SAMPLE NUMBER	BLOW COUNT	POCKET PEN	TORVANE	GROUND WATER	OBSERVATIONS	TESTING
0	Loose, oxidized, moist, silty fine SAND (SM)		1	5 4 2				4" base rock at surface	
			2	2 3 5					
5			3	3 3 4					
			4	2 3 6				Mottled below 7.5'	
10			5	3 4 5					
15			6	4 4 6			▼	Perched groundwater approximately 17'	
20	becomes medium dense below 20'		7	3 5 6					
25	becomes loose below 25'		8	2 3 5					

LEGEND

- 2-inch O.D. Split-Spoon Sample
- 1" Geoprobe
- Sample not Recovered
- DATE ▽ DATE ▼ — Static Water Level at Drilling / Static Water Level / Perched Groundwater
- Grab Sample
- WTPH-D Ext 8010 — Type of Analytical Testing Used
- NR — No Recovery
- ATD — At Time of Drilling

Drilling Start Date: 4-1-25 Drilling Completion Date: 4-1-25 Logged By: RN

EXHIBIT K

BORING LOG

Black Mountain Consulting LLC
PO Box 291
Clackamas, Oregon 97015
TEL:503.625.2517

PROJECT : Lower Prospect
Salem, Oregon 97306
Cushing Civil Engineers

Job Number: 250013-GEO

Boring No.: **B-1**

Elevation Reference :
Ground Surface Elevation :

Well Completed : N.A.
Casing Elevation : N.A.

DEPTH (feet)		SAMPLE TYPE	SAMPLE NUMBER	BLOW COUNT	POCKET PEN	TORVANE	GROUND WATER	OBSERVATIONS	TESTING
30	Medium dense, red-oxidized (mottled), moist, silty fine SAND (SM) below 30’		9	4 7 7					
35			10	4 7 9					
40			11	3 5 7					
	Boring terminated at approximately 41.5 feet bgs. Perched groundwater encountered at about 17’ at time of exploration.								
45									
50									
55									

LEGEND

- 2-inch O.D. Split-Spoon Sample
- 1" Geoprobe
- Sample not Recovered
- DATE ▽ DATE — Static Water Level at Drilling / Static Water Level / Perched Groundwater
- WTPH-D Ext 8010 — Grab Sample / Type of Analytical Testing Used
- NR — No Recovery
- ATD — At Time of Drilling

Drilling Start Date: 4-1-25

Drilling Completion Date: 4-1-25

Logged By: RN

EXHIBIT K

BLACK MOUNTAIN CONSULTING LLC
PO Box 291, Clackamas, OR 97015
503.625.2517
www.blkmountain.com

April 1, 2025

Black Mountain Project No. 250013-SRT

Cushing Civil Engineers
107 SE Washington Street, Suite 265
Portland, Oregon 97214

Attn: Mr. Kenny McManaway

Subject: Soil Resistivity Survey
Lower Prospect
3950 Cole Road South
Salem, Oregon 97306

At your request, a representative of Black Mountain Consulting LLC (Black Mountain) visited the above referenced site on March 10, 2025 to perform soil resistivity testing. Two surveys were completed, at the approximate locations and orientations described in this report. We understand others will use these test results in their design of the antenna grounding system.

Please note that, due to high resistivity values at the lease area, a standard grounding design may not be appropriate and that a site-specific grounding design may be required.

We appreciate this opportunity to be of service.

Sincerely,

Black Mountain Consulting LLC

Robert Nystrom, R.G.
Staff Geologist

Methods:

The resistivity survey was completed using the Wenner Four-Electrode Method and the Miller Model 400A Soil Resistance Meter. The Wenner Four-Electrode Method requires that four metal electrodes be placed in a straight line, equal distance from one another. Each electrode is driven approximately 6 -12 inches below ground surface at 5, 10, 20, 30 and 40-foot spacing intervals. A current of known amperage is subsequently circulated into the soil through the end electrodes and the resulting voltage drop between the inner electrodes is measured, yielding the resistance (in ohms) of the soil. The correct unit for resistivity is the ohm-centimeter (Ω-cm). The following equation is used to calculate the resistivity (Ω-cm).

$$\rho = 191.5\, aR$$

Where:

ρ = soil resistance in ohm-cm (Ω-cm)

a = electrode separation (in feet)

R = resistance measured in ohms (Ω)

This method is in general accordance with ASTM method G57-06 (IEEE Standard 81).

Site Conditions:

The existing communication site is located near the top of a hill and there are two communication compounds located adjacent to the site. The compounds and adjoining slopes limited the placement of the surveys. Two equally spaced electrode arrays were established at the site. Array 1 was configured along a N-S axis that was placed approximately 10 feet east of the site compound. Array 2 was configured along an NW-SE axis that was placed inside the compound (at the planned tower footprint). Array 2 was limited to 20-foot spacing due to the size of the fenced compound and the soils in the fenced compound are disturbed due to construction activity and subsequent grading. Therefore, Array 1 may be more representative of subsurface conditions.

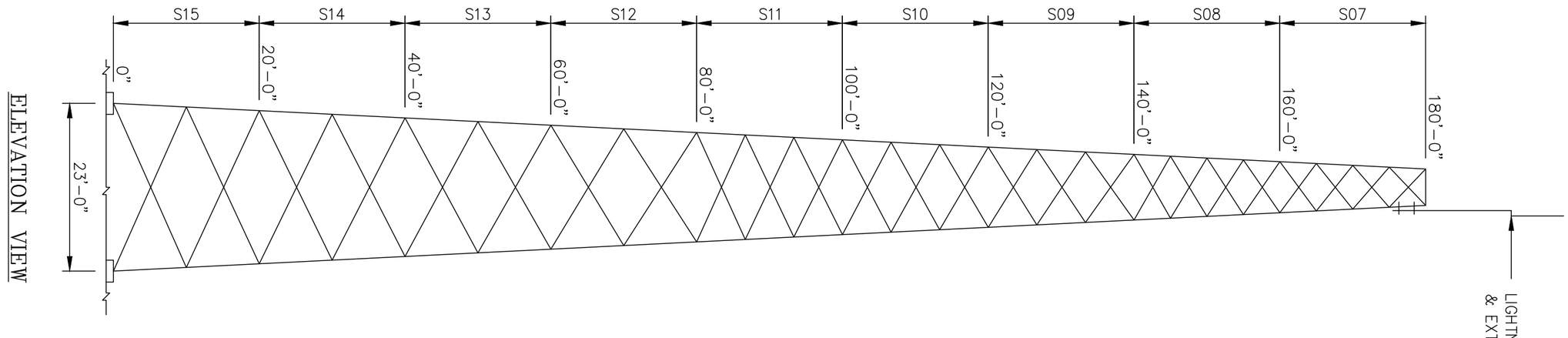
Surficial soils at Array 1 consisted of damp fine sand and some gravel. Surficial soils at Array 2 consisted of silty fine sand and gravel. Black Mountain conducted a geotechnical exploration at the tower site on April 1, 2025 and we encountered approximately 41.5 feet of fine sand with varying amounts of silt. We encountered perched groundwater at about 17 feet bgs at the time of our exploration. There was sufficient space to perform 40-foot spacing on Array 1 and 20-foot spacing on Array 2. The arrays were oriented approximately 45° to one another.

EXHIBIT K

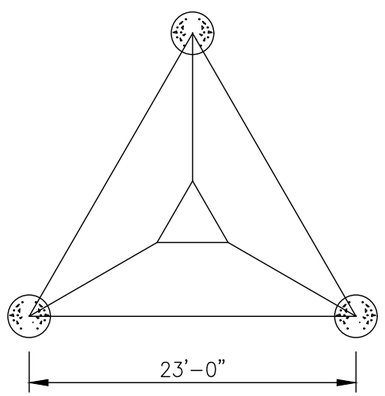
Soil Resistivity Survey Results

Table 1: Soil Resistivity Data						
Site Name & Address:		**Lower Prospect, 3950 Cole Road South, Salem, Oregon 97306**				
Company Performing Test (Include Name of Person & Date):		**Black Mountain Consulting LLC, Robert Nystrom, 3-10-2025**				
Test Instrument (Model #, Serial #, Date of Last Calibration):		**Miller Model 400A Soil Resistance Meter, #44500, Calibrated April 2024**				
Areas to be Measured	**Data Recordings**	**Distance Between Test Rods in Feet**				
		5	**10**	**20**	**30**	**40**
Array 1	Measured Resistance (Ω):	32	19	9.0	3.0	2.7
	Calculated Resistivity (Ω-cm):	30,640	36,385	34,470	17,235	20,682
Array 2	Measured Resistance (Ω):	31	18	5.3	-	-
	Calculated Resistivity (Ω-cm):	29,683	34,470	20,299	-	-
Area 3	Measured Resistance (Ω):					
	Calculated Resistivity (Ω-cm):					
Array 4	Measured Resistance (Ω):					
	Calculated Resistivity (Ω-cm):					
Additional Site Information						
Description of Soil as Seen as Site:		Array 1: Silt and gravel (gravel road). Array 2: Silty fine sand.				
Soil Condition (Wet, Damp, or Dry):		Damp				
Weather:		Overcast at time of survey: showers last 24 hours, 45° F				

LEGS	14.00 OD X .500		10.75 OD X .500		8.625 OD X .500	8.625 OD X .322	5.563 OD X .375	4.000 OD X .318	2.875 OD X .203
DIAGONALS	L 6 X 4 X 3/8 (SLV)		L 4 X 4 X 3/8	L 4 X 3 1/2 X 3/8 (SLV)		L 4 X 4 X 5/16	A	B	L 2 X 2 X 5/16
HORIZONTALS	NONE								L 2 X 2 X 5/16
BAYS/SECTION	2 BAYS				3 BAYS			4 BAYS	
SECTION WEIGHT	9219 LBS.	9060 LBS.	7202 LBS.	6525 LBS.	6047 LBS.	4305 LBS.	3448 LBS.	2454 LBS.	1408 LBS.



ELEVATION VIEW



PLAN VIEW

MATERIAL LIST	
A	L 3 1/2 X 3 X 3/8 (SLV)
B	L 2 1/2 X 2 1/2 X 3/8

UNLESS OTHERWISE SPECIFIED
ALL DIMENSIONS INCLUDE
FINISHES AND ARE IN INCHES

TOLERANCES: FRACTIONS ± 1/16"
ANGLES ± 1/2 DEG.
DECIMALS ± .010"

MATERIAL:

TOLERANCES DO NOT APPLY TO RAW MATERIAL

REV	DATE	DRW	CHK	DESCRIPTION

Sabre Industries™
INNOVATION DELIVERED

CONFIDENTIAL
This document and the information contained herein is the confidential trade secret property of Sabre Industries, Inc. ("Sabre") and must not be reproduced, copied or used, in whole or in part, for any purpose without the prior written consent of Sabre.
© 2025 Sabre Industries, Inc. All rights reserved.

MASTER: 180 FT. MODEL S3TL-HD2
SITE: MCCULLY MOUNTAIN, OR
CUSTOMER: MARION COUNTY OREGON

JOB NO. 563427		SIZE	DRAWING NO.	REV
DATE	08/07/25	B	563427-MS	0
DRAWN BY	KMP			
CHECKED BY	ZAK		SCALE NONE	PAGE 1 OF 3

DRAWING LIST

563427-F1 . . . . . MAT & PIER FOUNDATION
C30400341 . . . . . LEG TO LEG TEMPLATE
9030714 . . . . . TOWER BASE INSTALLATION
563427-S15 . . . . . SECTION 0 FT. – 20 FT.
563427-S14 . . . . . SECTION 20 FT. – 40 FT.
563427-S13 . . . . . SECTION 40 FT. – 60 FT.
563427-S12 . . . . . SECTION 60 FT. – 80 FT.
563427-S11 . . . . . SECTION 80 FT. – 100 FT.
563427-S10 . . . . . SECTION 100 FT. – 120 FT.
563427-S09 . . . . . SECTION 120 FT. – 140 FT.
563427-S08 . . . . . SECTION 140 FT. – 160 FT.
563427-S07 . . . . . SECTION 160 FT. – 180 FT.
563427-SB1 . . . . . STEP BOLT ATTACHMENT INSTALLATION
C30011-1 . . . . . SAFETY CLIMB BOTTOM MOUNTING BRACKET
C30011-2 . . . . . SAFETY CLIMB TOP MOUNTING BRACKET
C30003001 . . . . . SAFETY CLIMB INTERMEDIATE BRACKET
SEE MANUAL W/KIT . . . . . CABLE SAFETY CLIMB DEVICE
563427-WG1 . . . . . WAVEGUIDE LADDER INSTALLATION
563427-WG2 . . . . . WAVEGUIDE LADDER INSTALLATION
563427-WG3 . . . . . WAVEGUIDE LADDER INSTALLATION
9031861 . . . . . WAVEGUIDE LADDER
C30008022 . . . . . TOWER LEG CAP KIT
563427-SA1 . . . . . 3' SIDEARM @ 179'
563427-PM1 . . . . . 4 1/2 O.D. PIPE MOUNT KIT FOR SIDEARM @ 179'
563427-ST1 . . . . . SWIVEL KNUCKLE TIEBACK KITS FOR SIDEARM @ 179'
563427-FM1 . . . . . 2 3/8 O.D. FLUSH MOUNT KIT @ 177'
563427-SA2 . . . . . 3' SIDEARMS @ 175'
563427-PM2 . . . . . 4 1/2 O.D. PIPE MOUNT KITS FOR SIDEARMS @ 175'
563427-ST2 . . . . . SWIVEL KNUCKLE TIEBACK KITS FOR SIDEARMS @ 175'
563427-PM3 . . . . . 4 1/2 O.D. PIPE MOUNT KITS @ 173'
C30085002 . . . . . 8' ICE SHIELD ASSEMBLY @ 170'
563427-PM4 . . . . . 4 1/2 O.D. PIPE MOUNT KIT @ 165'
563427-SA3 . . . . . 3' SIDEARM @ 165'
563427-PM5 . . . . . 4 1/2 O.D. PIPE MOUNT KIT FOR SIDEARM @ 165'
563427-ST3 . . . . . SWIVEL KNUCKLE TIEBACK KITS FOR SIDEARM @ 165'
563427-SA4 . . . . . 3' SIDEARM @ 163'
563427-PM6 . . . . . 4 1/2 O.D. PIPE MOUNT KIT FOR SIDEARM @ 163'
563427-ST4 . . . . . SWIVEL KNUCKLE TIEBACK KITS FOR SIDEARM @ 163'
C30085002 . . . . . 8' ICE SHIELD ASSEMBLIES @ 155'
563427-PM7 . . . . . 4 1/2 O.D. PIPE MOUNT KITS @ 150'
563427-PM8 . . . . . 4 1/2 O.D. PIPE MOUNT KIT @ 143'
563427-SA5 . . . . . 3' SIDEARM @ 143'
563427-PM9 . . . . . 4 1/2 O.D. PIPE MOUNT KIT FOR SIDEARM @ 143'
563427-ST5 . . . . . SWIVEL KNUCKLE TIEBACK KITS FOR SIDEARM @ 143'
563427-SA6 . . . . . 3' SIDEARM @ 140'
563427-PM10 . . . . . 4 1/2 O.D. PIPE MOUNT KIT FOR SIDEARM @ 140'
563427-ST6 . . . . . SWIVEL KNUCKLE TIEBACK KITS FOR SIDEARM @ 140'
563427-PM11 . . . . . 4 1/2 O.D. PIPE MOUNT KIT @ 137'
563427-SA7 . . . . . 3' SIDEARM @ 134'
563427-PM12 . . . . . 4 1/2 O.D. PIPE MOUNT KIT FOR SIDEARM @ 134'
563427-ST7 . . . . . SWIVEL KNUCKLE TIEBACK KITS FOR SIDEARM @ 134'
563427-SA8 . . . . . 3' SIDEARM @ 127'
563427-PM13 . . . . . 4 1/2 O.D. PIPE MOUNT KIT FOR SIDEARM @ 127'
563427-ST8 . . . . . SWIVEL KNUCKLE TIEBACK KITS FOR SIDEARM @ 127'
563427-LR . . . . . LIGHTNING ROD W/STIFFENER & EXTENSION
9014671 . . . . . BOLT INSTALLATION
906956 . . . . . TOWER NAME PLATE
907901 . . . . . INVENTORY REQUIREMENT SHEET
BOM-1 . . . . . BILL OF MATERIAL

TOWER DESIGN INFORMATION

THIS ERECTION DRAWING PACKAGE IS BASED ON THE STRUCTURAL DESIGN REPORT NO. 563427.

THIS TOWER DESIGN ALSO MEETS OR EXCEEDS THE REQUIREMENTS OF THE 2022 OREGON STRUCTURAL SPECIALTY CODE.

DESIGN CRITERIA – ANSI/TIA-222-H	
WIND SPEED (NO ICE)	108 MPH
WIND SPEED (ICE)	30 MPH
DESIGN ICE THICKNESS	1.00 IN
RISK CATEGORY	IV
EXPOSURE CATEGORY	C
TOPOGRAPHIC FACTOR PROCEDURE	METHOD 2 (RIGOROUS)
TOPOGRAPHIC FEATURE	FLAT TOPPED HILL
CREST HEIGHT	1000 FT
LENGTH OF TOPOGRAPHIC FEATURE	3300 FT
HORIZONTAL DISTANCE FROM STRUCTURE TO CREST	0 FT
GROUND ELEVATION	1615 FT
SEISMIC IMPORTANCE FACTOR, Ie	1.50
0.2-SEC SPECTRAL RESPONSE, Ss	0.657 g
1-SEC SPECTRAL RESPONSE, S1	0.334 g
SITE CLASS	C
SEISMIC DESIGN CATEGORY	D
BASIC SEISMIC FORCE-RESISTING SYSTEM	TELECOMMUNICATION TOWER (TRUSS: STEEL)

UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS INCLUDE FINISHES AND ARE IN INCHES
TOLERANCES: FRACTIONS ± 1/16" ANGLES ± 1/2 DEG. DECIMALS ± .010"

MATERIAL:

TOLERANCES DO NOT APPLY TO RAW MATERIAL

REV	DATE	DRW	CHK	DESCRIPTION

Sabre Industries™ INNOVATION DELIVERED

CONFIDENTIAL
This document and the information contained herein is the confidential trade secret property of Sabre Industries, Inc. ("Sabre") and must not be reproduced, copied or used, in whole or in part, for any purpose without the prior written consent of Sabre.
© 2025 Sabre Industries, Inc. All rights reserved.

MASTER: 180 FT. MODEL S3TL-HD2
SITE: MCCULLY MOUNTAIN, OR
CUSTOMER: MARION COUNTY OREGON

JOB NO. 563427		SIZE	DRAWING NO.	REV
DATE	08/07/25	B	563427-MS	0
DRAWN BY	KMP			
CHECKED BY	ZAK		SCALE NONE	PAGE 2 OF 3

DESIGNED APPURTENANCE LOADING

ELEV.	ANTENNAS
189.62'	(1) DB224A
186.22'	(1) SC479-HF1LDF
185'	(1) EXTENDIBLE LIGHTNING ROD
184.14'	(1) CC807-09
182.22'	(3) SC479-HF1LDF
179'	3FT SIDEARM
179'	3FT SIDEARM
179'	3FT SIDEARM
177'	FLUSH MOUNT
177'	(1) 429-83H-01
175'	(2) 3FT SIDEARMS
173'	(2) LEG DISH MOUNT
173'	LEG DISH MOUNT
173'	(1) 1' H.P. DISH
173'	(2) VHLP2-23-2GR/B
170'	(1) 6' ICE SHIELD
168.46'	(1) OA20-67-DIN
167.21'	(1) SE414-SWBPALDF(DXX)
166.5'	(1) 7' X 2" WHIP
165'	3FT SIDEARM
165'	3FT SIDEARM
165'	LEG DISH MOUNT
165'	LEG DISH MOUNT

ELEV.	ANTENNAS
165'	(1) UHX8-59
165'	(1) VHLPX6-6W-6WH
163'	3FT SIDEARM
155'	(1) 6' ICE SHIELD
155'	(1) 6' ICE SHIELD
150'	(2) LEG DISH MOUNT
150'	(2) VHLPX6-6W-6WH
143'	3FT SIDEARM
143'	LEG DISH MOUNT
143'	(1) 3' X 1' X 3IN PANEL
143'	(1) VHLPX6-6W-6WH
140'	3FT SIDEARM
140'	(1) 3' X 1' X 3IN PANEL
137.5'	(1) 7' X 2" WHIP
137'	LEG DISH MOUNT
137'	(1) VHLPX4-11W/A
134'	3FT SIDEARM
130.5'	(1) 7' X 2" WHIP
129.5'	(1) DB404-B
127'	3FT SIDEARM
127'	3FT SIDEARM
120'	3 EHD V-BOOM - 12FT FACE - 3FT STANDOFF
120'	(12) 80010992

UNLESS OTHERWISE SPECIFIED
ALL DIMENSIONS INCLUDE
FINISHES AND ARE IN INCHES

TOLERANCES: FRACTIONS ± 1/16"
ANGLES ± 1/2 DEG.
DECIMALS ± .010"

MATERIAL:

TOLERANCES DO NOT APPLY TO RAW MATERIAL

REV	DATE	DRW	CHK	DESCRIPTION

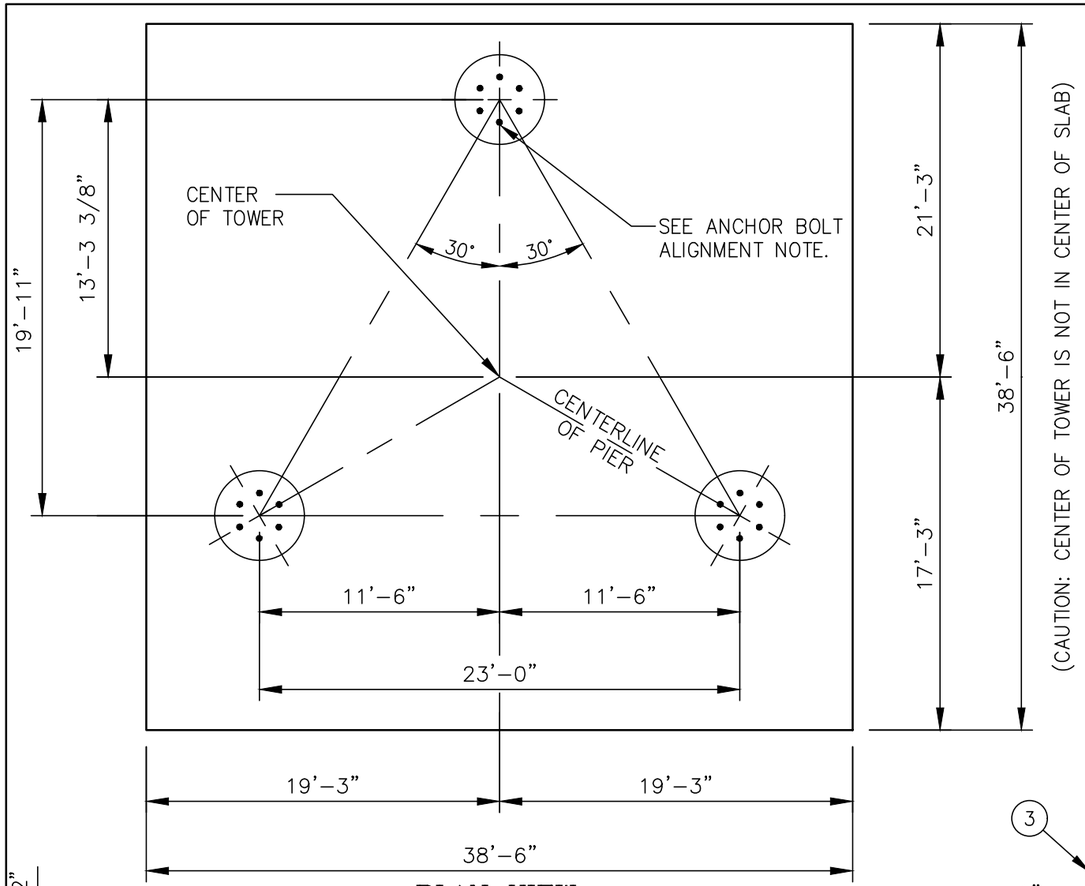
Sabre Industries™
INNOVATION DELIVERED

CONFIDENTIAL
This document and the information contained herein is the confidential trade secret property of Sabre Industries, Inc. ("Sabre") and must not be reproduced, copied or used, in whole or in part, for any purpose without the prior written consent of Sabre.
© 2025 Sabre Industries, Inc. All rights reserved.

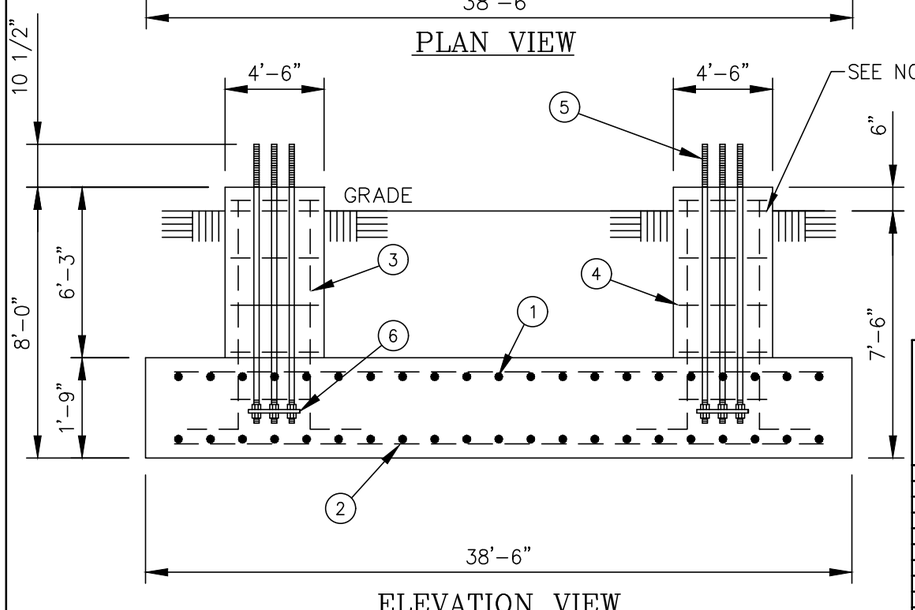
MASTER: 180 FT. MODEL S3TL-HD2
SITE: MCCULLY MOUNTAIN, OR
CUSTOMER: MARION COUNTY OREGON

JOB NO. 563427		SIZE	DRAWING NO.		REV
DATE	08/07/25	B	563427-MS		0
DRAWN BY	KMP			SCALE	PAGE
CHECKED BY	ZAK			NONE	3 OF 3

EXHIBIT K



PLAN VIEW



ELEVATION VIEW

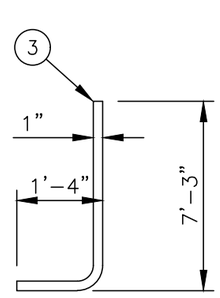
REINFORCING STEEL SCHEDULE								
ITEM	LOCATION	NO. REQ'D.	BAR SPC'G.	SIZE	CUT LGTH.	TOTAL LGTH.	TOTAL WT.	SHAPE
①	PAD TOP REINFORCING	106	EQUALLY SPACED	#10	38'–0"	4028'–0"	17332 LBS.	STRAIGHT
②	PAD BOTTOM REINFORCING	106	EQUALLY SPACED	#10	38'–0"	4028'–0"	17332 LBS.	STRAIGHT
③	PIER VERTICAL REINFORCING	72	EQUALLY SPACED	#8	8'–7"	618'–0"	1650 LBS.	
④	PIER TIES	69	SPACED 4" C/C	#4	13'–10"	954'–6"	638 LBS.	
						TOTAL REBAR WT.	36952 LBS.	

ANCHOR BOLT SCHEDULE				
ITEM	PART NO.	NO. REQ'D.	ANCHOR BOLT SIZE	SPACING
⑤	C40041061	18	1 3/4"ø X 7'–3"	EQUALLY SPACED

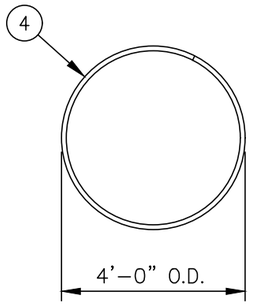
TEMPLATE SCHEDULE			
ITEM	PART NO.	NO. REQ'D.	BOLT CIRCLE
⑥	C30139220	6	1'–7"

CONCRETE REQ'D	ROUND PIERS
PAD	96.07 CU. YDS.
PIERS	11.04 CU. YDS.
TOTAL	107.11 CU. YDS.

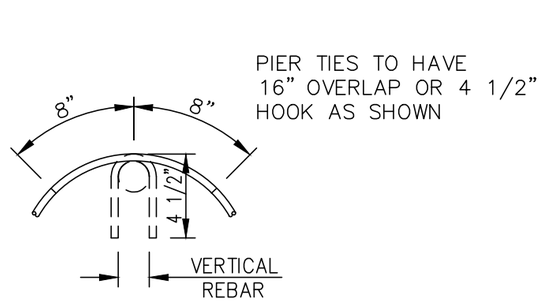
SEE PAGE 2 FOR GENERAL NOTES



REBAR DETAIL
(PIER VERTICAL REBAR)



REBAR DETAIL
(PIER TIES)



PIER TIE HOOK DETAIL

UNLESS OTHERWISE SPECIFIED
ALL DIMENSIONS INCLUDE
FINISHES AND ARE IN INCHES

TOLERANCES: FRACTIONS ± 1/16"
ANGLES ± 1/2 DEG.
DECIMALS ± .010"

MATERIAL:

TOLERANCES DO NOT APPLY TO RAW MATERIAL

REV	DATE	DRW	CHK	DESCRIPTION

Sabre Industries™
INNOVATION DELIVERED

CONFIDENTIAL
This document and the information contained herein is the confidential trade secret property of Sabre Industries, Inc. ("Sabre") and must not be reproduced, copied or used, in whole or in part, for any purpose without the prior written consent of Sabre.
© 2025 Sabre Industries, Inc. All rights reserved.

FOUNDATION: 180 FT. MODEL S3TL–HD2
SITE: MCCULLY MOUNTAIN, OR
CUSTOMER: MARION COUNTY OREGON

JOB NO. 563427		SIZE	DRAWING NO.	REV
DATE	7/15/25	B	563427–F1	0
DRAWN BY	AWB			
CHECKED BY	BWA		SCALE NONE	PAGE 1 OF 2

GENERAL NOTES

1. CONCRETE SHALL HAVE A MINIMUM 28-DAY COMPRESSIVE STRENGTH OF 4,500 PSI, IN ACCORDANCE WITH ACI 318-19. (2 REBAR TIES REQ'D IN THE TOP 5")
2. REBAR TO CONFORM TO ASTM SPECIFICATION A615 GRADE 60.
3. ALL REBAR TO HAVE A MINIMUM OF 3" CONCRETE COVER.
4. ALL EXPOSED CONCRETE CORNERS TO BE CHAMFERED 3/4".
5. THE FOUNDATION DESIGN IS BASED ON THE GEOTECHNICAL REPORT BY BLACK MOUNTAIN CONSULTING, LLC, PROJECT NO. 250016-GEO, DATED APRIL 26, 2025.
6. SEE THE GEOTECHNICAL REPORT FOR COMPACTION REQUIREMENTS, IF SPECIFIED.
7. 5.75' OF SOIL COVER IS REQUIRED OVER THE ENTIRE AREA OF THE FOUNDATION SLAB.
8. THE BOTTOM ANCHOR BOLT TEMPLATE SHALL BE POSITIONED AS CLOSELY AS POSSIBLE TO THE BOTTOM OF THE ANCHOR BOLTS.
9. THIS FOUNDATION IS DESIGNED FOR A MAX CAPACITY RATIO OF 70%.
10. DISTANCE BETWEEN CENTER OF ANCHOR BOLT CAGE AND THE CENTER OF THE PIER NOT TO EXCEED 1/2" WITHOUT APPROVAL FROM ENGINEER OF RECORD.
11. ONE ANCHOR BOLT MUST BE ALIGNED DIRECTLY WITH THE CENTER OF THE TOWER (TYPICAL).

BASE REACTIONS - ANSI/TIA-222-H (WIND/ICE)

TOTAL FOUNDATION		INDIVIDUAL FOOTING	
SHEAR (KIPS)	87.92	SHEAR (KIPS)	51.28
AXIAL (KIPS)	157.99	COMPRESSION (KIPS)	461
MOMENT (FT-KIPS)	8873	UPLIFT (KIPS)	415

BASE REACTIONS - ANSI/TIA-222-H (SEISMIC)

TOTAL FOUNDATION		INDIVIDUAL FOOTING	
SHEAR (KIPS)	18.36	SHEAR (KIPS)	13.61
AXIAL (KIPS)	88.75	COMPRESSION (KIPS)	135
MOMENT (FT-KIPS)	2097	UPLIFT (KIPS)	87

UNLESS OTHERWISE SPECIFIED
ALL DIMENSIONS INCLUDE FINISHES AND ARE IN INCHES
TOLERANCES: FRACTIONS ± 1/16"
ANGLES ± 1/2 DEG.
DECIMALS ± .010"

MATERIAL:
TOLERANCES DO NOT APPLY TO RAW MATERIAL

REV	DATE	DRW	CHK	DESCRIPTION

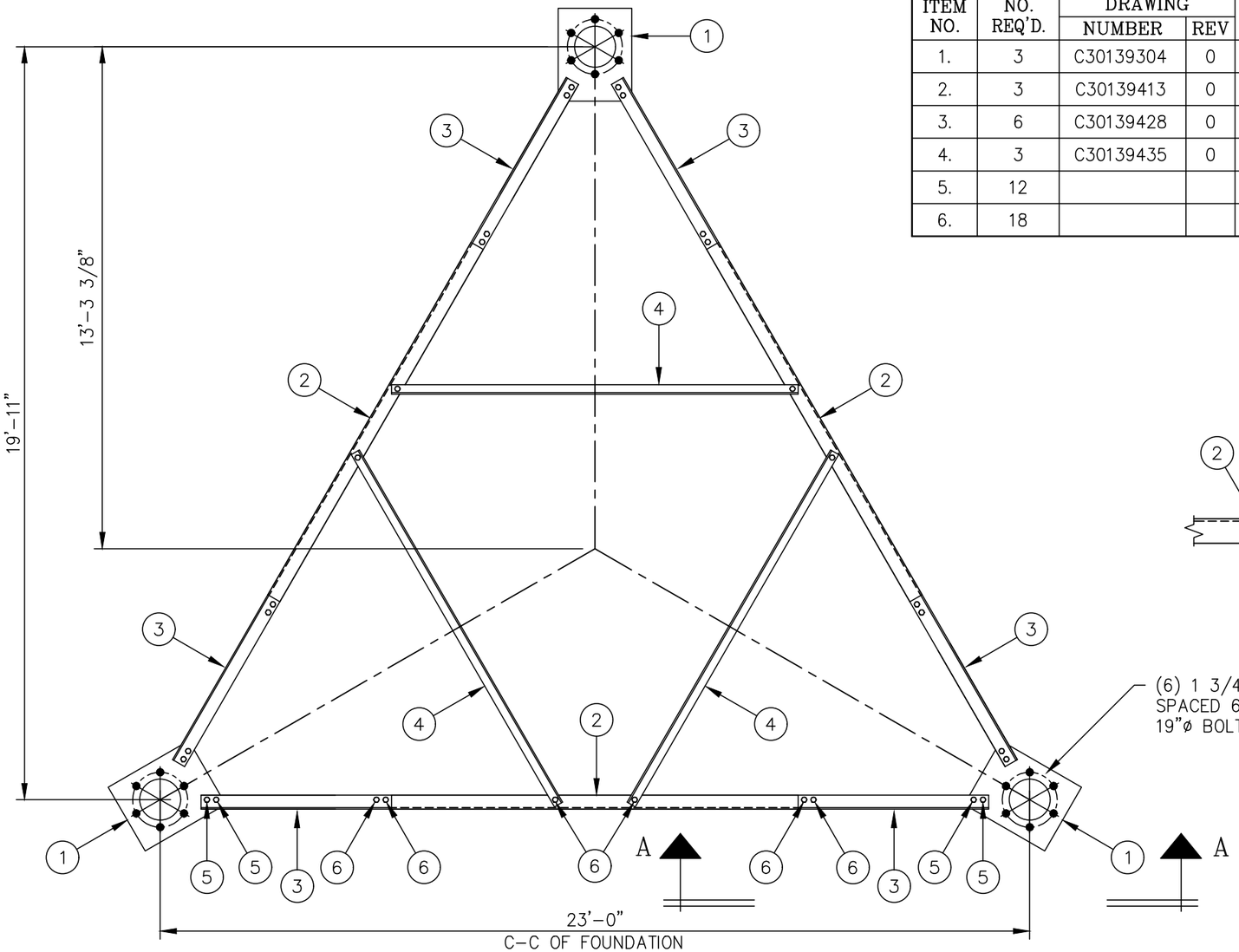
Sabre Industries™
INNOVATION DELIVERED

CONFIDENTIAL
This document and the information contained herein is the confidential trade secret property of Sabre Industries, Inc. ("Sabre") and must not be reproduced, copied or used, in whole or in part, for any purpose without the prior written consent of Sabre.
© 2025 Sabre Industries, Inc. All rights reserved.

FOUNDATION: 180 FT. MODEL S3TL-HD2
SITE: MCCULLY MOUNTAIN, OR
CUSTOMER: MARION COUNTY OREGON

JOB NO. 563427		SIZE	DRAWING NO.	REV
DATE	7/15/25	B	563427-F1	0
DRAWN BY	AWB			
CHECKED BY	BWA		SCALE NONE	PAGE 2 OF 2

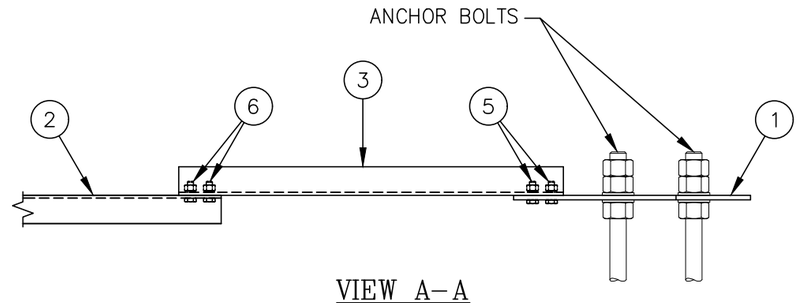
EXHIBIT K



PLAN VIEW

C30400341 LEG TO LEG TEMPLATE

ITEM NO.	NO. REQ'D.	DRAWING NUMBER	DRAWING REV	PART NO.	DESCRIPTION	WEIGHT LBS.	PAINT
1.	3	C30139304	0	C30139304	PLATE, ANCHOR BOLT TEMPLATE 1 3/4"ø A.B. ON 19"ø B.C.	155	N/R
2.	3	C30139413	0	C30139413	ANGLE, TEMPLATE SUPPORT, 3 X 3 X 3/16 X 10'-0	111	N/R
3.	6	C30139428	0	C30139428	ANGLE, TEMPLATE SUPPORT, 3 X 3 X 3/16 X 6'-1 3/4	136	N/R
4.	3	C30139435	0	C30139435	ANGLE, TEMPLATE SUPPORT, 2 1/2 X 2 1/2 X 3/16 X 11'-0	101	N/R
5.	12			C40026023	BOLT ASSEMBLY, 5/8 ø X 2 A325	6	
6.	18			C40026022	BOLT ASSEMBLY, 5/8 ø X 1 3/4 A325	8	
					TOTAL WEIGHT IN LBS.	517	



VIEW A-A

NOTE:

1. ALWAYS COMPARE THE DIMENSIONS SHOWN ON THIS DRAWING WITH THE PROPER CONCRETE FOUNDATION DRAWING, PRIOR TO PLACING CONCRETE.
2. ONE ANCHOR BOLT MUST BE ALIGNED DIRECTLY WITH THE CENTER OF THE TOWER (TYPICAL AT ALL (3) LEGS).
3. VERIFY ANCHOR BOLT CIRCLE CENTER-TO-CENTER SPACING ON ALL (3) FACES AND ALIGNMENT OF ANCHOR BOLTS WITH THE CENTER OF THE TOWER AT ALL (3) LEGS PRIOR TO PLACING CONCRETE.
4. PROVIDE NECESSARY SUPPORT TO ELIMINATE ANY MOVEMENT DURING CONCRETE PLACEMENT AND CURING.

UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS INCLUDE FINISHES AND ARE IN INCHES

TOLERANCES: FRACTIONS ± 1/16" ANGLES ± 1/2 DEG. DECIMALS ± .010"

MATERIAL:

TOLERANCES DO NOT APPLY TO RAW MATERIAL

REV	DATE	DRW	CHK	DESCRIPTION
1	07/02/25	GCK	KCG	REMOVED TOWER SERIES DESIGNATION.

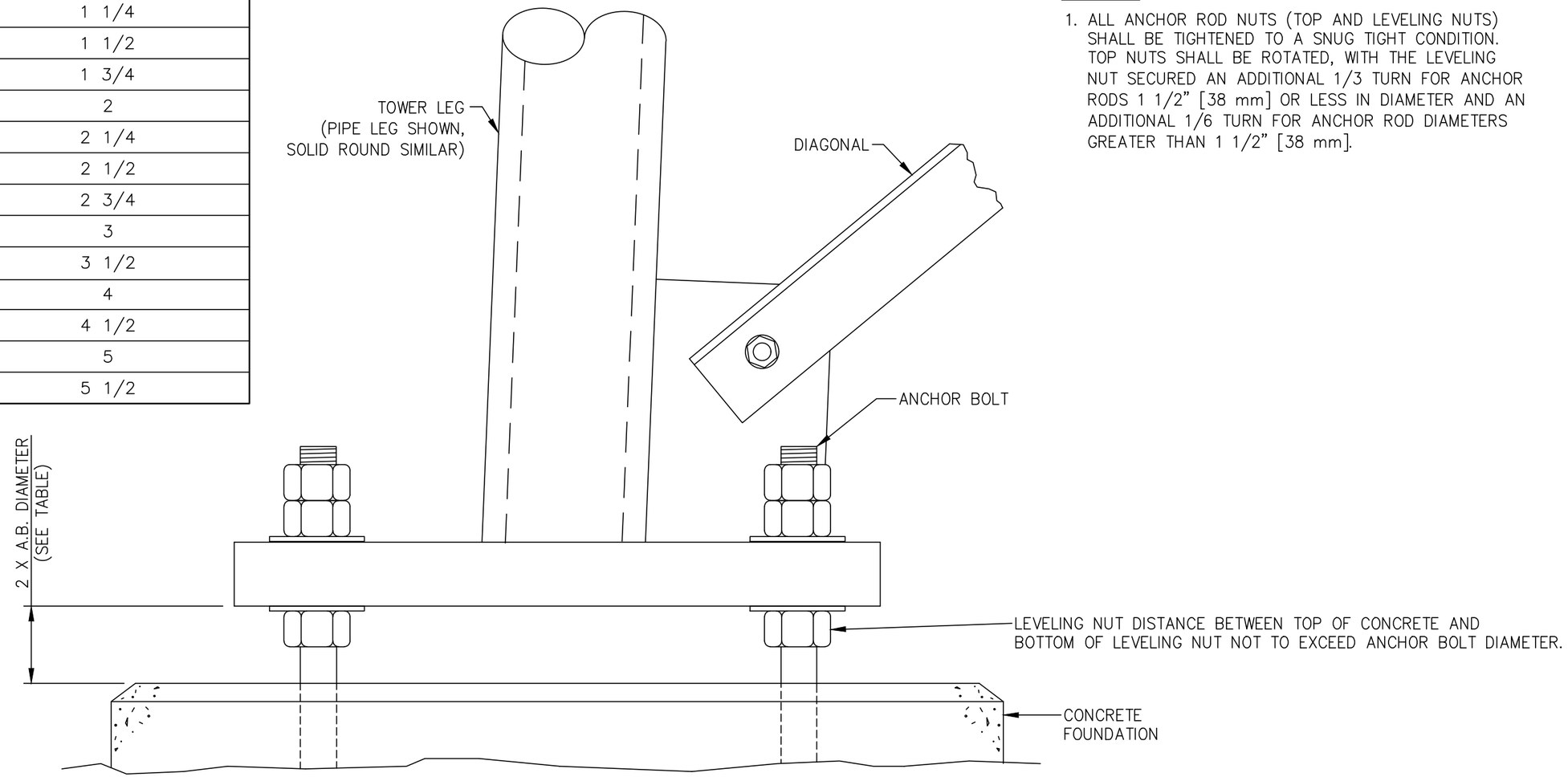
Sabre Industries™
INNOVATION DELIVERED

CONFIDENTIAL
This document and the information contained herein is the confidential trade secret property of Sabre Industries, Inc. ("Sabre") and must not be reproduced, copied or used, in whole or in part, for any purpose without the prior written consent of Sabre.
© 2022 Sabre Industries, Inc. All rights reserved.

LEG TO LEG TEMPLATE INSTALLATION FOR MODEL S3TL SECTION 15 BASE SPREAD 23'-0" C-C OF FOUNDATION (6) 1 3/4"ø A.B. ON A 19"ø B.C.

		SIZE	DRAWING NO.	REV
DATE	02/14/20	B	C30400341	1
DRAWN BY	DRL			
CHECKED BY	LRD		SCALE None	PAGE 1 OF 1

TABLE	
ANCHOR BOLT DIAMETER (in)	MAXIMUM SPACE (in)
1/2	1
5/8	1 1/4
3/4	1 1/2
7/8	1 3/4
1	2
1 1/8	2 1/4
1 1/4	2 1/2
1 3/8	2 3/4
1 1/2	3
1 3/4	3 1/2
2	4
2 1/4	4 1/2
2 1/2	5
2 3/4	5 1/2



ELEVATION VIEW

NOTES:

1. ALL ANCHOR ROD NUTS (TOP AND LEVELING NUTS) SHALL BE TIGHTENED TO A SNUG TIGHT CONDITION. TOP NUTS SHALL BE ROTATED, WITH THE LEVELING NUT SECURED AN ADDITIONAL 1/3 TURN FOR ANCHOR RODS 1 1/2" [38 mm] OR LESS IN DIAMETER AND AN ADDITIONAL 1/6 TURN FOR ANCHOR ROD DIAMETERS GREATER THAN 1 1/2" [38 mm].

UNLESS OTHERWISE SPECIFIED
ALL DIMENSIONS INCLUDE
FINISHES AND ARE IN INCHES

TOLERANCES: FRACTIONS ± 1/16"
ANGLES ± 1/2 DEG.
DECIMALS ± .010"

MATERIAL:

TOLERANCES DO NOT APPLY
TO RAW MATERIAL

REV	DATE	DRW	CHK	DESCRIPTION
2	10/13/17	RWM	MWR	ADDED ANCHOR BOLT TABLE, REVISED LEVELING NUT
				CALL OUT AND ADDED TIGHTENING NOTE #1.
1	1/6/12	DSN	RWM	REVISED BASE PLATE TO FND. GAP

Sabre Industries™
INNOVATION DELIVERED

CONFIDENTIAL
This document and the information contained herein is the confidential trade secret property of Sabre Industries, Inc. ("Sabre") and must not be reproduced, copied or used, in whole or in part, for any purpose without the prior written consent of Sabre.
© 2022 Sabre Industries, Inc. All rights reserved.

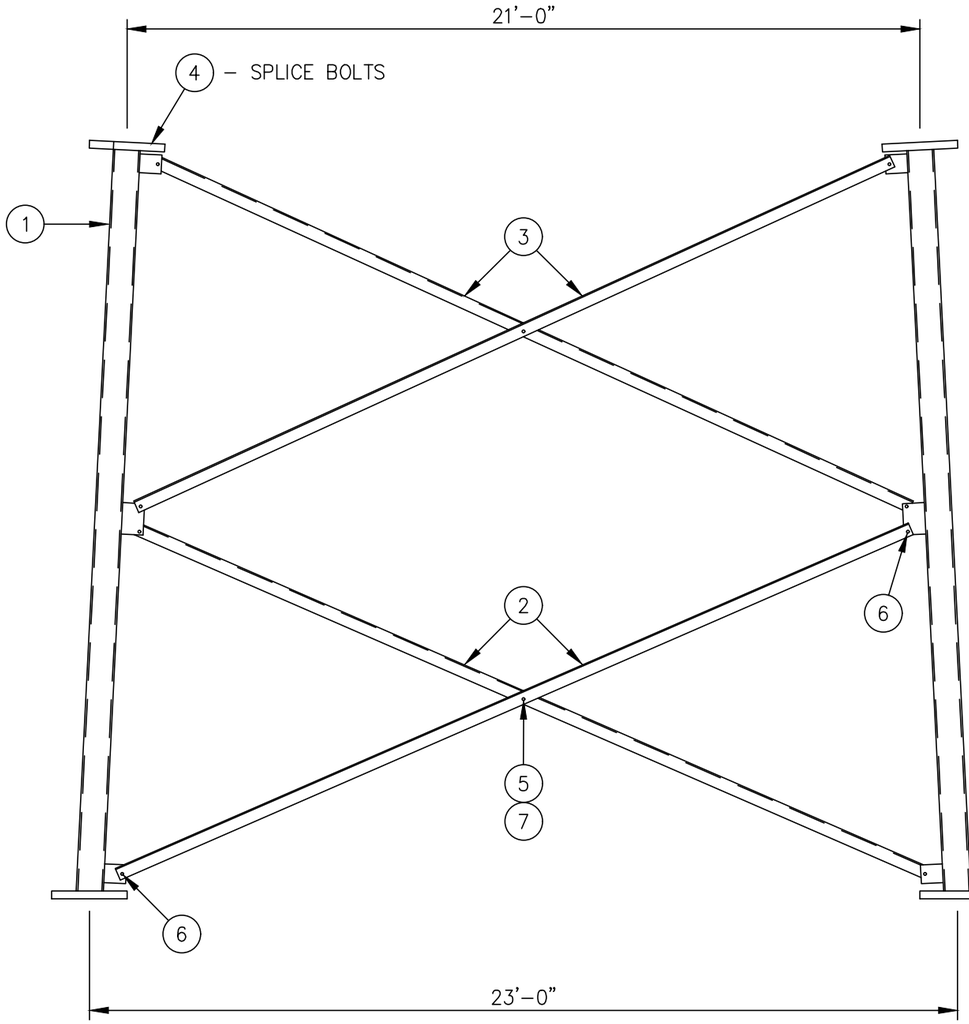
TOWER BASE INSTALLATION

DATE	11/24/09
DRAWN BY	RWM
CHECKED BY	MWR

SIZE	DRAWING NO.	REV
B	9030714	2

SCALE	PAGE
None	1 OF 1

EXHIBIT K



ELEVATION VIEW

LIST OF MATERIAL

15–LEGS

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
1	3	15–T11611441	SECT. 15 LEG 14 ø X .500 X 20'–0 5/16 W/STEP BOLTS	5508
			TOTAL WEIGHT LBS	5508

15–T8101794 BRACING KIT

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
2	6	TS11269	ANGLE, DIAGONAL 6 X 4 X 3/8 X 22'–11 3/16	1760
3	6	TS11270	ANGLE, DIAGONAL 6 X 4 X 3/8 X 22'–0 7/16	1691
			TOTAL WEIGHT LBS	3451

SPLICE BOLTS

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
4	31	C40026115	BOLT ASSEMBLY, 1 1/2 ø X 6 1/2 A325	188
			TOTAL WEIGHT LBS	188

TK01256 HARDWARE KIT

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
5	7	C40026099	BOLT ASSEMBLY, 1 1/8 ø X 3 1/4 A325	15
6	25	C40026097	BOLT ASSEMBLY, 1 1/8 ø X 2 3/4 A325	50
7	7	C40047014	RINGFILL, 3/8 THICK – 1 1/8 ø BOLT	7
			TOTAL WEIGHT LBS	72

TOTAL SECTION WEIGHT – INCLUDES 3 LEGS, BRACING AND HARDWARE KIT	9219

FIELD NOTES

1. THE PART NUMBERS FOR ALL LEGS ARE LOCATED AT THE TOP OF EACH PART.
2. STEP BOLTS PROVIDED FOR (3) LEGS.

UNLESS OTHERWISE SPECIFIED
ALL DIMENSIONS INCLUDE FINISHES AND ARE IN INCHES

TOLERANCES: FRACTIONS ± 1/16"
ANGLES ± 1/2 DEG.
DECIMALS ± .010"

MATERIAL:

TOLERANCES DO NOT APPLY TO RAW MATERIAL

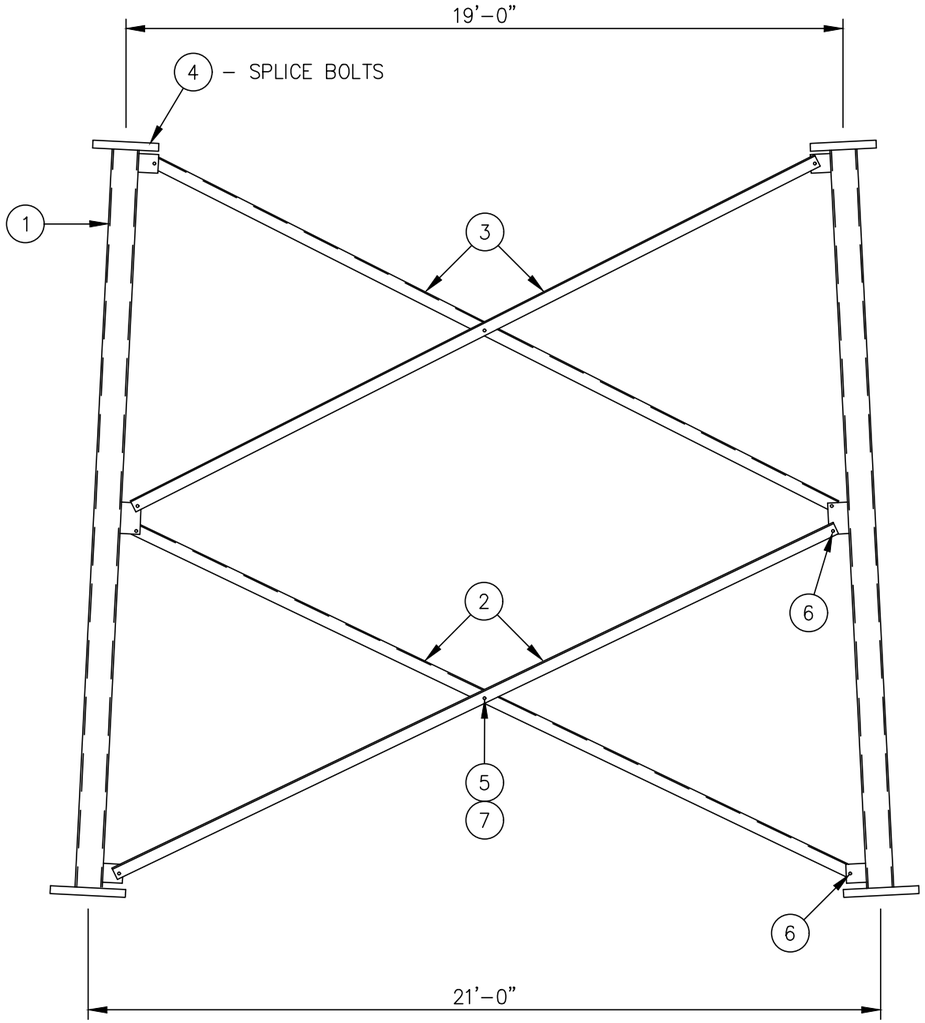
REV	DATE	DRW	CHK	DESCRIPTION

Sabre Industries™
INNOVATION DELIVERED

CONFIDENTIAL
This document and the information contained herein is the confidential trade secret property of Sabre Industries, Inc. ("Sabre") and must not be reproduced, copied or used, in whole or in part, for any purpose without the prior written consent of Sabre.
© 2025 Sabre Industries, Inc. All rights reserved.

SECTION ERECTION: 15 15–T8101794
SITE: MCCULLY MOUNTAIN, OR
CUSTOMER: MARION COUNTY OREGON

JOB NO. 563427		SIZE	DRAWING NO.	REV
DATE	07/30/25	B	563427–S15	0
DRAWN BY	KMP			
CHECKED BY	ZAK		SCALE None	PAGE 1 OF 1



ELEVATION VIEW

LIST OF MATERIAL

14 LEGS

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
1	3	14–T11611443	SECT. 14 LEG 14 ø X .500 X 20'–0 5/16 W/STEP BOLTS	5618
			TOTAL WEIGHT LBS	5618

14–T8101795 BRACING KIT

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
2	6	TS11271	ANGLE, DIAGONAL 6 X 4 X 3/8 X 21'–1 3/8	1621
3	6	TS11272	ANGLE, DIAGONAL 6 X 4 X 3/8 X 20'–2 7/8	1553
			TOTAL WEIGHT LBS	3174

SPLICE BOLTS

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
4	31	C40026166	BOLT ASSEMBLY, 1 1/2 ø X 7 A325	196
			TOTAL WEIGHT LBS	196

TK01256 HARDWARE KIT

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
5	7	C40026099	BOLT ASSEMBLY, 1 1/8 ø X 3 1/4 A325	15
6	25	C40026097	BOLT ASSEMBLY, 1 1/8 ø X 2 3/4 A325	50
7	7	C40047014	RINGFILL, 3/8 THICK – 1 1/8 ø BOLT	7
			TOTAL WEIGHT LBS	72

TOTAL SECTION WEIGHT – INCLUDES 3 LEGS, BRACING AND HARDWARE KIT	9060

FIELD NOTES

1. THE PART NUMBERS FOR ALL LEGS ARE LOCATED AT THE TOP OF EACH PART.
2. STEP BOLTS PROVIDED FOR (3) LEGS.

UNLESS OTHERWISE SPECIFIED
ALL DIMENSIONS INCLUDE FINISHES AND ARE IN INCHES
TOLERANCES: FRACTIONS ± 1/16"
ANGLES ± 1/2 DEG.
DECIMALS ± .010"

MATERIAL:

TOLERANCES DO NOT APPLY TO RAW MATERIAL

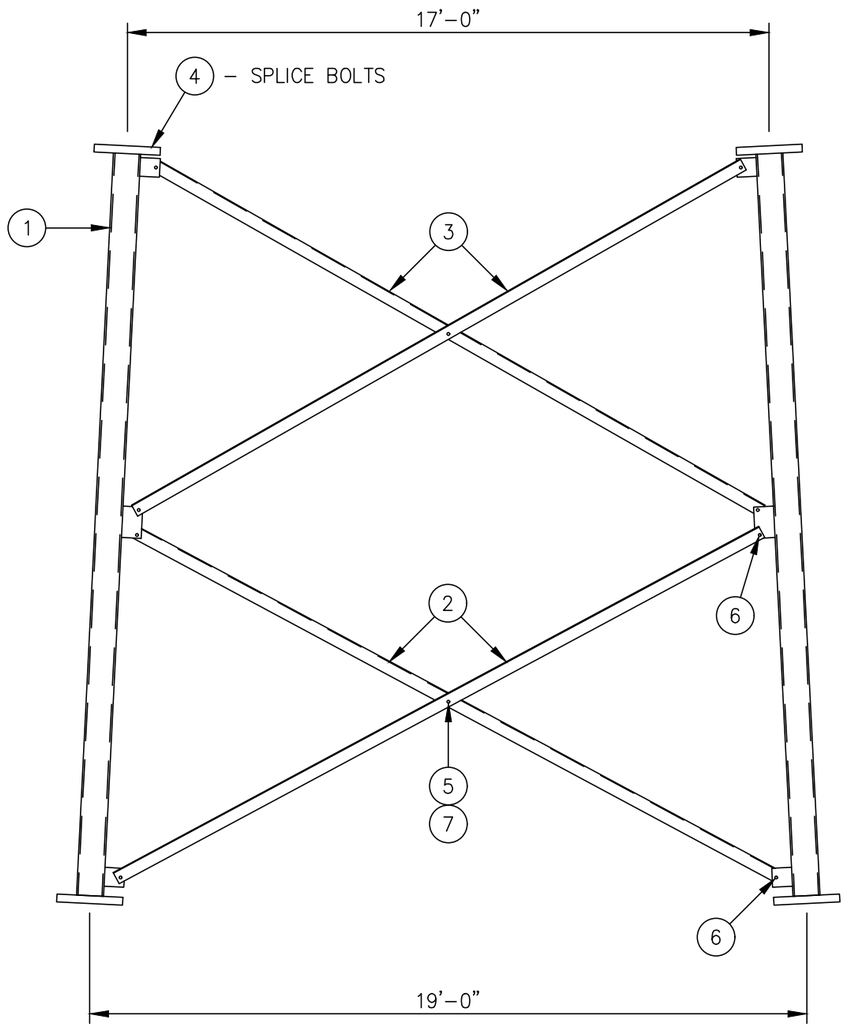
REV	DATE	DRW	CHK	DESCRIPTION

Sabre Industries™
INNOVATION DELIVERED

CONFIDENTIAL
This document and the information contained herein is the confidential trade secret property of Sabre Industries, Inc. ("Sabre") and must not be reproduced, copied or used, in whole or in part, for any purpose without the prior written consent of Sabre.
© 2025 Sabre Industries, Inc. All rights reserved.

SECTION ERECTION: 14 14–T8101795
SITE: MCCULLY MOUNTAIN, OR
CUSTOMER: MARION COUNTY OREGON

JOB NO. 563427		SIZE	DRAWING NO.	REV
DATE	07/31/25	B	563427–S14	0
DRAWN BY	KMP			
CHECKED BY	ZAK		SCALE NONE	PAGE 1 OF 1



ELEVATION VIEW

LIST OF MATERIAL

13–LEGS

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
1	3	13–T11611445	SECT. 13 LEG 10 3/4ø X .500 X 20'–0 5/16 W/STEP BOLTS	4625
			TOTAL WEIGHT LBS	4625

13–T8101796 BRACING KIT

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
2	6	TS11273	ANGLE, DIAGONAL 4 X 4 X 3/8 X 19'–4 1/8	1239
3	6	TS11274	ANGLE, DIAGONAL 4 X 4 X 3/8 X 18'–5 15/16	1132
			TOTAL WEIGHT LBS	2371

SPLICE BOLTS

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
4	25	C40026115	BOLT ASSEMBLY, 1 1/2 ø X 6 1/2 A325	152
			TOTAL WEIGHT LBS	152

TK00353 HARDWARE KIT

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
5	7	C40026073	BOLT ASSEMBLY, 1 ø X 3 A325	12
6	25	C40026071	BOLT ASSEMBLY, 1 ø X 2 1/2 A325	41
7	7	C40047007	RINGFILL, 3/8 THICK – 1 ø BOLT	1
			TOTAL WEIGHT LBS	54

TOTAL SECTION WEIGHT – INCLUDES 3 LEGS, BRACING AND HARDWARE KIT	7202

FIELD NOTES

1. THE PART NUMBERS FOR ALL LEGS ARE LOCATED AT THE TOP OF EACH PART.
2. STEP BOLTS PROVIDED FOR (3) LEGS.

UNLESS OTHERWISE SPECIFIED
ALL DIMENSIONS INCLUDE
FINISHES AND ARE IN INCHES

TOLERANCES: FRACTIONS ± 1/16"
ANGLES ± 1/2 DEG.
DECIMALS ± .010"

MATERIAL:

TOLERANCES DO NOT APPLY TO RAW MATERIAL

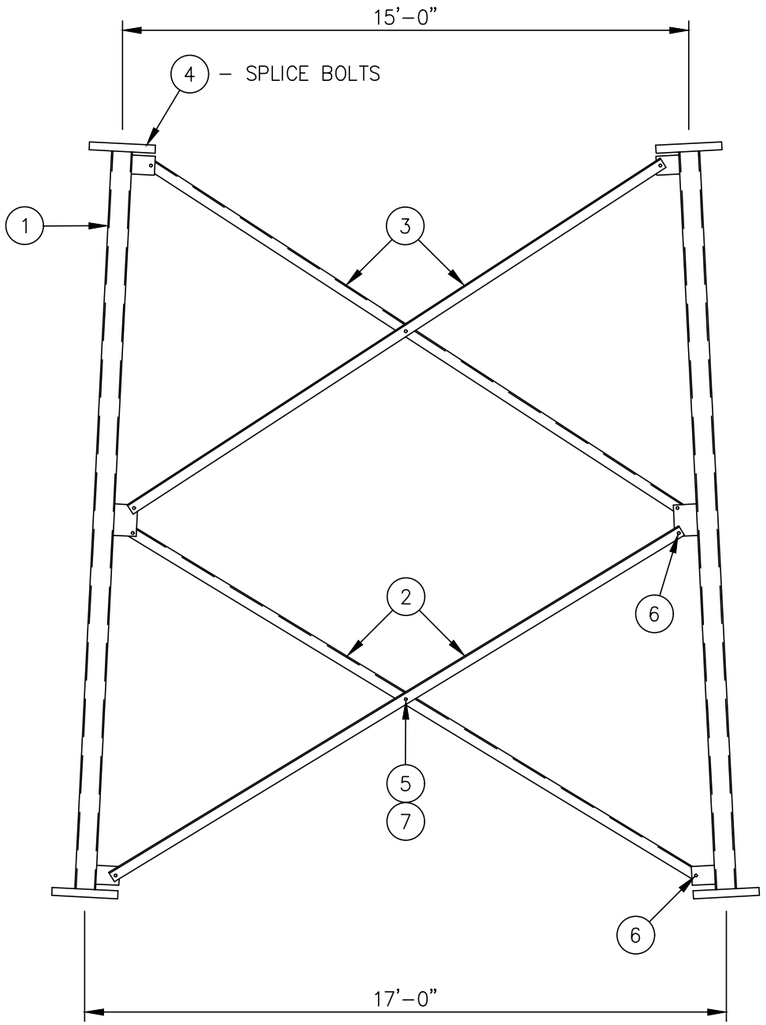
REV	DATE	DRW	CHK	DESCRIPTION

Sabre Industries™
INNOVATION DELIVERED

CONFIDENTIAL
This document and the information contained herein is the confidential trade secret property of Sabre Industries, Inc. ("Sabre") and must not be reproduced, copied or used, in whole or in part, for any purpose without the prior written consent of Sabre.
© 2025 Sabre Industries, Inc. All rights reserved.

SECTION ERECTION: 13 13–T8101796
SITE: MCCULLY MOUNTAIN, OR
CUSTOMER: MARION COUNTY OREGON

JOB NO. 563427		SIZE	DRAWING NO.	REV
DATE	07/31/25	B	563427–S13	0
DRAWN BY	KMP			
CHECKED BY	ZAK		SCALE NONE	PAGE 1 OF 1



ELEVATION VIEW

LIST OF MATERIAL

12 LEGS

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
1	3	12–T11610309	SECT. 12 LEG 10 3/4 ø X .500 X 20'–0 5/16 W/STEP BOLTS	4336
			TOTAL WEIGHT LBS	4336

12–T8101797 BRACING KIT

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
2	6	TS11275	ANGLE, DIAGONAL 4 X 3 1/2 X 3/8 X 17'–10 7/16	1015
3	6	TS11276	ANGLE, DIAGONAL 4 X 3 1/2 X 3/8 X 17'–0 9/16	968
			TOTAL WEIGHT LBS	1983

SPLICE BOLTS

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
4	25	C40026115	BOLT ASSEMBLY, 1 1/2 ø X 6 1/2 A325	152
			TOTAL WEIGHT LBS	152

TK00353 HARDWARE KIT

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
5	7	C40026073	BOLT ASSEMBLY, 1 ø X 3 A325	12
6	25	C40026071	BOLT ASSEMBLY, 1 ø X 2 1/2 A325	41
7	7	C40047007	RINGFILL, 3/8 THICK – 1" ø BOLT	1
			TOTAL WEIGHT LBS	54

TOTAL SECTION WEIGHT – INCLUDES 3 LEGS, BRACING AND HARDWARE KIT	6525

FIELD NOTES

1. THE PART NUMBERS FOR ALL LEGS ARE LOCATED AT THE TOP OF EACH PART.
2. STEP BOLTS PROVIDED FOR (3) LEGS.

UNLESS OTHERWISE SPECIFIED
ALL DIMENSIONS INCLUDE FINISHES AND ARE IN INCHES

TOLERANCES: FRACTIONS ± 1/16"
ANGLES ± 1/2 DEG.
DECIMALS ± .010"

MATERIAL:

TOLERANCES DO NOT APPLY TO RAW MATERIAL

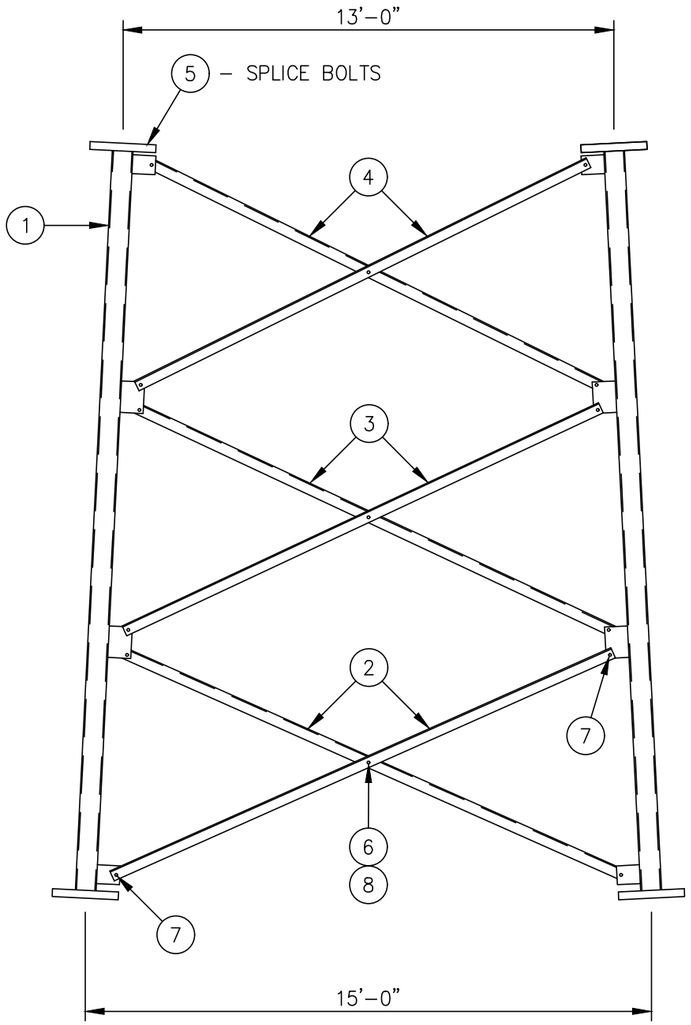
REV	DATE	DRW	CHK	DESCRIPTION

Sabre Industries™
INNOVATION DELIVERED

CONFIDENTIAL
This document and the information contained herein is the confidential trade secret property of Sabre Industries, Inc. ("Sabre") and must not be reproduced, copied or used, in whole or in part, for any purpose without the prior written consent of Sabre.
© 2025 Sabre Industries, Inc. All rights reserved.

SECTION ERECTION: 12 12–T8101797
SITE: MCCULLY MOUNTAIN, OR
CUSTOMER: MARION COUNTY OREGON

JOB NO. 563427		SIZE	DRAWING NO.	REV
DATE	07/31/25	B	563427–S12	0
DRAWN BY	KMP			
CHECKED BY	ZAK		SCALE NONE	PAGE 1 OF 1



ELEVATION VIEW

LIST OF MATERIAL

11-LEGS

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
1	3	11-T1169117	SECT. 11 LEG 8 5/8 ø X .500 X 20'-0 5/16	3504
			TOTAL WEIGHT LBS	3504

11-T8101372 BRACING KIT

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
2	6	TS08563	ANGLE, DIAGONAL 4 X 3 1/2 X 3/8 X 14'-7 7/8	832
3	6	TS08562	ANGLE, DIAGONAL 4 X 3 1/2 X 3/8 X 14'-0 13/16	799
4	6	TS08561	ANGLE, DIAGONAL 4 X 3 1/2 X 3/8 X 13'-5 13/16	766
			TOTAL WEIGHT LBS	2397

SPLICE BOLTS

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
5	19	C40026093	BOLT ASSEMBLY, 1 1/4 ø X 5 A325	65
			TOTAL WEIGHT LBS	65

TK00430 HARDWARE KIT

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
6	10	C40026073	BOLT ASSEMBLY, 1 ø X 3 A325	18
7	38	C40026071	BOLT ASSEMBLY, 1 ø X 2 1/2 A325	62
8	10	C40047007	RINGFILL, 3/8 THICK - 1 ø BOLT	1
			TOTAL WEIGHT LBS	81

TOTAL SECTION WEIGHT - INCLUDES 3 LEGS, BRACING AND HARDWARE KIT	6047

FIELD NOTES

1. THE PART NUMBERS FOR ALL LEGS ARE LOCATED AT THE TOP OF EACH PART.
2. STEP BOLTS PROVIDED FOR (3) LEGS.

UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS INCLUDE FINISHES AND ARE IN INCHES

TOLERANCES: FRACTIONS ± 1/16" ANGLES ± 1/2 DEG. DECIMALS ± .010"

MATERIAL:

TOLERANCES DO NOT APPLY TO RAW MATERIAL

REV	DATE	DRW	CHK	DESCRIPTION

Sabre Industries™ INNOVATION DELIVERED

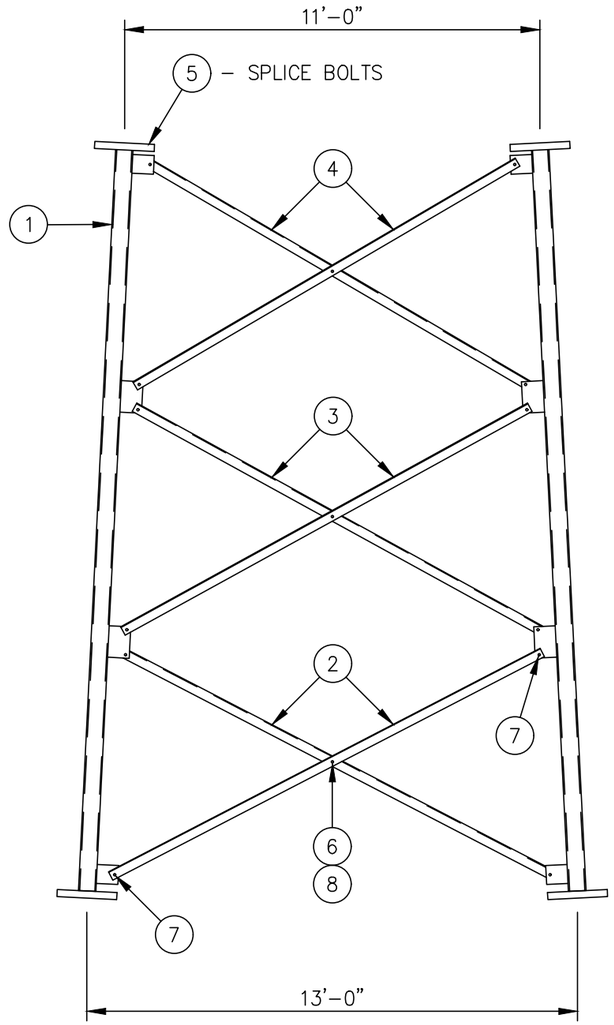
CONFIDENTIAL
This document and the information contained herein is the confidential trade secret property of Sabre Industries, Inc. ("Sabre") and must not be reproduced, copied or used, in whole or in part, for any purpose without the prior written consent of Sabre.
© 2025 Sabre Industries, Inc. All rights reserved.

SECTION ERECTION: 11 11-T8101372

SITE: MCCULLY MOUNTAIN, OR

CUSTOMER: MARION COUNTY OREGON

JOB NO. 563427		SIZE	DRAWING NO.	REV
DATE	07/31/25	B	563427-S11	0
DRAWN BY	KMP			
CHECKED BY	ZAK		SCALE None	PAGE 1 OF 1



ELEVATION VIEW

LIST OF MATERIAL

10–LEGS

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
1	3	10–T1169819	SECT. 10 LEG 8 5/8ø X .322 X 20'–0 5/16 W/STEP BOLTS	2270
			TOTAL WEIGHT LBS	2270

10–T8100820 BRACING KIT

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
2	6	TS05779	ANGLE, DIAGONAL 4 X 4 X 5/16 X 12'–10 3/8	658
3	6	TS05780	ANGLE, DIAGONAL 4 X 4 X 5/16 X 12'–3 1/2	629
4	6	TS05781	ANGLE, DIAGONAL 4 X 4 X 5/16 X 11'–8 3/4	600
			TOTAL WEIGHT LBS	1887

SPLICE BOLTS

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
5	19	C40026094	BOLT ASSEMBLY, 1 1/4 ø X 5 1/2 A325	69
			TOTAL WEIGHT LBS	69

TK00437 HARDWARE KIT

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
6	10	C40026072	BOLT ASSEMBLY, 1 ø X 2 3/4 A325	17
7	37	C40026071	BOLT ASSEMBLY, 1 ø X 2 1/2 A325	61
8	10	C40047010	RINGFILL, 1/2 THICK – 1 ø BOLT	1
			TOTAL WEIGHT LBS	79

TOTAL SECTION WEIGHT – INCLUDES (3) LEGS, BRACING AND HARDWARE KIT	4305

FIELD NOTES

1. THE PART NUMBERS FOR ALL LEGS AND DIAGONALS ARE LOCATED AT THE TOP OF EACH PART.
2. STEP BOLTS PROVIDED FOR (3) LEGS.

UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS INCLUDE FINISHES AND ARE IN INCHES

TOLERANCES: FRACTIONS ± 1/16" ANGLES ± 1/2 DEG. DECIMALS ± .010"

MATERIAL:

TOLERANCES DO NOT APPLY TO RAW MATERIAL

REV	DATE	DRW	CHK	DESCRIPTION

Sabre Industries™ INNOVATION DELIVERED

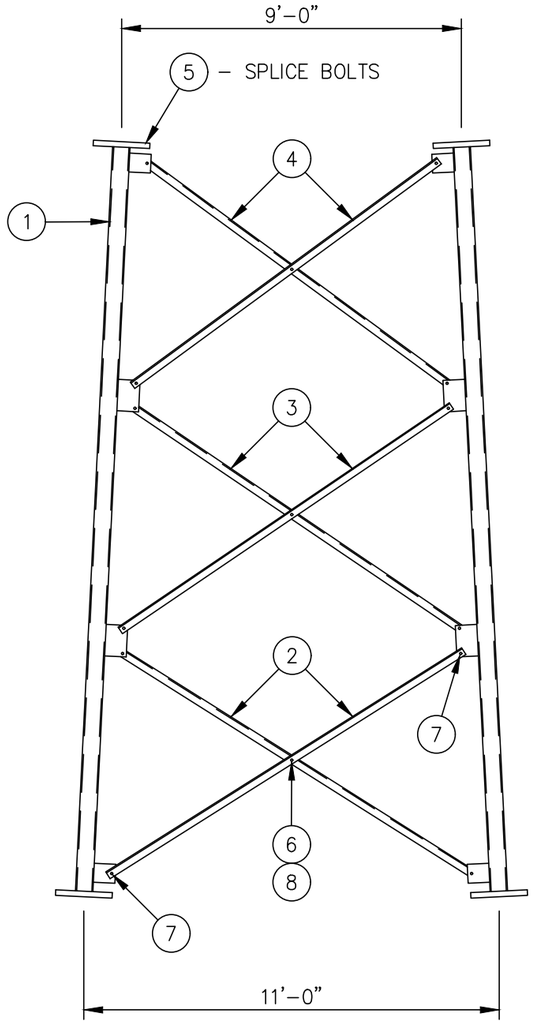
CONFIDENTIAL
This document and the information contained herein is the confidential trade secret property of Sabre Industries, Inc. ("Sabre") and must not be reproduced, copied or used, in whole or in part, for any purpose without the prior written consent of Sabre.
© 2025 Sabre Industries, Inc. All rights reserved.

SECTION ERECTION: 10 10–T8100820

SITE: WIPPER, OR

CUSTOMER: MARION COUNTY OREGON

JOB NO. 563427		SIZE	DRAWING NO.	REV
DATE	07/31/25	B	563427–S10	0
DRAWN BY	KMP			
CHECKED BY	ZAK		SCALE None	PAGE 1 OF 1



ELEVATION VIEW

LIST OF MATERIAL

09-LEGS

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
1	3	09-T1169975	SECT. 9 LEG 5 9/16ø X .375 X 20'-0 5/16 W/STEP BOLTS	1758
			TOTAL WEIGHT LBS	1758

09-T8100384 BRACING KIT

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
2	6	TS03786	ANGLE, DIAGONAL 3 1/2 X 3 X 3/8 X 11'-5 3/8	564
3	6	TS03787	ANGLE, DIAGONAL 3 1/2 X 3 X 3/8 X 10'-10 13/16	537
4	6	TS03788	ANGLE, DIAGONAL 3 1/2 X 3 X 3/8 X 10'-4 7/16	511
			TOTAL WEIGHT LBS	1612

SPLICE BOLTS

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
5	19	C40026078	BOLT ASSEMBLY, 1 ø X 4 1/4 A325	41
			TOTAL WEIGHT LBS	41

TK00269 HARDWARE KIT

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
6	10	C40026045	BOLT ASSEMBLY, 3/4 ø X 2 1/2 A325	8
7	38	C40026044	BOLT ASSEMBLY, 3/4 ø X 2 1/4 A325	28
8	10	C40047004	RINGFILL, 3/8 THICK - 3/4 ø BOLT	1
			TOTAL WEIGHT LBS	37

TOTAL SECTION WEIGHT - INCLUDES 3 LEGS, BRACING AND HARDWARE KIT	3448

FIELD NOTES

1. THE PART NUMBERS FOR ALL LEGS ARE LOCATED AT THE TOP OF EACH PART.
2. STEP BOLTS PROVIDED FOR (3) LEG ONLY.

UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS INCLUDE FINISHES AND ARE IN INCHES

TOLERANCES: FRACTIONS ± 1/16" ANGLES ± 1/2 DEG. DECIMALS ± .010"

MATERIAL:

TOLERANCES DO NOT APPLY TO RAW MATERIAL

REV	DATE	DRW	CHK	DESCRIPTION

Sabre Industries™ INNOVATION DELIVERED

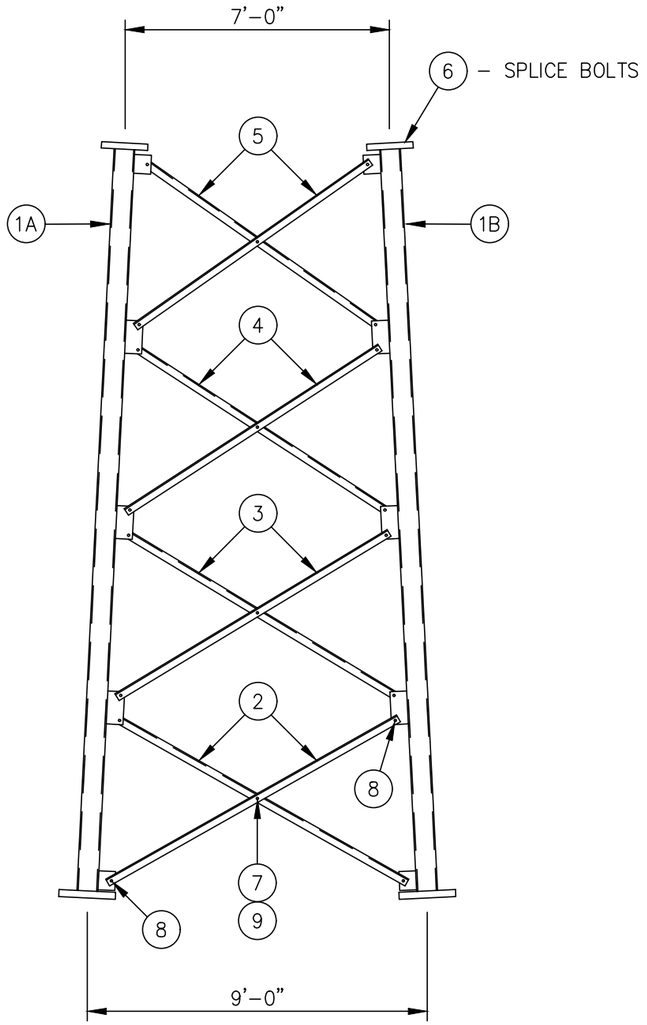
CONFIDENTIAL
This document and the information contained herein is the confidential trade secret property of Sabre Industries, Inc. ("Sabre") and must not be reproduced, copied or used, in whole or in part, for any purpose without the prior written consent of Sabre.
© 2025 Sabre Industries, Inc. All rights reserved.

SECTION ERECTION: 09 09-T8100384

SITE: MCCULLY MOUNTAIN, OR

CUSTOMER: MARION COUNTY OREGON

JOB NO. 563427		SIZE	DRAWING NO.	REV
DATE	07/31/25	B	563427-S09	0
DRAWN BY	KMP			
CHECKED BY	ZAK		SCALE NONE	PAGE 1 OF 1



ELEVATION VIEW

LIST OF MATERIAL

08–LEGS

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
1A	1	08–T1168025	SECT.8 LEG 4 ø X .318 X 20'–0 5/16 W/ STEP BOLTS	373
1B	2	08–T1168026	SECT.8 LEG 4 ø X .318 X 20'–0 5/16	735
			TOTAL WEIGHT LBS	1108

08–T8100421 BRACING KIT

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
2	6	TS04017	ANGLE, DIAGONAL 2 1/2 X 2 1/2 X 3/8 X 9'–1 13/16	337
3	6	TS04018	ANGLE, DIAGONAL 2 1/2 X 2 1/2 X 3/8 X 8'–8 11/16	322
4	6	TS04019	ANGLE, DIAGONAL 2 1/2 X 2 1/2 X 3/8 X 8'–3 5/8	306
5	6	TS04020	ANGLE, DIAGONAL 2 1/2 X 2 1/2 X 3/8 X 7'–10 11/16	291
			TOTAL WEIGHT LBS	1256

SPLICE BOLTS

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
6	19	C40026078	BOLT ASSEMBLY, 1 ø X 4 1/4 A325	41
			TOTAL WEIGHT LBS	41

TK00348 HARDWARE KIT

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
7	13	C40026045	BOLT ASSEMBLY, 3/4 ø X 2 1/2 A325	10
8	50	C40026044	BOLT ASSEMBLY, 3/4 ø X 2 1/4 A325	37
9	13	C40047004	RINGFILL, 3/8 THICK – 3/4 ø BOLT	2
			TOTAL WEIGHT LBS	49

TOTAL SECTION WEIGHT – INCLUDES 3 LEGS, BRACING AND HARDWARE KIT	2454

FIELD NOTES

1. THE PART NUMBERS FOR ALL LEGS ARE LOCATED AT THE TOP OF EACH PART.
2. STEP BOLTS PROVIDED FOR (1) LEG ONLY.

UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS INCLUDE FINISHES AND ARE IN INCHES

TOLERANCES: FRACTIONS ± 1/16" ANGLES ± 1/2 DEG. DECIMALS ± .010"

MATERIAL:

TOLERANCES DO NOT APPLY TO RAW MATERIAL

REV	DATE	DRW	CHK	DESCRIPTION

Sabre Industries™ INNOVATION DELIVERED

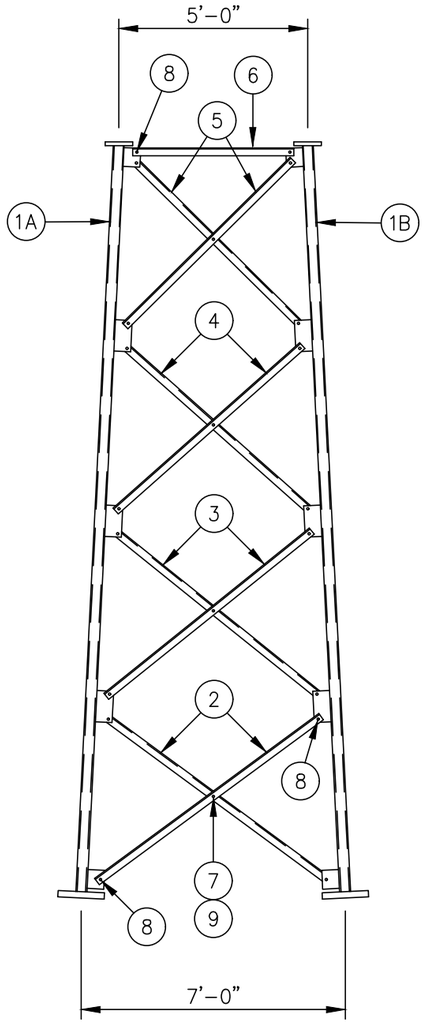
CONFIDENTIAL
This document and the information contained herein is the confidential trade secret property of Sabre Industries, Inc. ("Sabre") and must not be reproduced, copied or used, in whole or in part, for any purpose without the prior written consent of Sabre.
© 2025 Sabre Industries, Inc. All rights reserved.

SECTION ERECTION: 08 08–T8100421

SITE: MCCULLY MOUNTAIN, OR

CUSTOMER: MARION COUNTY OREGON

JOB NO. 563427		SIZE	DRAWING NO.	REV
DATE	07/31/25	B	563427–S08	0
DRAWN BY	KMP			
CHECKED BY	ZAK		SCALE NONE	PAGE 1 OF 1



ELEVATION VIEW

LIST OF MATERIAL

07-LEGS

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
1A	1	07-T1165503	SECT. 7 LEG 2 7/8ø X .203 X 20'-0 5/16 W/STEP BOLTS	219
1B	2	07-T1165504	SECT. 7 LEG 2 7/8ø X .203 X 20'-0 5/16	428
			TOTAL WEIGHT LBS	647

07-T8100168 BRACING KIT

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
2	6	TS02040	ANGLE, DIAGONAL 2 X 2 X 5/16 X 7'-5 1/2	182
3	6	TS02039	ANGLE, DIAGONAL 2 X 2 X 5/16 X 7'-0 13/16	173
4	6	TS02038	ANGLE, DIAGONAL 2 X 2 X 5/16 X 6'-8 5/16	163
5	6	TS02037	ANGLE, DIAGONAL 2 X 2 X 5/16 X 6'-3 15/16	155
6	3	TS02036	ANGLE, HORIZONTAL 2 X 2 X 5/16 X 4'-4 3/8	53
			TOTAL WEIGHT LBS	726

TK00146 HARDWARE KIT

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
7	13	C40026024	BOLT ASSEMBLY, 5/8 ø X 2 1/4 A325	7
8	57	C40026023	BOLT ASSEMBLY, 5/8 ø X 2 A325	26
9	13	C40047003	RINGFILL, 3/8 THICK - 5/8 ø BOLT	2
			TOTAL WEIGHT LBS	35

TOTAL SECTION WEIGHT - INCLUDES 3 LEGS, BRACING AND HARDWARE KIT	1408

FIELD NOTES

1. THE PART NUMBERS FOR ALL LEGS ARE LOCATED AT THE TOP OF EACH PART.
2. STEP BOLTS PROVIDED FOR (1) LEG ONLY.

UNLESS OTHERWISE SPECIFIED
ALL DIMENSIONS INCLUDE
FINISHES AND ARE IN INCHES

TOLERANCES: FRACTIONS ± 1/16"
ANGLES ± 1/2 DEG.
DECIMALS ± .010"

MATERIAL:

TOLERANCES DO NOT APPLY TO RAW MATERIAL

REV	DATE	DRW	CHK	DESCRIPTION

Sabre Industries™
INNOVATION DELIVERED

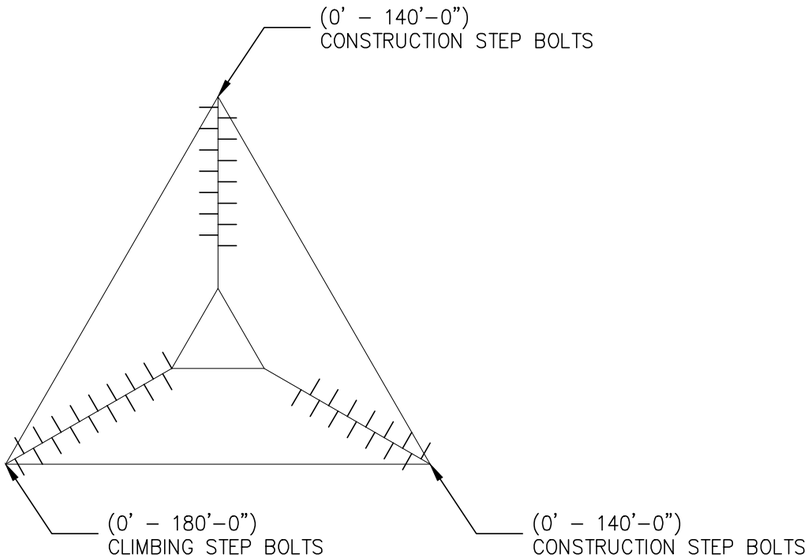
CONFIDENTIAL
This document and the information contained herein is the confidential trade secret property of Sabre Industries, Inc. ("Sabre") and must not be reproduced, copied or used, in whole or in part, for any purpose without the prior written consent of Sabre.
© 2025 Sabre Industries, Inc. All rights reserved.

SECTION ERECTION: 07 07-T8100168
SITE: MCCULLY MOUNTAIN, OR
CUSTOMER: MARION COUNTY OREGON

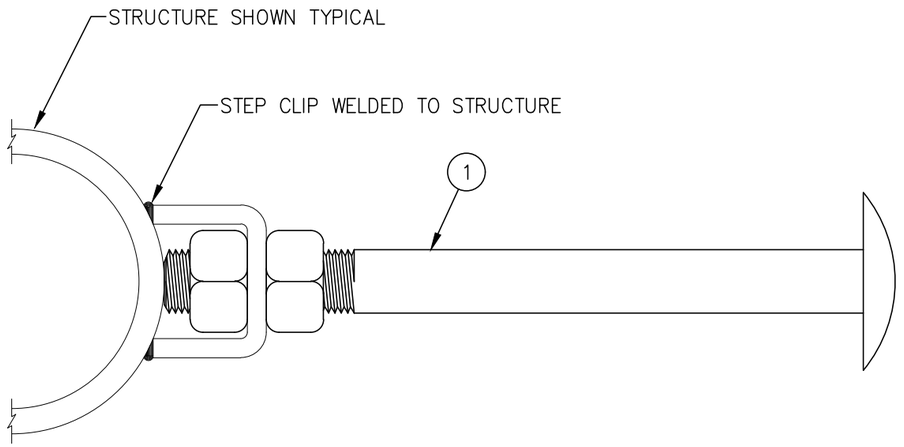
JOB NO. 563427		SIZE	DRAWING NO.	REV
DATE	07/31/25	B	563427-S07	0
DRAWN BY	KMP			
CHECKED BY	ZAK		SCALE NONE	PAGE 1 OF 1

FIELD NOTE:
SEE CUSTOMER REQUESTS FOR PROPER LEG POSITIONING OF ALL STEP BOLTS.

CLIMBING/CONSTRUCTION STEP BOLTS				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
1	368	C40044017	STEP BOLT ASSEMBLY, 5/8 ø X 7 H.D.G.	368
			TOTAL WEIGHT LBS	368



TOWER PLAN VIEW



NOTE:
STEP BOLTS PROVIDED FOR CONSTRUCTION PURPOSES ARE FOR EXPERIENCED TOWER ERECTORS ONLY AND SHOULD NEVER BE USED WITHOUT PROPER SAFETY EQUIPMENT. FOR STEP BOLTS SUPPLIED AS A FORM OF CLIMBING IN TYPICAL COMMUNICATION ACTIVITY, SABRE INDUSTRIES RECOMMENDS A FALL PROTECTION PLAN BE COMPLETED BY A COMPETENT PERSON AND FOLLOWED FOR EACH CLIMB.

UNLESS OTHERWISE SPECIFIED
ALL DIMENSIONS INCLUDE FINISHES AND ARE IN INCHES
TOLERANCES: FRACTIONS ± 1/16"
ANGLES ± 1/2 DEG.
DECIMALS ± .010"

MATERIAL:
TOLERANCES DO NOT APPLY TO RAW MATERIAL

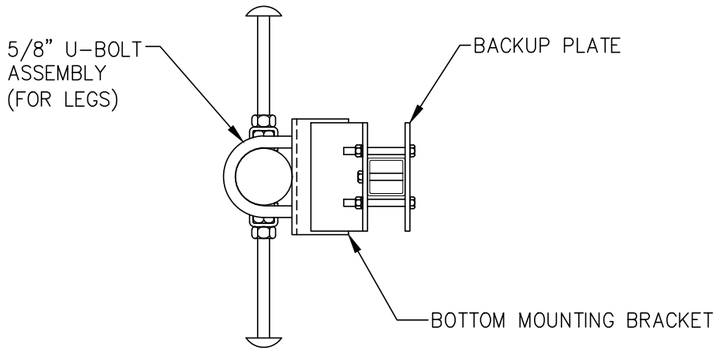
REV	DATE	DRW	CHK	DESCRIPTION

Sabre Industries™
INNOVATION DELIVERED

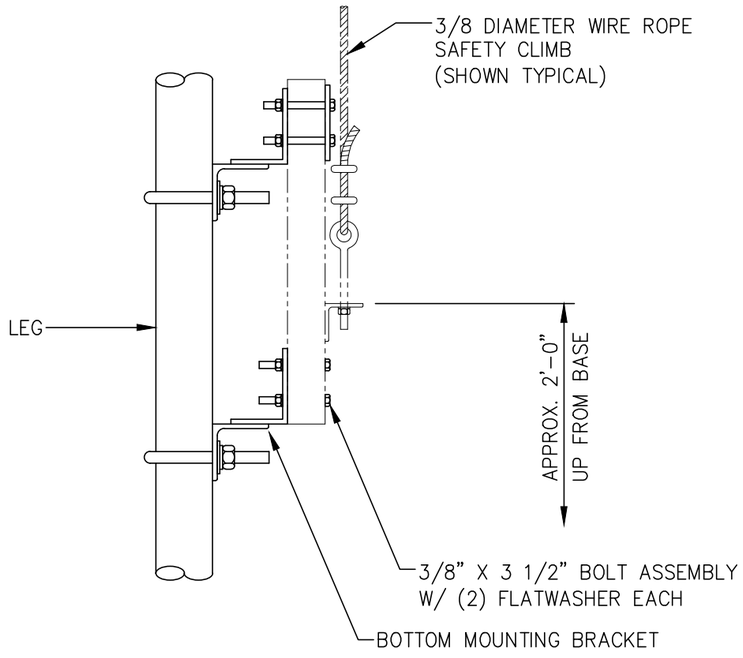
CONFIDENTIAL
This document and the information contained herein is the confidential trade secret property of Sabre Industries, Inc. ("Sabre") and must not be reproduced, copied or used, in whole or in part, for any purpose without the prior written consent of Sabre.
© 2025 Sabre Industries, Inc. All rights reserved.

STEP BOLT ATTACHMENT INSTALLATION:
SITE: MCCULLY MOUNTAIN, OR
CUSTOMER: MARION COUNTY OREGON

JOB NO. 563427		SIZE	DRAWING NO.	REV
DATE	08/07/25	B	563427–SB1	0
DRAWN BY	KMP			
CHECKED BY	ZAK		SCALE NONE	PAGE 1 OF 1



PLAN



ELEVATION

EACH KIT CONSISTS OF:

(2) BOTTOM MOUNTING BRACKET
(1) BACKUP PLATE
(2) 5/8" U-BOLT ASSEMBLY FOR MOUNTING TO LEG
(6) 3/8"ø X 3 1/2" BOLT ASSEMBLY
(12) 3/8"ø FLATWASHER

BOTTOM MOUNTING BRACKET KITS

KIT NUMBER	LEG DIAMETER	5/8" U-BOLT ASSEMBLY	3/8" BOLT ASSEMBLY	3/8"ø FLATWASHER	BOTTOM MOUNTING BRACKET	BACKUP PLATE	KIT WEIGHT
C30011054	1 1/4"	C40034041	C40024012	C40031001	CW00346	CS00167	16.2#
C30011055	1 1/2"	C40034020	C40024012	C40031001	CW00346	CS00167	16.4#
C30011056	1 3/4"	C40034021	C40024012	C40031001	CW00346	CS00167	16.5#
C30011031	2"	C40034022	C40024012	C40031001	CW00049	CS00167	17.0#
C30011032	2 1/4" OR 2 3/8"	C40034023	C40024012	C40031001	CW00049	CS00167	17.1#
C30011033	2 1/2"	C40034024	C40024012	C40031001	CW00049	CS00167	17.2#
C30011034	2 3/4" OR 2 7/8"	C40034025	C40024012	C40031001	CW00049	CS00167	17.3#
C30011035	3"	C40034026	C40024012	C40031001	CW00049	CS00167	17.4#
C30011036	3 1/4"	C40034027	C40024012	C40031001	CW00050	CS00167	18.5#
C30011037	3 1/2"	C40034028	C40024012	C40031001	CW00050	CS00167	18.6#
C30011038	3 3/4"	C40034029	C40024012	C40031001	CW00050	CS00167	18.8#
C30011039	4"	C40034030	C40024012	C40031001	CW00050	CS00167	18.9#
C30011040	4 1/4"	C40034031	C40024012	C40031001	CW00050	CS00167	19.0#
C30011041	4 1/2"	C40034032	C40024012	C40031001	CW00051	CS00167	20.3#
C30011042	4 3/4"	C40034033	C40024012	C40031001	CW00051	CS00167	20.4#
C30011043	5"	C40034034	C40024012	C40031001	CW00051	CS00167	20.5#
C30011044	5 1/4" – 5 9/16"	C40034035	C40024012	C40031001	CW00052	CS00167	21.9#
C30011057	5 3/4"	C40034044	C40024012	C40031001	CW00052	CS00167	22.0#
C30011058	6"	C40034064	C40024012	C40031001	CW00052	CS00167	22.0#
C30011053	6 1/4"	C40034068	C40024012	C40031001	CW00052	CS00167	22.1#
C30011045	6 5/8"	C40034036	C40024012	C40031001	CW00052	CS00167	22.3#
C30011059	6 3/4"	C40034093	C40024012	C40031001	CW00204	CS00167	23.2#
C30011050	7 OR 7 1/4"	C40034065	C40024012	C40031001	CW00204	CS00167	25.0#
C30011060	7 1/2"	C40034127	C40024012	C40031001	CW00204	CS00167	23.7#
C30011104	7 3/4"	C40034099	C40024012	C40031001	CW00204	CS00167	23.8#
C30011046	8 5/8"	C40034037	C40024012	C40031001	CW00053	CS00167	33.0#
C30011062	8 3/4"	C40034152	C40024012	C40031001	CW01346	CS00167	30.9#
C30011063	9"	C40034200	C40024012	C40031001	CW01362	CS00167	31.5#
C30011061	9 1/2" OR 9 5/8"	C40034130	C40024012	C40031001	CW01242	CS00167	29.3#
C30011047	10 3/4"	C40034038	C40024012	C40031001	CW00054	CS00167	35.4#
C30011048	12 3/4"	C40034039	C40024012	C40031001	CW00053	CS00167	34.9#
C30011049	14"	C40034040	C40024012	C40031001	CW00054	CS00167	36.9#
C30011051	16"	C40034042	C40024012	C40031001	CW00208	CS00167	42.6#
C30011052	18"	C40034043	C40024012	C40031001	CW00208	CS00167	43.5#

REV	DATE	DRW	CHK	DESCRIPTION
14	10/13/17	RWM	MWR	REVISED 3/8 DIAMETER WIRE ROPE VERBIAGE
13	8/14/17	DPJ	ZAK	ADDED KIT FOR 9" O.D. LEG.
12	4/24/17	DPJ	ZAK	ADDED KIT FOR 8 3/4" O.D. LEG.
11	9/30/14	DPJ	ZAK	ADDED KIT FOR 9 1/2" & 9 5/8" O.D. LEGS.
10	5/22/14	KLE	EK	ADDED KIT FOR 7 1/2" O.D. LEG.
9	10/10/11	DPJ	CE	ADDED KIT FOR 7 3/4" O.D. LEG.
8	7/26/11	DPJ	CHH	ADDED KIT FOR 6 3/4" O.D. LEG.
7	5/29/08	DPJ	ZAK	ADDED KIT FOR 6" O.D. LEG.
6	4/29/08	LRS	CE	ADDED KIT FOR 5 3/4" O.D. LEG.
5	3/03/08	LRS	ZAK	ADDED KIT FOR 6 1/4" O.D. LEG
4	1/10/08	LRS	CE	CHANGED LEG DIAMETER FOR C30011044 KIT (WAS 5 1/2" OR 5 9/16")
3	12/27/04	DLW	DEL	ADDED KITS FOR 1 1/4" TO 1 3/4" O.D. LEGS.
2	3/3/04	KLE	DLW	ADDED KITS FOR 16" O.D. & 18" O.D. LEGS.
1	2/19/04	KLE	DLW	ADDED C30011050 & ADDED LEADING ZERO.

UNLESS OTHERWISE SPECIFIED
ALL DIMENSIONS INCLUDE FINISHES AND ARE IN INCHES
TOLERANCES: FRACTIONS ± 1/16"
ANGLES ± 1/2 DEG.
DECIMALS ± .010"

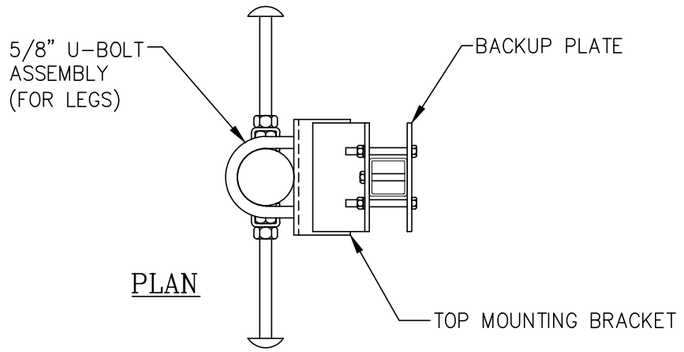
MATERIAL:
TOLERANCES DO NOT APPLY TO RAW MATERIAL

Sabre Industries™
INNOVATION DELIVERED

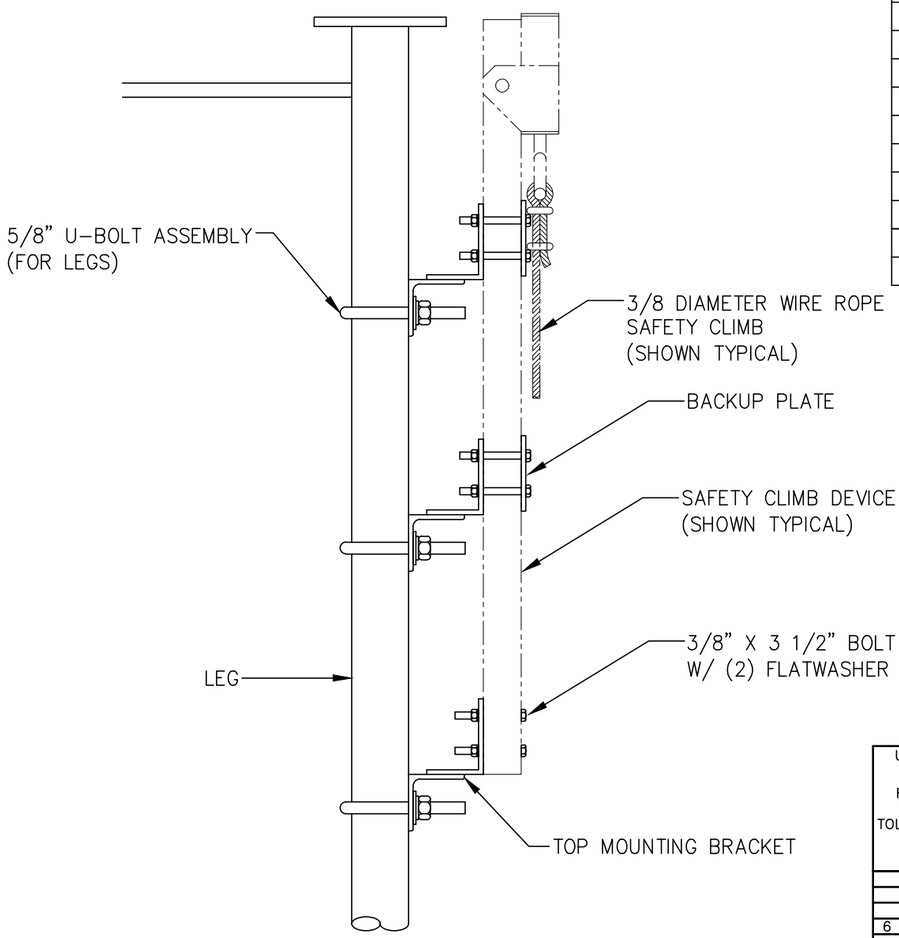
CONFIDENTIAL
This document and the information contained herein is the confidential trade secret property of Sabre Industries, Inc. ("Sabre") and must not be reproduced, copied or used, in whole or in part, for any purpose without the prior written consent of Sabre.
© 2022 Sabre Industries, Inc. All rights reserved.

3/8 DIAMETER WIRE ROPE SAFETY CLIMB BOTTOM MOUNTING BRACKET

		SIZE	DRAWING NO.	REV
DATE	4/11/02	B	C30011-1	14
DRAWN BY	KLE			
CHECKED BY	DLW	SCALE None	PAGE 1 OF 1	



PLAN



ELEVATION

TOP MOUNTING BRACKET KITS

KIT NUMBER	LEG DIAMETER	5/8" U-BOLT ASSEMBLY	3/8" BOLT ASSEMBLY	3/8"ø FLATWASHER	TOP MOUNTING BRACKET	BACKUP PLATE	KIT WEIGHT
C30011017	1 1/4"	C40034041	C40024012	C40031001	CW00346	CS00167	25.3#
C30011018	1 1/2"	C40034020	C40024012	C40031001	CW00346	CS00167	25.6#
C30011019	1 3/4"	C40034021	C40024012	C40031001	CW00346	CS00167	25.8#
C30011001	2"	C40034022	C40024012	C40031001	CW00049	CS00167	26.5#
C30011002	2 1/4" OR 2 3/8"	C40034023	C40024012	C40031001	CW00049	CS00167	26.8#
C30011003	2 1/2"	C40034024	C40024012	C40031001	CW00049	CS00167	26.9#
C30011004	2 3/4" OR 2 7/8"	C40034025	C40024012	C40031001	CW00049	CS00167	27.1#
C30011005	3"	C40034026	C40024012	C40031001	CW00049	CS00167	27.2#
C30011006	3 1/4"	C40034027	C40024012	C40031001	CW00050	CS00167	28.9#
C30011007	3 1/2"	C40034028	C40024012	C40031001	CW00050	CS00167	29.1#
C30011008	3 3/4"	C40034029	C40024012	C40031001	CW00050	CS00167	29.2#
C30011009	4"	C40034030	C40024012	C40031001	CW00050	CS00167	29.4#
C30011010	4 1/4"	C40034031	C40024012	C40031001	CW00050	CS00167	29.6#
C30011011	4 1/2"	C40034032	C40024012	C40031001	CW00051	CS00167	31.6#
C30011012	4 3/4"	C40034033	C40024012	C40031001	CW00051	CS00167	31.8#
C30011013	5"	C40034034	C40024012	C40031001	CW00051	CS00167	31.9#
C30011014	5 1/2" OR 5 9/16"	C40034035	C40024012	C40031001	CW00052	CS00167	34.0#
C30011015	6 5/8"	C40034036	C40024012	C40031001	CW00052	CS00167	34.6#
C30011020	8 5/8"	C40034037	C40024012	C40031001	CW00053	CS00167	50.5#
C30011021	12 3/4"	C40034039	C40024012	C40031001	CW00053	CS00167	53.4#

NOTES:

1. MOUNTING BRACKET SHOULD BE INSTALLED IN A MANNER THAT WILL ENSURE THE WIRE ROPE WILL NOT BE DAMAGED.
2. IF THERE IS A MOUNT AT THE TOP OF THE TOWER THAT WOULD INTERFERE WITH THE BRACKET OR SAFETY CLIMB, THE TOP MOUNTING BRACKET SHOULD BE INSTALLED JUST BELOW THE MOUNT.

EACH KIT CONSISTS OF

(3) TOP MOUNTING BRACKET
(2) BACKUP PLATE
(3) 5/8" U-BOLT ASSEMBLY FOR MOUNTING TO LEG
(10) 3/8"ø X 3 1/2" BOLT ASSEMBLY
(20) 3/8"ø FLATWASHER

UNLESS OTHERWISE SPECIFIED
ALL DIMENSIONS INCLUDE FINISHES AND ARE IN INCHES
TOLERANCES: FRACTIONS ± 1/16"
ANGLES ± 1/2 DEG.
DECIMALS ± .010"

MATERIAL:
TOLERANCES DO NOT APPLY TO RAW MATERIAL

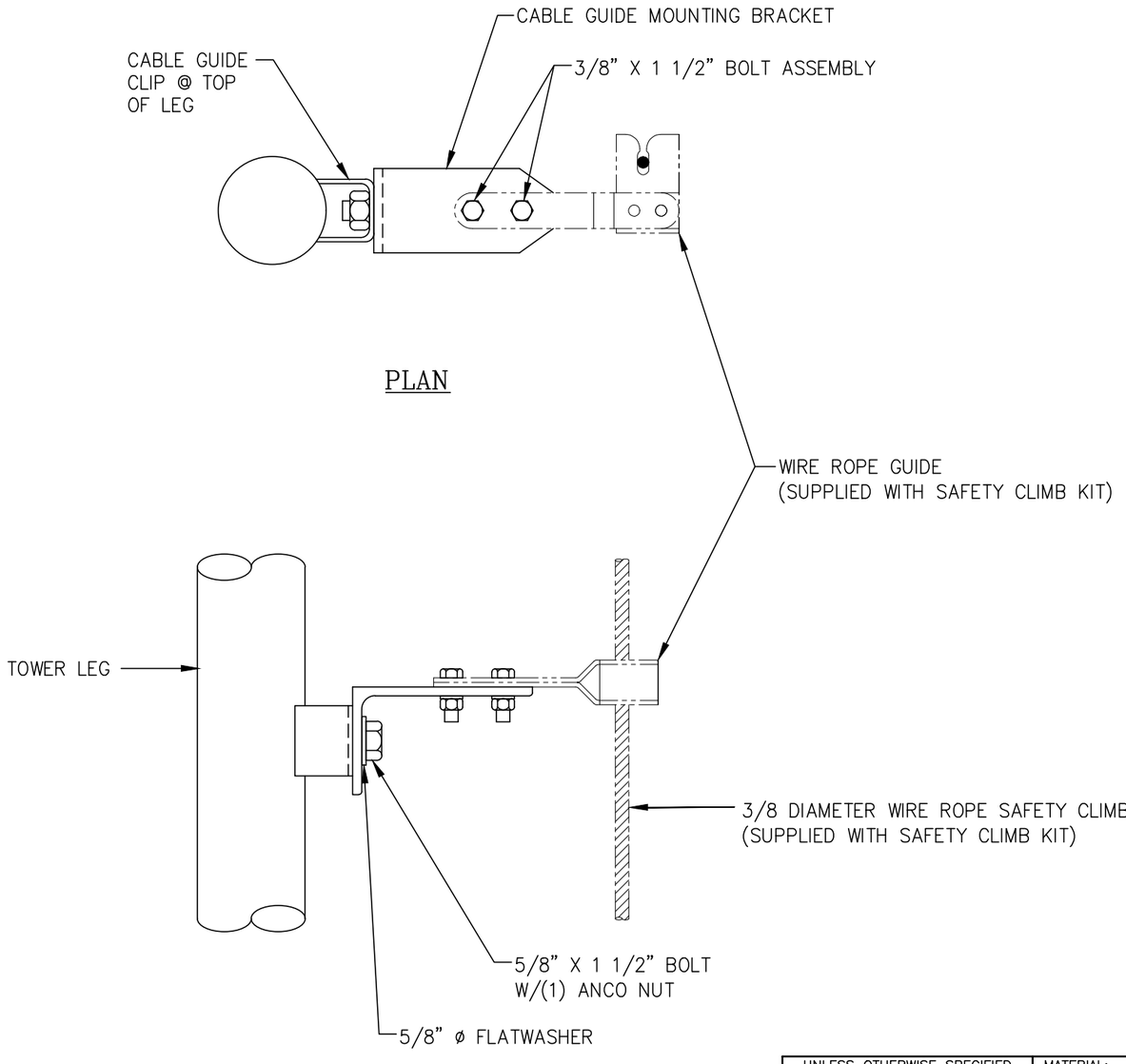
REV	DATE	DRW	CHK	DESCRIPTION
6	10/13/17	RWM	MWR	REVISED 3/8 DIAMETER WIRE ROPE VERBIAGE AND REVISED/ADDED NOTES.
5	7/2/10	CHH	HHC	ADDED KIT FOR 12 3/4" O.D. LEG.
4	11/2/09	DPJ	ZAK	ADDED KIT FOR 8 5/8" O.D. LEG.
3	12/27/04	DLW	DEL	ADDED KITS FOR 1 1/4" TO 1 3/4" O.D. LEGS
2	3/4/04	KLE	KLE	REMOVED DASHES
1	2/19/04	KLE	DLW	ADDED LEADING ZERO

Sabre Industries™
INNOVATION DELIVERED

CONFIDENTIAL
This document and the information contained herein is the confidential trade secret property of Sabre Industries, Inc. ("Sabre") and must not be reproduced, copied or used, in whole or in part, for any purpose without the prior written consent of Sabre.
© 2022 Sabre Industries, Inc. All rights reserved.

3/8 DIAMETER WIRE ROPE SAFETY CLIMB TOP MOUNTING BRACKET

		SIZE	DRAWING NO.	REV
DATE	4/12/02	B	C30011-2	6
DRAWN BY	KLE			
CHECKED BY	DLW	SCALE None	PAGE 1 OF 1	



C30003001 SAFETY CLIMB CABLE GUIDE MOUNTING BRACKET				
ITEM	QTY.	PART. NO.	DESCRIPTION	WEIGHT
1	1	CS00795	ANGLE, SAFETY CLIMB CABLE GUIDE SUPPORT	1.4#
2	1	C40126021	BOLT, 5/8 X 1 1/2 A325	0.3#
3	1	C40028003	NUT, ANCO 5/8" ø	0.1#
4	1	C40031003	FLATWASHER, 5/8" ø	0.1#
5	2	C40024004	BOLT ASSEMBLY, 3/8 X 1 1/2 GR. 5	0.2#
			TOTAL WEIGHT	2.1#

EACH KIT CONSISTS OF

(1) CABLE GUIDE MOUNTING BRACKET
(1) 5/8" X 1 1/2" BOLT FOR MOUNTING TO LEG
(1) 5/8" ANCO NUT FOR 5/8" BOLT
(1) 5/8" FLATWASHER
(2) 3/8"ø X 1 1/2" BOLT ASSEMBLY

UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS INCLUDE FINISHES AND ARE IN INCHES

TOLERANCES: FRACTIONS ± 1/16" ANGLES ± 1/2 DEG. DECIMALS ± .010"

MATERIAL:

TOLERANCES DO NOT APPLY TO RAW MATERIAL

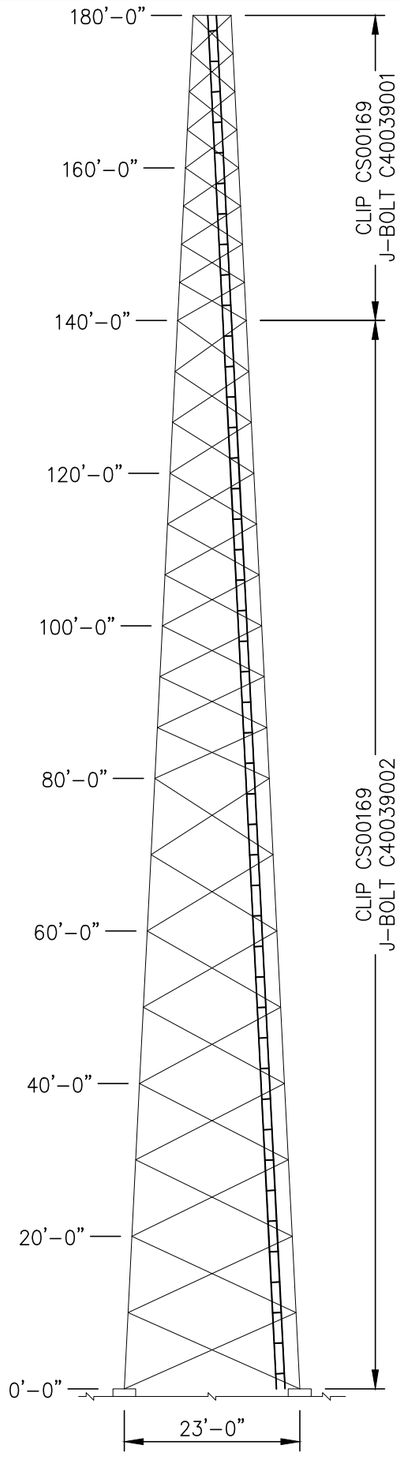
REV	DATE	DRW	CHK	DESCRIPTION
4	10/13/17	RWM	MWR	REVISED 3/8 DIAMETER WIRE ROPE VERBIAGE
3	10/6/11	CHH	RWM	REVISED MOUNTING BOLT WAS C40126019 & ADDED FLATWASHER C40031003
2	4/12/06	CHH	HHC	CHANGED PART NO. ITEM 2 (WAS C40998050).
1	2/17/06	MJM	ZAK	CORRECTED ITEM 3 PART NO. (WAS C40028004).

Sabre Industries™ INNOVATION DELIVERED

CONFIDENTIAL
This document and the information contained herein is the confidential trade secret property of Sabre Industries, Inc. ("Sabre") and must not be reproduced, copied or used, in whole or in part, for any purpose without the prior written consent of Sabre.
© 2022 Sabre Industries, Inc. All rights reserved.

3/8 DIAMETER WIRE ROPE SAFETY CLIMB CABLE GUIDE MOUNTING BRACKET

		SIZE	DRAWING NO.	REV
DATE	8/4/04	B	C30003001	4
DRAWN BY	CHH			
CHECKED BY	ZAK	SCALE None	PAGE 1 OF 1	



ELEVATION VIEW

WAVEGUIDE LADDER				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
1	18	CS00146	ANGLE, WAVEGUIDE LADDER RAIL 20 FT. W/4 FT. RUNG SPC	540
2	45	CS01619	ANGLE, WAVEGUIDE SUPPORT (6 HOLE)	95
3	16	CS00037	PLATE, LADDER SPLICE	6
4	42	CS00169	CLIP, LADDER ATTACHMENT	23
			TOTAL WEIGHT LBS	664

LADDER HARDWARE				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
5	34	C40039002	J–BOLT ASSEMBLY, 3/8 ø X 7 1/4 I.L.	12
6	8	C40039001	J–BOLT ASSEMBLY, 3/8 ø X 5 3/4 I.L.	2
7	122	C40024004	BOLT ASSEMBLY, 3/8 ø X 1 1/2 GRD 5	12
			TOTAL WEIGHT LBS	26

FIELD NOTES

1. FROM ELEVATION 0'–0" TO 140'–0" ATTACH WAVEGUIDE LADDER TO EACH TOWER DIAGONAL.
   FROM ELEVATION 140'–0" TO 180'–0" ATTACH WAVEGUIDE LADDER TO EVERY OTHER TOWER DIAGONAL.
2. SEE REFERENCE DWG. 9031861 FOR WAVEGUIDE LADDER INSTALLATION AND ATTACHMENT DETAIL.
3. SEE CUSTOMER REQUESTS FOR PROPER FACE POSITIONING OF ALL LADDERS.
4. WAVEGUIDE LADDERS SHOULD NEVER BE USED AS A CLIMBING OR RIGGING DEVICE.

UNLESS OTHERWISE SPECIFIED
ALL DIMENSIONS INCLUDE
FINISHES AND ARE IN INCHES

TOLERANCES: FRACTIONS ± 1/16"
ANGLES ± 1/2 DEG.
DECIMALS ± .010"

MATERIAL:

TOLERANCES DO NOT APPLY
TO RAW MATERIAL

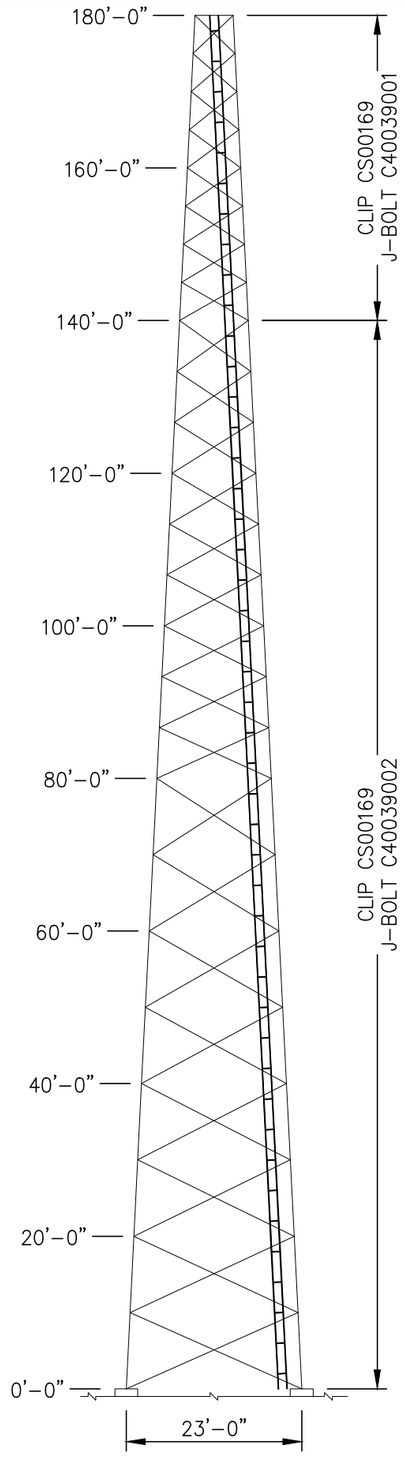
REV	DATE	DRW	CHK	DESCRIPTION

Sabre Industries™
INNOVATION DELIVERED

CONFIDENTIAL
This document and the information contained herein is the confidential trade secret property of Sabre Industries, Inc. ("Sabre") and must not be reproduced, copied or used, in whole or in part, for any purpose without the prior written consent of Sabre.
© 2025 Sabre Industries, Inc. All rights reserved.

W/G LADDER: 180 FT. MODEL S3TL–HD2
SITE: MCCULLY MOUNTAIN, OR
CUSTOMER: MARION COUNTY OREGON

JOB NO. 563427		SIZE	DRAWING NO.	REV
DATE	8/7/25	B	563427–WG1	0
DRAWN BY	KMP			
CHECKED BY	ZAK		SCALE NONE	PAGE 1 OF 1



ELEVATION VIEW

WAVEGUIDE LADDER				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
1	18	CS00146	ANGLE, WAVEGUIDE LADDER RAIL 20 FT. W/4 FT. RUNG SPC	540
2	45	CS01619	ANGLE, WAVEGUIDE SUPPORT (6 HOLE)	95
3	16	CS00037	PLATE, LADDER SPLICE	6
4	42	CS00169	CLIP, LADDER ATTACHMENT	23
			TOTAL WEIGHT LBS	664

LADDER HARDWARE				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
5	34	C40039002	J–BOLT ASSEMBLY, 3/8 ø X 7 1/4 I.L.	12
6	8	C40039001	J–BOLT ASSEMBLY, 3/8 ø X 5 3/4 I.L.	2
7	122	C40024004	BOLT ASSEMBLY, 3/8 ø X 1 1/2 GRD 5	12
			TOTAL WEIGHT LBS	26

FIELD NOTES

1. FROM ELEVATION 0'–0" TO 140'–0" ATTACH WAVEGUIDE LADDER TO EACH TOWER DIAGONAL.
   FROM ELEVATION 140'–0" TO 180'–0" ATTACH WAVEGUIDE LADDER TO EVERY OTHER TOWER DIAGONAL.
2. SEE REFERENCE DWG. 9031861 FOR WAVEGUIDE LADDER INSTALLATION AND ATTACHMENT DETAIL.
3. SEE CUSTOMER REQUESTS FOR PROPER FACE POSITIONING OF ALL LADDERS.
4. WAVEGUIDE LADDERS SHOULD NEVER BE USED AS A CLIMBING OR RIGGING DEVICE.

UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS INCLUDE FINISHES AND ARE IN INCHES

TOLERANCES: FRACTIONS ± 1/16" ANGLES ± 1/2 DEG. DECIMALS ± .010"

MATERIAL:

TOLERANCES DO NOT APPLY TO RAW MATERIAL

REV	DATE	DRW	CHK	DESCRIPTION

Sabre Industries™ INNOVATION DELIVERED

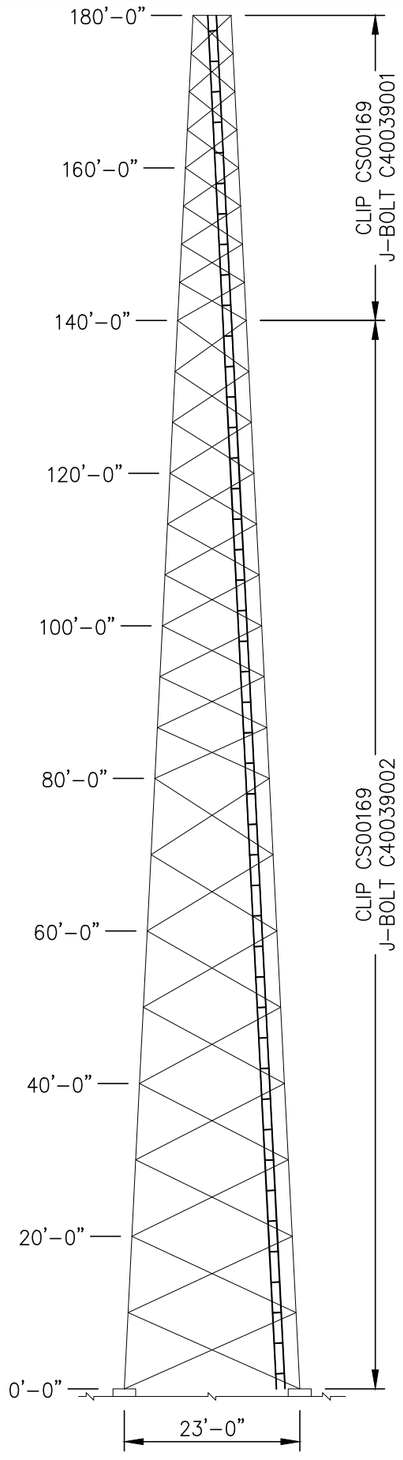
CONFIDENTIAL
This document and the information contained herein is the confidential trade secret property of Sabre Industries, Inc. ("Sabre") and must not be reproduced, copied or used, in whole or in part, for any purpose without the prior written consent of Sabre.
© 2025 Sabre Industries, Inc. All rights reserved.

W/G LADDER: 180 FT. MODEL S3TL–HD2

SITE: MCCULLY MOUNTAIN, OR

CUSTOMER: MARION COUNTY OREGON

JOB NO. 563427		SIZE	DRAWING NO.	REV
DATE	8/7/25	B	563427–WG2	0
DRAWN BY	KMP			
CHECKED BY	ZAK		SCALE NONE	PAGE 1 OF 1



ELEVATION VIEW

WAVEGUIDE LADDER				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
1	18	CS00146	ANGLE, WAVEGUIDE LADDER RAIL 20 FT. W/4 FT. RUNG SPC	540
2	45	CS01619	ANGLE, WAVEGUIDE SUPPORT (6 HOLE)	95
3	16	CS00037	PLATE, LADDER SPLICE	6
4	42	CS00169	CLIP, LADDER ATTACHMENT	23
			TOTAL WEIGHT LBS	664

LADDER HARDWARE				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
5	34	C40039002	J–BOLT ASSEMBLY, 3/8 ø X 7 1/4 I.L.	12
6	8	C40039001	J–BOLT ASSEMBLY, 3/8 ø X 5 3/4 I.L.	2
7	122	C40024004	BOLT ASSEMBLY, 3/8 ø X 1 1/2 GRD 5	12
			TOTAL WEIGHT LBS	26

FIELD NOTES

1. FROM ELEVATION 0'–0" TO 140'–0" ATTACH WAVEGUIDE LADDER TO EACH TOWER DIAGONAL.
   FROM ELEVATION 140'–0" TO 180'–0" ATTACH WAVEGUIDE LADDER TO EVERY OTHER TOWER DIAGONAL.
2. SEE REFERENCE DWG. 9031861 FOR WAVEGUIDE LADDER INSTALLATION AND ATTACHMENT DETAIL.
3. SEE CUSTOMER REQUESTS FOR PROPER FACE POSITIONING OF ALL LADDERS.
4. WAVEGUIDE LADDERS SHOULD NEVER BE USED AS A CLIMBING OR RIGGING DEVICE.

UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS INCLUDE FINISHES AND ARE IN INCHES

TOLERANCES: FRACTIONS ± 1/16" ANGLES ± 1/2 DEG. DECIMALS ± .010"

MATERIAL:

TOLERANCES DO NOT APPLY TO RAW MATERIAL

REV	DATE	DRW	CHK	DESCRIPTION

Sabre Industries™ INNOVATION DELIVERED

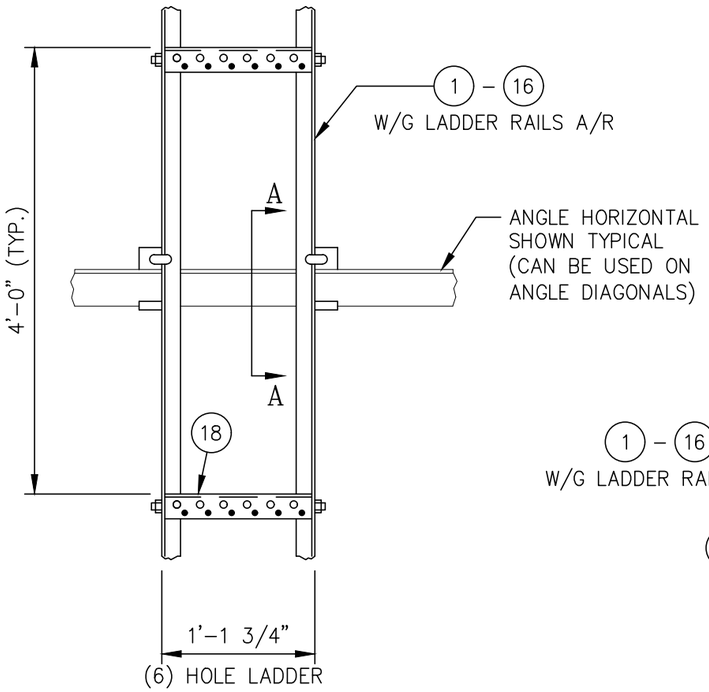
CONFIDENTIAL
This document and the information contained herein is the confidential trade secret property of Sabre Industries, Inc. ("Sabre") and must not be reproduced, copied or used, in whole or in part, for any purpose without the prior written consent of Sabre.
© 2025 Sabre Industries, Inc. All rights reserved.

W/G LADDER: 180 FT. MODEL S3TL–HD2

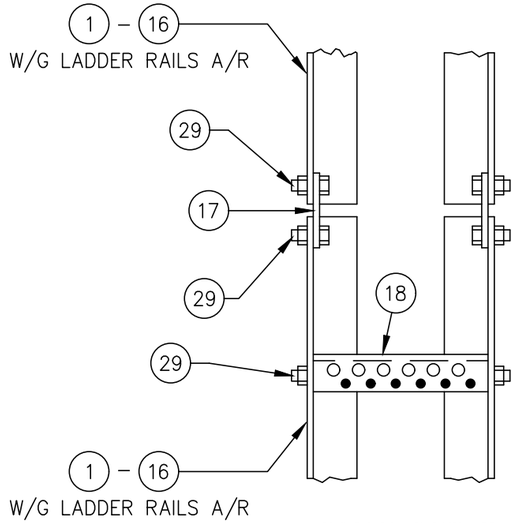
SITE: MCCULLY MOUNTAIN, OR

CUSTOMER: MARION COUNTY OREGON

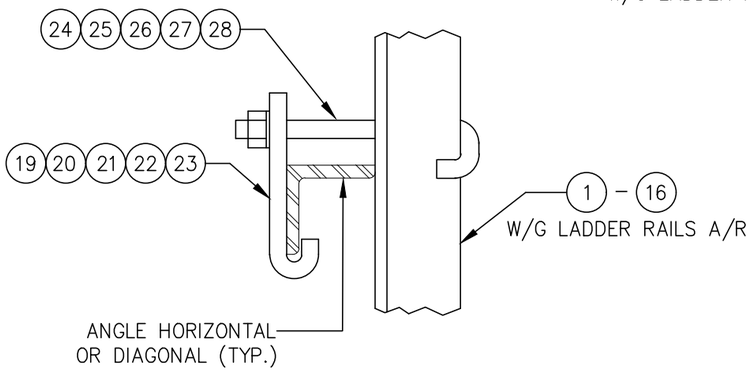
JOB NO. 563427		SIZE	DRAWING NO.	REV
DATE	8/7/25	B	563427–WG3	0
DRAWN BY	KMP			
CHECKED BY	ZAK		SCALE NONE	PAGE 1 OF 1



ELEVATION
(TYPICAL MOUNTING DETAIL)



SPLICE DETAIL



SECTION A–A

LIST OF MATERIAL

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
1	A/R	CS00146	ANGLE, WAVEGUIDE LADDER RAIL 20 FT.	
2	A/R	CS03607	ANGLE, WAVEGUIDE LADDER RAIL 19 FT.	
3	A/R	CS03608	ANGLE, WAVEGUIDE LADDER RAIL 18 FT.	
4	A/R	CS03402	ANGLE, WAVEGUIDE LADDER RAIL 17 FT.	
5	A/R	CS03609	ANGLE, WAVEGUIDE LADDER RAIL 16 FT.	
6	A/R	CS00147	ANGLE, WAVEGUIDE LADDER RAIL 15 FT.	
7	A/R	CS03621	ANGLE, WAVEGUIDE LADDER RAIL 14 FT.	
8	A/R	CS03610	ANGLE, WAVEGUIDE LADDER RAIL 13 FT.	
9	A/R	CS03611	ANGLE, WAVEGUIDE LADDER RAIL 12 FT.	
10	A/R	CS03612	ANGLE, WAVEGUIDE LADDER RAIL 11 FT.	
11	A/R	CS00148	ANGLE, WAVEGUIDE LADDER RAIL 10 FT.	
12	A/R	CS03613	ANGLE, WAVEGUIDE LADDER RAIL 9 FT.	
13	A/R	CS03444	ANGLE, WAVEGUIDE LADDER RAIL 8 FT.	
14	A/R	CS03614	ANGLE, WAVEGUIDE LADDER RAIL 7 FT.	
15	A/R	CS03615	ANGLE, WAVEGUIDE LADDER RAIL 6 FT.	
16	A/R	CS00149	ANGLE, WAVEGUIDE LADDER RAIL 5 FT.	
17	A/R	CS00037	PLATE, LADDER SPLICE	
18	A/R	CS01619	ANGLE WAVEGUIDE SUPPORT (6 HOLE)	
19	A/R	CS00169	CLIP, LADDER ATTACHMENT (1 1/2" – 4" ANGLES)	
20	A/R	CS00170	CLIP, LADDER ATTACHMENT (5" – 6" ANGLES: 3/8" THK. & UNDER)	
21	A/R	CS00171	CLIP, LADDER ATTACHMENT (1 1/2" – 6" ANGLES: 1/2" THK. & UNDER)	
22	A/R	CS00808	CLIP, LADDER ATTACHMENT (4" – 6" ANGLES: 1/2" TO 3/4" THK.)	
23	A/R	CS01212	CLIP, LADDER ATTACHMENT (8" ANGLES)	
24	A/R	C40039001	J–BOLT ASSY., 3/8 (1 1/2" – 2 1/2" ANGLES)	
25	A/R	C40039002	J–BOLT ASSY., 3/8 (3" – 4" ANGLES)	
26	A/R	C40039003	J–BOLT ASSY., 3/8 (5" – 6" ANGLES)	
27	A/R	C40039009	J–BOLT ASSY., 3/8 (3" – 6" ANGLES, 1/2" & 3/4" THK)	
28	A/R	C40039012	J–BOLT ASSY., 3/8 (8" ANGLES, 1/2" & 3/4" THK)	
29	A/R	C40024004	BOLT ASSEMBLY, 3/8 X 1 1/2 GR5	

"SEE JOB SPECIFIC BILL OF MATERIAL FOR QTY'S."

NOTE:
MAXIMUM SPACING OF LADDER CLIPS UP THE TOWER TO BE ±10'–0.

UNLESS OTHERWISE SPECIFIED
ALL DIMENSIONS INCLUDE
FINISHES AND ARE IN INCHES
TOLERANCES: FRACTIONS ± 1/16"
ANGLES ± 1/2 DEG.
DECIMALS ± .010"

MATERIAL:
TOLERANCES DO NOT APPLY
TO RAW MATERIAL

REV	DATE	DRW	CHK	DESCRIPTION
1	08/22/23	FJM	DLW	REVISED ITEM 7 (WAS CS03404)

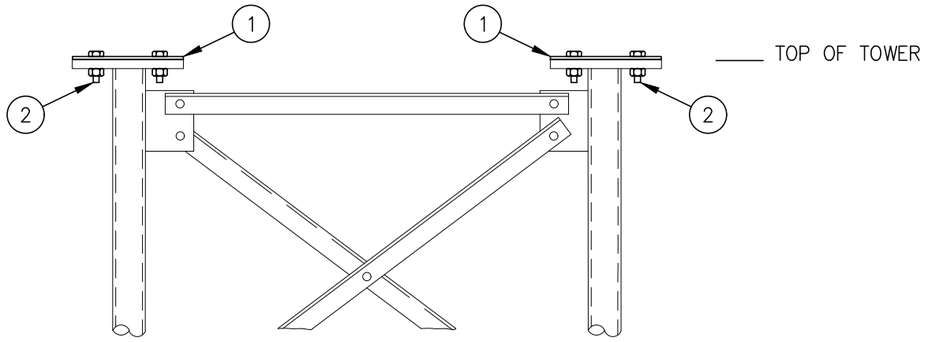
Sabre Industries™
INNOVATION DELIVERED

CONFIDENTIAL
This document and the information contained herein is the confidential trade secret property of Sabre Industries, Inc. ("Sabre") and must not be reproduced, copied or used, in whole or in part, for any purpose without the prior written consent of Sabre.
© 2021 Sabre Industries, Inc. All rights reserved.

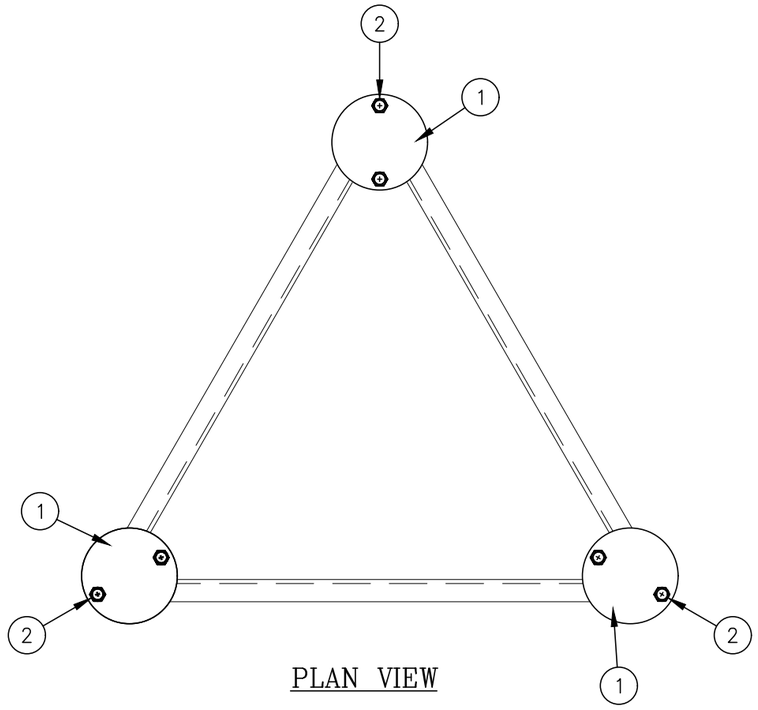
WAVEGUIDE LADDER INSTALLATION
6 HOLE RUNG – 7/16"ø & 3/4"ø
(CUSTOM LENGTH LADDER RAILS)

		SIZE	DRAWING NO.	REV
DATE	06/25/20	B	9031861	1
DRAWN BY	FJM			
CHECKED BY	DRL	SCALE None	PAGE 1 OF 1	

C30008022 LEG CAP KIT				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
1	3	CS01499	PLATE, LEG CAP (3/4" BOLTS ON A 6 1/2" B.C.)	6
2	6	C40026045	BOLT ASSEMBLY, 3/4 ø X 2 1/2 A325	5
			TOTAL WEIGHT LBS	11



ELEVATION VIEW



PLAN VIEW

UNLESS OTHERWISE SPECIFIED
ALL DIMENSIONS INCLUDE FINISHES AND ARE IN INCHES

TOLERANCES: FRACTIONS ± 1/16"
ANGLES ± 1/2 DEG.
DECIMALS ± .010"

MATERIAL:
FITS (6) 13/16"ø HOLES SPACED 60° APART ON A 6 1/2" BOLT CIRCLE

TOLERANCES DO NOT APPLY TO RAW MATERIAL

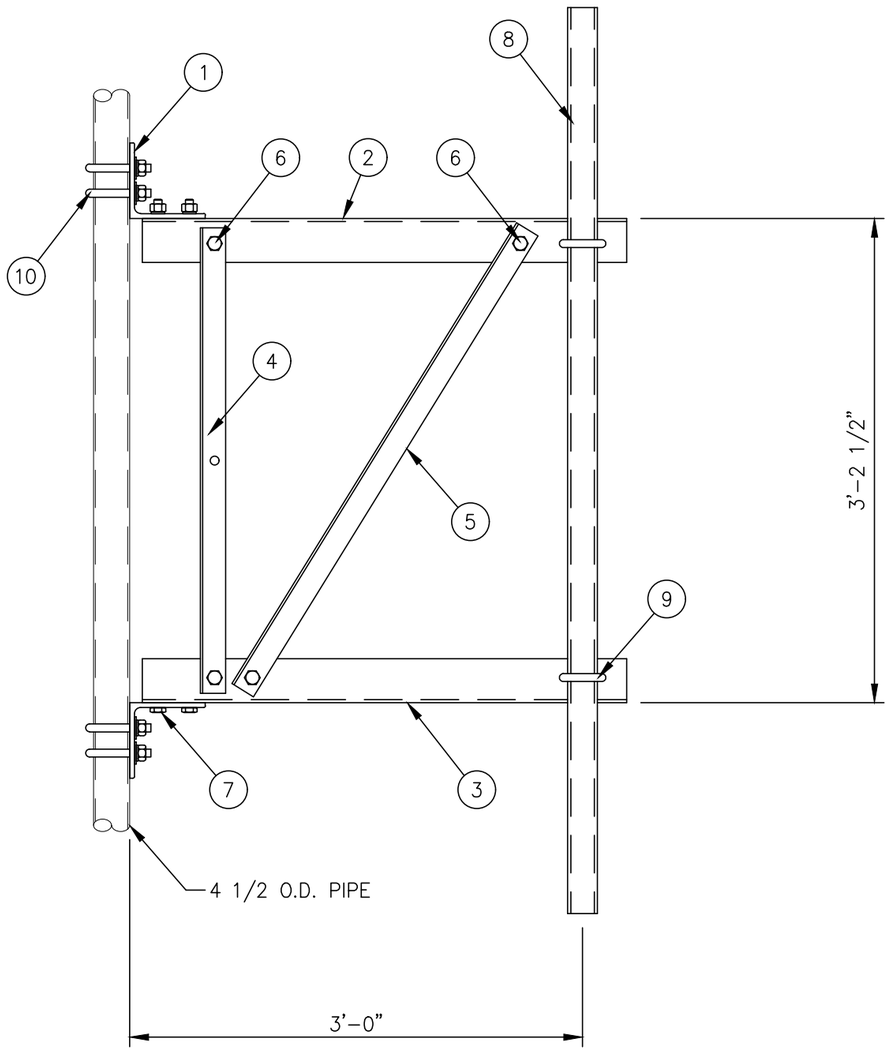
REV	DATE	DRW	CHK	DESCRIPTION

Sabre Industries™
INNOVATION DELIVERED

CONFIDENTIAL
This document and the information contained herein is the confidential trade secret property of Sabre Industries, Inc. ("Sabre") and must not be reproduced, copied or used, in whole or in part, for any purpose without the prior written consent of Sabre.
© 2021 Sabre Industries, Inc. All rights reserved.

LEG CAP INSTALLATION (S3TL–HD1) 3/4"ø BOLTS ON A 6 1/2" B.C. (1" SPLICE PLATE)

		SIZE	DRAWING NO.	REV
DATE	9/29/21	B	C30008022	0
DRAWN BY	MJM			
CHECKED BY	ZAK		SCALE None	PAGE 1 OF 1



C10151103 3 FT. SIDEARM ASSEMBLY			
1	CK00060	SIDEARM ANGLE KIT	78
1	– – –	MISC HARDWARE (FRAMING)	4
1	C10900105	PIPE ANTENNA MOUNTING KIT 2 3/8" ø X 5'-0	19
4	C40034032	U-BOLT ASSEMBLY 5/8" ø X 5 3/16 C-C	9
		TOTAL WEIGHT LBS	110

CK00060 KIT LIST OF MATERIAL				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
1	2	CS00067	ANGLE, BOOM SUPPORT	23
2	1	CS01223	ANGLE, TOP CHORD	19
3	1	CS01224	ANGLE, BOTTOM CHORD	19
4	1	CS00065	ANGLE, VERTICAL	8
5	1	CS01228	ANGLE, DIAGONAL	9
			TOTAL WEIGHT LBS	78

MISC HARDWARE (FRAMING)				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
6	4	C40026022	BOLT ASSEMBLY, 5/8 ø X 1 3/4 A325	2
7	4	C40026023	BOLT ASSEMBLY, 5/8 ø X 2 A325	2
			TOTAL WEIGHT LBS	4

C10900105 ANTENNA PIPE MOUNTING KIT				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
8	1	C10981223	ANTENNA MTG. PIPE 2 3/8" ø X 5'-0	16
9	2	C40034023	U-BOLT ASSEMBLY 5/8" ø X 3 1/16 C-C	3
			TOTAL WEIGHT LBS	19

MISC HARDWARE				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
10	4	C40034032	U-BOLT ASSEMBLY 5/8" ø X 5 3/16 C-C	9
			TOTAL WEIGHT LBS	9

NOTES:

1. IF THE MOUNT IS NOT ON THE STRAIGHT PORTION OF THE TOWER SEE SITE SPECIFIC PIPE MOUNT.
2. QUANTITIES SHOWN IN LIST OF MATERIALS ARE FOR ONE (1) SIDEARM ASSEMBLY ONLY.

UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS INCLUDE FINISHES AND ARE IN INCHES

TOLERANCES: FRACTIONS ± 1/16" ANGLES ± 1/2 DEG. DECIMALS ± .010"

MATERIAL:

TOLERANCES DO NOT APPLY TO RAW MATERIAL

REV	DATE	DRW	CHK	DESCRIPTION

Sabre Industries™ INNOVATION DELIVERED

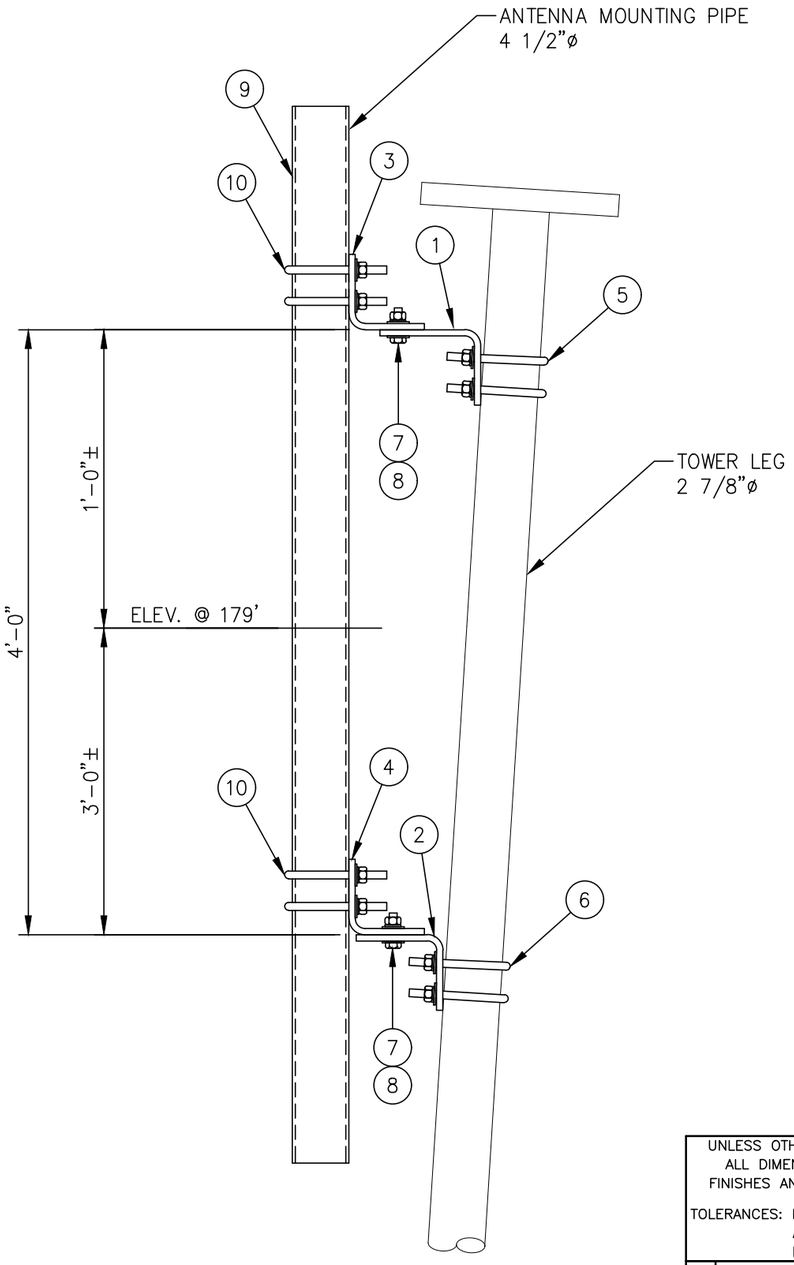
CONFIDENTIAL
This document and the information contained herein is the confidential trade secret property of Sabre Industries, Inc. ("Sabre") and must not be reproduced, copied or used, in whole or in part, for any purpose without the prior written consent of Sabre.
© 2025 Sabre Industries, Inc. All rights reserved.

3 FT. SIDEARM: 179' ELEVATION

SITE: MCCULLY MOUNTAIN, OR

CUSTOMER: MARION COUNTY OREGON

JOB NO. 563427		SIZE	DRAWING NO.	REV
DATE	08/07/25	B	563427-SA1	0
DRAWN BY	KMP			
CHECKED BY	ZAK		SCALE NONE	PAGE 1 OF 1



ELEVATION VIEW

LIST OF MATERIALS FOR TAPERED LEG PIPE MOUNT KIT C10174018				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
1.	1	CS00216	TOP LEG MOUNT FOR 2 7/8 ø LEG	15
2.	1	CS00215	BOTTOM LEG MOUNT FOR 2 7/8 ø LEG	12
3.	1	CS00214	TOP PIPE MOUNT FOR 4 1/2 ø PIPE	15
4.	1	CS00215	BOTTOM PIPE MOUNT FOR 4 1/2 ø PIPE	12
5.	2	C40034025	U-BOLT ASSEMBLY 5/8 ø X 3 9/16 C-C (TOP LEG MOUNT)	4
6.	2	C40034025	U-BOLT ASSEMBLY 5/8 ø X 3 9/16 C-C (BOTTOM LEG MOUNT)	4
7.	4	C40026024	BOLT ASSEMBLY 5/8 ø X 2 1/4 A325	2
8.	8	C40031003	FLATWASHER, 5/8 ø (F436)	1
			KIT WEIGHT LBS	65

LIST OF ADDITIONAL MATERIALS				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
9.	1	C10981407	ANTENNA MTG. PIPE 4 1/2 ø X 7'-0	58
10.	4	C40034032	U-BOLT ASSEMBLY 5/8 ø X 5 3/16 C-C (PIPE MOUNTS)	9
			ADDITIONAL WEIGHT LBS	67

TOTAL WEIGHT LBS	132

UNLESS OTHERWISE SPECIFIED
ALL DIMENSIONS INCLUDE FINISHES AND ARE IN INCHES
TOLERANCES: FRACTIONS ± 1/16"
ANGLES ± 1/2 DEG.
DECIMALS ± .010"

MATERIAL:

TOLERANCES DO NOT APPLY TO RAW MATERIAL

REV	DATE	DRW	CHK	DESCRIPTION

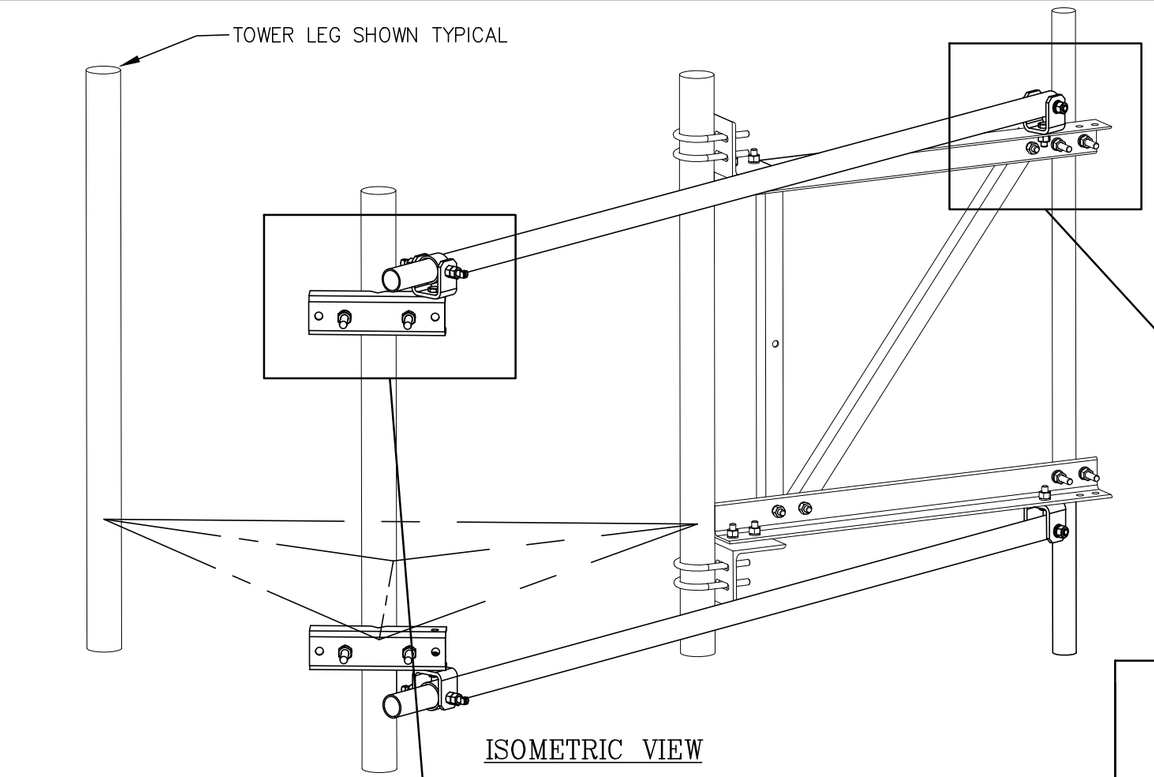
Sabre Industries™
INNOVATION DELIVERED

CONFIDENTIAL
This document and the information contained herein is the confidential trade secret property of Sabre Industries, Inc. ("Sabre") and must not be reproduced, copied or used, in whole or in part, for any purpose without the prior written consent of Sabre.
© 2025 Sabre Industries, Inc. All rights reserved.

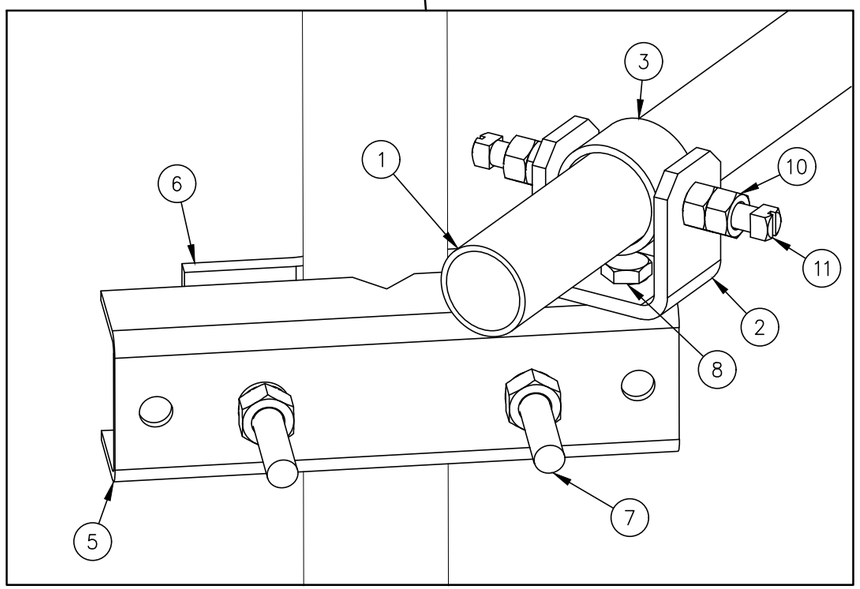
PIPE MOUNT FOR SIDEARM: 179' ELEVATION
SITE: MCCULLY MOUNTAIN, OR
CUSTOMER: MARION COUNTY OREGON

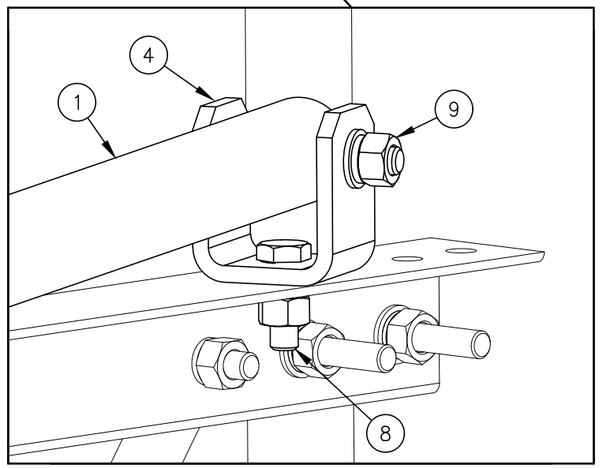
JOB NO. 563427		SIZE	DRAWING NO.		REV
DATE	8/7/25	B	563427-PM1		0
DRAWN BY	KMP			SCALE	PAGE
CHECKED BY	ZAK			None	1 OF 1

EXHIBIT K



ISOMETRIC VIEW





C10179001 SWIVEL KNUCKLE TIEBACK

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
1	1	CS00099	PIPE, 2 3/8" O.D. X 0.154 X 10'-0	38
2	1	CW00013	SWIVEL PLATE WELDMENT	3
3	1	CS00097	PIPE, SLEEVE 2 7/8 O.D. X W/0.203 X 0'-1 3/4	1
4	1	CS00098	BENT SWIVEL PLATE	3
5	1	CS01360	PLATE, MOUNTING BRACKET (FORMED CHANNEL)	9
6	1	CS01361	PLATE, 2 HOLE ADAPTER CLAMP	3
7	2	C40140001	BOLT ASSEMBLY, 3/4 X 10 A307 W/NUT, LKW, FLW	4
8	2	C40026023	BOLT ASSEMBLY, 5/8 ø X 2 A325	1
9	1	C40026033	BOLT ASSEMBLY, 5/8 ø X 4 1/2 A325	1
10	2	C40042007	HEX NUT, 5/8 A194 GRADE 2H	1
11	2	C40998007	SQ. HEAD SET SCREW, 5/8 X 2 1/2	1
			TOTAL WEIGHT LBS	65

QUANTITIES SHOWN ABOVE ARE FOR (1) SWIVEL KNUCKLE TIEBACK KIT ONLY.
(2) KITS ARE REQUIRED FOR THIS SIDEARM ASSEMBLY

UNLESS OTHERWISE SPECIFIED
ALL DIMENSIONS INCLUDE
FINISHES AND ARE IN INCHES

TOLERANCES: FRACTIONS ± 1/16"
ANGLES ± 1/2 DEG.
DECIMALS ± .010"

MATERIAL:

TOLERANCES DO NOT APPLY TO RAW MATERIAL

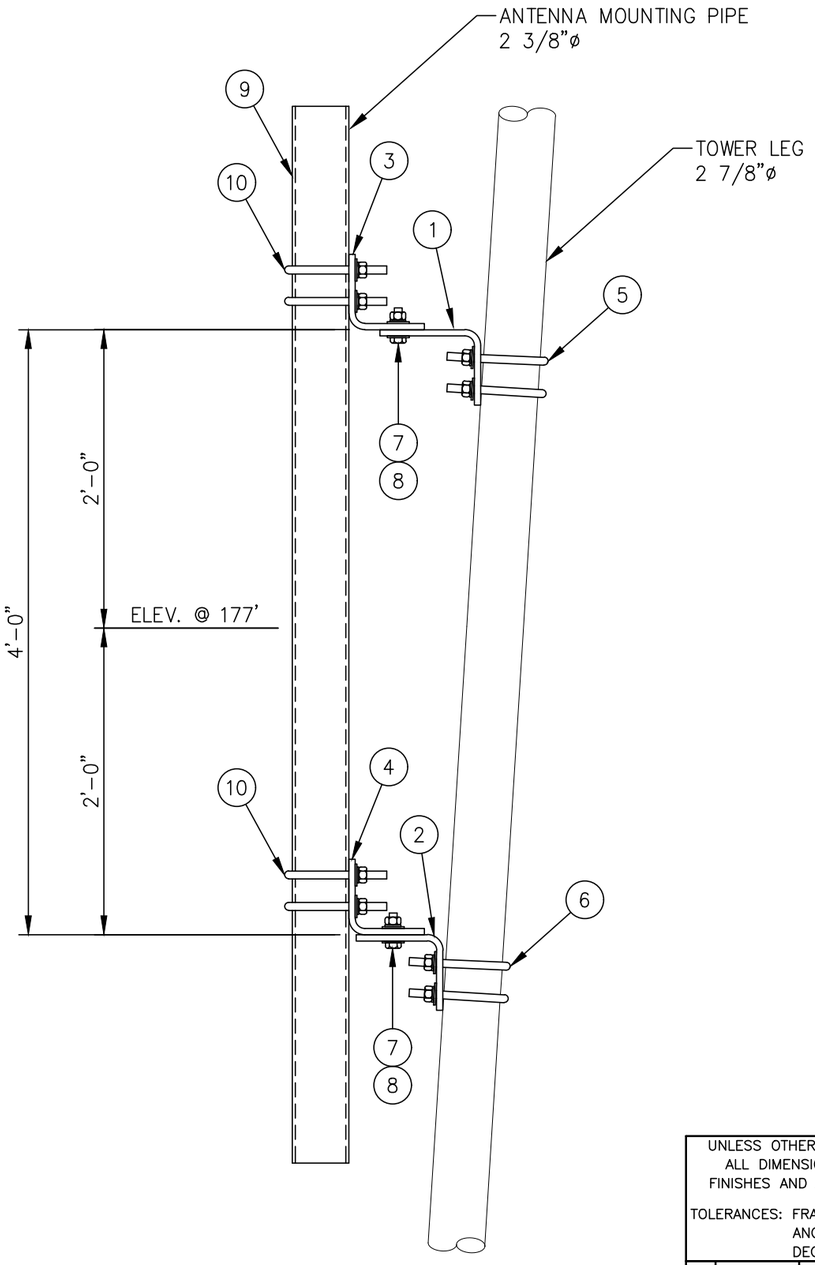
REV	DATE	DRW	CHK	DESCRIPTION

Sabre Industries™
INNOVATION DELIVERED

CONFIDENTIAL
This document and the information contained herein is the confidential trade secret property of Sabre Industries, Inc. ("Sabre") and must not be reproduced, copied or used, in whole or in part, for any purpose without the prior written consent of Sabre.
© 2025 Sabre Industries, Inc. All rights reserved.

SWIVEL KNUCKLE TIEBACKS: 179' ELEVATION
SITE: MCCULLY MOUNTAIN, OR
CUSTOMER: MARION COUNTY OREGON

JOB NO. 563427		SIZE	DRAWING NO.	REV
DATE	08/07/25	B	563427-ST1	0
DRAWN BY	KMP			
CHECKED BY	ZAK		SCALE NONE	PAGE 1 OF 1



ELEVATION VIEW

LIST OF MATERIALS FOR TAPERED LEG FLUSH MOUNT KIT C10174018				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
1.	1	CS00216	TOP LEG MOUNT FOR 2 7/8 ø LEG	15
2.	1	CS00215	BOTTOM LEG MOUNT FOR 2 7/8 ø LEG	12
3.	1	CS00214	TOP PIPE MOUNT FOR 2 3/8 ø PIPE	15
4.	1	CS00215	BOTTOM PIPE MOUNT FOR 2 3/8 ø PIPE	12
5.	2	C40034025	U-BOLT ASSEMBLY 5/8 ø X 3 9/16 C-C (TOP LEG MOUNT)	4
6.	2	C40034025	U-BOLT ASSEMBLY 5/8 ø X 3 9/16 C-C (BOTTOM LEG MOUNT)	4
7.	4	C40026024	BOLT ASSEMBLY 5/8 ø X 2 1/4 A325	2
8.	8	C40031003	FLATWASHER, 5/8 ø (F436)	1
			KIT WEIGHT LBS	65

LIST OF ADDITIONAL MATERIALS				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
9.	1	C10981207	ANTENNA MTG. PIPE 2 3/8 ø X 7'-0	23
10.	4	C40034023	U-BOLT ASSEMBLY 5/8 ø X 3 1/16 C-C (PIPE MOUNTS)	7
			ADDITIONAL WEIGHT LBS	30

TOTAL WEIGHT LBS	95

UNLESS OTHERWISE SPECIFIED
ALL DIMENSIONS INCLUDE FINISHES AND ARE IN INCHES
TOLERANCES: FRACTIONS ± 1/16"
ANGLES ± 1/2 DEG.
DECIMALS ± .010"

MATERIAL:

TOLERANCES DO NOT APPLY TO RAW MATERIAL

REV	DATE	DRW	CHK	DESCRIPTION

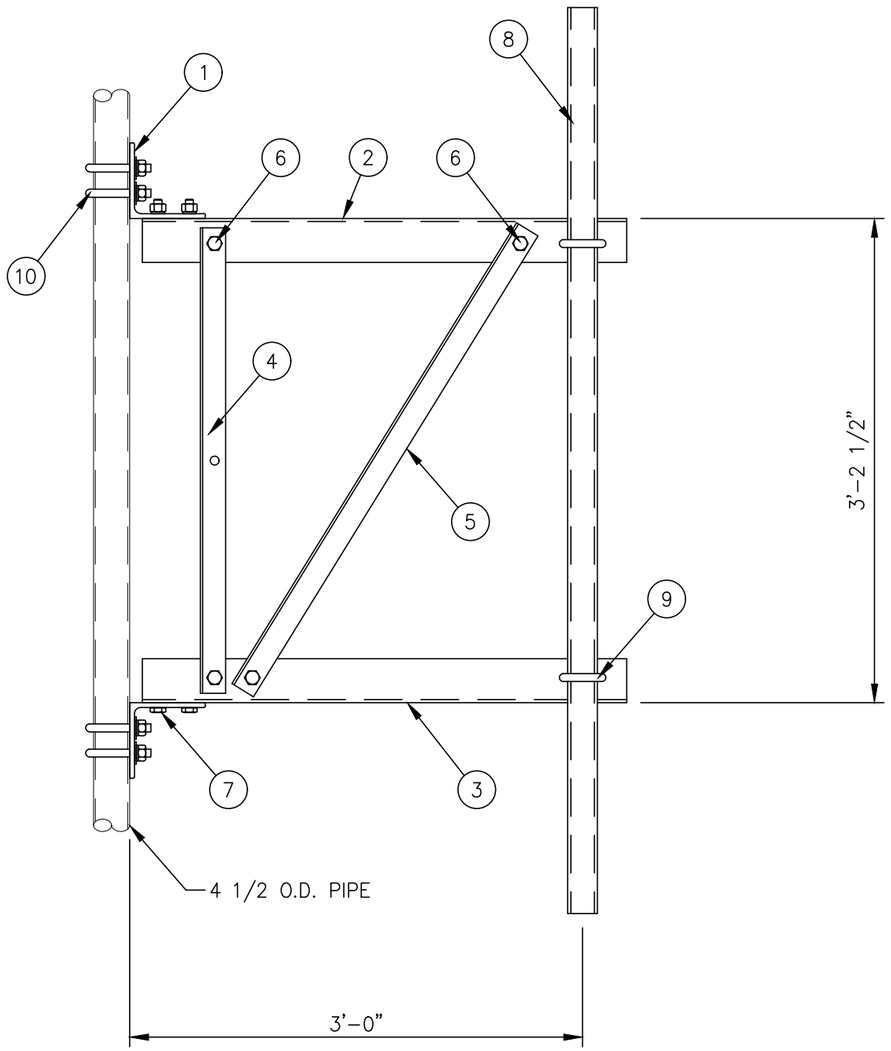
Sabre Industries™
INNOVATION DELIVERED

CONFIDENTIAL

This document and the information contained herein is the confidential trade secret property of Sabre Industries, Inc. ("Sabre") and must not be reproduced, copied or used, in whole or in part, for any purpose without the prior written consent of Sabre.
© 2025 Sabre Industries, Inc. All rights reserved.

FLUSH MOUNT: 177' ELEVATION
SITE: MCCULLY MOUNTAIN, OR
CUSTOMER: MARION COUNTY OREGON

JOB NO. 563427		SIZE	DRAWING NO.	REV
DATE	8/7/25	B	563427-FM1	0
DRAWN BY	KMP			
CHECKED BY	ZAK		SCALE None	PAGE 1 OF 1



C10151103 3 FT. SIDEARM ASSEMBLY			
1	CK00060	SIDEARM ANGLE KIT	78
1	– – –	MISC HARDWARE (FRAMING)	4
1	C10900105	PIPE ANTENNA MOUNTING KIT 2 3/8" ø X 5'-0	19
4	C40034032	U-BOLT ASSEMBLY 5/8" ø X 5 3/16 C-C	9
		TOTAL WEIGHT LBS	110

CK00060 KIT LIST OF MATERIAL				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
1	2	CS00067	ANGLE, BOOM SUPPORT	23
2	1	CS01223	ANGLE, TOP CHORD	19
3	1	CS01224	ANGLE, BOTTOM CHORD	19
4	1	CS00065	ANGLE, VERTICAL	8
5	1	CS01228	ANGLE, DIAGONAL	9
			TOTAL WEIGHT LBS	78

MISC HARDWARE (FRAMING)				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
6	4	C40026022	BOLT ASSEMBLY, 5/8 ø X 1 3/4 A325	2
7	4	C40026023	BOLT ASSEMBLY, 5/8 ø X 2 A325	2
			TOTAL WEIGHT LBS	4

C10900105 ANTENNA PIPE MOUNTING KIT				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
8	1	C10981223	ANTENNA MTG. PIPE 2 3/8" ø X 5'-0	16
9	2	C40034023	U-BOLT ASSEMBLY 5/8" ø X 3 1/16 C-C	3
			TOTAL WEIGHT LBS	19

MISC HARDWARE				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
10	4	C40034032	U-BOLT ASSEMBLY 5/8" ø X 5 3/16 C-C	9
			TOTAL WEIGHT LBS	9

NOTES:

1. IF THE MOUNT IS NOT ON THE STRAIGHT PORTION OF THE TOWER SEE SITE SPECIFIC PIPE MOUNT.
2. QUANTITIES SHOWN IN LIST OF MATERIALS ARE FOR ONE (1) SIDEARM ASSEMBLY ONLY.

UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS INCLUDE FINISHES AND ARE IN INCHES

TOLERANCES: FRACTIONS ± 1/16" ANGLES ± 1/2 DEG. DECIMALS ± .010"

MATERIAL:

TOLERANCES DO NOT APPLY TO RAW MATERIAL

REV	DATE	DRW	CHK	DESCRIPTION

Sabre Industries™ INNOVATION DELIVERED

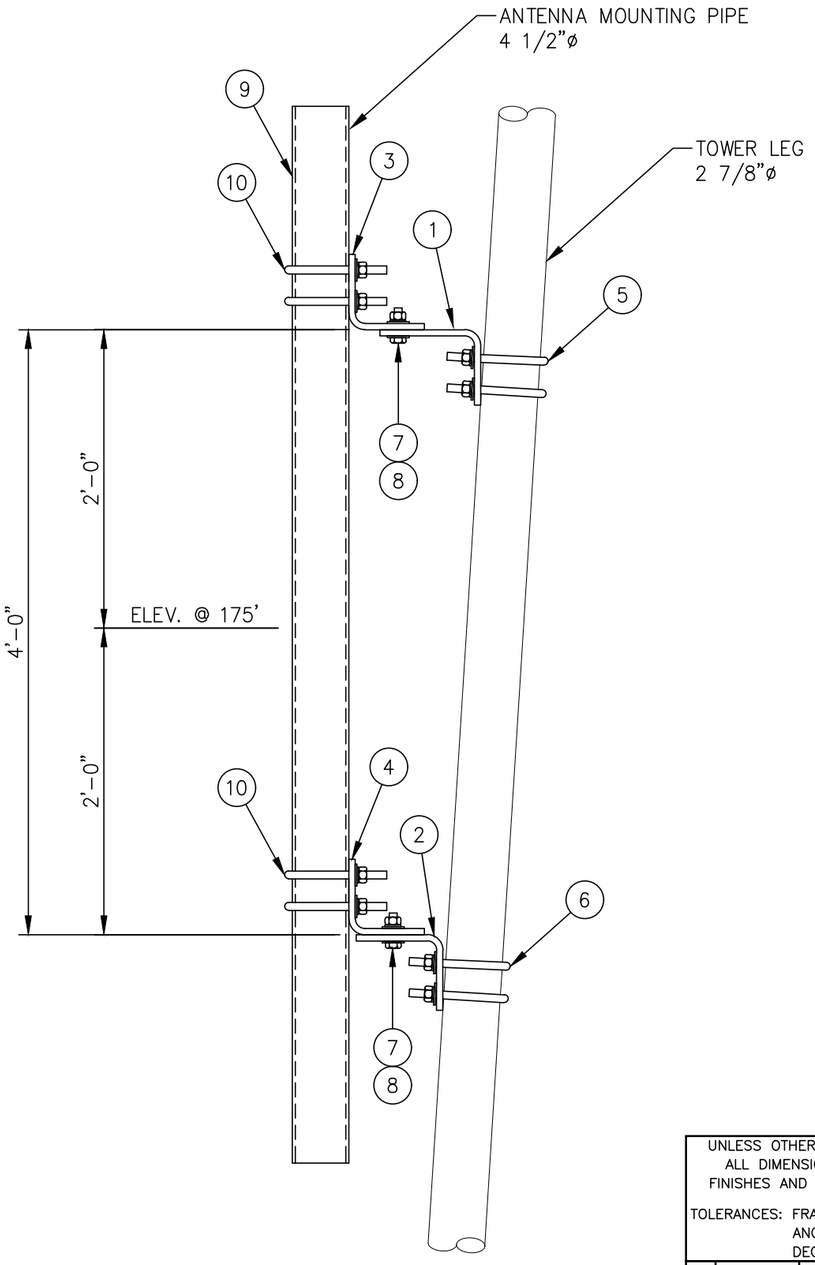
CONFIDENTIAL
This document and the information contained herein is the confidential trade secret property of Sabre Industries, Inc. ("Sabre") and must not be reproduced, copied or used, in whole or in part, for any purpose without the prior written consent of Sabre.
© 2025 Sabre Industries, Inc. All rights reserved.

3 FT. SIDEARMS: 175' ELEVATION

SITE: MCCULLY MOUNTAIN, OR

CUSTOMER: MARION COUNTY OREGON

JOB NO. 563427		SIZE	DRAWING NO.	REV
DATE	08/07/25	B	563427-SA2	0
DRAWN BY	KMP			
CHECKED BY	ZAK		SCALE NONE	PAGE 1 OF 1



ELEVATION VIEW

LIST OF MATERIALS FOR TAPERED LEG PIPE MOUNT KIT C10174018				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
1.	1	CS00216	TOP LEG MOUNT FOR 2 7/8 ø LEG	15
2.	1	CS00215	BOTTOM LEG MOUNT FOR 2 7/8 ø LEG	12
3.	1	CS00214	TOP PIPE MOUNT FOR 4 1/2 ø PIPE	15
4.	1	CS00215	BOTTOM PIPE MOUNT FOR 4 1/2 ø PIPE	12
5.	2	C40034025	U-BOLT ASSEMBLY 5/8 ø X 3 9/16 C-C (TOP LEG MOUNT)	4
6.	2	C40034025	U-BOLT ASSEMBLY 5/8 ø X 3 9/16 C-C (BOTTOM LEG MOUNT)	4
7.	4	C40026024	BOLT ASSEMBLY 5/8 ø X 2 1/4 A325	2
8.	8	C40031003	FLATWASHER, 5/8 ø (F436)	1
			KIT WEIGHT LBS	65

LIST OF ADDITIONAL MATERIALS				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
9.	1	C10981407	ANTENNA MTG. PIPE 4 1/2 ø X 7'-0	58
10.	4	C40034032	U-BOLT ASSEMBLY 5/8 ø X 5 3/16 C-C (PIPE MOUNTS)	9
			ADDITIONAL WEIGHT LBS	67

TOTAL WEIGHT LBS	132

UNLESS OTHERWISE SPECIFIED
ALL DIMENSIONS INCLUDE FINISHES AND ARE IN INCHES
TOLERANCES: FRACTIONS ± 1/16"
ANGLES ± 1/2 DEG.
DECIMALS ± .010"

MATERIAL:

TOLERANCES DO NOT APPLY TO RAW MATERIAL

REV	DATE	DRW	CHK	DESCRIPTION

Sabre Industries™
INNOVATION DELIVERED

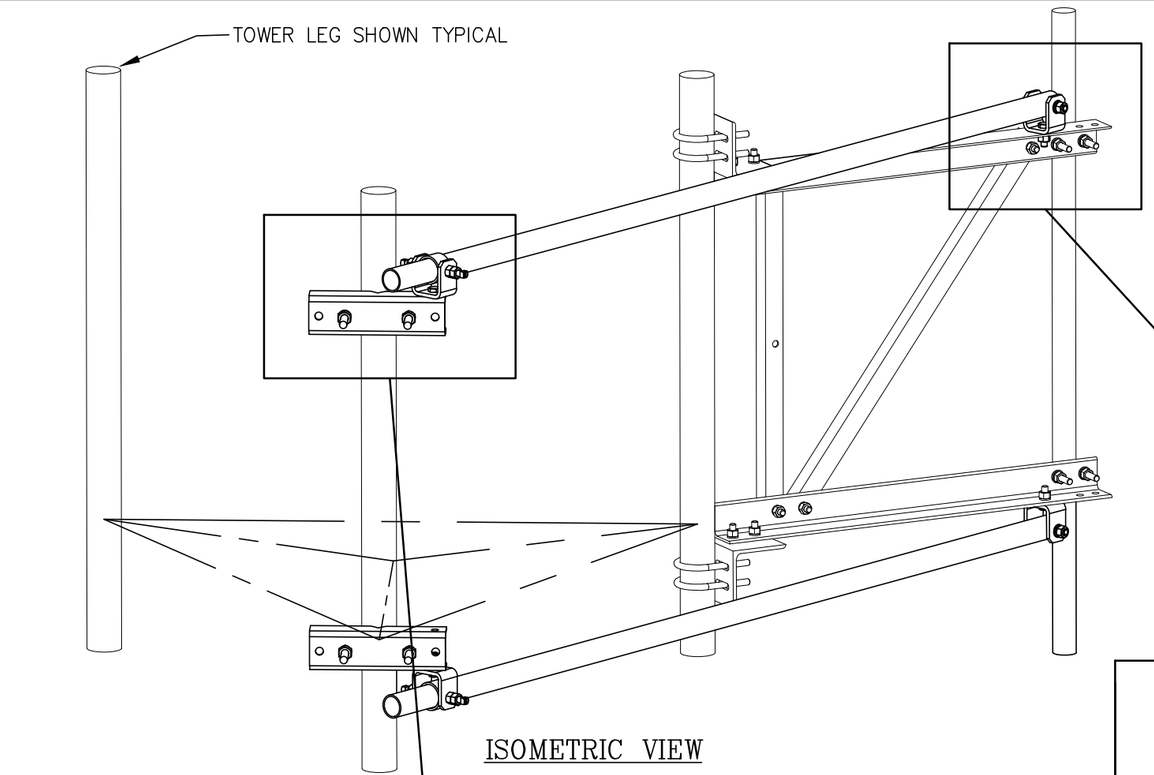
CONFIDENTIAL

This document and the information contained herein is the confidential trade secret property of Sabre Industries, Inc. ("Sabre") and must not be reproduced, copied or used, in whole or in part, for any purpose without the prior written consent of Sabre.
© 2025 Sabre Industries, Inc. All rights reserved.

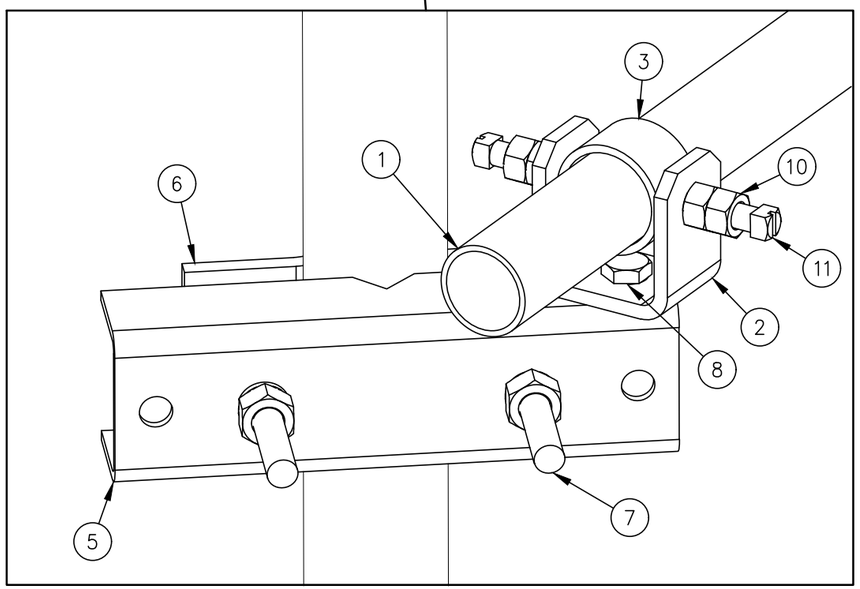
PIPE MOUNTS FOR SIDEARMS: 175' ELEVATION
SITE: MCCULLY MOUNTAIN, OR
CUSTOMER: MARION COUNTY OREGON

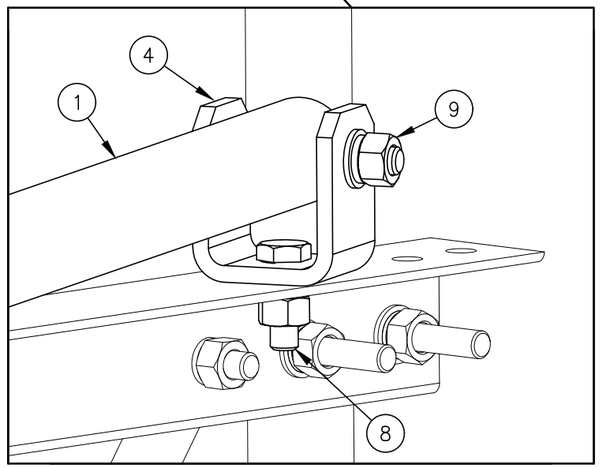
JOB NO. 563427		SIZE	DRAWING NO.		REV
DATE	8/7/25	B	563427-PM2		0
DRAWN BY	KMP			SCALE	PAGE
CHECKED BY	ZAK			None	1 OF 1

EXHIBIT K



ISOMETRIC VIEW





C10179002 SWIVEL KNUCKLE TIEBACK

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
1	1	CS02089	TIEBACK 2 3/8 X .134 X 13'-3"	43
2	1	CW00013	SWIVEL PLATE WELDMENT	3
3	1	CS00097	PIPE, SLEEVE 2 7/8 O.D. X W/0.203 X 0'-1 3/4	1
4	1	CS00098	BENT SWIVEL PLATE	3
5	1	CS01360	PLATE, MOUNTING BRACKET (FORMED CHANNEL)	9
6	1	CS01361	PLATE, 2 HOLE ADAPTER CLAMP	3
7	2	C40140001	BOLT ASSEMBLY, 3/4 X 10 A307 W/NUT, LKW, FLW	4
8	2	C40026023	BOLT ASSEMBLY, 5/8 ø X 2 A325	1
9	1	C40026033	BOLT ASSEMBLY, 5/8 ø X 4 1/2 A325	1
10	2	C40042007	HEX NUT, 5/8 A194 GRADE 2H	1
11	2	C40998007	SQ. HEAD SET SCREW, 5/8 X 2 1/2	1
			TOTAL WEIGHT LBS	70

QUANTITIES SHOWN ABOVE ARE FOR (1) SWIVEL KNUCKLE TIEBACK KIT ONLY.
(2) KITS ARE REQUIRED FOR THIS SIDEARM ASSEMBLY

UNLESS OTHERWISE SPECIFIED
ALL DIMENSIONS INCLUDE
FINISHES AND ARE IN INCHES

TOLERANCES: FRACTIONS ± 1/16"
ANGLES ± 1/2 DEG.
DECIMALS ± .010"

MATERIAL:

TOLERANCES DO NOT APPLY TO RAW MATERIAL

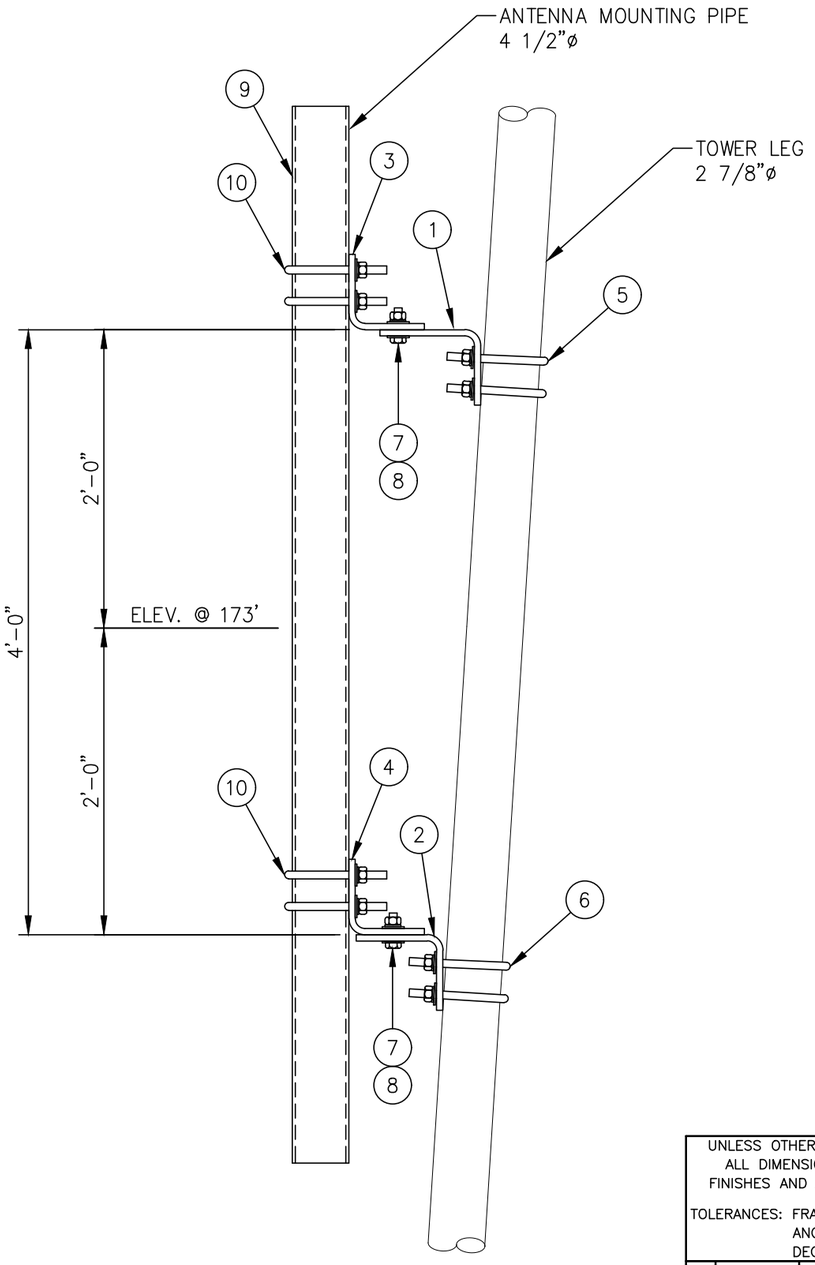
REV	DATE	DRW	CHK	DESCRIPTION

Sabre Industries™
INNOVATION DELIVERED

CONFIDENTIAL
This document and the information contained herein is the confidential trade secret property of Sabre Industries, Inc. ("Sabre") and must not be reproduced, copied or used, in whole or in part, for any purpose without the prior written consent of Sabre.
© 2025 Sabre Industries, Inc. All rights reserved.

SWIVEL KNUCKLE TIEBACKS: 175' ELEVATION
SITE: MCCULLY MOUNTAIN, OR
CUSTOMER: MARION COUNTY OREGON

JOB NO. 563427		SIZE	DRAWING NO.	REV
DATE	08/07/25	B	563427-ST2	0
DRAWN BY	KMP			
CHECKED BY	ZAK		SCALE NONE	PAGE 1 OF 1



ELEVATION VIEW

LIST OF MATERIALS FOR TAPERED LEG PIPE MOUNT KIT C10174018				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
1.	1	CS00216	TOP LEG MOUNT FOR 2 7/8 ø LEG	15
2.	1	CS00215	BOTTOM LEG MOUNT FOR 2 7/8 ø LEG	12
3.	1	CS00214	TOP PIPE MOUNT FOR 4 1/2 ø PIPE	15
4.	1	CS00215	BOTTOM PIPE MOUNT FOR 4 1/2 ø PIPE	12
5.	2	C40034025	U-BOLT ASSEMBLY 5/8 ø X 3 9/16 C-C (TOP LEG MOUNT)	4
6.	2	C40034025	U-BOLT ASSEMBLY 5/8 ø X 3 9/16 C-C (BOTTOM LEG MOUNT)	4
7.	4	C40026024	BOLT ASSEMBLY 5/8 ø X 2 1/4 A325	2
8.	8	C40031003	FLATWASHER, 5/8 ø (F436)	1
			KIT WEIGHT LBS	65

LIST OF ADDITIONAL MATERIALS				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
9.	1	C10981407	ANTENNA MTG. PIPE 4 1/2 ø X 7'-0	58
10.	4	C40034032	U-BOLT ASSEMBLY 5/8 ø X 5 3/16 C-C (PIPE MOUNTS)	9
			ADDITIONAL WEIGHT LBS	67

TOTAL WEIGHT LBS	132

UNLESS OTHERWISE SPECIFIED
ALL DIMENSIONS INCLUDE FINISHES AND ARE IN INCHES

TOLERANCES: FRACTIONS ± 1/16"
ANGLES ± 1/2 DEG.
DECIMALS ± .010"

MATERIAL:

TOLERANCES DO NOT APPLY TO RAW MATERIAL

REV	DATE	DRW	CHK	DESCRIPTION

Sabre Industries™
INNOVATION DELIVERED

CONFIDENTIAL

This document and the information contained herein is the confidential trade secret property of Sabre Industries, Inc. ("Sabre") and must not be reproduced, copied or used, in whole or in part, for any purpose without the prior written consent of Sabre.
© 2025 Sabre Industries, Inc. All rights reserved.

PIPE MOUNTS: 173' ELEVATION

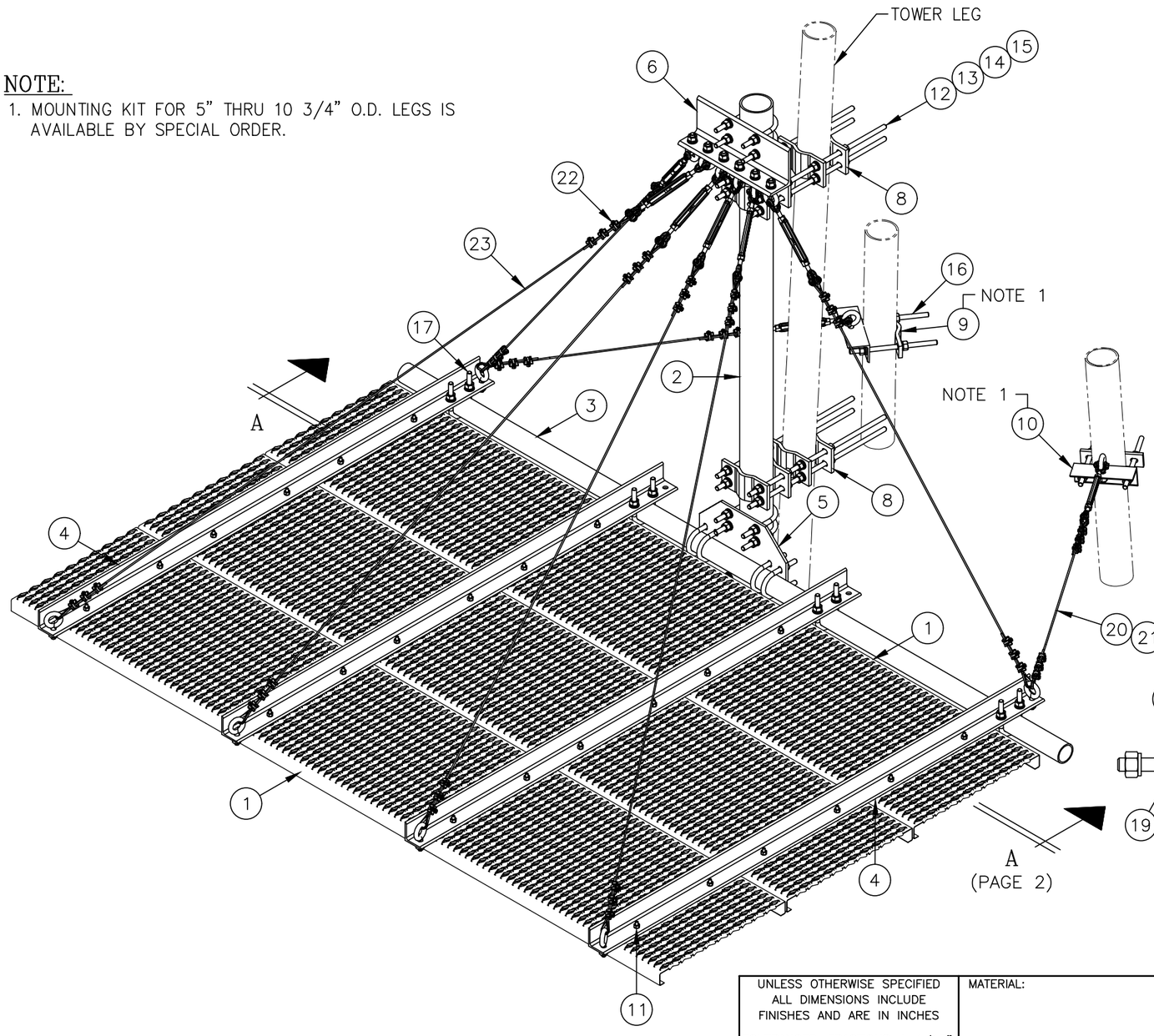
SITE: MCCULLY MOUNTAIN, OR

CUSTOMER: MARION COUNTY OREGON

JOB NO. 563427		SIZE	DRAWING NO.	REV
DATE	8/7/25	B	563427-PM3	0
DRAWN BY	KMP			
CHECKED BY	ZAK		SCALE None	PAGE 1 OF 1

NOTE:

1. MOUNTING KIT FOR 5" THRU 10 3/4" O.D. LEGS IS AVAILABLE BY SPECIAL ORDER.

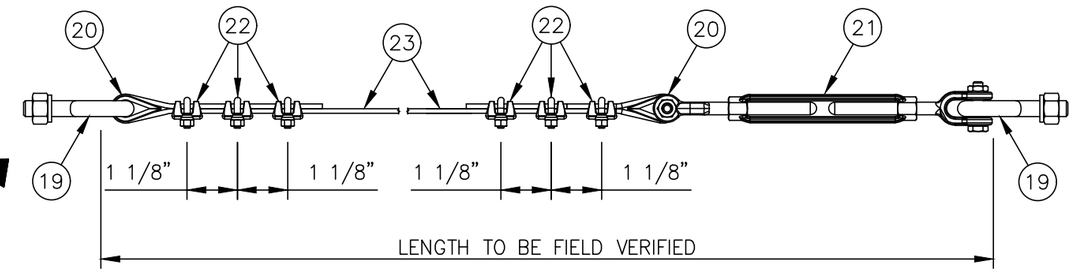


ISOMETRIC VIEW

(SEE PAGE 2 FOR MORE DETAILS)

C30085002 ICE SHIELD ASSEMBLY

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT
1.	3	C20137002	SAFETY GRATING, 2'-0 WIDE BY 10'-0 LONG	222
2.	1	C10981407	PIPE, 4 1/2" O.D. X W/0.180 X 7'-0	58
3.	1	C10901310	PIPE, 2 7/8" O.D. X W/0.203 X 10'-6	63
4.	4	CS00155	ANGLE, ICE SHIELD SUPPORT	143
5.	1	CS00156	PLATE, ICE SHIELD MOUNT	22
6.	1	CS01926	ANGLE, ICE SHIELD HANGER	19
7.	12	CS00158	PLATE, ICE SHIELD BACKUP	28
8.	8	CS00017	4 HOLE ADAPTER CLAMP 1 1/2" TO 5" O.D.	39
9.	2	CS00144	2 HOLE ADAPTER CLAMP 1 1/2" TO 5" O.D.	5
10.	2	CS01925	ANGLE, ICE SHIELD TIE BACK	7
11.	24	C40024006	BOLT ASSEMBLY, 3/8 ø X 2 GR 5	2
12.	16	C40042007	NUT, 5/8 ø A194 GRADE 2H	1
13.	16	C40030012	LOCKWASHER, 5/8 ø	1
14.	16	C40031003	FLATWASHER, 5/8 ø HARDENED ASTM F436	1
15.	8	C40099004	THREADED ROD ASS'Y, 5/8 ø X 2'-2 ASTM A193	22
16.	4	C40099002	THREADED ROD ASS'Y, 5/8 ø X 1'-0 ASTM A193	6
17.	8	C40034025	U-BOLT ASSEMBLY, 5/8 ø X 3 9/16" C-C	14
18.	6	C40034032	U-BOLT ASSEMBLY, 5/8 ø X 5 3/16" C-C	13
19.	14	C40079002	EYEBOLT ASSEMBLY, 5/8 ø X 1 3/4	8
20.	16	C40055011	THIMBLE, 3/16" STD	1
21.	8	C40051018	TURNBUCKLE, 1/2" X 6" J & J HDG	12
22.	48	C40056001	WIRE ROPE CLIP, 3/16"	5
23.	1	C30998120	AIRCRAFT CABLE, 3/16" X 120'-0	9
			TOTAL WEIGHT	701



TYPICAL CABLE ASSEMBLY

UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS INCLUDE FINISHES AND ARE IN INCHES

TOLERANCES: FRACTIONS ± 1/16" ANGLES ± 1/2 DEG. DECIMALS ± .010"

MATERIAL:

TOLERANCES DO NOT APPLY TO RAW MATERIAL

REV	DATE	DRW	CHK	DESCRIPTION
4	1/29/09	WRF	MC	REVISED PART NUMBERS OF ITEMS 6, 10, & EYEBOLTS WERE 3/8" & TURNB. WERE 1/4"
3	1/13/09	MLC	MC	REVISE PIPE (ITEM 2)
2	06/21/06	WRF	WMN	ADDED ISOMETRIC VIEW
1	4/4/03	KLE	DLW	REVISED PART NUMBERS

Sabre Industries™ INNOVATION DELIVERED

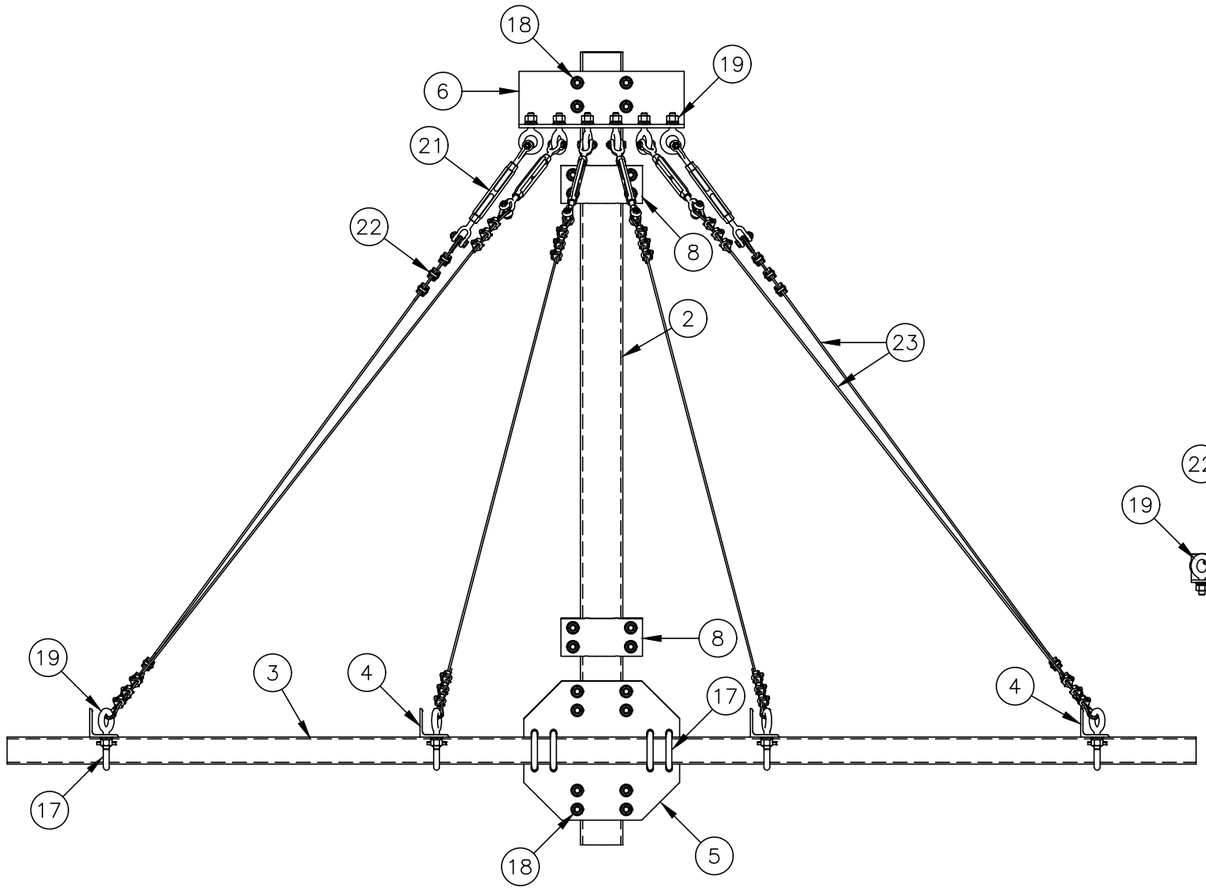
CONFIDENTIAL

This document and the information contained herein is the confidential trade secret property of Sabre Industries, Inc. ("Sabre") and must not be reproduced, copied or used, in whole or in part, for any purpose without the prior written consent of Sabre.

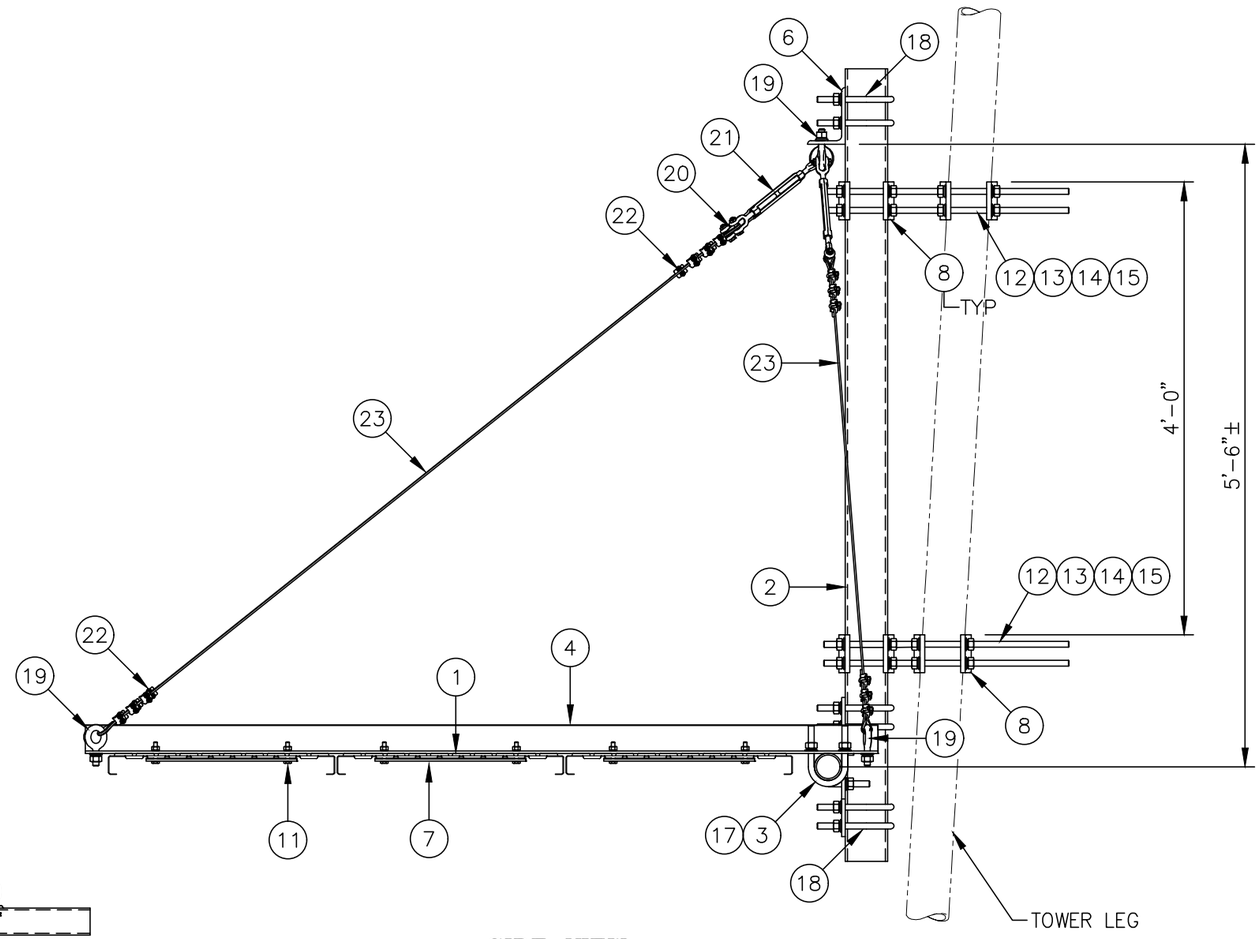
© 2022 Sabre Industries, Inc. All rights reserved.

ICE SHIELD ASSEMBLY FOR 6'-0 & 8'-0 DISH ANTENNA FITS 1 1/2 ø TO 5 ø LEGS

		SIZE	DRAWING NO.	REV
DATE	01/11/01	B	C30085002	4
DRAWN BY	BCT			
CHECKED BY	KLE		SCALE None	PAGE 1 OF 2



SECTION A–A
(GRATING REMOVED FOR CLARITY)



SIDE VIEW

REV	DATE	DRW	CHK	DESCRIPTION
4	1/29/09	WRF	MC	REVISED PART NUMBERS OF ITEMS 6, 10, & EYEBOLTS WERE 3/8" & TURNB. WERE 1/4"
3	1/13/09	MLC	MC	REVISE PIPE (ITEM 2)
2	06/21/06	WRF	WMN	ADDED ISOMETRIC VIEW
1	4/4/03	KLE	DLW	REVISED PART NUMBERS

UNLESS OTHERWISE SPECIFIED
ALL DIMENSIONS INCLUDE FINISHES AND ARE IN INCHES
TOLERANCES: FRACTIONS ± 1/16"
ANGLES ± 1/2 DEG.
DECIMALS ± .010"

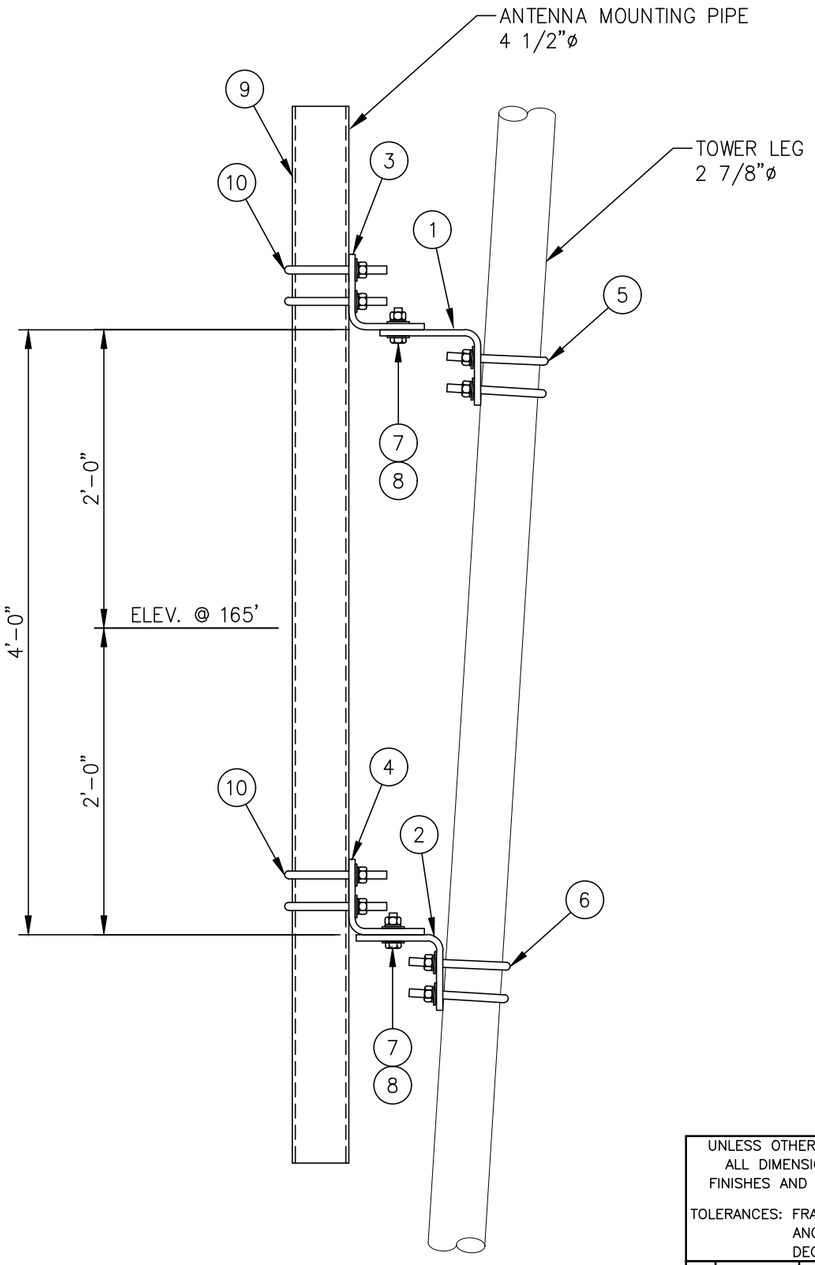
MATERIAL:
TOLERANCES DO NOT APPLY TO RAW MATERIAL

Sabre Industries™
INNOVATION DELIVERED

CONFIDENTIAL
This document and the information contained herein is the confidential trade secret property of Sabre Industries, Inc. ("Sabre") and must not be reproduced, copied or used, in whole or in part, for any purpose without the prior written consent of Sabre.
© 2022 Sabre Industries, Inc. All rights reserved.

ICE SHIELD ASSEMBLY
FOR 6'–0 & 8'–0 DISH ANTENNA
FITS 1 1/2 ø TO 5 ø LEGS

		SIZE	DRAWING NO.	REV
DATE	01/11/01	B	C30085002	4
DRAWN BY	BCT			
CHECKED BY	KLE	SCALE None	PAGE 2 OF 2	



ELEVATION VIEW

LIST OF MATERIALS FOR TAPERED LEG PIPE MOUNT KIT C10174018				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
1.	1	CS00216	TOP LEG MOUNT FOR 2 7/8 ø LEG	15
2.	1	CS00215	BOTTOM LEG MOUNT FOR 2 7/8 ø LEG	12
3.	1	CS00214	TOP PIPE MOUNT FOR 4 1/2 ø PIPE	15
4.	1	CS00215	BOTTOM PIPE MOUNT FOR 4 1/2 ø PIPE	12
5.	2	C40034025	U-BOLT ASSEMBLY 5/8 ø X 3 9/16 C-C (TOP LEG MOUNT)	4
6.	2	C40034025	U-BOLT ASSEMBLY 5/8 ø X 3 9/16 C-C (BOTTOM LEG MOUNT)	4
7.	4	C40026024	BOLT ASSEMBLY 5/8 ø X 2 1/4 A325	2
8.	8	C40031003	FLATWASHER, 5/8 ø (F436)	1
			KIT WEIGHT LBS	65

LIST OF ADDITIONAL MATERIALS				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
9.	1	C10981407	ANTENNA MTG. PIPE 4 1/2 ø X 7'-0	58
10.	4	C40034032	U-BOLT ASSEMBLY 5/8 ø X 5 3/16 C-C (PIPE MOUNTS)	9
			ADDITIONAL WEIGHT LBS	67

TOTAL WEIGHT LBS	132

UNLESS OTHERWISE SPECIFIED
ALL DIMENSIONS INCLUDE FINISHES AND ARE IN INCHES
TOLERANCES: FRACTIONS ± 1/16"
ANGLES ± 1/2 DEG.
DECIMALS ± .010"

MATERIAL:

TOLERANCES DO NOT APPLY TO RAW MATERIAL

REV	DATE	DRW	CHK	DESCRIPTION

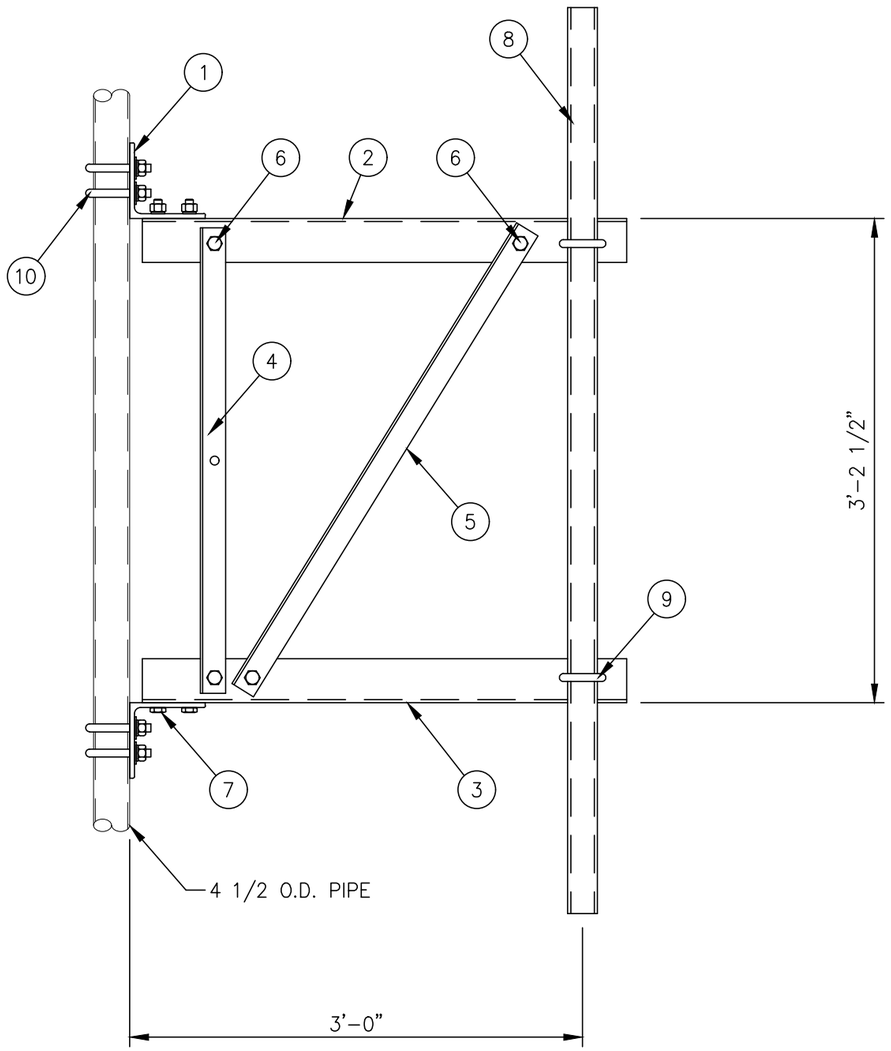
Sabre Industries™
INNOVATION DELIVERED

CONFIDENTIAL

This document and the information contained herein is the confidential trade secret property of Sabre Industries, Inc. ("Sabre") and must not be reproduced, copied or used, in whole or in part, for any purpose without the prior written consent of Sabre.
© 2025 Sabre Industries, Inc. All rights reserved.

PIPE MOUNT: 165' ELEVATION
SITE: MCCULLY MOUNTAIN, OR
CUSTOMER: MARION COUNTY OREGON

JOB NO. 563427		SIZE	DRAWING NO.		REV
DATE	8/7/25	B	563427-PM4		0
DRAWN BY	KMP			SCALE	PAGE
CHECKED BY	ZAK			None	1 OF 1



C10151103 3 FT. SIDEARM ASSEMBLY			
1	CK00060	SIDEARM ANGLE KIT	78
1	– – –	MISC HARDWARE (FRAMING)	4
1	C10900105	PIPE ANTENNA MOUNTING KIT 2 3/8" ø X 5'-0	19
4	C40034032	U-BOLT ASSEMBLY 5/8" ø X 5 3/16 C-C	9
		TOTAL WEIGHT LBS	110

CK00060 KIT LIST OF MATERIAL				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
1	2	CS00067	ANGLE, BOOM SUPPORT	23
2	1	CS01223	ANGLE, TOP CHORD	19
3	1	CS01224	ANGLE, BOTTOM CHORD	19
4	1	CS00065	ANGLE, VERTICAL	8
5	1	CS01228	ANGLE, DIAGONAL	9
			TOTAL WEIGHT LBS	78

MISC HARDWARE (FRAMING)				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
6	4	C40026022	BOLT ASSEMBLY, 5/8 ø X 1 3/4 A325	2
7	4	C40026023	BOLT ASSEMBLY, 5/8 ø X 2 A325	2
			TOTAL WEIGHT LBS	4

C10900105 ANTENNA PIPE MOUNTING KIT				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
8	1	C10981223	ANTENNA MTG. PIPE 2 3/8" ø X 5'-0	16
9	2	C40034023	U-BOLT ASSEMBLY 5/8" ø X 3 1/16 C-C	3
			TOTAL WEIGHT LBS	19

MISC HARDWARE				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
10	4	C40034032	U-BOLT ASSEMBLY 5/8" ø X 5 3/16 C-C	9
			TOTAL WEIGHT LBS	9

NOTES:

1. IF THE MOUNT IS NOT ON THE STRAIGHT PORTION OF THE TOWER SEE SITE SPECIFIC PIPE MOUNT.
2. QUANTITIES SHOWN IN LIST OF MATERIALS ARE FOR ONE (1) SIDEARM ASSEMBLY ONLY.

UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS INCLUDE FINISHES AND ARE IN INCHES

TOLERANCES: FRACTIONS ± 1/16" ANGLES ± 1/2 DEG. DECIMALS ± .010"

MATERIAL:

TOLERANCES DO NOT APPLY TO RAW MATERIAL

REV	DATE	DRW	CHK	DESCRIPTION

Sabre Industries™ INNOVATION DELIVERED

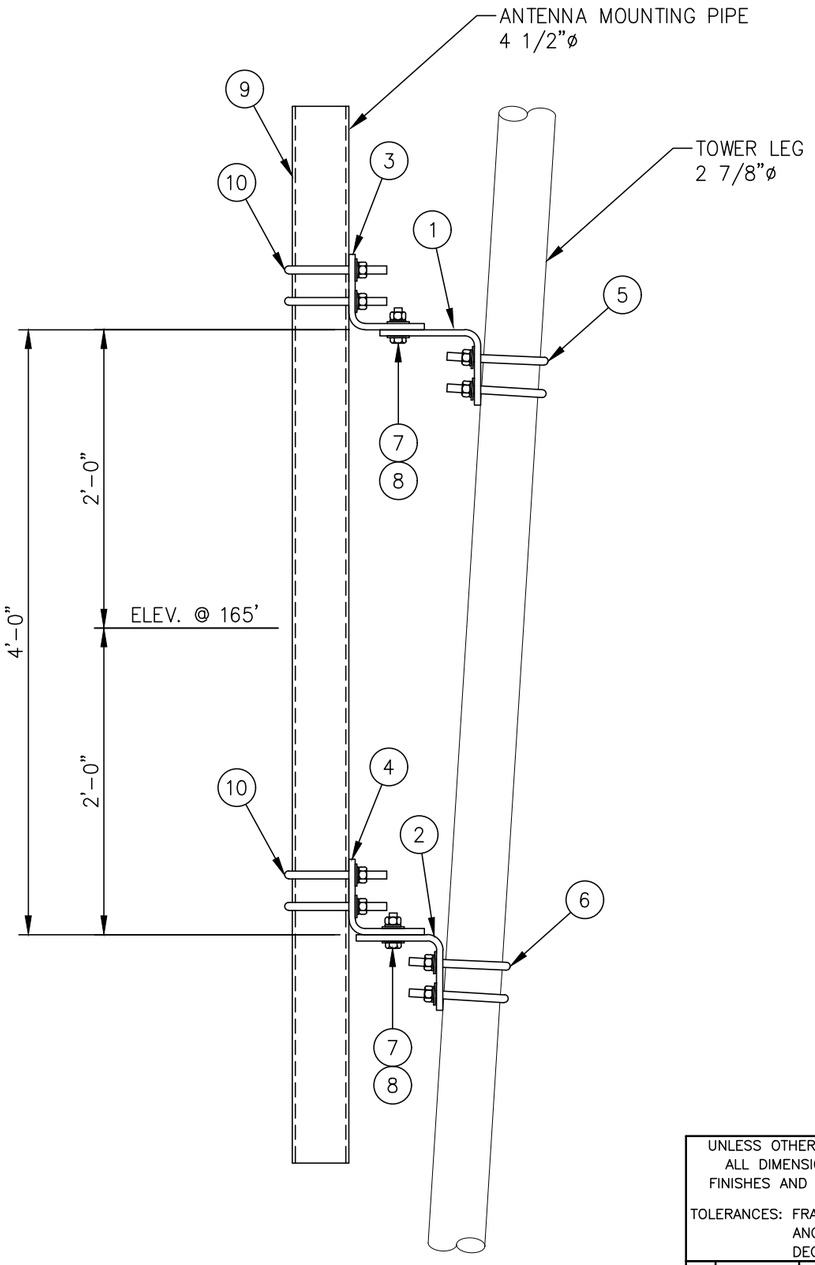
CONFIDENTIAL
This document and the information contained herein is the confidential trade secret property of Sabre Industries, Inc. ("Sabre") and must not be reproduced, copied or used, in whole or in part, for any purpose without the prior written consent of Sabre.
© 2025 Sabre Industries, Inc. All rights reserved.

3 FT. SIDEARM: 165' ELEVATION

SITE: MCCULLY MOUNTAIN, OR

CUSTOMER: MARION COUNTY OREGON

JOB NO. 563427		SIZE	DRAWING NO.	REV
DATE	08/07/25	B	563427-SA3	0
DRAWN BY	KMP			
CHECKED BY	ZAK	SCALE NONE	PAGE 1 OF 1	



ELEVATION VIEW

LIST OF MATERIALS FOR TAPERED LEG PIPE MOUNT KIT C10174018				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
1.	1	CS00216	TOP LEG MOUNT FOR 2 7/8 ø LEG	15
2.	1	CS00215	BOTTOM LEG MOUNT FOR 2 7/8 ø LEG	12
3.	1	CS00214	TOP PIPE MOUNT FOR 4 1/2 ø PIPE	15
4.	1	CS00215	BOTTOM PIPE MOUNT FOR 4 1/2 ø PIPE	12
5.	2	C40034025	U-BOLT ASSEMBLY 5/8 ø X 3 9/16 C-C (TOP LEG MOUNT)	4
6.	2	C40034025	U-BOLT ASSEMBLY 5/8 ø X 3 9/16 C-C (BOTTOM LEG MOUNT)	4
7.	4	C40026024	BOLT ASSEMBLY 5/8 ø X 2 1/4 A325	2
8.	8	C40031003	FLATWASHER, 5/8 ø (F436)	1
			KIT WEIGHT LBS	65

LIST OF ADDITIONAL MATERIALS				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
9.	1	C10981407	ANTENNA MTG. PIPE 4 1/2 ø X 7'-0	58
10.	4	C40034032	U-BOLT ASSEMBLY 5/8 ø X 5 3/16 C-C (PIPE MOUNTS)	9
			ADDITIONAL WEIGHT LBS	67

TOTAL WEIGHT LBS	132

UNLESS OTHERWISE SPECIFIED
ALL DIMENSIONS INCLUDE FINISHES AND ARE IN INCHES
TOLERANCES: FRACTIONS ± 1/16"
ANGLES ± 1/2 DEG.
DECIMALS ± .010"

MATERIAL:

TOLERANCES DO NOT APPLY TO RAW MATERIAL

REV	DATE	DRW	CHK	DESCRIPTION

Sabre Industries™
INNOVATION DELIVERED

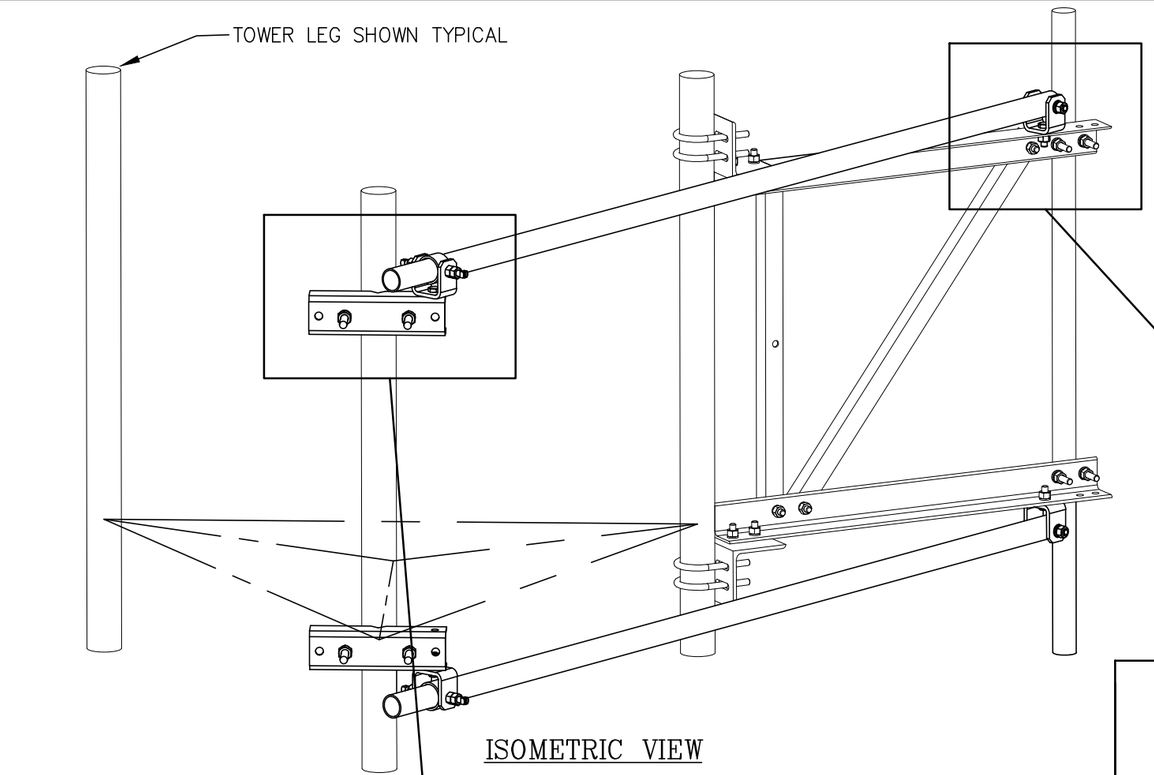
CONFIDENTIAL

This document and the information contained herein is the confidential trade secret property of Sabre Industries, Inc. ("Sabre") and must not be reproduced, copied or used, in whole or in part, for any purpose without the prior written consent of Sabre.
© 2025 Sabre Industries, Inc. All rights reserved.

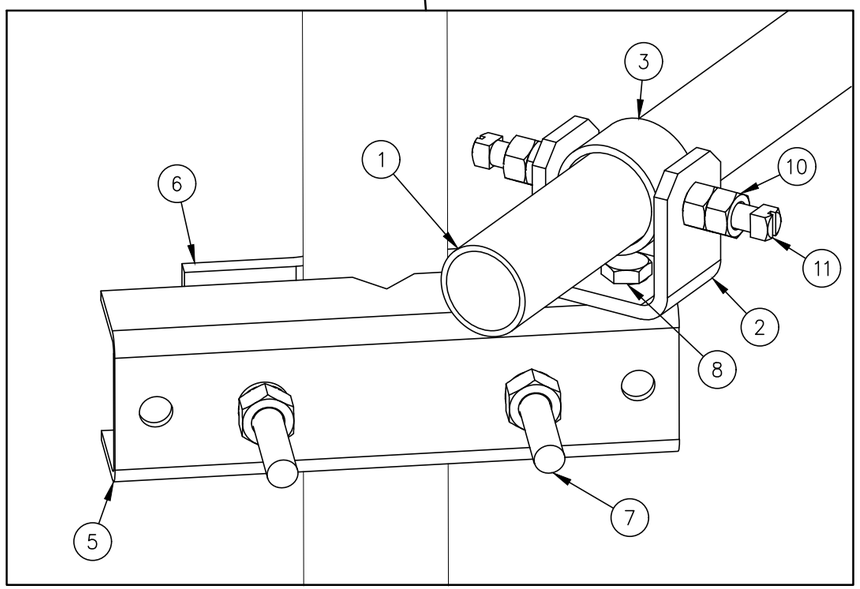
PIPE MOUNT FOR SIDEARM: 165' ELEVATION
SITE: MCCULLY MOUNTAIN, OR
CUSTOMER: MARION COUNTY OREGON

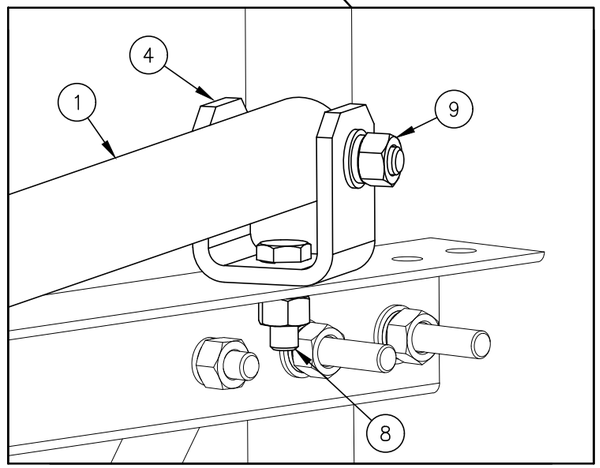
JOB NO. 563427		SIZE	DRAWING NO.		REV
DATE	8/7/25	B	563427-PM5		0
DRAWN BY	KMP			SCALE	PAGE
CHECKED BY	ZAK			None	1 OF 1

EXHIBIT K



ISOMETRIC VIEW





C10179002 SWIVEL KNUCKLE TIEBACK

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
1	1	CS02089	TIEBACK 2 3/8 X .134 X 13'-3"	43
2	1	CW00013	SWIVEL PLATE WELDMENT	3
3	1	CS00097	PIPE, SLEEVE 2 7/8 O.D. X W/0.203 X 0'-1 3/4	1
4	1	CS00098	BENT SWIVEL PLATE	3
5	1	CS01360	PLATE, MOUNTING BRACKET (FORMED CHANNEL)	9
6	1	CS01361	PLATE, 2 HOLE ADAPTER CLAMP	3
7	2	C40140001	BOLT ASSEMBLY, 3/4 X 10 A307 W/NUT, LKW, FLW	4
8	2	C40026023	BOLT ASSEMBLY, 5/8 ø X 2 A325	1
9	1	C40026033	BOLT ASSEMBLY, 5/8 ø X 4 1/2 A325	1
10	2	C40042007	HEX NUT, 5/8 A194 GRADE 2H	1
11	2	C40998007	SQ. HEAD SET SCREW, 5/8 X 2 1/2	1
			TOTAL WEIGHT LBS	70

QUANTITIES SHOWN ABOVE ARE FOR (1) SWIVEL KNUCKLE TIEBACK KIT ONLY.
(2) KITS ARE REQUIRED FOR THIS SIDEARM ASSEMBLY

UNLESS OTHERWISE SPECIFIED
ALL DIMENSIONS INCLUDE
FINISHES AND ARE IN INCHES

TOLERANCES: FRACTIONS ± 1/16"
ANGLES ± 1/2 DEG.
DECIMALS ± .010"

MATERIAL:

TOLERANCES DO NOT APPLY
TO RAW MATERIAL

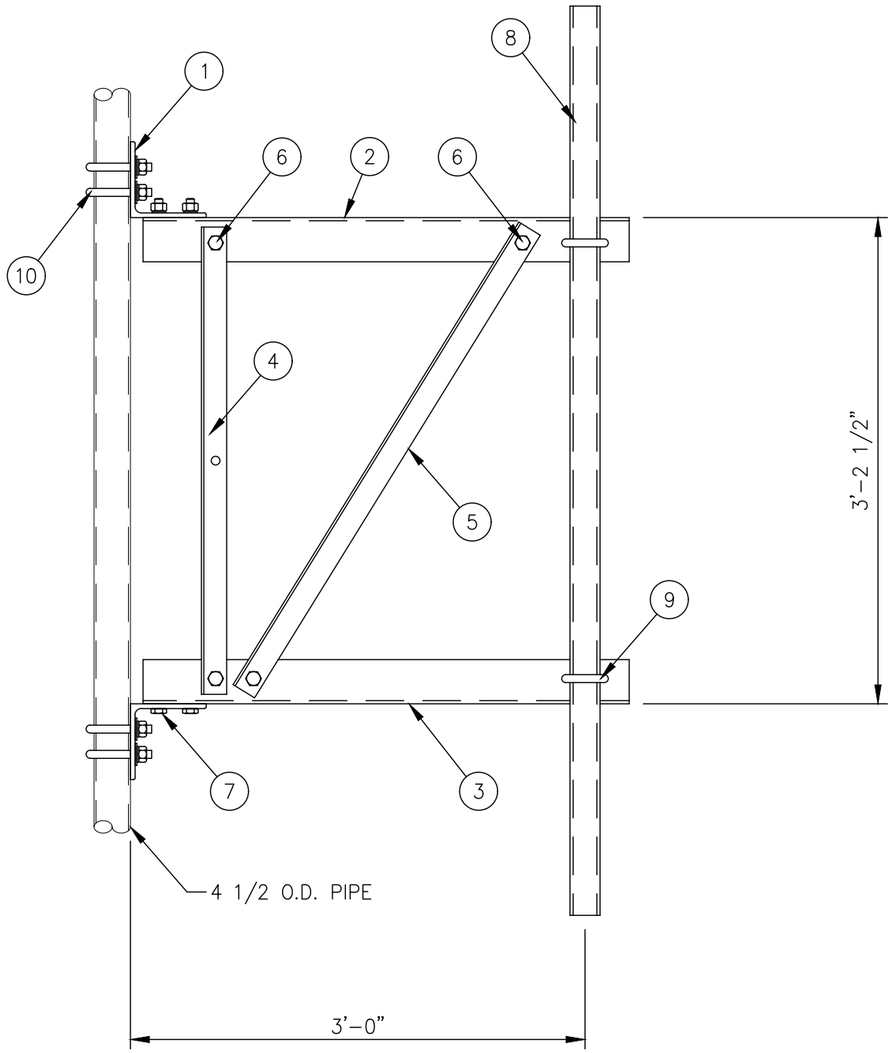
REV	DATE	DRW	CHK	DESCRIPTION

Sabre Industries™
INNOVATION DELIVERED

CONFIDENTIAL
This document and the information contained herein is the confidential trade secret property of Sabre Industries, Inc. ("Sabre") and must not be reproduced, copied or used, in whole or in part, for any purpose without the prior written consent of Sabre.
© 2025 Sabre Industries, Inc. All rights reserved.

SWIVEL KNUCKLE TIEBACKS: 165' ELEVATION
SITE: MCCULLY MOUNTAIN, OR
CUSTOMER: MARION COUNTY OREGON

JOB NO. 563427		SIZE	DRAWING NO.	REV
DATE	08/07/25	B	563427-ST3	0
DRAWN BY	KMP			
CHECKED BY	ZAK		SCALE NONE	PAGE 1 OF 1



C10151103 3 FT. SIDEARM ASSEMBLY			
1	CK00060	SIDEARM ANGLE KIT	78
1	– – –	MISC HARDWARE (FRAMING)	4
1	C10900104	PIPE ANTENNA MOUNTING KIT 2 3/8" ø X 4'-0	16
4	C40034032	U-BOLT ASSEMBLY 5/8" ø X 5 3/16 C-C	9
		TOTAL WEIGHT LBS	107

CK00060 KIT LIST OF MATERIAL				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
1	2	CS00067	ANGLE, BOOM SUPPORT	23
2	1	CS01223	ANGLE, TOP CHORD	19
3	1	CS01224	ANGLE, BOTTOM CHORD	19
4	1	CS00065	ANGLE, VERTICAL	8
5	1	CS01228	ANGLE, DIAGONAL	9
			TOTAL WEIGHT LBS	78

MISC HARDWARE (FRAMING)				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
6	4	C40026022	BOLT ASSEMBLY, 5/8 ø X 1 3/4 A325	2
7	4	C40026023	BOLT ASSEMBLY, 5/8 ø X 2 A325	2
			TOTAL WEIGHT LBS	4

C10900104 ANTENNA PIPE MOUNTING KIT				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
8	1	C10981204	ANTENNA MTG. PIPE 2 3/8" ø X 4'-0	13
9	2	C40034023	U-BOLT ASSEMBLY 5/8" ø X 3 1/16 C-C	3
			TOTAL WEIGHT LBS	16

MISC HARDWARE				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
10	4	C40034032	U-BOLT ASSEMBLY 5/8" ø X 5 3/16 C-C	9
			TOTAL WEIGHT LBS	9

NOTES:

1. IF THE MOUNT IS NOT ON THE STRAIGHT PORTION OF THE TOWER SEE SITE SPECIFIC PIPE MOUNT.
2. QUANTITIES SHOWN IN LIST OF MATERIALS ARE FOR ONE (1) SIDEARM ASSEMBLY ONLY.

UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS INCLUDE FINISHES AND ARE IN INCHES

TOLERANCES: FRACTIONS ± 1/16" ANGLES ± 1/2 DEG. DECIMALS ± .010"

MATERIAL:

TOLERANCES DO NOT APPLY TO RAW MATERIAL

REV	DATE	DRW	CHK	DESCRIPTION

Sabre Industries™ INNOVATION DELIVERED

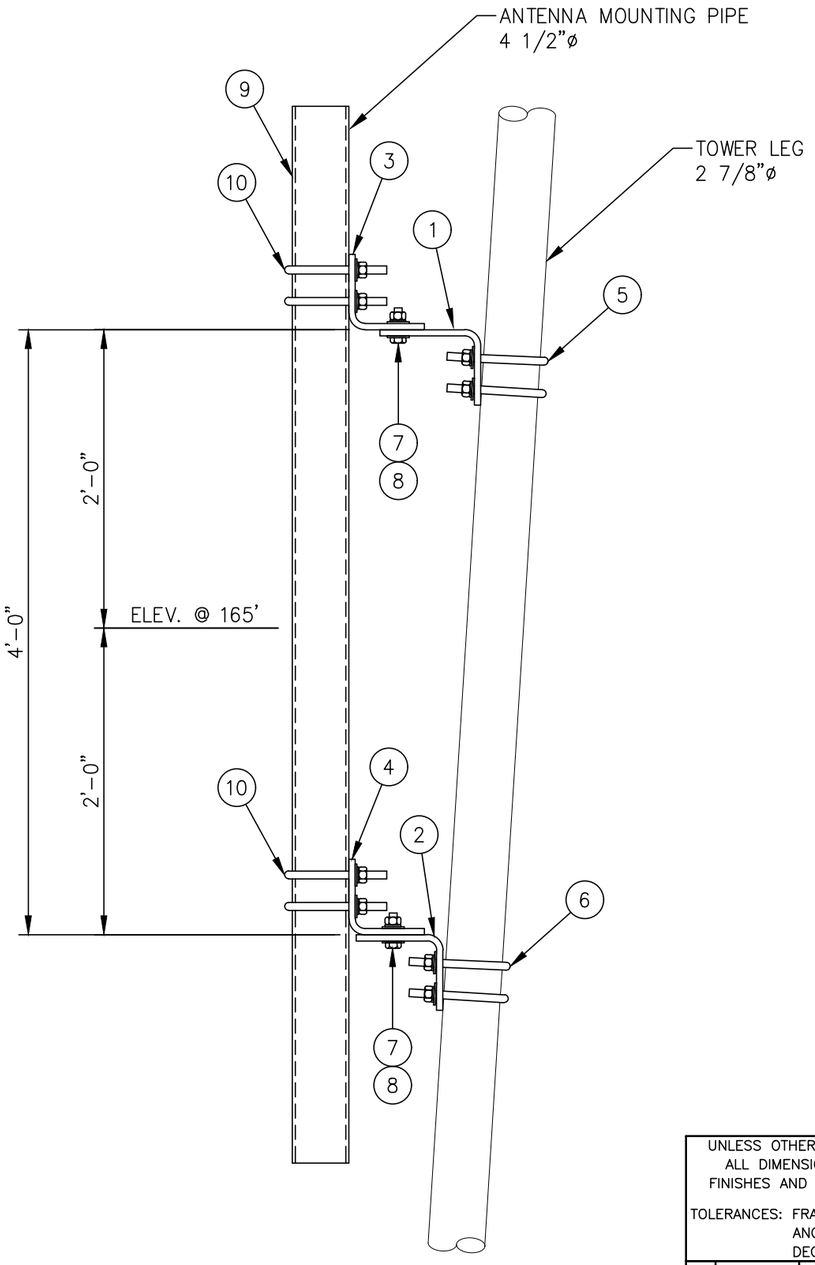
CONFIDENTIAL
This document and the information contained herein is the confidential trade secret property of Sabre Industries, Inc. ("Sabre") and must not be reproduced, copied or used, in whole or in part, for any purpose without the prior written consent of Sabre.
© 2025 Sabre Industries, Inc. All rights reserved.

3 FT. SIDEARM: 163' ELEVATION

SITE: MCCULLY MOUNTAIN, OR

CUSTOMER: MARION COUNTY OREGON

JOB NO. 563427		SIZE	DRAWING NO.	REV
DATE	08/07/25	B	563427-SA4	0
DRAWN BY	KMP			
CHECKED BY	ZAK		SCALE NONE	PAGE 1 OF 1



ELEVATION VIEW

LIST OF MATERIALS FOR TAPERED LEG PIPE MOUNT KIT C10174018				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
1.	1	CS00216	TOP LEG MOUNT FOR 2 7/8 ø LEG	15
2.	1	CS00215	BOTTOM LEG MOUNT FOR 2 7/8 ø LEG	12
3.	1	CS00214	TOP PIPE MOUNT FOR 4 1/2 ø PIPE	15
4.	1	CS00215	BOTTOM PIPE MOUNT FOR 4 1/2 ø PIPE	12
5.	2	C40034025	U-BOLT ASSEMBLY 5/8 ø X 3 9/16 C-C (TOP LEG MOUNT)	4
6.	2	C40034025	U-BOLT ASSEMBLY 5/8 ø X 3 9/16 C-C (BOTTOM LEG MOUNT)	4
7.	4	C40026024	BOLT ASSEMBLY 5/8 ø X 2 1/4 A325	2
8.	8	C40031003	FLATWASHER, 5/8 ø (F436)	1
			KIT WEIGHT LBS	65

LIST OF ADDITIONAL MATERIALS				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
9.	1	C10981407	ANTENNA MTG. PIPE 4 1/2 ø X 7'-0	58
10.	4	C40034032	U-BOLT ASSEMBLY 5/8 ø X 5 3/16 C-C (PIPE MOUNTS)	9
			ADDITIONAL WEIGHT LBS	67

TOTAL WEIGHT LBS	132

UNLESS OTHERWISE SPECIFIED
ALL DIMENSIONS INCLUDE FINISHES AND ARE IN INCHES
TOLERANCES: FRACTIONS ± 1/16"
ANGLES ± 1/2 DEG.
DECIMALS ± .010"

MATERIAL:

TOLERANCES DO NOT APPLY TO RAW MATERIAL

REV	DATE	DRW	CHK	DESCRIPTION

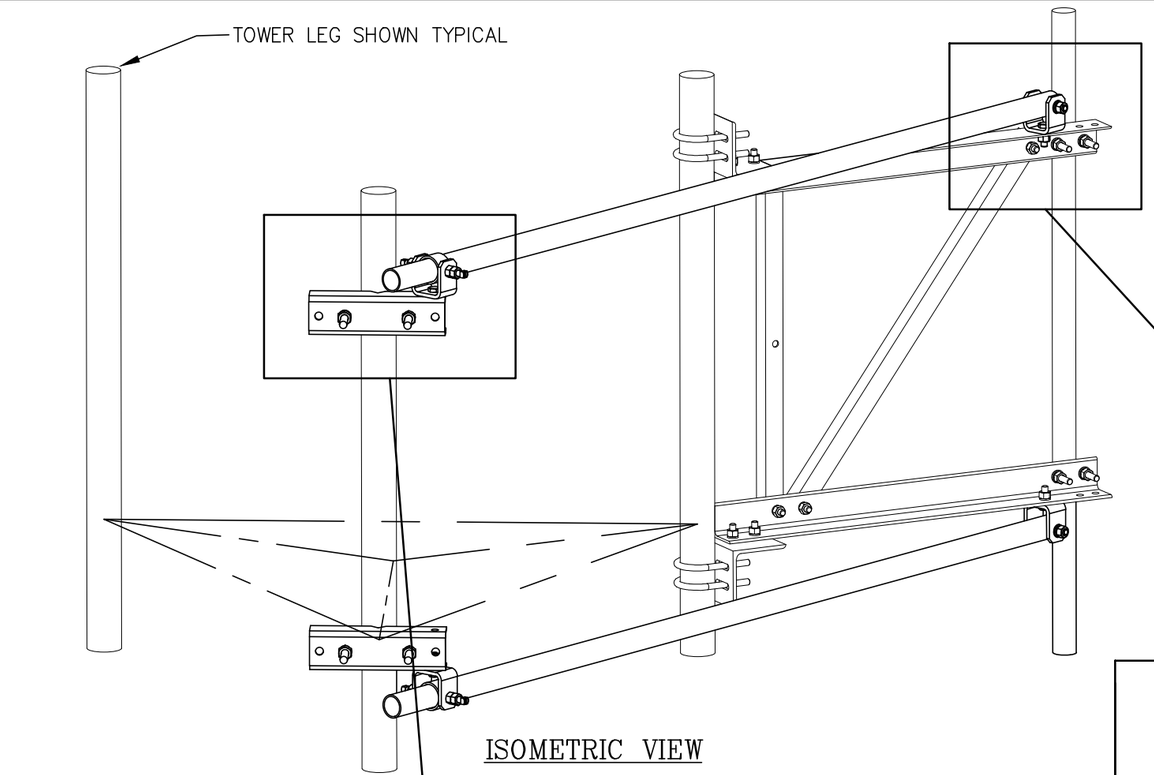
Sabre Industries™
INNOVATION DELIVERED

CONFIDENTIAL
This document and the information contained herein is the confidential trade secret property of Sabre Industries, Inc. ("Sabre") and must not be reproduced, copied or used, in whole or in part, for any purpose without the prior written consent of Sabre.
© 2025 Sabre Industries, Inc. All rights reserved.

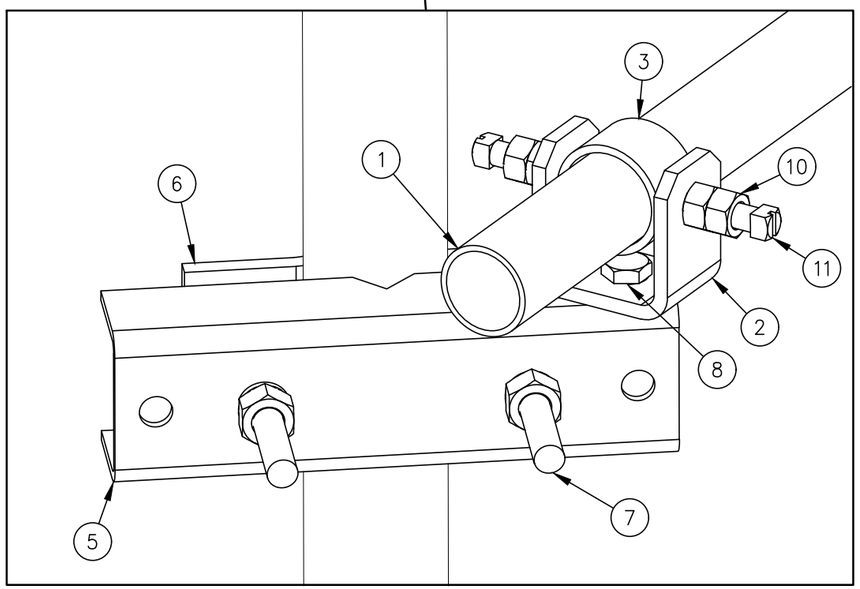
PIPE MOUNT FOR SIDEARM: 163' ELEVATION
SITE: MCCULLY MOUNTAIN, OR
CUSTOMER: MARION COUNTY OREGON

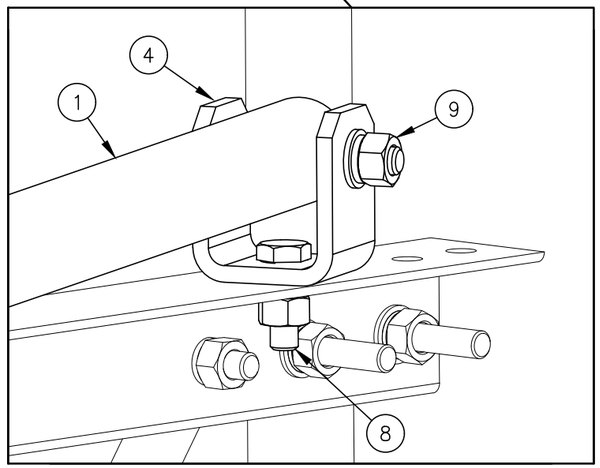
JOB NO. 563427		SIZE	DRAWING NO.		REV
DATE	8/7/25	B	563427-PM6		0
DRAWN BY	KMP			SCALE	PAGE
CHECKED BY	ZAK			None	1 OF 1

EXHIBIT K



ISOMETRIC VIEW





C10179002 SWIVEL KNUCKLE TIEBACK

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
1	1	CS02089	TIEBACK 2 3/8 X .134 X 13'-3"	43
2	1	CW00013	SWIVEL PLATE WELDMENT	3
3	1	CS00097	PIPE, SLEEVE 2 7/8 O.D. X W/0.203 X 0'-1 3/4	1
4	1	CS00098	BENT SWIVEL PLATE	3
5	1	CS01360	PLATE, MOUNTING BRACKET (FORMED CHANNEL)	9
6	1	CS01361	PLATE, 2 HOLE ADAPTER CLAMP	3
7	2	C40140001	BOLT ASSEMBLY, 3/4 X 10 A307 W/NUT, LKW, FLW	4
8	2	C40026023	BOLT ASSEMBLY, 5/8 ø X 2 A325	1
9	1	C40026033	BOLT ASSEMBLY, 5/8 ø X 4 1/2 A325	1
10	2	C40042007	HEX NUT, 5/8 A194 GRADE 2H	1
11	2	C40998007	SQ. HEAD SET SCREW, 5/8 X 2 1/2	1
			TOTAL WEIGHT LBS	70

QUANTITIES SHOWN ABOVE ARE FOR (1) SWIVEL KNUCKLE TIEBACK KIT ONLY.
(2) KITS ARE REQUIRED FOR THIS SIDEARM ASSEMBLY

UNLESS OTHERWISE SPECIFIED
ALL DIMENSIONS INCLUDE
FINISHES AND ARE IN INCHES

TOLERANCES: FRACTIONS ± 1/16"
ANGLES ± 1/2 DEG.
DECIMALS ± .010"

MATERIAL:

TOLERANCES DO NOT APPLY TO RAW MATERIAL

REV	DATE	DRW	CHK	DESCRIPTION

Sabre Industries™
INNOVATION DELIVERED

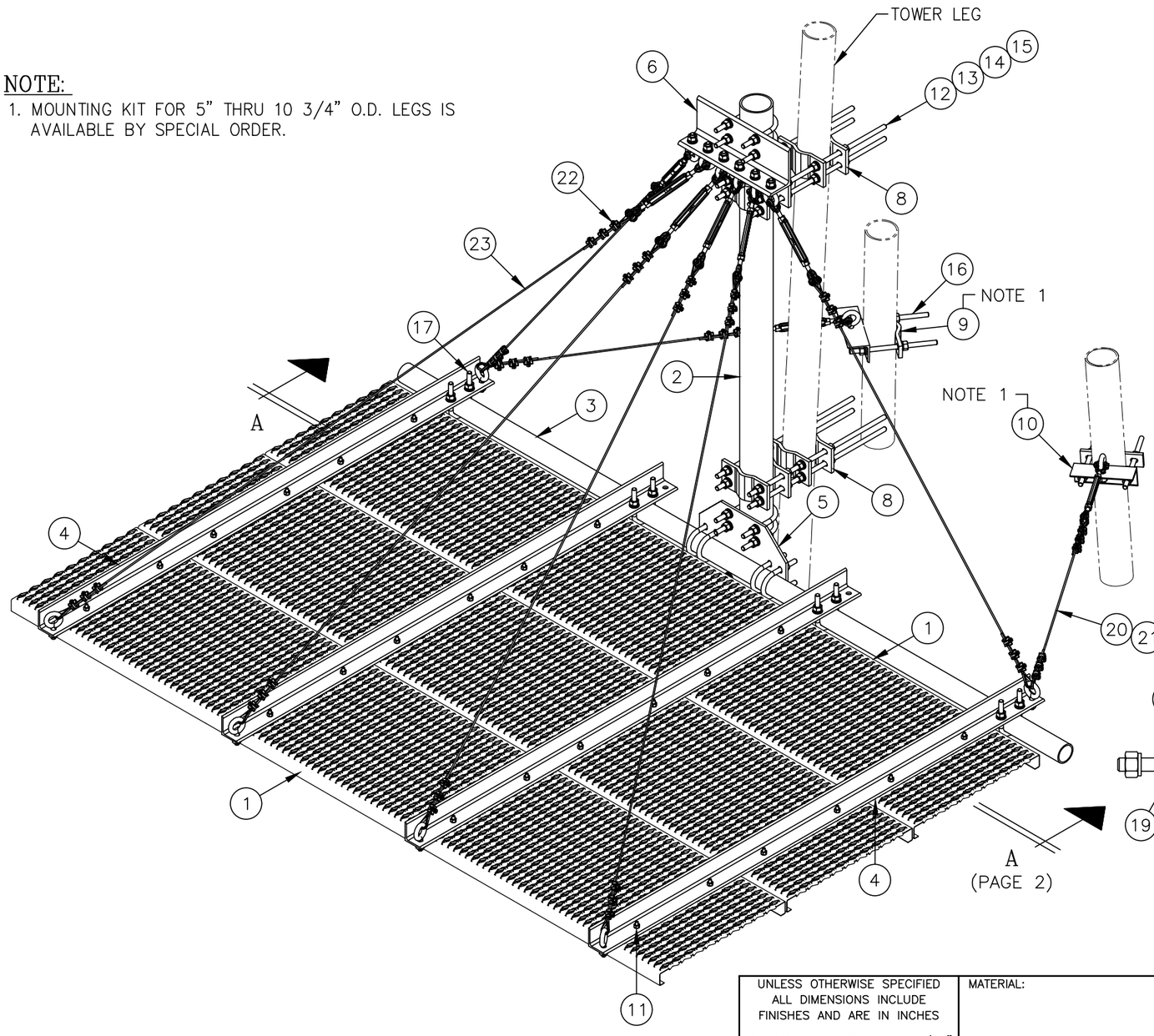
CONFIDENTIAL
This document and the information contained herein is the confidential trade secret property of Sabre Industries, Inc. ("Sabre") and must not be reproduced, copied or used, in whole or in part, for any purpose without the prior written consent of Sabre.
© 2025 Sabre Industries, Inc. All rights reserved.

SWIVEL KNUCKLE TIEBACKS: 163' ELEVATION
SITE: MCCULLY MOUNTAIN, OR
CUSTOMER: MARION COUNTY OREGON

JOB NO. 563427		SIZE	DRAWING NO.	REV
DATE	08/07/25	B	563427-ST4	0
DRAWN BY	KMP			
CHECKED BY	ZAK		SCALE NONE	PAGE 1 OF 1

NOTE:

1. MOUNTING KIT FOR 5" THRU 10 3/4" O.D. LEGS IS AVAILABLE BY SPECIAL ORDER.

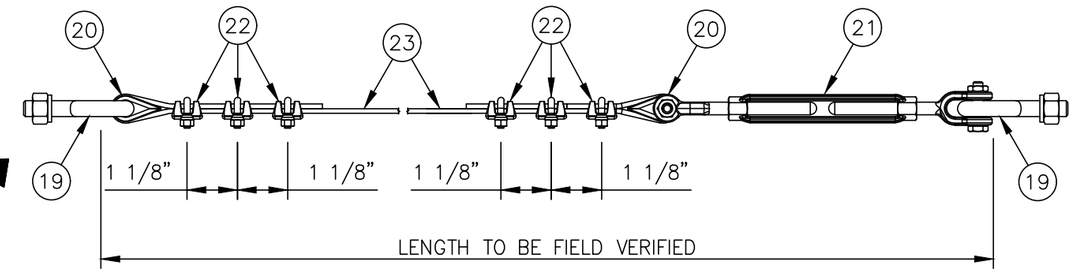


ISOMETRIC VIEW

(SEE PAGE 2 FOR MORE DETAILS)

C30085002 ICE SHIELD ASSEMBLY

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT
1.	3	C20137002	SAFETY GRATING, 2'-0 WIDE BY 10'-0 LONG	222
2.	1	C10981407	PIPE, 4 1/2" O.D. X W/0.180 X 7'-0	58
3.	1	C10901310	PIPE, 2 7/8" O.D. X W/0.203 X 10'-6	63
4.	4	CS00155	ANGLE, ICE SHIELD SUPPORT	143
5.	1	CS00156	PLATE, ICE SHIELD MOUNT	22
6.	1	CS01926	ANGLE, ICE SHIELD HANGER	19
7.	12	CS00158	PLATE, ICE SHIELD BACKUP	28
8.	8	CS00017	4 HOLE ADAPTER CLAMP 1 1/2" TO 5" O.D.	39
9.	2	CS00144	2 HOLE ADAPTER CLAMP 1 1/2" TO 5" O.D.	5
10.	2	CS01925	ANGLE, ICE SHIELD TIE BACK	7
11.	24	C40024006	BOLT ASSEMBLY, 3/8 ø X 2 GR 5	2
12.	16	C40042007	NUT, 5/8 ø A194 GRADE 2H	1
13.	16	C40030012	LOCKWASHER, 5/8 ø	1
14.	16	C40031003	FLATWASHER, 5/8 ø HARDENED ASTM F436	1
15.	8	C40099004	THREADED ROD ASS'Y, 5/8 ø X 2'-2 ASTM A193	22
16.	4	C40099002	THREADED ROD ASS'Y, 5/8 ø X 1'-0 ASTM A193	6
17.	8	C40034025	U-BOLT ASSEMBLY, 5/8 ø X 3 9/16" C-C	14
18.	6	C40034032	U-BOLT ASSEMBLY, 5/8 ø X 5 3/16" C-C	13
19.	14	C40079002	EYEBOLT ASSEMBLY, 5/8 ø X 1 3/4	8
20.	16	C40055011	THIMBLE, 3/16" STD	1
21.	8	C40051018	TURNBUCKLE, 1/2" X 6" J & J HDG	12
22.	48	C40056001	WIRE ROPE CLIP, 3/16"	5
23.	1	C30998120	AIRCRAFT CABLE, 3/16" X 120'-0	9
			TOTAL WEIGHT	701



TYPICAL CABLE ASSEMBLY

UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS INCLUDE FINISHES AND ARE IN INCHES

TOLERANCES: FRACTIONS ± 1/16" ANGLES ± 1/2 DEG. DECIMALS ± .010"

MATERIAL:

TOLERANCES DO NOT APPLY TO RAW MATERIAL

REV	DATE	DRW	CHK	DESCRIPTION
4	1/29/09	WRF	MC	REVISED PART NUMBERS OF ITEMS 6, 10, & EYEBOLTS WERE 3/8" & TURNB. WERE 1/4"
3	1/13/09	MLC	MC	REVISE PIPE (ITEM 2)
2	06/21/06	WRF	WMN	ADDED ISOMETRIC VIEW
1	4/4/03	KLE	DLW	REVISED PART NUMBERS

Sabre Industries™ INNOVATION DELIVERED

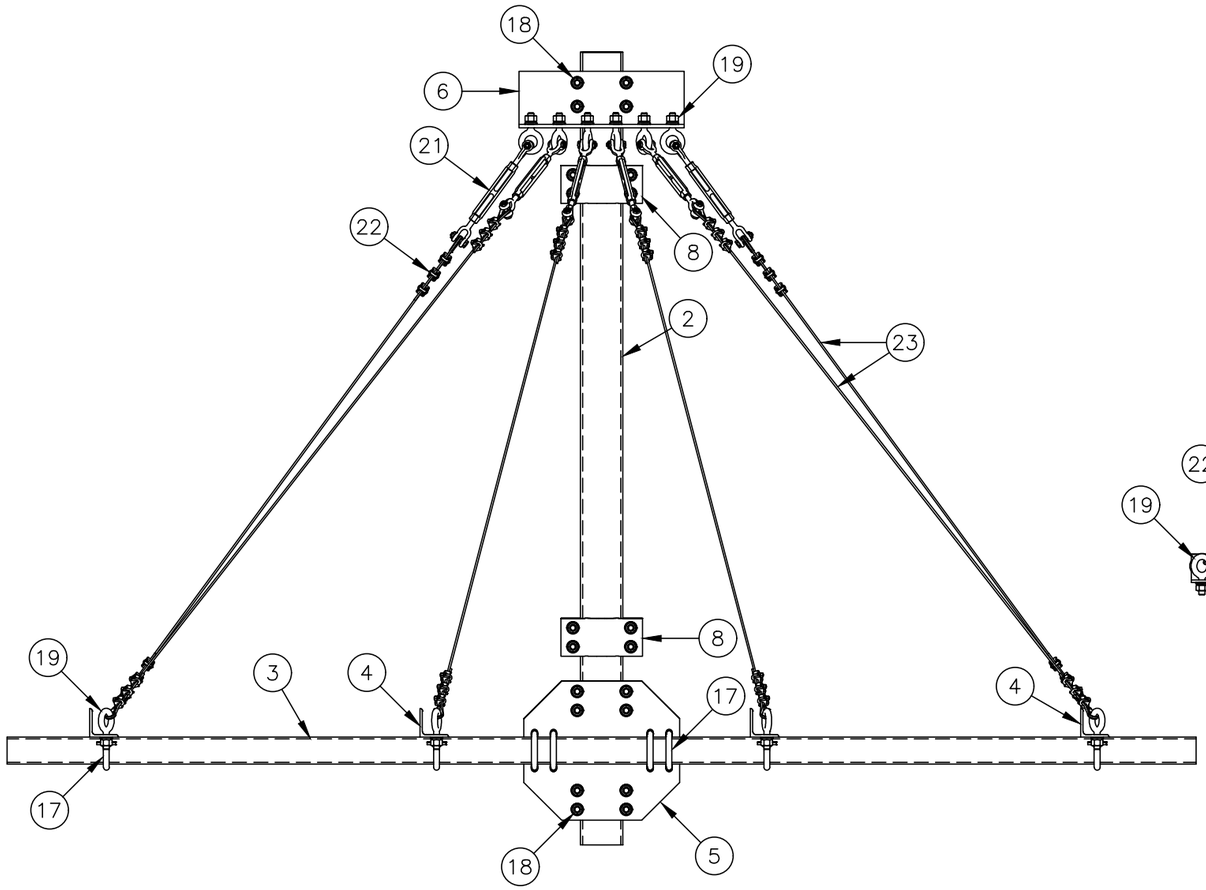
CONFIDENTIAL

This document and the information contained herein is the confidential trade secret property of Sabre Industries, Inc. ("Sabre") and must not be reproduced, copied or used, in whole or in part, for any purpose without the prior written consent of Sabre.

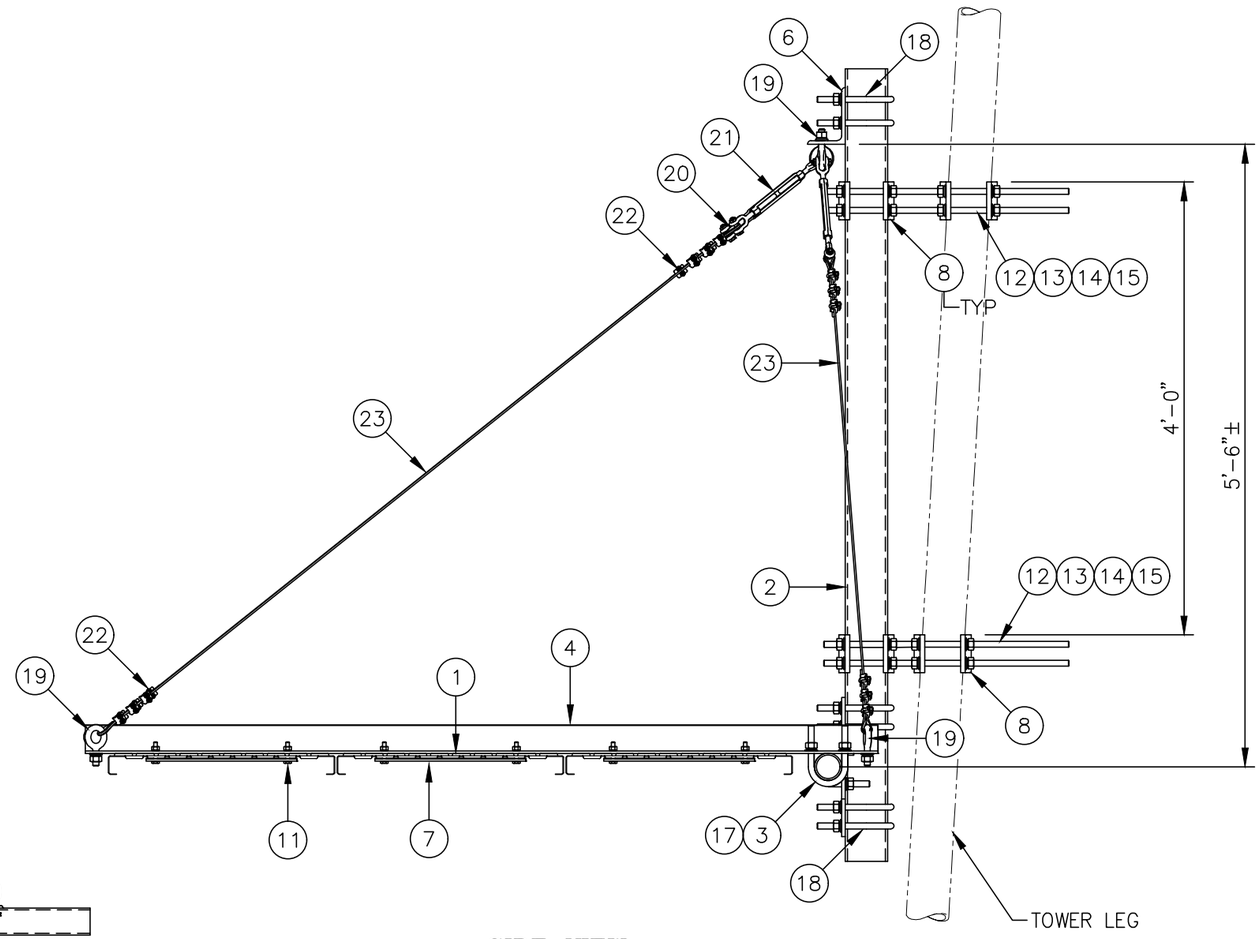
© 2022 Sabre Industries, Inc. All rights reserved.

ICE SHIELD ASSEMBLY FOR 6'-0 & 8'-0 DISH ANTENNA FITS 1 1/2 ø TO 5 ø LEGS

		SIZE	DRAWING NO.	REV
DATE	01/11/01	B	C30085002	4
DRAWN BY	BCT			
CHECKED BY	KLE		SCALE None	PAGE 1 OF 2



SECTION A–A
(GRATING REMOVED FOR CLARITY)



SIDE VIEW

REV	DATE	DRW	CHK	DESCRIPTION
4	1/29/09	WRF	MC	REVISED PART NUMBERS OF ITEMS 6, 10, & EYEBOLTS WERE 3/8" & TURNB. WERE 1/4"
3	1/13/09	MLC	MC	REVISE PIPE (ITEM 2)
2	06/21/06	WRF	WMN	ADDED ISOMETRIC VIEW
1	4/4/03	KLE	DLW	REVISED PART NUMBERS

UNLESS OTHERWISE SPECIFIED
ALL DIMENSIONS INCLUDE FINISHES AND ARE IN INCHES
TOLERANCES: FRACTIONS ± 1/16"
ANGLES ± 1/2 DEG.
DECIMALS ± .010"

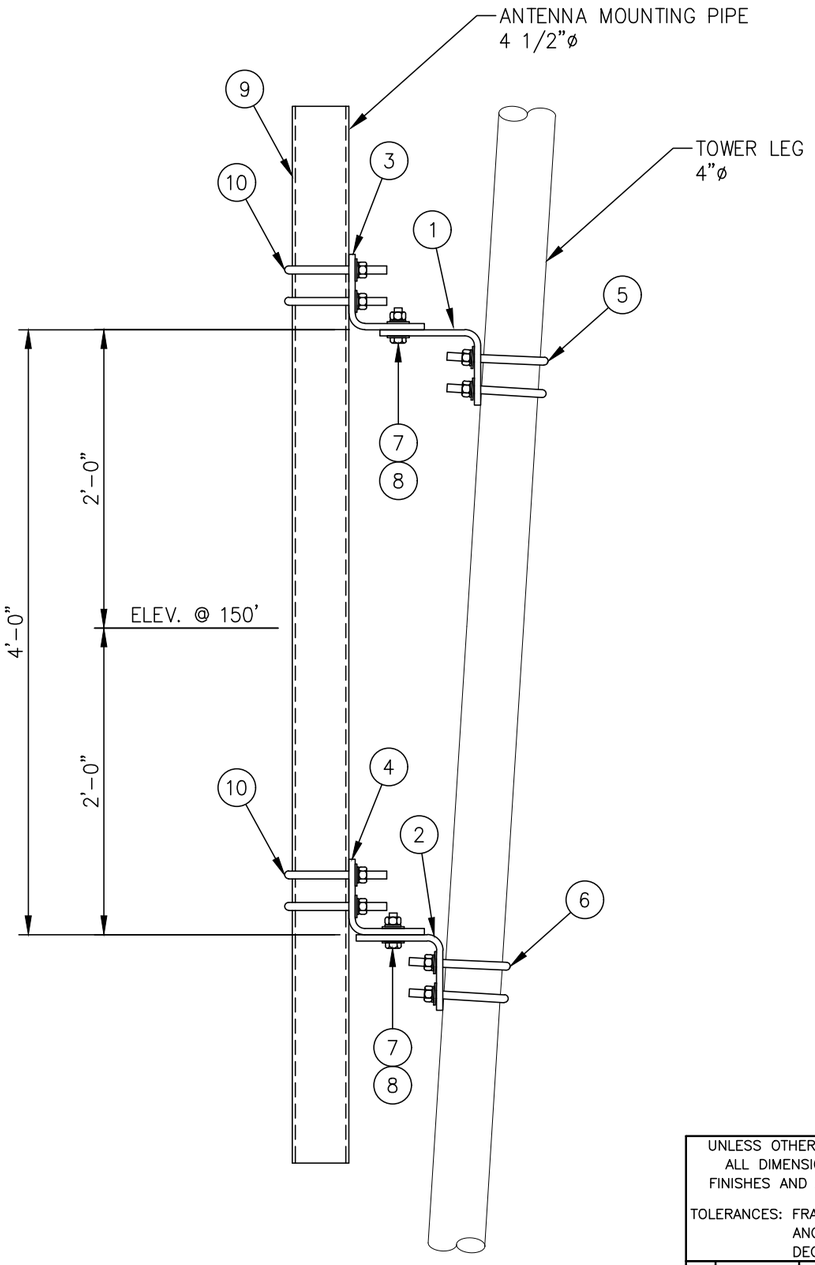
MATERIAL:
TOLERANCES DO NOT APPLY TO RAW MATERIAL

Sabre Industries™
INNOVATION DELIVERED

CONFIDENTIAL
This document and the information contained herein is the confidential trade secret property of Sabre Industries, Inc. ("Sabre") and must not be reproduced, copied or used, in whole or in part, for any purpose without the prior written consent of Sabre.
© 2022 Sabre Industries, Inc. All rights reserved.

ICE SHIELD ASSEMBLY
FOR 6'–0 & 8'–0 DISH ANTENNA
FITS 1 1/2 ø TO 5 ø LEGS

		SIZE	DRAWING NO.	REV
DATE	01/11/01	B	C30085002	4
DRAWN BY	BCT			
CHECKED BY	KLE	SCALE None	PAGE 2 OF 2	



ELEVATION VIEW

LIST OF MATERIALS FOR TAPERED LEG PIPE MOUNT KIT C10174036				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
1.	1	CS00216	TOP LEG MOUNT FOR 4 ø LEG	15
2.	1	CS00215	BOTTOM LEG MOUNT FOR 4 ø LEG	12
3.	1	CS00214	TOP PIPE MOUNT FOR 4 1/2 ø PIPE	15
4.	1	CS00215	BOTTOM PIPE MOUNT FOR 4 1/2 ø PIPE	12
5.	2	C40034030	U-BOLT ASSEMBLY 5/8 ø X 4 11/16 C-C (TOP LEG MOUNT)	4
6.	2	C40034030	U-BOLT ASSEMBLY 5/8 ø X 4 11/16 C-C (BOTTOM LEG MOUNT)	4
7.	4	C40026024	BOLT ASSEMBLY 5/8 ø X 2 1/4 A325	2
8.	8	C40031003	FLATWASHER, 5/8 ø (F436)	1
			KIT WEIGHT LBS	65

LIST OF ADDITIONAL MATERIALS				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
9.	1	C10981407	ANTENNA MTG. PIPE 4 1/2 ø X 7'-0	58
10.	4	C40034032	U-BOLT ASSEMBLY 5/8 ø X 5 3/16 C-C (PIPE MOUNTS)	9
			ADDITIONAL WEIGHT LBS	67

TOTAL WEIGHT LBS	132

UNLESS OTHERWISE SPECIFIED
ALL DIMENSIONS INCLUDE FINISHES AND ARE IN INCHES

TOLERANCES: FRACTIONS ± 1/16"
ANGLES ± 1/2 DEG.
DECIMALS ± .010"

MATERIAL:

TOLERANCES DO NOT APPLY TO RAW MATERIAL

REV	DATE	DRW	CHK	DESCRIPTION

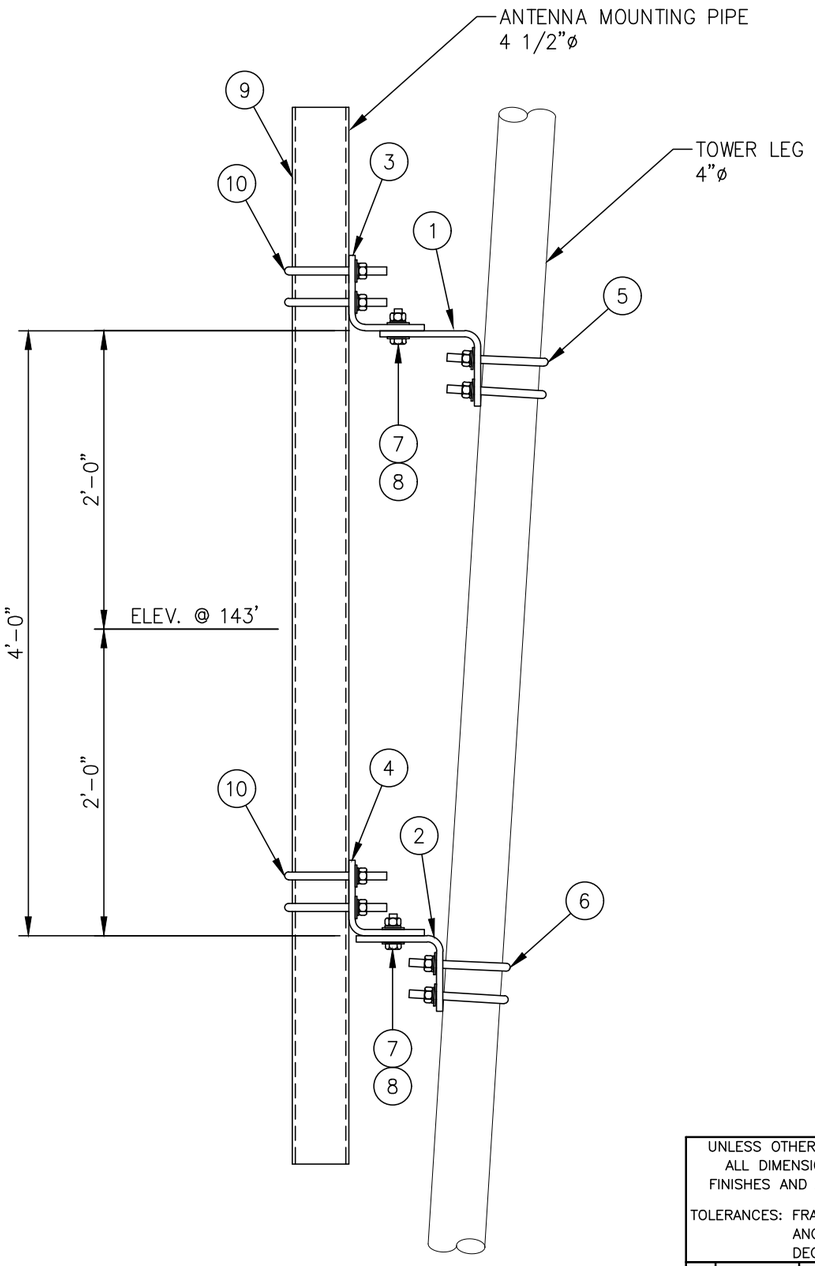
Sabre Industries™
INNOVATION DELIVERED

CONFIDENTIAL

This document and the information contained herein is the confidential trade secret property of Sabre Industries, Inc. ("Sabre") and must not be reproduced, copied or used, in whole or in part, for any purpose without the prior written consent of Sabre.
© 2025 Sabre Industries, Inc. All rights reserved.

PIPE MOUNTS: 150' ELEVATION
SITE: MCCULLY MOUNTAIN, OR
CUSTOMER: MARION COUNTY OREGON

JOB NO. 563427		SIZE	DRAWING NO.	REV
DATE	8/7/25	B	563427-PM7	0
DRAWN BY	KMP			
CHECKED BY	ZAK		SCALE None	PAGE 1 OF 1



ELEVATION VIEW

LIST OF MATERIALS FOR TAPERED LEG PIPE MOUNT KIT C10174036				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
1.	1	CS00216	TOP LEG MOUNT FOR 4 ø LEG	15
2.	1	CS00215	BOTTOM LEG MOUNT FOR 4 ø LEG	12
3.	1	CS00214	TOP PIPE MOUNT FOR 4 1/2 ø PIPE	15
4.	1	CS00215	BOTTOM PIPE MOUNT FOR 4 1/2 ø PIPE	12
5.	2	C40034030	U-BOLT ASSEMBLY 5/8 ø X 4 11/16 C-C (TOP LEG MOUNT)	4
6.	2	C40034030	U-BOLT ASSEMBLY 5/8 ø X 4 11/16 C-C (BOTTOM LEG MOUNT)	4
7.	4	C40026024	BOLT ASSEMBLY 5/8 ø X 2 1/4 A325	2
8.	8	C40031003	FLATWASHER, 5/8 ø (F436)	1
			KIT WEIGHT LBS	65

LIST OF ADDITIONAL MATERIALS				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
9.	1	C10981407	ANTENNA MTG. PIPE 4 1/2 ø X 7'-0	58
10.	4	C40034032	U-BOLT ASSEMBLY 5/8 ø X 5 3/16 C-C (PIPE MOUNTS)	9
			ADDITIONAL WEIGHT LBS	67

TOTAL WEIGHT LBS	132

UNLESS OTHERWISE SPECIFIED
ALL DIMENSIONS INCLUDE FINISHES AND ARE IN INCHES

TOLERANCES: FRACTIONS ± 1/16"
ANGLES ± 1/2 DEG.
DECIMALS ± .010"

MATERIAL:

TOLERANCES DO NOT APPLY TO RAW MATERIAL

REV	DATE	DRW	CHK	DESCRIPTION

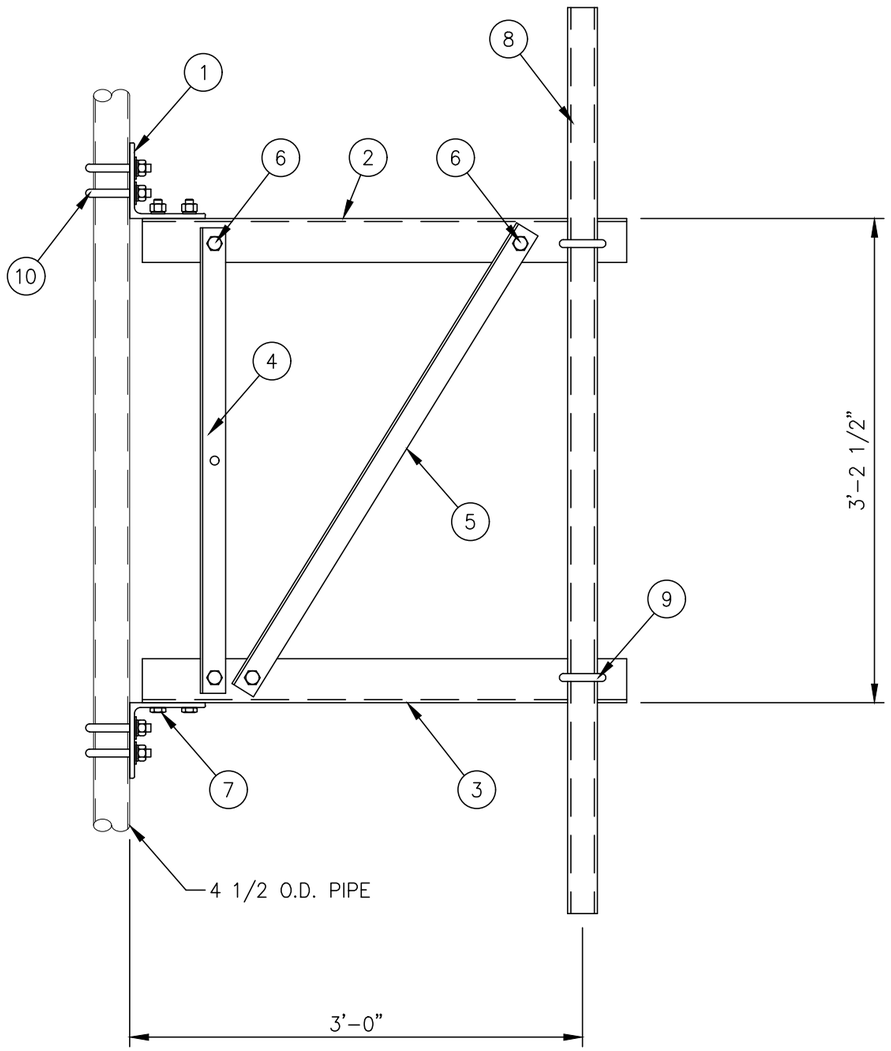
Sabre Industries™
INNOVATION DELIVERED

CONFIDENTIAL

This document and the information contained herein is the confidential trade secret property of Sabre Industries, Inc. ("Sabre") and must not be reproduced, copied or used, in whole or in part, for any purpose without the prior written consent of Sabre.
© 2025 Sabre Industries, Inc. All rights reserved.

PIPE MOUNT: 143' ELEVATION
SITE: MCCULLY MOUNTAIN, OR
CUSTOMER: MARION COUNTY OREGON

JOB NO. 563427		SIZE	DRAWING NO.		REV
DATE	8/7/25	B	563427-PM8		0
DRAWN BY	KMP			SCALE	PAGE
CHECKED BY	ZAK			None	1 OF 1



C10151103 3 FT. SIDEARM ASSEMBLY			
1	CK00060	SIDEARM ANGLE KIT	78
1	– – –	MISC HARDWARE (FRAMING)	4
1	C10900105	PIPE ANTENNA MOUNTING KIT 2 3/8" ø X 5'-0	19
4	C40034032	U-BOLT ASSEMBLY 5/8" ø X 5 3/16 C-C	9
		TOTAL WEIGHT LBS	110

CK00060 KIT LIST OF MATERIAL				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
1	2	CS00067	ANGLE, BOOM SUPPORT	23
2	1	CS01223	ANGLE, TOP CHORD	19
3	1	CS01224	ANGLE, BOTTOM CHORD	19
4	1	CS00065	ANGLE, VERTICAL	8
5	1	CS01228	ANGLE, DIAGONAL	9
			TOTAL WEIGHT LBS	78

MISC HARDWARE (FRAMING)				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
6	4	C40026022	BOLT ASSEMBLY, 5/8 ø X 1 3/4 A325	2
7	4	C40026023	BOLT ASSEMBLY, 5/8 ø X 2 A325	2
			TOTAL WEIGHT LBS	4

C10900105 ANTENNA PIPE MOUNTING KIT				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
8	1	C10981223	ANTENNA MTG. PIPE 2 3/8" ø X 5'-0	16
9	2	C40034023	U-BOLT ASSEMBLY 5/8" ø X 3 1/16 C-C	3
			TOTAL WEIGHT LBS	19

MISC HARDWARE				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
10	4	C40034032	U-BOLT ASSEMBLY 5/8" ø X 5 3/16 C-C	9
			TOTAL WEIGHT LBS	9

NOTES:

1. IF THE MOUNT IS NOT ON THE STRAIGHT PORTION OF THE TOWER SEE SITE SPECIFIC PIPE MOUNT.
2. QUANTITIES SHOWN IN LIST OF MATERIALS ARE FOR ONE (1) SIDEARM ASSEMBLY ONLY.

UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS INCLUDE FINISHES AND ARE IN INCHES

TOLERANCES: FRACTIONS ± 1/16" ANGLES ± 1/2 DEG. DECIMALS ± .010"

MATERIAL:

TOLERANCES DO NOT APPLY TO RAW MATERIAL

REV	DATE	DRW	CHK	DESCRIPTION

Sabre Industries™ INNOVATION DELIVERED

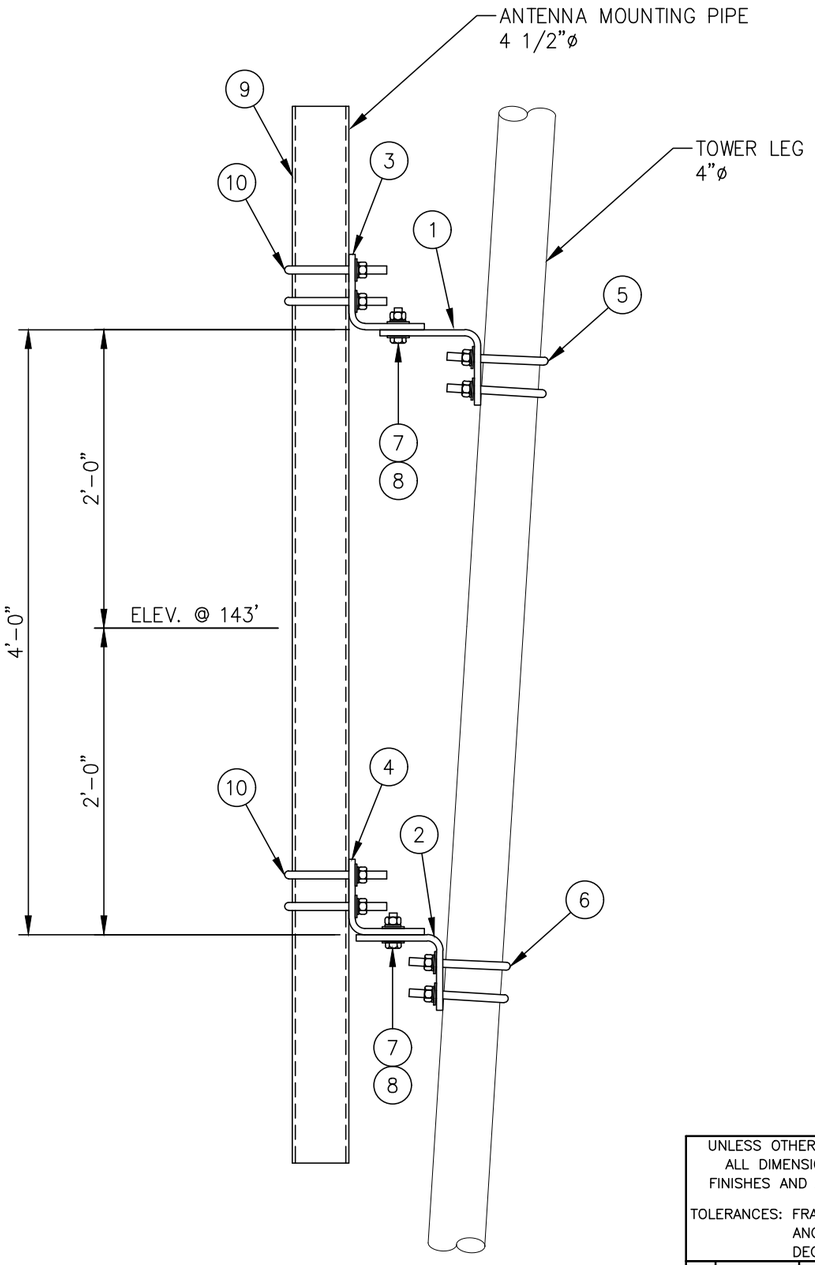
CONFIDENTIAL
This document and the information contained herein is the confidential trade secret property of Sabre Industries, Inc. ("Sabre") and must not be reproduced, copied or used, in whole or in part, for any purpose without the prior written consent of Sabre.
© 2025 Sabre Industries, Inc. All rights reserved.

3 FT. SIDEARM: 143' ELEVATION

SITE: MCCULLY MOUNTAIN, OR

CUSTOMER: MARION COUNTY OREGON

JOB NO. 563427		SIZE	DRAWING NO.	REV
DATE	08/07/25	B	563427-SA5	0
DRAWN BY	KMP			
CHECKED BY	ZAK		SCALE NONE	PAGE 1 OF 1



ELEVATION VIEW

LIST OF MATERIALS FOR TAPERED LEG PIPE MOUNT KIT C10174036				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
1.	1	CS00216	TOP LEG MOUNT FOR 4 ø LEG	15
2.	1	CS00215	BOTTOM LEG MOUNT FOR 4 ø LEG	12
3.	1	CS00214	TOP PIPE MOUNT FOR 4 1/2 ø PIPE	15
4.	1	CS00215	BOTTOM PIPE MOUNT FOR 4 1/2 ø PIPE	12
5.	2	C40034030	U-BOLT ASSEMBLY 5/8 ø X 4 11/16 C-C (TOP LEG MOUNT)	4
6.	2	C40034030	U-BOLT ASSEMBLY 5/8 ø X 4 11/16 C-C (BOTTOM LEG MOUNT)	4
7.	4	C40026024	BOLT ASSEMBLY 5/8 ø X 2 1/4 A325	2
8.	8	C40031003	FLATWASHER, 5/8 ø (F436)	1
			KIT WEIGHT LBS	65

LIST OF ADDITIONAL MATERIALS				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
9.	1	C10981407	ANTENNA MTG. PIPE 4 1/2 ø X 7'-0	58
10.	4	C40034032	U-BOLT ASSEMBLY 5/8 ø X 5 3/16 C-C (PIPE MOUNTS)	9
			ADDITIONAL WEIGHT LBS	67

TOTAL WEIGHT LBS	132

UNLESS OTHERWISE SPECIFIED
ALL DIMENSIONS INCLUDE FINISHES AND ARE IN INCHES
TOLERANCES: FRACTIONS ± 1/16"
ANGLES ± 1/2 DEG.
DECIMALS ± .010"

MATERIAL:

TOLERANCES DO NOT APPLY TO RAW MATERIAL

REV	DATE	DRW	CHK	DESCRIPTION

Sabre Industries™
INNOVATION DELIVERED

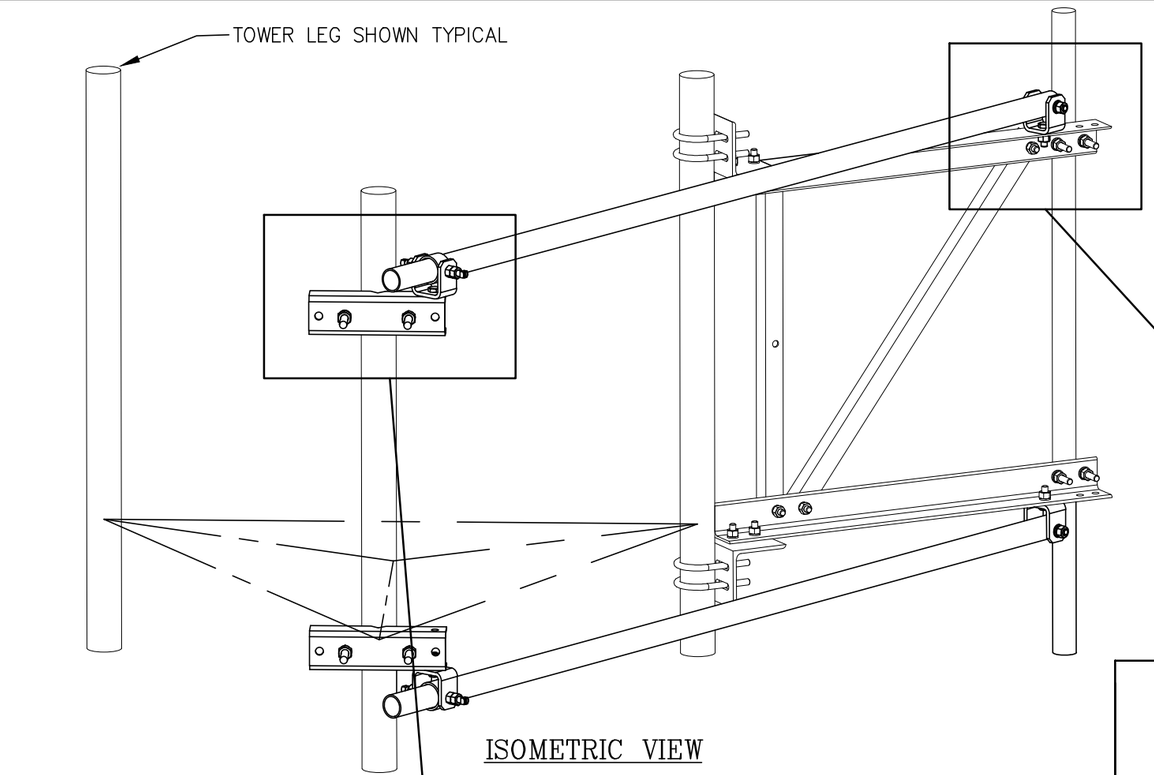
CONFIDENTIAL

This document and the information contained herein is the confidential trade secret property of Sabre Industries, Inc. ("Sabre") and must not be reproduced, copied or used, in whole or in part, for any purpose without the prior written consent of Sabre.
© 2025 Sabre Industries, Inc. All rights reserved.

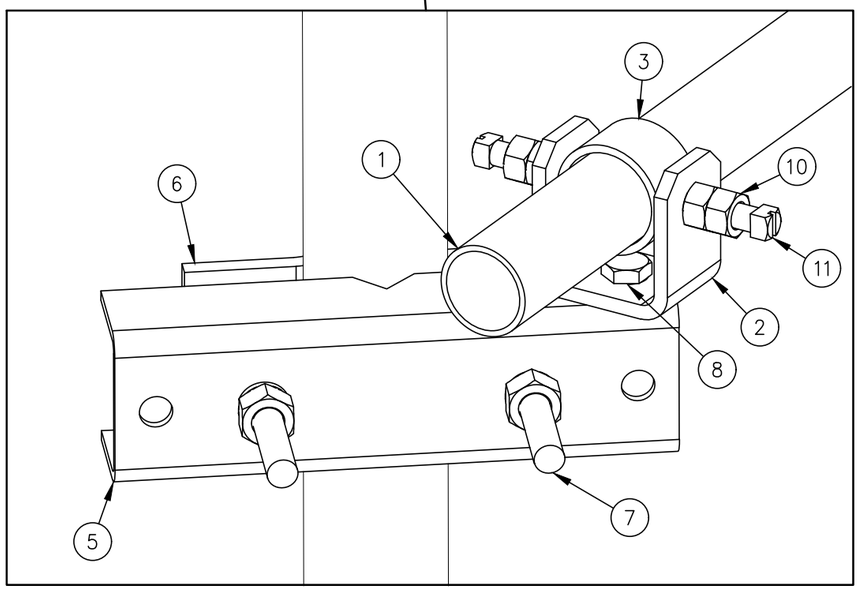
PIPE MOUNT FOR SIDEARM: 143' ELEVATION
SITE: MCCULLY MOUNTAIN, OR
CUSTOMER: MARION COUNTY OREGON

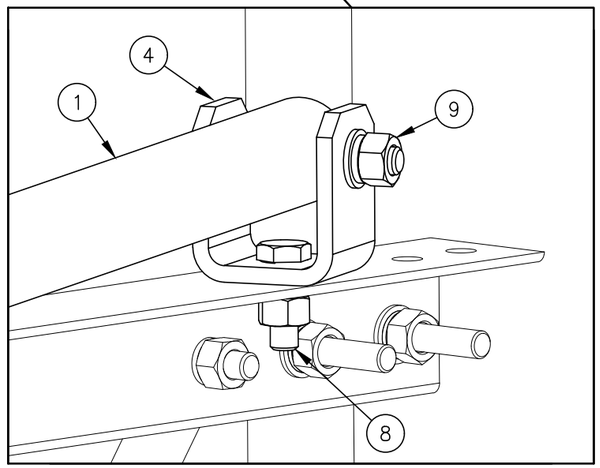
JOB NO. 563427		SIZE	DRAWING NO.		REV
DATE	8/7/25	B	563427-PM9		0
DRAWN BY	KMP			SCALE	PAGE
CHECKED BY	ZAK			None	1 OF 1

EXHIBIT K



ISOMETRIC VIEW





C10179002 SWIVEL KNUCKLE TIEBACK

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
1	1	CS02089	TIEBACK 2 3/8 X .134 X 13'-3"	43
2	1	CW00013	SWIVEL PLATE WELDMENT	3
3	1	CS00097	PIPE, SLEEVE 2 7/8 O.D. X W/0.203 X 0'-1 3/4	1
4	1	CS00098	BENT SWIVEL PLATE	3
5	1	CS01360	PLATE, MOUNTING BRACKET (FORMED CHANNEL)	9
6	1	CS01361	PLATE, 2 HOLE ADAPTER CLAMP	3
7	2	C40140001	BOLT ASSEMBLY, 3/4 X 10 A307 W/NUT, LKW, FLW	4
8	2	C40026023	BOLT ASSEMBLY, 5/8 ø X 2 A325	1
9	1	C40026033	BOLT ASSEMBLY, 5/8 ø X 4 1/2 A325	1
10	2	C40042007	HEX NUT, 5/8 A194 GRADE 2H	1
11	2	C40998007	SQ. HEAD SET SCREW, 5/8 X 2 1/2	1
			TOTAL WEIGHT LBS	70

QUANTITIES SHOWN ABOVE ARE FOR (1) SWIVEL KNUCKLE TIEBACK KIT ONLY.
(2) KITS ARE REQUIRED FOR THIS SIDEARM ASSEMBLY

UNLESS OTHERWISE SPECIFIED
ALL DIMENSIONS INCLUDE
FINISHES AND ARE IN INCHES

TOLERANCES: FRACTIONS ± 1/16"
ANGLES ± 1/2 DEG.
DECIMALS ± .010"

MATERIAL:

TOLERANCES DO NOT APPLY
TO RAW MATERIAL

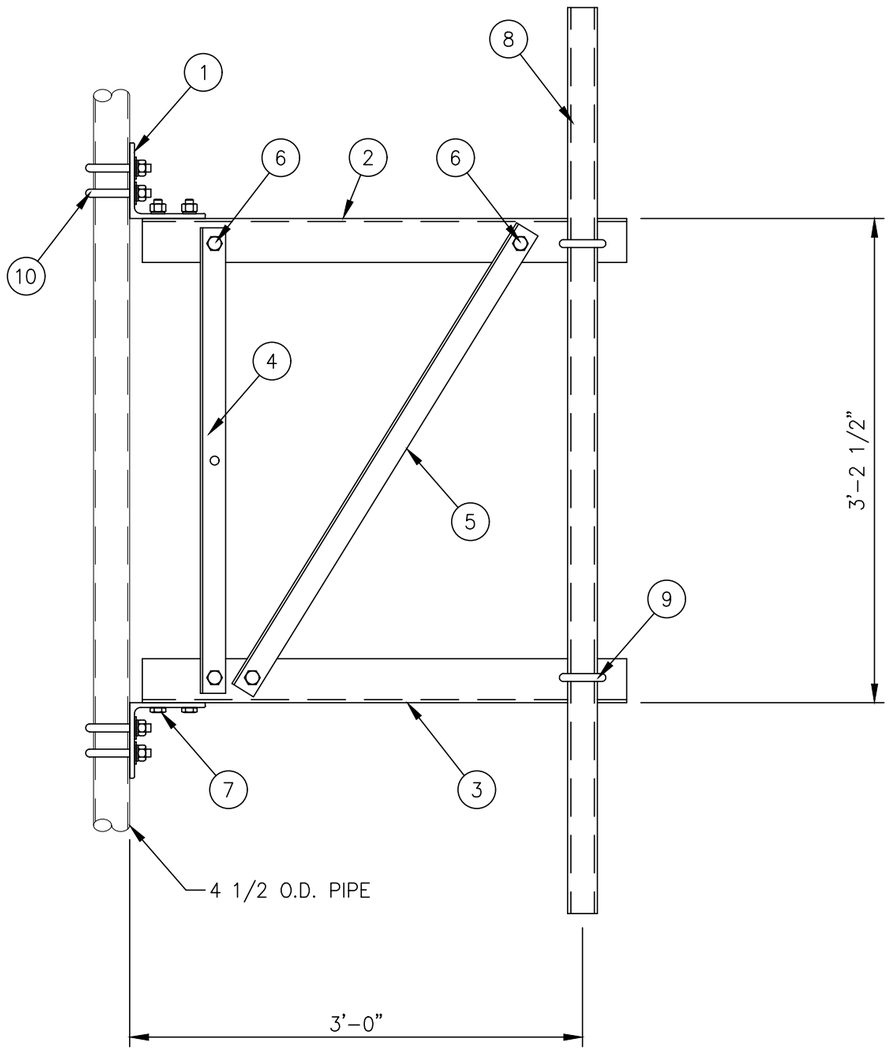
REV	DATE	DRW	CHK	DESCRIPTION

Sabre Industries™
INNOVATION DELIVERED

CONFIDENTIAL
This document and the information contained herein is the confidential trade secret property of Sabre Industries, Inc. ("Sabre") and must not be reproduced, copied or used, in whole or in part, for any purpose without the prior written consent of Sabre.
© 2025 Sabre Industries, Inc. All rights reserved.

SWIVEL KNUCKLE TIEBACKS: 143' ELEVATION
SITE: MCCULLY MOUNTAIN, OR
CUSTOMER: MARION COUNTY OREGON

JOB NO. 563427		SIZE	DRAWING NO.	REV
DATE	08/07/25	B	563427-ST5	0
DRAWN BY	KMP			
CHECKED BY	ZAK		SCALE NONE	PAGE 1 OF 1



C10151103 3 FT. SIDEARM ASSEMBLY			
1	CK00060	SIDEARM ANGLE KIT	78
1	- - -	MISC HARDWARE (FRAMING)	4
1	C10900105	PIPE ANTENNA MOUNTING KIT 2 3/8" ø X 5'-0	19
4	C40034032	U-BOLT ASSEMBLY 5/8" ø X 5 3/16 C-C	9
		TOTAL WEIGHT LBS	110

CK00060 KIT LIST OF MATERIAL				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
1	2	CS00067	ANGLE, BOOM SUPPORT	23
2	1	CS01223	ANGLE, TOP CHORD	19
3	1	CS01224	ANGLE, BOTTOM CHORD	19
4	1	CS00065	ANGLE, VERTICAL	8
5	1	CS01228	ANGLE, DIAGONAL	9
			TOTAL WEIGHT LBS	78

MISC HARDWARE (FRAMING)				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
6	4	C40026022	BOLT ASSEMBLY, 5/8 ø X 1 3/4 A325	2
7	4	C40026023	BOLT ASSEMBLY, 5/8 ø X 2 A325	2
			TOTAL WEIGHT LBS	4

C10900105 ANTENNA PIPE MOUNTING KIT				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
8	1	C10981223	ANTENNA MTG. PIPE 2 3/8" ø X 5'-0	16
9	2	C40034023	U-BOLT ASSEMBLY 5/8" ø X 3 1/16 C-C	3
			TOTAL WEIGHT LBS	19

MISC HARDWARE				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
10	4	C40034032	U-BOLT ASSEMBLY 5/8" ø X 5 3/16 C-C	9
			TOTAL WEIGHT LBS	9

NOTES:

1. IF THE MOUNT IS NOT ON THE STRAIGHT PORTION OF THE TOWER SEE SITE SPECIFIC PIPE MOUNT.
2. QUANTITIES SHOWN IN LIST OF MATERIALS ARE FOR ONE (1) SIDEARM ASSEMBLY ONLY.

UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS INCLUDE FINISHES AND ARE IN INCHES

TOLERANCES: FRACTIONS ± 1/16" ANGLES ± 1/2 DEG. DECIMALS ± .010"

MATERIAL:

TOLERANCES DO NOT APPLY TO RAW MATERIAL

REV	DATE	DRW	CHK	DESCRIPTION

Sabre Industries™ INNOVATION DELIVERED

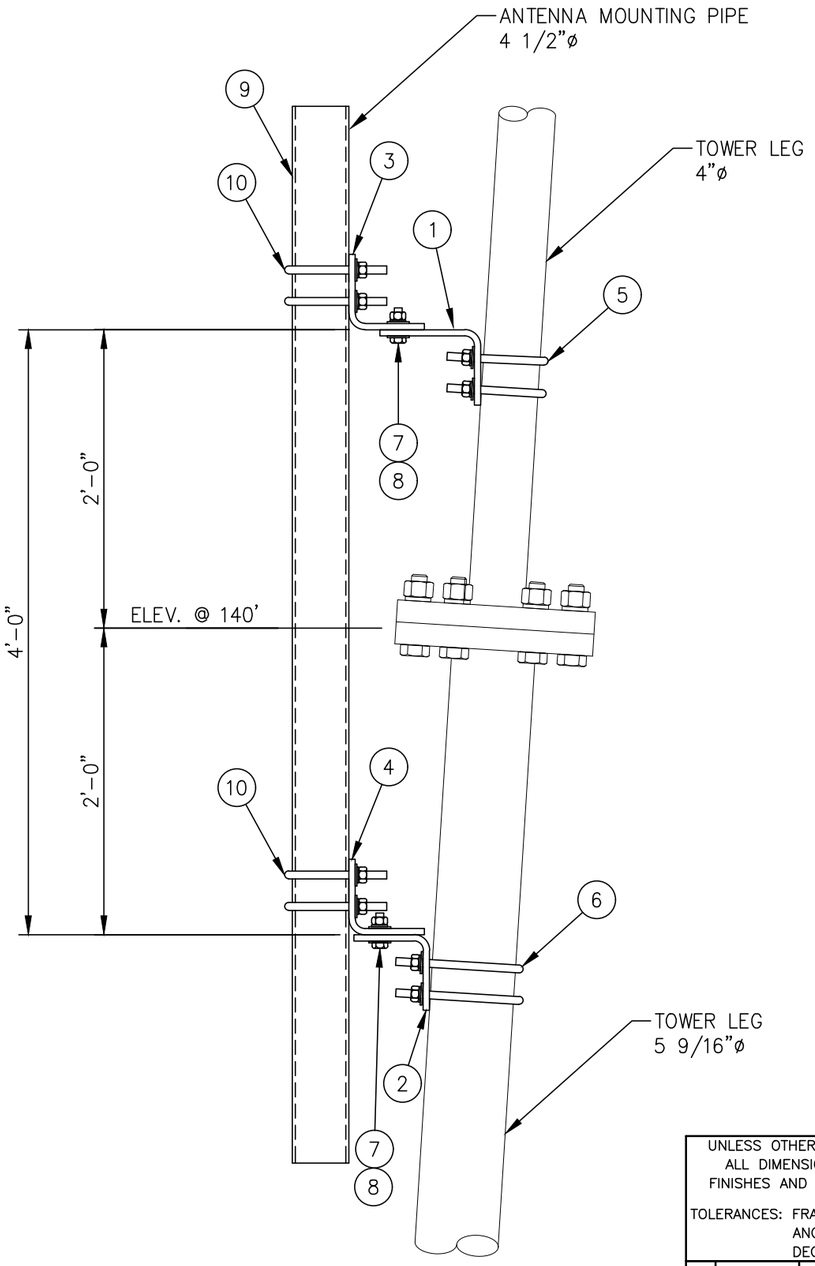
CONFIDENTIAL
This document and the information contained herein is the confidential trade secret property of Sabre Industries, Inc. ("Sabre") and must not be reproduced, copied or used, in whole or in part, for any purpose without the prior written consent of Sabre.
© 2025 Sabre Industries, Inc. All rights reserved.

3 FT. SIDEARM: 140' ELEVATION

SITE: MCCULLY MOUNTAIN, OR

CUSTOMER: MARION COUNTY OREGON

JOB NO. 563427		SIZE	DRAWING NO.	REV
DATE	08/07/25	B	563427-SA6	0
DRAWN BY	KMP			
CHECKED BY	ZAK		SCALE NONE	PAGE 1 OF 1



ELEVATION VIEW

LIST OF MATERIALS FOR TAPERED LEG PIPE MOUNT KIT C10174053				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
1.	1	CS00217	TOP LEG MOUNT FOR 4 ø LEG	18
2.	1	CS00218	BOTTOM LEG MOUNT FOR 5 9/16 ø LEG	20
3.	1	CS00222	TOP PIPE MOUNT FOR 4 1/2 ø PIPE	18
4.	1	CS00215	BOTTOM PIPE MOUNT FOR 4 1/2 ø PIPE	12
5.	2	C40034030	U-BOLT ASSEMBLY 5/8 ø X 4 11/16 C-C (TOP LEG MOUNT)	4
6.	2	C40034035	U-BOLT ASSEMBLY 5/8 ø X 6 1/4 C-C (BOTTOM LEG MOUNT)	5
7.	4	C40026024	BOLT ASSEMBLY 5/8 ø X 2 1/4 A325	2
8.	8	C40031003	FLATWASHER, 5/8 ø (F436)	1
			KIT WEIGHT LBS	80

LIST OF ADDITIONAL MATERIALS				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
9.	1	C10981407	ANTENNA MTG. PIPE 4 1/2 ø X 7'-0	58
10.	4	C40034032	U-BOLT ASSEMBLY 5/8 ø X 5 3/16 C-C (PIPE MOUNTS)	9
			ADDITIONAL WEIGHT LBS	67

TOTAL WEIGHT LBS	147

UNLESS OTHERWISE SPECIFIED
ALL DIMENSIONS INCLUDE
FINISHES AND ARE IN INCHES

TOLERANCES: FRACTIONS ± 1/16"
ANGLES ± 1/2 DEG.
DECIMALS ± .010"

MATERIAL:

TOLERANCES DO NOT APPLY TO RAW MATERIAL

REV	DATE	DRW	CHK	DESCRIPTION

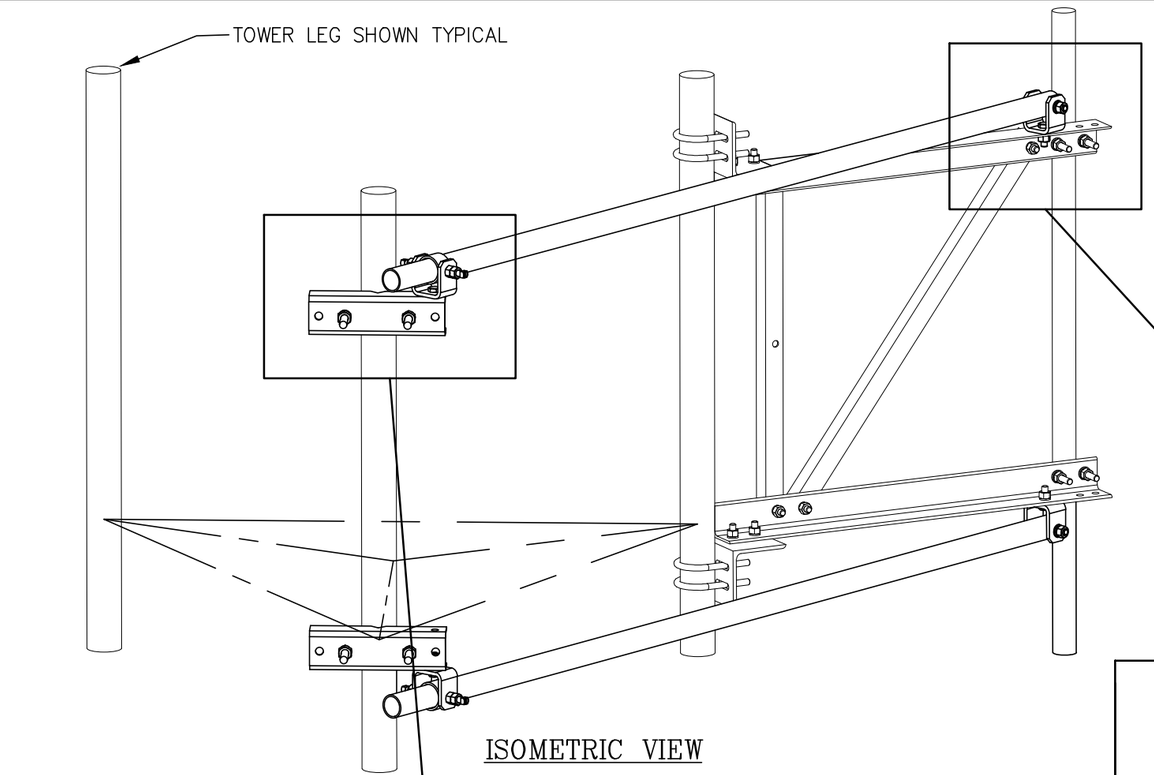
Sabre Industries™
INNOVATION DELIVERED

CONFIDENTIAL
This document and the information contained herein is the confidential trade secret property of Sabre Industries, Inc. ("Sabre") and must not be reproduced, copied or used, in whole or in part, for any purpose without the prior written consent of Sabre.
© 2025 Sabre Industries, Inc. All rights reserved.

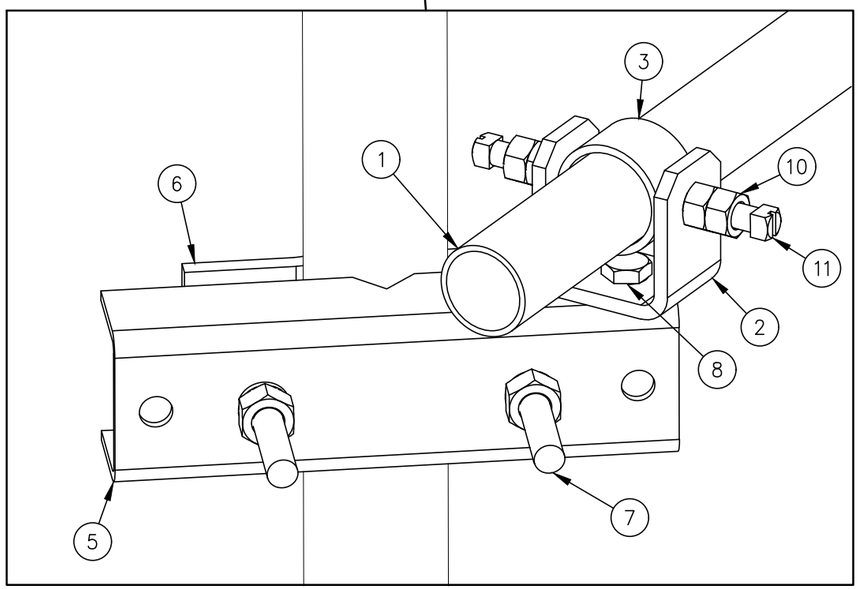
PIPE MOUNT FOR SIDEARM: 140' ELEVATION
SITE: MCCULLY MOUNTAIN, OR
CUSTOMER: MARION COUNTY OREGON

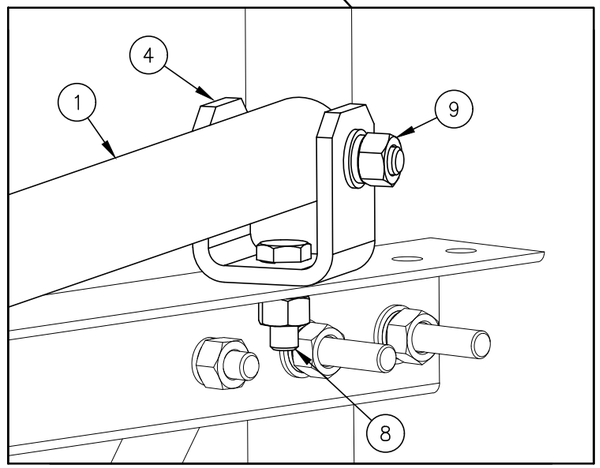
JOB NO. 563427		SIZE	DRAWING NO.	REV
DATE	8/7/25	B	563427-PM10	0
DRAWN BY	KMP			
CHECKED BY	ZAK		SCALE None	PAGE 1 OF 1

EXHIBIT K



ISOMETRIC VIEW





C10179011 SWIVEL KNUCKLE TIEBACK

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
1	1	CS00249	PIPE, 2 7/8 O.D. X W/0.203 X 15'-6	93
2	1	CW00022	SWIVEL PLATE WELDMENT	3
3	1	CS00092	PIPE, SLEEVE 3 1/2 O.D. X W/0.216 X 0'-1 3/4	1
4	1	CS00096	BENT SWIVEL PLATE	3
5	1	CS01360	PLATE, MOUNTING BRACKET (FORMED CHANNEL)	9
6	1	CS01361	PLATE, 2 HOLE ADAPTER CLAMP	3
7	2	C40140001	BOLT ASSEMBLY, 3/4 X 10 A307 W/NUT, LKW, FLW	4
8	2	C40026023	BOLT ASSEMBLY, 5/8 ø X 2 A325	1
9	1	C40026035	BOLT ASSEMBLY, 5/8 ø X 5 A325	1
10	2	C40042007	HEX NUT, 5/8 A194 GRADE 2H	1
11	2	C40998007	SQ. HEAD SET SCREW, 5/8 X 2 1/2	1
			TOTAL WEIGHT LBS	120

QUANTITIES SHOWN ABOVE ARE FOR (1) SWIVEL KNUCKLE TIEBACK KIT ONLY.
(2) KITS ARE REQUIRED FOR THIS SIDEARM ASSEMBLY

UNLESS OTHERWISE SPECIFIED
ALL DIMENSIONS INCLUDE
FINISHES AND ARE IN INCHES

TOLERANCES: FRACTIONS ± 1/16"
ANGLES ± 1/2 DEG.
DECIMALS ± .010"

MATERIAL:

TOLERANCES DO NOT APPLY
TO RAW MATERIAL

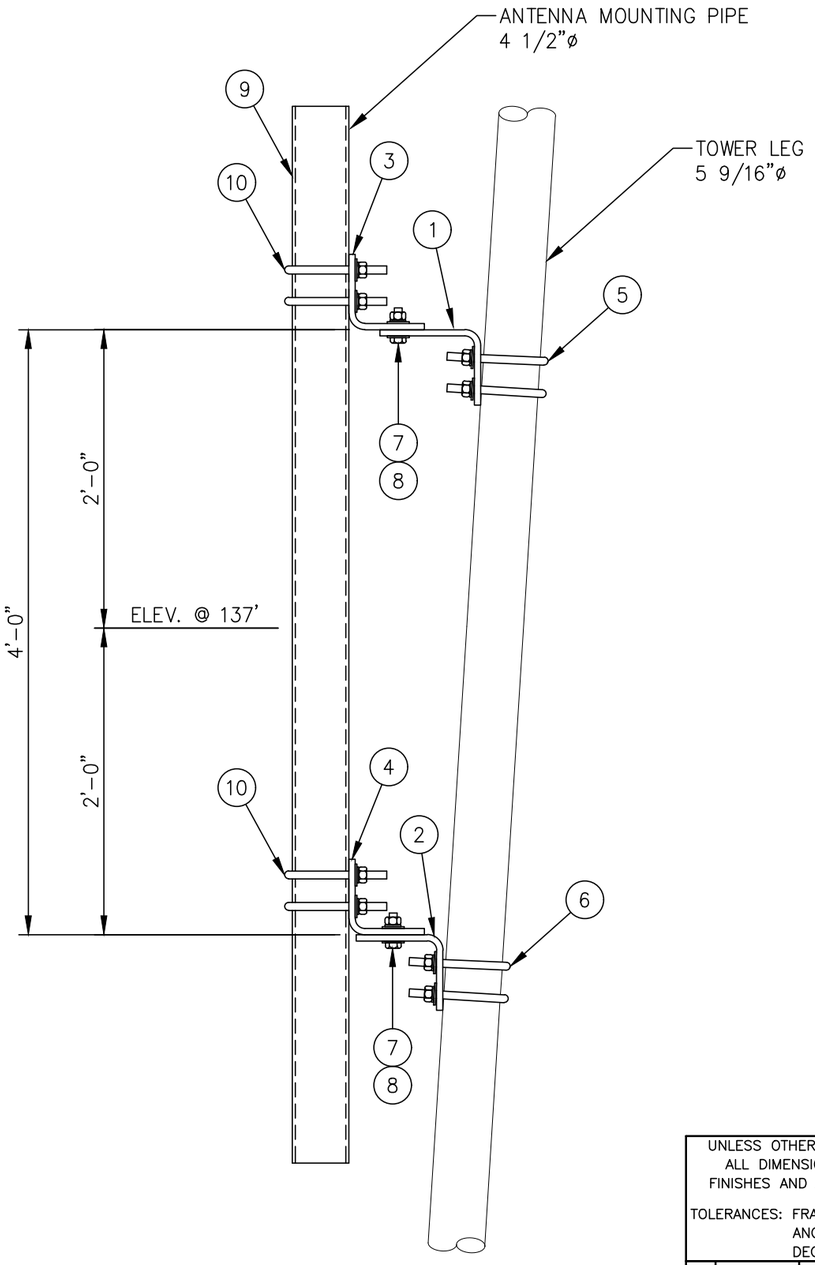
REV	DATE	DRW	CHK	DESCRIPTION

Sabre Industries™
INNOVATION DELIVERED

CONFIDENTIAL
This document and the information contained herein is the confidential trade secret property of Sabre Industries, Inc. ("Sabre") and must not be reproduced, copied or used, in whole or in part, for any purpose without the prior written consent of Sabre.
© 2025 Sabre Industries, Inc. All rights reserved.

SWIVEL KNUCKLE TIEBACKS: 140' ELEVATION
SITE: MCCULLY MOUNTAIN, OR
CUSTOMER: MARION COUNTY OREGON

JOB NO. 563427		SIZE	DRAWING NO.	REV
DATE	08/07/25	B	563427-ST6	0
DRAWN BY	KMP			
CHECKED BY	ZAK		SCALE NONE	PAGE 1 OF 1



ELEVATION VIEW

LIST OF MATERIALS FOR TAPERED LEG PIPE MOUNT KIT C10174055				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
1.	1	CS00219	TOP LEG MOUNT FOR 5 9/16 ø LEG	24
2.	1	CS00218	BOTTOM LEG MOUNT FOR 5 9/16 ø LEG	20
3.	1	CS00214	TOP PIPE MOUNT FOR 4 1/2 ø PIPE	15
4.	1	CS00215	BOTTOM PIPE MOUNT FOR 4 1/2 ø PIPE	12
5.	2	C40034035	U-BOLT ASSEMBLY 5/8 ø X 6 1/4 C-C (TOP LEG MOUNT)	5
6.	2	C40034035	U-BOLT ASSEMBLY 5/8 ø X 6 1/4 C-C (BOTTOM LEG MOUNT)	5
7.	4	C40026024	BOLT ASSEMBLY 5/8 ø X 2 1/4 A325	2
8.	8	C40031003	FLATWASHER, 5/8 ø (F436)	1
			KIT WEIGHT LBS	84

LIST OF ADDITIONAL MATERIALS				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
9.	1	C10981407	ANTENNA MTG. PIPE 4 1/2 ø X 7'-0	58
10.	4	C40034032	U-BOLT ASSEMBLY 5/8 ø X 5 3/16 C-C (PIPE MOUNTS)	9
			ADDITIONAL WEIGHT LBS	67

TOTAL WEIGHT LBS	151

UNLESS OTHERWISE SPECIFIED
ALL DIMENSIONS INCLUDE FINISHES AND ARE IN INCHES

TOLERANCES: FRACTIONS ± 1/16"
ANGLES ± 1/2 DEG.
DECIMALS ± .010"

MATERIAL:

TOLERANCES DO NOT APPLY TO RAW MATERIAL

REV	DATE	DRW	CHK	DESCRIPTION

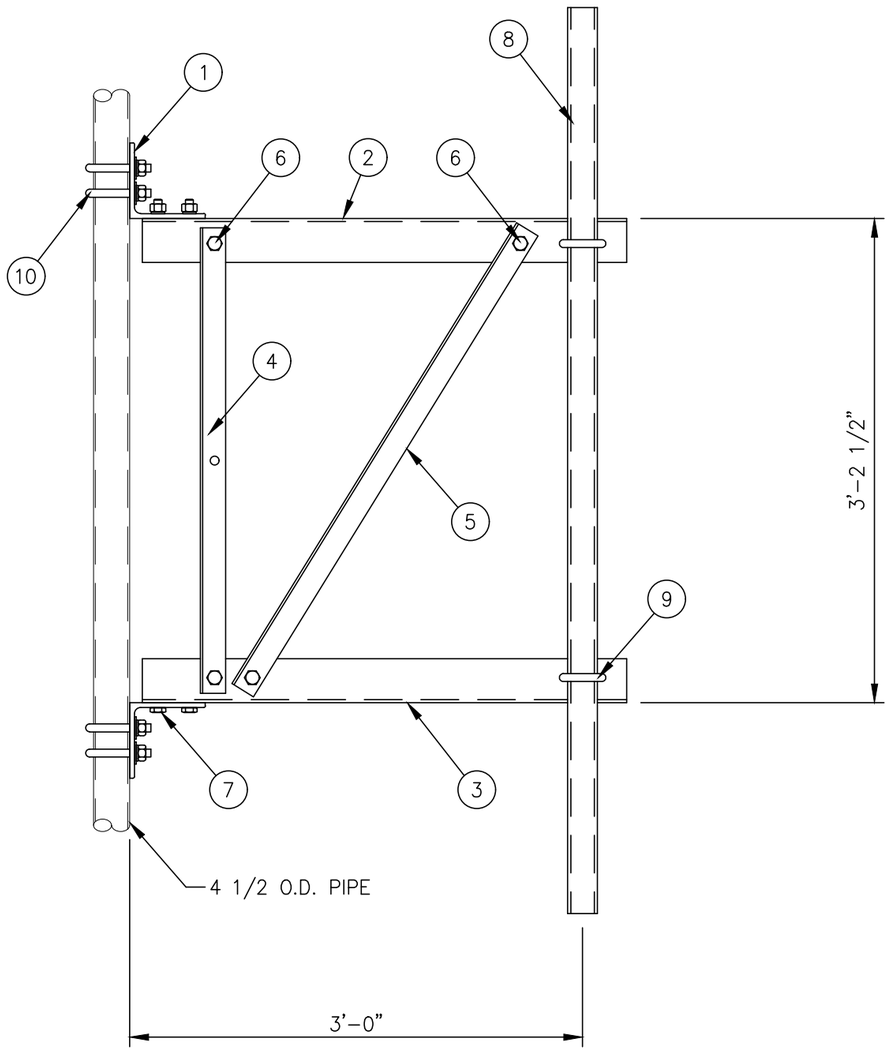
Sabre Industries™
INNOVATION DELIVERED

CONFIDENTIAL

This document and the information contained herein is the confidential trade secret property of Sabre Industries, Inc. ("Sabre") and must not be reproduced, copied or used, in whole or in part, for any purpose without the prior written consent of Sabre.
© 2025 Sabre Industries, Inc. All rights reserved.

PIPE MOUNT: 137' ELEVATION
SITE: MCCULLY MOUNTAIN, OR
CUSTOMER: MARION COUNTY OREGON

JOB NO. 563427		SIZE	DRAWING NO.		REV
DATE	8/7/25	B	563427-PM11		0
DRAWN BY	KMP			SCALE	PAGE
CHECKED BY	ZAK			None	1 OF 1



C10151103 3 FT. SIDEARM ASSEMBLY			
1	CK00060	SIDEARM ANGLE KIT	78
1	– – –	MISC HARDWARE (FRAMING)	4
1	C10900104	PIPE ANTENNA MOUNTING KIT 2 3/8" ø X 4'-0	16
4	C40034032	U-BOLT ASSEMBLY 5/8" ø X 5 3/16 C-C	9
		TOTAL WEIGHT LBS	107

CK00060 KIT LIST OF MATERIAL				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
1	2	CS00067	ANGLE, BOOM SUPPORT	23
2	1	CS01223	ANGLE, TOP CHORD	19
3	1	CS01224	ANGLE, BOTTOM CHORD	19
4	1	CS00065	ANGLE, VERTICAL	8
5	1	CS01228	ANGLE, DIAGONAL	9
			TOTAL WEIGHT LBS	78

MISC HARDWARE (FRAMING)				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
6	4	C40026022	BOLT ASSEMBLY, 5/8 ø X 1 3/4 A325	2
7	4	C40026023	BOLT ASSEMBLY, 5/8 ø X 2 A325	2
			TOTAL WEIGHT LBS	4

C10900104 ANTENNA PIPE MOUNTING KIT				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
8	1	C10981204	ANTENNA MTG. PIPE 2 3/8" ø X 4'-0"	13
9	2	C40034023	U-BOLT ASSEMBLY 5/8" ø X 3 1/16 C-C	3
			TOTAL WEIGHT LBS	16

MISC HARDWARE				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
10	4	C40034032	U-BOLT ASSEMBLY 5/8" ø X 5 3/16 C-C	9
			TOTAL WEIGHT LBS	9

NOTES:

1. IF THE MOUNT IS NOT ON THE STRAIGHT PORTION OF THE TOWER SEE SITE SPECIFIC PIPE MOUNT.
2. QUANTITIES SHOWN IN LIST OF MATERIALS ARE FOR ONE (1) SIDEARM ASSEMBLY ONLY.

UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS INCLUDE FINISHES AND ARE IN INCHES

TOLERANCES: FRACTIONS ± 1/16" ANGLES ± 1/2 DEG. DECIMALS ± .010"

MATERIAL:

TOLERANCES DO NOT APPLY TO RAW MATERIAL

REV	DATE	DRW	CHK	DESCRIPTION

Sabre Industries™ INNOVATION DELIVERED

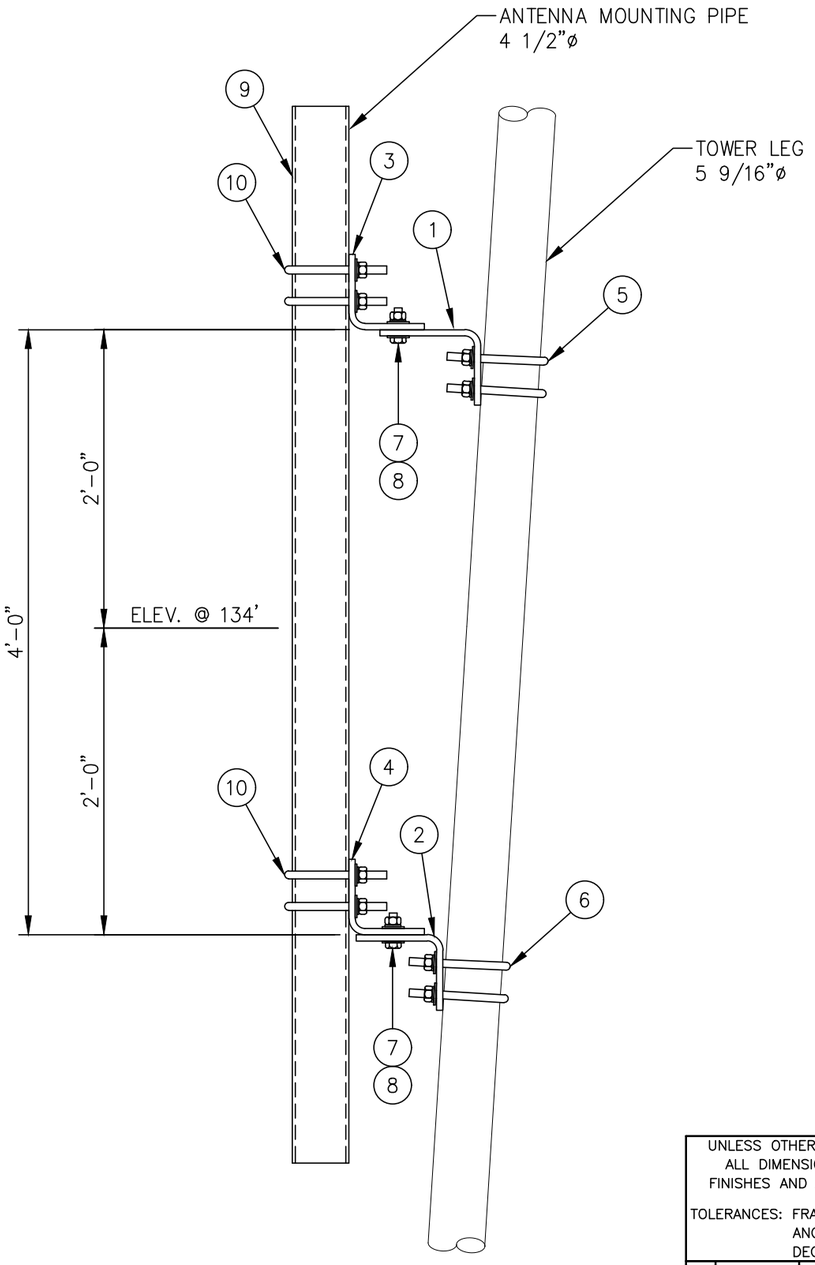
CONFIDENTIAL
This document and the information contained herein is the confidential trade secret property of Sabre Industries, Inc. ("Sabre") and must not be reproduced, copied or used, in whole or in part, for any purpose without the prior written consent of Sabre.
© 2025 Sabre Industries, Inc. All rights reserved.

3 FT. SIDEARM: 134' ELEVATION

SITE: MCCULLY MOUNTAIN, OR

CUSTOMER: MARION COUNTY OREGON

JOB NO. 563427		SIZE	DRAWING NO.	REV
DATE	08/07/25	B	563427-SA7	0
DRAWN BY	KMP			
CHECKED BY	ZAK		SCALE NONE	PAGE 1 OF 1



ELEVATION VIEW

LIST OF MATERIALS FOR TAPERED LEG PIPE MOUNT KIT C10174055				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
1.	1	CS00219	TOP LEG MOUNT FOR 5 9/16 ø LEG	24
2.	1	CS00218	BOTTOM LEG MOUNT FOR 5 9/16 ø LEG	20
3.	1	CS00214	TOP PIPE MOUNT FOR 4 1/2 ø PIPE	15
4.	1	CS00215	BOTTOM PIPE MOUNT FOR 4 1/2 ø PIPE	12
5.	2	C40034035	U-BOLT ASSEMBLY 5/8 ø X 6 1/4 C-C (TOP LEG MOUNT)	5
6.	2	C40034035	U-BOLT ASSEMBLY 5/8 ø X 6 1/4 C-C (BOTTOM LEG MOUNT)	5
7.	4	C40026024	BOLT ASSEMBLY 5/8 ø X 2 1/4 A325	2
8.	8	C40031003	FLATWASHER, 5/8 ø (F436)	1
			KIT WEIGHT LBS	84

LIST OF ADDITIONAL MATERIALS				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
9.	1	C10981407	ANTENNA MTG. PIPE 4 1/2 ø X 7'-0	58
10.	4	C40034032	U-BOLT ASSEMBLY 5/8 ø X 5 3/16 C-C (PIPE MOUNTS)	9
			ADDITIONAL WEIGHT LBS	67

TOTAL WEIGHT LBS	151

UNLESS OTHERWISE SPECIFIED
ALL DIMENSIONS INCLUDE FINISHES AND ARE IN INCHES
TOLERANCES: FRACTIONS ± 1/16"
ANGLES ± 1/2 DEG.
DECIMALS ± .010"

MATERIAL:
TOLERANCES DO NOT APPLY TO RAW MATERIAL

REV	DATE	DRW	CHK	DESCRIPTION

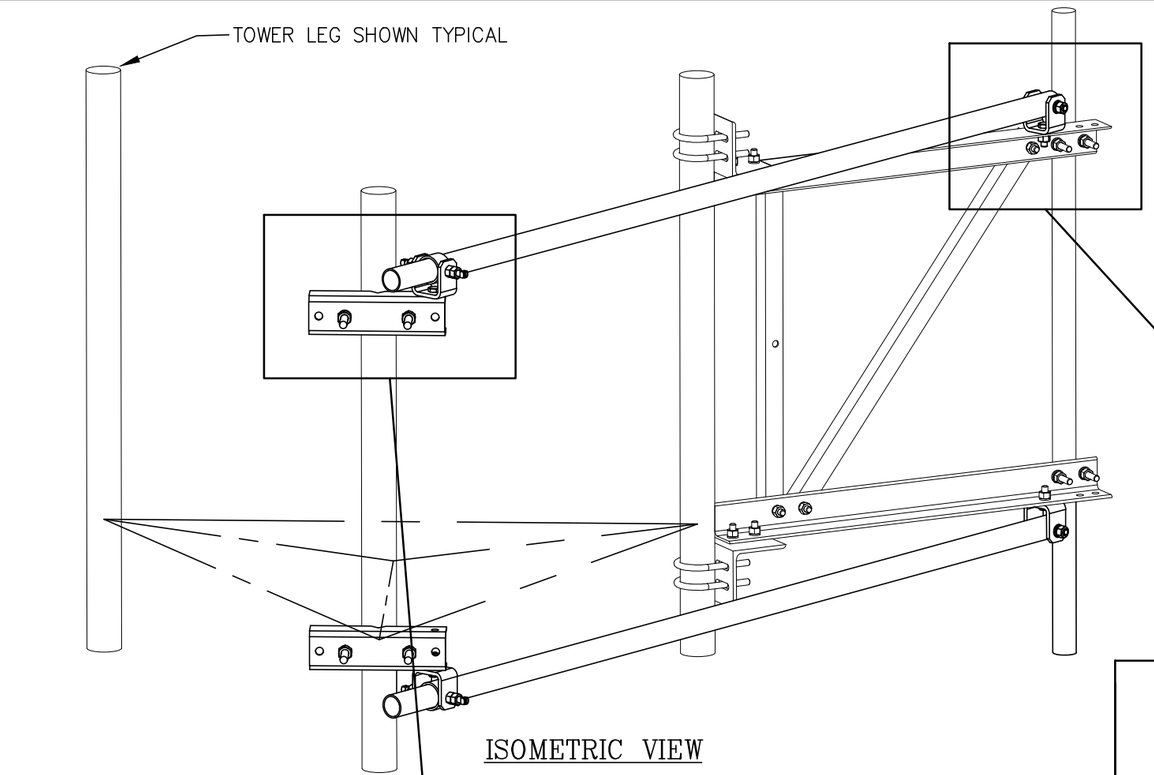
Sabre Industries™
INNOVATION DELIVERED

CONFIDENTIAL
This document and the information contained herein is the confidential trade secret property of Sabre Industries, Inc. ("Sabre") and must not be reproduced, copied or used, in whole or in part, for any purpose without the prior written consent of Sabre.
© 2025 Sabre Industries, Inc. All rights reserved.

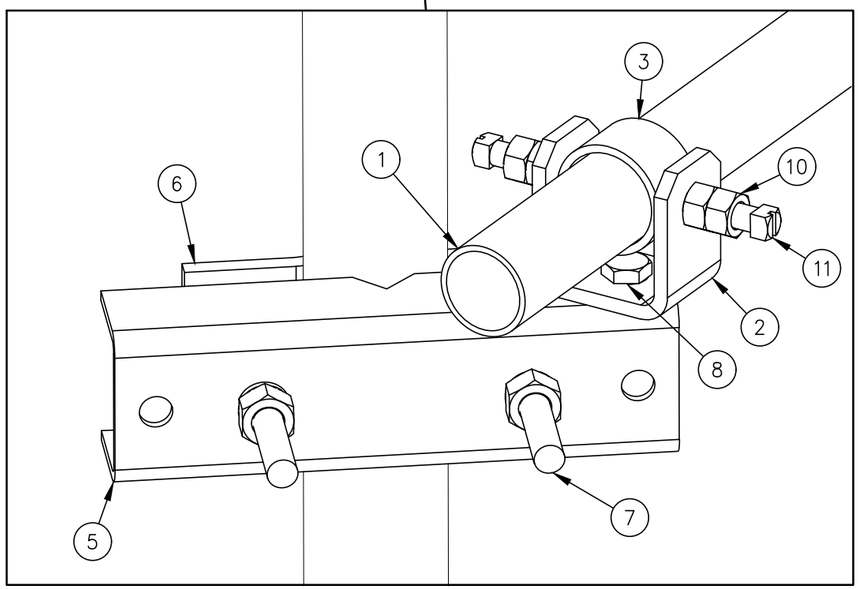
PIPE MOUNT FOR SIDEARM: 134' ELEVATION
SITE: MCCULLY MOUNTAIN, OR
CUSTOMER: MARION COUNTY OREGON

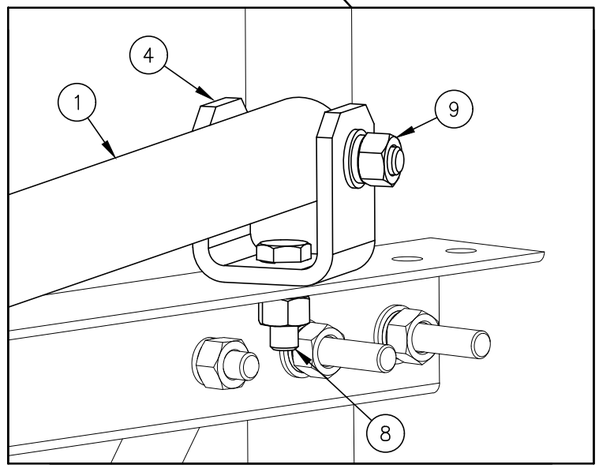
JOB NO. 563427		SIZE	DRAWING NO.	REV
DATE	8/7/25	B	563427-PM12	0
DRAWN BY	KMP			
CHECKED BY	ZAK		SCALE None	PAGE 1 OF 1

EXHIBIT K



ISOMETRIC VIEW





C10179011 SWIVEL KNUCKLE TIEBACK

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
1	1	CS00249	PIPE, 2 7/8 O.D. X W/0.203 X 15'-6	93
2	1	CW00022	SWIVEL PLATE WELDMENT	3
3	1	CS00092	PIPE, SLEEVE 3 1/2 O.D. X W/0.216 X 0'-1 3/4	1
4	1	CS00096	BENT SWIVEL PLATE	3
5	1	CS01360	PLATE, MOUNTING BRACKET (FORMED CHANNEL)	9
6	1	CS01361	PLATE, 2 HOLE ADAPTER CLAMP	3
7	2	C40140001	BOLT ASSEMBLY, 3/4 X 10 A307 W/NUT, LKW, FLW	4
8	2	C40026023	BOLT ASSEMBLY, 5/8 ø X 2 A325	1
9	1	C40026035	BOLT ASSEMBLY, 5/8 ø X 5 A325	1
10	2	C40042007	HEX NUT, 5/8 A194 GRADE 2H	1
11	2	C40998007	SQ. HEAD SET SCREW, 5/8 X 2 1/2	1
			TOTAL WEIGHT LBS	120

QUANTITIES SHOWN ABOVE ARE FOR (1) SWIVEL KNUCKLE TIEBACK KIT ONLY.
(2) KITS ARE REQUIRED FOR THIS SIDEARM ASSEMBLY

UNLESS OTHERWISE SPECIFIED
ALL DIMENSIONS INCLUDE
FINISHES AND ARE IN INCHES

TOLERANCES: FRACTIONS ± 1/16"
ANGLES ± 1/2 DEG.
DECIMALS ± .010"

MATERIAL:

TOLERANCES DO NOT APPLY
TO RAW MATERIAL

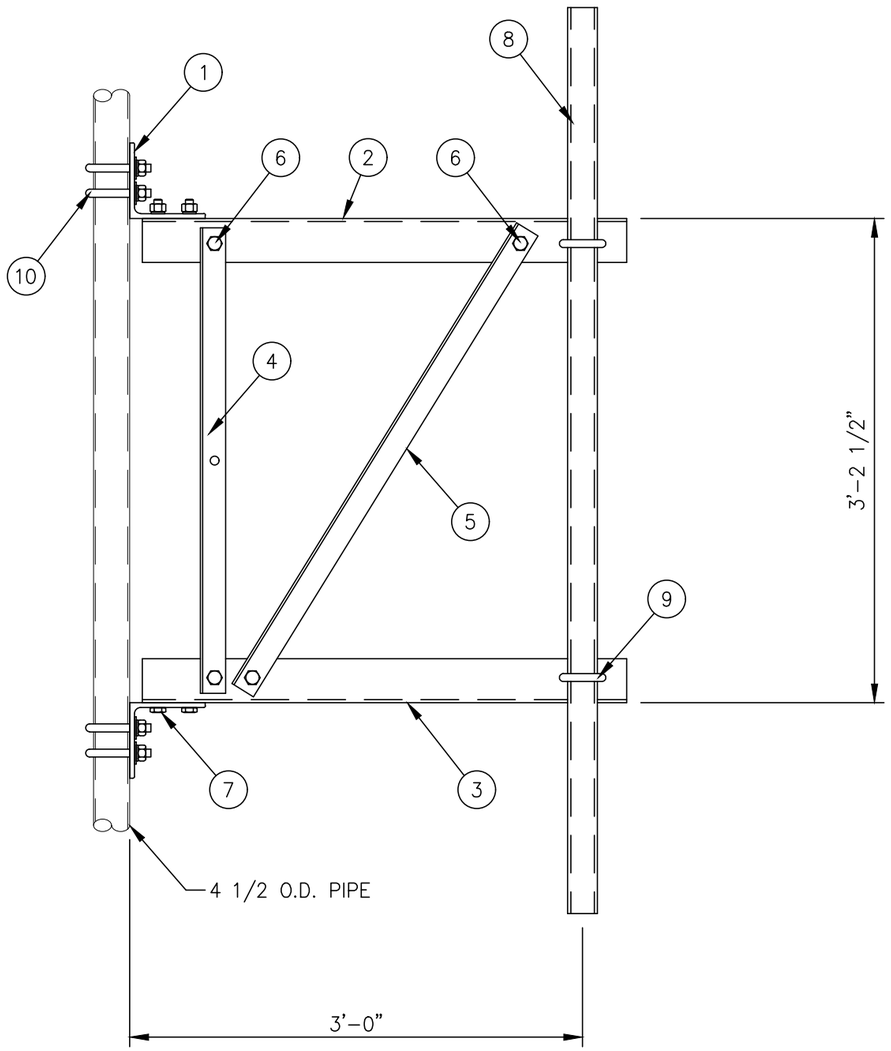
REV	DATE	DRW	CHK	DESCRIPTION

Sabre Industries™
INNOVATION DELIVERED

CONFIDENTIAL
This document and the information contained herein is the confidential trade secret property of Sabre Industries, Inc. ("Sabre") and must not be reproduced, copied or used, in whole or in part, for any purpose without the prior written consent of Sabre.
© 2025 Sabre Industries, Inc. All rights reserved.

SWIVEL KNUCKLE TIEBACKS: 134' ELEVATION
SITE: MCCULLY MOUNTAIN, OR
CUSTOMER: MARION COUNTY OREGON

JOB NO. 563427		SIZE	DRAWING NO.	REV
DATE	08/07/25	B	563427-ST7	0
DRAWN BY	KMP			
CHECKED BY	ZAK		SCALE NONE	PAGE 1 OF 1



C10151103 3 FT. SIDEARM ASSEMBLY			
1	CK00060	SIDEARM ANGLE KIT	78
1	– – –	MISC HARDWARE (FRAMING)	4
1	C10900105	PIPE ANTENNA MOUNTING KIT 2 3/8" ø X 5'-0	19
4	C40034032	U-BOLT ASSEMBLY 5/8" ø X 5 3/16 C-C	9
		TOTAL WEIGHT LBS	110

CK00060 KIT LIST OF MATERIAL				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
1	2	CS00067	ANGLE, BOOM SUPPORT	23
2	1	CS01223	ANGLE, TOP CHORD	19
3	1	CS01224	ANGLE, BOTTOM CHORD	19
4	1	CS00065	ANGLE, VERTICAL	8
5	1	CS01228	ANGLE, DIAGONAL	9
			TOTAL WEIGHT LBS	78

MISC HARDWARE (FRAMING)				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
6	4	C40026022	BOLT ASSEMBLY, 5/8 ø X 1 3/4 A325	2
7	4	C40026023	BOLT ASSEMBLY, 5/8 ø X 2 A325	2
			TOTAL WEIGHT LBS	4

C10900105 ANTENNA PIPE MOUNTING KIT				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
8	1	C10981223	ANTENNA MTG. PIPE 2 3/8" ø X 5'-0	16
9	2	C40034023	U-BOLT ASSEMBLY 5/8" ø X 3 1/16 C-C	3
			TOTAL WEIGHT LBS	19

MISC HARDWARE				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
10	4	C40034032	U-BOLT ASSEMBLY 5/8" ø X 5 3/16 C-C	9
			TOTAL WEIGHT LBS	9

NOTES:

1. IF THE MOUNT IS NOT ON THE STRAIGHT PORTION OF THE TOWER SEE SITE SPECIFIC PIPE MOUNT.
2. QUANTITIES SHOWN IN LIST OF MATERIALS ARE FOR ONE (1) SIDEARM ASSEMBLY ONLY.

UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS INCLUDE FINISHES AND ARE IN INCHES

TOLERANCES: FRACTIONS ± 1/16" ANGLES ± 1/2 DEG. DECIMALS ± .010"

MATERIAL:

TOLERANCES DO NOT APPLY TO RAW MATERIAL

REV	DATE	DRW	CHK	DESCRIPTION

Sabre Industries™ INNOVATION DELIVERED

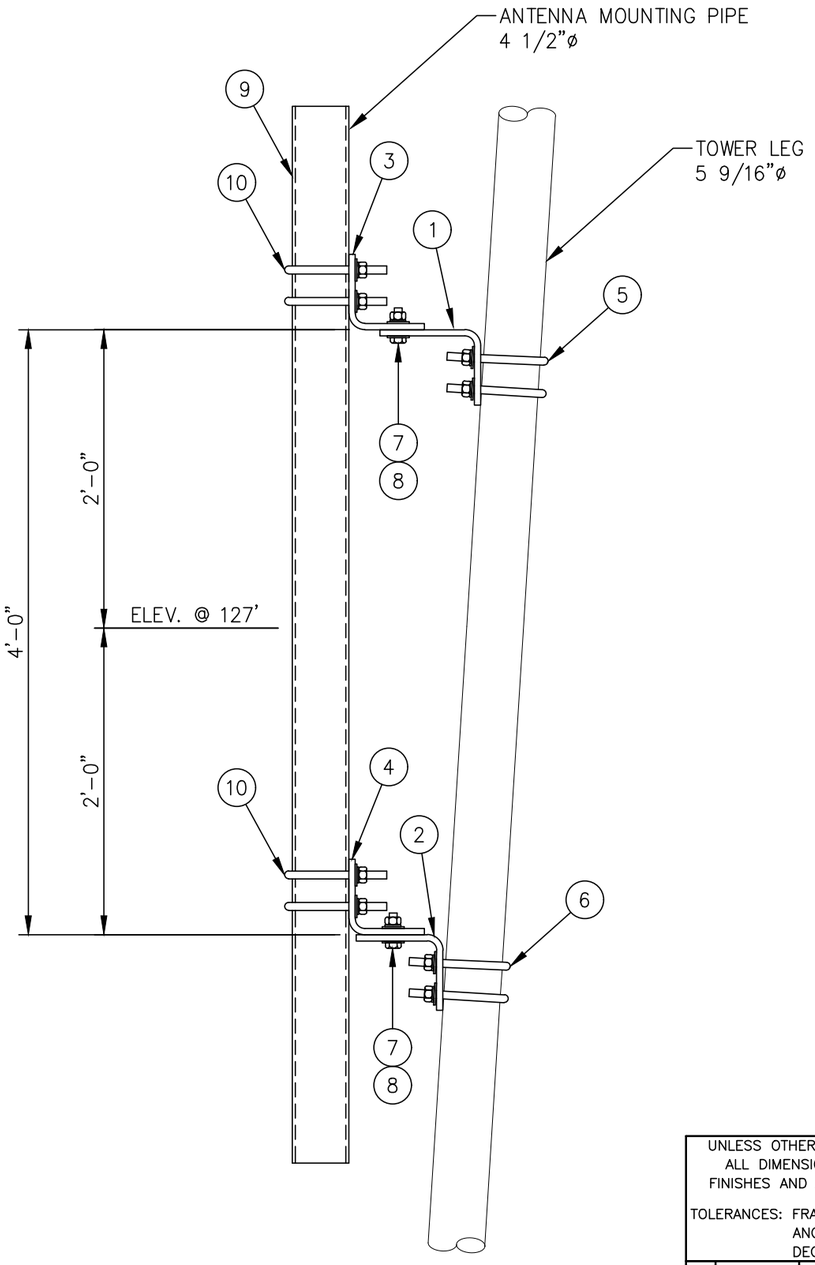
CONFIDENTIAL
This document and the information contained herein is the confidential trade secret property of Sabre Industries, Inc. ("Sabre") and must not be reproduced, copied or used, in whole or in part, for any purpose without the prior written consent of Sabre.
© 2025 Sabre Industries, Inc. All rights reserved.

3 FT. SIDEARM: 127' ELEVATION

SITE: MCCULLY MOUNTAIN, OR

CUSTOMER: MARION COUNTY OREGON

JOB NO. 563427		SIZE	DRAWING NO.	REV
DATE	08/07/25	B	563427-SA8	0
DRAWN BY	KMP			
CHECKED BY	ZAK		SCALE NONE	PAGE 1 OF 1



ELEVATION VIEW

LIST OF MATERIALS FOR TAPERED LEG PIPE MOUNT KIT C10174055				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
1.	1	CS00219	TOP LEG MOUNT FOR 5 9/16 ø LEG	24
2.	1	CS00218	BOTTOM LEG MOUNT FOR 5 9/16 ø LEG	20
3.	1	CS00214	TOP PIPE MOUNT FOR 4 1/2 ø PIPE	15
4.	1	CS00215	BOTTOM PIPE MOUNT FOR 4 1/2 ø PIPE	12
5.	2	C40034035	U-BOLT ASSEMBLY 5/8 ø X 6 1/4 C-C (TOP LEG MOUNT)	5
6.	2	C40034035	U-BOLT ASSEMBLY 5/8 ø X 6 1/4 C-C (BOTTOM LEG MOUNT)	5
7.	4	C40026024	BOLT ASSEMBLY 5/8 ø X 2 1/4 A325	2
8.	8	C40031003	FLATWASHER, 5/8 ø (F436)	1
			KIT WEIGHT LBS	84

LIST OF ADDITIONAL MATERIALS				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
9.	1	C10981407	ANTENNA MTG. PIPE 4 1/2 ø X 7'-0	58
10.	4	C40034032	U-BOLT ASSEMBLY 5/8 ø X 5 3/16 C-C (PIPE MOUNTS)	9
			ADDITIONAL WEIGHT LBS	67

TOTAL WEIGHT LBS	151

UNLESS OTHERWISE SPECIFIED
ALL DIMENSIONS INCLUDE FINISHES AND ARE IN INCHES
TOLERANCES: FRACTIONS ± 1/16"
ANGLES ± 1/2 DEG.
DECIMALS ± .010"

MATERIAL:

TOLERANCES DO NOT APPLY TO RAW MATERIAL

REV	DATE	DRW	CHK	DESCRIPTION

Sabre Industries™
INNOVATION DELIVERED

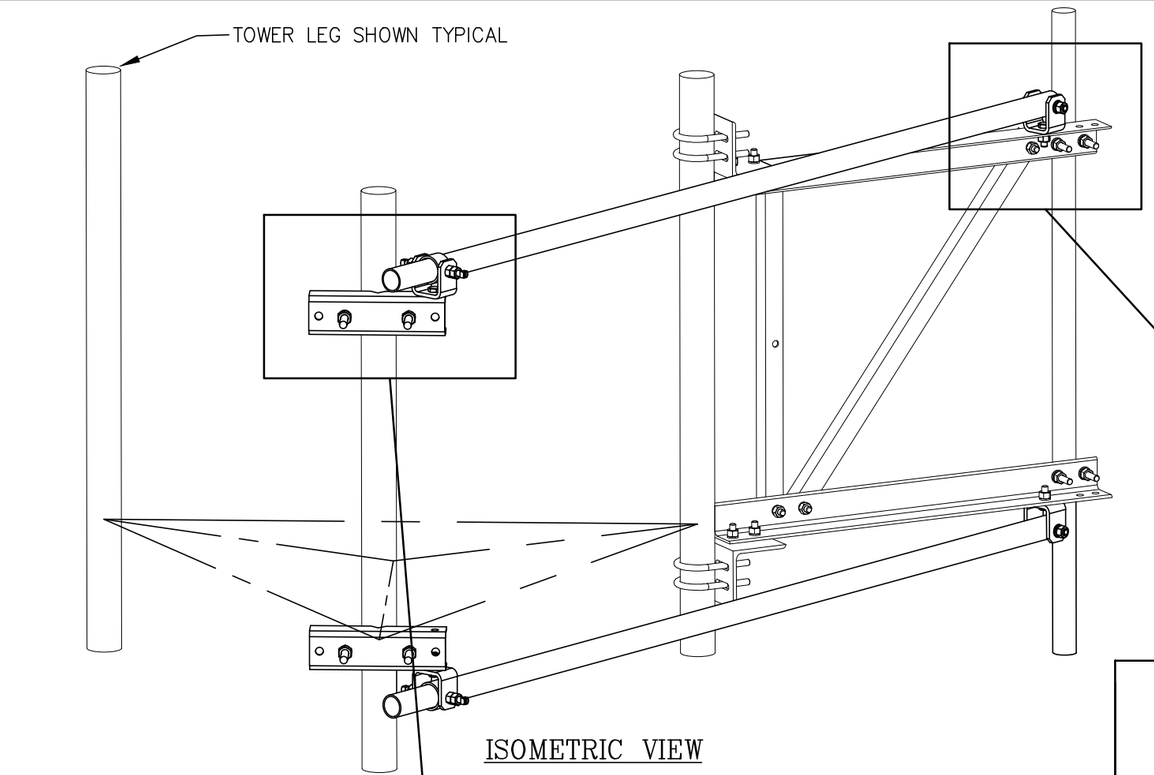
CONFIDENTIAL

This document and the information contained herein is the confidential trade secret property of Sabre Industries, Inc. ("Sabre") and must not be reproduced, copied or used, in whole or in part, for any purpose without the prior written consent of Sabre.
© 2025 Sabre Industries, Inc. All rights reserved.

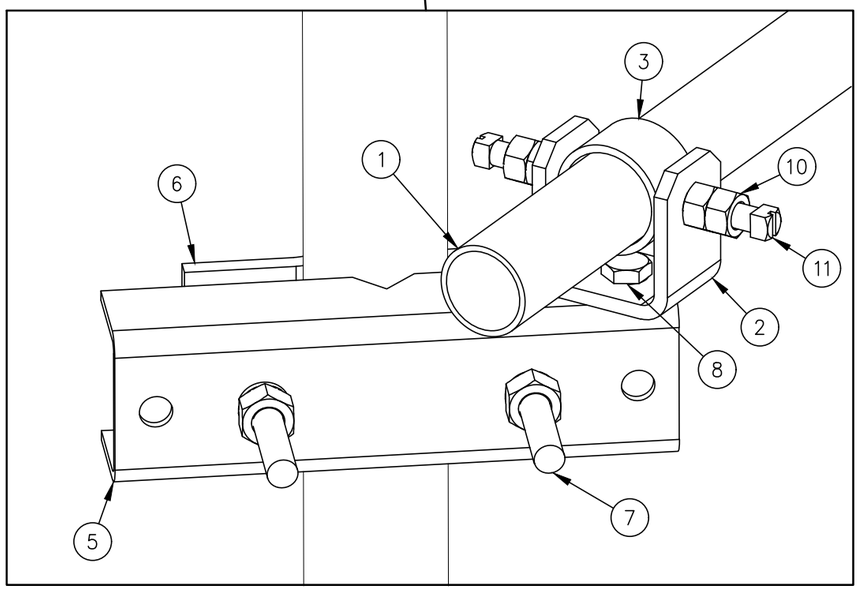
PIPE MOUNT FOR SIDEARM: 127' ELEVATION
SITE: MCCULLY MOUNTAIN, OR
CUSTOMER: MARION COUNTY OREGON

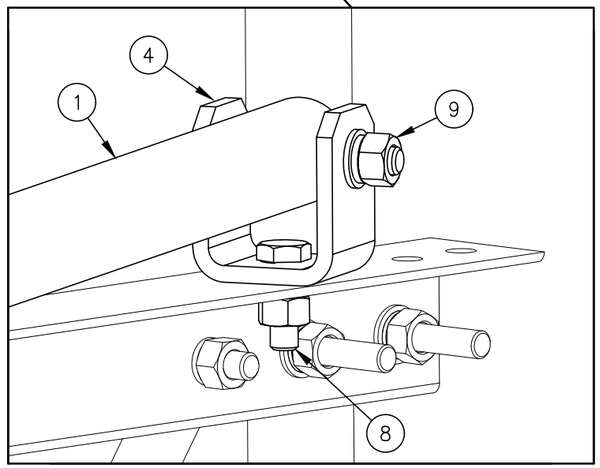
JOB NO. 563427		SIZE	DRAWING NO.	REV
DATE	8/7/25	B	563427-PM13	0
DRAWN BY	KMP			
CHECKED BY	ZAK		SCALE None	PAGE 1 OF 1

EXHIBIT K



ISOMETRIC VIEW





C10179011 SWIVEL KNUCKLE TIEBACK

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
1	1	CS00249	PIPE, 2 7/8 O.D. X W/0.203 X 15'-6	93
2	1	CW00022	SWIVEL PLATE WELDMENT	3
3	1	CS00092	PIPE, SLEEVE 3 1/2 O.D. X W/0.216 X 0'-1 3/4	1
4	1	CS00096	BENT SWIVEL PLATE	3
5	1	CS01360	PLATE, MOUNTING BRACKET (FORMED CHANNEL)	9
6	1	CS01361	PLATE, 2 HOLE ADAPTER CLAMP	3
7	2	C40140001	BOLT ASSEMBLY, 3/4 X 10 A307 W/NUT, LKW, FLW	4
8	2	C40026023	BOLT ASSEMBLY, 5/8 ø X 2 A325	1
9	1	C40026035	BOLT ASSEMBLY, 5/8 ø X 5 A325	1
10	2	C40042007	HEX NUT, 5/8 A194 GRADE 2H	1
11	2	C40998007	SQ. HEAD SET SCREW, 5/8 X 2 1/2	1
			TOTAL WEIGHT LBS	120

QUANTITIES SHOWN ABOVE ARE FOR (1) SWIVEL KNUCKLE TIEBACK KIT ONLY.
(2) KITS ARE REQUIRED FOR THIS SIDEARM ASSEMBLY

UNLESS OTHERWISE SPECIFIED
ALL DIMENSIONS INCLUDE
FINISHES AND ARE IN INCHES

TOLERANCES: FRACTIONS ± 1/16"
ANGLES ± 1/2 DEG.
DECIMALS ± .010"

MATERIAL:

TOLERANCES DO NOT APPLY TO RAW MATERIAL

REV	DATE	DRW	CHK	DESCRIPTION

Sabre Industries™
INNOVATION DELIVERED

CONFIDENTIAL
This document and the information contained herein is the confidential trade secret property of Sabre Industries, Inc. ("Sabre") and must not be reproduced, copied or used, in whole or in part, for any purpose without the prior written consent of Sabre.
© 2025 Sabre Industries, Inc. All rights reserved.

SWIVEL KNUCKLE TIEBACKS: 127' ELEVATION

SITE: MCCULLY MOUNTAIN, OR

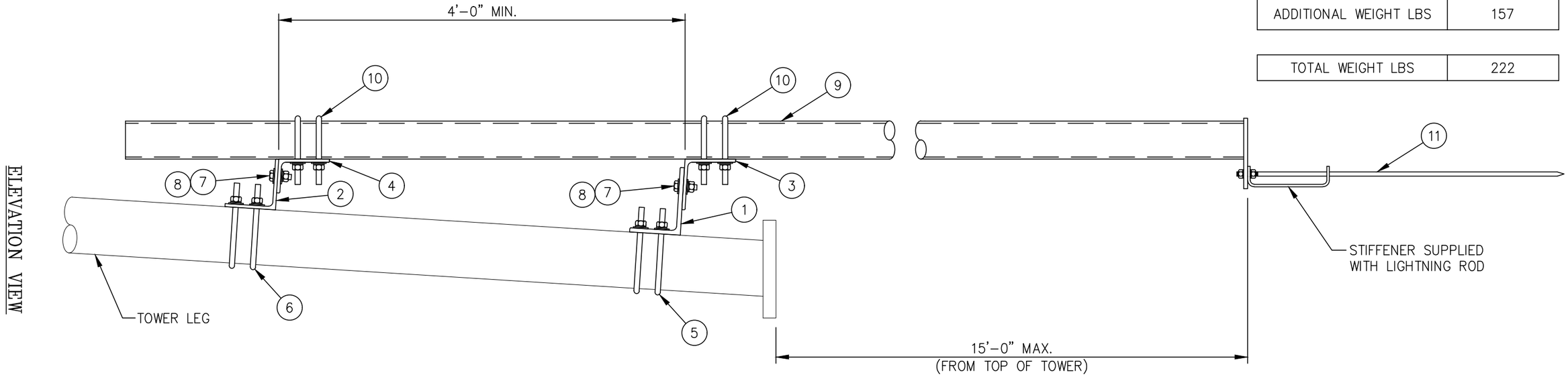
CUSTOMER: MARION COUNTY OREGON

JOB NO. 563427		SIZE	DRAWING NO.	REV
DATE	08/07/25	B	563427-ST8	0
DRAWN BY	KMP			
CHECKED BY	ZAK		SCALE NONE	PAGE 1 OF 1

LIST OF MATERIALS FOR TAPERED LEG PIPE MOUNT KIT C10174018				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
1.	1	CS00216	TOP LEG MOUNT FOR 2 7/8 ø LEG	15
2.	1	CS00215	BOTTOM LEG MOUNT FOR 2 7/8 ø LEG	12
3.	1	CS00214	TOP PIPE MOUNT FOR 2 7/8 ø PIPE	15
4.	1	CS00215	BOTTOM PIPE MOUNT FOR 2 7/8 ø PIPE	12
5.	2	C40034025	U-BOLT ASSEMBLY 5/8 ø X 3 9/16 C-C (TOP LEG MOUNT)	4
6.	2	C40034025	U-BOLT ASSEMBLY 5/8 ø X 3 9/16 C-C (BOTTOM LEG MOUNT)	4
7.	4	C40026024	BOLT ASSEMBLY 5/8 ø X 2 1/4 A325	2
8.	8	C40031003	FLATWASHER, 5/8 ø (F436)	1
			KIT WEIGHT LBS	65

LIST OF ADDITIONAL MATERIALS				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
9.	1	CW00032	LIGHTNING ROD EXTENSION 2 7/8 ø X 21'-0"	128
10.	4	C40034025	U-BOLT ASSEMBLY 5/8 ø X 3 9/16 C-C (PIPE MOUNTS)	7
11.	1 KIT	C30986004	LIGHTNING ROD ASSY 3/4 ø X 10'-0 CCS W/STIFFENER	22
			ADDITIONAL WEIGHT LBS	157

TOTAL WEIGHT LBS	222



NOTE:
THE ASSEMBLY IS SHOWN ON THE OUTSIDE OF THE TOWER.
IT MAY ALSO BE MOUNTED ON THE INSIDE OF TOWER, IF NECESSARY.

UNLESS OTHERWISE SPECIFIED
ALL DIMENSIONS INCLUDE
FINISHES AND ARE IN INCHES

TOLERANCES: FRACTIONS ± 1/16"
ANGLES ± 1/2 DEG.
DECIMALS ± .010"

MATERIAL:

TOLERANCES DO NOT APPLY
TO RAW MATERIAL

REV	DATE	DRW	CHK	DESCRIPTION

Sabre Industries™
INNOVATION DELIVERED

CONFIDENTIAL
This document and the information contained herein is the confidential trade secret property of Sabre Industries, Inc. ("Sabre") and must not be reproduced, copied or used, in whole or in part, for any purpose without the prior written consent of Sabre.
© 2025 Sabre Industries, Inc. All rights reserved.

LIGHTNING ROD W/STIFFENER & EXTENSION
SITE: MCCULLY MOUNTAIN, OR
CUSTOMER: MARION COUNTY OREGON

JOB NO. 563427		SIZE	DRAWING NO.	REV
DATE	8/7/25	B	563427-LR	0
DRAWN BY	KMP			
CHECKED BY	ZAK		SCALE None	PAGE 1 OF 1

BOLT INSTALLATION DETAILS:

1. INSTALLATION OF BOLTS: BOLTS FOR TOWERS AND ANTENNAS SHALL BE INSTALLED WITH THE NUTS FACING TO THE OUTSIDE AND/OR TO THE TOP OF THE TOWER, UNLESS PROHIBITED BY LACK OF CLEARANCE.

2. TIGHTENING OF BOLTS: ALL HIGH STRENGTH BOLTS SHALL BE TIGHTENED TO A SNUG-TIGHT CONDITION, AS DEFINED BY AISC.

3. NUT LOCKING DEVICE: ALL NUTS SHALL BE EQUIPPED WITH SOME TYPE OF NUT LOCKING DEVICE. SEE THE INDIVIDUAL DRAWINGS FOR THE TYPE OF NUT LOCKING DEVICE TO BE USED FOR EACH INDIVIDUAL APPLICATION.

UNLESS OTHERWISE SPECIFIED
ALL DIMENSIONS INCLUDE
FINISHES AND ARE IN INCHES

TOLERANCES: FRACTIONS ± 1/16"
ANGLES ± 1/2 DEG.
DECIMALS ± .010"

MATERIAL:

TOLERANCES DO NOT APPLY TO RAW MATERIAL

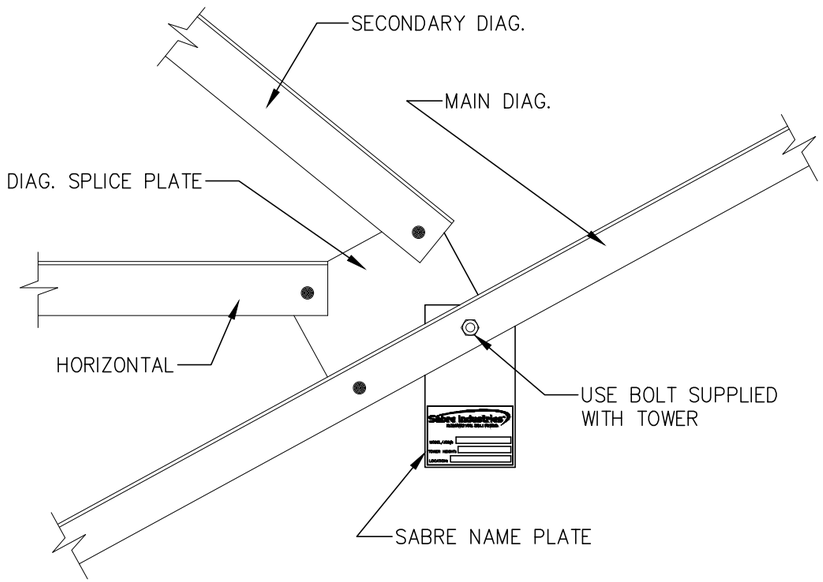
REV	DATE	DRW	CHK	DESCRIPTION
3	02/15/08	KLE	DLW	REVISED PER KEITH TINDALL
2	03/04/04	PSB	ZAK	REDRAWN ONTO "B" SIZE TITLEBLOCK.
1	03/06/01	JKW	PSB	REDRAWN IN AUTOCAD 2000i.

Sabre Industries™
INNOVATION DELIVERED

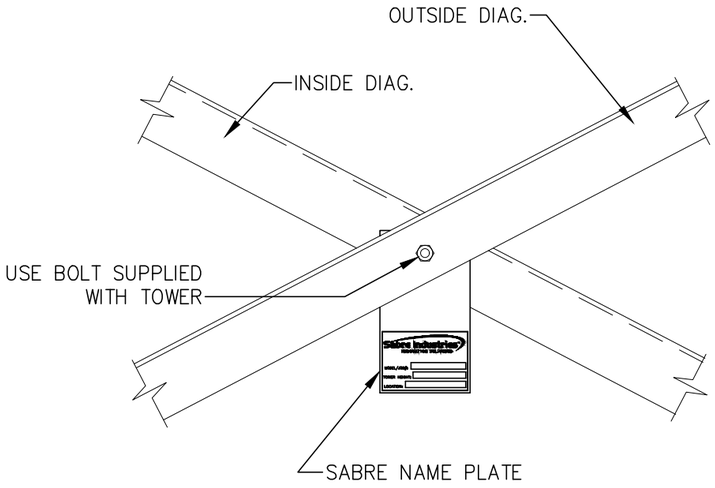
CONFIDENTIAL
This document and the information contained herein is the confidential trade secret property of Sabre Industries, Inc. ("Sabre") and must not be reproduced, copied or used, in whole or in part, for any purpose without the prior written consent of Sabre.
© 2022 Sabre Industries, Inc. All rights reserved.

BOLT INSTALLATION DETAILS

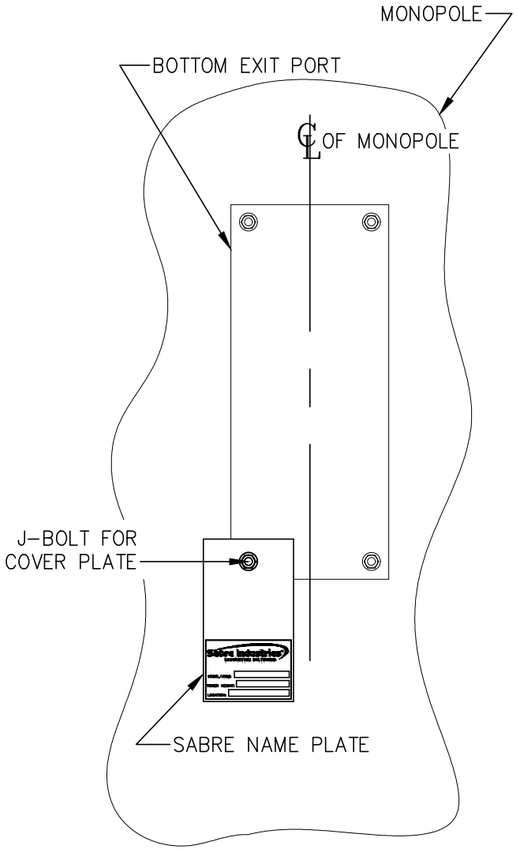
		SIZE	DRAWING NO.	REV
DATE	01/28/00	B	9014671	3
DRAWN BY	MJM			
CHECKED BY	KJT/DLW	SCALE None	PAGE 1 OF 1	



TYPICAL FOR MODEL S3TL, S4TL, S3R & S4R
SELF-SUPPORTING TOWER
(K-BRACE)

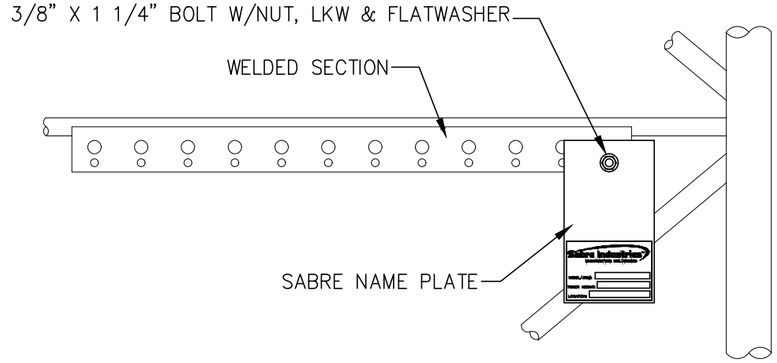


TYPICAL FOR MODEL S3TL, S4TL, S3R & S4R
SELF-SUPPORTING TOWER
(X-BRACE)

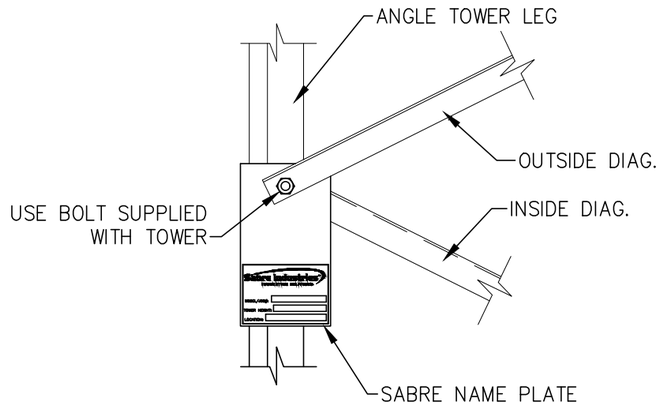


TYPICAL FOR MONOPOLE
STRUCTURE

NOTE:
NAME PLATE SHOULD BE MOUNTED AT
APPROXIMATELY EYE LEVEL WHEN POSSIBLE.



TYPICAL FOR MODEL 2400 / 3600 / 4400 / 4800 / 6000
WELDED GUYED TOWER



TYPICAL FOR MODEL 3000 / 3600 / 4800
ANGLE GUYED TOWER

UNLESS OTHERWISE SPECIFIED
ALL DIMENSIONS INCLUDE
FINISHES AND ARE IN INCHES

TOLERANCES: FRACTIONS ± 1/16"
ANGLES ± 1/2 DEG.
DECIMALS ± .010"

MATERIAL:

TOLERANCES DO NOT APPLY
TO RAW MATERIAL

REV	DATE	DRW	CHK	DESCRIPTION
7	05/25/21	FJM	DLW	UPDATED SABRE NAME PLATE LOGO
6	8/18/11	DSN	KTW	ADDED 4800 & 6000 WELDED GUYED TOWER.
5	3/30/04	MJM	ZAK	ADDED S4TL & S4R TO S.S. TOWER.
4	11/11/02	PSB	RGF	ADDED 2400 WELDED GUYED TOWER.
3	08/23/01	SMC	PSB	REVISED BOLT ON GUYED TOWER WAS 3/8 X 1"
				REVISED MONOPOLE INSTALLATION.
2	02/16/01	DEM	RGF	REDRAWN IN AUTOCAD 2000i
1	04/16/97	DEM	RGF	REDRAWN WITH NEW TITLE BLOCK

Sabre Industries™
INNOVATION DELIVERED

CONFIDENTIAL
This document and the information contained herein is the confidential trade secret property of Sabre Industries, Inc. ("Sabre") and must not be reproduced, copied or used, in whole or in part, for any purpose without the prior written consent of Sabre.
© 2022 Sabre Industries, Inc. All rights reserved.

OPTIONAL MOUNTING INSTALLATION
SABRE NAME PLATE

		SIZE	DRAWING NO.	REV
DATE	10/15/96	B	906956	7
DRAWN BY	DEM			
CHECKED BY	RGF	SCALE None	PAGE 1 OF 1	

NOTICE

ALL PARTS ARE TO BE INVENTORIED AND ANY
SHORTAGES REPORTED WITHIN 48 HOURS OF DELIVERY
TO THE CONTRACTING ERECTOR.

SHORTAGES REPORTED AFTER THIS TIME PERIOD WILL
BE CHARGED TO THE CONTRACTOR.

CALL 712-258-6690

TO REACH THE SABRE CONTRACTS DEPARTMENT.

AVISO

Todas las partes serán inventariadas y los faltantes reportados
por el contratista dentro de las 48 horas a partir de la entrega.

Los faltantes reportados después de 48 horas serán cargados al contratista.

Para aclaraciones llame a:

Sabre-Departamento de Contrataciones

(001) 712 258-6690

UNLESS OTHERWISE SPECIFIED
ALL DIMENSIONS INCLUDE
FINISHES AND ARE IN INCHES

TOLERANCES: FRACTIONS ± 1/16"
ANGLES ± 1/2 DEG.
DECIMALS ± .010"

MATERIAL:

TOLERANCES DO NOT APPLY
TO RAW MATERIAL

REV	DATE	DRW	CHK	DESCRIPTION
3	03/04/04	PSB	ZAK	REDRAWN ONTO "B" SIZE TITLEBLOCK.
2	02/25/02	CHH	RWM	ADDED SPANISH TEXT.
1	02/27/01	CHH	CE	REDRAWN IN AUTOCAD 2000i & UPDATED VERBAGE.

Sabre Industries™
INNOVATION DELIVERED

CONFIDENTIAL

This document and the information contained herein is the confidential trade secret property of Sabre Industries, Inc. ("Sabre") and must not be reproduced, copied or used, in whole or in part, for any purpose without the prior written consent of Sabre.
© 2022 Sabre Industries, Inc. All rights reserved.

INVENTORY REQUIREMENT SHEET

DATE	05/12/97
DRAWN BY	ZAK
CHECKED BY	JD

SIZE	DRAWING NO.	REV
B	907901	3

SCALE	PAGE
None	1 OF 1

EXHIBIT K

CUSTOMER : MARION COUNTY OREGON

SITE : MCCULLY MOUNTAIN, OR

B.O.M. 180 FT. MODEL S3TL-HD2 SELF-SUPPORTING TOWER

PC=PIECE	OR=ORANGE
PLT=PALLET	WH=WHITE
BDL=BUNDLE	O/W=OR & WH
CRT=CRATE	N/R=NOT REQ'D
D=DRUM	SP=SPECIAL
BX=BOX	

ITEM NO.	NO. REQ'D.	DRAWING NUMBER	DRAWING REV	PART NO.	DESCRIPTION	TOTAL WEIGHT LBS.	PAINT	PACKING KIT	PACKING QTY OF PKG'S	PACKING PKG. NO.
1					**ANCHOR BOLTS AND TEMPLATES**					
2	18	C40041061	0	C40041061	ANCHOR BOLT ASSEMBLY, 1 3/4 Ø X 7'-3 (F1554 GR 105)	1305				
3					W/(5) NUTS 1 3/4 HEAVY HEX (A563 DH)					
4					(2) FLATWASHERS 1 3/4 (F436)					
5	6	C30139220	0	C30139220	PLATE, A.B. TEMPLATE 1 3/4"Ø A.B. ON 19"Ø B.C.	161				
6					**LEG TO LEG TEMPLATE MATERIAL**					
7	1 KIT			C30400341	LEG TO LEG TEMPLATE KIT, 23'-0 BASE SPREAD	517				
8					(6) 1 3/4"Ø A.B. ON A 19"Ø B.C.					
9										
10										
11										
12										
13										
14										
15										
16										
17										
18										
19										
20										

REV	DATE	DRW	CHK	DESCRIPTION

DATE	7/15/25	**JOB NO.**	563427
DRAWN BY	AWB	**PRINT NO.**	BOM-1
CHECKED BY	BWA	**PAGE**	1 OF 23

Sabre Industries™
INNOVATION DELIVERED

CUSTOMER : MARION COUNTY OREGON

SITE : MCCULLY MOUNTAIN, OR

B.O.M. 180 FT. MODEL S3TL-HD2 SELF-SUPPORTING TOWER

PC=PIECE	OR=ORANGE
PLT=PALLET	WH=WHITE
BDL=BUNDLE	O/W=OR & WH
CRT=CRATE	N/R=NOT REQ'D
D=DRUM	SP=SPECIAL
BX=BOX	

ITEM NO.	NO. REQ'D.	DRAWING NUMBER	DRAWING REV	PART NO.	DESCRIPTION	TOTAL WEIGHT LBS.	PAINT	PACKING KIT	PACKING QTY OF PKG'S	PACKING PKG. NO.
1					**TOWER LEGS**					
2	3	15-T11611441	0	15-T11611441	SECT. 15 LEG 14 Ø X .500 X 20'-0 5/16 W/STEP BOLTS	5508				
3	3	14-T11611443	0	14-T11611443	SECT. 14 LEG 14 Ø X .500 X 20'-0 5/16 W/STEP BOLTS	5618				
4	3	13-T11611445	0	13-T11611445	SECT. 13 LEG 10 3/4 Ø X .500 X 20'-0 5/16 W/STEP BOLTS	4625				
5	3	12-T11610309	0	12-T11610309	SECT. 12 LEG 10 3/4 Ø X .500 X 20'-0 5/16 W/STEP BOLTS	4336				
6	3	11-T1169117	0	11-T1169117	SECT. 11 LEG 8 5/8 Ø X .500 X 20'-0 5/16 W/STEP BOLTS	3504				
7	3	10-T1169819	0	10-T1169819	SECT. 10 LEG 8 5/8 Ø X .322 X 20'-0 5/16 W/STEP BOLTS	2270				
8	3	09-T1169975	0	09-T1169975	SECT. 9 LEG 5 9/16 Ø X .375 X 20'-0 5/16 W/STEP BOLTS	1758				
9	1	08-T1168025	0	08-T1168025	SECT. 8 LEG 4 Ø X .318 X 20'-0 5/16 W/STEP BOLTS	373				
10	2	08-T1168026	0	08-T1168026	SECT. 8 LEG 4 Ø X .318 X 20'-0 5/16	735				
11	1	07-T1165503	0	07-T1165503	SECT. 7 LEG 2 7/8 Ø X .203 X 20'-0 5/16 W/STEP BOLTS	219				
12	2	07-T1165504	0	07-T1165504	SECT. 7 LEG 2 7/8 Ø X .203 X 20'-0 5/16	428				
13										
14										
15										
16										
17										
18										
19										
20										

REV	DATE	DRW	CHK	DESCRIPTION

DATE	8/7/25	**JOB NO.**	563427
DRAWN BY	KMP	**PRINT NO.**	BOM-1
CHECKED BY	ZAK	**PAGE**	2 OF 23

Sabre Industries™
INNOVATION DELIVERED

CUSTOMER : MARION COUNTY OREGON

SITE : MCCULLY MOUNTAIN, OR

B.O.M. 180 FT. MODEL S3TL-HD2 SELF-SUPPORTING TOWER

PC=PIECE	OR=ORANGE
PLT=PALLET	WH=WHITE
BDL=BUNDLE	O/W=OR & WH
CRT=CRATE	N/R=NOT REQ'D
D=DRUM	SP=SPECIAL
BX=BOX	

ITEM NO.	NO. REQ'D.	DRAWING NUMBER	DRAWING REV	PART NO.	DESCRIPTION	TOTAL WEIGHT LBS.	PAINT	PACKING KIT	PACKING QTY OF PKG'S	PACKING PKG. NO.
1					**TOWER BRACING**					
2	1 KIT				**BRACING #15-T8101794 SECTION 15**	3451				
3					**CONSISTING OF THE MATERIAL LISTED BELOW**					
4	6	TS11269	0	TS11269	ANGLE, DIAGONAL 6 X 4 X 3/8 X 22'-11 3/16	1760				
5	6	TS11270	0	TS11270	ANGLE, DIAGONAL 6 X 4 X 3/8 X 22'-0 7/16	1691				
6					**SPLICE BOLTS TOP OF SECTION 15**					
7	31			C40026115	BOLT ASSEMBLY, 1 1/2 Ø X 6 1/2 A325	188				
8	1 KIT				**HARDWARE #TK01256 SECTION 15**	72				
9					**CONSISTING OF THE MATERIAL LISTED BELOW**					
10	7			C40026099	BOLT ASSEMBLY, 1 1/8 Ø X 3 1/4 A325	15				
11	25			C40026097	BOLT ASSEMBLY, 1 1/8 Ø X 2 3/4 A325	50				
12	7	C40047014	0	C40047014	RINGFILL, 3/8 THICK - 1 1/8 Ø BOLT (3 X 3)	7				
13										
14										
15										
16										
17										
18										
19										
20										

REV	DATE	DRW	CHK	DESCRIPTION

DATE	8/7/25	**JOB NO.**	563427
DRAWN BY	KMP	**PRINT NO.**	BOM-1
CHECKED BY	ZAK	**PAGE**	3 OF 23

Sabre Industries™
INNOVATION DELIVERED

CUSTOMER : MARION COUNTY OREGON

SITE : MCCULLY MOUNTAIN, OR

B.O.M. 180 FT. MODEL S3TL-HD2 SELF-SUPPORTING TOWER

PC=PIECE	OR=ORANGE
PLT=PALLET	WH=WHITE
BDL=BUNDLE	O/W=OR & WH
CRT=CRATE	N/R=NOT REQ'D
D=DRUM	SP=SPECIAL
BX=BOX	

ITEM NO.	NO. REQ'D.	DRAWING NUMBER	DRAWING REV	PART NO.	DESCRIPTION	TOTAL WEIGHT LBS.	PAINT	PACKING KIT	PACKING QTY OF PKG'S	PACKING PKG. NO.
1					**TOWER BRACING CONT'D**					
2	1 KIT				**BRACING #14-T8101795 SECTION 14**	3174				
3					**CONSISTING OF THE MATERIAL LISTED BELOW**					
4	6	TS11271	0	TS11271	ANGLE, DIAGONAL 6 X 4 X 3/8 X 21'-1 3/8	1621				
5	6	TS11272	0	TS11272	ANGLE, DIAGONAL 6 X 4 X 3/8 X 20'-2 7/8	1553				
6					**SPLICE BOLTS TOP OF SECTION 14**					
7	31			C40026166	BOLT ASSEMBLY, 1 1/2 Ø X 7 A325	196				
8	1 KIT				**HARDWARE #TK01256 SECTION 14**	72				
9					**CONSISTING OF THE MATERIAL LISTED BELOW**					
10	7			C40026099	BOLT ASSEMBLY, 1 1/8 Ø X 3 1/4 A325	15				
11	25			C40026097	BOLT ASSEMBLY, 1 1/8 Ø X 2 3/4 A325	50				
12	7	C40047014	0	C40047014	RINGFILL, 3/8 THICK - 1 1/8 Ø BOLT (3 X 3)	7				
13										
14										
15										
16										
17										
18										
19										
20										

REV	DATE	DRW	CHK	DESCRIPTION

DATE	8/7/25	**JOB NO.**	563427
DRAWN BY	KMP	**PRINT NO.**	BOM-1
CHECKED BY	ZAK	**PAGE**	4 OF 23

Sabre Industries™
INNOVATION DELIVERED

CUSTOMER : MARION COUNTY OREGON

SITE : MCCULLY MOUNTAIN, OR

B.O.M. 180 FT. MODEL S3TL-HD2 SELF-SUPPORTING TOWER

PC=PIECE	OR=ORANGE
PLT=PALLET	WH=WHITE
BDL=BUNDLE	O/W=OR & WH
CRT=CRATE	N/R=NOT REQ'D
D=DRUM	SP=SPECIAL
BX=BOX	

ITEM NO.	NO. REQ'D.	DRAWING NUMBER	DRAWING REV	PART NO.	DESCRIPTION	TOTAL WEIGHT LBS.	PAINT	PACKING KIT	PACKING QTY OF PKG'S	PACKING PKG. NO.
1					**TOWER BRACING CONT'D**					
2	1 KIT				**BRACING #13-T8101796 SECTION 13**	2371				
3					**CONSISTING OF THE MATERIAL LISTED BELOW**					
4	6	TS11273	0	TS11273	ANGLE, DIAGONAL 4 X 4 X 3/8 X 19'-4 1/8	1239				
5	6	TS11274	0	TS11274	ANGLE, DIAGONAL 4 X 4 X 3/8 X 18'-5 15/16	1132				
6					**SPLICE BOLTS TOP OF SECTION 13**					
7	25			C40026115	BOLT ASSEMBLY, 1 1/2 Ø X 6 1/2 A325	152				
8	1 KIT				**HARDWARE #TK00353 SECTION 13**	54				
9					**CONSISTING OF THE MATERIAL LISTED BELOW**					
10	7			C40026073	BOLT ASSEMBLY, 1 Ø X 3 A325	12				
11	25			C40026071	BOLT ASSEMBLY, 1 Ø X 2 1/2 A325	41				
12	7			C40047007	RINGFILL, 3/8 THICK - 1 Ø BOLT	1				
13										
14										
15										
16										
17										
18										
19										
20										

REV	DATE	DRW	CHK	DESCRIPTION

DATE	8/7/25	**JOB NO.**	563427
DRAWN BY	KMP	**PRINT NO.**	BOM-1
CHECKED BY	ZAK	**PAGE**	5 OF 23

Sabre Industries™
INNOVATION DELIVERED

CUSTOMER : MARION COUNTY OREGON

SITE : MCCULLY MOUNTAIN, OR

B.O.M. 180 FT. MODEL S3TL-HD2 SELF-SUPPORTING TOWER

PC=PIECE	OR=ORANGE
PLT=PALLET	WH=WHITE
BDL=BUNDLE	O/W=OR & WH
CRT=CRATE	N/R=NOT REQ'D
D=DRUM	SP=SPECIAL
BX=BOX	

ITEM NO.	NO. REQ'D.	DRAWING NUMBER	DRAWING REV	PART NO.	DESCRIPTION	TOTAL WEIGHT LBS.	PAINT	PACKING KIT	PACKING QTY OF PKG'S	PACKING PKG. NO.
1					**TOWER BRACING CONT'D**					
2	1 KIT				**BRACING #12-T8101797 SECTION 12**	1983				
3					**CONSISTING OF THE MATERIAL LISTED BELOW**					
4	6	TS11275	0	TS11275	ANGLE, DIAGONAL 4 X 3 1/2 X 3/8 X 17'-10 7/16	1015				
5	6	TS11276	0	TS11276	ANGLE, DIAGONAL 4 X 3 1/2 X 3/8 X 17'-0 9/16	968				
6					**SPLICE BOLTS TOP OF SECTION 12**					
7	25			C40026115	BOLT ASSEMBLY, 1 1/2 Ø X 6 1/2 A325	152				
8	1 KIT				**HARDWARE #TK00353 SECTION 12**	54				
9					**CONSISTING OF THE MATERIAL LISTED BELOW**					
10	7			C40026073	BOLT ASSEMBLY, 1 Ø X 3 A325	12				
11	25			C40026071	BOLT ASSEMBLY, 1 Ø X 2 1/2 A325	41				
12	7			C40047007	RINGFILL, 3/8 THICK - 1 Ø BOLT	1				
13										
14										
15										
16										
17										
18										
19										
20										

REV	DATE	DRW	CHK	DESCRIPTION

DATE	8/7/25	**JOB NO.**	563427
DRAWN BY	KMP	**PRINT NO.**	BOM-1
CHECKED BY	ZAK	**PAGE**	6 OF 23

Sabre Industries™
INNOVATION DELIVERED

CUSTOMER : MARION COUNTY OREGON

SITE : MCCULLY MOUNTAIN, OR

B.O.M. 180 FT. MODEL S3TL-HD2 SELF-SUPPORTING TOWER

PC=PIECE	OR=ORANGE
PLT=PALLET	WH=WHITE
BDL=BUNDLE	O/W=OR & WH
CRT=CRATE	N/R=NOT REQ'D
D=DRUM	SP=SPECIAL
BX=BOX	

ITEM NO.	NO. REQ'D.	DRAWING NUMBER	DRAWING REV	PART NO.	DESCRIPTION	TOTAL WEIGHT LBS.	PAINT	PACKING KIT	PACKING QTY OF PKG'S	PACKING PKG. NO.
1					**TOWER BRACING CONT'D**					
2	1 KIT				**BRACING #11-T8101372 SECTION 11**	2397				
3					**CONSISTING OF THE MATERIAL LISTED BELOW**					
4	6	TS08563	0	TS08563	ANGLE, DIAGONAL 4 X 3 1/2 X 3/8 X 14'-7 7/8	832				
5	6	TS08562	0	TS08562	ANGLE, DIAGONAL 4 X 3 1/2 X 3/8 X 14'-0 13/16	799				
6	6	TS08561	0	TS08561	ANGLE, DIAGONAL 4 X 3 1/2 X 3/8 X 13'-5 13/16	766				
7					**SPLICE BOLTS TOP OF SECTION 11**					
8	19			C40026093	BOLT ASSEMBLY, 1 1/4 Ø X 5 A325	65				
9	1 KIT				**HARDWARE #TK00430 SECTION 11**	81				
10					**CONSISTING OF THE MATERIAL LISTED BELOW**					
11	10			C40026073	BOLT ASSEMBLY, 1 Ø X 3 A325	18				
12	38			C40026071	BOLT ASSEMBLY, 1 Ø X 2 1/2 A325	62				
13	10			C40047007	RINGFILL, 3/8 THICK - 1 Ø BOLT	1				
14										
15										
16										
17										
18										
19										
20										

REV	DATE	DRW	CHK	DESCRIPTION

DATE	8/7/25	**JOB NO.**	563427
DRAWN BY	KMP	**PRINT NO.**	BOM-1
CHECKED BY	ZAK	**PAGE**	7 OF 23

Sabre Industries™
INNOVATION DELIVERED

CUSTOMER : MARION COUNTY OREGON

SITE : MCCULLY MOUNTAIN, OR

B.O.M. 180 FT. MODEL S3TL-HD2 SELF-SUPPORTING TOWER

PC=PIECE	OR=ORANGE
PLT=PALLET	WH=WHITE
BDL=BUNDLE	O/W=OR & WH
CRT=CRATE	N/R=NOT REQ'D
D=DRUM	SP=SPECIAL
BX=BOX	

ITEM NO.	NO. REQ'D.	DRAWING NUMBER	DRAWING REV	PART NO.	DESCRIPTION	TOTAL WEIGHT LBS.	PAINT	PACKING KIT	PACKING QTY OF PKG'S	PACKING PKG. NO.
1					**TOWER BRACING CONT'D**					
2	1 KIT				**BRACING #10-T8100820 SECTION 10**	1887				
3					**CONSISTING OF THE MATERIAL LISTED BELOW**					
4	6	TS05779	1	TS05779	ANGLE, DIAGONAL 4 X 4 X 5/16 X 12'-10 3/8	658				
5	6	TS05780	1	TS05780	ANGLE, DIAGONAL 4 X 4 X 5/16 X 12'-3 1/2	629				
6	6	TS05781	1	TS05781	ANGLE, DIAGONAL 4 X 4 X 5/16 X 11'-8 3/4	600				
7					**SPLICE BOLTS TOP OF SECTION 10**					
8	19			C40026094	BOLT ASSEMBLY, 1 1/4 Ø X 5 1/2 A325	69				
9	1 KIT				**HARDWARE #TK00437 SECTION 10**	79				
10					**CONSISTING OF THE MATERIAL LISTED BELOW**					
11	10			C40026072	BOLT ASSEMBLY, 1 Ø X 2 3/4 A325	17				
12	37			C40026071	BOLT ASSEMBLY, 1 Ø X 2 1/2 A325	61				
13	10			C40047010	RINGFILL, 1/2 THICK - 1 Ø BOLT	1				
14										
15										
16										
17										
18										
19										
20										

REV	DATE	DRW	CHK	DESCRIPTION

DATE	8/7/25	**JOB NO.**	563427
DRAWN BY	KMP	**PRINT NO.**	BOM-1
CHECKED BY	ZAK	**PAGE**	8 OF 23

Sabre Industries™
INNOVATION DELIVERED

CUSTOMER : MARION COUNTY OREGON

SITE : MCCULLY MOUNTAIN, OR

B.O.M. 180 FT. MODEL S3TL-HD2 SELF-SUPPORTING TOWER

PC=PIECE	OR=ORANGE
PLT=PALLET	WH=WHITE
BDL=BUNDLE	O/W=OR & WH
CRT=CRATE	N/R=NOT REQ'D
D=DRUM	SP=SPECIAL
BX=BOX	

ITEM NO.	NO. REQ'D.	DRAWING NUMBER	DRAWING REV	PART NO.	DESCRIPTION	TOTAL WEIGHT LBS.	PAINT	PACKING KIT	PACKING QTY OF PKG'S	PACKING PKG. NO.
1					**TOWER BRACING CONT'D**					
2	1 KIT				**BRACING #09-T8100384 SECTION 09**	1612				
3					**CONSISTING OF THE MATERIAL LISTED BELOW**					
4	6	TS03786	1	TS03786	ANGLE, DIAGONAL 3 1/2 X 3 X 3/8 X 11'-5 3/8	564				
5	6	TS03787	1	TS03787	ANGLE, DIAGONAL 3 1/2 X 3 X 3/8 X 10'-10 13/16	537				
6	6	TS03788	1	TS03788	ANGLE, DIAGONAL 3 1/2 X 3 X 3/8 X 10'-4 7/16	511				
7					**SPLICE BOLTS TOP OF SECTION 09**					
8	19			C40026078	BOLT ASSEMBLY, 1 Ø X 4 1/4 A325	41				
9	1 KIT				**HARDWARE #TK00269 SECTION 09**	37				
10					**CONSISTING OF THE MATERIAL LISTED BELOW**					
11	10			C40026045	BOLT ASSEMBLY, 3/4 Ø X 2 1/2 A325	8				
12	38			C40026044	BOLT ASSEMBLY, 3/4 Ø X 2 1/4 A325	28				
13	10			C40047004	RINGFILL, 3/8 THICK - 3/4 Ø BOLT	1				
14										
15										
16										
17										
18										
19										
20										

REV	DATE	DRW	CHK	DESCRIPTION

DATE	8/7/25	**JOB NO.**	563427
DRAWN BY	KMP	**PRINT NO.**	BOM-1
CHECKED BY	ZAK	**PAGE**	9 OF 23

CUSTOMER : MARION COUNTY OREGON

SITE : MCCULLY MOUNTAIN, OR

B.O.M. 180 FT. MODEL S3TL-HD2 SELF-SUPPORTING TOWER

PC=PIECE	OR=ORANGE
PLT=PALLET	WH=WHITE
BDL=BUNDLE	O/W=OR & WH
CRT=CRATE	N/R=NOT REQ'D
D=DRUM	SP=SPECIAL
BX=BOX	

ITEM NO.	NO. REQ'D.	DRAWING NUMBER	DRAWING REV	PART NO.	DESCRIPTION	TOTAL WEIGHT LBS.	PAINT	PACKING KIT	PACKING QTY OF PKG'S	PACKING PKG. NO.
1					**TOWER BRACING CONT'D**					
2	1 KIT				**BRACING #08-T8100421 SECTION 08**	1256				
3					**CONSISTING OF THE MATERIAL LISTED BELOW**					
4	6	TS04017	1	TS04017	ANGLE, DIAGONAL 2 1/2 X 2 1/2 X 3/8 X 9'-1 13/16	337				
5	6	TS04018	1	TS04018	ANGLE, DIAGONAL 2 1/2 X 2 1/2 X 3/8 X 8'-8 11/16	322				
6	6	TS04019	1	TS04019	ANGLE, DIAGONAL 2 1/2 X 2 1/2 X 3/8 X 8'-3 5/8	306				
7	6	TS04020	1	TS04020	ANGLE, DIAGONAL 2 1/2 X 2 1/2 X 3/8 X 7'-10 11/16	291				
8					**SPLICE BOLTS TOP OF SECTION 08**					
9	19			C40026078	BOLT ASSEMBLY, 1 Ø X 4 1/4 A325	41				
10	1 KIT				**HARDWARE #TK00348 SECTION 08**	49				
11					**CONSISTING OF THE MATERIAL LISTED BELOW**					
12	13			C40026045	BOLT ASSEMBLY, 3/4 Ø X 2 1/2 A325	10				
13	50			C40026044	BOLT ASSEMBLY, 3/4 Ø X 2 1/4 A325	37				
14	13			C40047004	RINGFILL, 3/8 THICK - 3/4 Ø BOLT	2				
15										
16										
17										
18										
19										
20										

REV	DATE	DRW	CHK	DESCRIPTION

DATE 8/7/25 **JOB NO.** 563427

DRAWN BY KMP **PRINT NO.** BOM-1

CHECKED BY ZAK **PAGE** 10 OF 23

Sabre Industries™
INNOVATION DELIVERED

CUSTOMER : MARION COUNTY OREGON

SITE : MCCULLY MOUNTAIN, OR

B.O.M. 180 FT. MODEL S3TL-HD2 SELF-SUPPORTING TOWER

PC=PIECE	OR=ORANGE
PLT=PALLET	WH=WHITE
BDL=BUNDLE	O/W=OR & WH
CRT=CRATE	N/R=NOT REQ'D
D=DRUM	SP=SPECIAL
BX=BOX	

ITEM NO.	NO. REQ'D.	DRAWING NUMBER	DRAWING REV	PART NO.	DESCRIPTION	TOTAL WEIGHT LBS.	PAINT	PACKING KIT	PACKING QTY OF PKG'S	PACKING PKG. NO.
1					**TOWER BRACING**					
2	1 KIT				**BRACING #07-T8100168 SECTION 07**	726				
3					**CONSISTING OF THE MATERIAL LISTED BELOW**					
4	6	TS02040	1	TS02040	ANGLE, DIAGONAL 2 X 2 X 5/16 X 7'-5 1/2	182				
5	6	TS02039	1	TS02039	ANGLE, DIAGONAL 2 X 2 X 5/16 X 7'-0 13/16	173				
6	6	TS02038	1	TS02038	ANGLE, DIAGONAL 2 X 2 X 5/16 X 6'-8 5/16	163				
7	6	TS02037	1	TS02037	ANGLE, DIAGONAL 2 X 2 X 5/16 X 6'-3 15/16	155				
8	3	TS02036	1	TS02036	ANGLE, HORIZONTAL 2 X 2 X 5/16 X 4'-4 3/8	53				
9	1 KIT				**HARDWARE #TK00146 SECTION 07**	35				
10					**CONSISTING OF THE MATERIAL LISTED BELOW**					
11	13			C40026024	BOLT ASSEMBLY, 5/8 Ø X 2 1/4 A325	7				
12	57			C40026023	BOLT ASSEMBLY, 5/8 Ø X 2 A325	26				
13	13			C40047003	RINGFILL, 3/8 THICK - 5/8 Ø BOLT	2				
14										
15										
16										
17										
18										
19										
20										

REV	DATE	DRW	CHK	DESCRIPTION

DATE	8/7/25	**JOB NO.**	563427
DRAWN BY	KMP	**PRINT NO.**	BOM-1
CHECKED BY	ZAK	**PAGE**	11 OF 23

EXHIBIT K

CUSTOMER : MARION COUNTY OREGON

SITE : MCCULLY MOUNTAIN, OR

B.O.M. 180 FT. MODEL S3TL-HD2 SELF-SUPPORTING TOWER

PC=PIECE	OR=ORANGE
PLT=PALLET	WH=WHITE
BDL=BUNDLE	O/W=OR & WH
CRT=CRATE	N/R=NOT REQ'D
D=DRUM	SP=SPECIAL
BX=BOX	

ITEM NO.	NO. REQ'D.	DRAWING NUMBER	DRAWING REV	PART NO.	DESCRIPTION	TOTAL WEIGHT LBS.	PAINT	PACKING KIT	PACKING QTY OF PKG'S	PACKING PKG. NO.
1					**SAFETY CLIMB**					
2	1 KIT			C30012054	200' TUF-TUG SAFETY CLIMB MATERIAL	95				
3										
4										
5										
6										
7										
8										
9										
10										
11										
12										
13										
14										
15										
16										
17										
18										
19										
20										

REV	DATE	DRW	CHK	DESCRIPTION

DATE	8/7/25	**JOB NO.**	563427
DRAWN BY	KMP	**PRINT NO.**	BOM-1
CHECKED BY	ZAK	**PAGE**	12 OF 23

Sabre Industries
INNOVATION DELIVERED

CUSTOMER : MARION COUNTY OREGON

SITE : MCCULLY MOUNTAIN, OR

B.O.M. 180 FT. MODEL S3TL-HD2 SELF-SUPPORTING TOWER

PC=PIECE	OR=ORANGE
PLT=PALLET	WH=WHITE
BDL=BUNDLE	O/W=OR & WH
CRT=CRATE	N/R=NOT REQ'D
D=DRUM	SP=SPECIAL
BX=BOX	

ITEM NO.	NO. REQ'D.	DRAWING NUMBER	DRAWING REV	PART NO.	DESCRIPTION	TOTAL WEIGHT LBS.	PAINT	PACKING KIT	PACKING QTY OF PKG'S	PACKING PKG. NO.
1					**SAFETY CLIMB MATERIAL**					
2	1 KIT			C30011049	SAFETY CLIMB BOTTOM MOUNT (14"Ø)	37				
3	1 KIT			C30011004	SAFETY CLIMB TOP MOUNT (2 3/4"Ø - 2 7/8"Ø)	27				
4	8 KITS			C30003001	SAFETY CLIMB INTERMEDIATE MOUNT	17				
5					**CLIMBING/CONSTRUCTION STEP BOLTS**					
6	373			C40044017	STEP BOLT ASSEMBLY, 5/8 Ø X 7 H.D.G.	373				
7										
8										
9										
10										
11										
12										
13										
14										
15										
16										
17										
18										
19										
20										

REV	DATE	DRW	CHK	DESCRIPTION

DATE	8/11/25	**JOB NO.**	563427
DRAWN BY	KMP	**PRINT NO.**	BOM-1
CHECKED BY	ZAK	**PAGE**	13 OF 23

Sabre Industries™
INNOVATION DELIVERED

CUSTOMER : MARION COUNTY OREGON

SITE : MCCULLY MOUNTAIN, OR

B.O.M. 180 FT. MODEL S3TL-HD2 SELF-SUPPORTING TOWER

PC=PIECE	OR=ORANGE
PLT=PALLET	WH=WHITE
BDL=BUNDLE	O/W=OR & WH
CRT=CRATE	N/R=NOT REQ'D
D=DRUM	SP=SPECIAL
BX=BOX	

ITEM NO.	NO. REQ'D.	DRAWING NUMBER	DRAWING REV	PART NO.	DESCRIPTION	TOTAL WEIGHT LBS.	PAINT	PACKING KIT	PACKING QTY OF PKG'S	PACKING PKG. NO.
1					**WAVEGUIDE LADDER (WG1)**					
2	18	CS00146	2	CS00146	ANGLE, WAVEGUIDE LADDER RAIL 20 FT. W/4 FT. RUNG SPC	540				
3	45	CS01619	0	CS01619	ANGLE, WAVEGUIDE SUPPORT (6 HOLE)	95				
4	18	CS00037	2	CS00037	PLATE, LADDER SPLICE	7				
5	46	CS00169	2	CS00169	CLIP, LADDER ATTACHMENT	25				
6					**WAVEGUIDE LADDER HARDWARE (WG1)**					
7	36			C40039002	J-BOLT ASSEMBLY, 3/8 Ø X 7 1/4 I.L.	13				
8	10			C40039001	J-BOLT ASSEMBLY, 3/8 Ø X 5 3/4 I.L.	3				
9	130			C40024004	BOLT ASSEMBLY, 3/8 Ø X 1 1/2 GRD 5	13				
10										
11										
12										
13										
14										
15										
16										
17										
18										
19										
20										

REV	DATE	DRW	CHK	DESCRIPTION

DATE	8/11/25	**JOB NO.**	563427
DRAWN BY	KMP	**PRINT NO.**	BOM-1
CHECKED BY	ZAK	**PAGE**	14 OF 23

Sabre Industries™
INNOVATION DELIVERED

CUSTOMER : MARION COUNTY OREGON

SITE : MCCULLY MOUNTAIN, OR

B.O.M. 180 FT. MODEL S3TL-HD2 SELF-SUPPORTING TOWER

PC=PIECE	OR=ORANGE
PLT=PALLET	WH=WHITE
BDL=BUNDLE	O/W=OR & WH
CRT=CRATE	N/R=NOT REQ'D
D=DRUM	SP=SPECIAL
BX=BOX	

ITEM NO.	NO. REQ'D.	DRAWING NUMBER	DRAWING REV	PART NO.	DESCRIPTION	TOTAL WEIGHT LBS.	PAINT	PACKING KIT	PACKING QTY OF PKG'S	PACKING PKG. NO.
1					**WAVEGUIDE LADDER (WG2)**					
2	18	CS00146	2	CS00146	ANGLE, WAVEGUIDE LADDER RAIL 20 FT. W/4 FT. RUNG SPC	540				
3	45	CS01619	0	CS01619	ANGLE, WAVEGUIDE SUPPORT (6 HOLE)	95				
4	18	CS00037	2	CS00037	PLATE, LADDER SPLICE	7				
5	46	CS00169	2	CS00169	CLIP, LADDER ATTACHMENT	25				
6					**WAVEGUIDE LADDER HARDWARE (WG2)**					
7	36			C40039002	J-BOLT ASSEMBLY, 3/8 Ø X 7 1/4 I.L.	13				
8	10			C40039001	J-BOLT ASSEMBLY, 3/8 Ø X 5 3/4 I.L.	3				
9	130			C40024004	BOLT ASSEMBLY, 3/8 Ø X 1 1/2 GRD 5	13				
10										
11										
12										
13										
14										
15										
16										
17										
18										
19										
20										

REV	DATE	DRW	CHK	DESCRIPTION

DATE	8/11/25	**JOB NO.**	563427
DRAWN BY	KMP	**PRINT NO.**	BOM-1
CHECKED BY	ZAK	**PAGE**	15 OF 23

EXHIBIT K

CUSTOMER : MARION COUNTY OREGON

SITE : MCCULLY MOUNTAIN, OR

B.O.M. 180 FT. MODEL S3TL-HD2 SELF-SUPPORTING TOWER

PC=PIECE	OR=ORANGE
PLT=PALLET	WH=WHITE
BDL=BUNDLE	O/W=OR & WH
CRT=CRATE	N/R=NOT REQ'D
D=DRUM	SP=SPECIAL
BX=BOX	

ITEM NO.	NO. REQ'D.	DRAWING NUMBER	DRAWING REV	PART NO.	DESCRIPTION	TOTAL WEIGHT LBS.	PAINT	PACKING KIT	PACKING QTY OF PKG'S	PACKING PKG. NO.
1					**WAVEGUIDE LADDER (WG3)**					
2	18	CS00146	2	CS00146	ANGLE, WAVEGUIDE LADDER RAIL 20 FT. W/4 FT. RUNG SPC	540				
3	45	CS01619	0	CS01619	ANGLE, WAVEGUIDE SUPPORT (6 HOLE)	95				
4	18	CS00037	2	CS00037	PLATE, LADDER SPLICE	7				
5	46	CS00169	2	CS00169	CLIP, LADDER ATTACHMENT	25				
6					**WAVEGUIDE LADDER HARDWARE (WG3)**					
7	36			C40039002	J-BOLT ASSEMBLY, 3/8 Ø X 7 1/4 I.L.	13				
8	10			C40039001	J-BOLT ASSEMBLY, 3/8 Ø X 5 3/4 I.L.	3				
9	130			C40024004	BOLT ASSEMBLY, 3/8 Ø X 1 1/2 GRD 5	13				
10										
11										
12										
13										
14										
15										
16										
17										
18										
19										
20										

REV	DATE	DRW	CHK	DESCRIPTION

DATE 8/11/25 **JOB NO.** 563427

DRAWN BY KMP **PRINT NO.** BOM-1

CHECKED BY ZAK **PAGE** 16 OF 23

CUSTOMER : MARION COUNTY OREGON

SITE : MCCULLY MOUNTAIN, OR

B.O.M. 180 FT. MODEL S3TL-HD2 SELF-SUPPORTING TOWER

PC=PIECE	OR=ORANGE
PLT=PALLET	WH=WHITE
BDL=BUNDLE	O/W=OR & WH
CRT=CRATE	N/R=NOT REQ'D
D=DRUM	SP=SPECIAL
BX=BOX	

ITEM NO.	NO. REQ'D.	DRAWING NUMBER	DRAWING REV	PART NO.	DESCRIPTION	TOTAL WEIGHT LBS.	PAINT	PACKING KIT	PACKING QTY OF PKG'S	PACKING PKG. NO.
1					**LEG CAPS**					
2	1 KIT			C30008022	LEG CAP KIT, 3/4" BOLTS ON 6 1/2" B.C. (1" SPLICE PLATE)	11				
3					**3' SIDEARM MOUNT @ 179'**					
4	1 KIT			C10151103	3 FT. SIDEARM ASSEMBLY	82				
5	1			C10900105	PIPE ANTENNA MOUNTING KIT 2 3/8 Ø X 5'-0	22				
6	4			C40034032	U-BOLT ASSEMBLY 5/8 Ø X 5 3/16 C-C	9				
7					**Z-BRACKET PIPE MOUNT FOR SIDEARM @ 179'**					
8	1 KIT			C10174018	TAPERED LEG PIPE MOUNT KIT	64				
9	1			C10981407	ANTENNA MTG. PIPE 4 1/2 Ø X 7'-0	58				
10	4			C40034032	U-BOLT ASSEMBLY 5/8 Ø X 5 3/16 C-C	9				
11					**SWIVEL KNUCKLE TIEBACKS FOR SIDEARM @ 179'**					
12	2 KITS			C10179001	SWIVEL KNUCKLE TIEBACK KIT 2 3/8 Ø PIPE X 10'-0	118				
13					**Z-BRACKET FLUSH MOUNT @ 177'**					
14	1 KIT			C10174018	TAPERED LEG FLUSH MOUNT KIT	64				
15	1			C10981207	ANTENNA MTG. PIPE 2 3/8 Ø X 7'-0	23				
16	4			C40034023	U-BOLT ASSEMBLY 5/8 Ø X 3 1/16 C-C	5				
17					**3' SIDEARM MOUNTS @ 175'**					
18	2 KITS			C10151103	3 FT. SIDEARM ASSEMBLY	164				
19	2			C10900105	PIPE ANTENNA MOUNTING KIT 2 3/8 Ø X 5'-0	45				
20	8			C40034032	U-BOLT ASSEMBLY 5/8 Ø X 5 3/16 C-C	17				

REV	DATE	DRW	CHK	DESCRIPTION

DATE	8/11/25	**JOB NO.**	563427
DRAWN BY	KMP	**PRINT NO.**	BOM-1
CHECKED BY	ZAK	**PAGE**	17 OF 23

CUSTOMER : MARION COUNTY OREGON

SITE : MCCULLY MOUNTAIN, OR

B.O.M. 180 FT. MODEL S3TL-HD2 SELF-SUPPORTING TOWER

PC=PIECE	OR=ORANGE
PLT=PALLET	WH=WHITE
BDL=BUNDLE	O/W=OR & WH
CRT=CRATE	N/R=NOT REQ'D
D=DRUM	SP=SPECIAL
BX=BOX	

ITEM NO.	NO. REQ'D.	DRAWING NUMBER	DRAWING REV	PART NO.	DESCRIPTION	TOTAL WEIGHT LBS.	PAINT	PACKING KIT	PACKING QTY OF PKG'S	PACKING PKG. NO.
1					**Z-BRACKET PIPE MOUNTS FOR SIDEARMS @ 175'**					
2	2 KITS			C10174018	TAPERED LEG PIPE MOUNT KIT	127				
3	2			C10981407	ANTENNA MTG. PIPE 4 1/2 Ø X 7'-0	116				
4	8			C40034032	U-BOLT ASSEMBLY 5/8 Ø X 5 3/16 C-C	17				
5					**SWIVEL KNUCKLE TIEBACKS FOR SIDEARMS @ 175'**					
6	4 KITS			C10179002	SWIVEL KNUCKLE TIEBACK KIT 2 3/8 Ø PIPE X 13'-3	280				
7					**Z-BRACKET PIPE MOUNTS @ 173'**					
8	3 KITS			C10174018	TAPERED LEG PIPE MOUNT KIT	191				
9	3			C10981407	ANTENNA MTG. PIPE 4 1/2 Ø X 7'-0	175				
10	12			C40034032	U-BOLT ASSEMBLY 5/8 Ø X 5 3/16 C-C	26				
11					**8 FT. PARABOLIC ANTENNA ICE SHIELD @ 170'**					
12	1 KIT			C30085002	PARABOLIC ANTENNA ICE SHIELD, 6'-8' ANTENNAS	701				
13					**Z-BRACKET PIPE MOUNT @ 165'**					
14	1 KIT			C10174018	TAPERED LEG PIPE MOUNT KIT	64				
15	1			C10981407	ANTENNA MTG. PIPE 4 1/2 Ø X 7'-0	58				
16	4			C40034032	U-BOLT ASSEMBLY 5/8 Ø X 5 3/16 C-C	9				
17					**3' SIDEARM MOUNT @ 165'**					
18	1 KIT			C10151103	3 FT. SIDEARM ASSEMBLY	82				
19	1			C10900105	PIPE ANTENNA MOUNTING KIT 2 3/8 Ø X 5'-0	22				
20	4			C40034032	U-BOLT ASSEMBLY 5/8 Ø X 5 3/16 C-C	9				

REV	DATE	DRW	CHK	DESCRIPTION

DATE	8/11/25	**JOB NO.**	563427
DRAWN BY	KMP	**PRINT NO.**	BOM-1
CHECKED BY	ZAK	**PAGE**	18 OF 23

EXHIBIT K

CUSTOMER : MARION COUNTY OREGON

SITE : MCCULLY MOUNTAIN, OR

B.O.M. 180 FT. MODEL S3TL-HD2 SELF-SUPPORTING TOWER

PC=PIECE	OR=ORANGE
PLT=PALLET	WH=WHITE
BDL=BUNDLE	O/W=OR & WH
CRT=CRATE	N/R=NOT REQ'D
D=DRUM	SP=SPECIAL
BX=BOX	

ITEM NO.	NO. REQ'D.	DRAWING NUMBER	DRAWING REV	PART NO.	DESCRIPTION	TOTAL WEIGHT LBS.	PAINT	PACKING KIT	PACKING QTY OF PKG'S	PACKING PKG. NO.
1					**Z-BRACKET PIPE MOUNT FOR SIDEARM @ 165'**					
2	1 KIT			C10174018	TAPERED LEG PIPE MOUNT KIT	64				
3	1			C10981407	ANTENNA MTG. PIPE 4 1/2 Ø X 7'-0	58				
4	4			C40034032	U-BOLT ASSEMBLY 5/8 Ø X 5 3/16 C-C	9				
5					**SWIVEL KNUCKLE TIEBACKS FOR SIDEARM @ 165'**					
6	2 KITS			C10179002	SWIVEL KNUCKLE TIEBACK KIT 2 3/8 Ø PIPE X 13'-3	140				
7					**3' SIDEARM MOUNT @ 163'**					
8	1 KIT			C10151103	3 FT. SIDEARM ASSEMBLY	82				
9	1			C10900104	PIPE ANTENNA MOUNTING KIT 2 3/8 Ø X 4'-0	19				
10	4			C40034032	U-BOLT ASSEMBLY 5/8 Ø X 5 3/16 C-C	9				
11					**Z-BRACKET PIPE MOUNT FOR SIDEARM @ 163'**					
12	1 KIT			C10174018	TAPERED LEG PIPE MOUNT KIT	64				
13	1			C10981407	ANTENNA MTG. PIPE 4 1/2 Ø X 7'-0	58				
14	4			C40034032	U-BOLT ASSEMBLY 5/8 Ø X 5 3/16 C-C	9				
15					**SWIVEL KNUCKLE TIEBACKS FOR SIDEARM @ 163'**					
16	2 KITS			C10179002	SWIVEL KNUCKLE TIEBACK KIT 2 3/8 Ø PIPE X 13'-3	140				
17					**8 FT. PARABOLIC ANTENNA ICE SHIELD @ 155'**					
18	2 KITS			C30085002	PARABOLIC ANTENNA ICE SHIELD, 6'-8' ANTENNAS	1402				
19										
20										

REV	DATE	DRW	CHK	DESCRIPTION

DATE 8/11/25 **JOB NO.** 563427

DRAWN BY KMP **PRINT NO.** BOM-1

CHECKED BY ZAK **PAGE** 19 OF 23

Sabre Industries
INNOVATION DELIVERED

CUSTOMER : MARION COUNTY OREGON

SITE : MCCULLY MOUNTAIN, OR

B.O.M. 180 FT. MODEL S3TL-HD2 SELF-SUPPORTING TOWER

PC=PIECE	OR=ORANGE
PLT=PALLET	WH=WHITE
BDL=BUNDLE	O/W=OR & WH
CRT=CRATE	N/R=NOT REQ'D
D=DRUM	SP=SPECIAL
BX=BOX	

ITEM NO.	NO. REQ'D.	DRAWING NUMBER	DRAWING REV	PART NO.	DESCRIPTION	TOTAL WEIGHT LBS.	PAINT	PACKING KIT	PACKING QTY OF PKG'S	PACKING PKG. NO.
1					**Z-BRACKET PIPE MOUNTS @ 150'**					
2	2 KITS			C10174036	TAPERED LEG PIPE MOUNT KIT	129				
3	2			C10981407	ANTENNA MTG. PIPE 4 1/2 Ø X 7'-0	116				
4	8			C40034032	U-BOLT ASSEMBLY 5/8 Ø X 5 3/16 C-C	17				
5					**Z-BRACKET PIPE MOUNT @ 143'**					
6	1 KIT			C10174036	TAPERED LEG PIPE MOUNT KIT	65				
7	1			C10981407	ANTENNA MTG. PIPE 4 1/2 Ø X 7'-0	58				
8	4			C40034032	U-BOLT ASSEMBLY 5/8 Ø X 5 3/16 C-C	9				
9					**3' SIDEARM MOUNT @ 143'**					
10	1 KIT			C10151103	3 FT. SIDEARM ASSEMBLY	82				
11	1			C10900105	PIPE ANTENNA MOUNTING KIT 2 3/8 Ø X 5'-0	22				
12	4			C40034032	U-BOLT ASSEMBLY 5/8 Ø X 5 3/16 C-C	9				
13					**Z-BRACKET PIPE MOUNT FOR SIDEARM @ 143'**					
14	1 KIT			C10174036	TAPERED LEG PIPE MOUNT KIT	65				
15	1			C10981407	ANTENNA MTG. PIPE 4 1/2 Ø X 7'-0	58				
16	4			C40034032	U-BOLT ASSEMBLY 5/8 Ø X 5 3/16 C-C	9				
17					**SWIVEL KNUCKLE TIEBACKS FOR SIDEARM @ 143'**					
18	2 KITS			C10179002	SWIVEL KNUCKLE TIEBACK KIT 2 3/8 Ø PIPE X 13'-3	140				
19										
20										

REV	DATE	DRW	CHK	DESCRIPTION

DATE	8/11/25	**JOB NO.**	563427
DRAWN BY	KMP	**PRINT NO.**	BOM-1
CHECKED BY	ZAK	**PAGE**	20 OF 23

CUSTOMER : MARION COUNTY OREGON

SITE : MCCULLY MOUNTAIN, OR

B.O.M. 180 FT. MODEL S3TL-HD2 SELF-SUPPORTING TOWER

PC=PIECE	OR=ORANGE
PLT=PALLET	WH=WHITE
BDL=BUNDLE	O/W=OR & WH
CRT=CRATE	N/R=NOT REQ'D
D=DRUM	SP=SPECIAL
BX=BOX	

ITEM NO.	NO. REQ'D.	DRAWING NUMBER	DRAWING REV	PART NO.	DESCRIPTION	TOTAL WEIGHT LBS.	PAINT	PACKING KIT	PACKING QTY OF PKG'S	PACKING PKG. NO.
1					**3' SIDEARM MOUNT @ 140'**					
2	1 KIT			C10151103	3 FT. SIDEARM ASSEMBLY	82				
3	1			C10900105	PIPE ANTENNA MOUNTING KIT 2 3/8 Ø X 5'-0	22				
4	4			C40034032	U-BOLT ASSEMBLY 5/8 Ø X 5 3/16 C-C	9				
5					**Z-BRACKET PIPE MOUNT FOR SIDEARM @ 140'**					
6	1 KIT			C10174053	TAPERED LEG PIPE MOUNT KIT	79				
7	1			C10981407	ANTENNA MTG. PIPE 4 1/2 Ø X 7'-0	58				
8	4			C40034032	U-BOLT ASSEMBLY 5/8 Ø X 5 3/16 C-C	9				
9					**SWIVEL KNUCKLE TIEBACKS FOR SIDEARM @ 140'**					
10	2 KITS			C10179011	SWIVEL KNUCKLE TIEBACK KIT 2 7/8 Ø PIPE X 15'-6	240				
11					**Z-BRACKET PIPE MOUNT @ 137'**					
12	1 KIT			C10174055	TAPERED LEG PIPE MOUNT KIT	83				
13	1			C10981407	ANTENNA MTG. PIPE 4 1/2 Ø X 7'-0	58				
14	4			C40034032	U-BOLT ASSEMBLY 5/8 Ø X 5 3/16 C-C	9				
15					**3' SIDEARM MOUNT @ 134'**					
16	1 KIT			C10151103	3 FT. SIDEARM ASSEMBLY	82				
17	1			C10900104	PIPE ANTENNA MOUNTING KIT 2 3/8 Ø X 4'-0	19				
18	4			C40034032	U-BOLT ASSEMBLY 5/8 Ø X 5 3/16 C-C	9				
19										
20										

REV	DATE	DRW	CHK	DESCRIPTION

DATE 8/11/25 **JOB NO.** 563427

DRAWN BY KMP **PRINT NO.** BOM-1

CHECKED BY ZAK **PAGE** 21 OF 23

CUSTOMER : MARION COUNTY OREGON

SITE : MCCULLY MOUNTAIN, OR

B.O.M. 180 FT. MODEL S3TL-HD2 SELF-SUPPORTING TOWER

PC=PIECE	OR=ORANGE
PLT=PALLET	WH=WHITE
BDL=BUNDLE	O/W=OR & WH
CRT=CRATE	N/R=NOT REQ'D
D=DRUM	SP=SPECIAL
BX=BOX	

ITEM NO.	NO. REQ'D.	DRAWING NUMBER	DRAWING REV	PART NO.	DESCRIPTION	TOTAL WEIGHT LBS.	PAINT	PACKING KIT	PACKING QTY OF PKG'S	PACKING PKG. NO.
1					**Z-BRACKET PIPE MOUNT FOR SIDEARM @ 134'**					
2	1 KIT			C10174055	TAPERED LEG PIPE MOUNT KIT	83				
3	1			C10981407	ANTENNA MTG. PIPE 4 1/2 Ø X 7'-0	58				
4	4			C40034032	U-BOLT ASSEMBLY 5/8 Ø X 5 3/16 C-C	9				
5					**SWIVEL KNUCKLE TIEBACKS FOR SIDEARM @ 134'**					
6	2 KITS			C10179011	SWIVEL KNUCKLE TIEBACK KIT 2 7/8 Ø PIPE X 15'-6	240				
7					**3' SIDEARM MOUNT @ 127'**					
8	1 KIT			C10151103	3 FT. SIDEARM ASSEMBLY	82				
9	1			C10900105	PIPE ANTENNA MOUNTING KIT 2 3/8 Ø X 5'-0	22				
10	4			C40034032	U-BOLT ASSEMBLY 5/8 Ø X 5 3/16 C-C	9				
11					**Z-BRACKET PIPE MOUNT FOR SIDEARM @ 127'**					
12	1 KIT			C10174055	TAPERED LEG PIPE MOUNT KIT	83				
13	1			C10981407	ANTENNA MTG. PIPE 4 1/2 Ø X 7'-0	58				
14	4			C40034032	U-BOLT ASSEMBLY 5/8 Ø X 5 3/16 C-C	9				
15					**SWIVEL KNUCKLE TIEBACKS FOR SIDEARM @ 127'**					
16	2 KITS			C10179011	SWIVEL KNUCKLE TIEBACK KIT 2 7/8 Ø PIPE X 15'-6	240				
17										
18										
19										
20										

REV	DATE	DRW	CHK	DESCRIPTION

DATE 8/11/25 **JOB NO.** 563427

DRAWN BY KMP **PRINT NO.** BOM-1

CHECKED BY ZAK **PAGE** 22 OF 23

Sabre Industries
INNOVATION DELIVERED

CUSTOMER : MARION COUNTY OREGON

SITE : MCCULLY MOUNTAIN, OR

B.O.M. 180 FT. MODEL S3TL-HD2 SELF-SUPPORTING TOWER

PC=PIECE	OR=ORANGE
PLT=PALLET	WH=WHITE
BDL=BUNDLE	O/W=OR & WH
CRT=CRATE	N/R=NOT REQ'D
D=DRUM	SP=SPECIAL
BX=BOX	

ITEM NO.	NO. REQ'D.	DRAWING NUMBER	DRAWING REV	PART NO.	DESCRIPTION	TOTAL WEIGHT LBS.	PAINT	PACKING KIT	PACKING QTY OF PKG'S	PACKING PKG. NO.
1					**LIGHTNING ROD**					
2	1 KIT			C10174018	TAPERED LEG PIPE MOUNT KIT	64				
3	1	CW00032	2	CW00032	LIGHTNING ROD EXTENSION 2 7/8 O.D. X 21'-0	128				
4	4			C40034025	U-BOLT ASSEMBLY 5/8 Ø X 3 9/16 C-C	7				
5	1 KIT			C30986004	LIGHTNING ROD ASSY 3/4 Ø X 10'-0 CCS W/STIFFENER	22				
6					**MISCELLANEOUS**					
7	1			C40068001	COLD GALVANIZING SPRAY	1				
8	1	CS00500	2	CS00500	TOWER NAME PLATE	1				
9										
10										
11										
12										
13										
14										
15										
16										
17										
18										
19										
20										

REV	DATE	DRW	CHK	DESCRIPTION

DATE	8/11/25	**JOB NO.**	563427
DRAWN BY	KMP	**PRINT NO.**	BOM-1
CHECKED BY	ZAK	**PAGE**	23 OF 23

EXHIBIT K

BLACK MOUNTAIN CONSULTING LLC
PO Box 291, Clackamas, OR 97015
503.625.2517
www.blkmountain.com

April 26, 2025

Black Mountain Project No. 250016-GEO

Cushing Civil Engineers
107 SE Washington Street, Suite 265
Portland, Oregon 97214

Attention: Mr. Kenny McManaway

Subject: Geotechnical Engineering Evaluation
McCully Mountain
40505 McCully Mountain Road
Lyons, Oregon 97358

Black Mountain Consulting LLC (Black Mountain) is pleased to submit this report describing our recent geotechnical engineering evaluation for the McCully Mountain tower site. The purpose of our work was to interpret general surface and subsurface site conditions in order to provide recommendations for design and construction. Our scope of services was authorized by Cushing Civil Engineers (CCE) on behalf of Marion County Public Works (Marion County), and consisted of a literature review, subsurface exploration, geotechnical analyses, and report preparation.

We prepared this report in accordance with generally accepted geotechnical engineering practices at the time we prepared it, for the exclusive use of CCE, Marion County, and their agents, for specific application to this project. Use or reliance upon this report by a third party is at their own risk. Black Mountain does not make any representation or warranty, express or implied, to such other parties as to the accuracy or completeness of this report or the suitability of its use by such other parties for any purpose whatever, known or unknown, to Black Mountain.

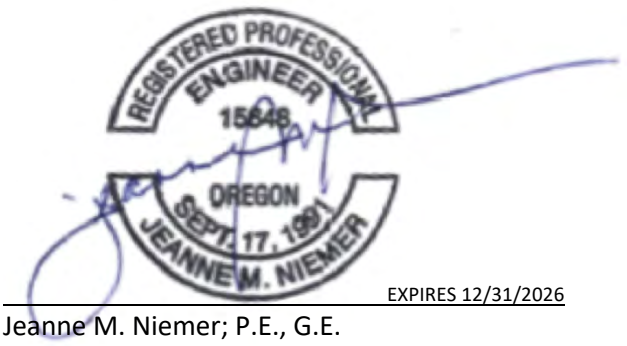
We appreciate the opportunity to be of service to you. If you have any questions, or if we can be of further assistance to you, please contact us at (503) 625.2517.

Respectfully Submitted,

Black Mountain Consulting LLC



Robert Nystrom, R.G.
Staff Geologist



EXPIRES 12/31/2026

Jeanne M. Niemer; P.E., G.E.
Principal Geotechnical Engineer

Attachment A — Figure 1 - Site Location Map
Figure 2 - Site & Exploration Plan

Attachment B — Subsurface Exploration Log

Cushing Civil Engineers
Geotechnical Engineering Evaluation

McCully Mountain
Lyons, Oregon

250016-GEO
April 2025

PROJECT DESCRIPTION

The project is located at 40505 McCully Mountain Road, near Lyons, Linn County, Oregon, as shown on the attached *Site Location Map,* Figure 1. The proposed project will consist of constructing a new approximately 180-foot emergency communications tower adjacent to an existing communications compound.

SITE CONDITIONS

Regional Geology

The geology of the area consists of a complex group of basalt flows, tuffaceous sedimentary rocks, and alluvial sedimentary deposits. The region is characterized by hilly terrain and steep slopes created by recurring lava flows from local volcanic vents and subsequent erosion by numerous streams. The planned compound is located on a unit of tuffaceous sedimentary rocks and volcanic conglomerates, pebble conglomerate, and air-fall tuffs (Tcss) (Walker, G.W. and MacLeod, N.S., 1991). The tuffaceous sedimentary rocks are surrounded by Oligocene and Miocene Epoch basalt flows of andesite and breccia, ash-flow and air-fall tuffs, mudflows, tuffaceous sedimentary rocks and volcanic conglomerates (Tu) (Walker, G.W. and MacLeod, N.S., 1991). Valleys in the region are filled with Holocene and Pleistocene age terrace, pediment and lag gravels, cobbles, and boulders mixed with clay, silt and sand (Qt) (Walker, G.W. and MacLeod, N.S., 1991) and Holocene age alluvial deposits (Qal) consisting of sand, gravel, and silt (Walker, G.W. and MacLeod, N.S., 1991). Other smaller units in the region consist of Middle to Late Miocene Epoch lava flows of basalt and andesite with hypersthene and olivine composition (Tbaa), (Peck, D.L., Griggs, A.B., Schlicker, H.G., Well, F.G., and Dole, H.M., 1964; Wise, W.S., 1969) and Tertiary age tuff and debris-flow deposits (Tus) consisting of volcanic conglomerate, breccia and ash (Walker, G.W. and MacLeod, N.S., 1991).

Surface Conditions

The project site is located on a broad plateau adjacent to an existing communication facility. The site is vacant and level.

Subsurface Conditions

We explored the subsurface conditions at the project site on April 24, 2025. Our exploration consisted of advancing one test pit as shown on the attached Site and Exploration Plan, Figure 2. We logged and classified the subsurface materials in general accordance with the Manual Visual Classification Method (ASTM D 2488).

We excavated TP-1 near the planned tower site and encountered approximately 3 feet of loose sand and gravel mantling cemented sand with some gravel at about 3 feet below ground surface (bgs). The cemented sand and gravel extended to about 12 feet bgs where we also encountered large basalt boulders. We terminated our exploration, due to the extent of the excavator reach, at approximately 16 feet bgs on the cemented sand and gravel.

We did not encounter groundwater at the time of our exploration. A well log issued for a well installed on an adjacent east parcel documents static groundwater on the order of 70 feet bgs. Groundwater levels may fluctuate in response to changing precipitation patterns, off-site construction activities, and changes in site utilization.

SEISMIC HAZARD STUDY

Seismic Sources
There are three primary earthquake sources for this site: Cascadia Subduction Zone (CSZ) intraplate and interface earthquakes, and local crustal earthquakes that could occur in the North American Plate. CSZ intraplate earthquakes that could occur within the subducted Juan de Fuca plate are anticipated to have magnitudes on the order of 7.0 to 7.5, at a depth of about 40 to 60 km. This subduction is occurring beneath the North American Plate in the coastal regions between Vancouver Island and northern California. The subducting Juan de Fuca plate is mapped approximately 215 kilometers west of the site. They present a low-moderate hazard.

An interface event earthquake on the seismogenic portion of the interface between the Juan de Fuca Plate and the North American Plate is capable of generating earthquakes with a moment magnitude of between 8.5 and 9.0. A magnitude 8.5 is expected to correspond to an average 10 percent of being exceeded in 50 years, and a magnitude 9.0 corresponds to an average 2 percent of being exceeded in 50 years.

Local crustal earthquakes may occur from northeast-southwest trending faults in the region. The nearest known fault is an unnamed fault located approximately 8 kilometers northeast of the site. The unnamed fault is classified as a normal fault.

CONCLUSIONS

The tower can be supported on a mat foundation that derives its support from the very dense sand that we encountered below 5 feet.

Seismic Conditions
Based on our analysis of subsurface exploration logs and a review of published geologic maps, we interpret the on-site soil conditions to correspond to Site Class C, as defined by ASCE/SEI 7-22.

Site Specific Ground Motions
Our experience with ground motion modeling indicates that the site subsurface conditions are not susceptible to amplification beyond code spectra.

Liquefaction, Fault Rupture, Slope Stability and Tsunami Inundation

- Based on the depth to groundwater and the consistency of the material, the site soils are not susceptible to settlement from liquefaction during a design level earthquake.
- Because the nearest known fault is over six kilometers from the site, hazards from fault rupture are low.
- The site is located inland, outside of tsunami inundation areas.
- The site is relatively flat, and is therefore not susceptible to earthquake-induced slope instability.

Our specific recommendations are presented in the following sections.

GEOTECHNICAL DESIGN RECOMMENDATIONS

Seismic Design Parameters

Our recommended seismic design parameters are summarized in the table below, and were determined in accordance with ASCE/SEI 7-22.

Seismic Design Parameters		
	Short Period	**1 Second**
Mapped Spectral Acceleration Values	S_S= 0.75	S_1=0.30
Site Soil Class	C	
Seismic Design Category	D	
Design Spectral Response Acceleration Parameters	S_{DS}=0.57	S_{D1}=0.28

For purposes of seismic site characterization, we extrapolated the soil conditions that we observed below the exploration termination depth, based on our knowledge of the regional geology.

Mat Foundation

The base of the mat foundation should be located at a minimum depth of five feet bgs, on the very dense sand. After excavation to design grade, the subgrade should be cleaned of material loosened by excavation. Irregularities resulting from the excavation should be filled with sand, lean concrete, or other suitable material to produce a level bearing surface for the foundation.

We recommend using an ultimate static bearing capacity of 7,000 pounds per square foot (psf) for design of the foundation. In accordance with the provisions of the current EIA/TIA 222 code, this static bearing pressure does not incorporate a factor of safety. We estimate post construction settlements will be less than one inch. We estimate that the differential settlement will be approximately half of the total settlement.

Lateral loads acting on the foundations can be resisted by passive earth pressure on one side of the foundation and by friction along the soil-concrete interface at the base of the foundation. We recommend using an ultimate foundation base friction coefficient of 0.70 for the sand. A passive earth pressure of 700 pounds per-cubic-foot (pcf), expressed as an equivalent fluid unit weight, may be used for that portion of the foundation embedded more than one foot below finished exterior subgrade elevation. These lateral resistance values do not incorporate a safety factor, in accordance with the provisions of the current EIA/TIA 222 code. In order to develop these capacities, concrete must be poured neat in excavations, the adjacent grade must be level, and the static ground water level must remain below the base of the footing throughout the year. The passive pressure within the upper foot of embedment should be neglected.

Eccentric loads and moments acting on the foundation produce a skewed bearing pressure distribution to the ground. The mat foundation should be sized so that the resultant load acts within the middle third of the foundation for one-way and two-way eccentric loading to maintain a compressive contact pressure along the base of the foundation. The maximum bearing pressure from the eccentric loading must be less than the allowable bearing pressure.

Uplift loads can be resisted by the self-weight of the mat and the backfill directly overlying the embedded mat foundation. The overlying soils can be re-used as backfill over the mat provided it is prepared and placed in accordance with recommendations contained in the Structural Fill section of this report. For preliminary design purposes, the total unit weight of the overlying soils can be assumed to be 100 pounds per cubic foot (pcf).

Excavations should be made in accordance with applicable Occupational Safety and Health Administration (OSHA) and state regulations. It is the contractor's responsibility to select the excavation and dewatering methods, to monitor the excavations for safety and to provide any shoring required to protect personnel and adjacent improvements.

Spread Footings

Lightly loaded structures such as the equipment shelter can be supported on spread footings. Continuous-wall and isolated-spread footings should be at least 18 and 24 inches wide, respectively. For frost protection, the footings should be located at least 24 inches below the lowest adjacent grades or deeper if required by local building code.

Footings should bear on the native loose sand that is recompacted to a medium dense state or better, or on imported structural fill placed in accordance with our recommendations. Footings bearing on the sand or structural fill should be sized for an allowable bearing capacity of 2,000 psf. We estimate post construction settlements will be less than one inch for the above recommended bearing capacity. We estimate that the differential settlement will be approximately half of the total settlement. Our recommended bearing capacity is based on limiting settlements and includes a factor of safety of 3 against bearing capacity failure.

Lateral loads acting on the foundations can be resisted by passive earth pressures on the sides of the foundation and by friction along the soil-concrete interface at the base of the foundation. We recommend using an allowable passive earth pressure of 300 pounds per cubic foot (pcf) for foundations confined by the sand or structural fill placed in accordance with our recommendations. The passive pressure within the upper two feet of embedment should be neglected. We recommend an allowable coefficient of friction of 0.30. In order to develop these capacities, concrete must be poured neat in excavations, the adjacent grade must be level, and the static ground water level must remain below the base of the footing throughout the year. These allowable lateral resistance values include a minimal factor of safety of 1.5.

Floor Slabs

We recommend a 6-inch-thick layer of imported granular structural fill be placed and compacted over the prepared subgrade. The granular fill should be placed in 6-inch-thick lifts and compacted to at least 95 percent of the maximum dry density, as determined by the American Society for Testing and Materials (ASTM) D 1557. A modulus of subgrade reaction value of 75 pounds per cubic inch (pci) may be used to design the floor slab.

Foundation Construction Considerations

A geotechnical engineer from Black Mountain (or their representative) should confirm suitable bearing conditions and evaluate the foundation subgrades. Observations should also confirm that loose or soft material, organics, unsuitable fill, or old topsoil zones were removed. Localized deepening of footing excavations may be required to penetrate any deleterious materials.

Because foundation stresses are transferred outward as well as downward into the bearing soils, all footing over-excavations should extend horizontally outward from the footing edge a distance equal to the one half the over-excavation depth for the structural backfill.

CONSTRUCTION RECOMMENDATIONS

Site Preparation

Clearing and Stripping: After surface and near-surface water sources have been controlled, the construction areas should be cleared and stripped of organic matter and other deleterious materials. Silt fences, hay bales, buffer zones of natural growth, sedimentation ponds, and granular haul roads should be used as required to reduce sediment transport during construction to acceptable levels.

Where present, fill and existing topsoil should be stripped and removed from proposed development locations and for a five-foot-margin around such areas. Based on our explorations, we anticipate the depth of stripping to be less than about a foot, although greater stripping depths may be required if deleterious materials are encountered. Deleterious materials encountered during site preparation should be removed from the subgrade soils and hauled off site for disposal. Stripped material should be transported off site for disposal or stockpiled for use in landscaped areas. If stripping operations occur during wet weather, a generally greater stripping depth might be required in order to remove disturbed moisture-sensitive soils; therefore, stripping is best performed during a period of dry weather.

Excavations: We anticipate that site grading will be minimal. Where required, temporary soil cuts associated with site excavations or regrading activities should be adequately sloped back to prevent sloughing and collapse, unless a shoring box or other suitable excavation side wall bracing is provided. It is the responsibility of the contractor to ensure that excavations are properly sloped or braced for worker safety protection, in accordance with OSHA safety guidelines.

Dewatering: Based on our subsurface exploration, we do not anticipate groundwater seepage within the tower mat excavation. If water is encountered, we anticipate that pumping from sumps located in the trench will likely be effective in removing water resulting from seepage or perched groundwater.

Final Grades: Final site grades should slope downward away from the structure at a minimum of two percent and runoff should be conveyed to a suitable drainage outlet. Additionally, the area surrounding the structure could be capped with concrete, asphalt or compacted, low-permeability soils to reduce surface water infiltration into the subsurface soils near the foundation.

Structural Fill

The following recommendations for structural fill are provided for design and construction purposes, if required.

Materials: Structural fill includes any fill materials placed under footings, pavements, or driveways and backfill over the embedded mat foundation. Typical materials used for structural fill include: clean, well-graded sand and gravel; clean sand; crushed rock; controlled-density fill (CDF); lean-mix concrete; and various soil mixtures of silt, sand, and gravel. Recycled concrete, asphalt, and glass derived from pulverized parent materials may also be used as structural fill when combined with an equal volume or more of silt, sand, and/or gravel. Use of the on-site soils as structural fill is also feasible.

Placement and Compaction: When used as structural fill, the on-site soils should be placed in lifts with a maximum thickness of 8 inches and compacted to not less than 92 percent of the material's maximum dry density, as determined by ASTM D-1557. The on-site soils should be moisture-conditioned to within 3 percent of the optimum moisture content (ASTM D-1557). If the on-site soils cannot be properly moisture-conditioned, we recommend using imported granular material for structural fill.

Imported granular structural fill should consist of angular pit or quarry run rock, crushed rock, or crushed gravel and sand that is fairly well graded between coarse and fine particle sizes. The fill should contain no organic matter or other deleterious materials, have a maximum particle size of one inch, and have less than 5 percent passing the U.S. No. 200 Sieve. In deep excavations, or where subgrade soils require stabilization, the particle size may be increased to four inches. The percentage of fines can be increased to 12 percent of the material passing the U.S. No. 200 Sieve if placed during dry weather and provided the fill material is moisture-conditioned, as necessary, for proper compaction. The material should be placed in lifts with a maximum uncompacted thickness of 12 inches and be compacted to not less than 95 percent of the maximum dry density, as determined by ASTM D-1557. During the wet season or when wet subgrade conditions exist, the initial lift thickness should be increased to 24 inches and should be compacted by rolling with a smooth-drum, nonvibratory roller.

CDF and lean-mix concrete do not require special placement or compaction procedures. Regardless of location or material, all structural fill should be placed over firm, unyielding subgrade soils. If earthwork takes place during freezing conditions, we recommend that all exposed subgrades be allowed to thaw and be recompacted prior to placing subsequent lifts of structural fill.

CONSTRUCTION OBSERVATIONS

Satisfactory earthwork performance depends on the quality of construction. Sufficient monitoring of the contractor's activities is a key part ensuring that work is completed in accordance with the construction drawings and specifications. We recommend that a representative from Black Mountain observe that the subsurface conditions are consistent with the anticipated conditions, and that foundation subgrades are suitable for placement of structural fill, rebar, or concrete for the new structures.

Some jurisdictions require a final letter of geotechnical compliance before they will provide a final permit. It is incumbent on the client to determine if a final letter of geotechnical compliance is required by the jurisdiction. If such a letter is required, a representative from Black Mountain MUST observe foundation subgrades PRIOR to concrete being poured for the foundation. If Black Mountain does not perform this observation, we cannot provide a final letter of geotechnical compliance, and a permit will not be eligible for final sign-off. ***It is the owner's responsibility to ensure that Black Mountain is notified in a timely manner (i.e., at least 48 hours prior to the required site observation) of the need for our services on site during construction.***

CLOSURE

We have prepared this report for use by the owner/developer and other members of the design and construction team for the proposed tower site. The opinions and recommendations contained within this report are not intended to be, nor should they be, construed as a warranty of subsurface conditions, but are forwarded to assist in the planning and design process.

We have made observations based on our explorations that indicate the soil conditions at only those specific locations and only to the depths penetrated. These observations do not necessarily reflect soil types, strata thickness, or water level variations that may exist in other locations. If subsurface conditions vary from those anticipated, Black Mountain will provide additional geotechnical recommendations, if necessary. The future performance and integrity of the improvements will depend largely on proper initial site preparation, drainage, and construction procedures. Observation by experienced geotechnical personnel should be considered an integral part of the construction process.

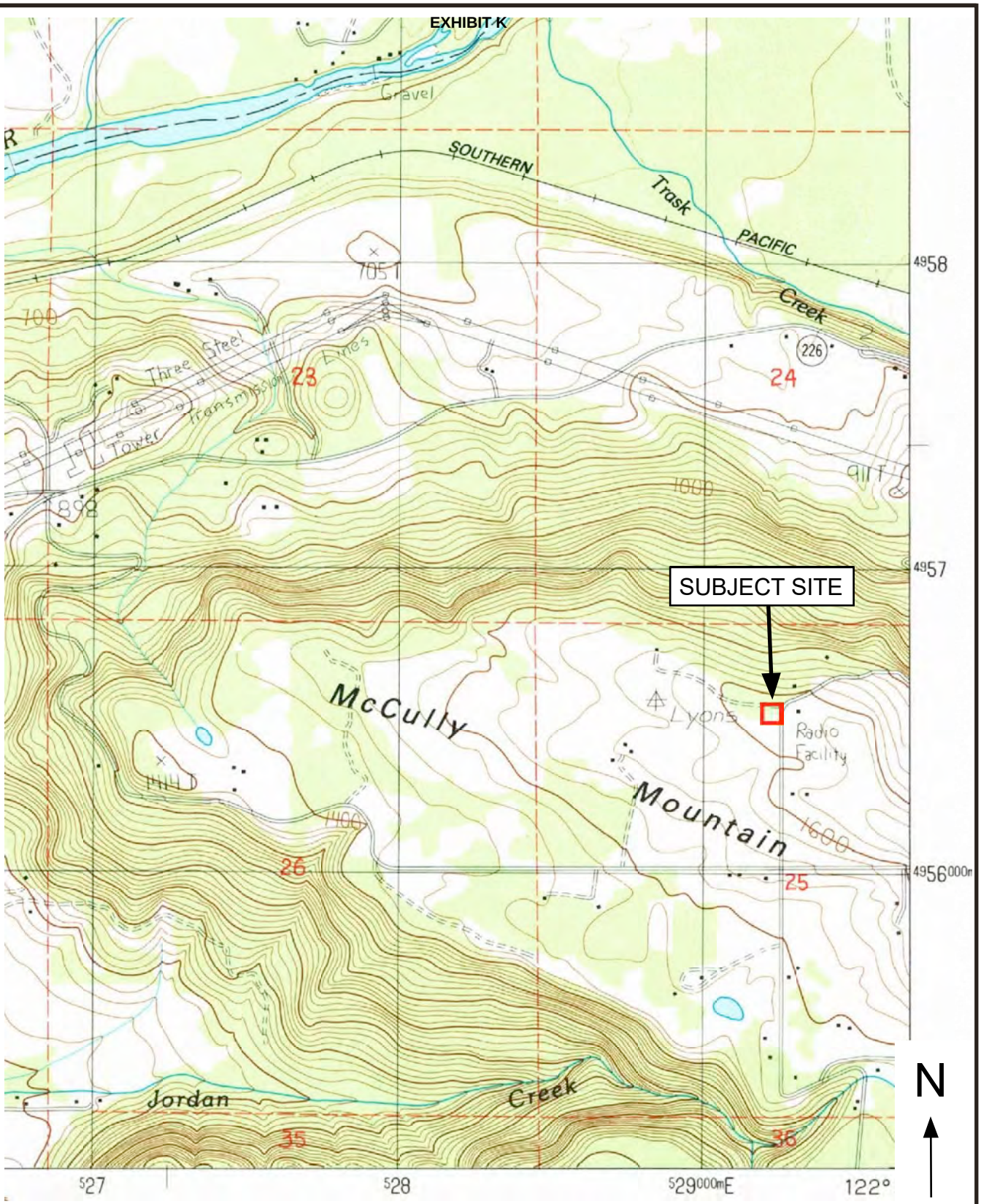
The conclusions and recommendations contained in this report are based on our understanding of the currently proposed project, as derived from written and verbal information that the client supplied to us. When the design is finalized, we recommend that our firm review to see that our recommendations have been interpreted and implemented as intended. If design changes are made, we request that we be retained to review our conclusions and recommendations and to provide a written modification or verification.

The scope of our services does not include services related to construction safety precautions, and our recommendations are not intended to direct the contractor's methods, techniques, sequences, or procedures, except as specifically described in our report for consideration in design. Within the limitations of scope, schedule, and budget, our services have been executed in accordance with the generally accepted practices in this area at the time this report was prepared. No warranty or other conditions, express or implied, should be understood.

ATTACHMENT A

FIGURES

EXHIBIT K



Base Map Courtesy of U.S.G.S. Topographic Map "Stout Mountain, Oreg." (1985) Not to Scale

Black Mountain Consulting LLC PO Box 291 Clackamas, OR 97015 TEL. 503.625-2517 | www.blkmountain.com	**FIGURE 1 -** Location Map	**Location** McCully Mountain 40505 McCully Mountain Road Lyons, Oregon 97358
	Project : 250016	
	Client : Cushing Civil Engineers	**Date :** April 2025

EXHIBIT K



Aerial photo provided by Google Earth (2024), Not to Scale

Black Mountain Consulting LLC
PO Box 291
Clackamas, OR 97015
TEL. 503.625-2517 | www.blkmountain.com

FIGURE 2 - Site & Exploration Plan

Project : 250016

Client : Cushing Civil Engineers

Location
McCully Mountain
40505 McCully Mountain Road
Lyons, Oregon 97358

Date : April 2025

ATTACHMENT B

SUBSURFACE EXPLORATION LOG

EXHIBIT K

GEOTECHNICAL TEST PIT LOG

Black Mountain Consulting LLC
PO Box 291
Clackamas, Oregon 97015
TEL:503.625.2517

PROJECT
McCully Mountain
Lyons, Oregon 97358
Cushing Civil Engineers

Job Number: 250016

Test Pit No.: **TP-1**

Elevation Reference :
Ground Surface Elevation :

DEPTH (feet)		SAMPLE TYPE	SAMPLE NUMBER	POCKET PEN	TORVANE	GROUND WATER	OBSERVATIONS	TESTING
0	Loose, moist, red-brown, fine SAND, some silt and gravel (SW), medium and large roots		1				Caterpillar 308 T probe to 12"	
	Very dense, brown, cemented fine and medium SAND with some gravel (SW) below 3'						Friable and non-friable material T probe to 1"	
5							No sidewall caving to depth	
			2					
10								
							Non-friable material below 13', para-lithic sandstone with large basalt boulders	
15			3					
	Test pit terminated, due to extent of reach, at approximately 16 feet bgs. No groundwater, seeps or seams encountered at the time of exploration.							
20								
25								

LEGEND

DATE — Static Water Level

Perched Groundwater

Grab Sample

NWTPH-HCID / VOCs — Type of Analytical Testing Used

Test Pit Start Date: 4-24-25

Test Pit Completion Date: 4-24-25

Logged By: RN

EXHIBIT K

BLACK MOUNTAIN CONSULTING LLC
PO Box 291, Clackamas, OR 97015
503.625.2517
www.blkmountain.com

April 26, 2025

Black Mountain Project No. 250016-SRT

Cushing Civil Engineers
107 SE Washington Street, Suite 265
Portland, Oregon 97214

Attn: Mr. Kenny McManaway

Subject: Soil Resistivity Survey
McCully Mountain
40505 McCully Mountain Road
Lyons, Oregon 97358

At your request, a representative of Black Mountain Consulting LLC (Black Mountain) visited the above referenced site on April 11, 2025 to perform soil resistivity testing. Two surveys were completed, at the approximate locations and orientations described in this report. We understand others will use these test results in their design of the antenna grounding system.

Please note that, due to high resistivity values at the lease area, a standard grounding design may not be appropriate and that a site-specific grounding design may be required.

We appreciate this opportunity to be of service.

Sincerely,

Black Mountain Consulting LLC

Robert Nystrom, R.G.
Staff Geologist

Methods:

The resistivity survey was completed using the Wenner Four-Electrode Method and the Miller Model 400A Soil Resistance Meter. The Wenner Four-Electrode Method requires that four metal electrodes be placed in a straight line, equal distance from one another. Each electrode is driven approximately 6 -12 inches below ground surface at 5, 10, 20, 30 and 40-foot spacing intervals. A current of known amperage is subsequently circulated into the soil through the end electrodes and the resulting voltage drop between the inner electrodes is measured, yielding the resistance (in ohms) of the soil. The correct unit for resistivity is the ohm-centimeter (Ω-cm). The following equation is used to calculate the resistivity (Ω-cm).

$$\rho = 191.5\, aR$$

Where:

ρ = soil resistance in ohm-cm (Ω-cm)

a = electrode separation (in feet)

R = resistance measured in ohms (Ω)

This method is in general accordance with ASTM method G57-06 (IEEE Standard 81).

Site Conditions:

The site is located on a broad plane adjacent to a communications compound. The site is level. Two equally spaced electrode arrays were established at the site. Array 1 was configured along a N-S axis that was placed along the western edge of the existing compound. Array 2 was configured along an E-W axis that extended to the west of the compound. Array 2 was placed in a highly disturbed area where logging activity has altered surface soils. Therefore, Array 1 may be more representative of subsurface conditions.

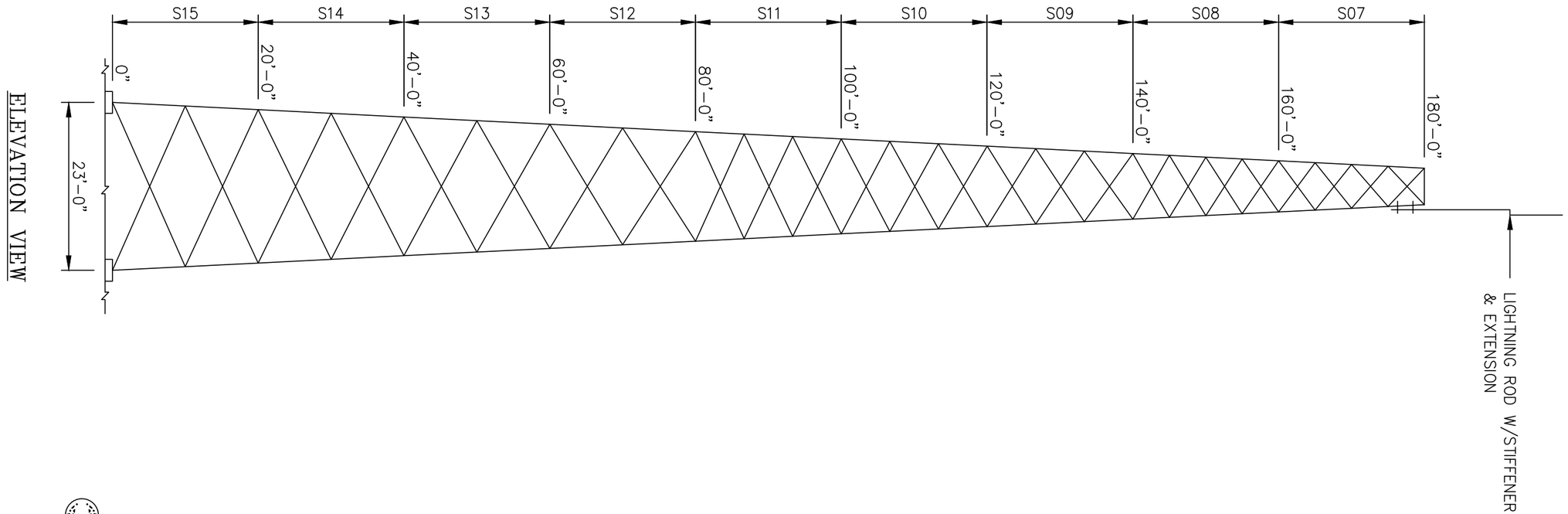
Surficial soils at the site consisted of damp fine sand and some gravel. Black Mountain conducted a geotechnical exploration at the tower site on April 24, 2025 and we encountered approximately 3 feet of sand and gravel mantling cemented sand with some gravel at about 3 feet below ground surface (bgs). The cemented sand and gravel extended to about 12 feet bgs where we also encountered large basalt boulders. We terminated our exploration, due to the extent of the excavator reach, at approximately 16 feet bgs on the cemented sand and gravel. We did not encounter perched groundwater at the time of our exploration. There was sufficient space to perform 40-foot spacing on Arrays 1 and 2. The arrays were oriented approximately 90° to one another.

EXHIBIT K

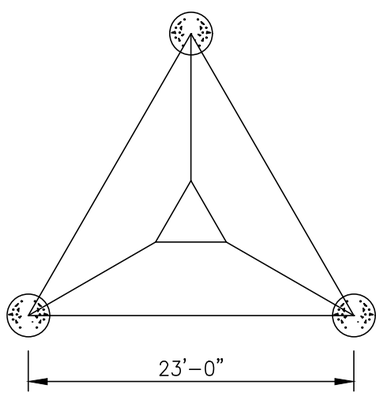
Soil Resistivity Survey Results

Table 1: Soil Resistivity Data						
Site Name & Address:		**McCully Mountain, 40505 McCully Mountain Road, Lyons, Oregon 97358**				
Company Performing Test (Include Name of Person & Date):		**Black Mountain Consulting LLC, Robert Nystrom, 4-11-2025**				
Test Instrument (Model #, Serial #, Date of Last Calibration):		**Miller Model 400A Soil Resistance Meter, #44500, Calibrated April 2025**				
Areas to be Measured	**Data Recordings**	**Distance Between Test Rods in Feet**				
		5	**10**	**20**	**30**	**40**
Array 1	Measured Resistance (Ω):	43	14	3.2	2.7	2.4
	Calculated Resistivity (Ω-cm):	41,173	26,810	12,256	15,512	18,384
Array 2	Measured Resistance (Ω):	38	20	8.1	3.9	2.0
	Calculated Resistivity (Ω-cm):	36,385	38,300	31,023	22,406	15,320
Area 3	Measured Resistance (Ω):					
	Calculated Resistivity (Ω-cm):					
Array 4	Measured Resistance (Ω):					
	Calculated Resistivity (Ω-cm):					
Additional Site Information						
Description of Soil as Seen as Site:		Fine sand and some gravel, Array 2 in disturbed logged area				
Soil Condition (Wet, Damp, or Dry):		Damp				
Weather:		Overcast at time of survey: showers last 24 hours, 50° F				

LEGS	14.00 OD X .500		10.75 OD X .500		8.625 OD X .500	8.625 OD X .322	5.563 OD X .375	4.000 OD X .318	2.875 OD X .203
DIAGONALS	L 6 X 4 X 3/8 (SLV)		L 4 X 4 X 3/8	L 4 X 3 1/2 X 3/8 (SLV)		L 4 X 4 X 5/16	A	B	L 2 X 2 X 5/16
HORIZONTALS	NONE								L 2 X 2 X 5/16
BAYS/SECTION	2 BAYS				3 BAYS			4 BAYS	
SECTION WEIGHT	9219 LBS.	9060 LBS.	7202 LBS.	6525 LBS.	6047 LBS.	4305 LBS.	3448 LBS.	2454 LBS.	1408 LBS.



ELEVATION VIEW



PLAN VIEW

MATERIAL LIST	
A	L 3 1/2 X 3 X 3/8 (SLV)
B	L 2 1/2 X 2 1/2 X 3/8

UNLESS OTHERWISE SPECIFIED
ALL DIMENSIONS INCLUDE
FINISHES AND ARE IN INCHES

TOLERANCES: FRACTIONS ± 1/16"
ANGLES ± 1/2 DEG.
DECIMALS ± .010"

MATERIAL:

TOLERANCES DO NOT APPLY TO RAW MATERIAL

REV	DATE	DRW	CHK	DESCRIPTION

Sabre Industries™
INNOVATION DELIVERED

CONFIDENTIAL
This document and the information contained herein is the confidential trade secret property of Sabre Industries, Inc. ("Sabre") and must not be reproduced, copied or used, in whole or in part, for any purpose without the prior written consent of Sabre.
© 2025 Sabre Industries, Inc. All rights reserved.

MASTER: 180 FT. MODEL S3TL–HD2
SITE: WIPPER, OR
CUSTOMER: MARION COUNTY OREGON

JOB NO. 563423		SIZE	DRAWING NO.	REV
DATE	08/07/25	B	563423–MS	0
DRAWN BY	KMP			
CHECKED BY	ZAK		SCALE NONE	PAGE 1 OF 3

DRAWING LIST

563423-F1 . . . . . MAT & PIER FOUNDATION
C30400341 . . . . . LEG TO LEG TEMPLATE
9030714 . . . . . TOWER BASE INSTALLATION
563423-S15 . . . . . SECTION 0 FT. - 20 FT.
563423-S14 . . . . . SECTION 20 FT. - 40 FT.
563423-S13 . . . . . SECTION 40 FT. - 60 FT.
563423-S12 . . . . . SECTION 60 FT. - 80 FT.
563423-S11 . . . . . SECTION 80 FT. - 100 FT.
563423-S10 . . . . . SECTION 100 FT. - 120 FT.
563423-S09 . . . . . SECTION 120 FT. - 140 FT.
563423-S08 . . . . . SECTION 140 FT. - 160 FT.
563423-S07 . . . . . SECTION 160 FT. - 180 FT.
563423-SB1 . . . . . STEP BOLT ATTACHMENT INSTALLATION
C30011-1 . . . . . SAFETY CLIMB BOTTOM MOUNTING BRACKET
C30011-2 . . . . . SAFETY CLIMB TOP MOUNTING BRACKET
C30003001 . . . . . SAFETY CLIMB INTERMEDIATE BRACKET
SEE MANUAL W/KIT . . . . . CABLE SAFETY CLIMB DEVICE
563423-WG1 . . . . . WAVEGUIDE LADDER INSTALLATION
563423-WG2 . . . . . WAVEGUIDE LADDER INSTALLATION
563423-WG3 . . . . . WAVEGUIDE LADDER INSTALLATION
9031861 . . . . . WAVEGUIDE LADDER
C30008022 . . . . . TOWER LEG CAP KIT
563423-SA1 . . . . . 3' SIDEARM @ 179'
563423-PM1 . . . . . 4 1/2 O.D. PIPE MOUNT KIT FOR SIDEARM @ 179'
563423-ST1 . . . . . SWIVEL KNUCKLE TIEBACK KITS FOR SIDEARM @ 179'
563423-FM1 . . . . . 2 3/8 O.D. FLUSH MOUNT KIT @ 177'
563423-SA2 . . . . . 3' SIDEARMS @ 175'
563423-PM2 . . . . . 4 1/2 O.D. PIPE MOUNT KITS FOR SIDEARMS @ 175'
563423-ST2 . . . . . SWIVEL KNUCKLE TIEBACK KITS FOR SIDEARMS @ 175'
563423-PM3 . . . . . 4 1/2 O.D. PIPE MOUNT KITS @ 173'
C30085002 . . . . . 8' ICE SHIELD ASSEMBLY @ 170'
563423-PM4 . . . . . 4 1/2 O.D. PIPE MOUNT KIT @ 165'
563423-SA3 . . . . . 3' SIDEARM @ 165'
563423-PM5 . . . . . 4 1/2 O.D. PIPE MOUNT KIT FOR SIDEARM @ 165'
563423-ST3 . . . . . SWIVEL KNUCKLE TIEBACK KITS FOR SIDEARM @ 165'
563423-SA4 . . . . . 3' SIDEARM @ 163'
563423-PM6 . . . . . 4 1/2 O.D. PIPE MOUNT KIT FOR SIDEARM @ 163'
563423-ST4 . . . . . SWIVEL KNUCKLE TIEBACK KITS FOR SIDEARM @ 163'
C30085002 . . . . . 8' ICE SHIELD ASSEMBLIES @ 155'
563423-PM7 . . . . . 4 1/2 O.D. PIPE MOUNT KITS @ 150'
563423-PM8 . . . . . 4 1/2 O.D. PIPE MOUNT KIT @ 143'
563423-SA5 . . . . . 3' SIDEARM @ 143'
563423-PM9 . . . . . 4 1/2 O.D. PIPE MOUNT KIT FOR SIDEARM @ 143'
563423-ST5 . . . . . SWIVEL KNUCKLE TIEBACK KITS FOR SIDEARM @ 143'
563423-SA6 . . . . . 3' SIDEARM @ 140'
563423-PM10 . . . . . 4 1/2 O.D. PIPE MOUNT KIT FOR SIDEARM @ 140'
563423-ST6 . . . . . SWIVEL KNUCKLE TIEBACK KITS FOR SIDEARM @ 140'
563423-PM11 . . . . . 4 1/2 O.D. PIPE MOUNT KIT @ 137'
563423-SA7 . . . . . 3' SIDEARM @ 134'
563423-PM12 . . . . . 4 1/2 O.D. PIPE MOUNT KIT FOR SIDEARM @ 134'
563423-ST7 . . . . . SWIVEL KNUCKLE TIEBACK KITS FOR SIDEARM @ 134'
563423-SA8 . . . . . 3' SIDEARM @ 127'
563423-PM13 . . . . . 4 1/2 O.D. PIPE MOUNT KIT FOR SIDEARM @ 127'
563423-ST8 . . . . . SWIVEL KNUCKLE TIEBACK KITS FOR SIDEARM @ 127'
563423-LR . . . . . LIGHTNING ROD W/STIFFENER & EXTENSION
9014671 . . . . . BOLT INSTALLATION
906956 . . . . . TOWER NAME PLATE
907901 . . . . . INVENTORY REQUIREMENT SHEET
BOM-1 . . . . . BILL OF MATERIAL

TOWER DESIGN INFORMATION

THIS ERECTION DRAWING PACKAGE IS BASED ON THE STRUCTURAL DESIGN REPORT NO. 563423.

THIS TOWER DESIGN ALSO MEETS OR EXCEEDS THE REQUIREMENTS OF THE 2022 OREGON STRUCTURAL SPECIALTY CODE.

DESIGN CRITERIA - ANSI/TIA-222-H	
WIND SPEED (NO ICE)	108 MPH
WIND SPEED (ICE)	30 MPH
DESIGN ICE THICKNESS	1.00 IN
RISK CATEGORY	IV
EXPOSURE CATEGORY	C
TOPOGRAPHIC FACTOR PROCEDURE	METHOD 2 (RIGOROUS)
TOPOGRAPHIC FEATURE	FLAT TOPPED HILL
CREST HEIGHT	750 FT
LENGTH OF TOPOGRAPHIC FEATURE	3000 FT
HORIZONTAL DISTANCE FROM STRUCTURE TO CREST	0 FT
GROUND ELEVATION	1068 FT
SEISMIC IMPORTANCE FACTOR, Ie	1.50
0.2-SEC SPECTRAL RESPONSE, Ss	0.79 g
1-SEC SPECTRAL RESPONSE, S1	0.404 g
SITE CLASS	C
SEISMIC DESIGN CATEGORY	D
BASIC SEISMIC FORCE-RESISTING SYSTEM	TELECOMMUNICATION TOWER (TRUSS: STEEL)

UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS INCLUDE FINISHES AND ARE IN INCHES

TOLERANCES: FRACTIONS ± 1/16" ANGLES ± 1/2 DEG. DECIMALS ± .010"

MATERIAL:

TOLERANCES DO NOT APPLY TO RAW MATERIAL

REV	DATE	DRW	CHK	DESCRIPTION

Sabre Industries™ INNOVATION DELIVERED

CONFIDENTIAL
This document and the information contained herein is the confidential trade secret property of Sabre Industries, Inc. ("Sabre") and must not be reproduced, copied or used, in whole or in part, for any purpose without the prior written consent of Sabre.
© 2025 Sabre Industries, Inc. All rights reserved.

MASTER: 180 FT. MODEL S3TL-HD2
SITE: WIPPER, OR
CUSTOMER: MARION COUNTY OREGON

JOB NO. 563423		SIZE	DRAWING NO.	REV
DATE	08/07/25	B	563423-MS	0
DRAWN BY	KMP			
CHECKED BY	ZAK		SCALE NONE	PAGE 2 OF 3

DESIGNED APPURTENANCE LOADING

ELEV.	ANTENNAS
189.62'	(1) DB224A
186.22'	(1) SC479-HF1LDF
185'	(1) EXTENDIBLE LIGHTNING ROD
184.14'	(1) CC807-09
182.22'	(3) SC479-HF1LDF
179'	3FT SIDEARM
179'	3FT SIDEARM
179'	3FT SIDEARM
177'	FLUSH MOUNT
177'	(1) 429-83H-01
175'	(2) 3FT SIDEARMS
173'	(2) LEG DISH MOUNT
173'	LEG DISH MOUNT
173'	(1) 1' H.P. DISH
173'	(2) VHLP2-23-2GR/B
170'	(1) 6' ICE SHIELD
168.46'	(1) OA20-67-DIN
167.21'	(1) SE414-SWBPALDF(DXX)
166.5'	(1) 7' X 2" WHIP
165'	3FT SIDEARM
165'	3FT SIDEARM
165'	LEG DISH MOUNT
165'	LEG DISH MOUNT

ELEV.	ANTENNAS
165'	(1) UHX8-59
165'	(1) VHLPX6-6W-6WH
163'	3FT SIDEARM
155'	(1) 6' ICE SHIELD
155'	(1) 6' ICE SHIELD
150'	(2) LEG DISH MOUNT
150'	(2) VHLPX6-6W-6WH
143'	3FT SIDEARM
143'	LEG DISH MOUNT
143'	(1) 3' X 1' X 3IN PANEL
143'	(1) VHLPX6-6W-6WH
140'	3FT SIDEARM
140'	(1) 3' X 1' X 3IN PANEL
137.5'	(1) 7' X 2" WHIP
137'	LEG DISH MOUNT
137'	(1) VHLPX4-11W/A
134'	3FT SIDEARM
130.5'	(1) 7' X 2" WHIP
129.5'	(1) DB404-B
127'	3FT SIDEARM
127'	3FT SIDEARM
120'	3 EHD V-BOOM - 12FT FACE - 3FT STANDOFF
120'	(12) 80010992

UNLESS OTHERWISE SPECIFIED
ALL DIMENSIONS INCLUDE FINISHES AND ARE IN INCHES

TOLERANCES: FRACTIONS ± 1/16"
ANGLES ± 1/2 DEG.
DECIMALS ± .010"

MATERIAL:

TOLERANCES DO NOT APPLY TO RAW MATERIAL

REV	DATE	DRW	CHK	DESCRIPTION

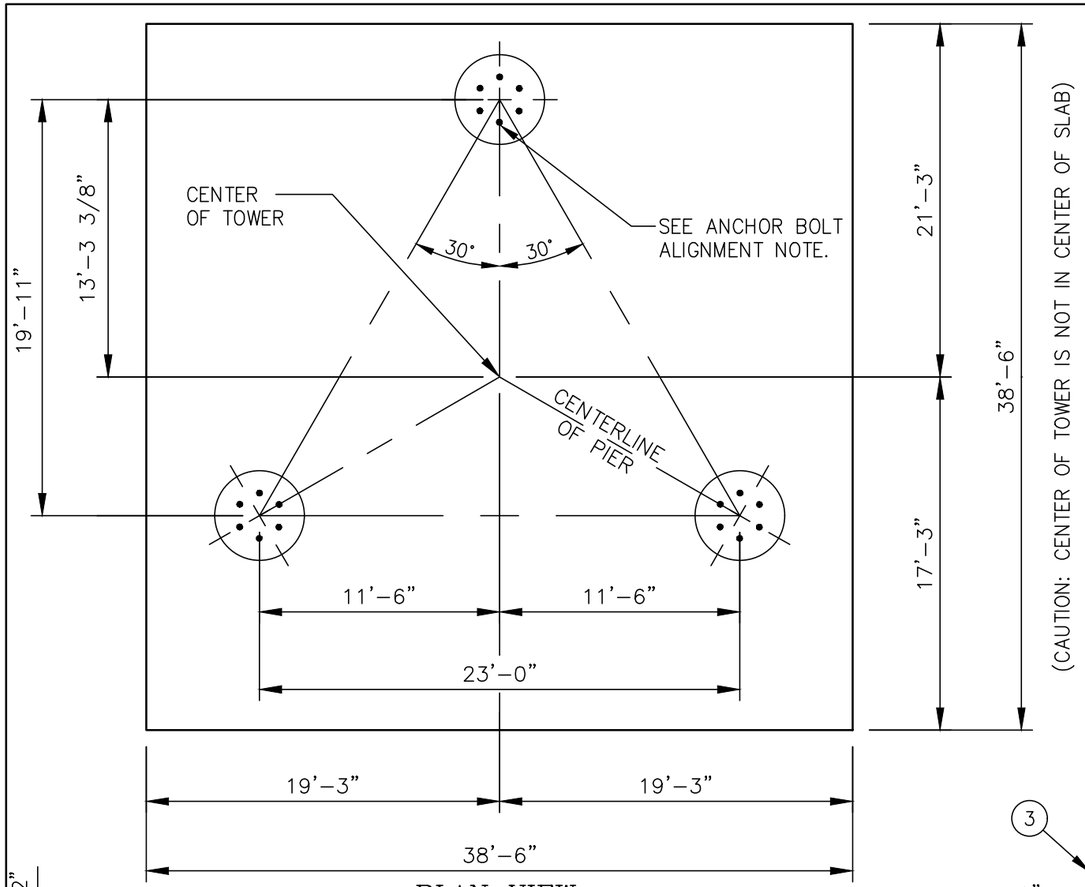
Sabre Industries™
INNOVATION DELIVERED

CONFIDENTIAL
This document and the information contained herein is the confidential trade secret property of Sabre Industries, Inc. ("Sabre") and must not be reproduced, copied or used, in whole or in part, for any purpose without the prior written consent of Sabre.
© 2025 Sabre Industries, Inc. All rights reserved.

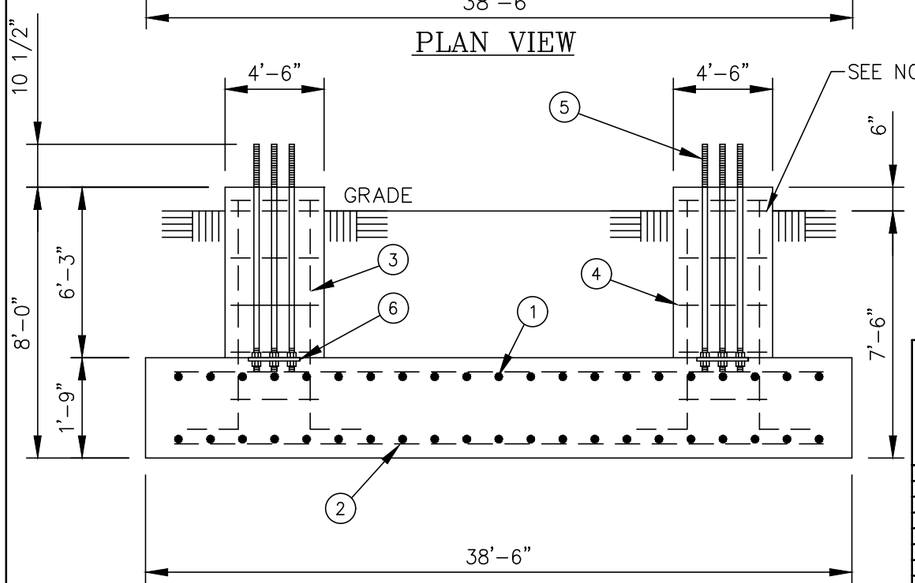
MASTER: 180 FT. MODEL S3TL-HD2
SITE: WIPPER, OR
CUSTOMER: MARION COUNTY OREGON

JOB NO. 563423		SIZE	DRAWING NO.	REV
DATE	08/07/25	B	563423-MS	0
DRAWN BY	KMP			
CHECKED BY	ZAK		SCALE NONE	PAGE 3 OF 3

EXHIBIT K



PLAN VIEW



ELEVATION VIEW

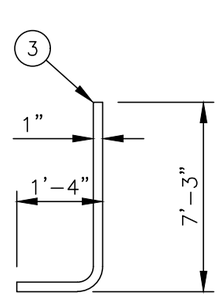
REINFORCING STEEL SCHEDULE								
ITEM	LOCATION	NO. REQ'D.	BAR SPC'G.	SIZE	CUT LGTH.	TOTAL LGTH.	TOTAL WT.	SHAPE
①	PAD TOP REINFORCING	104	EQUALLY SPACED	#10	38'-0"	3952'-0"	17005 LBS.	STRAIGHT
②	PAD BOTTOM REINFORCING	104	EQUALLY SPACED	#10	38'-0"	3952'-0"	17005 LBS.	STRAIGHT
③	PIER VERTICAL REINFORCING	72	EQUALLY SPACED	#8	8'-7"	618'-0"	1650 LBS.	
④	PIER TIES	69	SPACED 4" C/C	#4	13'-10"	954'-6"	638 LBS.	
						TOTAL REBAR WT.	36298 LBS.	

ANCHOR BOLT SCHEDULE				
ITEM	PART NO.	NO. REQ'D.	ANCHOR BOLT SIZE	SPACING
⑤	C40041061	18	1 3/4"ø X 7'-3"	EQUALLY SPACED

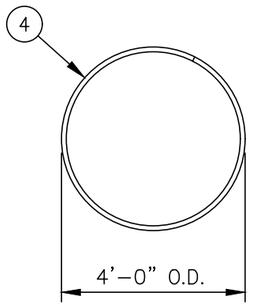
TEMPLATE SCHEDULE			
ITEM	PART NO.	NO. REQ'D.	BOLT CIRCLE
⑥	C30139220	6	1'-7"

CONCRETE REQ'D	ROUND PIERS
PAD	96.07 CU. YDS.
PIERS	11.04 CU. YDS.
TOTAL	107.11 CU. YDS.

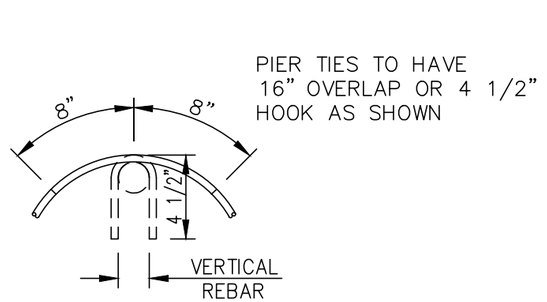
SEE PAGE 2 FOR GENERAL NOTES



REBAR DETAIL
(PIER VERTICAL REBAR)



REBAR DETAIL
(PIER TIES)



PIER TIE HOOK DETAIL

UNLESS OTHERWISE SPECIFIED
ALL DIMENSIONS INCLUDE
FINISHES AND ARE IN INCHES

TOLERANCES: FRACTIONS ± 1/16"
ANGLES ± 1/2 DEG.
DECIMALS ± .010"

MATERIAL:

TOLERANCES DO NOT APPLY TO RAW MATERIAL

REV	DATE	DRW	CHK	DESCRIPTION

Sabre Industries™
INNOVATION DELIVERED

CONFIDENTIAL
This document and the information contained herein is the confidential trade secret property of Sabre Industries, Inc. ("Sabre") and must not be reproduced, copied or used, in whole or in part, for any purpose without the prior written consent of Sabre.
© 2025 Sabre Industries, Inc. All rights reserved.

FOUNDATION: 180 FT. MODEL S3TL-HD2
SITE: WIPPER, OR
CUSTOMER: MARION COUNTY OREGON

JOB NO. 563423		SIZE	DRAWING NO.	REV
DATE	07/02/25	B	563423-F1	0
DRAWN BY	CK			
CHECKED BY	KC		SCALE NONE	PAGE 1 OF 2

GENERAL NOTES

1. CONCRETE SHALL HAVE A MINIMUM 28-DAY COMPRESSIVE STRENGTH OF 4,500 PSI, IN ACCORDANCE WITH ACI 318-14. (2 REBAR TIES REQ'D IN THE TOP 5")
2. REBAR TO CONFORM TO ASTM SPECIFICATION A615 GRADE 60.
3. ALL REBAR TO HAVE A MINIMUM OF 3" CONCRETE COVER.
4. ALL EXPOSED CONCRETE CORNERS TO BE CHAMFERED 3/4".
5. THE FOUNDATION DESIGN IS BASED ON THE GEOTECHNICAL REPORT BY BLACK MOUNTAIN CONSULTING, LLC, PROJECT NO. 240031-GEO, DATED OCTOB 6, 2024.
6. SEE THE GEOTECHNICAL REPORT FOR COMPACTION REQUIREMENTS, IF SPECIFIED.
7. 5.75' OF SOIL COVER IS REQUIRED OVER THE ENTIRE AREA OF THE FOUNDATION SLAB.
8. THE BOTTOM ANCHOR BOLT TEMPLATE SHALL BE POSITIONED AS CLOSELY AS POSSIBLE TO THE BOTTOM OF THE ANCHOR BOLTS.
9. THIS FOUNDATION IS DESIGNED FOR A MAX CAPACITY RATIO OF 70%.
10. DISTANCE BETWEEN CENTER OF ANCHOR BOLT CAGE AND THE CENTER OF THE PIER NOT TO EXCEED 1/2" WITHOUT APPROVAL FROM ENGINEER OF RECORD.
11. ONE ANCHOR BOLT MUST BE ALIGNED DIRECTLY WITH THE CENTER OF THE TOWER (TYPICAL).

BASE REACTIONS - ANSI/TIA-222-H (WIND/ICE)

TOTAL FOUNDATION		INDIVIDUAL FOOTING	
SHEAR (KIPS)	88.58	SHEAR (KIPS)	51.54
AXIAL (KIPS)	157.7	COMPRESSION (KIPS)	455
MOMENT (FT-KIPS)	8750	UPLIFT (KIPS)	409

BASE REACTIONS - ANSI/TIA-222-H (SEISMIC)

TOTAL FOUNDATION		INDIVIDUAL FOOTING	
SHEAR (KIPS)	21.43	SHEAR (KIPS)	15.52
AXIAL (KIPS)	89.97	COMPRESSION (KIPS)	153
MOMENT (FT-KIPS)	2445	UPLIFT (KIPS)	105

UNLESS OTHERWISE SPECIFIED
ALL DIMENSIONS INCLUDE FINISHES AND ARE IN INCHES
TOLERANCES: FRACTIONS ± 1/16"
ANGLES ± 1/2 DEG.
DECIMALS ± .010"

MATERIAL:
TOLERANCES DO NOT APPLY TO RAW MATERIAL

REV	DATE	DRW	CHK	DESCRIPTION

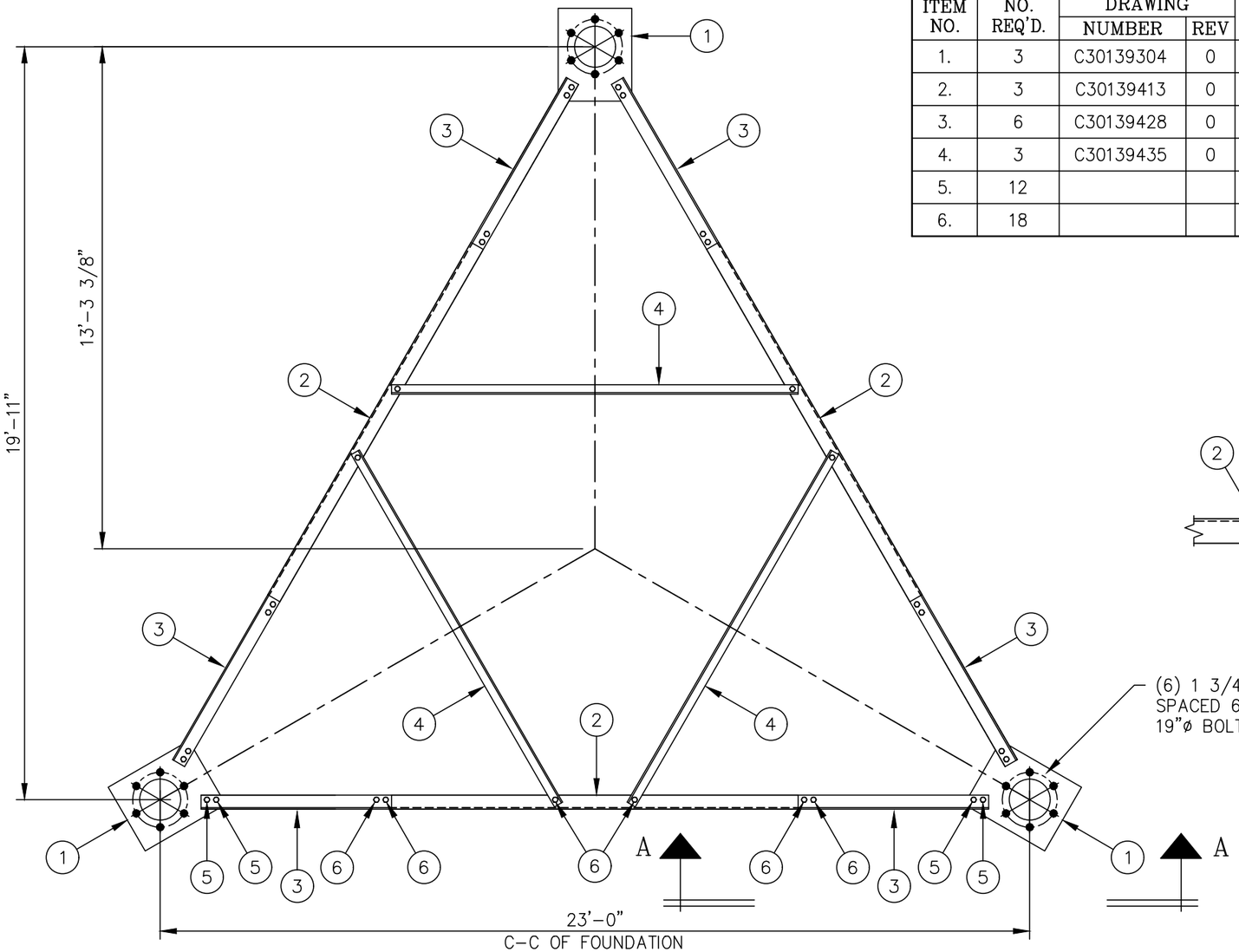
Sabre Industries™
INNOVATION DELIVERED

CONFIDENTIAL
This document and the information contained herein is the confidential trade secret property of Sabre Industries, Inc. ("Sabre") and must not be reproduced, copied or used, in whole or in part, for any purpose without the prior written consent of Sabre.
© 2025 Sabre Industries, Inc. All rights reserved.

FOUNDATION: 180 FT. MODEL S3TL-HD2
SITE: WIPPER, OR
CUSTOMER: MARION COUNTY OREGON

JOB NO. 563423		SIZE	DRAWING NO.	REV
DATE	07/02/25	B	563423-F1	0
DRAWN BY	CK			
CHECKED BY	KC		SCALE NONE	PAGE 2 OF 2

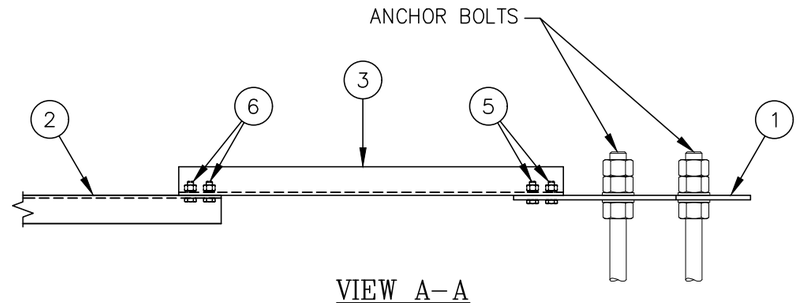
EXHIBIT K



PLAN VIEW

C30400341 LEG TO LEG TEMPLATE

ITEM NO.	NO. REQ'D.	DRAWING NUMBER	DRAWING REV	PART NO.	DESCRIPTION	WEIGHT LBS.	PAINT
1.	3	C30139304	0	C30139304	PLATE, ANCHOR BOLT TEMPLATE 1 3/4"ø A.B. ON 19"ø B.C.	155	N/R
2.	3	C30139413	0	C30139413	ANGLE, TEMPLATE SUPPORT, 3 X 3 X 3/16 X 10'-0	111	N/R
3.	6	C30139428	0	C30139428	ANGLE, TEMPLATE SUPPORT, 3 X 3 X 3/16 X 6'-1 3/4	136	N/R
4.	3	C30139435	0	C30139435	ANGLE, TEMPLATE SUPPORT, 2 1/2 X 2 1/2 X 3/16 X 11'-0	101	N/R
5.	12			C40026023	BOLT ASSEMBLY, 5/8 ø X 2 A325	6	
6.	18			C40026022	BOLT ASSEMBLY, 5/8 ø X 1 3/4 A325	8	
					TOTAL WEIGHT IN LBS.	517	



VIEW A-A

NOTE:

1. ALWAYS COMPARE THE DIMENSIONS SHOWN ON THIS DRAWING WITH THE PROPER CONCRETE FOUNDATION DRAWING, PRIOR TO PLACING CONCRETE.
2. ONE ANCHOR BOLT MUST BE ALIGNED DIRECTLY WITH THE CENTER OF THE TOWER (TYPICAL AT ALL (3) LEGS).
3. VERIFY ANCHOR BOLT CIRCLE CENTER-TO-CENTER SPACING ON ALL (3) FACES AND ALIGNMENT OF ANCHOR BOLTS WITH THE CENTER OF THE TOWER AT ALL (3) LEGS PRIOR TO PLACING CONCRETE.
4. PROVIDE NECESSARY SUPPORT TO ELIMINATE ANY MOVEMENT DURING CONCRETE PLACEMENT AND CURING.

UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS INCLUDE FINISHES AND ARE IN INCHES

TOLERANCES: FRACTIONS ± 1/16" ANGLES ± 1/2 DEG. DECIMALS ± .010"

MATERIAL:

TOLERANCES DO NOT APPLY TO RAW MATERIAL

REV	DATE	DRW	CHK	DESCRIPTION
1	07/02/25	GCK	KCG	REMOVED TOWER SERIES DESIGNATION.

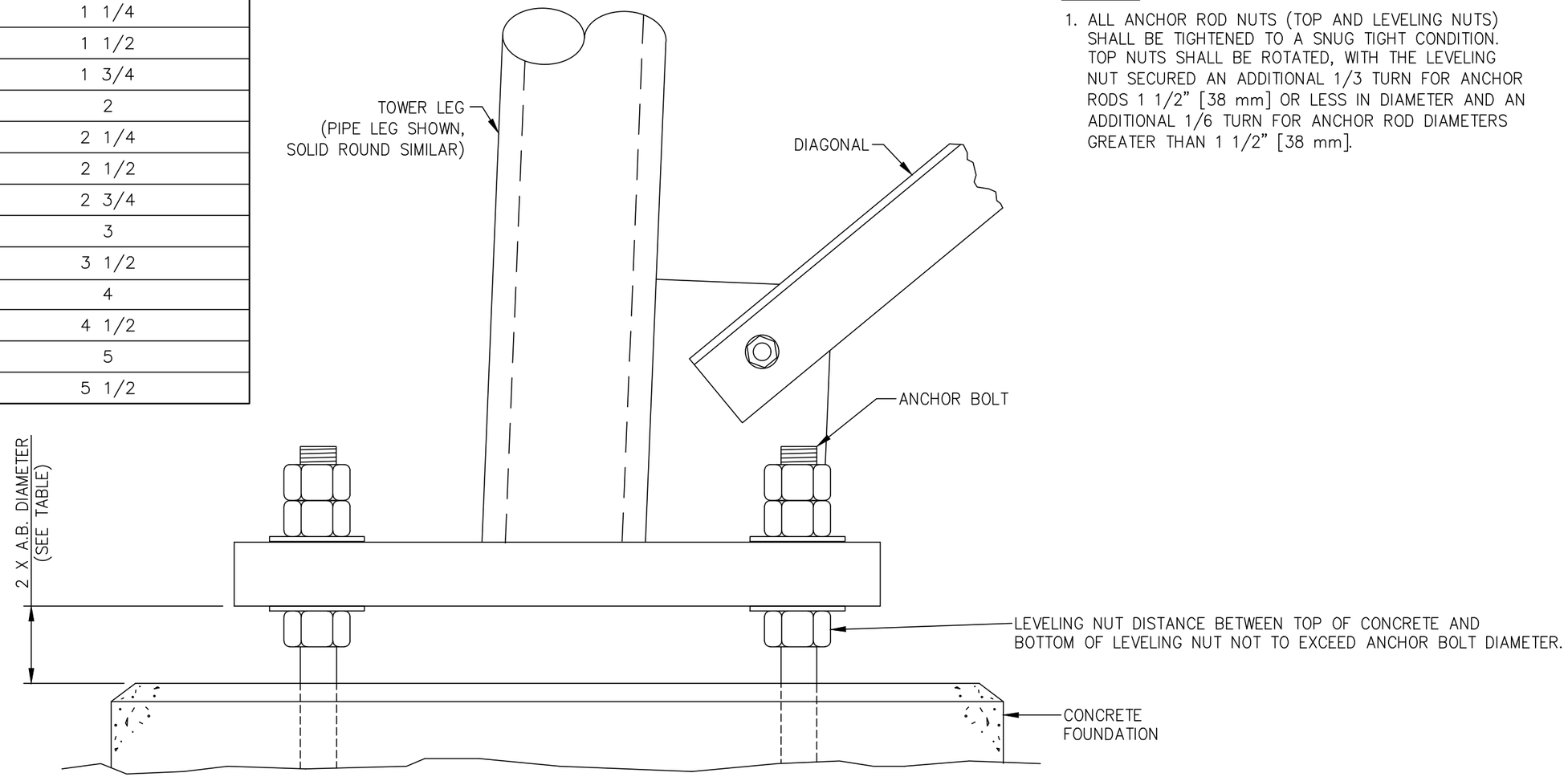
Sabre Industries™
INNOVATION DELIVERED

CONFIDENTIAL
This document and the information contained herein is the confidential trade secret property of Sabre Industries, Inc. ("Sabre") and must not be reproduced, copied or used, in whole or in part, for any purpose without the prior written consent of Sabre.
© 2022 Sabre Industries, Inc. All rights reserved.

LEG TO LEG TEMPLATE INSTALLATION FOR MODEL S3TL SECTION 15 BASE SPREAD 23'-0" C-C OF FOUNDATION (6) 1 3/4"ø A.B. ON A 19"ø B.C.

		SIZE	DRAWING NO.	REV
DATE	02/14/20	B	C30400341	1
DRAWN BY	DRL			
CHECKED BY	LRD		SCALE None	PAGE 1 OF 1

TABLE	
ANCHOR BOLT DIAMETER (in)	MAXIMUM SPACE (in)
1/2	1
5/8	1 1/4
3/4	1 1/2
7/8	1 3/4
1	2
1 1/8	2 1/4
1 1/4	2 1/2
1 3/8	2 3/4
1 1/2	3
1 3/4	3 1/2
2	4
2 1/4	4 1/2
2 1/2	5
2 3/4	5 1/2



ELEVATION VIEW

NOTES:

1. ALL ANCHOR ROD NUTS (TOP AND LEVELING NUTS) SHALL BE TIGHTENED TO A SNUG TIGHT CONDITION. TOP NUTS SHALL BE ROTATED, WITH THE LEVELING NUT SECURED AN ADDITIONAL 1/3 TURN FOR ANCHOR RODS 1 1/2" [38 mm] OR LESS IN DIAMETER AND AN ADDITIONAL 1/6 TURN FOR ANCHOR ROD DIAMETERS GREATER THAN 1 1/2" [38 mm].

UNLESS OTHERWISE SPECIFIED
ALL DIMENSIONS INCLUDE
FINISHES AND ARE IN INCHES

TOLERANCES: FRACTIONS ± 1/16"
ANGLES ± 1/2 DEG.
DECIMALS ± .010"

MATERIAL:

TOLERANCES DO NOT APPLY
TO RAW MATERIAL

REV	DATE	DRW	CHK	DESCRIPTION
2	10/13/17	RWM	MWR	ADDED ANCHOR BOLT TABLE, REVISED LEVELING NUT
				CALL OUT AND ADDED TIGHTENING NOTE #1.
1	1/6/12	DSN	RWM	REVISED BASE PLATE TO FND. GAP

Sabre Industries™
INNOVATION DELIVERED

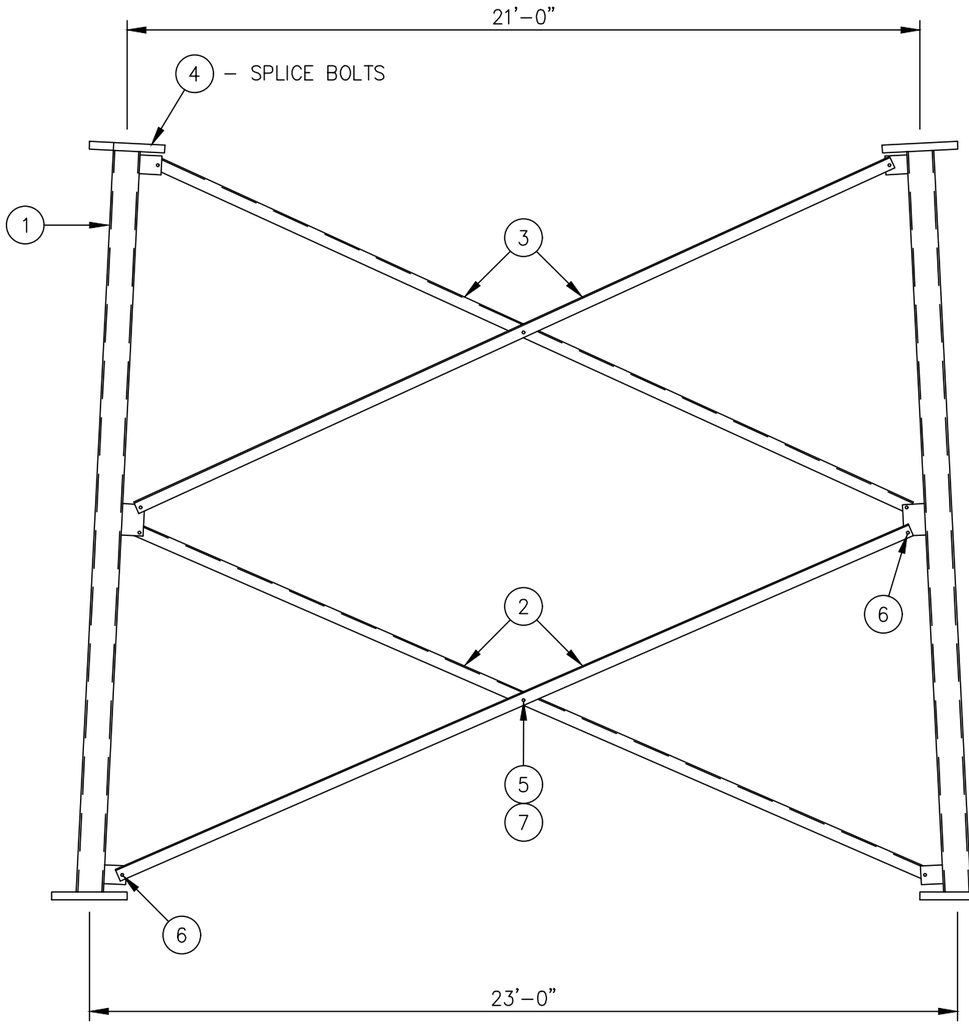
CONFIDENTIAL
This document and the information contained herein is the confidential trade secret property of Sabre Industries, Inc. ("Sabre") and must not be reproduced, copied or used, in whole or in part, for any purpose without the prior written consent of Sabre.
© 2022 Sabre Industries, Inc. All rights reserved.

TOWER BASE INSTALLATION

DATE	11/24/09
DRAWN BY	RWM
CHECKED BY	MWR

SIZE	DRAWING NO.	REV
B	9030714	2

SCALE	PAGE
None	1 OF 1



(6) 1 3/4"ø ANCHOR BOLTS ON A 19"ø BOLT CIRCLE.

ELEVATION VIEW

LIST OF MATERIAL

15–LEGS

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
1	3	15–T11611441	SECT. 15 LEG 14 ø X .500 X 20'–0 5/16 W/STEP BOLTS	5508
			TOTAL WEIGHT LBS	5508

15–T8101794 BRACING KIT

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
2	6	TS11269	ANGLE, DIAGONAL 6 X 4 X 3/8 X 22'–11 3/16	1760
3	6	TS11270	ANGLE, DIAGONAL 6 X 4 X 3/8 X 22'–0 7/16	1691
			TOTAL WEIGHT LBS	3451

SPLICE BOLTS

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
4	31	C40026115	BOLT ASSEMBLY, 1 1/2 ø X 6 1/2 A325	188
			TOTAL WEIGHT LBS	188

TK01256 HARDWARE KIT

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
5	7	C40026099	BOLT ASSEMBLY, 1 1/8 ø X 3 1/4 A325	15
6	25	C40026097	BOLT ASSEMBLY, 1 1/8 ø X 2 3/4 A325	50
7	7	C40047014	RINGFILL, 3/8 THICK – 1 1/8 ø BOLT	7
			TOTAL WEIGHT LBS	72

TOTAL SECTION WEIGHT – INCLUDES 3 LEGS, BRACING AND HARDWARE KIT	9219

FIELD NOTES

1. THE PART NUMBERS FOR ALL LEGS ARE LOCATED AT THE TOP OF EACH PART.
2. STEP BOLTS PROVIDED FOR (3) LEGS.

UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS INCLUDE FINISHES AND ARE IN INCHES

TOLERANCES: FRACTIONS ± 1/16" ANGLES ± 1/2 DEG. DECIMALS ± .010"

MATERIAL:

TOLERANCES DO NOT APPLY TO RAW MATERIAL

REV	DATE	DRW	CHK	DESCRIPTION

Sabre Industries™ INNOVATION DELIVERED

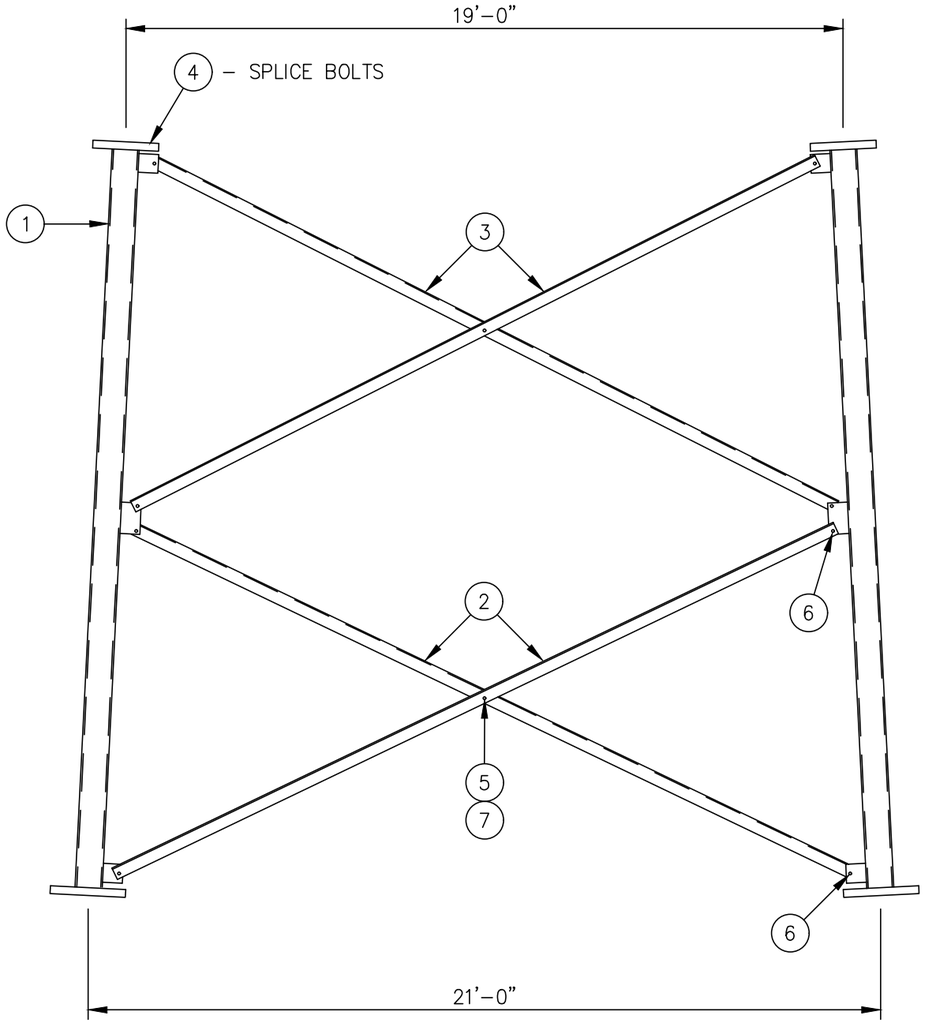
CONFIDENTIAL
This document and the information contained herein is the confidential trade secret property of Sabre Industries, Inc. ("Sabre") and must not be reproduced, copied or used, in whole or in part, for any purpose without the prior written consent of Sabre.
© 2025 Sabre Industries, Inc. All rights reserved.

SECTION ERECTION: 15 15–T8101794

SITE: WIPPER, OR

CUSTOMER: MARION COUNTY OREGON

JOB NO. 563423		SIZE	DRAWING NO.	REV
DATE	07/30/25	B	563423–S15	0
DRAWN BY	KMP			
CHECKED BY	ZAK		SCALE None	PAGE 1 OF 1



ELEVATION VIEW

LIST OF MATERIAL

14 LEGS

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
1	3	14–T11611443	SECT. 14 LEG 14 ø X .500 X 20'–0 5/16 W/STEP BOLTS	5618
			TOTAL WEIGHT LBS	5618

14–T8101795 BRACING KIT

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
2	6	TS11271	ANGLE, DIAGONAL 6 X 4 X 3/8 X 21'–1 3/8	1621
3	6	TS11272	ANGLE, DIAGONAL 6 X 4 X 3/8 X 20'–2 7/8	1553
			TOTAL WEIGHT LBS	3174

SPLICE BOLTS

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
4	31	C40026166	BOLT ASSEMBLY, 1 1/2 ø X 7 A325	196
			TOTAL WEIGHT LBS	196

TK01256 HARDWARE KIT

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
5	7	C40026099	BOLT ASSEMBLY, 1 1/8 ø X 3 1/4 A325	15
6	25	C40026097	BOLT ASSEMBLY, 1 1/8 ø X 2 3/4 A325	50
7	7	C40047014	RINGFILL, 3/8 THICK – 1 1/8 ø BOLT	7
			TOTAL WEIGHT LBS	72

TOTAL SECTION WEIGHT – INCLUDES 3 LEGS, BRACING AND HARDWARE KIT	9060

FIELD NOTES

1. THE PART NUMBERS FOR ALL LEGS ARE LOCATED AT THE TOP OF EACH PART.
2. STEP BOLTS PROVIDED FOR (3) LEGS.

UNLESS OTHERWISE SPECIFIED
ALL DIMENSIONS INCLUDE FINISHES AND ARE IN INCHES

TOLERANCES: FRACTIONS ± 1/16"
ANGLES ± 1/2 DEG.
DECIMALS ± .010"

MATERIAL:

TOLERANCES DO NOT APPLY TO RAW MATERIAL

REV	DATE	DRW	CHK	DESCRIPTION

Sabre Industries™
INNOVATION DELIVERED

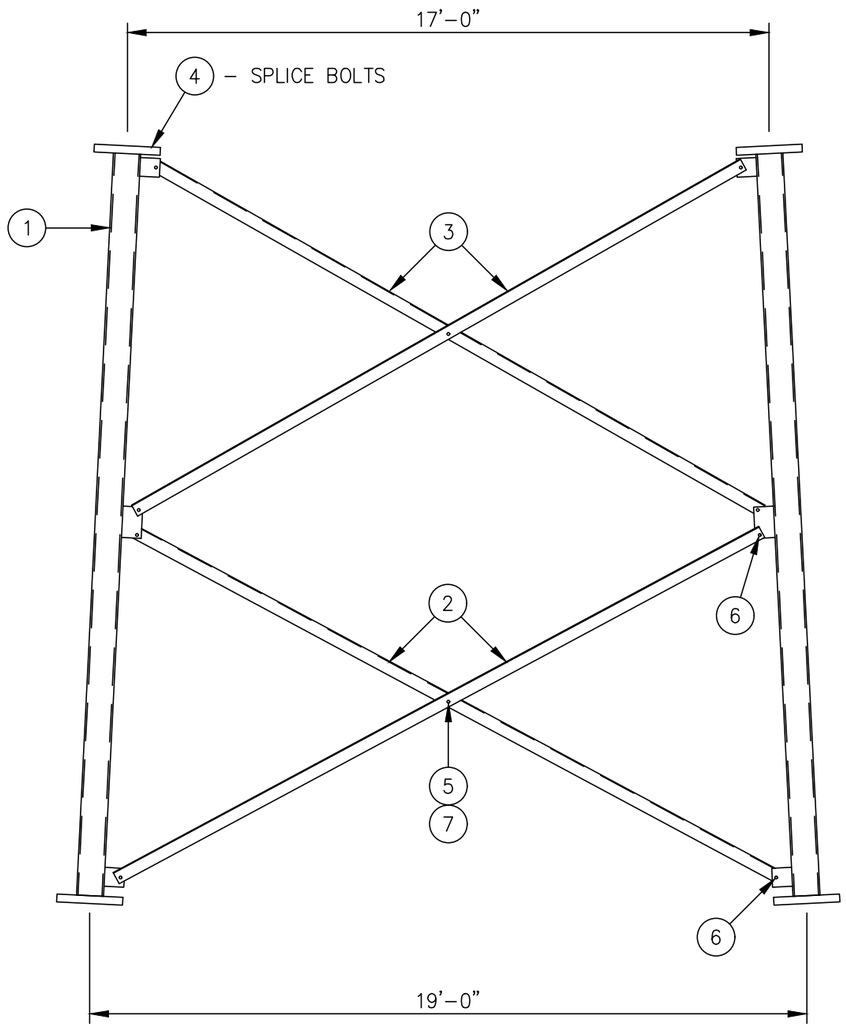
CONFIDENTIAL
This document and the information contained herein is the confidential trade secret property of Sabre Industries, Inc. ("Sabre") and must not be reproduced, copied or used, in whole or in part, for any purpose without the prior written consent of Sabre.
© 2025 Sabre Industries, Inc. All rights reserved.

SECTION ERECTION: 14 14–T8101795

SITE: WIPPER, OR

CUSTOMER: MARION COUNTY OREGON

JOB NO. 563423		SIZE	DRAWING NO.	REV
DATE	07/31/25	B	563423–S14	0
DRAWN BY	KMP			
CHECKED BY	ZAK		SCALE NONE	PAGE 1 OF 1



ELEVATION VIEW

LIST OF MATERIAL

13–LEGS

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
1	3	13–T11611445	SECT. 13 LEG 10 3/4ø X .500 X 20'–0 5/16 W/STEP BOLTS	4625
			TOTAL WEIGHT LBS	4625

13–T8101796 BRACING KIT

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
2	6	TS11273	ANGLE, DIAGONAL 4 X 4 X 3/8 X 19'–4 1/8	1239
3	6	TS11274	ANGLE, DIAGONAL 4 X 4 X 3/8 X 18'–5 15/16	1132
			TOTAL WEIGHT LBS	2371

SPLICE BOLTS

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
4	25	C40026115	BOLT ASSEMBLY, 1 1/2 ø X 6 1/2 A325	152
			TOTAL WEIGHT LBS	152

TK00353 HARDWARE KIT

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
5	7	C40026073	BOLT ASSEMBLY, 1 ø X 3 A325	12
6	25	C40026071	BOLT ASSEMBLY, 1 ø X 2 1/2 A325	41
7	7	C40047007	RINGFILL, 3/8 THICK – 1 ø BOLT	1
			TOTAL WEIGHT LBS	54

TOTAL SECTION WEIGHT – INCLUDES 3 LEGS, BRACING AND HARDWARE KIT	7202

FIELD NOTES

1. THE PART NUMBERS FOR ALL LEGS ARE LOCATED AT THE TOP OF EACH PART.
2. STEP BOLTS PROVIDED FOR (3) LEGS.

UNLESS OTHERWISE SPECIFIED
ALL DIMENSIONS INCLUDE
FINISHES AND ARE IN INCHES

TOLERANCES: FRACTIONS ± 1/16"
ANGLES ± 1/2 DEG.
DECIMALS ± .010"

MATERIAL:

TOLERANCES DO NOT APPLY TO RAW MATERIAL

REV	DATE	DRW	CHK	DESCRIPTION

Sabre Industries™
INNOVATION DELIVERED

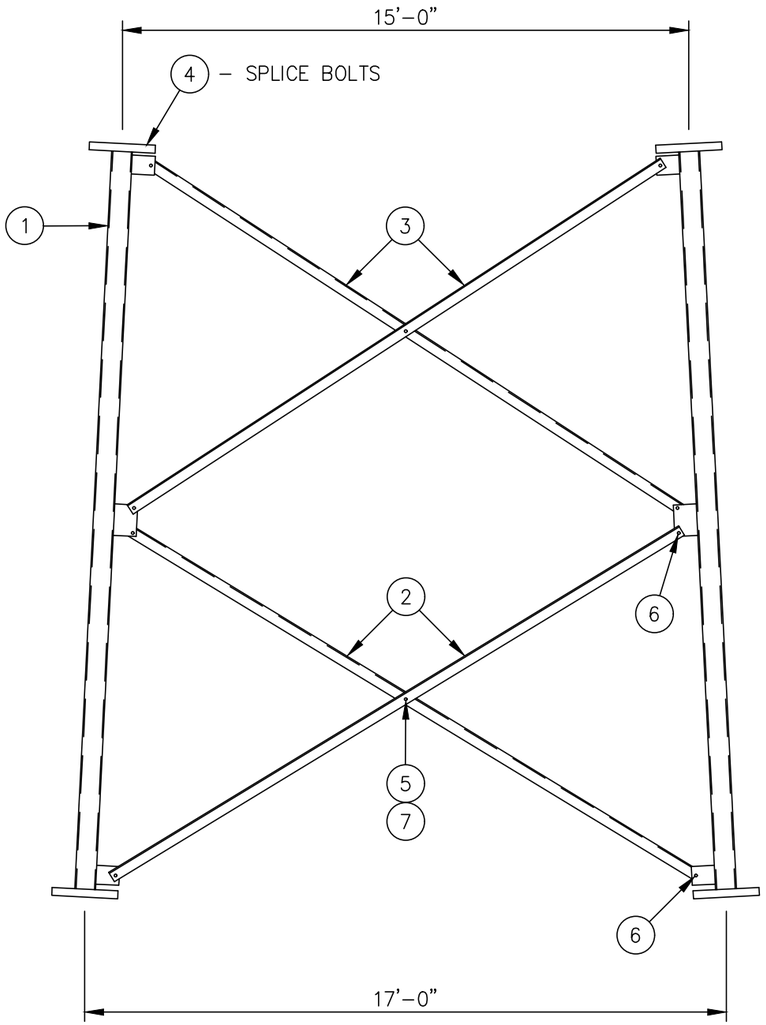
CONFIDENTIAL
This document and the information contained herein is the confidential trade secret property of Sabre Industries, Inc. ("Sabre") and must not be reproduced, copied or used, in whole or in part, for any purpose without the prior written consent of Sabre.
© 2025 Sabre Industries, Inc. All rights reserved.

SECTION ERECTION: 13 13–T8101796

SITE: WIPPER, OR

CUSTOMER: MARION COUNTY OREGON

JOB NO. 563423		SIZE	DRAWING NO.	REV
DATE	07/31/25	B	563423–S13	0
DRAWN BY	KMP			
CHECKED BY	ZAK		SCALE NONE	PAGE 1 OF 1



ELEVATION VIEW

LIST OF MATERIAL

12 LEGS

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
1	3	12–T11610309	SECT. 12 LEG 10 3/4 ø X .500 X 20'–0 5/16 W/STEP BOLTS	4336
			TOTAL WEIGHT LBS	4336

12–T8101797 BRACING KIT

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
2	6	TS11275	ANGLE, DIAGONAL 4 X 3 1/2 X 3/8 X 17'–10 7/16	1015
3	6	TS11276	ANGLE, DIAGONAL 4 X 3 1/2 X 3/8 X 17'–0 9/16	968
			TOTAL WEIGHT LBS	1983

SPLICE BOLTS

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
4	25	C40026115	BOLT ASSEMBLY, 1 1/2 ø X 6 1/2 A325	152
			TOTAL WEIGHT LBS	152

TK00353 HARDWARE KIT

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
5	7	C40026073	BOLT ASSEMBLY, 1 ø X 3 A325	12
6	25	C40026071	BOLT ASSEMBLY, 1 ø X 2 1/2 A325	41
7	7	C40047007	RINGFILL, 3/8 THICK – 1" ø BOLT	1
			TOTAL WEIGHT LBS	54

TOTAL SECTION WEIGHT – INCLUDES 3 LEGS, BRACING AND HARDWARE KIT	6525

FIELD NOTES

1. THE PART NUMBERS FOR ALL LEGS ARE LOCATED AT THE TOP OF EACH PART.
2. STEP BOLTS PROVIDED FOR (3) LEGS.

UNLESS OTHERWISE SPECIFIED
ALL DIMENSIONS INCLUDE FINISHES AND ARE IN INCHES

TOLERANCES: FRACTIONS ± 1/16"
ANGLES ± 1/2 DEG.
DECIMALS ± .010"

MATERIAL:

TOLERANCES DO NOT APPLY TO RAW MATERIAL

REV	DATE	DRW	CHK	DESCRIPTION

Sabre Industries™
INNOVATION DELIVERED

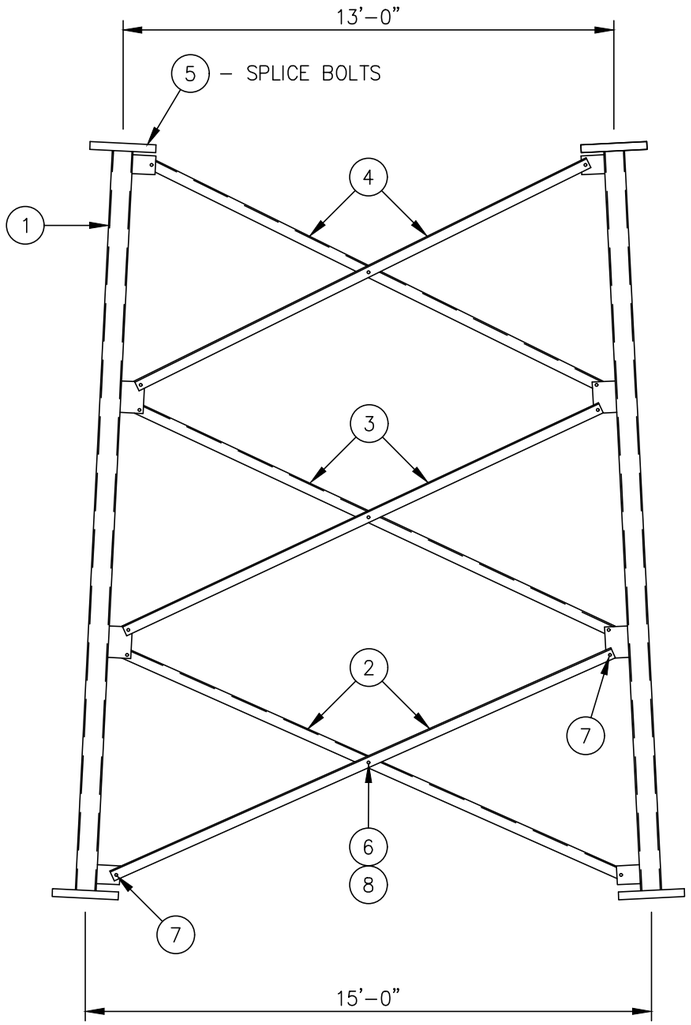
CONFIDENTIAL
This document and the information contained herein is the confidential trade secret property of Sabre Industries, Inc. ("Sabre") and must not be reproduced, copied or used, in whole or in part, for any purpose without the prior written consent of Sabre.
© 2025 Sabre Industries, Inc. All rights reserved.

SECTION ERECTION: 12 12–T8101797

SITE: WIPPER, OR

CUSTOMER: MARION COUNTY OREGON

JOB NO. 563423		SIZE	DRAWING NO.	REV
DATE	07/31/25	B	563423–S12	0
DRAWN BY	KMP			
CHECKED BY	ZAK		SCALE NONE	PAGE 1 OF 1



ELEVATION VIEW

LIST OF MATERIAL

11–LEGS

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
1	3	11–T1169117	SECT. 11 LEG 8 5/8 ø X .500 X 20'–0 5/16	3504
			TOTAL WEIGHT LBS	3504

11–T8101372 BRACING KIT

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
2	6	TS08563	ANGLE, DIAGONAL 4 X 3 1/2 X 3/8 X 14'–7 7/8	832
3	6	TS08562	ANGLE, DIAGONAL 4 X 3 1/2 X 3/8 X 14'–0 13/16	799
4	6	TS08561	ANGLE, DIAGONAL 4 X 3 1/2 X 3/8 X 13'–5 13/16	766
			TOTAL WEIGHT LBS	2397

SPLICE BOLTS

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
5	19	C40026093	BOLT ASSEMBLY, 1 1/4 ø X 5 A325	65
			TOTAL WEIGHT LBS	65

TK00430 HARDWARE KIT

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
6	10	C40026073	BOLT ASSEMBLY, 1 ø X 3 A325	18
7	38	C40026071	BOLT ASSEMBLY, 1 ø X 2 1/2 A325	62
8	10	C40047007	RINGFILL, 3/8 THICK – 1 ø BOLT	1
			TOTAL WEIGHT LBS	81

TOTAL SECTION WEIGHT – INCLUDES 3 LEGS, BRACING AND HARDWARE KIT	6047

FIELD NOTES

1. THE PART NUMBERS FOR ALL LEGS ARE LOCATED AT THE TOP OF EACH PART.
2. STEP BOLTS PROVIDED FOR (3) LEGS.

UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS INCLUDE FINISHES AND ARE IN INCHES

TOLERANCES: FRACTIONS ± 1/16" ANGLES ± 1/2 DEG. DECIMALS ± .010"

MATERIAL:

TOLERANCES DO NOT APPLY TO RAW MATERIAL

REV	DATE	DRW	CHK	DESCRIPTION

Sabre Industries™ INNOVATION DELIVERED

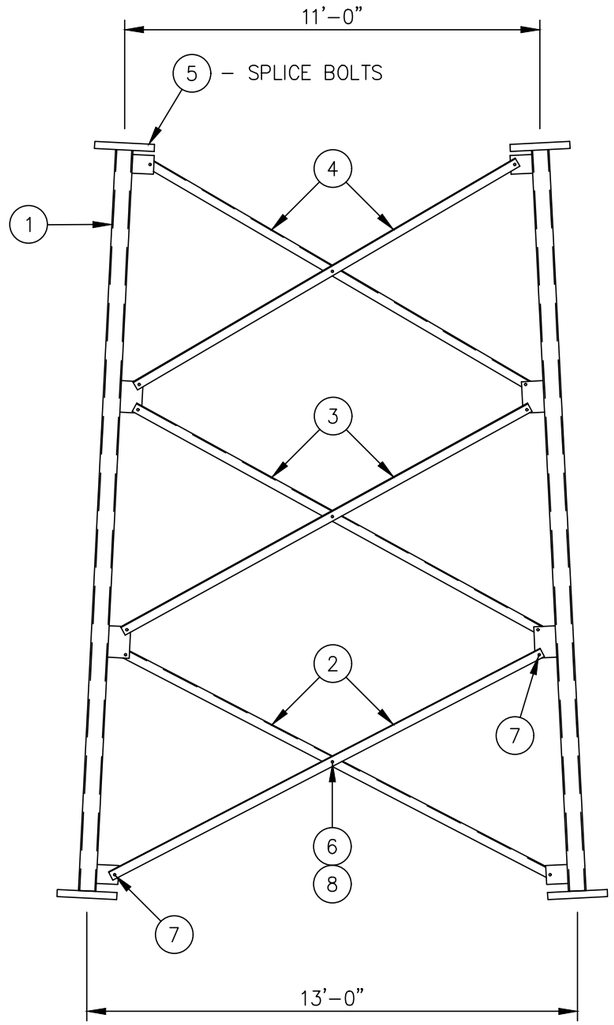
CONFIDENTIAL
This document and the information contained herein is the confidential trade secret property of Sabre Industries, Inc. ("Sabre") and must not be reproduced, copied or used, in whole or in part, for any purpose without the prior written consent of Sabre.
© 2025 Sabre Industries, Inc. All rights reserved.

SECTION ERECTION: 11 11–T8101372

SITE: WIPPER, OR

CUSTOMER: MARION COUNTY OREGON

JOB NO. 563423		SIZE	DRAWING NO.	REV
DATE	07/31/25	B	563423–S11	0
DRAWN BY	KMP			
CHECKED BY	ZAK		SCALE None	PAGE 1 OF 1



ELEVATION VIEW

LIST OF MATERIAL

10–LEGS

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
1	3	10–T1169819	SECT. 10 LEG 8 5/8ø X .322 X 20'–0 5/16 W/STEP BOLTS	2270
			TOTAL WEIGHT LBS	2270

10–T8100820 BRACING KIT

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
2	6	TS05779	ANGLE, DIAGONAL 4 X 4 X 5/16 X 12'–10 3/8	658
3	6	TS05780	ANGLE, DIAGONAL 4 X 4 X 5/16 X 12'–3 1/2	629
4	6	TS05781	ANGLE, DIAGONAL 4 X 4 X 5/16 X 11'–8 3/4	600
			TOTAL WEIGHT LBS	1887

SPLICE BOLTS

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
5	19	C40026094	BOLT ASSEMBLY, 1 1/4 ø X 5 1/2 A325	69
			TOTAL WEIGHT LBS	69

TK00437 HARDWARE KIT

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
6	10	C40026072	BOLT ASSEMBLY, 1 ø X 2 3/4 A325	17
7	37	C40026071	BOLT ASSEMBLY, 1 ø X 2 1/2 A325	61
8	10	C40047010	RINGFILL, 1/2 THICK – 1 ø BOLT	1
			TOTAL WEIGHT LBS	79

TOTAL SECTION WEIGHT – INCLUDES (3) LEGS, BRACING AND HARDWARE KIT	4305

FIELD NOTES

1. THE PART NUMBERS FOR ALL LEGS AND DIAGONALS ARE LOCATED AT THE TOP OF EACH PART.
2. STEP BOLTS PROVIDED FOR (3) LEGS.

UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS INCLUDE FINISHES AND ARE IN INCHES

TOLERANCES: FRACTIONS ± 1/16" ANGLES ± 1/2 DEG. DECIMALS ± .010"

MATERIAL:

TOLERANCES DO NOT APPLY TO RAW MATERIAL

REV	DATE	DRW	CHK	DESCRIPTION

Sabre Industries™ INNOVATION DELIVERED

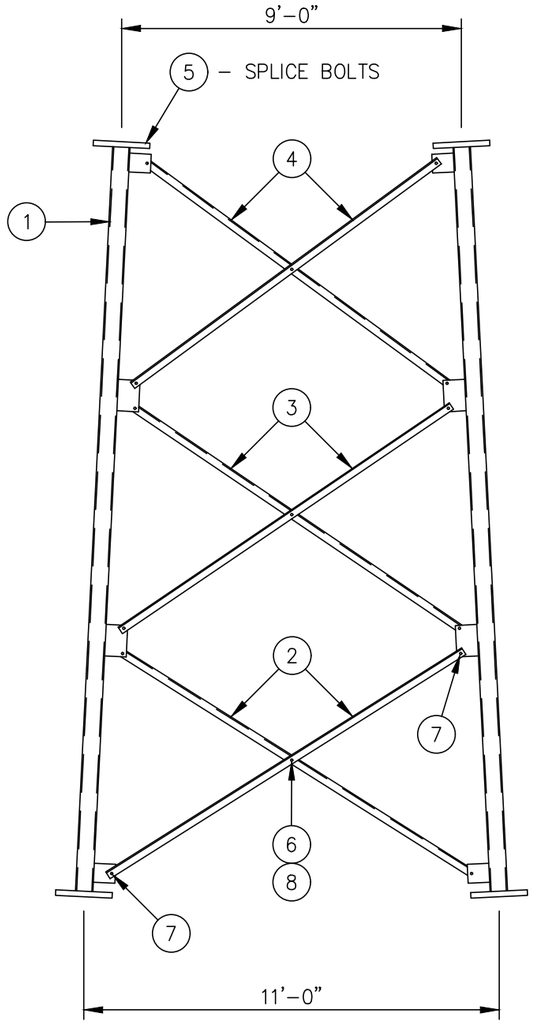
CONFIDENTIAL
This document and the information contained herein is the confidential trade secret property of Sabre Industries, Inc. ("Sabre") and must not be reproduced, copied or used, in whole or in part, for any purpose without the prior written consent of Sabre.
© 2025 Sabre Industries, Inc. All rights reserved.

SECTION ERECTION: 10 10–T8100820

SITE: WIPPER, OR

CUSTOMER: MARION COUNTY OREGON

JOB NO. 563423		SIZE	DRAWING NO.	REV
DATE	07/31/25	B	563423–S10	0
DRAWN BY	KMP			
CHECKED BY	ZAK		SCALE None	PAGE 1 OF 1



ELEVATION VIEW

LIST OF MATERIAL

09–LEGS

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
1	3	09–T1169975	SECT. 9 LEG 5 9/16ø X .375 X 20'–0 5/16 W/STEP BOLTS	1758
			TOTAL WEIGHT LBS	1758

09–T8100384 BRACING KIT

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
2	6	TS03786	ANGLE, DIAGONAL 3 1/2 X 3 X 3/8 X 11'–5 3/8	564
3	6	TS03787	ANGLE, DIAGONAL 3 1/2 X 3 X 3/8 X 10'–10 13/16	537
4	6	TS03788	ANGLE, DIAGONAL 3 1/2 X 3 X 3/8 X 10'–4 7/16	511
			TOTAL WEIGHT LBS	1612

SPLICE BOLTS

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
5	19	C40026078	BOLT ASSEMBLY, 1 ø X 4 1/4 A325	41
			TOTAL WEIGHT LBS	41

TK00269 HARDWARE KIT

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
6	10	C40026045	BOLT ASSEMBLY, 3/4 ø X 2 1/2 A325	8
7	38	C40026044	BOLT ASSEMBLY, 3/4 ø X 2 1/4 A325	28
8	10	C40047004	RINGFILL, 3/8 THICK – 3/4 ø BOLT	1
			TOTAL WEIGHT LBS	37

TOTAL SECTION WEIGHT – INCLUDES 3 LEGS, BRACING AND HARDWARE KIT	3448

FIELD NOTES

1. THE PART NUMBERS FOR ALL LEGS ARE LOCATED AT THE TOP OF EACH PART.
2. STEP BOLTS PROVIDED FOR (3) LEG ONLY.

UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS INCLUDE FINISHES AND ARE IN INCHES

TOLERANCES: FRACTIONS ± 1/16" ANGLES ± 1/2 DEG. DECIMALS ± .010"

MATERIAL:

TOLERANCES DO NOT APPLY TO RAW MATERIAL

REV	DATE	DRW	CHK	DESCRIPTION

Sabre Industries™ INNOVATION DELIVERED

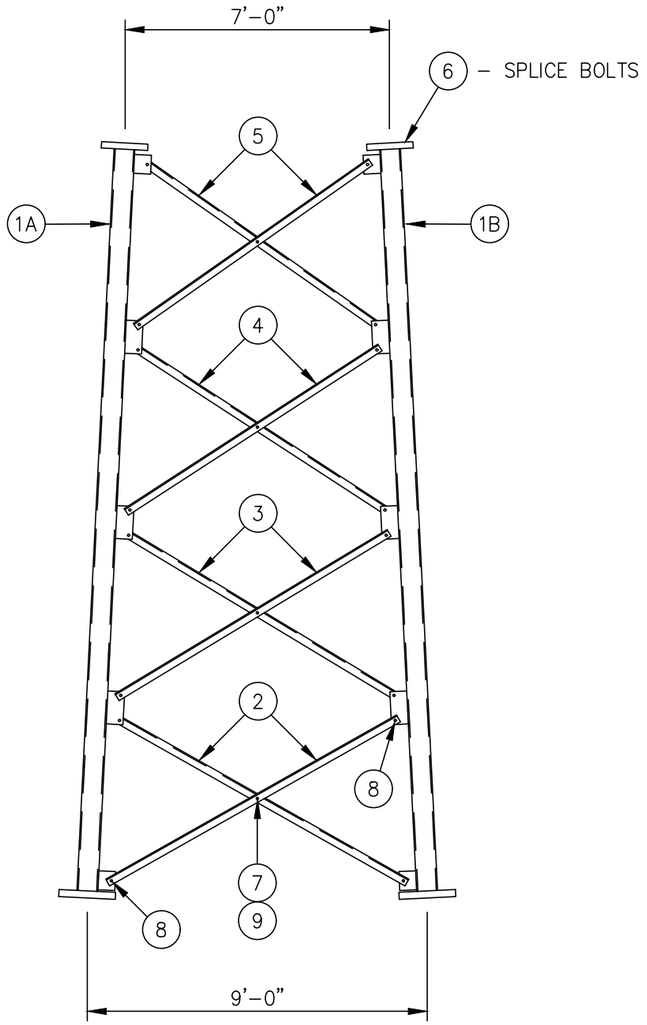
CONFIDENTIAL
This document and the information contained herein is the confidential trade secret property of Sabre Industries, Inc. ("Sabre") and must not be reproduced, copied or used, in whole or in part, for any purpose without the prior written consent of Sabre.
© 2025 Sabre Industries, Inc. All rights reserved.

SECTION ERECTION: 09 09–T8100384

SITE: WIPPER, OR

CUSTOMER: MARION COUNTY OREGON

JOB NO. 563423		SIZE	DRAWING NO.	REV
DATE	07/31/25	B	563423–S09	0
DRAWN BY	KMP			
CHECKED BY	ZAK		SCALE NONE	PAGE 1 OF 1



ELEVATION VIEW

LIST OF MATERIAL

08–LEGS

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
1A	1	08–T1168025	SECT.8 LEG 4 ø X .318 X 20'–0 5/16 W/ STEP BOLTS	373
1B	2	08–T1168026	SECT.8 LEG 4 ø X .318 X 20'–0 5/16	735
			TOTAL WEIGHT LBS	1108

08–T8100421 BRACING KIT

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
2	6	TS04017	ANGLE, DIAGONAL 2 1/2 X 2 1/2 X 3/8 X 9'–1 13/16	337
3	6	TS04018	ANGLE, DIAGONAL 2 1/2 X 2 1/2 X 3/8 X 8'–8 11/16	322
4	6	TS04019	ANGLE, DIAGONAL 2 1/2 X 2 1/2 X 3/8 X 8'–3 5/8	306
5	6	TS04020	ANGLE, DIAGONAL 2 1/2 X 2 1/2 X 3/8 X 7'–10 11/16	291
			TOTAL WEIGHT LBS	1256

SPLICE BOLTS

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
6	19	C40026078	BOLT ASSEMBLY, 1 ø X 4 1/4 A325	41
			TOTAL WEIGHT LBS	41

TK00348 HARDWARE KIT

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
7	13	C40026045	BOLT ASSEMBLY, 3/4 ø X 2 1/2 A325	10
8	50	C40026044	BOLT ASSEMBLY, 3/4 ø X 2 1/4 A325	37
9	13	C40047004	RINGFILL, 3/8 THICK – 3/4 ø BOLT	2
			TOTAL WEIGHT LBS	49

TOTAL SECTION WEIGHT – INCLUDES 3 LEGS, BRACING AND HARDWARE KIT	2454

FIELD NOTES

1. THE PART NUMBERS FOR ALL LEGS ARE LOCATED AT THE TOP OF EACH PART.
2. STEP BOLTS PROVIDED FOR (1) LEG.

UNLESS OTHERWISE SPECIFIED
ALL DIMENSIONS INCLUDE FINISHES AND ARE IN INCHES

TOLERANCES: FRACTIONS ± 1/16"
ANGLES ± 1/2 DEG.
DECIMALS ± .010"

MATERIAL:

TOLERANCES DO NOT APPLY TO RAW MATERIAL

REV	DATE	DRW	CHK	DESCRIPTION

Sabre Industries™
INNOVATION DELIVERED

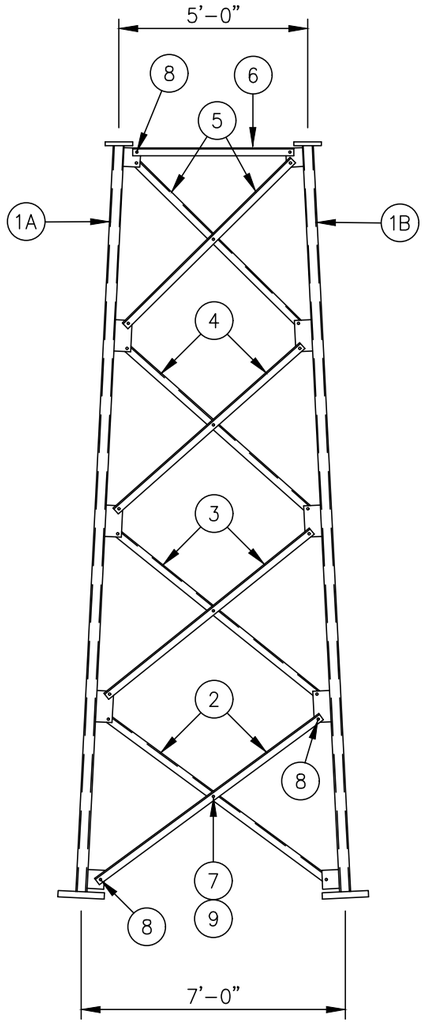
CONFIDENTIAL
This document and the information contained herein is the confidential trade secret property of Sabre Industries, Inc. ("Sabre") and must not be reproduced, copied or used, in whole or in part, for any purpose without the prior written consent of Sabre.
© 2025 Sabre Industries, Inc. All rights reserved.

SECTION ERECTION: 08 08–T8100421

SITE: WIPPER, OR

CUSTOMER: MARION COUNTY OREGON

JOB NO. 563423		SIZE	DRAWING NO.	REV
DATE	07/31/25	B	563423–S08	0
DRAWN BY	KMP			
CHECKED BY	ZAK		SCALE NONE	PAGE 1 OF 1



ELEVATION VIEW

LIST OF MATERIAL

07-LEGS

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
1A	1	07-T1165503	SECT. 7 LEG 2 7/8ø X .203 X 20'-0 5/16 W/STEP BOLTS	219
1B	2	07-T1165504	SECT. 7 LEG 2 7/8ø X .203 X 20'-0 5/16	428
			TOTAL WEIGHT LBS	647

07-T8100168 BRACING KIT

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
2	6	TS02040	ANGLE, DIAGONAL 2 X 2 X 5/16 X 7'-5 1/2	182
3	6	TS02039	ANGLE, DIAGONAL 2 X 2 X 5/16 X 7'-0 13/16	173
4	6	TS02038	ANGLE, DIAGONAL 2 X 2 X 5/16 X 6'-8 5/16	163
5	6	TS02037	ANGLE, DIAGONAL 2 X 2 X 5/16 X 6'-3 15/16	155
6	3	TS02036	ANGLE, HORIZONTAL 2 X 2 X 5/16 X 4'-4 3/8	53
			TOTAL WEIGHT LBS	726

TK00146 HARDWARE KIT

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
7	13	C40026024	BOLT ASSEMBLY, 5/8 ø X 2 1/4 A325	7
8	57	C40026023	BOLT ASSEMBLY, 5/8 ø X 2 A325	26
9	13	C40047003	RINGFILL, 3/8 THICK - 5/8 ø BOLT	2
			TOTAL WEIGHT LBS	35

TOTAL SECTION WEIGHT - INCLUDES 3 LEGS, BRACING AND HARDWARE KIT	1408

FIELD NOTES

1. THE PART NUMBERS FOR ALL LEGS ARE LOCATED AT THE TOP OF EACH PART.
2. STEP BOLTS PROVIDED FOR (1) LEG ONLY.

UNLESS OTHERWISE SPECIFIED
ALL DIMENSIONS INCLUDE
FINISHES AND ARE IN INCHES

TOLERANCES: FRACTIONS ± 1/16"
ANGLES ± 1/2 DEG.
DECIMALS ± .010"

MATERIAL:

TOLERANCES DO NOT APPLY TO RAW MATERIAL

REV	DATE	DRW	CHK	DESCRIPTION

Sabre Industries™
INNOVATION DELIVERED

CONFIDENTIAL
This document and the information contained herein is the confidential trade secret property of Sabre Industries, Inc. ("Sabre") and must not be reproduced, copied or used, in whole or in part, for any purpose without the prior written consent of Sabre.
© 2025 Sabre Industries, Inc. All rights reserved.

SECTION ERECTION: 07 07-T8100168

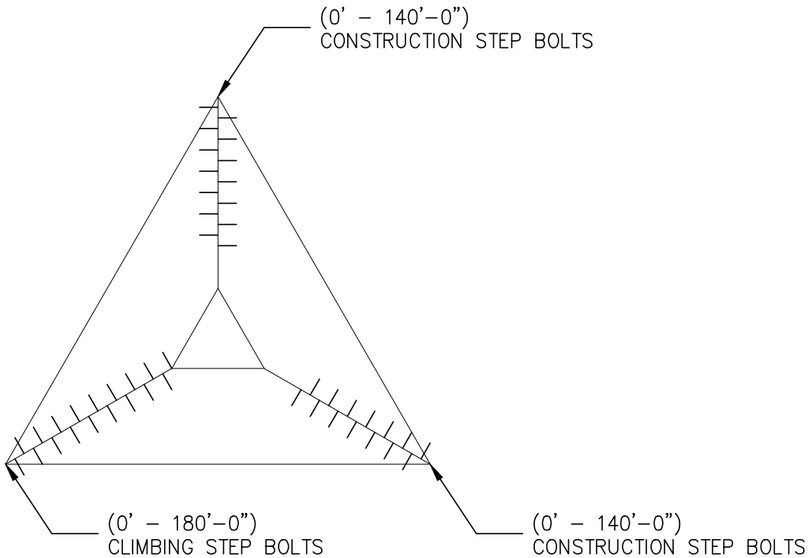
SITE: WIPPER, OR

CUSTOMER: MARION COUNTY OREGON

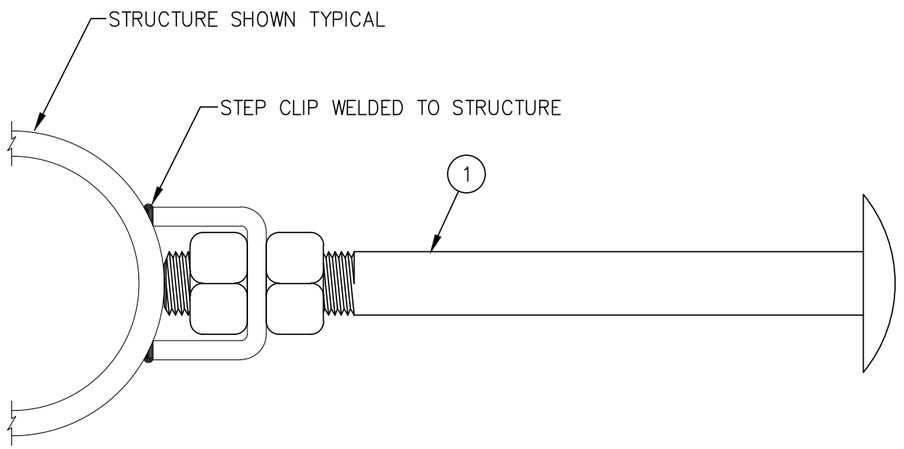
JOB NO. 563423		SIZE	DRAWING NO.	REV
DATE	07/31/25	B	563423-S07	0
DRAWN BY	KMP			
CHECKED BY	ZAK		SCALE NONE	PAGE 1 OF 1

FIELD NOTE:
SEE CUSTOMER REQUESTS FOR PROPER LEG POSITIONING OF ALL STEP BOLTS.

CLIMBING/CONSTRUCTION STEP BOLTS				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
1	368	C40044017	STEP BOLT ASSEMBLY, 5/8 ø X 7 H.D.G.	368
			TOTAL WEIGHT LBS	368



TOWER PLAN VIEW



NOTE:
STEP BOLTS PROVIDED FOR CONSTRUCTION PURPOSES ARE FOR EXPERIENCED TOWER ERECTORS ONLY AND SHOULD NEVER BE USED WITHOUT PROPER SAFETY EQUIPMENT. FOR STEP BOLTS SUPPLIED AS A FORM OF CLIMBING IN TYPICAL COMMUNICATION ACTIVITY, SABRE INDUSTRIES RECOMMENDS A FALL PROTECTION PLAN BE COMPLETED BY A COMPETENT PERSON AND FOLLOWED FOR EACH CLIMB.

UNLESS OTHERWISE SPECIFIED
ALL DIMENSIONS INCLUDE FINISHES AND ARE IN INCHES
TOLERANCES: FRACTIONS ± 1/16"
ANGLES ± 1/2 DEG.
DECIMALS ± .010"

MATERIAL:
TOLERANCES DO NOT APPLY TO RAW MATERIAL

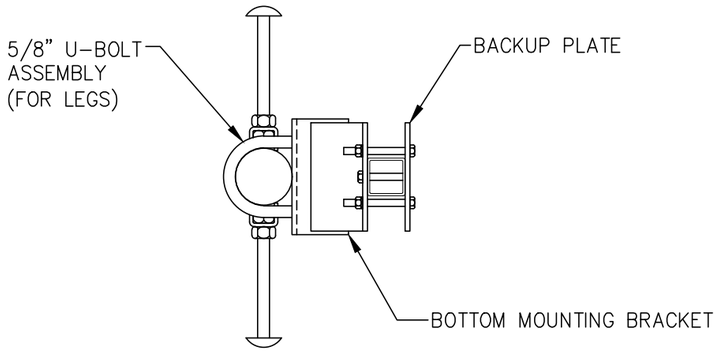
REV	DATE	DRW	CHK	DESCRIPTION

Sabre Industries™
INNOVATION DELIVERED

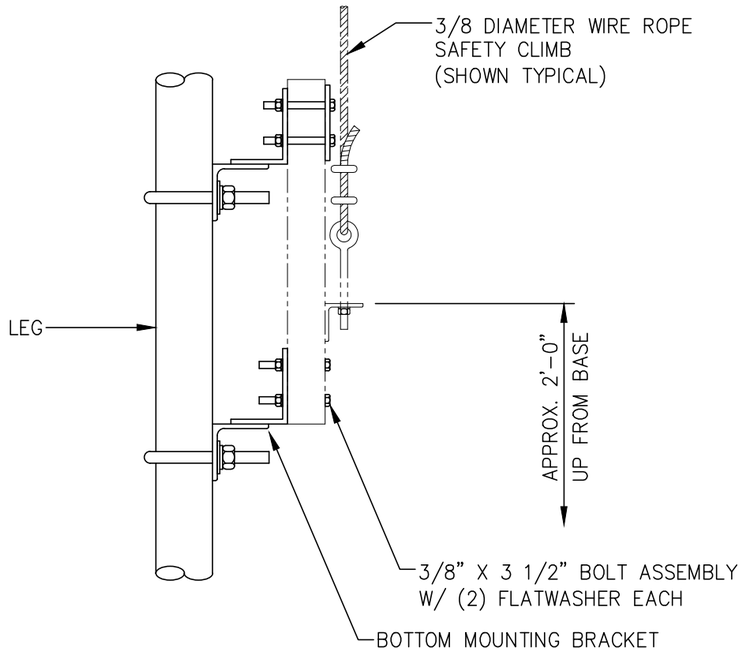
CONFIDENTIAL
This document and the information contained herein is the confidential trade secret property of Sabre Industries, Inc. ("Sabre") and must not be reproduced, copied or used, in whole or in part, for any purpose without the prior written consent of Sabre.
© 2025 Sabre Industries, Inc. All rights reserved.

STEP BOLT ATTACHMENT INSTALLATION:
SITE: WIPPER, OR
CUSTOMER: MARION COUNTY OREGON

JOB NO. 563423		SIZE	DRAWING NO.	REV
DATE	08/07/25	B	563423–SB1	0
DRAWN BY	KMP			
CHECKED BY	ZAK		SCALE NONE	PAGE 1 OF 1



PLAN



ELEVATION

EACH KIT CONSISTS OF:

(2) BOTTOM MOUNTING BRACKET
(1) BACKUP PLATE
(2) 5/8" U-BOLT ASSEMBLY FOR MOUNTING TO LEG
(6) 3/8"ø X 3 1/2" BOLT ASSEMBLY
(12) 3/8"ø FLATWASHER

BOTTOM MOUNTING BRACKET KITS

KIT NUMBER	LEG DIAMETER	5/8" U-BOLT ASSEMBLY	3/8" BOLT ASSEMBLY	3/8"ø FLATWASHER	BOTTOM MOUNTING BRACKET	BACKUP PLATE	KIT WEIGHT
C30011054	1 1/4"	C40034041	C40024012	C40031001	CW00346	CS00167	16.2#
C30011055	1 1/2"	C40034020	C40024012	C40031001	CW00346	CS00167	16.4#
C30011056	1 3/4"	C40034021	C40024012	C40031001	CW00346	CS00167	16.5#
C30011031	2"	C40034022	C40024012	C40031001	CW00049	CS00167	17.0#
C30011032	2 1/4" OR 2 3/8"	C40034023	C40024012	C40031001	CW00049	CS00167	17.1#
C30011033	2 1/2"	C40034024	C40024012	C40031001	CW00049	CS00167	17.2#
C30011034	2 3/4" OR 2 7/8"	C40034025	C40024012	C40031001	CW00049	CS00167	17.3#
C30011035	3"	C40034026	C40024012	C40031001	CW00049	CS00167	17.4#
C30011036	3 1/4"	C40034027	C40024012	C40031001	CW00050	CS00167	18.5#
C30011037	3 1/2"	C40034028	C40024012	C40031001	CW00050	CS00167	18.6#
C30011038	3 3/4"	C40034029	C40024012	C40031001	CW00050	CS00167	18.8#
C30011039	4"	C40034030	C40024012	C40031001	CW00050	CS00167	18.9#
C30011040	4 1/4"	C40034031	C40024012	C40031001	CW00050	CS00167	19.0#
C30011041	4 1/2"	C40034032	C40024012	C40031001	CW00051	CS00167	20.3#
C30011042	4 3/4"	C40034033	C40024012	C40031001	CW00051	CS00167	20.4#
C30011043	5"	C40034034	C40024012	C40031001	CW00051	CS00167	20.5#
C30011044	5 1/4" – 5 9/16"	C40034035	C40024012	C40031001	CW00052	CS00167	21.9#
C30011057	5 3/4"	C40034044	C40024012	C40031001	CW00052	CS00167	22.0#
C30011058	6"	C40034064	C40024012	C40031001	CW00052	CS00167	22.0#
C30011053	6 1/4"	C40034068	C40024012	C40031001	CW00052	CS00167	22.1#
C30011045	6 5/8"	C40034036	C40024012	C40031001	CW00052	CS00167	22.3#
C30011059	6 3/4"	C40034093	C40024012	C40031001	CW00204	CS00167	23.2#
C30011050	7 OR 7 1/4"	C40034065	C40024012	C40031001	CW00204	CS00167	25.0#
C30011060	7 1/2"	C40034127	C40024012	C40031001	CW00204	CS00167	23.7#
C30011104	7 3/4"	C40034099	C40024012	C40031001	CW00204	CS00167	23.8#
C30011046	8 5/8"	C40034037	C40024012	C40031001	CW00053	CS00167	33.0#
C30011062	8 3/4"	C40034152	C40024012	C40031001	CW01346	CS00167	30.9#
C30011063	9"	C40034200	C40024012	C40031001	CW01362	CS00167	31.5#
C30011061	9 1/2" OR 9 5/8"	C40034130	C40024012	C40031001	CW01242	CS00167	29.3#
C30011047	10 3/4"	C40034038	C40024012	C40031001	CW00054	CS00167	35.4#
C30011048	12 3/4"	C40034039	C40024012	C40031001	CW00053	CS00167	34.9#
C30011049	14"	C40034040	C40024012	C40031001	CW00054	CS00167	36.9#
C30011051	16"	C40034042	C40024012	C40031001	CW00208	CS00167	42.6#
C30011052	18"	C40034043	C40024012	C40031001	CW00208	CS00167	43.5#

REV	DATE	DRW	CHK	DESCRIPTION
14	10/13/17	RWM	MWR	REVISED 3/8 DIAMETER WIRE ROPE VERBIAGE
13	8/14/17	DPJ	ZAK	ADDED KIT FOR 9" O.D. LEG.
12	4/24/17	DPJ	ZAK	ADDED KIT FOR 8 3/4" O.D. LEG.
11	9/30/14	DPJ	ZAK	ADDED KIT FOR 9 1/2" & 9 5/8" O.D. LEGS.
10	5/22/14	KLE	EK	ADDED KIT FOR 7 1/2" O.D. LEG.
9	10/10/11	DPJ	CE	ADDED KIT FOR 7 3/4" O.D. LEG.
8	7/26/11	DPJ	CHH	ADDED KIT FOR 6 3/4" O.D. LEG.
7	5/29/08	DPJ	ZAK	ADDED KIT FOR 6" O.D. LEG.
6	4/29/08	LRS	CE	ADDED KIT FOR 5 3/4" O.D. LEG.
5	3/03/08	LRS	ZAK	ADDED KIT FOR 6 1/4" O.D. LEG
4	1/10/08	LRS	CE	CHANGED LEG DIAMETER FOR C30011044 KIT (WAS 5 1/2" OR 5 9/16")
3	12/27/04	DLW	DEL	ADDED KITS FOR 1 1/4" TO 1 3/4" O.D. LEGS.
2	3/3/04	KLE	DLW	ADDED KITS FOR 16" O.D. & 18" O.D. LEGS.
1	2/19/04	KLE	DLW	ADDED C30011050 & ADDED LEADING ZERO.

UNLESS OTHERWISE SPECIFIED
ALL DIMENSIONS INCLUDE FINISHES AND ARE IN INCHES
TOLERANCES: FRACTIONS ± 1/16"
ANGLES ± 1/2 DEG.
DECIMALS ± .010"

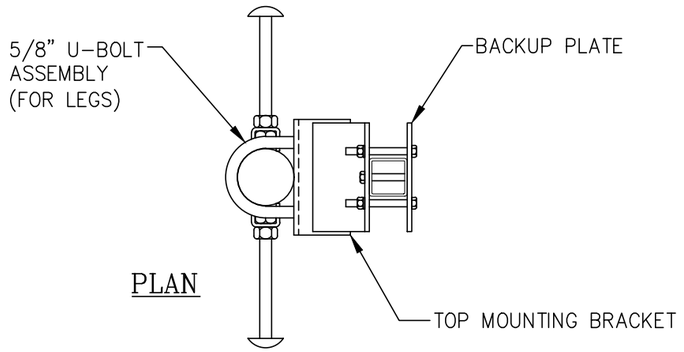
MATERIAL:
TOLERANCES DO NOT APPLY TO RAW MATERIAL

Sabre Industries™
INNOVATION DELIVERED

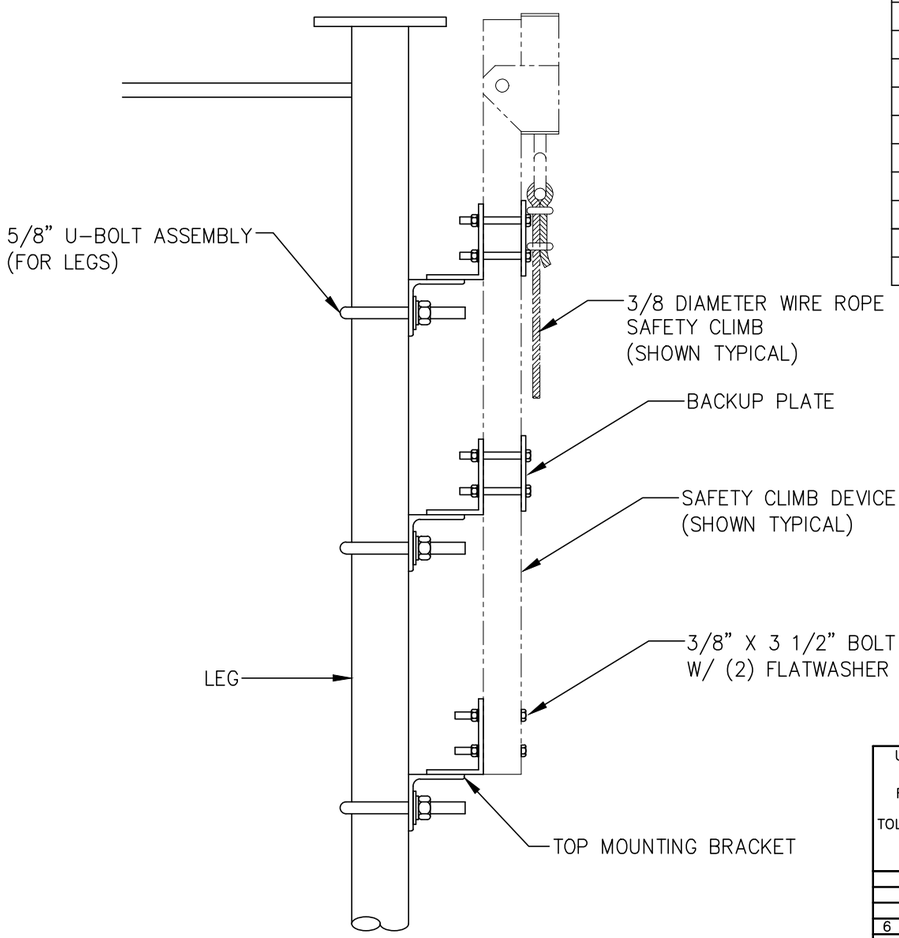
CONFIDENTIAL
This document and the information contained herein is the confidential trade secret property of Sabre Industries, Inc. ("Sabre") and must not be reproduced, copied or used, in whole or in part, for any purpose without the prior written consent of Sabre.
© 2022 Sabre Industries, Inc. All rights reserved.

3/8 DIAMETER WIRE ROPE SAFETY CLIMB BOTTOM MOUNTING BRACKET

		SIZE	DRAWING NO.	REV
DATE	4/11/02	B	C30011-1	14
DRAWN BY	KLE			
CHECKED BY	DLW	SCALE None	PAGE 1 OF 1	



PLAN



ELEVATION

TOP MOUNTING BRACKET KITS

KIT NUMBER	LEG DIAMETER	5/8" U-BOLT ASSEMBLY	3/8" BOLT ASSEMBLY	3/8"ø FLATWASHER	TOP MOUNTING BRACKET	BACKUP PLATE	KIT WEIGHT
C30011017	1 1/4"	C40034041	C40024012	C40031001	CW00346	CS00167	25.3#
C30011018	1 1/2"	C40034020	C40024012	C40031001	CW00346	CS00167	25.6#
C30011019	1 3/4"	C40034021	C40024012	C40031001	CW00346	CS00167	25.8#
C30011001	2"	C40034022	C40024012	C40031001	CW00049	CS00167	26.5#
C30011002	2 1/4" OR 2 3/8"	C40034023	C40024012	C40031001	CW00049	CS00167	26.8#
C30011003	2 1/2"	C40034024	C40024012	C40031001	CW00049	CS00167	26.9#
C30011004	2 3/4" OR 2 7/8"	C40034025	C40024012	C40031001	CW00049	CS00167	27.1#
C30011005	3"	C40034026	C40024012	C40031001	CW00049	CS00167	27.2#
C30011006	3 1/4"	C40034027	C40024012	C40031001	CW00050	CS00167	28.9#
C30011007	3 1/2"	C40034028	C40024012	C40031001	CW00050	CS00167	29.1#
C30011008	3 3/4"	C40034029	C40024012	C40031001	CW00050	CS00167	29.2#
C30011009	4"	C40034030	C40024012	C40031001	CW00050	CS00167	29.4#
C30011010	4 1/4"	C40034031	C40024012	C40031001	CW00050	CS00167	29.6#
C30011011	4 1/2"	C40034032	C40024012	C40031001	CW00051	CS00167	31.6#
C30011012	4 3/4"	C40034033	C40024012	C40031001	CW00051	CS00167	31.8#
C30011013	5"	C40034034	C40024012	C40031001	CW00051	CS00167	31.9#
C30011014	5 1/2" OR 5 9/16"	C40034035	C40024012	C40031001	CW00052	CS00167	34.0#
C30011015	6 5/8"	C40034036	C40024012	C40031001	CW00052	CS00167	34.6#
C30011020	8 5/8"	C40034037	C40024012	C40031001	CW00053	CS00167	50.5#
C30011021	12 3/4"	C40034039	C40024012	C40031001	CW00053	CS00167	53.4#

NOTES:

1. MOUNTING BRACKET SHOULD BE INSTALLED IN A MANNER THAT WILL ENSURE THE WIRE ROPE WILL NOT BE DAMAGED.
2. IF THERE IS A MOUNT AT THE TOP OF THE TOWER THAT WOULD INTERFERE WITH THE BRACKET OR SAFETY CLIMB, THE TOP MOUNTING BRACKET SHOULD BE INSTALLED JUST BELOW THE MOUNT.

EACH KIT CONSISTS OF

(3) TOP MOUNTING BRACKET
(2) BACKUP PLATE
(3) 5/8" U-BOLT ASSEMBLY FOR MOUNTING TO LEG
(10) 3/8"ø X 3 1/2" BOLT ASSEMBLY
(20) 3/8"ø FLATWASHER

UNLESS OTHERWISE SPECIFIED
ALL DIMENSIONS INCLUDE FINISHES AND ARE IN INCHES
TOLERANCES: FRACTIONS ± 1/16"
ANGLES ± 1/2 DEG.
DECIMALS ± .010"

MATERIAL:
TOLERANCES DO NOT APPLY TO RAW MATERIAL

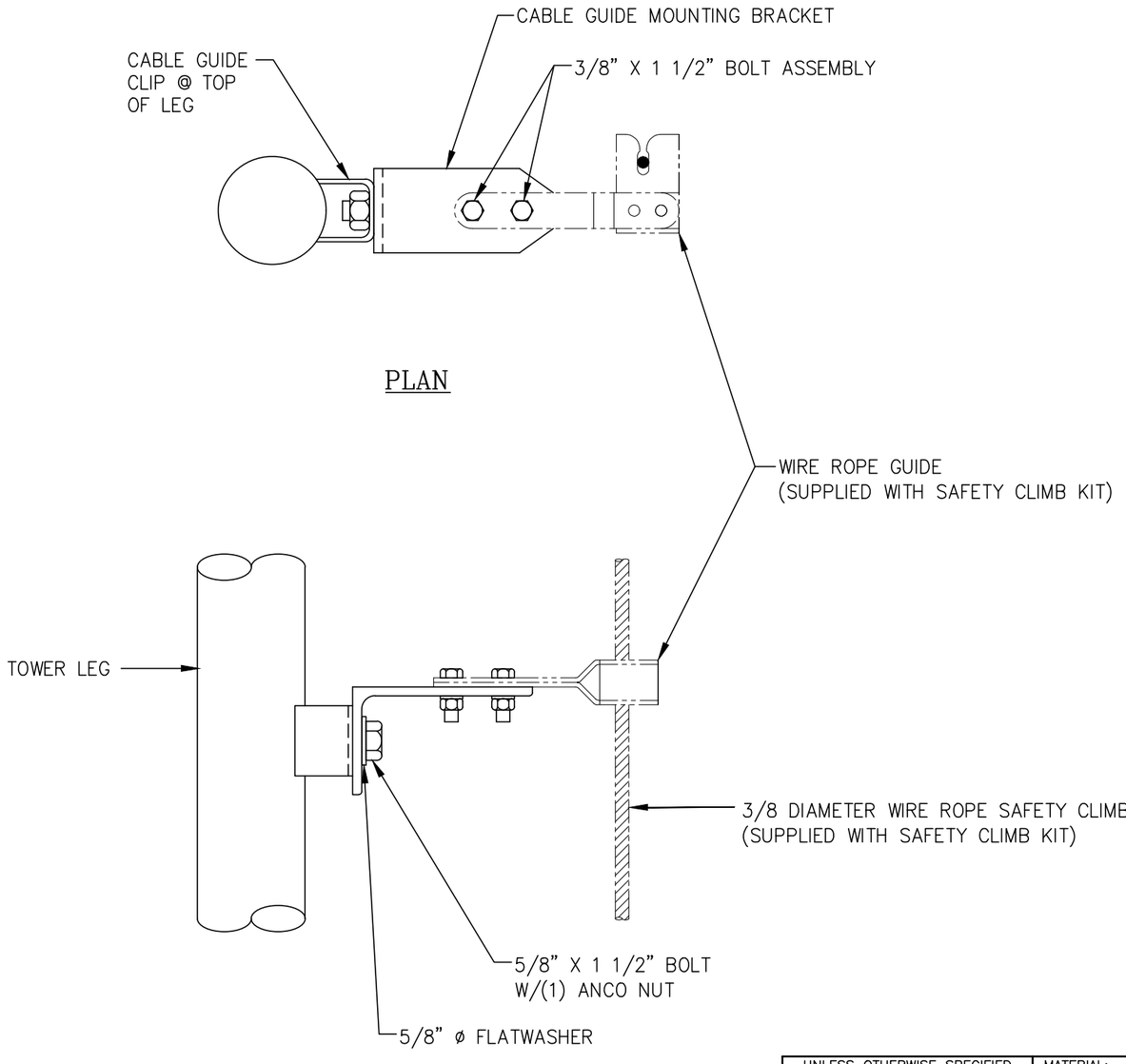
REV	DATE	DRW	CHK	DESCRIPTION
6	10/13/17	RWM	MWR	REVISED 3/8 DIAMETER WIRE ROPE VERBIAGE AND REVISED/ADDED NOTES.
5	7/2/10	CHH	HHC	ADDED KIT FOR 12 3/4" O.D. LEG.
4	11/2/09	DPJ	ZAK	ADDED KIT FOR 8 5/8" O.D. LEG.
3	12/27/04	DLW	DEL	ADDED KITS FOR 1 1/4" TO 1 3/4" O.D. LEGS
2	3/4/04	KLE	KLE	REMOVED DASHES
1	2/19/04	KLE	DLW	ADDED LEADING ZERO

Sabre Industries™
INNOVATION DELIVERED

CONFIDENTIAL
This document and the information contained herein is the confidential trade secret property of Sabre Industries, Inc. ("Sabre") and must not be reproduced, copied or used, in whole or in part, for any purpose without the prior written consent of Sabre.
© 2022 Sabre Industries, Inc. All rights reserved.

3/8 DIAMETER WIRE ROPE SAFETY CLIMB TOP MOUNTING BRACKET

		SIZE	DRAWING NO.	REV
DATE	4/12/02	B	C30011-2	6
DRAWN BY	KLE			
CHECKED BY	DLW	SCALE None	PAGE 1 OF 1	



C30003001 SAFETY CLIMB CABLE GUIDE MOUNTING BRACKET				
ITEM	QTY.	PART. NO.	DESCRIPTION	WEIGHT
1	1	CS00795	ANGLE, SAFETY CLIMB CABLE GUIDE SUPPORT	1.4#
2	1	C40126021	BOLT, 5/8 X 1 1/2 A325	0.3#
3	1	C40028003	NUT, ANCO 5/8" ø	0.1#
4	1	C40031003	FLATWASHER, 5/8" ø	0.1#
5	2	C40024004	BOLT ASSEMBLY, 3/8 X 1 1/2 GR. 5	0.2#
			TOTAL WEIGHT	2.1#

EACH KIT CONSISTS OF

(1) CABLE GUIDE MOUNTING BRACKET
(1) 5/8" X 1 1/2" BOLT FOR MOUNTING TO LEG
(1) 5/8" ANCO NUT FOR 5/8" BOLT
(1) 5/8" FLATWASHER
(2) 3/8"ø X 1 1/2" BOLT ASSEMBLY

UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS INCLUDE FINISHES AND ARE IN INCHES

TOLERANCES: FRACTIONS ± 1/16" ANGLES ± 1/2 DEG. DECIMALS ± .010"

MATERIAL:

TOLERANCES DO NOT APPLY TO RAW MATERIAL

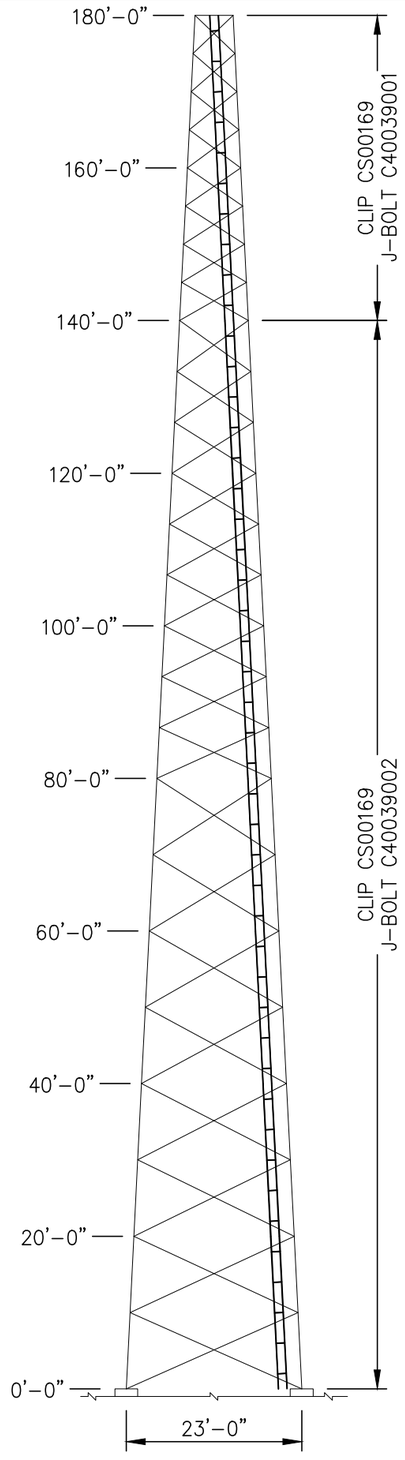
REV	DATE	DRW	CHK	DESCRIPTION
4	10/13/17	RWM	MWR	REVISED 3/8 DIAMETER WIRE ROPE VERBIAGE
3	10/6/11	CHH	RWM	REVISED MOUNTING BOLT WAS C40126019 & ADDED FLATWASHER C40031003
2	4/12/06	CHH	HHC	CHANGED PART NO. ITEM 2 (WAS C40998050).
1	2/17/06	MJM	ZAK	CORRECTED ITEM 3 PART NO. (WAS C40028004).

Sabre Industries™ INNOVATION DELIVERED

CONFIDENTIAL
This document and the information contained herein is the confidential trade secret property of Sabre Industries, Inc. ("Sabre") and must not be reproduced, copied or used, in whole or in part, for any purpose without the prior written consent of Sabre.
© 2022 Sabre Industries, Inc. All rights reserved.

3/8 DIAMETER WIRE ROPE SAFETY CLIMB CABLE GUIDE MOUNTING BRACKET

		SIZE	DRAWING NO.	REV
DATE	8/4/04	B	C30003001	4
DRAWN BY	CHH			
CHECKED BY	ZAK	SCALE None	PAGE 1 OF 1	



ELEVATION VIEW

WAVEGUIDE LADDER				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
1	18	CS00146	ANGLE, WAVEGUIDE LADDER RAIL 20 FT. W/4 FT. RUNG SPC	540
2	45	CS01619	ANGLE, WAVEGUIDE SUPPORT (6 HOLE)	95
3	16	CS00037	PLATE, LADDER SPLICE	6
4	42	CS00169	CLIP, LADDER ATTACHMENT	23
			TOTAL WEIGHT LBS	664

LADDER HARDWARE				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
5	34	C40039002	J–BOLT ASSEMBLY, 3/8 ø X 7 1/4 I.L.	12
6	8	C40039001	J–BOLT ASSEMBLY, 3/8 ø X 5 3/4 I.L.	2
7	122	C40024004	BOLT ASSEMBLY, 3/8 ø X 1 1/2 GRD 5	12
			TOTAL WEIGHT LBS	26

FIELD NOTES

1. FROM ELEVATION 0'–0" TO 140'–0" ATTACH WAVEGUIDE LADDER TO EACH TOWER DIAGONAL.
   FROM ELEVATION 140'–0" TO 180'–0" ATTACH WAVEGUIDE LADDER TO EVERY OTHER TOWER DIAGONAL.
2. SEE REFERENCE DWG. 9031861 FOR WAVEGUIDE LADDER INSTALLATION AND ATTACHMENT DETAIL.
3. SEE CUSTOMER REQUESTS FOR PROPER FACE POSITIONING OF ALL LADDERS.
4. WAVEGUIDE LADDERS SHOULD NEVER BE USED AS A CLIMBING OR RIGGING DEVICE.

UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS INCLUDE FINISHES AND ARE IN INCHES

TOLERANCES: FRACTIONS ± 1/16" ANGLES ± 1/2 DEG. DECIMALS ± .010"

MATERIAL:

TOLERANCES DO NOT APPLY TO RAW MATERIAL

REV	DATE	DRW	CHK	DESCRIPTION

Sabre Industries™ INNOVATION DELIVERED

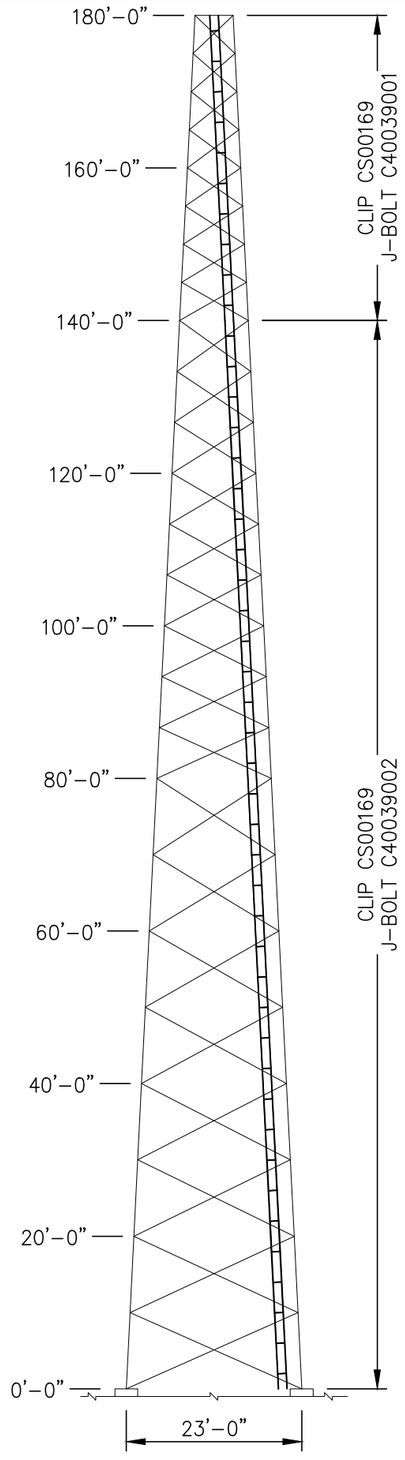
CONFIDENTIAL
This document and the information contained herein is the confidential trade secret property of Sabre Industries, Inc. ("Sabre") and must not be reproduced, copied or used, in whole or in part, for any purpose without the prior written consent of Sabre.
© 2025 Sabre Industries, Inc. All rights reserved.

W/G LADDER: 180 FT. MODEL S3TL–HD2

SITE: WIPPER, OR

CUSTOMER: MARION COUNTY OREGON

JOB NO. 563423		SIZE	DRAWING NO.	REV
DATE	8/7/25	B	563423–WG1	0
DRAWN BY	KMP			
CHECKED BY	ZAK		SCALE NONE	PAGE 1 OF 1



ELEVATION VIEW

WAVEGUIDE LADDER				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
1	18	CS00146	ANGLE, WAVEGUIDE LADDER RAIL 20 FT. W/4 FT. RUNG SPC	540
2	45	CS01619	ANGLE, WAVEGUIDE SUPPORT (6 HOLE)	95
3	16	CS00037	PLATE, LADDER SPLICE	6
4	42	CS00169	CLIP, LADDER ATTACHMENT	23
			TOTAL WEIGHT LBS	664

LADDER HARDWARE				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
5	34	C40039002	J–BOLT ASSEMBLY, 3/8 ø X 7 1/4 I.L.	12
6	8	C40039001	J–BOLT ASSEMBLY, 3/8 ø X 5 3/4 I.L.	2
7	122	C40024004	BOLT ASSEMBLY, 3/8 ø X 1 1/2 GRD 5	12
			TOTAL WEIGHT LBS	26

FIELD NOTES

1. FROM ELEVATION 0'–0" TO 140'–0" ATTACH WAVEGUIDE LADDER TO EACH TOWER DIAGONAL.
   FROM ELEVATION 140'–0" TO 180'–0" ATTACH WAVEGUIDE LADDER TO EVERY OTHER TOWER DIAGONAL.
2. SEE REFERENCE DWG. 9031861 FOR WAVEGUIDE LADDER INSTALLATION AND ATTACHMENT DETAIL.
3. SEE CUSTOMER REQUESTS FOR PROPER FACE POSITIONING OF ALL LADDERS.
4. WAVEGUIDE LADDERS SHOULD NEVER BE USED AS A CLIMBING OR RIGGING DEVICE.

UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS INCLUDE FINISHES AND ARE IN INCHES

TOLERANCES: FRACTIONS ± 1/16" ANGLES ± 1/2 DEG. DECIMALS ± .010"

MATERIAL:

TOLERANCES DO NOT APPLY TO RAW MATERIAL

REV	DATE	DRW	CHK	DESCRIPTION

Sabre Industries™ INNOVATION DELIVERED

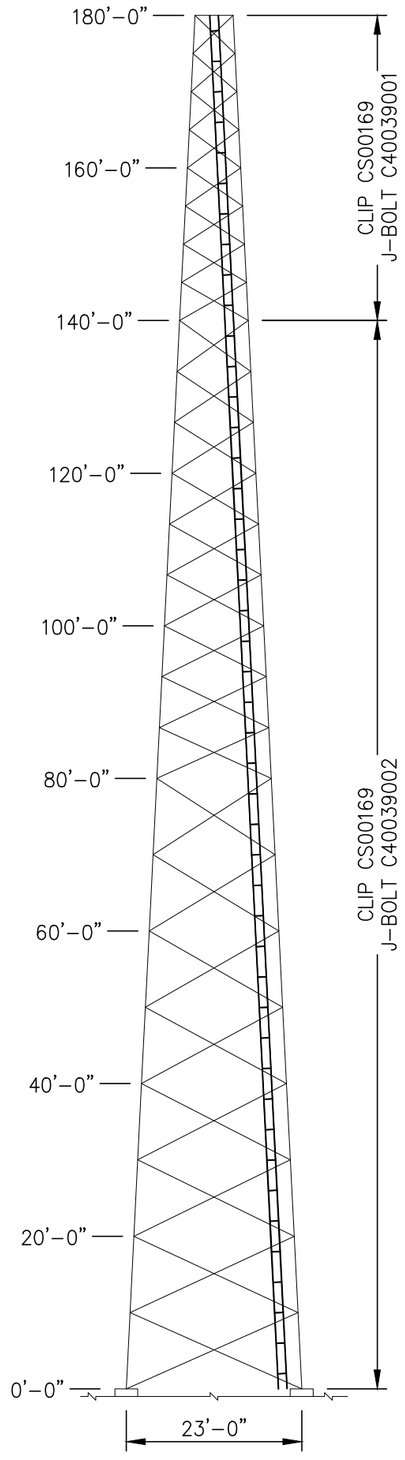
CONFIDENTIAL
This document and the information contained herein is the confidential trade secret property of Sabre Industries, Inc. ("Sabre") and must not be reproduced, copied or used, in whole or in part, for any purpose without the prior written consent of Sabre.
© 2025 Sabre Industries, Inc. All rights reserved.

W/G LADDER: 180 FT. MODEL S3TL–HD2

SITE: WIPPER, OR

CUSTOMER: MARION COUNTY OREGON

JOB NO. 563423		SIZE	DRAWING NO.	REV
DATE	8/7/25	B	563423–WG2	0
DRAWN BY	KMP			
CHECKED BY	ZAK		SCALE NONE	PAGE 1 OF 1



ELEVATION VIEW

WAVEGUIDE LADDER				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
1	18	CS00146	ANGLE, WAVEGUIDE LADDER RAIL 20 FT. W/4 FT. RUNG SPC	540
2	45	CS01619	ANGLE, WAVEGUIDE SUPPORT (6 HOLE)	95
3	16	CS00037	PLATE, LADDER SPLICE	6
4	42	CS00169	CLIP, LADDER ATTACHMENT	23
			TOTAL WEIGHT LBS	664

LADDER HARDWARE				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
5	34	C40039002	J–BOLT ASSEMBLY, 3/8 ø X 7 1/4 I.L.	12
6	8	C40039001	J–BOLT ASSEMBLY, 3/8 ø X 5 3/4 I.L.	2
7	122	C40024004	BOLT ASSEMBLY, 3/8 ø X 1 1/2 GRD 5	12
			TOTAL WEIGHT LBS	26

FIELD NOTES

1. FROM ELEVATION 0'–0" TO 140'–0" ATTACH WAVEGUIDE LADDER TO EACH TOWER DIAGONAL.
   FROM ELEVATION 140'–0" TO 180'–0" ATTACH WAVEGUIDE LADDER TO EVERY OTHER TOWER DIAGONAL.
2. SEE REFERENCE DWG. 9031861 FOR WAVEGUIDE LADDER INSTALLATION AND ATTACHMENT DETAIL.
3. SEE CUSTOMER REQUESTS FOR PROPER FACE POSITIONING OF ALL LADDERS.
4. WAVEGUIDE LADDERS SHOULD NEVER BE USED AS A CLIMBING OR RIGGING DEVICE.

UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS INCLUDE FINISHES AND ARE IN INCHES

TOLERANCES: FRACTIONS ± 1/16" ANGLES ± 1/2 DEG. DECIMALS ± .010"

MATERIAL:

TOLERANCES DO NOT APPLY TO RAW MATERIAL

REV	DATE	DRW	CHK	DESCRIPTION

Sabre Industries™ INNOVATION DELIVERED

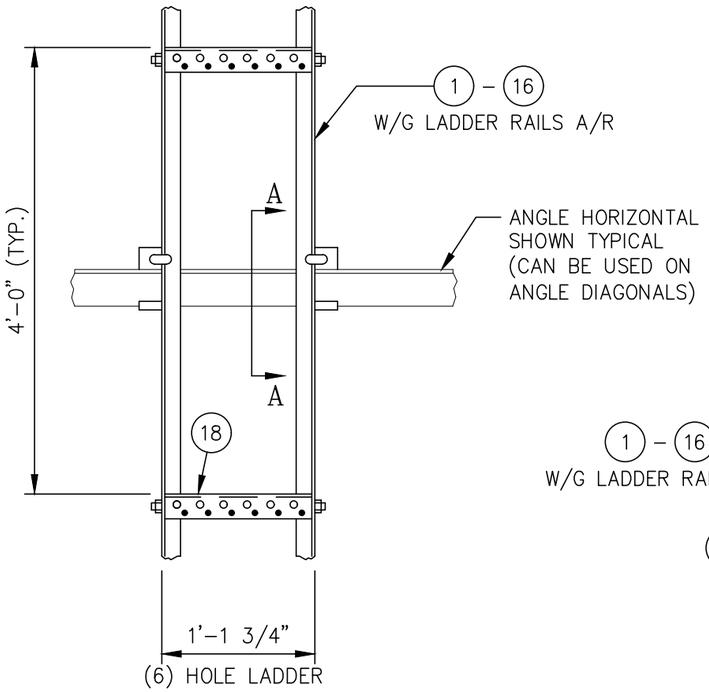
CONFIDENTIAL
This document and the information contained herein is the confidential trade secret property of Sabre Industries, Inc. ("Sabre") and must not be reproduced, copied or used, in whole or in part, for any purpose without the prior written consent of Sabre.
© 2025 Sabre Industries, Inc. All rights reserved.

W/G LADDER: 180 FT. MODEL S3TL–HD2

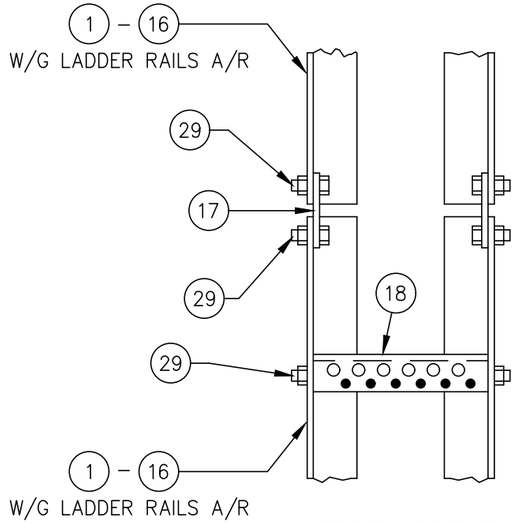
SITE: WIPPER, OR

CUSTOMER: MARION COUNTY OREGON

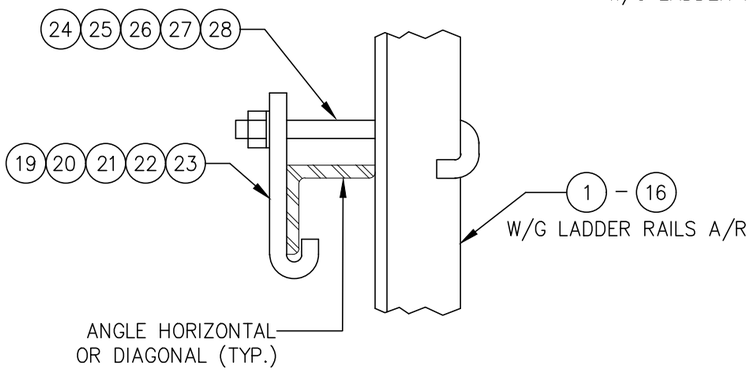
JOB NO. 563423		SIZE	DRAWING NO.	REV
DATE	8/7/25	B	563423–WG3	0
DRAWN BY	KMP			
CHECKED BY	ZAK		SCALE NONE	PAGE 1 OF 1



ELEVATION
(TYPICAL MOUNTING DETAIL)



SPLICE DETAIL



SECTION A–A

LIST OF MATERIAL

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
1	A/R	CS00146	ANGLE, WAVEGUIDE LADDER RAIL 20 FT.	
2	A/R	CS03607	ANGLE, WAVEGUIDE LADDER RAIL 19 FT.	
3	A/R	CS03608	ANGLE, WAVEGUIDE LADDER RAIL 18 FT.	
4	A/R	CS03402	ANGLE, WAVEGUIDE LADDER RAIL 17 FT.	
5	A/R	CS03609	ANGLE, WAVEGUIDE LADDER RAIL 16 FT.	
6	A/R	CS00147	ANGLE, WAVEGUIDE LADDER RAIL 15 FT.	
7	A/R	CS03621	ANGLE, WAVEGUIDE LADDER RAIL 14 FT.	
8	A/R	CS03610	ANGLE, WAVEGUIDE LADDER RAIL 13 FT.	
9	A/R	CS03611	ANGLE, WAVEGUIDE LADDER RAIL 12 FT.	
10	A/R	CS03612	ANGLE, WAVEGUIDE LADDER RAIL 11 FT.	
11	A/R	CS00148	ANGLE, WAVEGUIDE LADDER RAIL 10 FT.	
12	A/R	CS03613	ANGLE, WAVEGUIDE LADDER RAIL 9 FT.	
13	A/R	CS03444	ANGLE, WAVEGUIDE LADDER RAIL 8 FT.	
14	A/R	CS03614	ANGLE, WAVEGUIDE LADDER RAIL 7 FT.	
15	A/R	CS03615	ANGLE, WAVEGUIDE LADDER RAIL 6 FT.	
16	A/R	CS00149	ANGLE, WAVEGUIDE LADDER RAIL 5 FT.	
17	A/R	CS00037	PLATE, LADDER SPLICE	
18	A/R	CS01619	ANGLE WAVEGUIDE SUPPORT (6 HOLE)	
19	A/R	CS00169	CLIP, LADDER ATTACHMENT (1 1/2" – 4" ANGLES)	
20	A/R	CS00170	CLIP, LADDER ATTACHMENT (5" – 6" ANGLES: 3/8" THK. & UNDER)	
21	A/R	CS00171	CLIP, LADDER ATTACHMENT (1 1/2" – 6" ANGLES: 1/2" THK. & UNDER)	
22	A/R	CS00808	CLIP, LADDER ATTACHMENT (4" – 6" ANGLES: 1/2" TO 3/4" THK.)	
23	A/R	CS01212	CLIP, LADDER ATTACHMENT (8" ANGLES)	
24	A/R	C40039001	J–BOLT ASSY., 3/8 (1 1/2" – 2 1/2" ANGLES)	
25	A/R	C40039002	J–BOLT ASSY., 3/8 (3" – 4" ANGLES)	
26	A/R	C40039003	J–BOLT ASSY., 3/8 (5" – 6" ANGLES)	
27	A/R	C40039009	J–BOLT ASSY., 3/8 (3" – 6" ANGLES, 1/2" & 3/4" THK)	
28	A/R	C40039012	J–BOLT ASSY., 3/8 (8" ANGLES, 1/2" & 3/4" THK)	
29	A/R	C40024004	BOLT ASSEMBLY, 3/8 X 1 1/2 GR5	

"SEE JOB SPECIFIC BILL OF MATERIAL FOR QTY'S."

NOTE:
MAXIMUM SPACING OF LADDER CLIPS UP THE TOWER TO BE ±10'–0.

UNLESS OTHERWISE SPECIFIED
ALL DIMENSIONS INCLUDE
FINISHES AND ARE IN INCHES
TOLERANCES: FRACTIONS ± 1/16"
ANGLES ± 1/2 DEG.
DECIMALS ± .010"

MATERIAL:
TOLERANCES DO NOT APPLY
TO RAW MATERIAL

REV	DATE	DRW	CHK	DESCRIPTION
1	08/22/23	FJM	DLW	REVISED ITEM 7 (WAS CS03404)

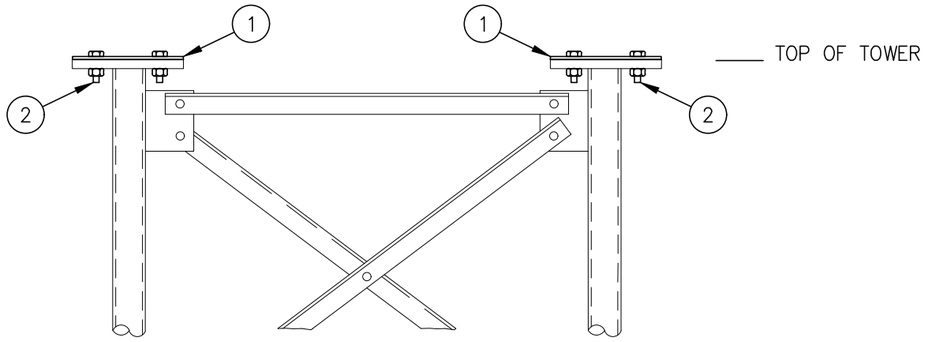
Sabre Industries™
INNOVATION DELIVERED

CONFIDENTIAL
This document and the information contained herein is the confidential trade secret property of Sabre Industries, Inc. ("Sabre") and must not be reproduced, copied or used, in whole or in part, for any purpose without the prior written consent of Sabre.
© 2021 Sabre Industries, Inc. All rights reserved.

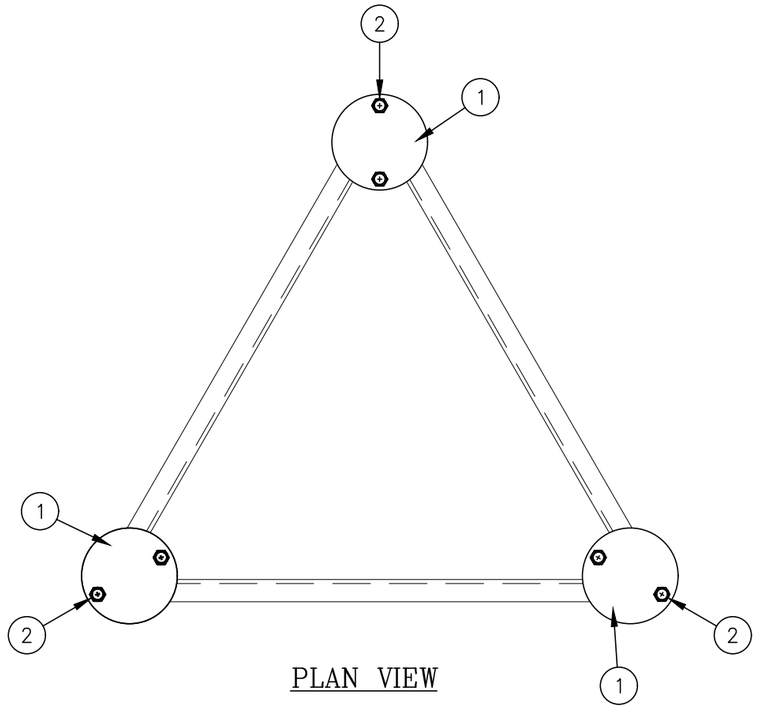
WAVEGUIDE LADDER INSTALLATION
6 HOLE RUNG – 7/16"ø & 3/4"ø
(CUSTOM LENGTH LADDER RAILS)

		SIZE	DRAWING NO.	REV
DATE	06/25/20	B	9031861	1
DRAWN BY	FJM			
CHECKED BY	DRL	SCALE None	PAGE 1 OF 1	

C30008022 LEG CAP KIT				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
1	3	CS01499	PLATE, LEG CAP (3/4" BOLTS ON A 6 1/2" B.C.)	6
2	6	C40026045	BOLT ASSEMBLY, 3/4 ø X 2 1/2 A325	5
			TOTAL WEIGHT LBS	11



ELEVATION VIEW



PLAN VIEW

UNLESS OTHERWISE SPECIFIED
ALL DIMENSIONS INCLUDE FINISHES AND ARE IN INCHES

TOLERANCES: FRACTIONS ± 1/16"
ANGLES ± 1/2 DEG.
DECIMALS ± .010"

MATERIAL:
FITS (6) 13/16"ø HOLES SPACED 60° APART ON A 6 1/2" BOLT CIRCLE

TOLERANCES DO NOT APPLY TO RAW MATERIAL

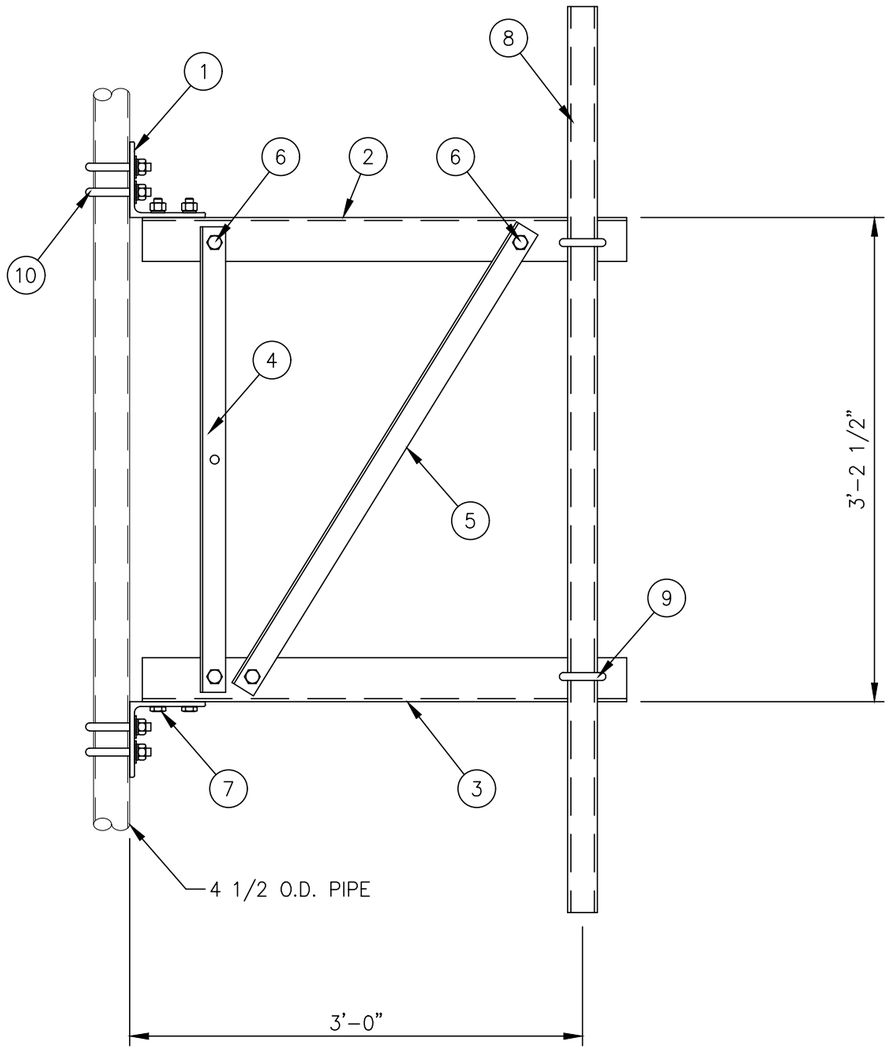
REV	DATE	DRW	CHK	DESCRIPTION

Sabre Industries™
INNOVATION DELIVERED

CONFIDENTIAL
This document and the information contained herein is the confidential trade secret property of Sabre Industries, Inc. ("Sabre") and must not be reproduced, copied or used, in whole or in part, for any purpose without the prior written consent of Sabre.
© 2021 Sabre Industries, Inc. All rights reserved.

LEG CAP INSTALLATION (S3TL–HD1) 3/4"ø BOLTS ON A 6 1/2" B.C. (1" SPLICE PLATE)

		SIZE	DRAWING NO.	REV
DATE	9/29/21	B	C30008022	0
DRAWN BY	MJM			
CHECKED BY	ZAK		SCALE None	PAGE 1 OF 1



C10151103 3 FT. SIDEARM ASSEMBLY			
1	CK00060	SIDEARM ANGLE KIT	78
1	– – –	MISC HARDWARE (FRAMING)	4
1	C10900105	PIPE ANTENNA MOUNTING KIT 2 3/8" ø X 5'-0	19
4	C40034032	U-BOLT ASSEMBLY 5/8" ø X 5 3/16 C-C	9
		TOTAL WEIGHT LBS	110

CK00060 KIT LIST OF MATERIAL				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
1	2	CS00067	ANGLE, BOOM SUPPORT	23
2	1	CS01223	ANGLE, TOP CHORD	19
3	1	CS01224	ANGLE, BOTTOM CHORD	19
4	1	CS00065	ANGLE, VERTICAL	8
5	1	CS01228	ANGLE, DIAGONAL	9
			TOTAL WEIGHT LBS	78

MISC HARDWARE (FRAMING)				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
6	4	C40026022	BOLT ASSEMBLY, 5/8 ø X 1 3/4 A325	2
7	4	C40026023	BOLT ASSEMBLY, 5/8 ø X 2 A325	2
			TOTAL WEIGHT LBS	4

C10900105 ANTENNA PIPE MOUNTING KIT				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
8	1	C10981223	ANTENNA MTG. PIPE 2 3/8" ø X 5'-0	16
9	2	C40034023	U-BOLT ASSEMBLY 5/8" ø X 3 1/16 C-C	3
			TOTAL WEIGHT LBS	19

MISC HARDWARE				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
10	4	C40034032	U-BOLT ASSEMBLY 5/8" ø X 5 3/16 C-C	9
			TOTAL WEIGHT LBS	9

NOTES:

1. IF THE MOUNT IS NOT ON THE STRAIGHT PORTION OF THE TOWER SEE SITE SPECIFIC PIPE MOUNT.
2. QUANTITIES SHOWN IN LIST OF MATERIALS ARE FOR ONE (1) SIDEARM ASSEMBLY ONLY.

UNLESS OTHERWISE SPECIFIED
ALL DIMENSIONS INCLUDE
FINISHES AND ARE IN INCHES

TOLERANCES: FRACTIONS ± 1/16"
ANGLES ± 1/2 DEG.
DECIMALS ± .010"

MATERIAL:

TOLERANCES DO NOT APPLY TO RAW MATERIAL

REV	DATE	DRW	CHK	DESCRIPTION

Sabre Industries™
INNOVATION DELIVERED

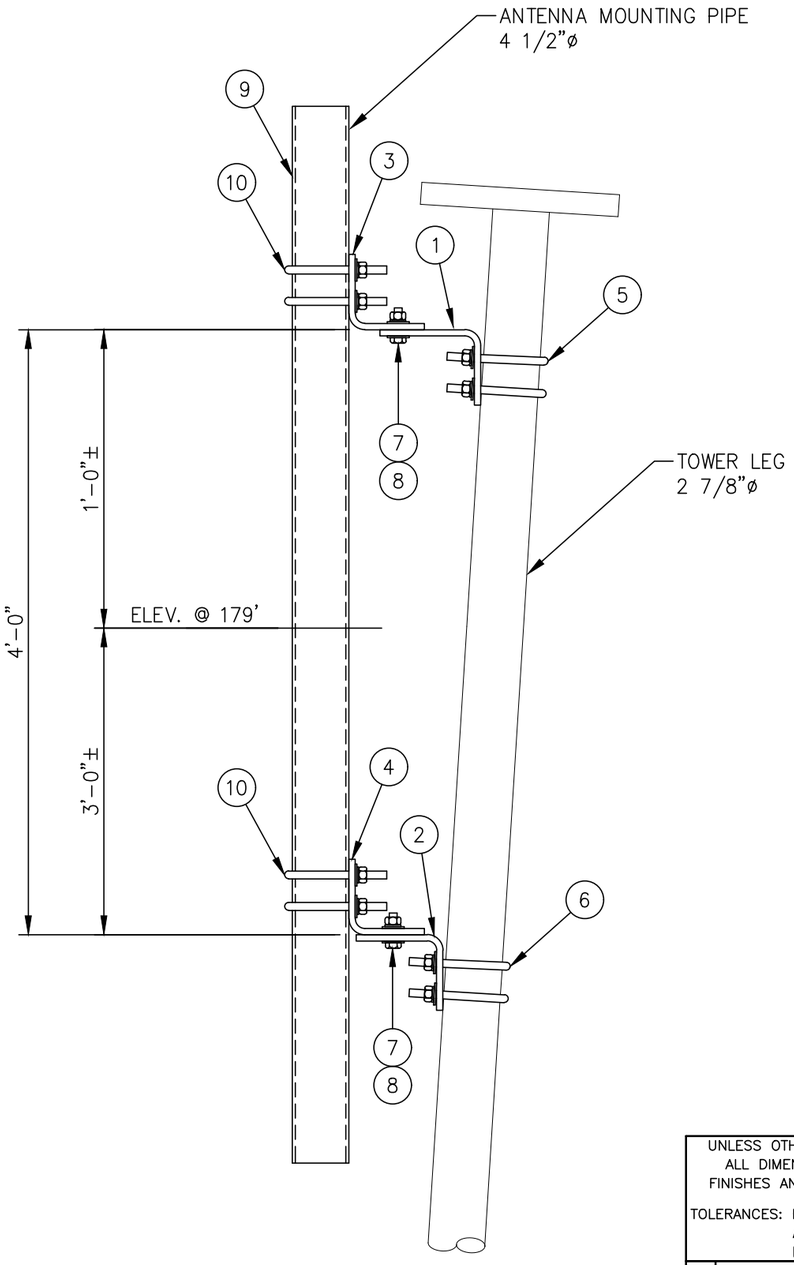
CONFIDENTIAL
This document and the information contained herein is the confidential trade secret property of Sabre Industries, Inc. ("Sabre") and must not be reproduced, copied or used, in whole or in part, for any purpose without the prior written consent of Sabre.
© 2025 Sabre Industries, Inc. All rights reserved.

3 FT. SIDEARM: 179' ELEVATION

SITE: WIPPER, OR

CUSTOMER: MARION COUNTY OREGON

JOB NO. 563423		SIZE	DRAWING NO.	REV
DATE	08/07/25	B	563423-SA1	0
DRAWN BY	KMP			
CHECKED BY	ZAK		SCALE NONE	PAGE 1 OF 1



ELEVATION VIEW

LIST OF MATERIALS FOR TAPERED LEG PIPE MOUNT KIT C10174018				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
1.	1	CS00216	TOP LEG MOUNT FOR 2 7/8 ø LEG	15
2.	1	CS00215	BOTTOM LEG MOUNT FOR 2 7/8 ø LEG	12
3.	1	CS00214	TOP PIPE MOUNT FOR 4 1/2 ø PIPE	15
4.	1	CS00215	BOTTOM PIPE MOUNT FOR 4 1/2 ø PIPE	12
5.	2	C40034025	U-BOLT ASSEMBLY 5/8 ø X 3 9/16 C-C (TOP LEG MOUNT)	4
6.	2	C40034025	U-BOLT ASSEMBLY 5/8 ø X 3 9/16 C-C (BOTTOM LEG MOUNT)	4
7.	4	C40026024	BOLT ASSEMBLY 5/8 ø X 2 1/4 A325	2
8.	8	C40031003	FLATWASHER, 5/8 ø (F436)	1
			KIT WEIGHT LBS	65

LIST OF ADDITIONAL MATERIALS				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
9.	1	C10981407	ANTENNA MTG. PIPE 4 1/2 ø X 7'-0	58
10.	4	C40034032	U-BOLT ASSEMBLY 5/8 ø X 5 3/16 C-C (PIPE MOUNTS)	9
			ADDITIONAL WEIGHT LBS	67

TOTAL WEIGHT LBS	132

UNLESS OTHERWISE SPECIFIED
ALL DIMENSIONS INCLUDE FINISHES AND ARE IN INCHES
TOLERANCES: FRACTIONS ± 1/16"
ANGLES ± 1/2 DEG.
DECIMALS ± .010"

MATERIAL:

TOLERANCES DO NOT APPLY TO RAW MATERIAL

REV	DATE	DRW	CHK	DESCRIPTION

Sabre Industries™
INNOVATION DELIVERED

CONFIDENTIAL

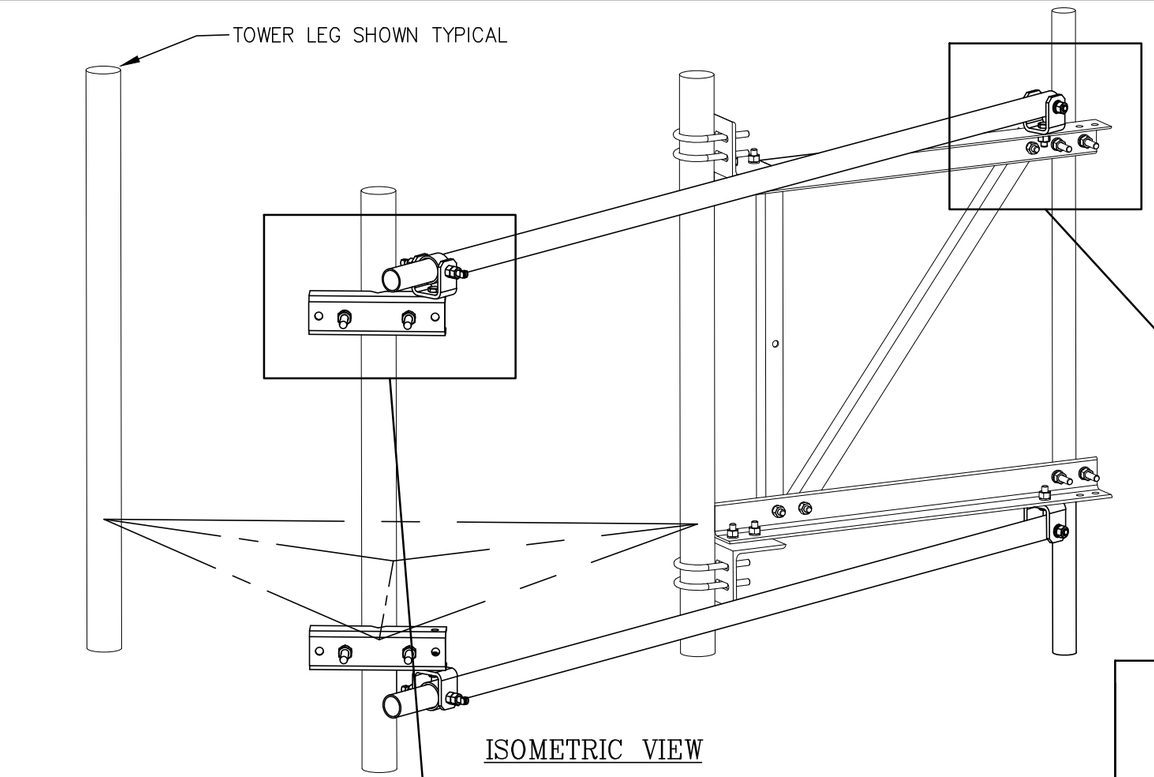
This document and the information contained herein is the confidential trade secret property of Sabre Industries, Inc. ("Sabre") and must not be reproduced, copied or used, in whole or in part, for any purpose without the prior written consent of Sabre.
© 2025 Sabre Industries, Inc. All rights reserved.

PIPE MOUNT FOR SIDEARM: 179' ELEVATION

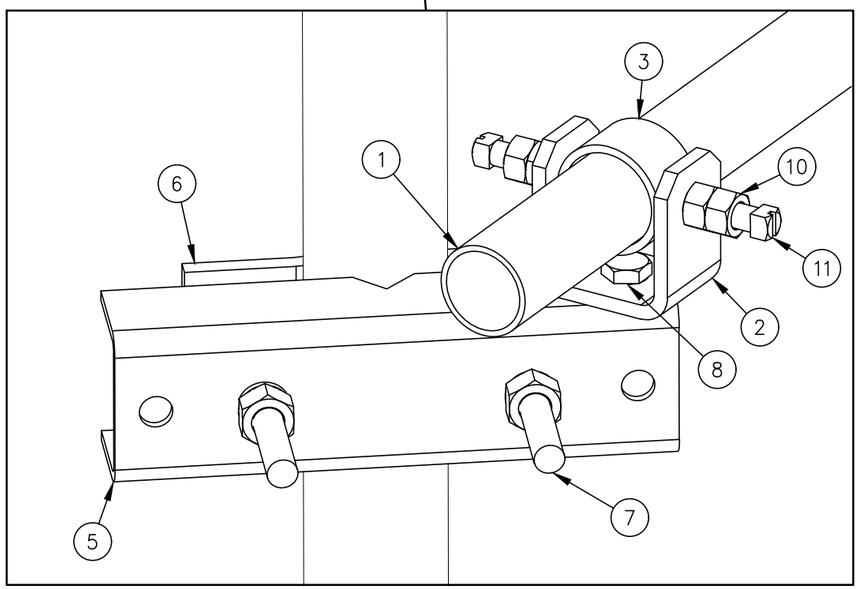
SITE: WIPPER, OR

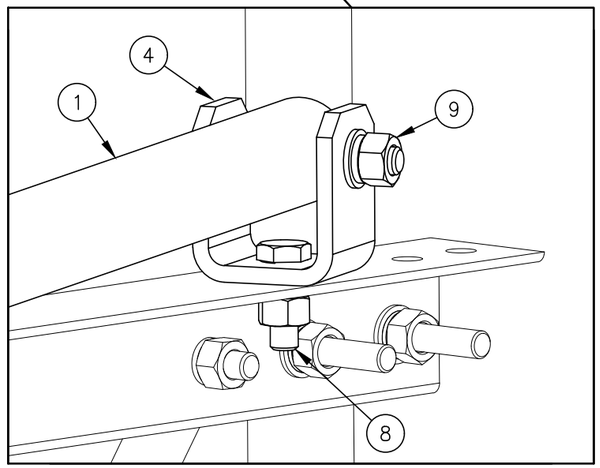
CUSTOMER: MARION COUNTY OREGON

JOB NO. 563423		SIZE	DRAWING NO.	REV
DATE	8/7/25	B	563423-PM1	0
DRAWN BY	KMP			
CHECKED BY	ZAK		SCALE None	PAGE 1 OF 1



ISOMETRIC VIEW





C10179001 SWIVEL KNUCKLE TIEBACK

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
1	1	CS00099	PIPE, 2 3/8" O.D. X 0.154 X 10'-0	38
2	1	CW00013	SWIVEL PLATE WELDMENT	3
3	1	CS00097	PIPE, SLEEVE 2 7/8 O.D. X W/0.203 X 0'-1 3/4	1
4	1	CS00098	BENT SWIVEL PLATE	3
5	1	CS01360	PLATE, MOUNTING BRACKET (FORMED CHANNEL)	9
6	1	CS01361	PLATE, 2 HOLE ADAPTER CLAMP	3
7	2	C40140001	BOLT ASSEMBLY, 3/4 X 10 A307 W/NUT, LKW, FLW	4
8	2	C40026023	BOLT ASSEMBLY, 5/8 ø X 2 A325	1
9	1	C40026033	BOLT ASSEMBLY, 5/8 ø X 4 1/2 A325	1
10	2	C40042007	HEX NUT, 5/8 A194 GRADE 2H	1
11	2	C40998007	SQ. HEAD SET SCREW, 5/8 X 2 1/2	1
			TOTAL WEIGHT LBS	65

QUANTITIES SHOWN ABOVE ARE FOR (1) SWIVEL KNUCKLE TIEBACK KIT ONLY.
(2) KITS ARE REQUIRED FOR THIS SIDEARM ASSEMBLY

UNLESS OTHERWISE SPECIFIED
ALL DIMENSIONS INCLUDE
FINISHES AND ARE IN INCHES

TOLERANCES: FRACTIONS ± 1/16"
ANGLES ± 1/2 DEG.
DECIMALS ± .010"

MATERIAL:

TOLERANCES DO NOT APPLY TO RAW MATERIAL

REV	DATE	DRW	CHK	DESCRIPTION

Sabre Industries™
INNOVATION DELIVERED

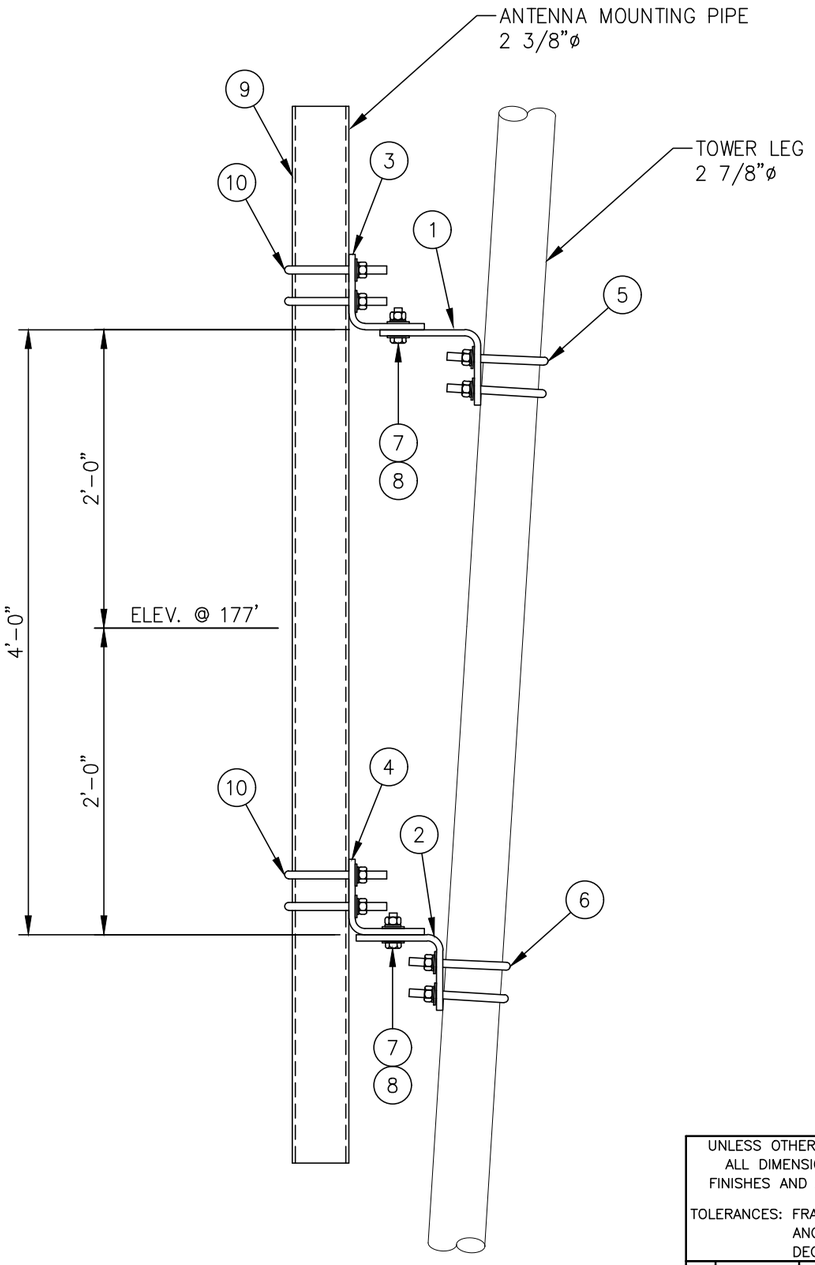
CONFIDENTIAL
This document and the information contained herein is the confidential trade secret property of Sabre Industries, Inc. ("Sabre") and must not be reproduced, copied or used, in whole or in part, for any purpose without the prior written consent of Sabre.
© 2025 Sabre Industries, Inc. All rights reserved.

SWIVEL KNUCKLE TIEBACKS: 179' ELEVATION

SITE: WIPPER, OR

CUSTOMER: MARION COUNTY OREGON

JOB NO. 563423		SIZE	DRAWING NO.	REV
DATE	08/07/25	B	563423-ST1	0
DRAWN BY	KMP			
CHECKED BY	ZAK		SCALE NONE	PAGE 1 OF 1



ELEVATION VIEW

LIST OF MATERIALS FOR TAPERED LEG FLUSH MOUNT KIT C10174018				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
1.	1	CS00216	TOP LEG MOUNT FOR 2 7/8 ø LEG	15
2.	1	CS00215	BOTTOM LEG MOUNT FOR 2 7/8 ø LEG	12
3.	1	CS00214	TOP PIPE MOUNT FOR 2 3/8 ø PIPE	15
4.	1	CS00215	BOTTOM PIPE MOUNT FOR 2 3/8 ø PIPE	12
5.	2	C40034025	U-BOLT ASSEMBLY 5/8 ø X 3 9/16 C-C (TOP LEG MOUNT)	4
6.	2	C40034025	U-BOLT ASSEMBLY 5/8 ø X 3 9/16 C-C (BOTTOM LEG MOUNT)	4
7.	4	C40026024	BOLT ASSEMBLY 5/8 ø X 2 1/4 A325	2
8.	8	C40031003	FLATWASHER, 5/8 ø (F436)	1
			KIT WEIGHT LBS	65

LIST OF ADDITIONAL MATERIALS				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
9.	1	C10981207	ANTENNA MTG. PIPE 2 3/8 ø X 7'-0	23
10.	4	C40034023	U-BOLT ASSEMBLY 5/8 ø X 3 1/16 C-C (PIPE MOUNTS)	7
			ADDITIONAL WEIGHT LBS	30

TOTAL WEIGHT LBS	95

UNLESS OTHERWISE SPECIFIED
ALL DIMENSIONS INCLUDE FINISHES AND ARE IN INCHES
TOLERANCES: FRACTIONS ± 1/16"
ANGLES ± 1/2 DEG.
DECIMALS ± .010"

MATERIAL:

TOLERANCES DO NOT APPLY TO RAW MATERIAL

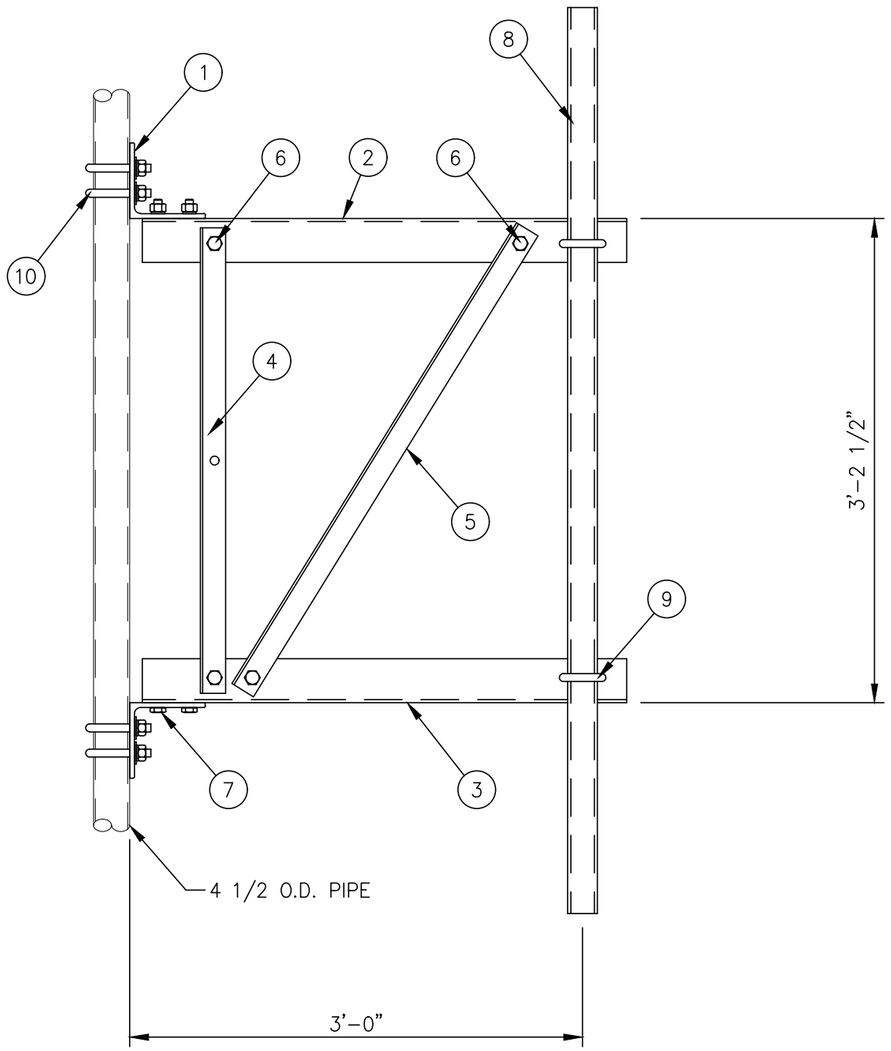
REV	DATE	DRW	CHK	DESCRIPTION

Sabre Industries™
INNOVATION DELIVERED

CONFIDENTIAL
This document and the information contained herein is the confidential trade secret property of Sabre Industries, Inc. ("Sabre") and must not be reproduced, copied or used, in whole or in part, for any purpose without the prior written consent of Sabre.
© 2025 Sabre Industries, Inc. All rights reserved.

FLUSH MOUNT: 177' ELEVATION
SITE: WIPPER, OR
CUSTOMER: MARION COUNTY OREGON

JOB NO. 563423		SIZE	DRAWING NO.	REV
DATE	8/7/25	B	563423-FM1	0
DRAWN BY	KMP			
CHECKED BY	ZAK		SCALE None	PAGE 1 OF 1



C10151103 3 FT. SIDEARM ASSEMBLY			
1	CK00060	SIDEARM ANGLE KIT	78
1	– – –	MISC HARDWARE (FRAMING)	4
1	C10900105	PIPE ANTENNA MOUNTING KIT 2 3/8" ø X 5'-0	19
4	C40034032	U-BOLT ASSEMBLY 5/8" ø X 5 3/16 C-C	9
		TOTAL WEIGHT LBS	110

CK00060 KIT LIST OF MATERIAL				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
1	2	CS00067	ANGLE, BOOM SUPPORT	23
2	1	CS01223	ANGLE, TOP CHORD	19
3	1	CS01224	ANGLE, BOTTOM CHORD	19
4	1	CS00065	ANGLE, VERTICAL	8
5	1	CS01228	ANGLE, DIAGONAL	9
			TOTAL WEIGHT LBS	78

MISC HARDWARE (FRAMING)				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
6	4	C40026022	BOLT ASSEMBLY, 5/8 ø X 1 3/4 A325	2
7	4	C40026023	BOLT ASSEMBLY, 5/8 ø X 2 A325	2
			TOTAL WEIGHT LBS	4

C10900105 ANTENNA PIPE MOUNTING KIT				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
8	1	C10981223	ANTENNA MTG. PIPE 2 3/8" ø X 5'-0	16
9	2	C40034023	U-BOLT ASSEMBLY 5/8" ø X 3 1/16 C-C	3
			TOTAL WEIGHT LBS	19

MISC HARDWARE				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
10	4	C40034032	U-BOLT ASSEMBLY 5/8" ø X 5 3/16 C-C	9
			TOTAL WEIGHT LBS	9

NOTES:

1. IF THE MOUNT IS NOT ON THE STRAIGHT PORTION OF THE TOWER SEE SITE SPECIFIC PIPE MOUNT.
2. QUANTITIES SHOWN IN LIST OF MATERIALS ARE FOR ONE (1) SIDEARM ASSEMBLY ONLY.

UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS INCLUDE FINISHES AND ARE IN INCHES

TOLERANCES: FRACTIONS ± 1/16" ANGLES ± 1/2 DEG. DECIMALS ± .010"

MATERIAL:

TOLERANCES DO NOT APPLY TO RAW MATERIAL

REV	DATE	DRW	CHK	DESCRIPTION

Sabre Industries™ INNOVATION DELIVERED

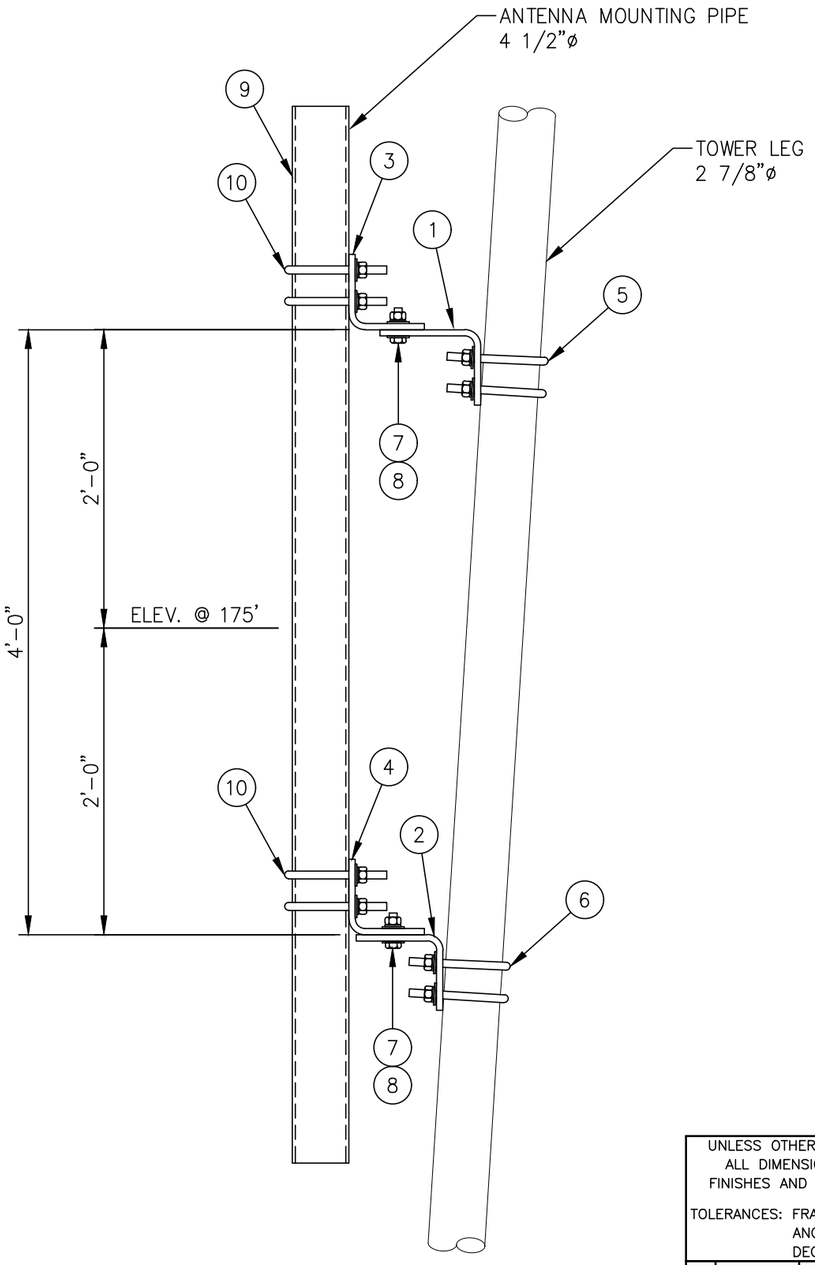
CONFIDENTIAL
This document and the information contained herein is the confidential trade secret property of Sabre Industries, Inc. ("Sabre") and must not be reproduced, copied or used, in whole or in part, for any purpose without the prior written consent of Sabre.
© 2025 Sabre Industries, Inc. All rights reserved.

3 FT. SIDEARMS: 175' ELEVATION

SITE: WIPPER, OR

CUSTOMER: MARION COUNTY OREGON

JOB NO. 563423		SIZE	DRAWING NO.	REV
DATE	08/07/25	B	563423-SA2	0
DRAWN BY	KMP			
CHECKED BY	ZAK		SCALE NONE	PAGE 1 OF 1



ELEVATION VIEW

LIST OF MATERIALS FOR TAPERED LEG PIPE MOUNT KIT C10174018				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
1.	1	CS00216	TOP LEG MOUNT FOR 2 7/8 ø LEG	15
2.	1	CS00215	BOTTOM LEG MOUNT FOR 2 7/8 ø LEG	12
3.	1	CS00214	TOP PIPE MOUNT FOR 4 1/2 ø PIPE	15
4.	1	CS00215	BOTTOM PIPE MOUNT FOR 4 1/2 ø PIPE	12
5.	2	C40034025	U-BOLT ASSEMBLY 5/8 ø X 3 9/16 C-C (TOP LEG MOUNT)	4
6.	2	C40034025	U-BOLT ASSEMBLY 5/8 ø X 3 9/16 C-C (BOTTOM LEG MOUNT)	4
7.	4	C40026024	BOLT ASSEMBLY 5/8 ø X 2 1/4 A325	2
8.	8	C40031003	FLATWASHER, 5/8 ø (F436)	1
			KIT WEIGHT LBS	65

LIST OF ADDITIONAL MATERIALS				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
9.	1	C10981407	ANTENNA MTG. PIPE 4 1/2 ø X 7'-0	58
10.	4	C40034032	U-BOLT ASSEMBLY 5/8 ø X 5 3/16 C-C (PIPE MOUNTS)	9
			ADDITIONAL WEIGHT LBS	67

TOTAL WEIGHT LBS	132

UNLESS OTHERWISE SPECIFIED
ALL DIMENSIONS INCLUDE FINISHES AND ARE IN INCHES
TOLERANCES: FRACTIONS ± 1/16"
ANGLES ± 1/2 DEG.
DECIMALS ± .010"

MATERIAL:

TOLERANCES DO NOT APPLY TO RAW MATERIAL

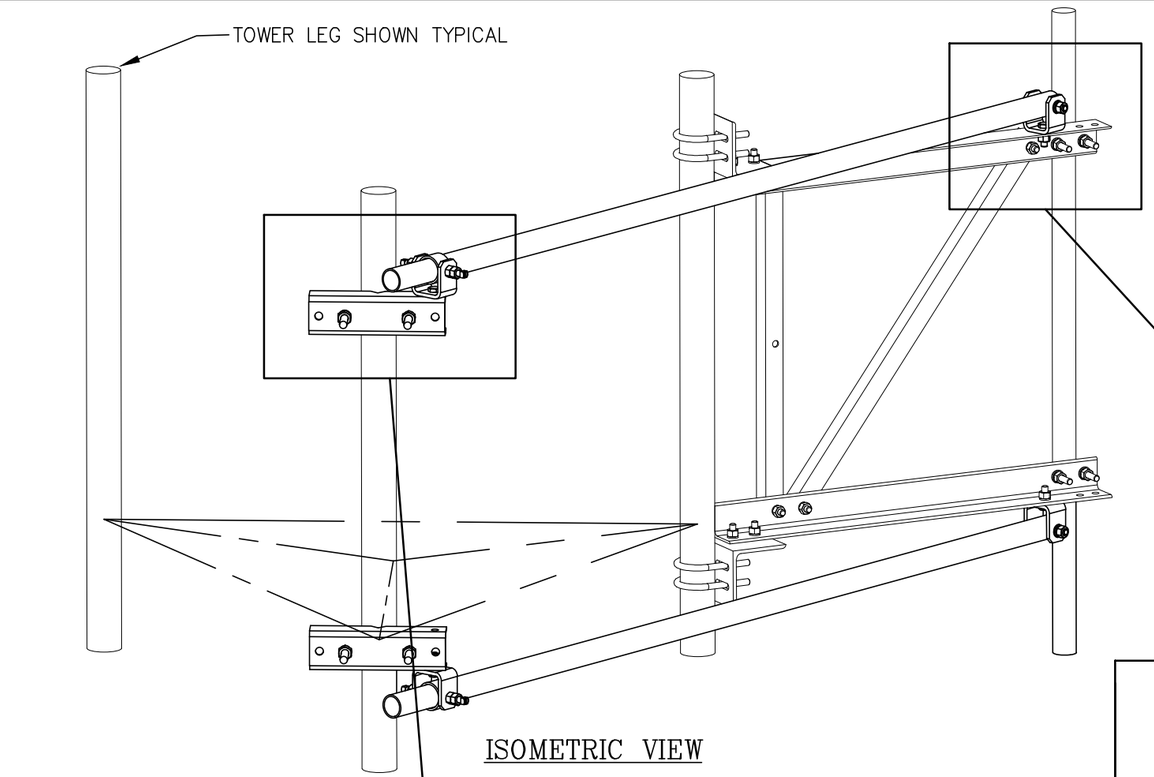
REV	DATE	DRW	CHK	DESCRIPTION

Sabre Industries™
INNOVATION DELIVERED

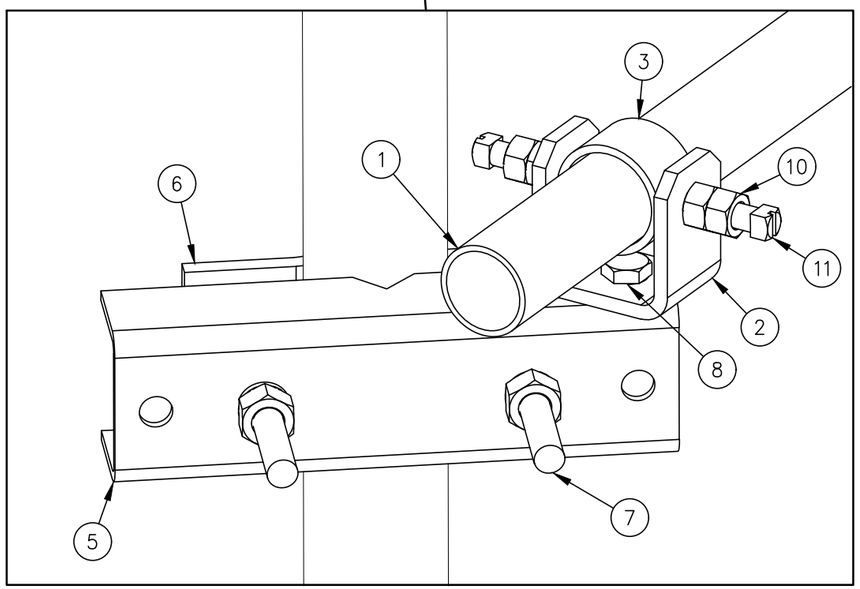
CONFIDENTIAL
This document and the information contained herein is the confidential trade secret property of Sabre Industries, Inc. ("Sabre") and must not be reproduced, copied or used, in whole or in part, for any purpose without the prior written consent of Sabre.
© 2025 Sabre Industries, Inc. All rights reserved.

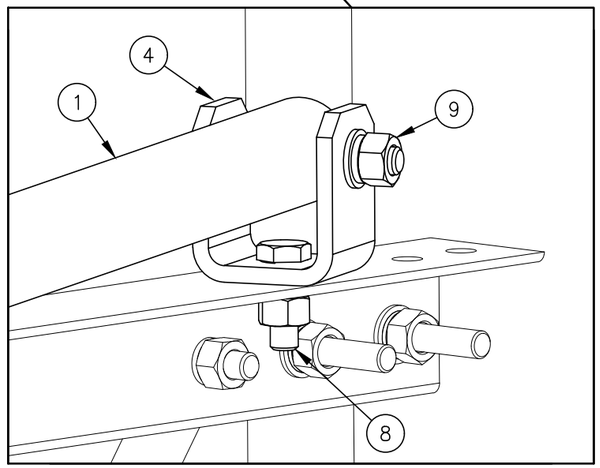
PIPE MOUNTS FOR SIDEARMS: 175' ELEVATION
SITE: WIPPER, OR
CUSTOMER: MARION COUNTY OREGON

JOB NO. 563423		SIZE	DRAWING NO.	REV
DATE	8/7/25	B	563423-PM2	0
DRAWN BY	KMP			
CHECKED BY	ZAK		SCALE None	PAGE 1 OF 1



ISOMETRIC VIEW





C10179002 SWIVEL KNUCKLE TIEBACK

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
1	1	CS02089	TIEBACK 2 3/8 X .134 X 13'-3"	43
2	1	CW00013	SWIVEL PLATE WELDMENT	3
3	1	CS00097	PIPE, SLEEVE 2 7/8 O.D. X W/0.203 X 0'-1 3/4	1
4	1	CS00098	BENT SWIVEL PLATE	3
5	1	CS01360	PLATE, MOUNTING BRACKET (FORMED CHANNEL)	9
6	1	CS01361	PLATE, 2 HOLE ADAPTER CLAMP	3
7	2	C40140001	BOLT ASSEMBLY, 3/4 X 10 A307 W/NUT, LKW, FLW	4
8	2	C40026023	BOLT ASSEMBLY, 5/8 ø X 2 A325	1
9	1	C40026033	BOLT ASSEMBLY, 5/8 ø X 4 1/2 A325	1
10	2	C40042007	HEX NUT, 5/8 A194 GRADE 2H	1
11	2	C40998007	SQ. HEAD SET SCREW, 5/8 X 2 1/2	1
			TOTAL WEIGHT LBS	70

QUANTITIES SHOWN ABOVE ARE FOR (1) SWIVEL KNUCKLE TIEBACK KIT ONLY.
(2) KITS ARE REQUIRED FOR THIS SIDEARM ASSEMBLY

UNLESS OTHERWISE SPECIFIED
ALL DIMENSIONS INCLUDE
FINISHES AND ARE IN INCHES

TOLERANCES: FRACTIONS ± 1/16"
ANGLES ± 1/2 DEG.
DECIMALS ± .010"

MATERIAL:

TOLERANCES DO NOT APPLY TO RAW MATERIAL

REV	DATE	DRW	CHK	DESCRIPTION

Sabre Industries™
INNOVATION DELIVERED

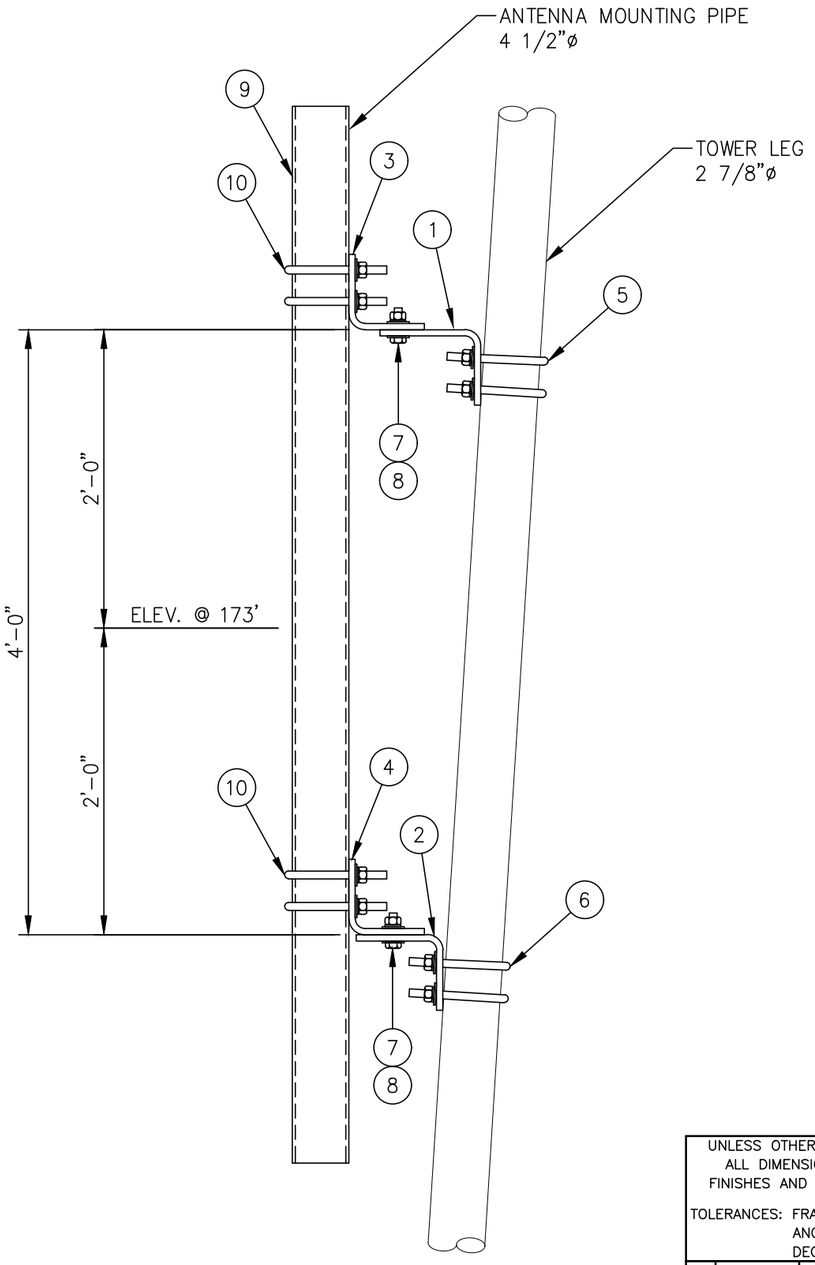
CONFIDENTIAL
This document and the information contained herein is the confidential trade secret property of Sabre Industries, Inc. ("Sabre") and must not be reproduced, copied or used, in whole or in part, for any purpose without the prior written consent of Sabre.
© 2025 Sabre Industries, Inc. All rights reserved.

SWIVEL KNUCKLE TIEBACKS: 175' ELEVATION

SITE: WIPPER, OR

CUSTOMER: MARION COUNTY OREGON

JOB NO. 563423		SIZE	DRAWING NO.	REV
DATE	08/07/25	B	563423-ST2	0
DRAWN BY	KMP			
CHECKED BY	ZAK		SCALE NONE	PAGE 1 OF 1



ELEVATION VIEW

LIST OF MATERIALS FOR TAPERED LEG PIPE MOUNT KIT C10174018				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
1.	1	CS00216	TOP LEG MOUNT FOR 2 7/8 ø LEG	15
2.	1	CS00215	BOTTOM LEG MOUNT FOR 2 7/8 ø LEG	12
3.	1	CS00214	TOP PIPE MOUNT FOR 4 1/2 ø PIPE	15
4.	1	CS00215	BOTTOM PIPE MOUNT FOR 4 1/2 ø PIPE	12
5.	2	C40034025	U-BOLT ASSEMBLY 5/8 ø X 3 9/16 C-C (TOP LEG MOUNT)	4
6.	2	C40034025	U-BOLT ASSEMBLY 5/8 ø X 3 9/16 C-C (BOTTOM LEG MOUNT)	4
7.	4	C40026024	BOLT ASSEMBLY 5/8 ø X 2 1/4 A325	2
8.	8	C40031003	FLATWASHER, 5/8 ø (F436)	1
			KIT WEIGHT LBS	65

LIST OF ADDITIONAL MATERIALS				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
9.	1	C10981407	ANTENNA MTG. PIPE 4 1/2 ø X 7'-0	58
10.	4	C40034032	U-BOLT ASSEMBLY 5/8 ø X 5 3/16 C-C (PIPE MOUNTS)	9
			ADDITIONAL WEIGHT LBS	67

TOTAL WEIGHT LBS	132

UNLESS OTHERWISE SPECIFIED
ALL DIMENSIONS INCLUDE FINISHES AND ARE IN INCHES

TOLERANCES: FRACTIONS ± 1/16"
ANGLES ± 1/2 DEG.
DECIMALS ± .010"

MATERIAL:

TOLERANCES DO NOT APPLY TO RAW MATERIAL

REV	DATE	DRW	CHK	DESCRIPTION

Sabre Industries™
INNOVATION DELIVERED

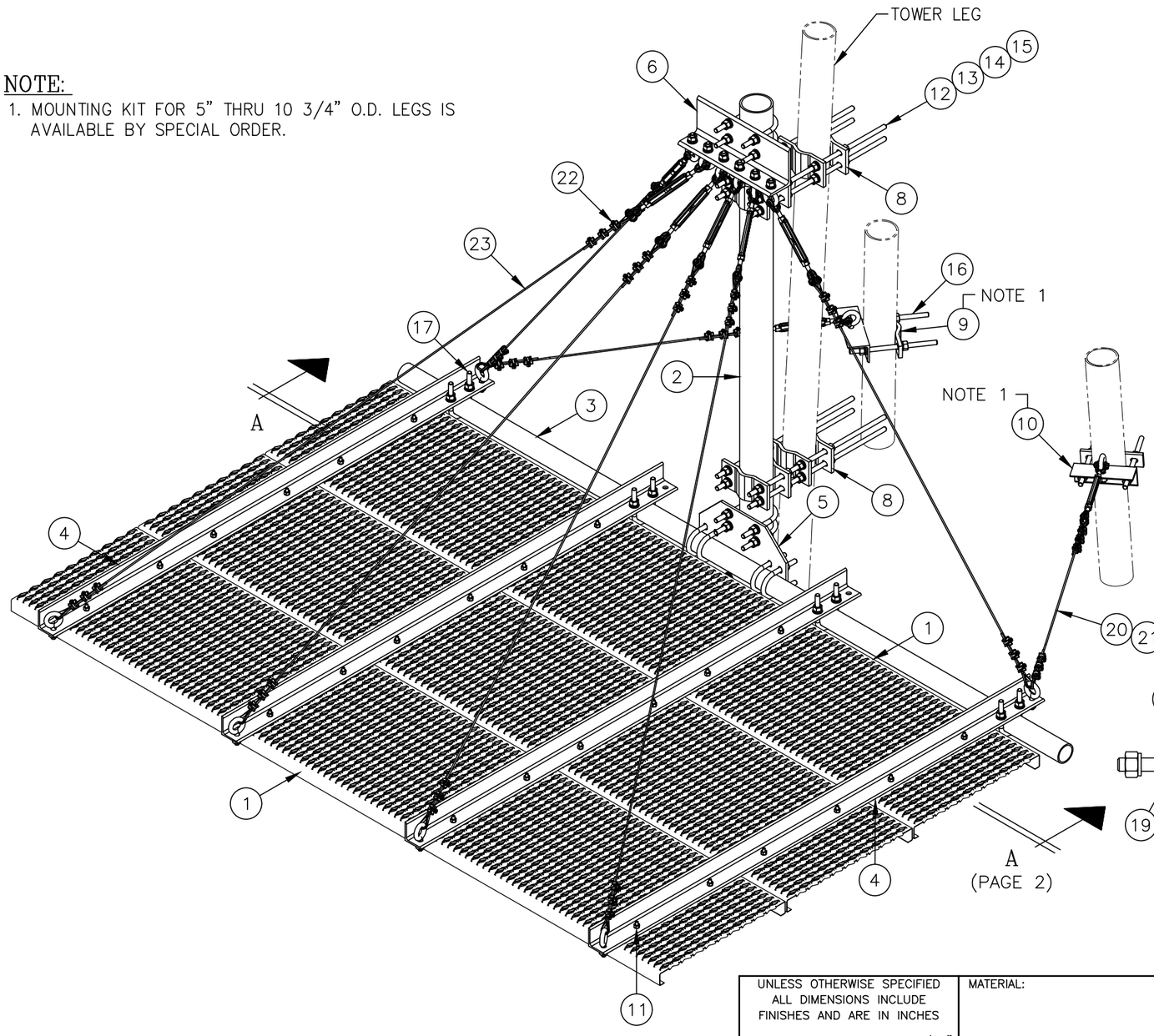
CONFIDENTIAL
This document and the information contained herein is the confidential trade secret property of Sabre Industries, Inc. ("Sabre") and must not be reproduced, copied or used, in whole or in part, for any purpose without the prior written consent of Sabre.
© 2025 Sabre Industries, Inc. All rights reserved.

PIPE MOUNTS: 173' ELEVATION
SITE: WIPPER, OR
CUSTOMER: MARION COUNTY OREGON

JOB NO. 563423		SIZE	DRAWING NO.	REV
DATE	8/7/25	B	563423-PM3	0
DRAWN BY	KMP			
CHECKED BY	ZAK		SCALE None	PAGE 1 OF 1

NOTE:

1. MOUNTING KIT FOR 5" THRU 10 3/4" O.D. LEGS IS AVAILABLE BY SPECIAL ORDER.

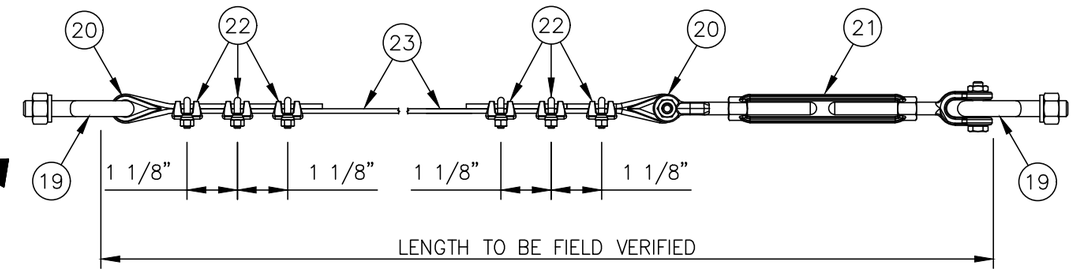


ISOMETRIC VIEW

(SEE PAGE 2 FOR MORE DETAILS)

C30085002 ICE SHIELD ASSEMBLY

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT
1.	3	C20137002	SAFETY GRATING, 2'-0 WIDE BY 10'-0 LONG	222
2.	1	C10981407	PIPE, 4 1/2" O.D. X W/0.180 X 7'-0	58
3.	1	C10901310	PIPE, 2 7/8" O.D. X W/0.203 X 10'-6	63
4.	4	CS00155	ANGLE, ICE SHIELD SUPPORT	143
5.	1	CS00156	PLATE, ICE SHIELD MOUNT	22
6.	1	CS01926	ANGLE, ICE SHIELD HANGER	19
7.	12	CS00158	PLATE, ICE SHIELD BACKUP	28
8.	8	CS00017	4 HOLE ADAPTER CLAMP 1 1/2" TO 5" O.D.	39
9.	2	CS00144	2 HOLE ADAPTER CLAMP 1 1/2" TO 5" O.D.	5
10.	2	CS01925	ANGLE, ICE SHIELD TIE BACK	7
11.	24	C40024006	BOLT ASSEMBLY, 3/8 ø X 2 GR 5	2
12.	16	C40042007	NUT, 5/8 ø A194 GRADE 2H	1
13.	16	C40030012	LOCKWASHER, 5/8 ø	1
14.	16	C40031003	FLATWASHER, 5/8 ø HARDENED ASTM F436	1
15.	8	C40099004	THREADED ROD ASS'Y, 5/8 ø X 2'-2 ASTM A193	22
16.	4	C40099002	THREADED ROD ASS'Y, 5/8 ø X 1'-0 ASTM A193	6
17.	8	C40034025	U-BOLT ASSEMBLY, 5/8 ø X 3 9/16" C-C	14
18.	6	C40034032	U-BOLT ASSEMBLY, 5/8 ø X 5 3/16" C-C	13
19.	14	C40079002	EYEBOLT ASSEMBLY, 5/8 ø X 1 3/4	8
20.	16	C40055011	THIMBLE, 3/16" STD	1
21.	8	C40051018	TURNBUCKLE, 1/2" X 6" J & J HDG	12
22.	48	C40056001	WIRE ROPE CLIP, 3/16"	5
23.	1	C30998120	AIRCRAFT CABLE, 3/16" X 120'-0	9
			TOTAL WEIGHT	701



TYPICAL CABLE ASSEMBLY

UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS INCLUDE FINISHES AND ARE IN INCHES

TOLERANCES: FRACTIONS ± 1/16" ANGLES ± 1/2 DEG. DECIMALS ± .010"

MATERIAL:

TOLERANCES DO NOT APPLY TO RAW MATERIAL

REV	DATE	DRW	CHK	DESCRIPTION
4	1/29/09	WRF	MC	REVISED PART NUMBERS OF ITEMS 6, 10, & EYEBOLTS WERE 3/8" & TURNB. WERE 1/4"
3	1/13/09	MLC	MC	REVISE PIPE (ITEM 2)
2	06/21/06	WRF	WMN	ADDED ISOMETRIC VIEW
1	4/4/03	KLE	DLW	REVISED PART NUMBERS

Sabre Industries™ INNOVATION DELIVERED

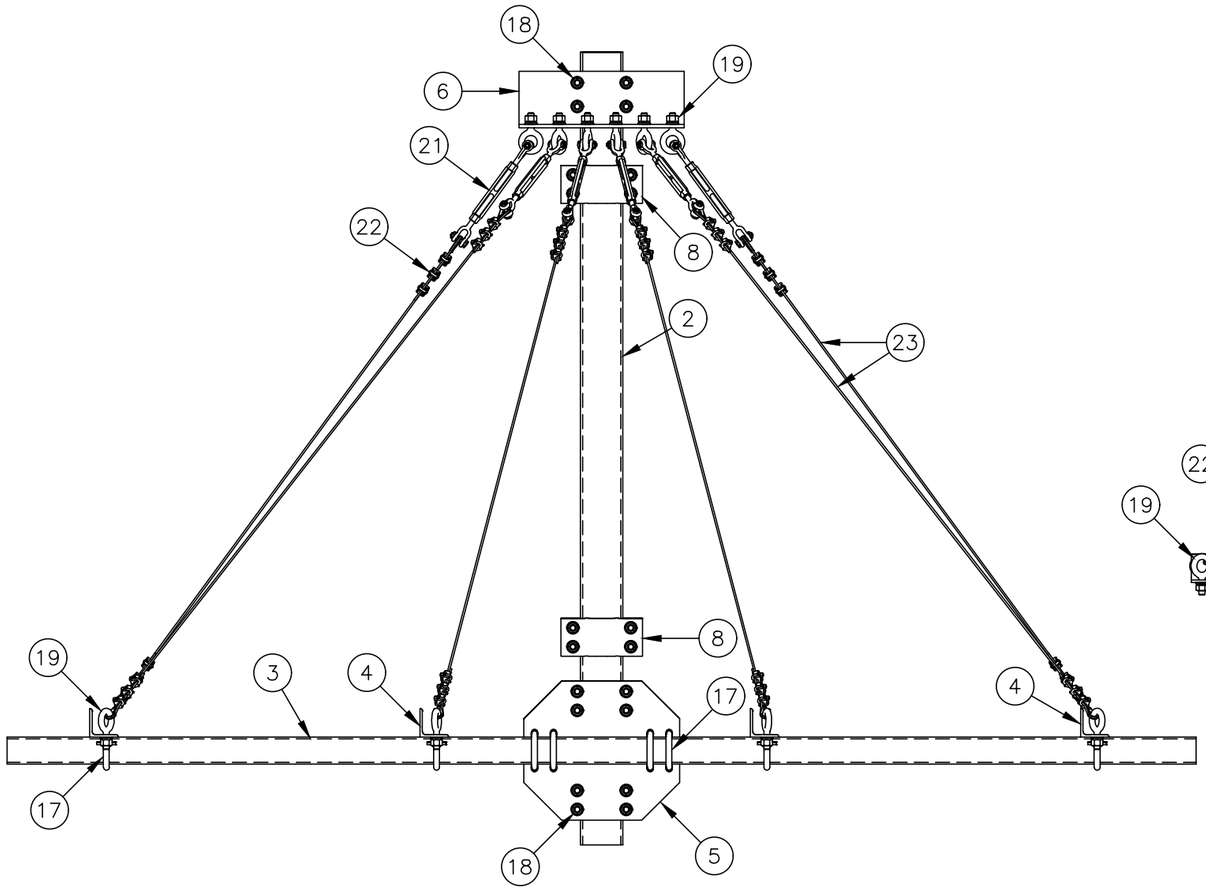
CONFIDENTIAL

This document and the information contained herein is the confidential trade secret property of Sabre Industries, Inc. ("Sabre") and must not be reproduced, copied or used, in whole or in part, for any purpose without the prior written consent of Sabre.

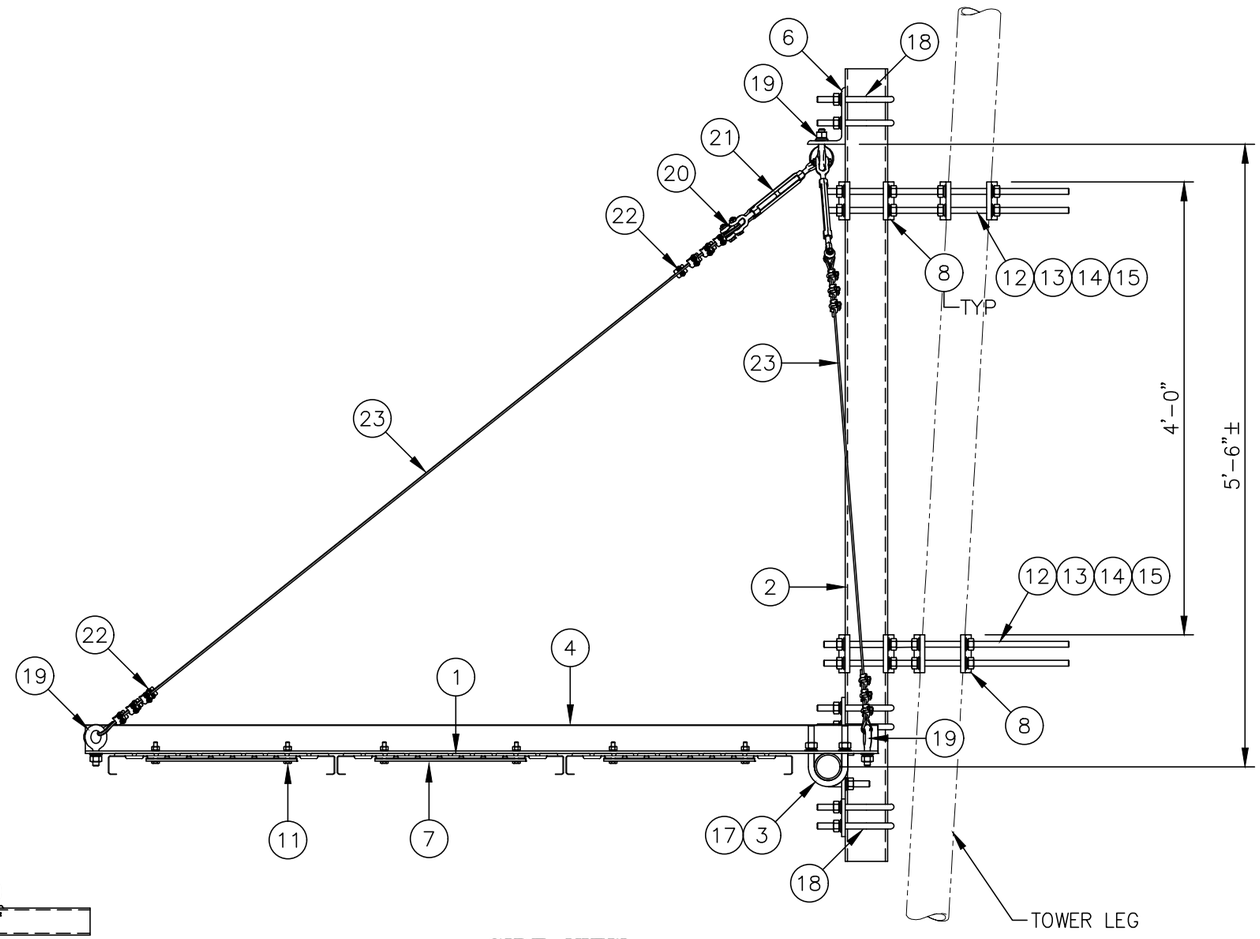
© 2022 Sabre Industries, Inc. All rights reserved.

ICE SHIELD ASSEMBLY FOR 6'-0 & 8'-0 DISH ANTENNA FITS 1 1/2 ø TO 5 ø LEGS

		SIZE	DRAWING NO.	REV
DATE	01/11/01	B	C30085002	4
DRAWN BY	BCT			
CHECKED BY	KLE		SCALE None	PAGE 1 OF 2



SECTION A–A
(GRATING REMOVED FOR CLARITY)



SIDE VIEW

REV	DATE	DRW	CHK	DESCRIPTION
4	1/29/09	WRF	MC	REVISED PART NUMBERS OF ITEMS 6, 10, & EYEBOLTS WERE 3/8" & TURNB. WERE 1/4"
3	1/13/09	MLC	MC	REVISE PIPE (ITEM 2)
2	06/21/06	WRF	WMN	ADDED ISOMETRIC VIEW
1	4/4/03	KLE	DLW	REVISED PART NUMBERS

UNLESS OTHERWISE SPECIFIED
ALL DIMENSIONS INCLUDE FINISHES AND ARE IN INCHES
TOLERANCES: FRACTIONS ± 1/16"
ANGLES ± 1/2 DEG.
DECIMALS ± .010"

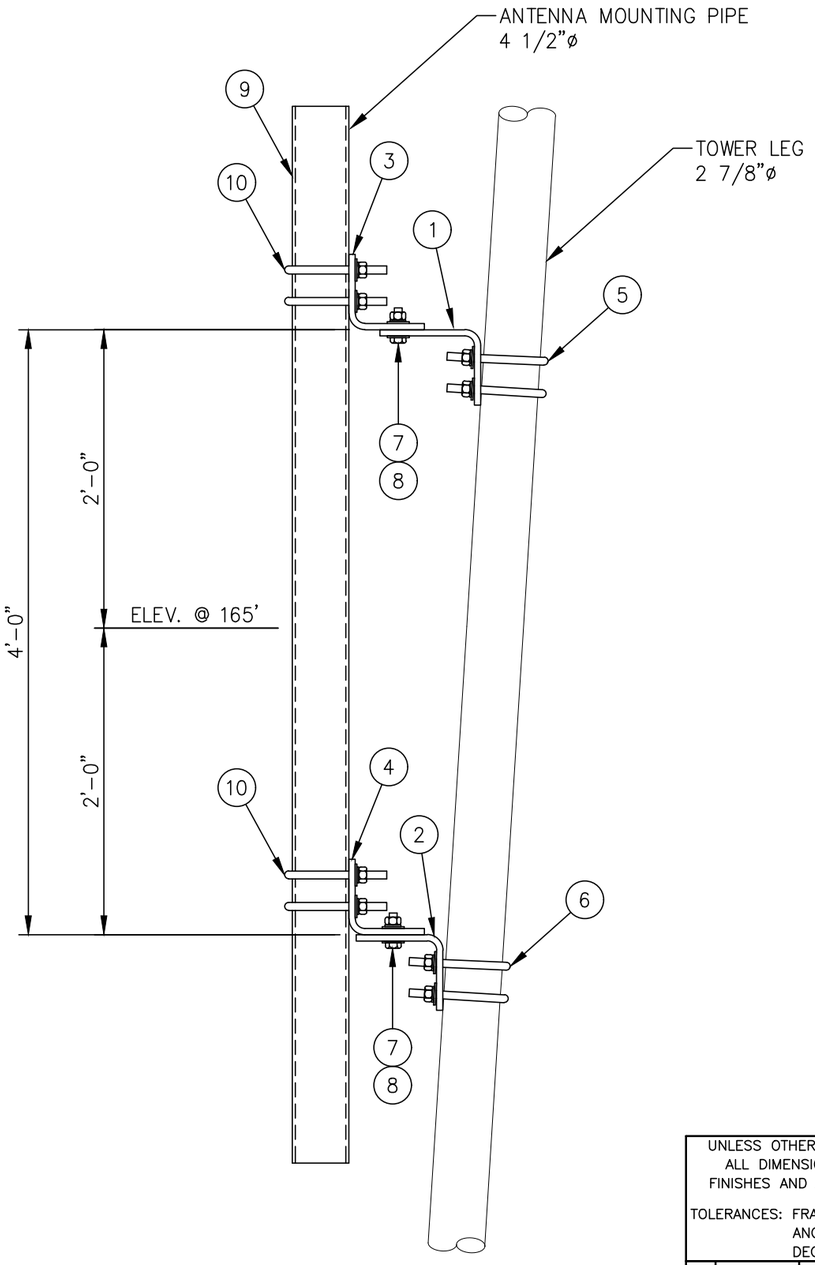
MATERIAL:
TOLERANCES DO NOT APPLY TO RAW MATERIAL

Sabre Industries™
INNOVATION DELIVERED

CONFIDENTIAL
This document and the information contained herein is the confidential trade secret property of Sabre Industries, Inc. ("Sabre") and must not be reproduced, copied or used, in whole or in part, for any purpose without the prior written consent of Sabre.
© 2022 Sabre Industries, Inc. All rights reserved.

ICE SHIELD ASSEMBLY
FOR 6'–0 & 8'–0 DISH ANTENNA
FITS 1 1/2 ø TO 5 ø LEGS

		SIZE	DRAWING NO.	REV
DATE	01/11/01	B	C30085002	4
DRAWN BY	BCT			
CHECKED BY	KLE	SCALE None	PAGE 2 OF 2	



ELEVATION VIEW

LIST OF MATERIALS FOR TAPERED LEG PIPE MOUNT KIT C10174018				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
1.	1	CS00216	TOP LEG MOUNT FOR 2 7/8 ø LEG	15
2.	1	CS00215	BOTTOM LEG MOUNT FOR 2 7/8 ø LEG	12
3.	1	CS00214	TOP PIPE MOUNT FOR 4 1/2 ø PIPE	15
4.	1	CS00215	BOTTOM PIPE MOUNT FOR 4 1/2 ø PIPE	12
5.	2	C40034025	U-BOLT ASSEMBLY 5/8 ø X 3 9/16 C-C (TOP LEG MOUNT)	4
6.	2	C40034025	U-BOLT ASSEMBLY 5/8 ø X 3 9/16 C-C (BOTTOM LEG MOUNT)	4
7.	4	C40026024	BOLT ASSEMBLY 5/8 ø X 2 1/4 A325	2
8.	8	C40031003	FLATWASHER, 5/8 ø (F436)	1
			KIT WEIGHT LBS	65

LIST OF ADDITIONAL MATERIALS				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
9.	1	C10981407	ANTENNA MTG. PIPE 4 1/2 ø X 7'-0	58
10.	4	C40034032	U-BOLT ASSEMBLY 5/8 ø X 5 3/16 C-C (PIPE MOUNTS)	9
			ADDITIONAL WEIGHT LBS	67

TOTAL WEIGHT LBS	132

UNLESS OTHERWISE SPECIFIED
ALL DIMENSIONS INCLUDE FINISHES AND ARE IN INCHES

TOLERANCES: FRACTIONS ± 1/16"
ANGLES ± 1/2 DEG.
DECIMALS ± .010"

MATERIAL:

TOLERANCES DO NOT APPLY TO RAW MATERIAL

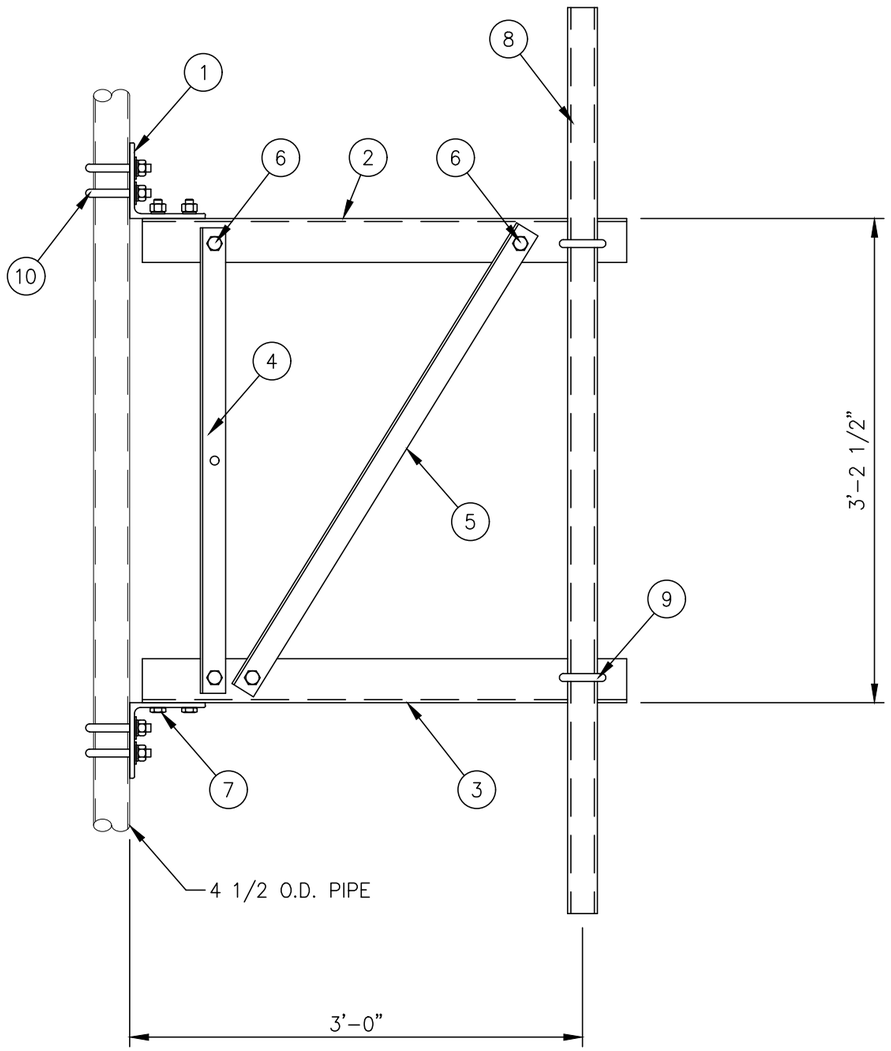
REV	DATE	DRW	CHK	DESCRIPTION

Sabre Industries™
INNOVATION DELIVERED

CONFIDENTIAL
This document and the information contained herein is the confidential trade secret property of Sabre Industries, Inc. ("Sabre") and must not be reproduced, copied or used, in whole or in part, for any purpose without the prior written consent of Sabre.
© 2025 Sabre Industries, Inc. All rights reserved.

PIPE MOUNT: 165' ELEVATION
SITE: WIPPER, OR
CUSTOMER: MARION COUNTY OREGON

JOB NO. 563423		SIZE	DRAWING NO.	REV
DATE	8/7/25	B	563423-PM4	0
DRAWN BY	KMP			
CHECKED BY	ZAK		SCALE None	PAGE 1 OF 1



C10151103 3 FT. SIDEARM ASSEMBLY			
1	CK00060	SIDEARM ANGLE KIT	78
1	– – –	MISC HARDWARE (FRAMING)	4
1	C10900105	PIPE ANTENNA MOUNTING KIT 2 3/8" ø X 5'-0	19
4	C40034032	U-BOLT ASSEMBLY 5/8" ø X 5 3/16 C-C	9
		TOTAL WEIGHT LBS	110

CK00060 KIT LIST OF MATERIAL				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
1	2	CS00067	ANGLE, BOOM SUPPORT	23
2	1	CS01223	ANGLE, TOP CHORD	19
3	1	CS01224	ANGLE, BOTTOM CHORD	19
4	1	CS00065	ANGLE, VERTICAL	8
5	1	CS01228	ANGLE, DIAGONAL	9
			TOTAL WEIGHT LBS	78

MISC HARDWARE (FRAMING)				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
6	4	C40026022	BOLT ASSEMBLY, 5/8 ø X 1 3/4 A325	2
7	4	C40026023	BOLT ASSEMBLY, 5/8 ø X 2 A325	2
			TOTAL WEIGHT LBS	4

C10900105 ANTENNA PIPE MOUNTING KIT				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
8	1	C10981223	ANTENNA MTG. PIPE 2 3/8" ø X 5'-0	16
9	2	C40034023	U-BOLT ASSEMBLY 5/8" ø X 3 1/16 C-C	3
			TOTAL WEIGHT LBS	19

MISC HARDWARE				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
10	4	C40034032	U-BOLT ASSEMBLY 5/8" ø X 5 3/16 C-C	9
			TOTAL WEIGHT LBS	9

NOTES:

1. IF THE MOUNT IS NOT ON THE STRAIGHT PORTION OF THE TOWER SEE SITE SPECIFIC PIPE MOUNT.
2. QUANTITIES SHOWN IN LIST OF MATERIALS ARE FOR ONE (1) SIDEARM ASSEMBLY ONLY.

UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS INCLUDE FINISHES AND ARE IN INCHES

TOLERANCES: FRACTIONS ± 1/16" ANGLES ± 1/2 DEG. DECIMALS ± .010"

MATERIAL:

TOLERANCES DO NOT APPLY TO RAW MATERIAL

REV	DATE	DRW	CHK	DESCRIPTION

Sabre Industries™ INNOVATION DELIVERED

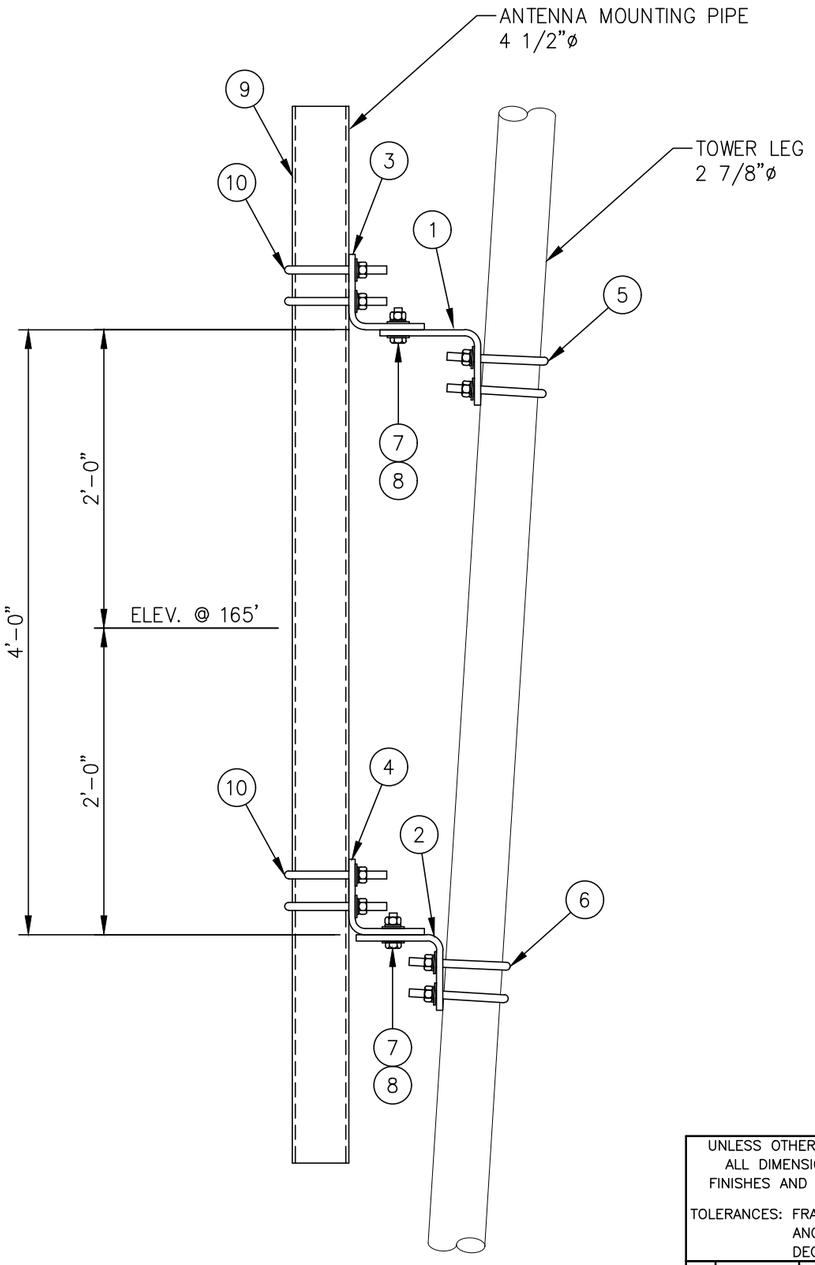
CONFIDENTIAL
This document and the information contained herein is the confidential trade secret property of Sabre Industries, Inc. ("Sabre") and must not be reproduced, copied or used, in whole or in part, for any purpose without the prior written consent of Sabre.
© 2025 Sabre Industries, Inc. All rights reserved.

3 FT. SIDEARM: 165' ELEVATION

SITE: WIPPER, OR

CUSTOMER: MARION COUNTY OREGON

JOB NO. 563423		SIZE	DRAWING NO.	REV
DATE	08/07/25	B	563423-SA3	0
DRAWN BY	KMP			
CHECKED BY	ZAK		SCALE NONE	PAGE 1 OF 1



ELEVATION VIEW

LIST OF MATERIALS FOR TAPERED LEG PIPE MOUNT KIT C10174018				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
1.	1	CS00216	TOP LEG MOUNT FOR 2 7/8 ø LEG	15
2.	1	CS00215	BOTTOM LEG MOUNT FOR 2 7/8 ø LEG	12
3.	1	CS00214	TOP PIPE MOUNT FOR 4 1/2 ø PIPE	15
4.	1	CS00215	BOTTOM PIPE MOUNT FOR 4 1/2 ø PIPE	12
5.	2	C40034025	U-BOLT ASSEMBLY 5/8 ø X 3 9/16 C-C (TOP LEG MOUNT)	4
6.	2	C40034025	U-BOLT ASSEMBLY 5/8 ø X 3 9/16 C-C (BOTTOM LEG MOUNT)	4
7.	4	C40026024	BOLT ASSEMBLY 5/8 ø X 2 1/4 A325	2
8.	8	C40031003	FLATWASHER, 5/8 ø (F436)	1
			KIT WEIGHT LBS	65

LIST OF ADDITIONAL MATERIALS				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
9.	1	C10981407	ANTENNA MTG. PIPE 4 1/2 ø X 7'-0	58
10.	4	C40034032	U-BOLT ASSEMBLY 5/8 ø X 5 3/16 C-C (PIPE MOUNTS)	9
			ADDITIONAL WEIGHT LBS	67

TOTAL WEIGHT LBS	132

UNLESS OTHERWISE SPECIFIED
ALL DIMENSIONS INCLUDE FINISHES AND ARE IN INCHES
TOLERANCES: FRACTIONS ± 1/16"
ANGLES ± 1/2 DEG.
DECIMALS ± .010"

MATERIAL:

TOLERANCES DO NOT APPLY TO RAW MATERIAL

REV	DATE	DRW	CHK	DESCRIPTION

Sabre Industries™
INNOVATION DELIVERED

CONFIDENTIAL

This document and the information contained herein is the confidential trade secret property of Sabre Industries, Inc. ("Sabre") and must not be reproduced, copied or used, in whole or in part, for any purpose without the prior written consent of Sabre.
© 2025 Sabre Industries, Inc. All rights reserved.

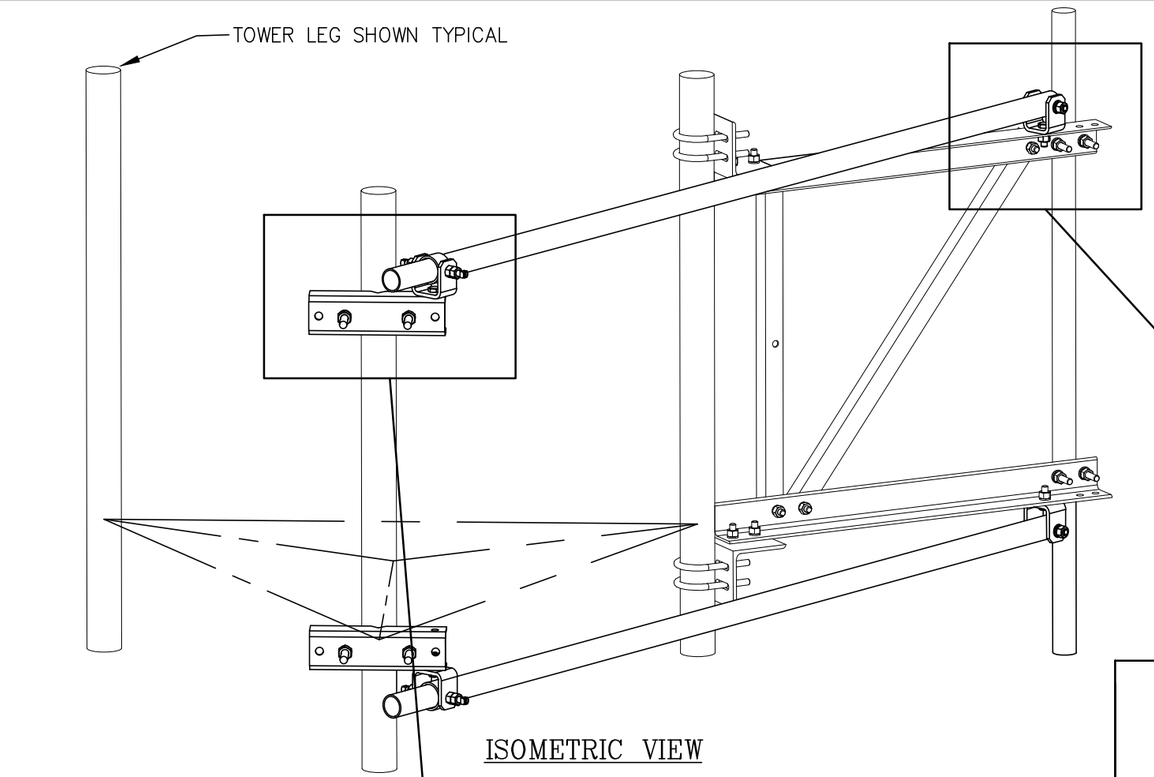
PIPE MOUNT FOR SIDEARM: 165' ELEVATION

SITE: WIPPER, OR

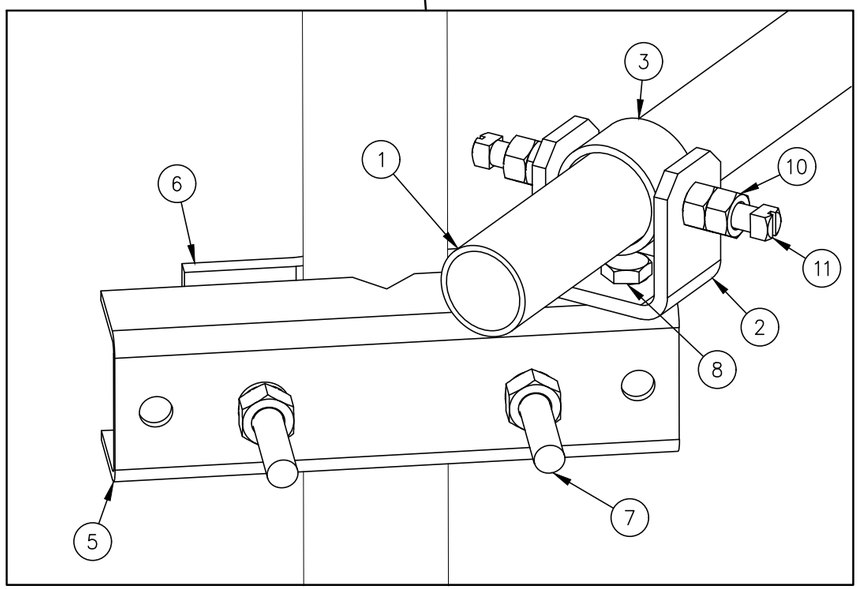
CUSTOMER: MARION COUNTY OREGON

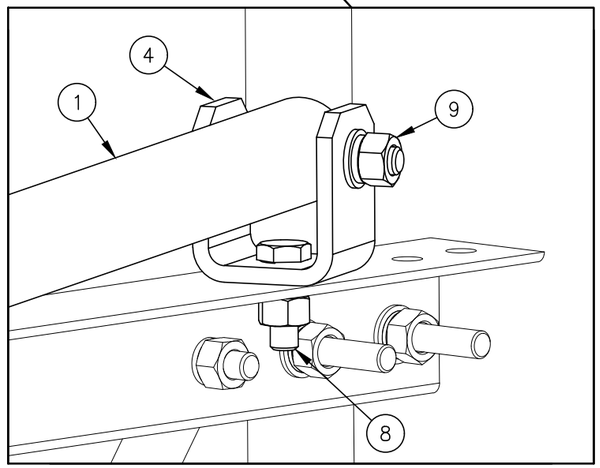
JOB NO. 563423		SIZE	DRAWING NO.	REV
DATE	8/7/25	B	563423-PM5	0
DRAWN BY	KMP			
CHECKED BY	ZAK		SCALE None	PAGE 1 OF 1

EXHIBIT K



ISOMETRIC VIEW





C10179002 SWIVEL KNUCKLE TIEBACK

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
1	1	CS02089	TIEBACK 2 3/8 X .134 X 13'-3"	43
2	1	CW00013	SWIVEL PLATE WELDMENT	3
3	1	CS00097	PIPE, SLEEVE 2 7/8 O.D. X W/0.203 X 0'-1 3/4	1
4	1	CS00098	BENT SWIVEL PLATE	3
5	1	CS01360	PLATE, MOUNTING BRACKET (FORMED CHANNEL)	9
6	1	CS01361	PLATE, 2 HOLE ADAPTER CLAMP	3
7	2	C40140001	BOLT ASSEMBLY, 3/4 X 10 A307 W/NUT, LKW, FLW	4
8	2	C40026023	BOLT ASSEMBLY, 5/8 ø X 2 A325	1
9	1	C40026033	BOLT ASSEMBLY, 5/8 ø X 4 1/2 A325	1
10	2	C40042007	HEX NUT, 5/8 A194 GRADE 2H	1
11	2	C40998007	SQ. HEAD SET SCREW, 5/8 X 2 1/2	1
			TOTAL WEIGHT LBS	70

QUANTITIES SHOWN ABOVE ARE FOR (1) SWIVEL KNUCKLE TIEBACK KIT ONLY.
(2) KITS ARE REQUIRED FOR THIS SIDEARM ASSEMBLY

UNLESS OTHERWISE SPECIFIED
ALL DIMENSIONS INCLUDE
FINISHES AND ARE IN INCHES

TOLERANCES: FRACTIONS ± 1/16"
ANGLES ± 1/2 DEG.
DECIMALS ± .010"

MATERIAL:

TOLERANCES DO NOT APPLY
TO RAW MATERIAL

REV	DATE	DRW	CHK	DESCRIPTION

Sabre Industries™
INNOVATION DELIVERED

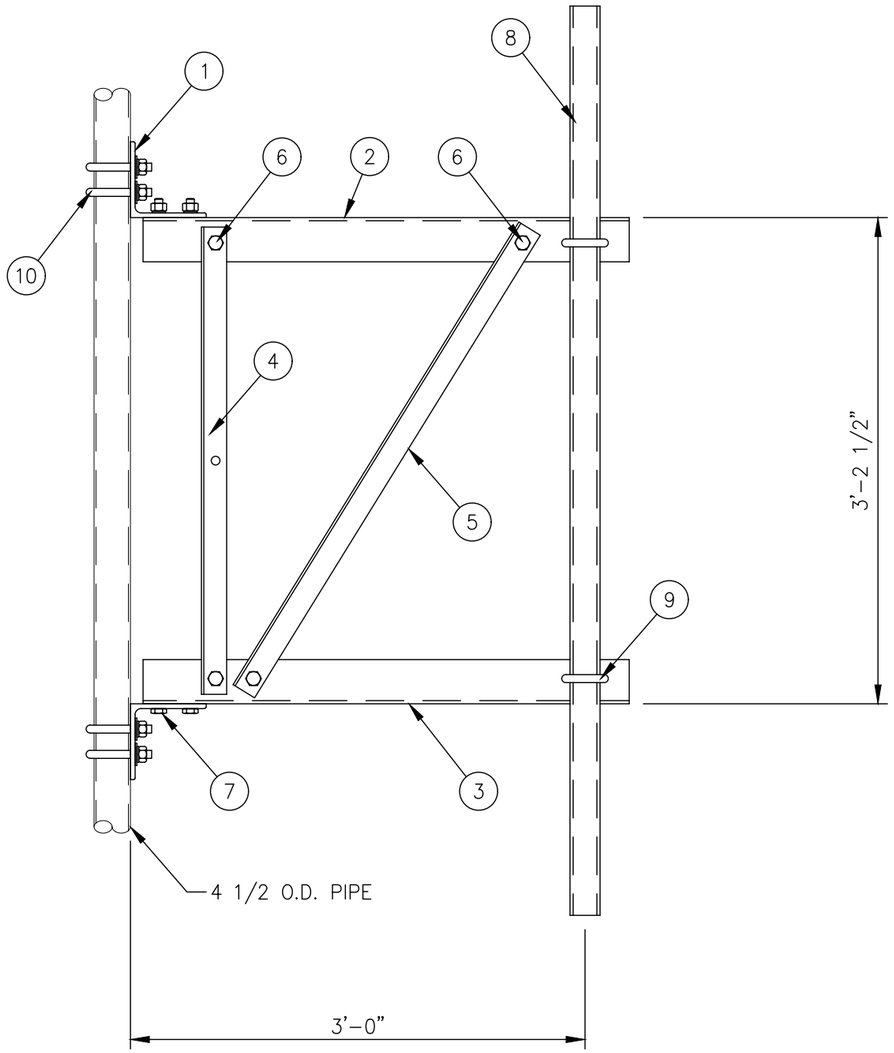
CONFIDENTIAL
This document and the information contained herein is the confidential trade secret property of Sabre Industries, Inc. ("Sabre") and must not be reproduced, copied or used, in whole or in part, for any purpose without the prior written consent of Sabre.
© 2025 Sabre Industries, Inc. All rights reserved.

SWIVEL KNUCKLE TIEBACKS: 165' ELEVATION

SITE: WIPPER, OR

CUSTOMER: MARION COUNTY OREGON

JOB NO. 563423		SIZE	DRAWING NO.	REV
DATE	08/07/25	B	563423-ST3	0
DRAWN BY	KMP			
CHECKED BY	ZAK		SCALE NONE	PAGE 1 OF 1



C10151103 3 FT. SIDEARM ASSEMBLY			
1	CK00060	SIDEARM ANGLE KIT	78
1	– – –	MISC HARDWARE (FRAMING)	4
1	C10900104	PIPE ANTENNA MOUNTING KIT 2 3/8" ø X 4'-0	16
4	C40034032	U-BOLT ASSEMBLY 5/8" ø X 5 3/16 C-C	9
		TOTAL WEIGHT LBS	107

CK00060 KIT LIST OF MATERIAL				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
1	2	CS00067	ANGLE, BOOM SUPPORT	23
2	1	CS01223	ANGLE, TOP CHORD	19
3	1	CS01224	ANGLE, BOTTOM CHORD	19
4	1	CS00065	ANGLE, VERTICAL	8
5	1	CS01228	ANGLE, DIAGONAL	9
			TOTAL WEIGHT LBS	78

MISC HARDWARE (FRAMING)				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
6	4	C40026022	BOLT ASSEMBLY, 5/8 ø X 1 3/4 A325	2
7	4	C40026023	BOLT ASSEMBLY, 5/8 ø X 2 A325	2
			TOTAL WEIGHT LBS	4

C10900104 ANTENNA PIPE MOUNTING KIT				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
8	1	C10981204	ANTENNA MTG. PIPE 2 3/8" ø X 4'-0	13
9	2	C40034023	U-BOLT ASSEMBLY 5/8" ø X 3 1/16 C-C	3
			TOTAL WEIGHT LBS	16

MISC HARDWARE				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
10	4	C40034032	U-BOLT ASSEMBLY 5/8" ø X 5 3/16 C-C	9
			TOTAL WEIGHT LBS	9

NOTES:

1. IF THE MOUNT IS NOT ON THE STRAIGHT PORTION OF THE TOWER SEE SITE SPECIFIC PIPE MOUNT.
2. QUANTITIES SHOWN IN LIST OF MATERIALS ARE FOR ONE (1) SIDEARM ASSEMBLY ONLY.

UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS INCLUDE FINISHES AND ARE IN INCHES

TOLERANCES: FRACTIONS ± 1/16" ANGLES ± 1/2 DEG. DECIMALS ± .010"

MATERIAL:

TOLERANCES DO NOT APPLY TO RAW MATERIAL

REV	DATE	DRW	CHK	DESCRIPTION

Sabre Industries™ INNOVATION DELIVERED

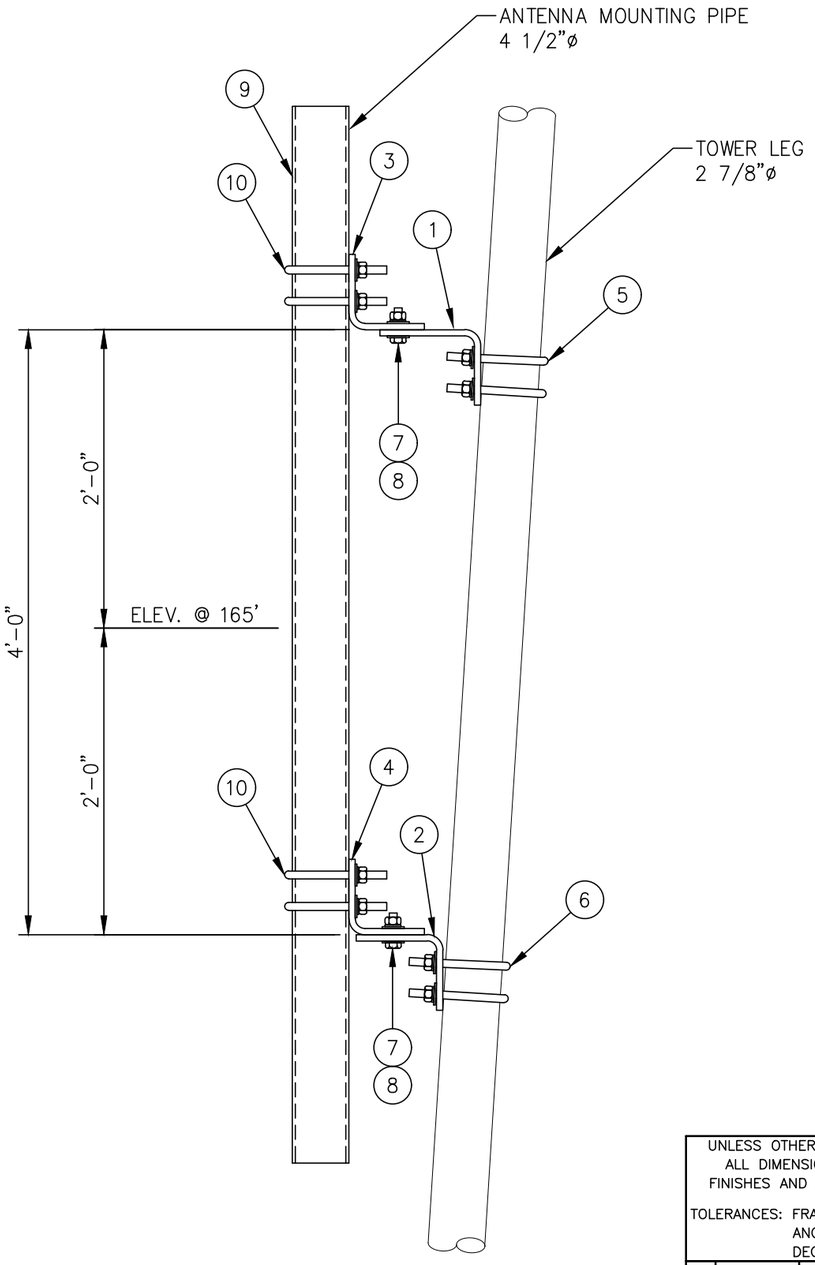
CONFIDENTIAL
This document and the information contained herein is the confidential trade secret property of Sabre Industries, Inc. ("Sabre") and must not be reproduced, copied or used, in whole or in part, for any purpose without the prior written consent of Sabre.
© 2025 Sabre Industries, Inc. All rights reserved.

3 FT. SIDEARM: 163' ELEVATION

SITE: WIPPER, OR

CUSTOMER: MARION COUNTY OREGON

JOB NO. 563423		SIZE	DRAWING NO.	REV
DATE	08/07/25	B	563423-SA4	0
DRAWN BY	KMP			
CHECKED BY	ZAK		SCALE NONE	PAGE 1 OF 1



ELEVATION VIEW

LIST OF MATERIALS FOR TAPERED LEG PIPE MOUNT KIT C10174018				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
1.	1	CS00216	TOP LEG MOUNT FOR 2 7/8 ø LEG	15
2.	1	CS00215	BOTTOM LEG MOUNT FOR 2 7/8 ø LEG	12
3.	1	CS00214	TOP PIPE MOUNT FOR 4 1/2 ø PIPE	15
4.	1	CS00215	BOTTOM PIPE MOUNT FOR 4 1/2 ø PIPE	12
5.	2	C40034025	U-BOLT ASSEMBLY 5/8 ø X 3 9/16 C-C (TOP LEG MOUNT)	4
6.	2	C40034025	U-BOLT ASSEMBLY 5/8 ø X 3 9/16 C-C (BOTTOM LEG MOUNT)	4
7.	4	C40026024	BOLT ASSEMBLY 5/8 ø X 2 1/4 A325	2
8.	8	C40031003	FLATWASHER, 5/8 ø (F436)	1
			KIT WEIGHT LBS	65

LIST OF ADDITIONAL MATERIALS				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
9.	1	C10981407	ANTENNA MTG. PIPE 4 1/2 ø X 7'-0	58
10.	4	C40034032	U-BOLT ASSEMBLY 5/8 ø X 5 3/16 C-C (PIPE MOUNTS)	9
			ADDITIONAL WEIGHT LBS	67

TOTAL WEIGHT LBS	132

UNLESS OTHERWISE SPECIFIED
ALL DIMENSIONS INCLUDE FINISHES AND ARE IN INCHES
TOLERANCES: FRACTIONS ± 1/16"
ANGLES ± 1/2 DEG.
DECIMALS ± .010"

MATERIAL:

TOLERANCES DO NOT APPLY TO RAW MATERIAL

REV	DATE	DRW	CHK	DESCRIPTION

Sabre Industries™
INNOVATION DELIVERED

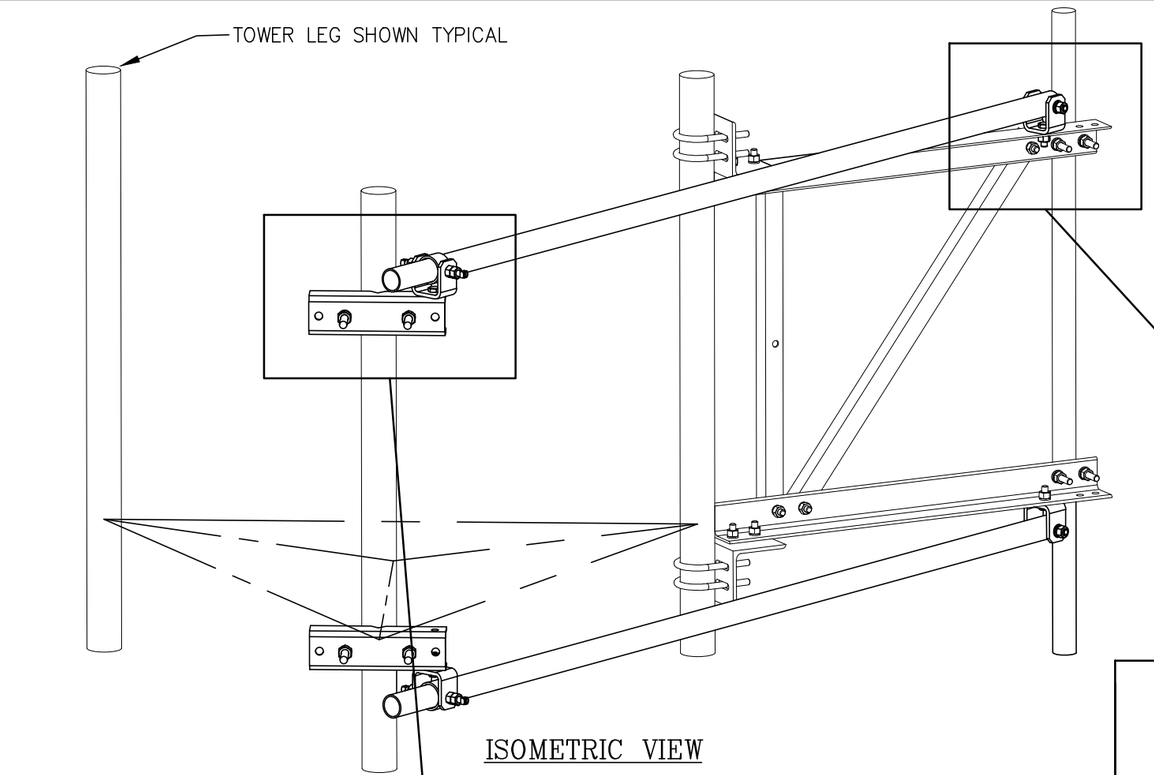
CONFIDENTIAL

This document and the information contained herein is the confidential trade secret property of Sabre Industries, Inc. ("Sabre") and must not be reproduced, copied or used, in whole or in part, for any purpose without the prior written consent of Sabre.
© 2025 Sabre Industries, Inc. All rights reserved.

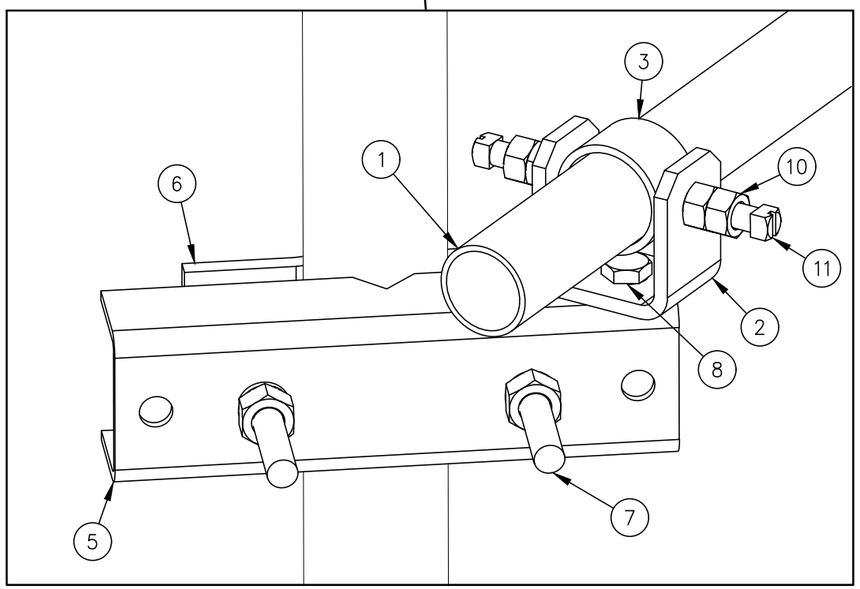
PIPE MOUNT FOR SIDEARM: 163' ELEVATION
SITE: WIPPER, OR
CUSTOMER: MARION COUNTY OREGON

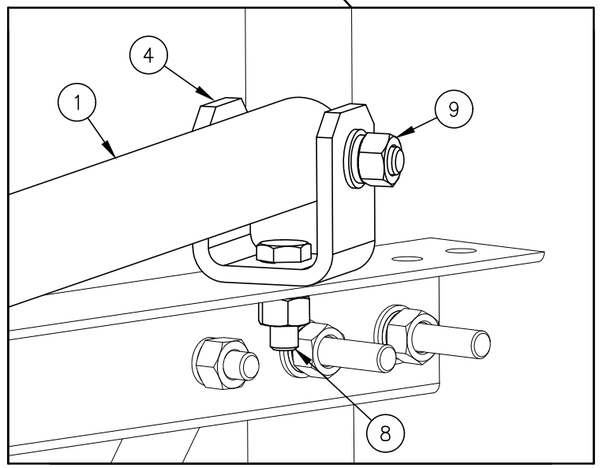
JOB NO. 563423		SIZE	DRAWING NO.	REV
DATE	8/7/25	B	563423-PM6	0
DRAWN BY	KMP			
CHECKED BY	ZAK		SCALE None	PAGE 1 OF 1

EXHIBIT K



ISOMETRIC VIEW





C10179002 SWIVEL KNUCKLE TIEBACK

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
1	1	CS02089	TIEBACK 2 3/8 X .134 X 13'-3"	43
2	1	CW00013	SWIVEL PLATE WELDMENT	3
3	1	CS00097	PIPE, SLEEVE 2 7/8 O.D. X W/0.203 X 0'-1 3/4	1
4	1	CS00098	BENT SWIVEL PLATE	3
5	1	CS01360	PLATE, MOUNTING BRACKET (FORMED CHANNEL)	9
6	1	CS01361	PLATE, 2 HOLE ADAPTER CLAMP	3
7	2	C40140001	BOLT ASSEMBLY, 3/4 X 10 A307 W/NUT, LKW, FLW	4
8	2	C40026023	BOLT ASSEMBLY, 5/8 ø X 2 A325	1
9	1	C40026033	BOLT ASSEMBLY, 5/8 ø X 4 1/2 A325	1
10	2	C40042007	HEX NUT, 5/8 A194 GRADE 2H	1
11	2	C40998007	SQ. HEAD SET SCREW, 5/8 X 2 1/2	1
			TOTAL WEIGHT LBS	70

QUANTITIES SHOWN ABOVE ARE FOR (1) SWIVEL KNUCKLE TIEBACK KIT ONLY.
(2) KITS ARE REQUIRED FOR THIS SIDEARM ASSEMBLY

UNLESS OTHERWISE SPECIFIED
ALL DIMENSIONS INCLUDE
FINISHES AND ARE IN INCHES

TOLERANCES: FRACTIONS ± 1/16"
ANGLES ± 1/2 DEG.
DECIMALS ± .010"

MATERIAL:

TOLERANCES DO NOT APPLY TO RAW MATERIAL

REV	DATE	DRW	CHK	DESCRIPTION

Sabre Industries™
INNOVATION DELIVERED

CONFIDENTIAL
This document and the information contained herein is the confidential trade secret property of Sabre Industries, Inc. ("Sabre") and must not be reproduced, copied or used, in whole or in part, for any purpose without the prior written consent of Sabre.
© 2025 Sabre Industries, Inc. All rights reserved.

SWIVEL KNUCKLE TIEBACKS: 163' ELEVATION

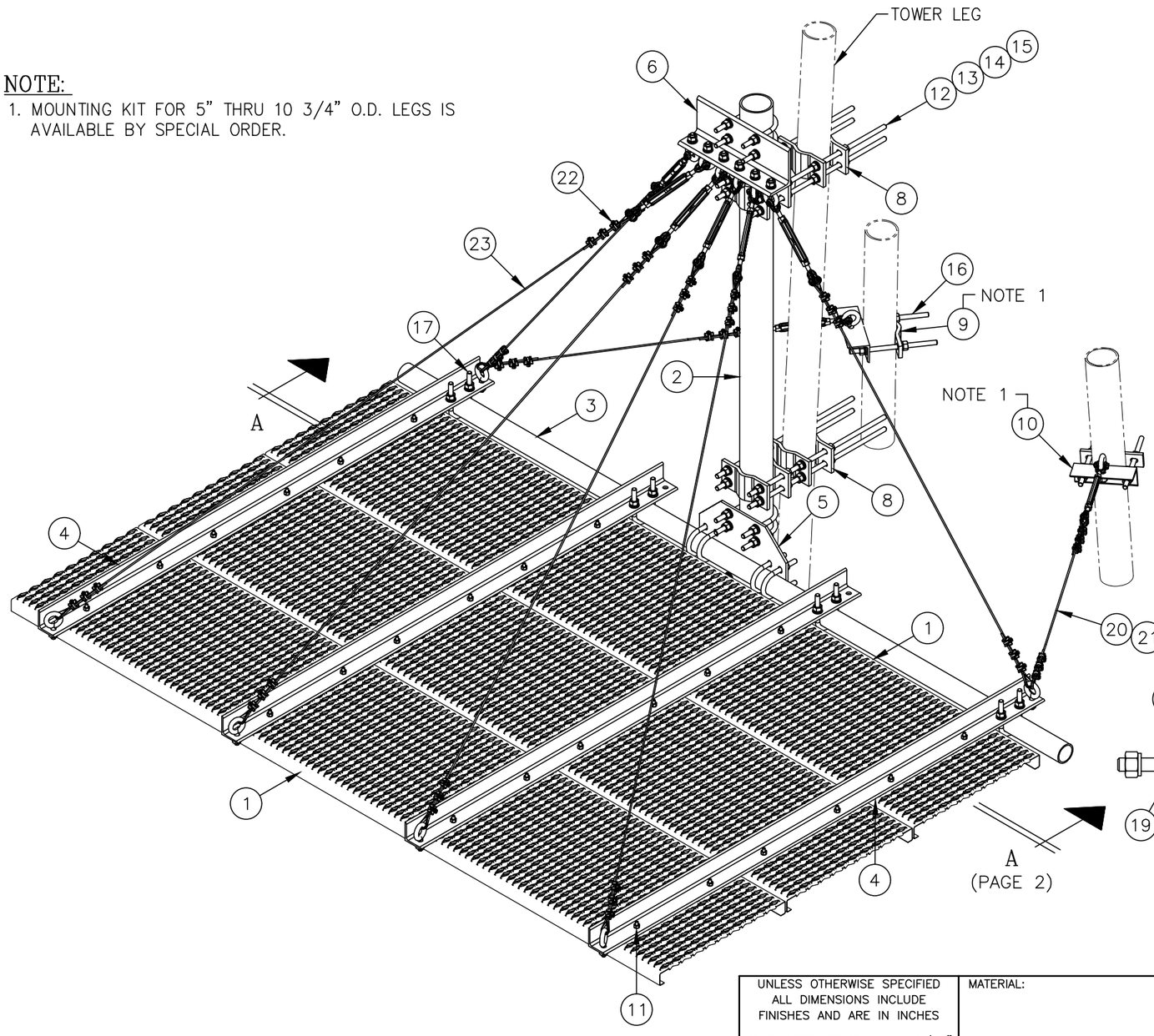
SITE: WIPPER, OR

CUSTOMER: MARION COUNTY OREGON

JOB NO. 563423		SIZE	DRAWING NO.	REV
DATE	08/07/25	B	563423-ST4	0
DRAWN BY	KMP			
CHECKED BY	ZAK		SCALE NONE	PAGE 1 OF 1

NOTE:

1. MOUNTING KIT FOR 5" THRU 10 3/4" O.D. LEGS IS AVAILABLE BY SPECIAL ORDER.

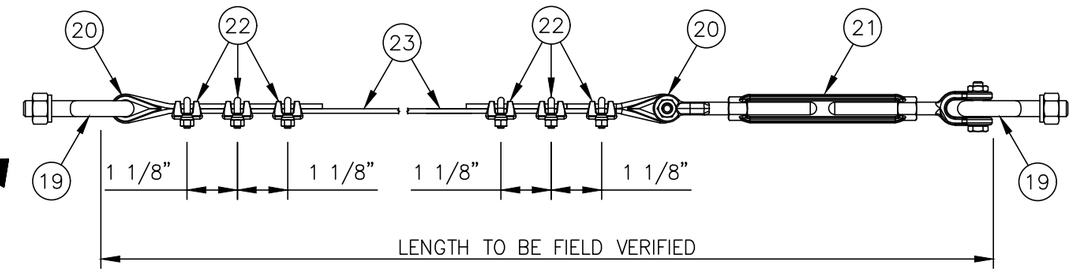


ISOMETRIC VIEW

(SEE PAGE 2 FOR MORE DETAILS)

C30085002 ICE SHIELD ASSEMBLY

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT
1.	3	C20137002	SAFETY GRATING, 2'-0 WIDE BY 10'-0 LONG	222
2.	1	C10981407	PIPE, 4 1/2" O.D. X W/0.180 X 7'-0	58
3.	1	C10901310	PIPE, 2 7/8" O.D. X W/0.203 X 10'-6	63
4.	4	CS00155	ANGLE, ICE SHIELD SUPPORT	143
5.	1	CS00156	PLATE, ICE SHIELD MOUNT	22
6.	1	CS01926	ANGLE, ICE SHIELD HANGER	19
7.	12	CS00158	PLATE, ICE SHIELD BACKUP	28
8.	8	CS00017	4 HOLE ADAPTER CLAMP 1 1/2" TO 5" O.D.	39
9.	2	CS00144	2 HOLE ADAPTER CLAMP 1 1/2" TO 5" O.D.	5
10.	2	CS01925	ANGLE, ICE SHIELD TIE BACK	7
11.	24	C40024006	BOLT ASSEMBLY, 3/8 ø X 2 GR 5	2
12.	16	C40042007	NUT, 5/8 ø A194 GRADE 2H	1
13.	16	C40030012	LOCKWASHER, 5/8 ø	1
14.	16	C40031003	FLATWASHER, 5/8 ø HARDENED ASTM F436	1
15.	8	C40099004	THREADED ROD ASS'Y, 5/8 ø X 2'-2 ASTM A193	22
16.	4	C40099002	THREADED ROD ASS'Y, 5/8 ø X 1'-0 ASTM A193	6
17.	8	C40034025	U-BOLT ASSEMBLY, 5/8 ø X 3 9/16" C-C	14
18.	6	C40034032	U-BOLT ASSEMBLY, 5/8 ø X 5 3/16" C-C	13
19.	14	C40079002	EYEBOLT ASSEMBLY, 5/8 ø X 1 3/4	8
20.	16	C40055011	THIMBLE, 3/16" STD	1
21.	8	C40051018	TURNBUCKLE, 1/2" X 6" J & J HDG	12
22.	48	C40056001	WIRE ROPE CLIP, 3/16"	5
23.	1	C30998120	AIRCRAFT CABLE, 3/16" X 120'-0	9
			TOTAL WEIGHT	701



TYPICAL CABLE ASSEMBLY

UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS INCLUDE FINISHES AND ARE IN INCHES

TOLERANCES: FRACTIONS ± 1/16" ANGLES ± 1/2 DEG. DECIMALS ± .010"

MATERIAL:

TOLERANCES DO NOT APPLY TO RAW MATERIAL

REV	DATE	DRW	CHK	DESCRIPTION
4	1/29/09	WRF	MC	REVISED PART NUMBERS OF ITEMS 6, 10, & EYEBOLTS WERE 3/8" & TURNB. WERE 1/4"
3	1/13/09	MLC	MC	REVISE PIPE (ITEM 2)
2	06/21/06	WRF	WMN	ADDED ISOMETRIC VIEW
1	4/4/03	KLE	DLW	REVISED PART NUMBERS

Sabre Industries™ INNOVATION DELIVERED

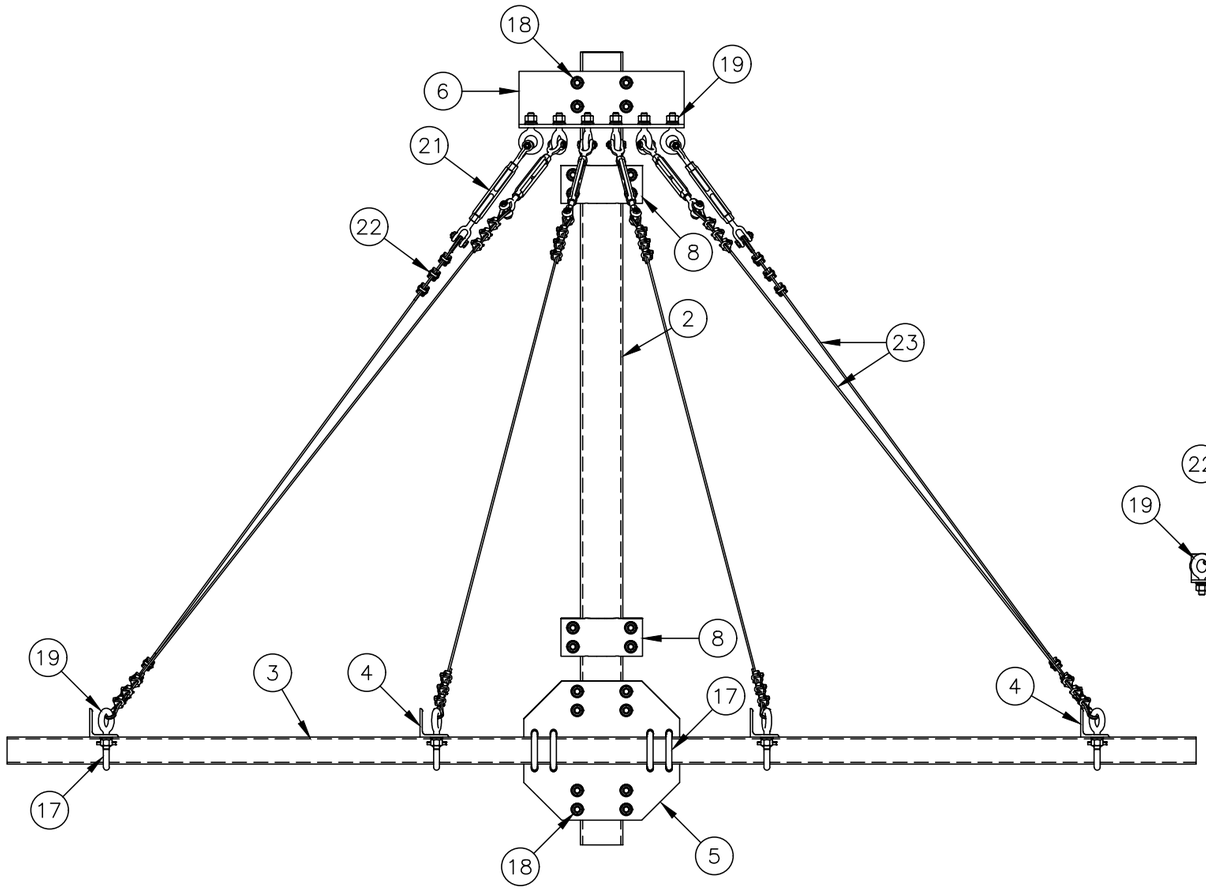
CONFIDENTIAL

This document and the information contained herein is the confidential trade secret property of Sabre Industries, Inc. ("Sabre") and must not be reproduced, copied or used, in whole or in part, for any purpose without the prior written consent of Sabre.

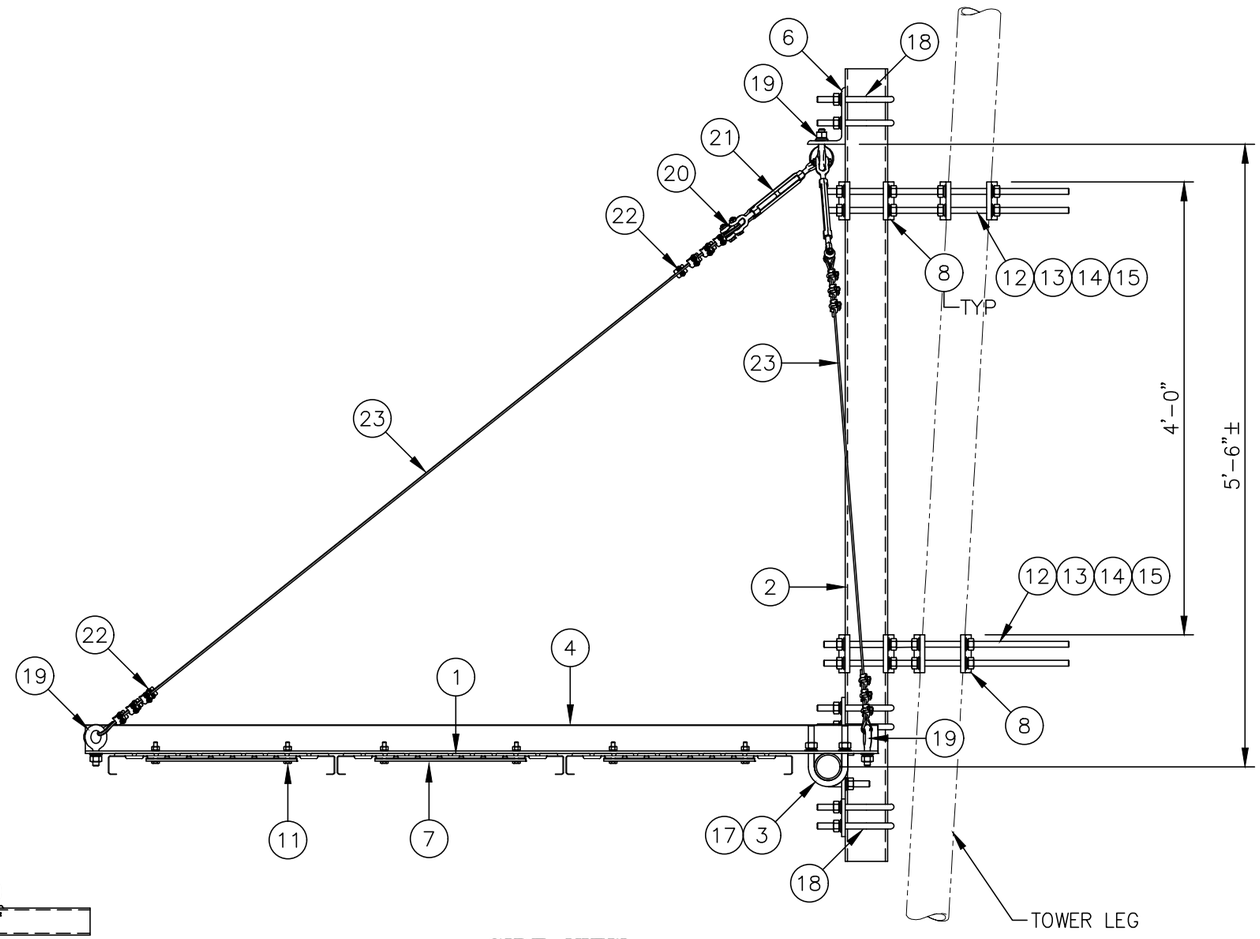
© 2022 Sabre Industries, Inc. All rights reserved.

ICE SHIELD ASSEMBLY FOR 6'-0 & 8'-0 DISH ANTENNA FITS 1 1/2 ø TO 5 ø LEGS

		SIZE	DRAWING NO.	REV
DATE	01/11/01	B	C30085002	4
DRAWN BY	BCT			
CHECKED BY	KLE		SCALE None	PAGE 1 OF 2



SECTION A–A
(GRATING REMOVED FOR CLARITY)



SIDE VIEW

REV	DATE	DRW	CHK	DESCRIPTION
4	1/29/09	WRF	MC	REVISED PART NUMBERS OF ITEMS 6, 10, & EYEBOLTS WERE 3/8" & TURNB. WERE 1/4"
3	1/13/09	MLC	MC	REVISE PIPE (ITEM 2)
2	06/21/06	WRF	WMN	ADDED ISOMETRIC VIEW
1	4/4/03	KLE	DLW	REVISED PART NUMBERS

UNLESS OTHERWISE SPECIFIED
ALL DIMENSIONS INCLUDE FINISHES AND ARE IN INCHES
TOLERANCES: FRACTIONS ± 1/16"
ANGLES ± 1/2 DEG.
DECIMALS ± .010"

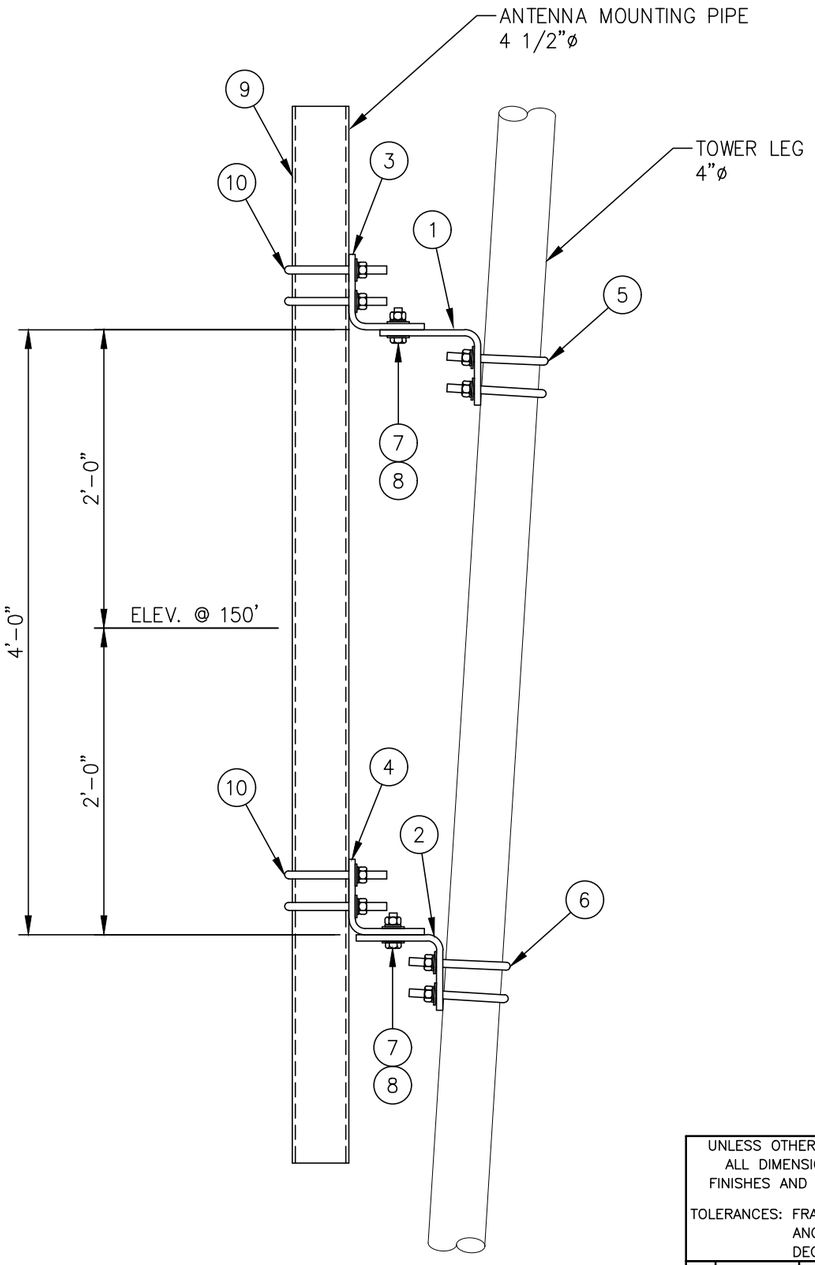
MATERIAL:
TOLERANCES DO NOT APPLY TO RAW MATERIAL

Sabre Industries™
INNOVATION DELIVERED

CONFIDENTIAL
This document and the information contained herein is the confidential trade secret property of Sabre Industries, Inc. ("Sabre") and must not be reproduced, copied or used, in whole or in part, for any purpose without the prior written consent of Sabre.
© 2022 Sabre Industries, Inc. All rights reserved.

ICE SHIELD ASSEMBLY
FOR 6'–0 & 8'–0 DISH ANTENNA
FITS 1 1/2 ø TO 5 ø LEGS

		SIZE	DRAWING NO.	REV
DATE	01/11/01	B	C30085002	4
DRAWN BY	BCT			
CHECKED BY	KLE	SCALE None	PAGE 2 OF 2	



ELEVATION VIEW

LIST OF MATERIALS FOR TAPERED LEG PIPE MOUNT KIT C10174036				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
1.	1	CS00216	TOP LEG MOUNT FOR 4 ø LEG	15
2.	1	CS00215	BOTTOM LEG MOUNT FOR 4 ø LEG	12
3.	1	CS00214	TOP PIPE MOUNT FOR 4 1/2 ø PIPE	15
4.	1	CS00215	BOTTOM PIPE MOUNT FOR 4 1/2 ø PIPE	12
5.	2	C40034030	U-BOLT ASSEMBLY 5/8 ø X 4 11/16 C-C (TOP LEG MOUNT)	4
6.	2	C40034030	U-BOLT ASSEMBLY 5/8 ø X 4 11/16 C-C (BOTTOM LEG MOUNT)	4
7.	4	C40026024	BOLT ASSEMBLY 5/8 ø X 2 1/4 A325	2
8.	8	C40031003	FLATWASHER, 5/8 ø (F436)	1
			KIT WEIGHT LBS	65

LIST OF ADDITIONAL MATERIALS				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
9.	1	C10981407	ANTENNA MTG. PIPE 4 1/2 ø X 7'-0	58
10.	4	C40034032	U-BOLT ASSEMBLY 5/8 ø X 5 3/16 C-C (PIPE MOUNTS)	9
			ADDITIONAL WEIGHT LBS	67

TOTAL WEIGHT LBS	132

UNLESS OTHERWISE SPECIFIED
ALL DIMENSIONS INCLUDE FINISHES AND ARE IN INCHES

TOLERANCES: FRACTIONS ± 1/16"
ANGLES ± 1/2 DEG.
DECIMALS ± .010"

MATERIAL:

TOLERANCES DO NOT APPLY TO RAW MATERIAL

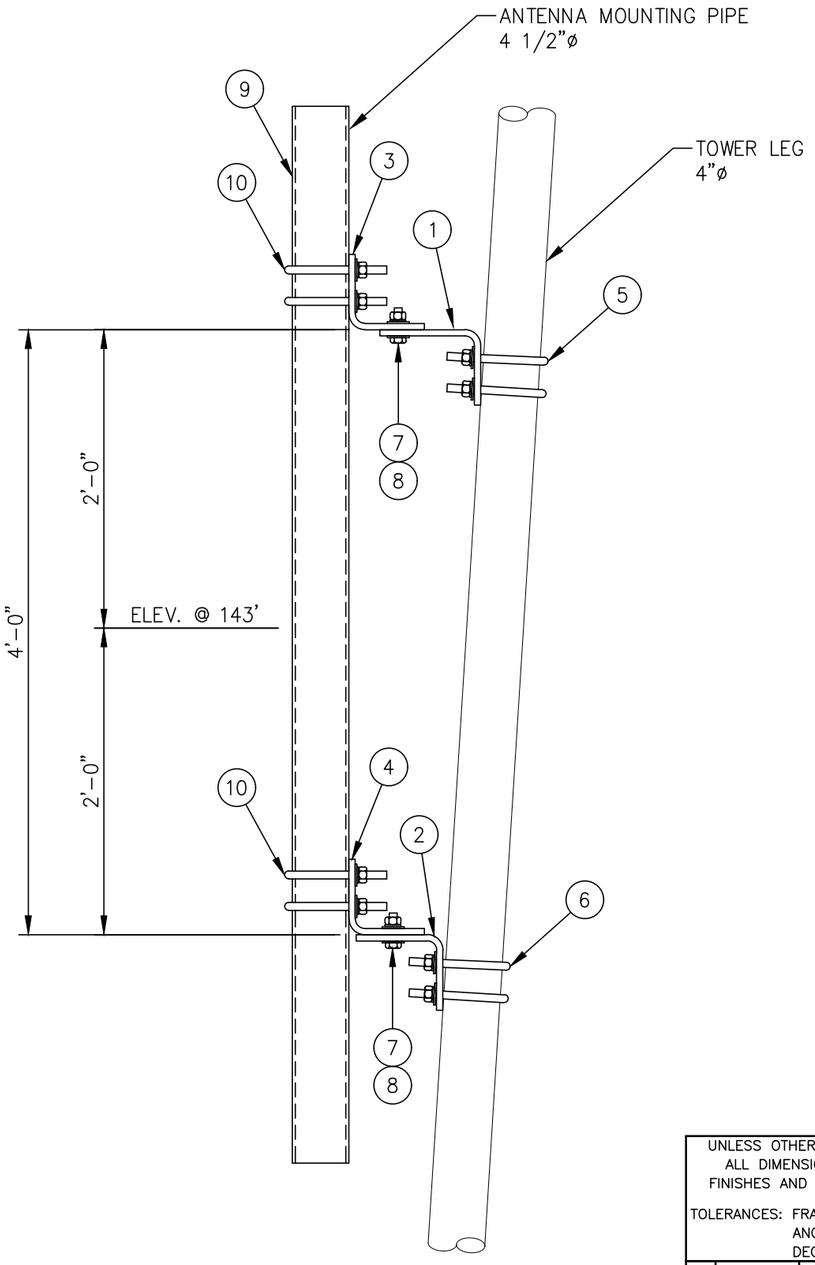
REV	DATE	DRW	CHK	DESCRIPTION

Sabre Industries™
INNOVATION DELIVERED

CONFIDENTIAL
This document and the information contained herein is the confidential trade secret property of Sabre Industries, Inc. ("Sabre") and must not be reproduced, copied or used, in whole or in part, for any purpose without the prior written consent of Sabre.
© 2025 Sabre Industries, Inc. All rights reserved.

PIPE MOUNTS: 150' ELEVATION
SITE: WIPPER, OR
CUSTOMER: MARION COUNTY OREGON

JOB NO. 563423		SIZE	DRAWING NO.	REV
DATE	8/7/25	B	563423-PM7	0
DRAWN BY	KMP			
CHECKED BY	ZAK		SCALE None	PAGE 1 OF 1



ELEVATION VIEW

LIST OF MATERIALS FOR TAPERED LEG PIPE MOUNT KIT C10174036				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
1.	1	CS00216	TOP LEG MOUNT FOR 4 ø LEG	15
2.	1	CS00215	BOTTOM LEG MOUNT FOR 4 ø LEG	12
3.	1	CS00214	TOP PIPE MOUNT FOR 4 1/2 ø PIPE	15
4.	1	CS00215	BOTTOM PIPE MOUNT FOR 4 1/2 ø PIPE	12
5.	2	C40034030	U-BOLT ASSEMBLY 5/8 ø X 4 11/16 C-C (TOP LEG MOUNT)	4
6.	2	C40034030	U-BOLT ASSEMBLY 5/8 ø X 4 11/16 C-C (BOTTOM LEG MOUNT)	4
7.	4	C40026024	BOLT ASSEMBLY 5/8 ø X 2 1/4 A325	2
8.	8	C40031003	FLATWASHER, 5/8 ø (F436)	1
			KIT WEIGHT LBS	65

LIST OF ADDITIONAL MATERIALS				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
9.	1	C10981407	ANTENNA MTG. PIPE 4 1/2 ø X 7'-0	58
10.	4	C40034032	U-BOLT ASSEMBLY 5/8 ø X 5 3/16 C-C (PIPE MOUNTS)	9
			ADDITIONAL WEIGHT LBS	67

TOTAL WEIGHT LBS	132

UNLESS OTHERWISE SPECIFIED
ALL DIMENSIONS INCLUDE FINISHES AND ARE IN INCHES

TOLERANCES: FRACTIONS ± 1/16"
ANGLES ± 1/2 DEG.
DECIMALS ± .010"

MATERIAL:

TOLERANCES DO NOT APPLY TO RAW MATERIAL

REV	DATE	DRW	CHK	DESCRIPTION

Sabre Industries™
INNOVATION DELIVERED

CONFIDENTIAL

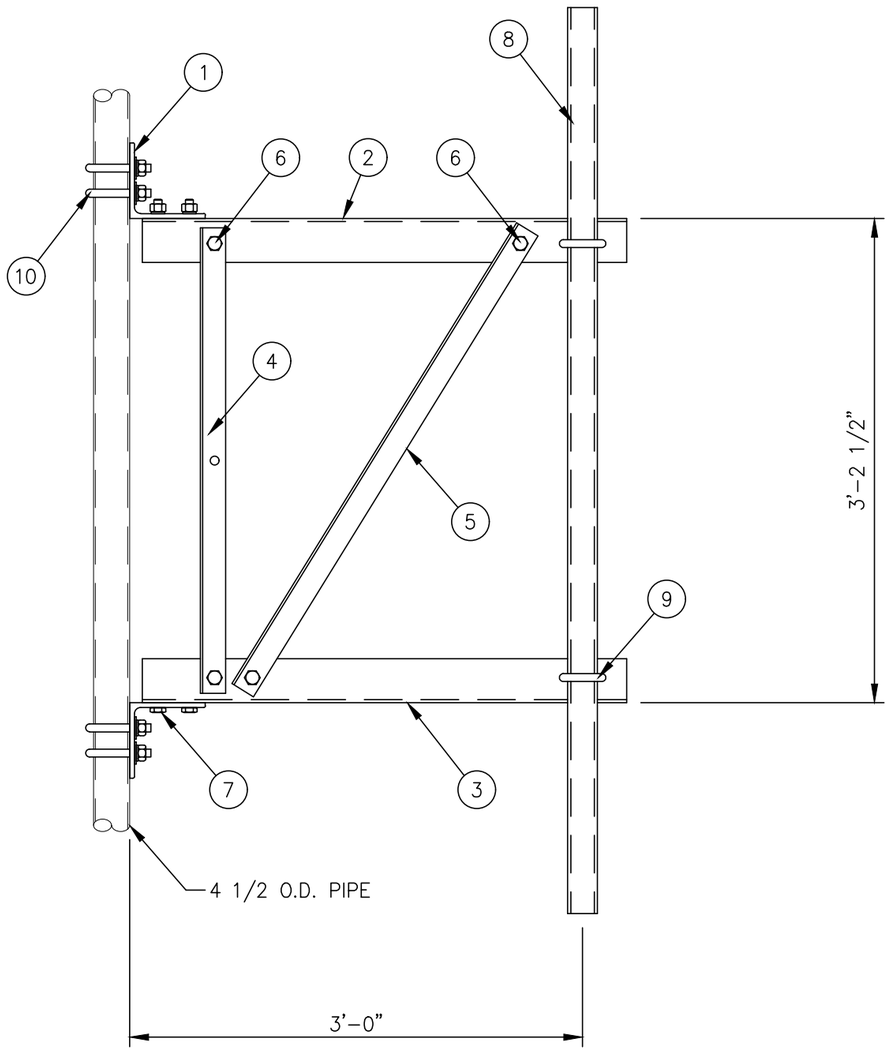
This document and the information contained herein is the confidential trade secret property of Sabre Industries, Inc. ("Sabre") and must not be reproduced, copied or used, in whole or in part, for any purpose without the prior written consent of Sabre.
© 2025 Sabre Industries, Inc. All rights reserved.

PIPE MOUNT: 143' ELEVATION

SITE: WIPPER, OR

CUSTOMER: MARION COUNTY OREGON

JOB NO. 563423		SIZE	DRAWING NO.	REV
DATE	8/7/25	B	563423-PM8	0
DRAWN BY	KMP			
CHECKED BY	ZAK		SCALE None	PAGE 1 OF 1



C10151103 3 FT. SIDEARM ASSEMBLY			
1	CK00060	SIDEARM ANGLE KIT	78
1	– – –	MISC HARDWARE (FRAMING)	4
1	C10900105	PIPE ANTENNA MOUNTING KIT 2 3/8" ø X 5'-0	19
4	C40034032	U-BOLT ASSEMBLY 5/8" ø X 5 3/16 C-C	9
		TOTAL WEIGHT LBS	110

CK00060 KIT LIST OF MATERIAL				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
1	2	CS00067	ANGLE, BOOM SUPPORT	23
2	1	CS01223	ANGLE, TOP CHORD	19
3	1	CS01224	ANGLE, BOTTOM CHORD	19
4	1	CS00065	ANGLE, VERTICAL	8
5	1	CS01228	ANGLE, DIAGONAL	9
			TOTAL WEIGHT LBS	78

MISC HARDWARE (FRAMING)				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
6	4	C40026022	BOLT ASSEMBLY, 5/8 ø X 1 3/4 A325	2
7	4	C40026023	BOLT ASSEMBLY, 5/8 ø X 2 A325	2
			TOTAL WEIGHT LBS	4

C10900105 ANTENNA PIPE MOUNTING KIT				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
8	1	C10981223	ANTENNA MTG. PIPE 2 3/8" ø X 5'-0	16
9	2	C40034023	U-BOLT ASSEMBLY 5/8" ø X 3 1/16 C-C	3
			TOTAL WEIGHT LBS	19

MISC HARDWARE				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
10	4	C40034032	U-BOLT ASSEMBLY 5/8" ø X 5 3/16 C-C	9
			TOTAL WEIGHT LBS	9

NOTES:

1. IF THE MOUNT IS NOT ON THE STRAIGHT PORTION OF THE TOWER SEE SITE SPECIFIC PIPE MOUNT.
2. QUANTITIES SHOWN IN LIST OF MATERIALS ARE FOR ONE (1) SIDEARM ASSEMBLY ONLY.

UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS INCLUDE FINISHES AND ARE IN INCHES

TOLERANCES: FRACTIONS ± 1/16" ANGLES ± 1/2 DEG. DECIMALS ± .010"

MATERIAL:

TOLERANCES DO NOT APPLY TO RAW MATERIAL

REV	DATE	DRW	CHK	DESCRIPTION

Sabre Industries™ INNOVATION DELIVERED

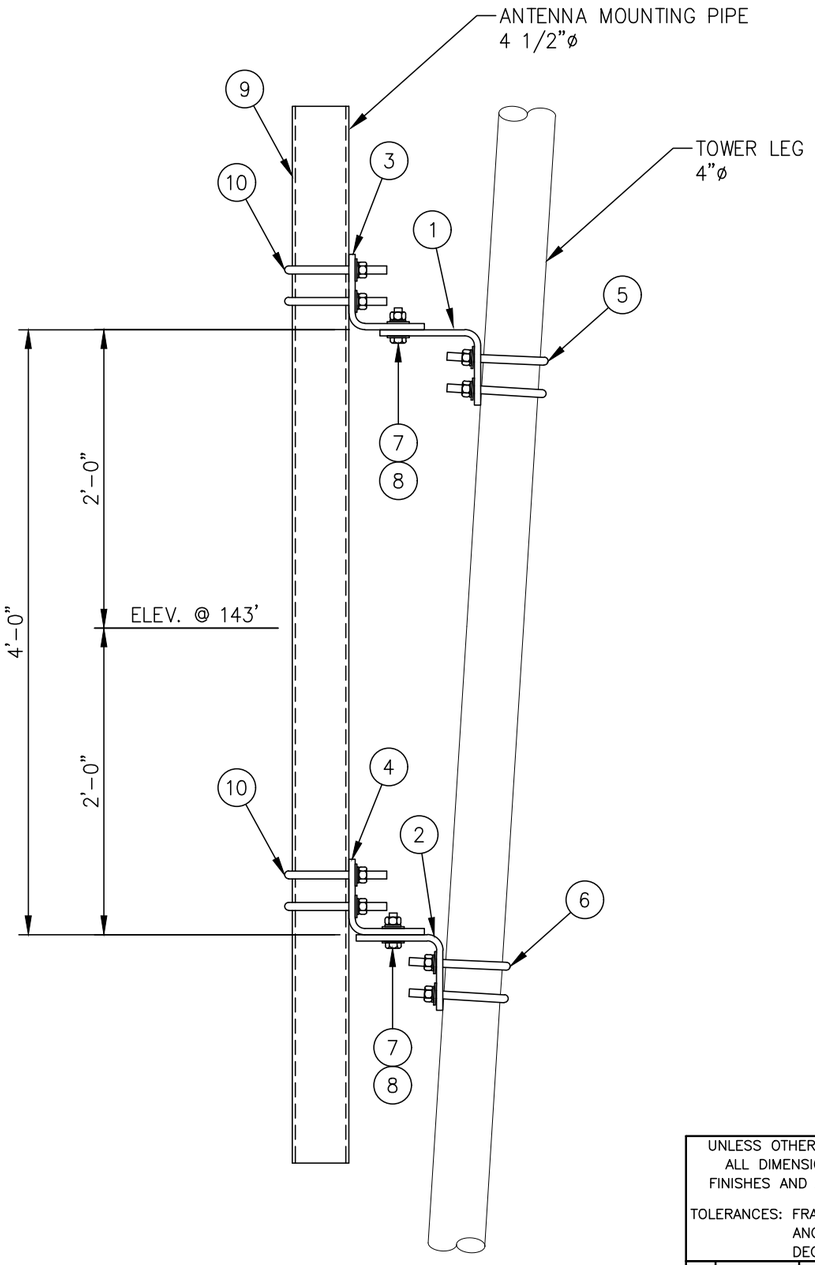
CONFIDENTIAL
This document and the information contained herein is the confidential trade secret property of Sabre Industries, Inc. ("Sabre") and must not be reproduced, copied or used, in whole or in part, for any purpose without the prior written consent of Sabre.
© 2025 Sabre Industries, Inc. All rights reserved.

3 FT. SIDEARM: 143' ELEVATION

SITE: WIPPER, OR

CUSTOMER: MARION COUNTY OREGON

JOB NO. 563423		SIZE	DRAWING NO.	REV
DATE	08/07/25	B	563423-SA5	0
DRAWN BY	KMP			
CHECKED BY	ZAK		SCALE NONE	PAGE 1 OF 1



ELEVATION VIEW

LIST OF MATERIALS FOR TAPERED LEG PIPE MOUNT KIT C10174036				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
1.	1	CS00216	TOP LEG MOUNT FOR 4 ø LEG	15
2.	1	CS00215	BOTTOM LEG MOUNT FOR 4 ø LEG	12
3.	1	CS00214	TOP PIPE MOUNT FOR 4 1/2 ø PIPE	15
4.	1	CS00215	BOTTOM PIPE MOUNT FOR 4 1/2 ø PIPE	12
5.	2	C40034030	U-BOLT ASSEMBLY 5/8 ø X 4 11/16 C-C (TOP LEG MOUNT)	4
6.	2	C40034030	U-BOLT ASSEMBLY 5/8 ø X 4 11/16 C-C (BOTTOM LEG MOUNT)	4
7.	4	C40026024	BOLT ASSEMBLY 5/8 ø X 2 1/4 A325	2
8.	8	C40031003	FLATWASHER, 5/8 ø (F436)	1
			KIT WEIGHT LBS	65

LIST OF ADDITIONAL MATERIALS				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
9.	1	C10981407	ANTENNA MTG. PIPE 4 1/2 ø X 7'-0	58
10.	4	C40034032	U-BOLT ASSEMBLY 5/8 ø X 5 3/16 C-C (PIPE MOUNTS)	9
			ADDITIONAL WEIGHT LBS	67

TOTAL WEIGHT LBS	132

UNLESS OTHERWISE SPECIFIED
ALL DIMENSIONS INCLUDE FINISHES AND ARE IN INCHES
TOLERANCES: FRACTIONS ± 1/16"
ANGLES ± 1/2 DEG.
DECIMALS ± .010"

MATERIAL:

TOLERANCES DO NOT APPLY TO RAW MATERIAL

REV	DATE	DRW	CHK	DESCRIPTION

Sabre Industries™
INNOVATION DELIVERED

CONFIDENTIAL

This document and the information contained herein is the confidential trade secret property of Sabre Industries, Inc. ("Sabre") and must not be reproduced, copied or used, in whole or in part, for any purpose without the prior written consent of Sabre.
© 2025 Sabre Industries, Inc. All rights reserved.

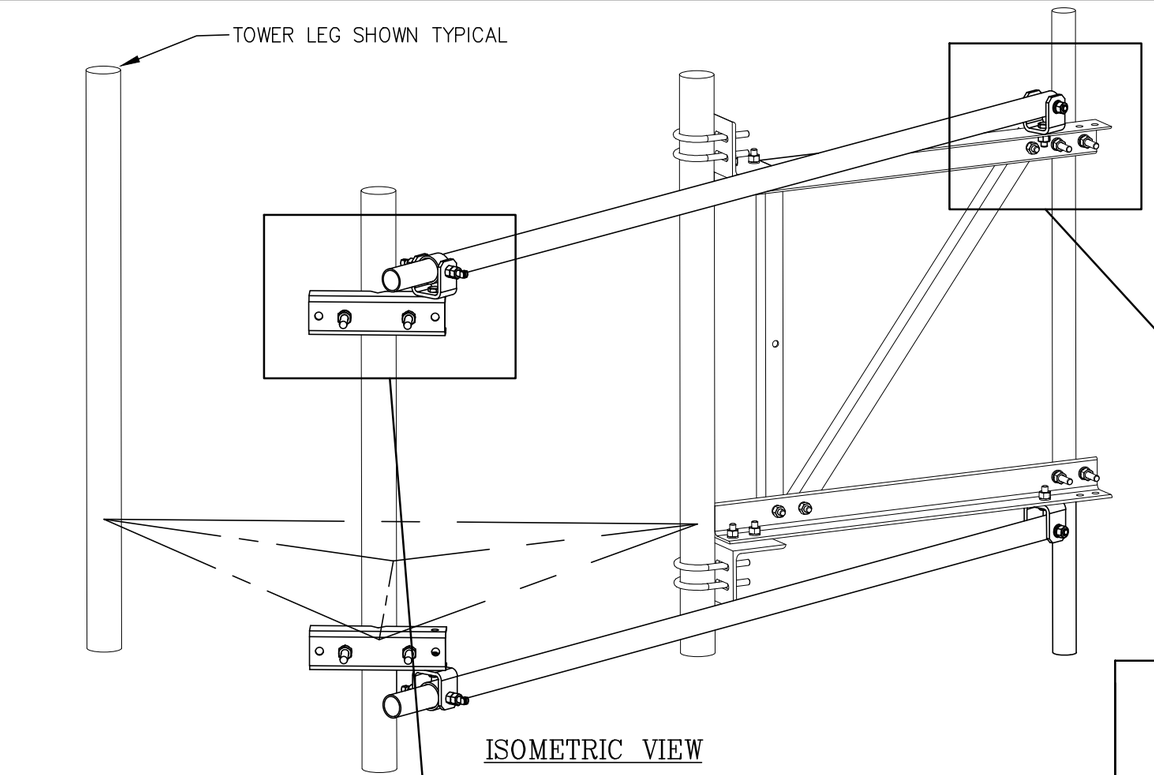
PIPE MOUNT FOR SIDEARM: 143' ELEVATION

SITE: WIPPER, OR

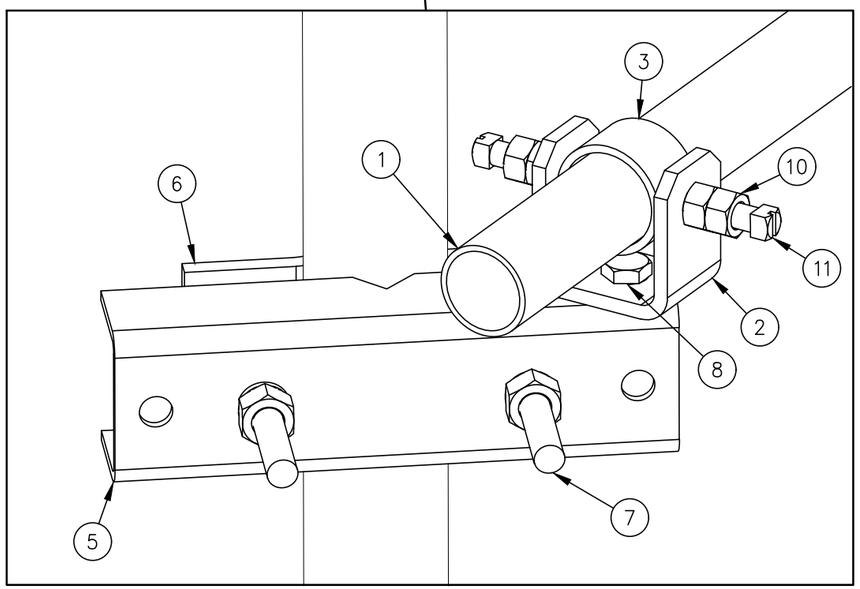
CUSTOMER: MARION COUNTY OREGON

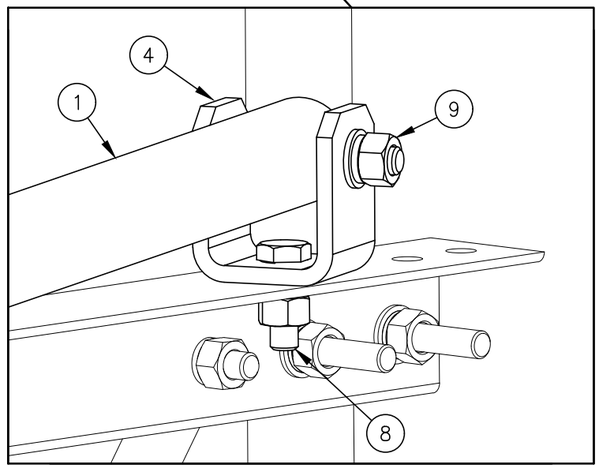
JOB NO. 563423		SIZE	DRAWING NO.	REV
DATE	8/7/25	B	563423-PM9	0
DRAWN BY	KMP			
CHECKED BY	ZAK		SCALE None	PAGE 1 OF 1

EXHIBIT K



ISOMETRIC VIEW





C10179002 SWIVEL KNUCKLE TIEBACK

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
1	1	CS02089	TIEBACK 2 3/8 X .134 X 13'-3"	43
2	1	CW00013	SWIVEL PLATE WELDMENT	3
3	1	CS00097	PIPE, SLEEVE 2 7/8 O.D. X W/0.203 X 0'-1 3/4	1
4	1	CS00098	BENT SWIVEL PLATE	3
5	1	CS01360	PLATE, MOUNTING BRACKET (FORMED CHANNEL)	9
6	1	CS01361	PLATE, 2 HOLE ADAPTER CLAMP	3
7	2	C40140001	BOLT ASSEMBLY, 3/4 X 10 A307 W/NUT, LKW, FLW	4
8	2	C40026023	BOLT ASSEMBLY, 5/8 ø X 2 A325	1
9	1	C40026033	BOLT ASSEMBLY, 5/8 ø X 4 1/2 A325	1
10	2	C40042007	HEX NUT, 5/8 A194 GRADE 2H	1
11	2	C40998007	SQ. HEAD SET SCREW, 5/8 X 2 1/2	1
			TOTAL WEIGHT LBS	70

QUANTITIES SHOWN ABOVE ARE FOR (1) SWIVEL KNUCKLE TIEBACK KIT ONLY.
(2) KITS ARE REQUIRED FOR THIS SIDEARM ASSEMBLY

UNLESS OTHERWISE SPECIFIED
ALL DIMENSIONS INCLUDE
FINISHES AND ARE IN INCHES

TOLERANCES: FRACTIONS ± 1/16"
ANGLES ± 1/2 DEG.
DECIMALS ± .010"

MATERIAL:

TOLERANCES DO NOT APPLY
TO RAW MATERIAL

REV	DATE	DRW	CHK	DESCRIPTION

Sabre Industries™
INNOVATION DELIVERED

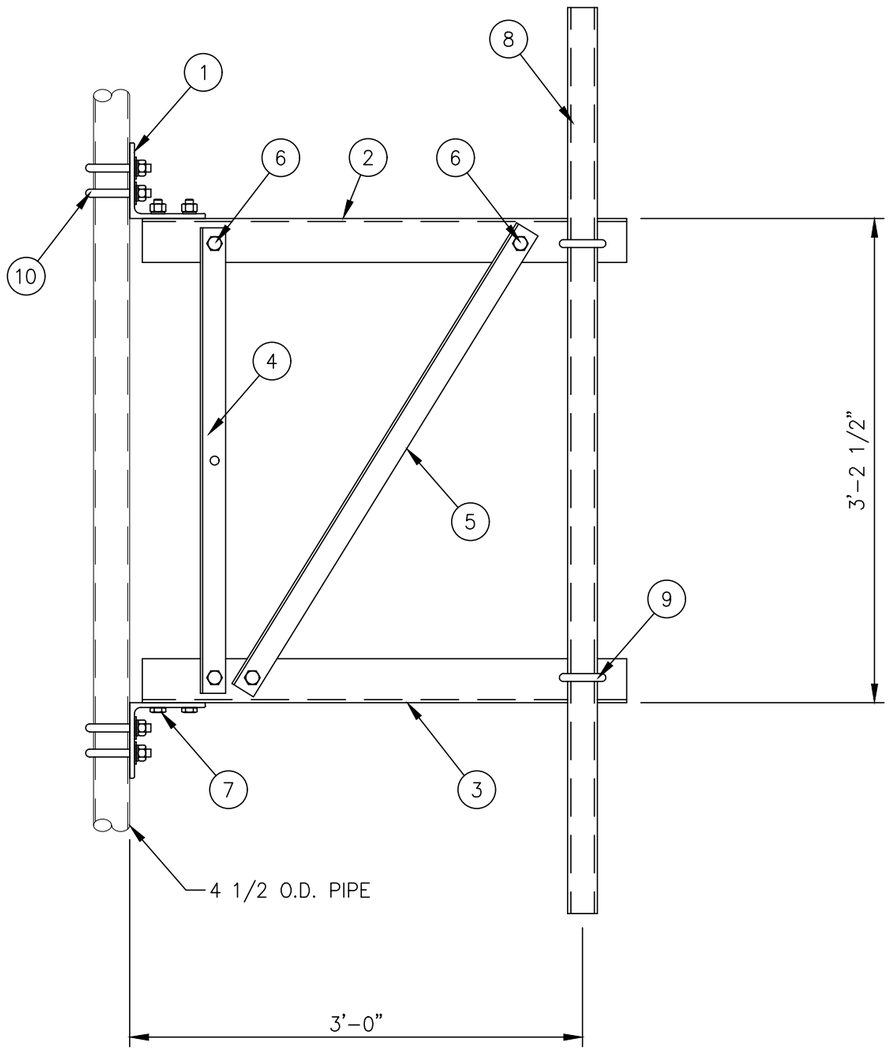
CONFIDENTIAL
This document and the information contained herein is the confidential trade secret property of Sabre Industries, Inc. ("Sabre") and must not be reproduced, copied or used, in whole or in part, for any purpose without the prior written consent of Sabre.
© 2025 Sabre Industries, Inc. All rights reserved.

SWIVEL KNUCKLE TIEBACKS: 143' ELEVATION

SITE: WIPPER, OR

CUSTOMER: MARION COUNTY OREGON

JOB NO. 563423		SIZE	DRAWING NO.	REV
DATE	08/07/25	B	563423-ST5	0
DRAWN BY	KMP			
CHECKED BY	ZAK		SCALE NONE	PAGE 1 OF 1



C10151103 3 FT. SIDEARM ASSEMBLY			
1	CK00060	SIDEARM ANGLE KIT	78
1	– – –	MISC HARDWARE (FRAMING)	4
1	C10900105	PIPE ANTENNA MOUNTING KIT 2 3/8" ø X 5'-0	19
4	C40034032	U-BOLT ASSEMBLY 5/8" ø X 5 3/16 C-C	9
		TOTAL WEIGHT LBS	110

CK00060 KIT LIST OF MATERIAL				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
1	2	CS00067	ANGLE, BOOM SUPPORT	23
2	1	CS01223	ANGLE, TOP CHORD	19
3	1	CS01224	ANGLE, BOTTOM CHORD	19
4	1	CS00065	ANGLE, VERTICAL	8
5	1	CS01228	ANGLE, DIAGONAL	9
			TOTAL WEIGHT LBS	78

MISC HARDWARE (FRAMING)				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
6	4	C40026022	BOLT ASSEMBLY, 5/8 ø X 1 3/4 A325	2
7	4	C40026023	BOLT ASSEMBLY, 5/8 ø X 2 A325	2
			TOTAL WEIGHT LBS	4

C10900105 ANTENNA PIPE MOUNTING KIT				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
8	1	C10981223	ANTENNA MTG. PIPE 2 3/8" ø X 5'-0	16
9	2	C40034023	U-BOLT ASSEMBLY 5/8" ø X 3 1/16 C-C	3
			TOTAL WEIGHT LBS	19

MISC HARDWARE				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
10	4	C40034032	U-BOLT ASSEMBLY 5/8" ø X 5 3/16 C-C	9
			TOTAL WEIGHT LBS	9

NOTES:

1. IF THE MOUNT IS NOT ON THE STRAIGHT PORTION OF THE TOWER SEE SITE SPECIFIC PIPE MOUNT.
2. QUANTITIES SHOWN IN LIST OF MATERIALS ARE FOR ONE (1) SIDEARM ASSEMBLY ONLY.

UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS INCLUDE FINISHES AND ARE IN INCHES

TOLERANCES: FRACTIONS ± 1/16" ANGLES ± 1/2 DEG. DECIMALS ± .010"

MATERIAL:

TOLERANCES DO NOT APPLY TO RAW MATERIAL

REV	DATE	DRW	CHK	DESCRIPTION

Sabre Industries™ INNOVATION DELIVERED

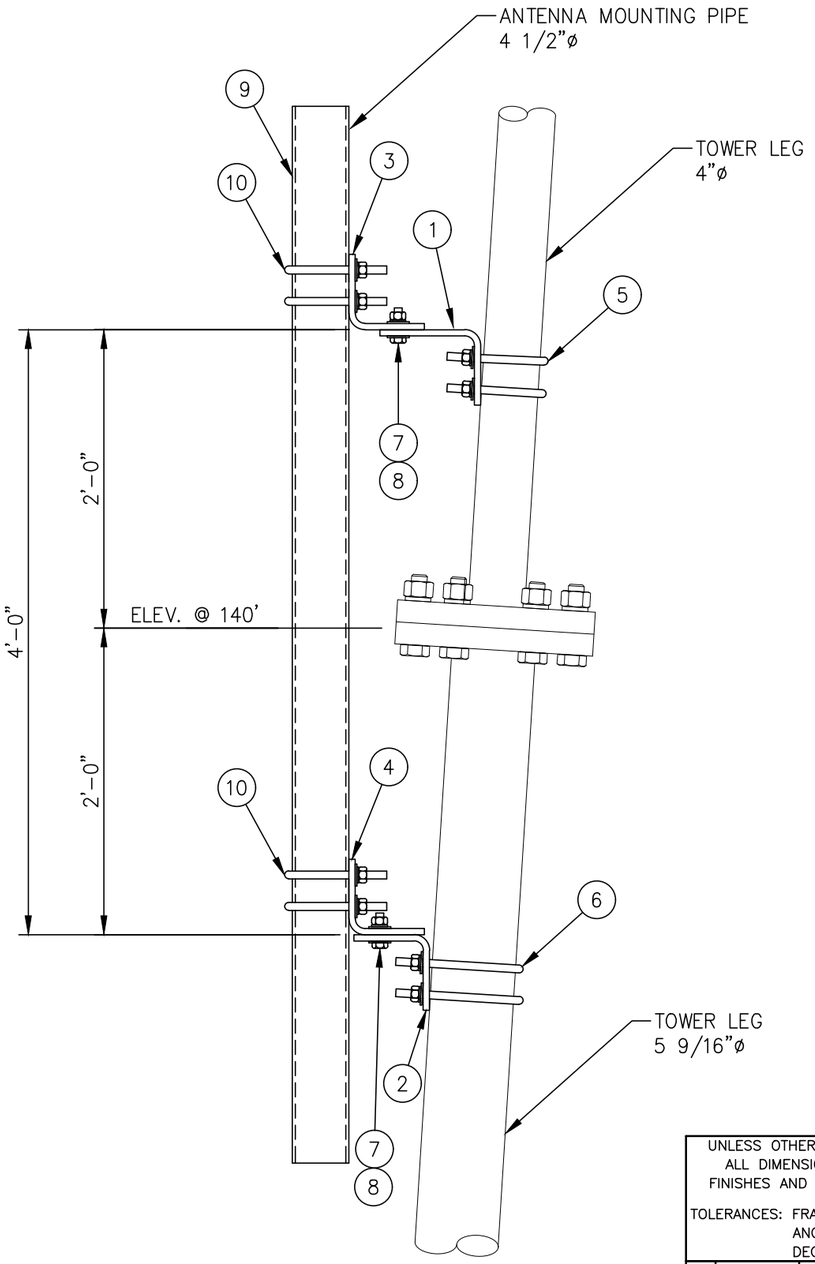
CONFIDENTIAL
This document and the information contained herein is the confidential trade secret property of Sabre Industries, Inc. ("Sabre") and must not be reproduced, copied or used, in whole or in part, for any purpose without the prior written consent of Sabre.
© 2025 Sabre Industries, Inc. All rights reserved.

3 FT. SIDEARM: 140' ELEVATION

SITE: WIPPER, OR

CUSTOMER: MARION COUNTY OREGON

JOB NO. 563423		SIZE	DRAWING NO.	REV
DATE	08/07/25	B	563423-SA6	0
DRAWN BY	KMP			
CHECKED BY	ZAK		SCALE NONE	PAGE 1 OF 1



ELEVATION VIEW

LIST OF MATERIALS FOR TAPERED LEG PIPE MOUNT KIT C10174053				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
1.	1	CS00217	TOP LEG MOUNT FOR 4 ø LEG	18
2.	1	CS00218	BOTTOM LEG MOUNT FOR 5 9/16 ø LEG	20
3.	1	CS00222	TOP PIPE MOUNT FOR 4 1/2 ø PIPE	18
4.	1	CS00215	BOTTOM PIPE MOUNT FOR 4 1/2 ø PIPE	12
5.	2	C40034030	U-BOLT ASSEMBLY 5/8 ø X 4 11/16 C-C (TOP LEG MOUNT)	4
6.	2	C40034035	U-BOLT ASSEMBLY 5/8 ø X 6 1/4 C-C (BOTTOM LEG MOUNT)	5
7.	4	C40026024	BOLT ASSEMBLY 5/8 ø X 2 1/4 A325	2
8.	8	C40031003	FLATWASHER, 5/8 ø (F436)	1
			KIT WEIGHT LBS	80

LIST OF ADDITIONAL MATERIALS				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
9.	1	C10981407	ANTENNA MTG. PIPE 4 1/2 ø X 7'-0	58
10.	4	C40034032	U-BOLT ASSEMBLY 5/8 ø X 5 3/16 C-C (PIPE MOUNTS)	9
			ADDITIONAL WEIGHT LBS	67

TOTAL WEIGHT LBS	147

UNLESS OTHERWISE SPECIFIED
ALL DIMENSIONS INCLUDE
FINISHES AND ARE IN INCHES

TOLERANCES: FRACTIONS ± 1/16"
ANGLES ± 1/2 DEG.
DECIMALS ± .010"

MATERIAL:

TOLERANCES DO NOT APPLY TO RAW MATERIAL

REV	DATE	DRW	CHK	DESCRIPTION

Sabre Industries™
INNOVATION DELIVERED

CONFIDENTIAL
This document and the information contained herein is the confidential trade secret property of Sabre Industries, Inc. ("Sabre") and must not be reproduced, copied or used, in whole or in part, for any purpose without the prior written consent of Sabre.
© 2025 Sabre Industries, Inc. All rights reserved.

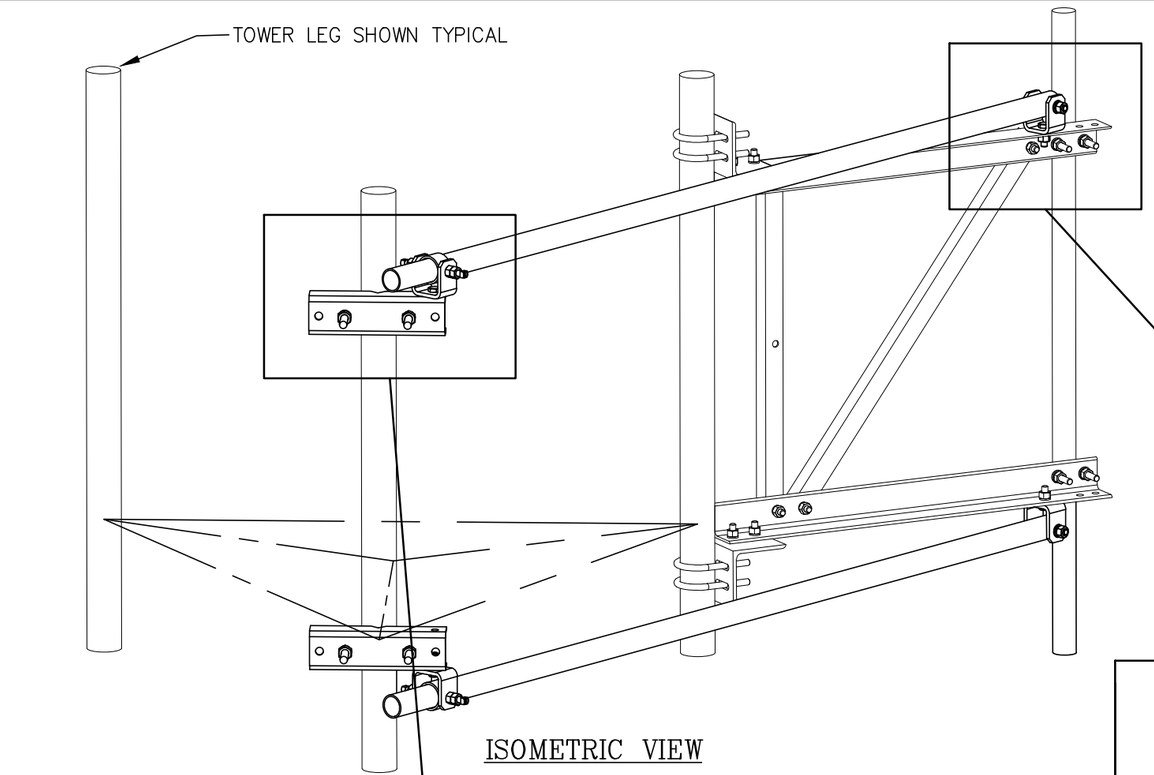
PIPE MOUNT FOR SIDEARM: 140' ELEVATION

SITE: WIPPER, OR

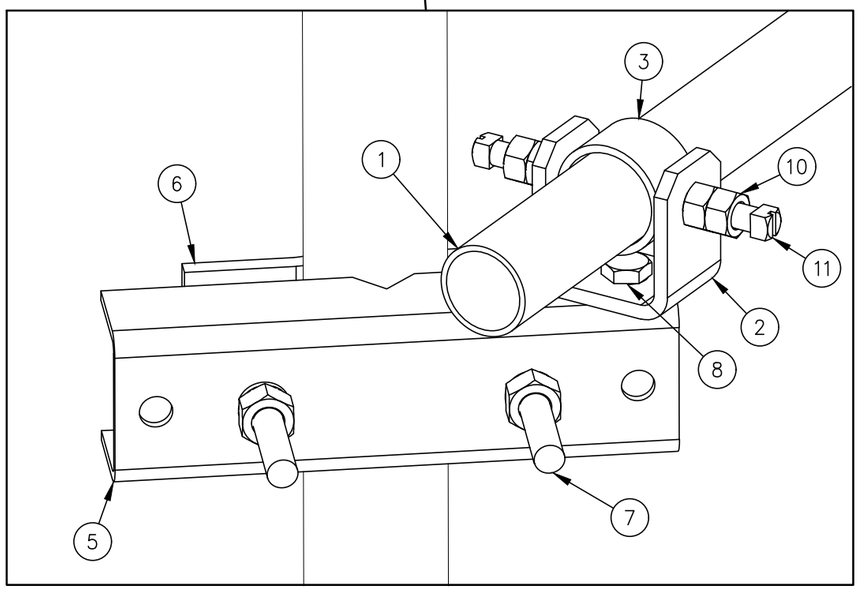
CUSTOMER: MARION COUNTY OREGON

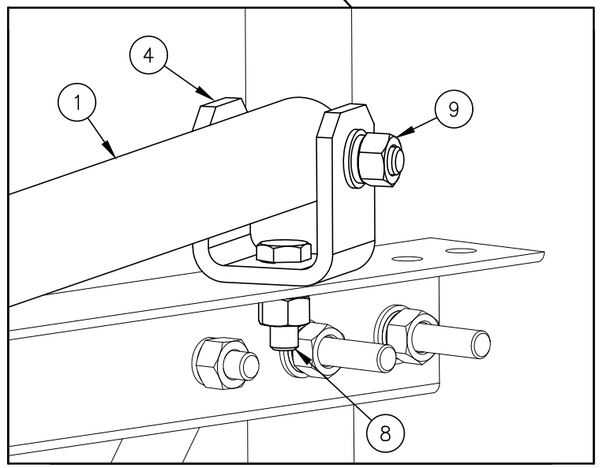
JOB NO. 563423		SIZE	DRAWING NO.	REV
DATE	8/7/25	B	563423-PM10	0
DRAWN BY	KMP			
CHECKED BY	ZAK		SCALE None	PAGE 1 OF 1

EXHIBIT K



ISOMETRIC VIEW





C10179011 SWIVEL KNUCKLE TIEBACK

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
1	1	CS00249	PIPE, 2 7/8 O.D. X W/0.203 X 15'-6	93
2	1	CW00022	SWIVEL PLATE WELDMENT	3
3	1	CS00092	PIPE, SLEEVE 3 1/2 O.D. X W/0.216 X 0'-1 3/4	1
4	1	CS00096	BENT SWIVEL PLATE	3
5	1	CS01360	PLATE, MOUNTING BRACKET (FORMED CHANNEL)	9
6	1	CS01361	PLATE, 2 HOLE ADAPTER CLAMP	3
7	2	C40140001	BOLT ASSEMBLY, 3/4 X 10 A307 W/NUT, LKW, FLW	4
8	2	C40026023	BOLT ASSEMBLY, 5/8 ø X 2 A325	1
9	1	C40026035	BOLT ASSEMBLY, 5/8 ø X 5 A325	1
10	2	C40042007	HEX NUT, 5/8 A194 GRADE 2H	1
11	2	C40998007	SQ. HEAD SET SCREW, 5/8 X 2 1/2	1
			TOTAL WEIGHT LBS	120

QUANTITIES SHOWN ABOVE ARE FOR (1) SWIVEL KNUCKLE TIEBACK KIT ONLY.
(2) KITS ARE REQUIRED FOR THIS SIDEARM ASSEMBLY

UNLESS OTHERWISE SPECIFIED
ALL DIMENSIONS INCLUDE
FINISHES AND ARE IN INCHES

TOLERANCES: FRACTIONS ± 1/16"
ANGLES ± 1/2 DEG.
DECIMALS ± .010"

MATERIAL:

TOLERANCES DO NOT APPLY
TO RAW MATERIAL

REV	DATE	DRW	CHK	DESCRIPTION

Sabre Industries™
INNOVATION DELIVERED

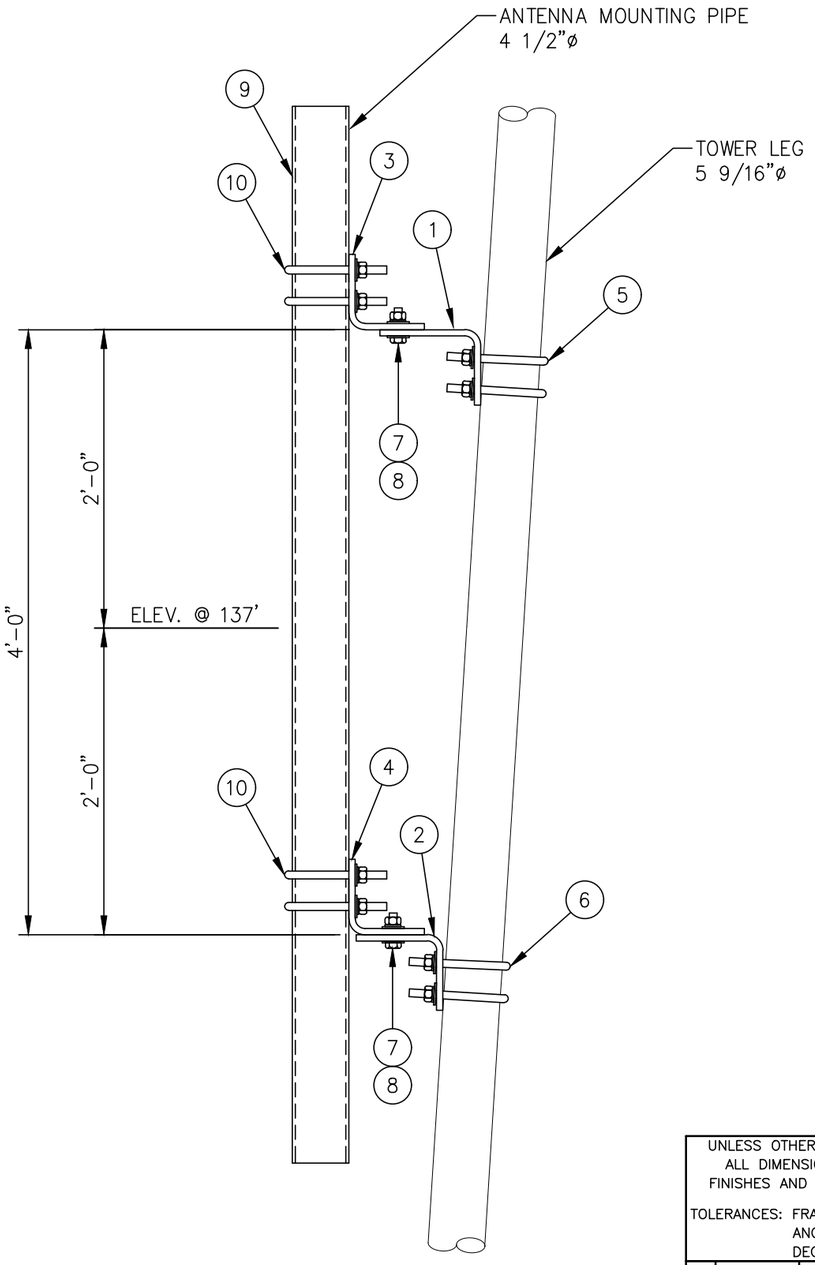
CONFIDENTIAL
This document and the information contained herein is the confidential trade secret property of Sabre Industries, Inc. ("Sabre") and must not be reproduced, copied or used, in whole or in part, for any purpose without the prior written consent of Sabre.
© 2025 Sabre Industries, Inc. All rights reserved.

SWIVEL KNUCKLE TIEBACKS: 140' ELEVATION

SITE: WIPPER, OR

CUSTOMER: MARION COUNTY OREGON

JOB NO. 563423		SIZE	DRAWING NO.	REV
DATE	08/07/25	B	563423-ST6	0
DRAWN BY	KMP			
CHECKED BY	ZAK		SCALE NONE	PAGE 1 OF 1



ELEVATION VIEW

LIST OF MATERIALS FOR TAPERED LEG PIPE MOUNT KIT C10174055				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
1.	1	CS00219	TOP LEG MOUNT FOR 5 9/16 ø LEG	24
2.	1	CS00218	BOTTOM LEG MOUNT FOR 5 9/16 ø LEG	20
3.	1	CS00214	TOP PIPE MOUNT FOR 4 1/2 ø PIPE	15
4.	1	CS00215	BOTTOM PIPE MOUNT FOR 4 1/2 ø PIPE	12
5.	2	C40034035	U-BOLT ASSEMBLY 5/8 ø X 6 1/4 C-C (TOP LEG MOUNT)	5
6.	2	C40034035	U-BOLT ASSEMBLY 5/8 ø X 6 1/4 C-C (BOTTOM LEG MOUNT)	5
7.	4	C40026024	BOLT ASSEMBLY 5/8 ø X 2 1/4 A325	2
8.	8	C40031003	FLATWASHER, 5/8 ø (F436)	1
			KIT WEIGHT LBS	84

LIST OF ADDITIONAL MATERIALS				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
9.	1	C10981407	ANTENNA MTG. PIPE 4 1/2 ø X 7'-0	58
10.	4	C40034032	U-BOLT ASSEMBLY 5/8 ø X 5 3/16 C-C (PIPE MOUNTS)	9
			ADDITIONAL WEIGHT LBS	67

TOTAL WEIGHT LBS	151

UNLESS OTHERWISE SPECIFIED
ALL DIMENSIONS INCLUDE FINISHES AND ARE IN INCHES

TOLERANCES: FRACTIONS ± 1/16"
ANGLES ± 1/2 DEG.
DECIMALS ± .010"

MATERIAL:

TOLERANCES DO NOT APPLY TO RAW MATERIAL

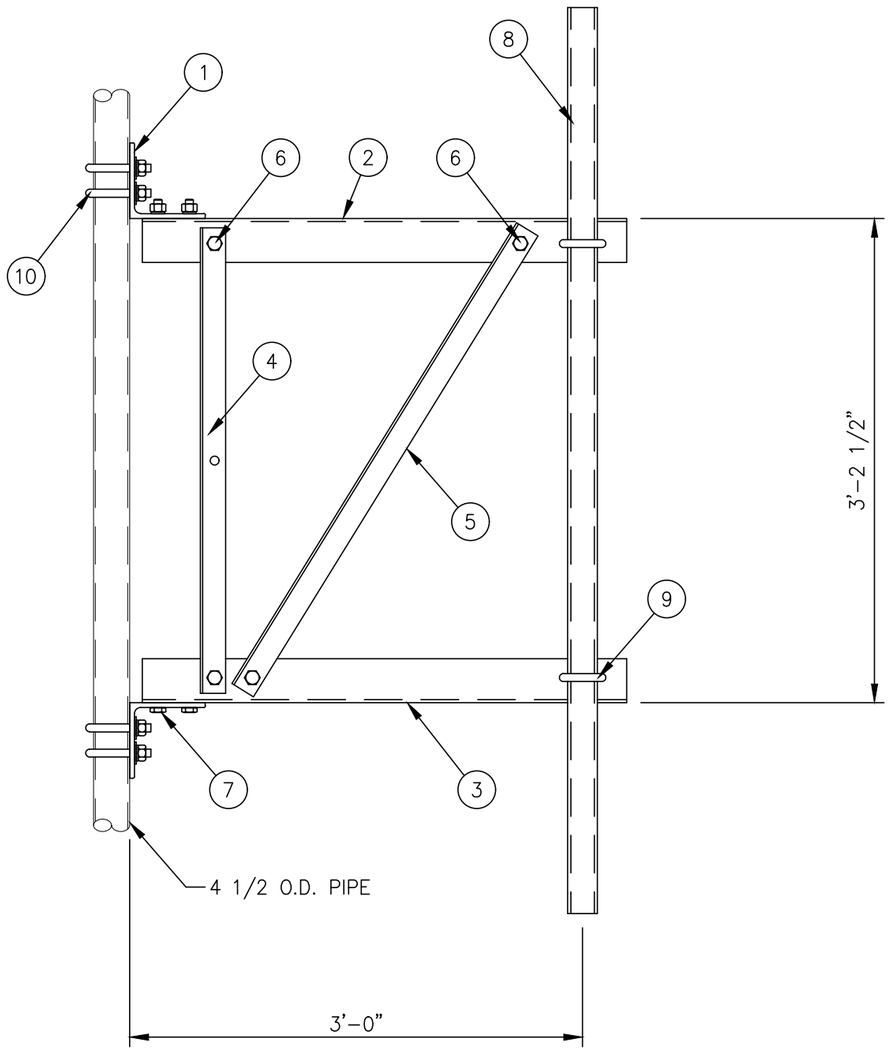
REV	DATE	DRW	CHK	DESCRIPTION

Sabre Industries™
INNOVATION DELIVERED

CONFIDENTIAL
This document and the information contained herein is the confidential trade secret property of Sabre Industries, Inc. ("Sabre") and must not be reproduced, copied or used, in whole or in part, for any purpose without the prior written consent of Sabre.
© 2025 Sabre Industries, Inc. All rights reserved.

PIPE MOUNT: 137' ELEVATION
SITE: WIPPER, OR
CUSTOMER: MARION COUNTY OREGON

JOB NO. 563423		SIZE	DRAWING NO.	REV
DATE	8/7/25	B	563423-PM11	0
DRAWN BY	KMP			
CHECKED BY	ZAK		SCALE None	PAGE 1 OF 1



C10151103 3 FT. SIDEARM ASSEMBLY			
1	CK00060	SIDEARM ANGLE KIT	78
1	– – –	MISC HARDWARE (FRAMING)	4
1	C10900104	PIPE ANTENNA MOUNTING KIT 2 3/8" ø X 4'-0	16
4	C40034032	U-BOLT ASSEMBLY 5/8" ø X 5 3/16 C-C	9
		TOTAL WEIGHT LBS	107

CK00060 KIT LIST OF MATERIAL				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
1	2	CS00067	ANGLE, BOOM SUPPORT	23
2	1	CS01223	ANGLE, TOP CHORD	19
3	1	CS01224	ANGLE, BOTTOM CHORD	19
4	1	CS00065	ANGLE, VERTICAL	8
5	1	CS01228	ANGLE, DIAGONAL	9
			TOTAL WEIGHT LBS	78

MISC HARDWARE (FRAMING)				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
6	4	C40026022	BOLT ASSEMBLY, 5/8 ø X 1 3/4 A325	2
7	4	C40026023	BOLT ASSEMBLY, 5/8 ø X 2 A325	2
			TOTAL WEIGHT LBS	4

C10900104 ANTENNA PIPE MOUNTING KIT				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
8	1	C10981204	ANTENNA MTG. PIPE 2 3/8" ø X 4'-0"	13
9	2	C40034023	U-BOLT ASSEMBLY 5/8" ø X 3 1/16 C-C	3
			TOTAL WEIGHT LBS	16

MISC HARDWARE				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
10	4	C40034032	U-BOLT ASSEMBLY 5/8" ø X 5 3/16 C-C	9
			TOTAL WEIGHT LBS	9

NOTES:

1. IF THE MOUNT IS NOT ON THE STRAIGHT PORTION OF THE TOWER SEE SITE SPECIFIC PIPE MOUNT.
2. QUANTITIES SHOWN IN LIST OF MATERIALS ARE FOR ONE (1) SIDEARM ASSEMBLY ONLY.

UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS INCLUDE FINISHES AND ARE IN INCHES

TOLERANCES: FRACTIONS ± 1/16" ANGLES ± 1/2 DEG. DECIMALS ± .010"

MATERIAL:

TOLERANCES DO NOT APPLY TO RAW MATERIAL

REV	DATE	DRW	CHK	DESCRIPTION

Sabre Industries™ INNOVATION DELIVERED

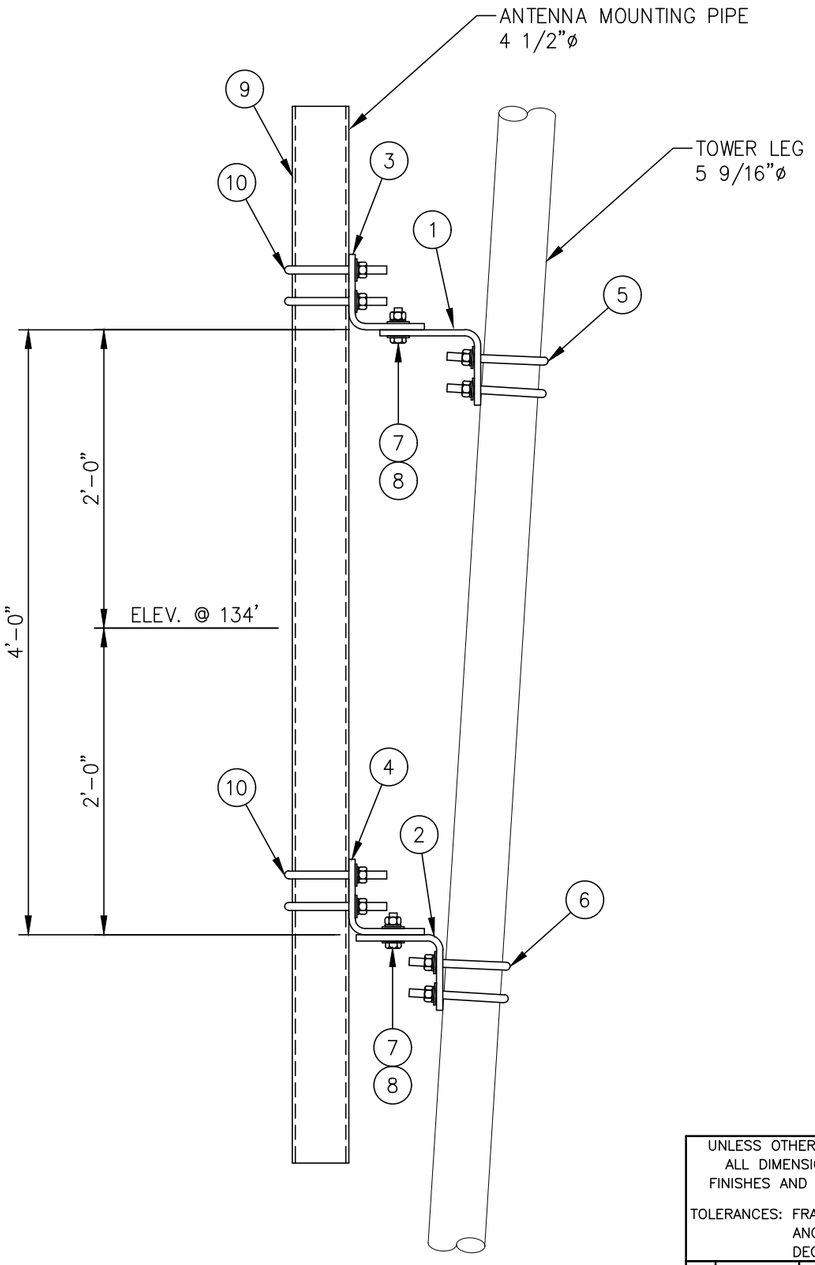
CONFIDENTIAL
This document and the information contained herein is the confidential trade secret property of Sabre Industries, Inc. ("Sabre") and must not be reproduced, copied or used, in whole or in part, for any purpose without the prior written consent of Sabre.
© 2025 Sabre Industries, Inc. All rights reserved.

3 FT. SIDEARM: 134' ELEVATION

SITE: WIPPER, OR

CUSTOMER: MARION COUNTY OREGON

JOB NO. 563423		SIZE	DRAWING NO.	REV
DATE	08/07/25	B	563423-SA7	0
DRAWN BY	KMP			
CHECKED BY	ZAK		SCALE NONE	PAGE 1 OF 1



ELEVATION VIEW

LIST OF MATERIALS FOR TAPERED LEG PIPE MOUNT KIT C10174055				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
1.	1	CS00219	TOP LEG MOUNT FOR 5 9/16 ø LEG	24
2.	1	CS00218	BOTTOM LEG MOUNT FOR 5 9/16 ø LEG	20
3.	1	CS00214	TOP PIPE MOUNT FOR 4 1/2 ø PIPE	15
4.	1	CS00215	BOTTOM PIPE MOUNT FOR 4 1/2 ø PIPE	12
5.	2	C40034035	U-BOLT ASSEMBLY 5/8 ø X 6 1/4 C-C (TOP LEG MOUNT)	5
6.	2	C40034035	U-BOLT ASSEMBLY 5/8 ø X 6 1/4 C-C (BOTTOM LEG MOUNT)	5
7.	4	C40026024	BOLT ASSEMBLY 5/8 ø X 2 1/4 A325	2
8.	8	C40031003	FLATWASHER, 5/8 ø (F436)	1
			KIT WEIGHT LBS	84

LIST OF ADDITIONAL MATERIALS				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
9.	1	C10981407	ANTENNA MTG. PIPE 4 1/2 ø X 7'-0	58
10.	4	C40034032	U-BOLT ASSEMBLY 5/8 ø X 5 3/16 C-C (PIPE MOUNTS)	9
			ADDITIONAL WEIGHT LBS	67

TOTAL WEIGHT LBS	151

UNLESS OTHERWISE SPECIFIED
ALL DIMENSIONS INCLUDE FINISHES AND ARE IN INCHES
TOLERANCES: FRACTIONS ± 1/16"
ANGLES ± 1/2 DEG.
DECIMALS ± .010"

MATERIAL:

TOLERANCES DO NOT APPLY TO RAW MATERIAL

REV	DATE	DRW	CHK	DESCRIPTION

Sabre Industries™
INNOVATION DELIVERED

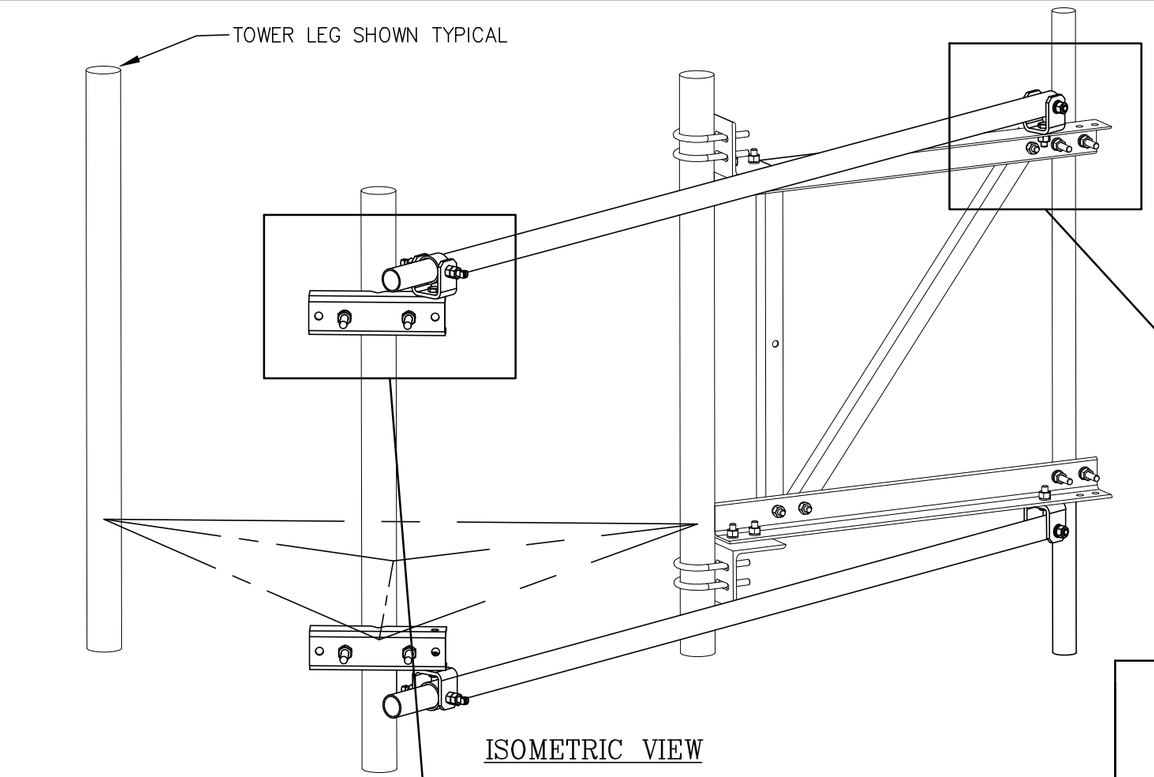
CONFIDENTIAL
This document and the information contained herein is the confidential trade secret property of Sabre Industries, Inc. ("Sabre") and must not be reproduced, copied or used, in whole or in part, for any purpose without the prior written consent of Sabre.
© 2025 Sabre Industries, Inc. All rights reserved.

PIPE MOUNT FOR SIDEARM: 134' ELEVATION

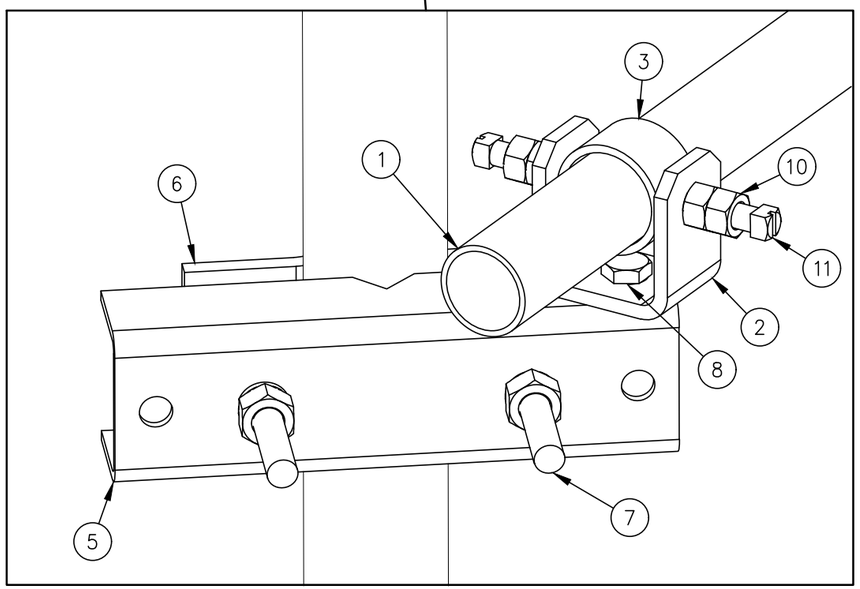
SITE: WIPPER, OR

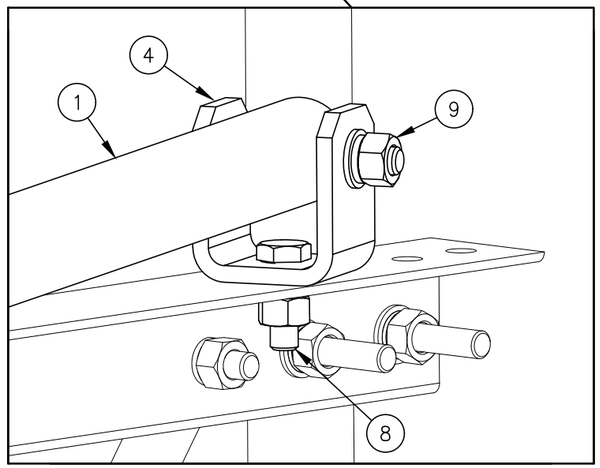
CUSTOMER: MARION COUNTY OREGON

JOB NO. 563423		SIZE	DRAWING NO.	REV
DATE	8/7/25	B	563423-PM12	0
DRAWN BY	KMP			
CHECKED BY	ZAK		SCALE None	PAGE 1 OF 1



ISOMETRIC VIEW





C10179011 SWIVEL KNUCKLE TIEBACK

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
1	1	CS00249	PIPE, 2 7/8 O.D. X W/0.203 X 15'-6	93
2	1	CW00022	SWIVEL PLATE WELDMENT	3
3	1	CS00092	PIPE, SLEEVE 3 1/2 O.D. X W/0.216 X 0'-1 3/4	1
4	1	CS00096	BENT SWIVEL PLATE	3
5	1	CS01360	PLATE, MOUNTING BRACKET (FORMED CHANNEL)	9
6	1	CS01361	PLATE, 2 HOLE ADAPTER CLAMP	3
7	2	C40140001	BOLT ASSEMBLY, 3/4 X 10 A307 W/NUT, LKW, FLW	4
8	2	C40026023	BOLT ASSEMBLY, 5/8 ø X 2 A325	1
9	1	C40026035	BOLT ASSEMBLY, 5/8 ø X 5 A325	1
10	2	C40042007	HEX NUT, 5/8 A194 GRADE 2H	1
11	2	C40998007	SQ. HEAD SET SCREW, 5/8 X 2 1/2	1
			TOTAL WEIGHT LBS	120

QUANTITIES SHOWN ABOVE ARE FOR (1) SWIVEL KNUCKLE TIEBACK KIT ONLY.
(2) KITS ARE REQUIRED FOR THIS SIDEARM ASSEMBLY

UNLESS OTHERWISE SPECIFIED
ALL DIMENSIONS INCLUDE
FINISHES AND ARE IN INCHES

TOLERANCES: FRACTIONS ± 1/16"
ANGLES ± 1/2 DEG.
DECIMALS ± .010"

MATERIAL:

TOLERANCES DO NOT APPLY TO RAW MATERIAL

REV	DATE	DRW	CHK	DESCRIPTION

Sabre Industries™
INNOVATION DELIVERED

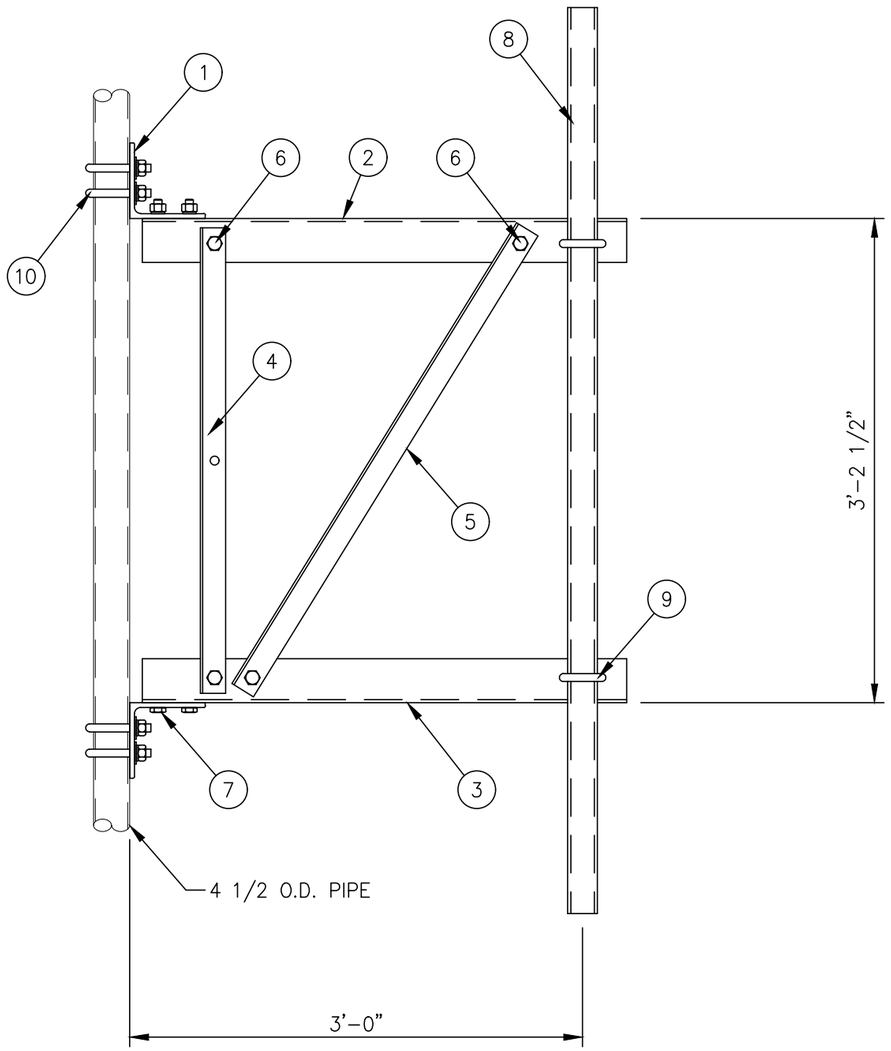
CONFIDENTIAL
This document and the information contained herein is the confidential trade secret property of Sabre Industries, Inc. ("Sabre") and must not be reproduced, copied or used, in whole or in part, for any purpose without the prior written consent of Sabre.
© 2025 Sabre Industries, Inc. All rights reserved.

SWIVEL KNUCKLE TIEBACKS: 134' ELEVATION

SITE: WIPPER, OR

CUSTOMER: MARION COUNTY OREGON

JOB NO. 563423		SIZE	DRAWING NO.	REV
DATE	08/07/25	B	563423-ST7	0
DRAWN BY	KMP			
CHECKED BY	ZAK		SCALE NONE	PAGE 1 OF 1



C10151103 3 FT. SIDEARM ASSEMBLY			
1	CK00060	SIDEARM ANGLE KIT	78
1	– – –	MISC HARDWARE (FRAMING)	4
1	C10900105	PIPE ANTENNA MOUNTING KIT 2 3/8" ø X 5'-0	19
4	C40034032	U-BOLT ASSEMBLY 5/8" ø X 5 3/16 C-C	9
		TOTAL WEIGHT LBS	110

CK00060 KIT LIST OF MATERIAL				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
1	2	CS00067	ANGLE, BOOM SUPPORT	23
2	1	CS01223	ANGLE, TOP CHORD	19
3	1	CS01224	ANGLE, BOTTOM CHORD	19
4	1	CS00065	ANGLE, VERTICAL	8
5	1	CS01228	ANGLE, DIAGONAL	9
			TOTAL WEIGHT LBS	78

MISC HARDWARE (FRAMING)				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
6	4	C40026022	BOLT ASSEMBLY, 5/8 ø X 1 3/4 A325	2
7	4	C40026023	BOLT ASSEMBLY, 5/8 ø X 2 A325	2
			TOTAL WEIGHT LBS	4

C10900105 ANTENNA PIPE MOUNTING KIT				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
8	1	C10981223	ANTENNA MTG. PIPE 2 3/8" ø X 5'-0	16
9	2	C40034023	U-BOLT ASSEMBLY 5/8" ø X 3 1/16 C-C	3
			TOTAL WEIGHT LBS	19

MISC HARDWARE				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
10	4	C40034032	U-BOLT ASSEMBLY 5/8" ø X 5 3/16 C-C	9
			TOTAL WEIGHT LBS	9

NOTES:

1. IF THE MOUNT IS NOT ON THE STRAIGHT PORTION OF THE TOWER SEE SITE SPECIFIC PIPE MOUNT.
2. QUANTITIES SHOWN IN LIST OF MATERIALS ARE FOR ONE (1) SIDEARM ASSEMBLY ONLY.

UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS INCLUDE FINISHES AND ARE IN INCHES

TOLERANCES: FRACTIONS ± 1/16" ANGLES ± 1/2 DEG. DECIMALS ± .010"

MATERIAL:

TOLERANCES DO NOT APPLY TO RAW MATERIAL

REV	DATE	DRW	CHK	DESCRIPTION

Sabre Industries™ INNOVATION DELIVERED

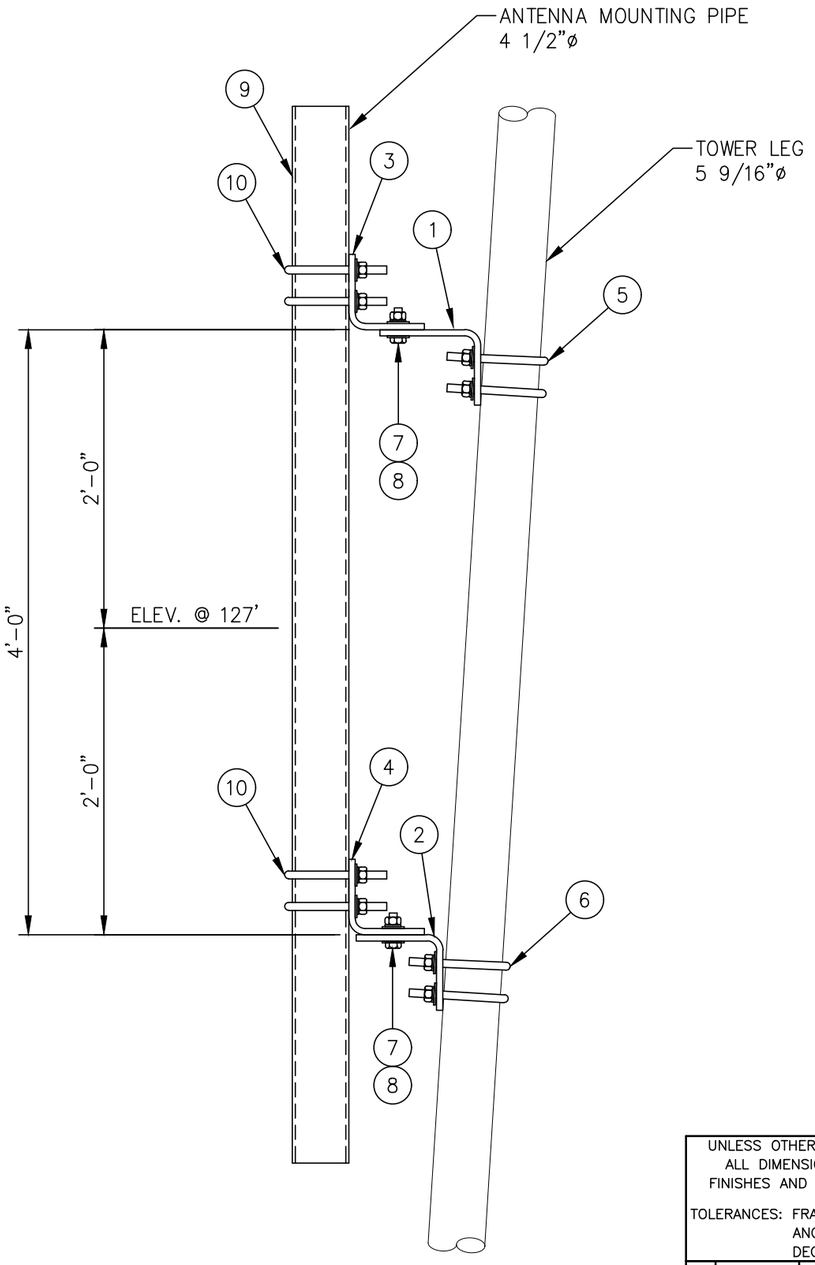
CONFIDENTIAL
This document and the information contained herein is the confidential trade secret property of Sabre Industries, Inc. ("Sabre") and must not be reproduced, copied or used, in whole or in part, for any purpose without the prior written consent of Sabre.
© 2025 Sabre Industries, Inc. All rights reserved.

3 FT. SIDEARM: 127' ELEVATION

SITE: WIPPER, OR

CUSTOMER: MARION COUNTY OREGON

JOB NO. 563423		SIZE	DRAWING NO.	REV
DATE	08/07/25	B	563423-SA8	0
DRAWN BY	KMP			
CHECKED BY	ZAK		SCALE NONE	PAGE 1 OF 1



ELEVATION VIEW

LIST OF MATERIALS FOR TAPERED LEG PIPE MOUNT KIT C10174055				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
1.	1	CS00219	TOP LEG MOUNT FOR 5 9/16 ø LEG	24
2.	1	CS00218	BOTTOM LEG MOUNT FOR 5 9/16 ø LEG	20
3.	1	CS00214	TOP PIPE MOUNT FOR 4 1/2 ø PIPE	15
4.	1	CS00215	BOTTOM PIPE MOUNT FOR 4 1/2 ø PIPE	12
5.	2	C40034035	U-BOLT ASSEMBLY 5/8 ø X 6 1/4 C-C (TOP LEG MOUNT)	5
6.	2	C40034035	U-BOLT ASSEMBLY 5/8 ø X 6 1/4 C-C (BOTTOM LEG MOUNT)	5
7.	4	C40026024	BOLT ASSEMBLY 5/8 ø X 2 1/4 A325	2
8.	8	C40031003	FLATWASHER, 5/8 ø (F436)	1
			KIT WEIGHT LBS	84

LIST OF ADDITIONAL MATERIALS				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
9.	1	C10981407	ANTENNA MTG. PIPE 4 1/2 ø X 7'-0	58
10.	4	C40034032	U-BOLT ASSEMBLY 5/8 ø X 5 3/16 C-C (PIPE MOUNTS)	9
			ADDITIONAL WEIGHT LBS	67

TOTAL WEIGHT LBS	151

UNLESS OTHERWISE SPECIFIED
ALL DIMENSIONS INCLUDE FINISHES AND ARE IN INCHES
TOLERANCES: FRACTIONS ± 1/16"
ANGLES ± 1/2 DEG.
DECIMALS ± .010"

MATERIAL:

TOLERANCES DO NOT APPLY TO RAW MATERIAL

REV	DATE	DRW	CHK	DESCRIPTION

Sabre Industries™
INNOVATION DELIVERED

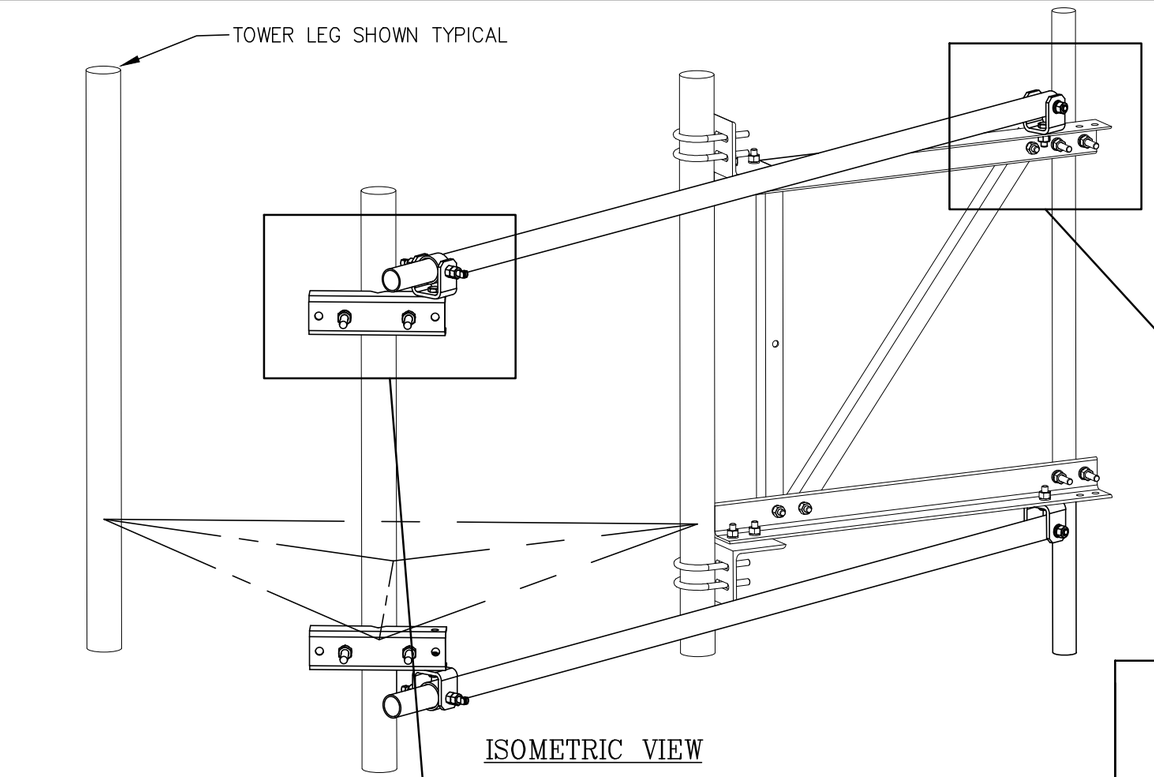
CONFIDENTIAL
This document and the information contained herein is the confidential trade secret property of Sabre Industries, Inc. ("Sabre") and must not be reproduced, copied or used, in whole or in part, for any purpose without the prior written consent of Sabre.
© 2025 Sabre Industries, Inc. All rights reserved.

PIPE MOUNT FOR SIDEARM: 127' ELEVATION

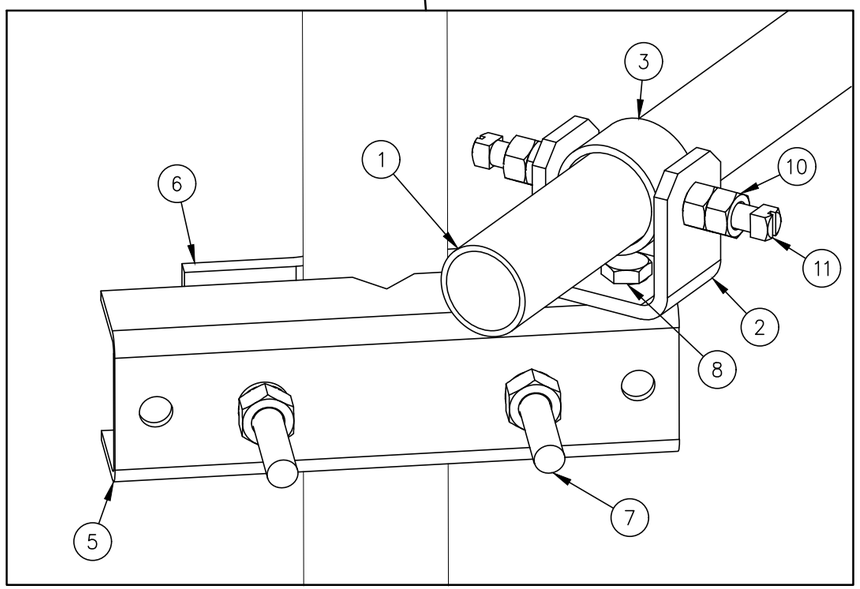
SITE: WIPPER, OR

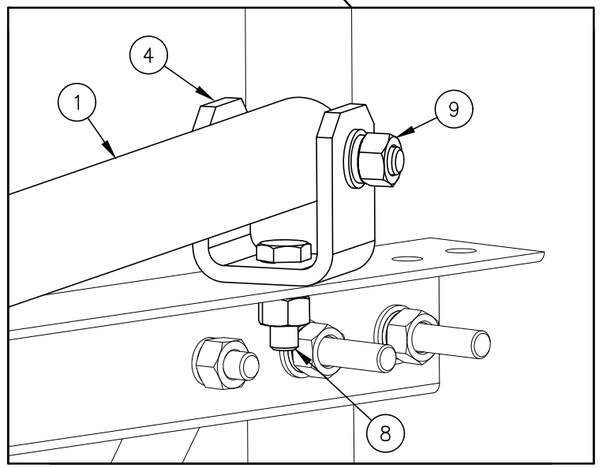
CUSTOMER: MARION COUNTY OREGON

JOB NO. 563423		SIZE	DRAWING NO.	REV
DATE	8/7/25	B	563423-PM13	0
DRAWN BY	KMP			
CHECKED BY	ZAK		SCALE None	PAGE 1 OF 1



ISOMETRIC VIEW





C10179011 SWIVEL KNUCKLE TIEBACK

ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
1	1	CS00249	PIPE, 2 7/8 O.D. X W/0.203 X 15'-6	93
2	1	CW00022	SWIVEL PLATE WELDMENT	3
3	1	CS00092	PIPE, SLEEVE 3 1/2 O.D. X W/0.216 X 0'-1 3/4	1
4	1	CS00096	BENT SWIVEL PLATE	3
5	1	CS01360	PLATE, MOUNTING BRACKET (FORMED CHANNEL)	9
6	1	CS01361	PLATE, 2 HOLE ADAPTER CLAMP	3
7	2	C40140001	BOLT ASSEMBLY, 3/4 X 10 A307 W/NUT, LKW, FLW	4
8	2	C40026023	BOLT ASSEMBLY, 5/8 ø X 2 A325	1
9	1	C40026035	BOLT ASSEMBLY, 5/8 ø X 5 A325	1
10	2	C40042007	HEX NUT, 5/8 A194 GRADE 2H	1
11	2	C40998007	SQ. HEAD SET SCREW, 5/8 X 2 1/2	1
			TOTAL WEIGHT LBS	120

QUANTITIES SHOWN ABOVE ARE FOR (1) SWIVEL KNUCKLE TIEBACK KIT ONLY.
(2) KITS ARE REQUIRED FOR THIS SIDEARM ASSEMBLY

UNLESS OTHERWISE SPECIFIED
ALL DIMENSIONS INCLUDE
FINISHES AND ARE IN INCHES

TOLERANCES: FRACTIONS ± 1/16"
ANGLES ± 1/2 DEG.
DECIMALS ± .010"

MATERIAL:

TOLERANCES DO NOT APPLY
TO RAW MATERIAL

REV	DATE	DRW	CHK	DESCRIPTION

Sabre Industries™
INNOVATION DELIVERED

CONFIDENTIAL
This document and the information contained herein is the confidential trade secret property of Sabre Industries, Inc. ("Sabre") and must not be reproduced, copied or used, in whole or in part, for any purpose without the prior written consent of Sabre.
© 2025 Sabre Industries, Inc. All rights reserved.

SWIVEL KNUCKLE TIEBACKS: 127' ELEVATION

SITE: WIPPER, OR

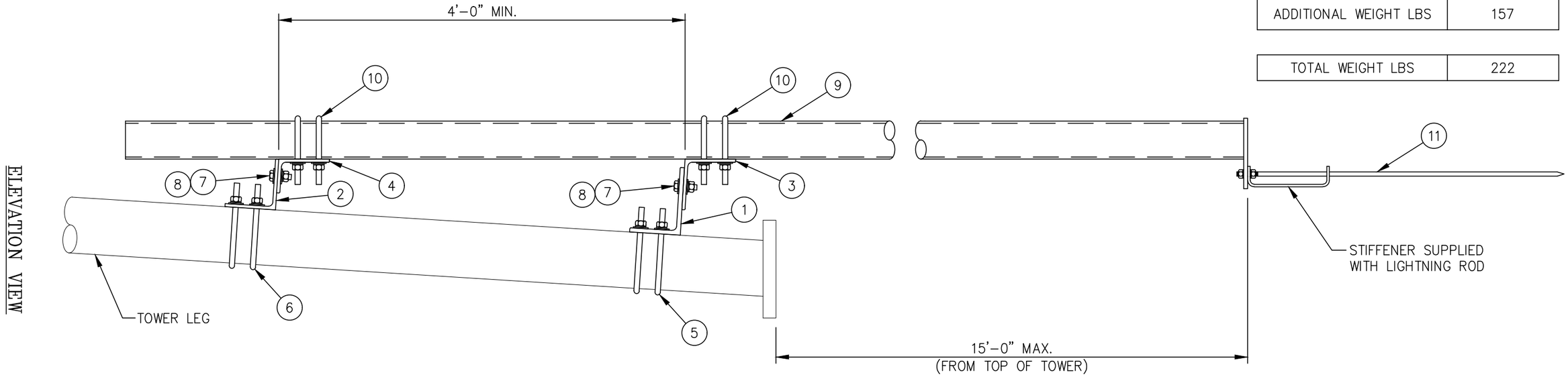
CUSTOMER: MARION COUNTY OREGON

JOB NO. 563423		SIZE	DRAWING NO.	REV
DATE	08/07/25	B	563423-ST8	0
DRAWN BY	KMP			
CHECKED BY	ZAK		SCALE NONE	PAGE 1 OF 1

LIST OF MATERIALS FOR TAPERED LEG PIPE MOUNT KIT C10174018				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
1.	1	CS00216	TOP LEG MOUNT FOR 2 7/8 ø LEG	15
2.	1	CS00215	BOTTOM LEG MOUNT FOR 2 7/8 ø LEG	12
3.	1	CS00214	TOP PIPE MOUNT FOR 2 7/8 ø PIPE	15
4.	1	CS00215	BOTTOM PIPE MOUNT FOR 2 7/8 ø PIPE	12
5.	2	C40034025	U-BOLT ASSEMBLY 5/8 ø X 3 9/16 C-C (TOP LEG MOUNT)	4
6.	2	C40034025	U-BOLT ASSEMBLY 5/8 ø X 3 9/16 C-C (BOTTOM LEG MOUNT)	4
7.	4	C40026024	BOLT ASSEMBLY 5/8 ø X 2 1/4 A325	2
8.	8	C40031003	FLATWASHER, 5/8 ø (F436)	1
			KIT WEIGHT LBS	65

LIST OF ADDITIONAL MATERIALS				
ITEM	QTY.	PART NO.	DESCRIPTION	WEIGHT LBS
9.	1	CW00032	LIGHTNING ROD EXTENSION 2 7/8 ø X 21'-0"	128
10.	4	C40034025	U-BOLT ASSEMBLY 5/8 ø X 3 9/16 C-C (PIPE MOUNTS)	7
11.	1 KIT	C30986004	LIGHTNING ROD ASSY 3/4 ø X 10'-0 CCS W/STIFFENER	22
			ADDITIONAL WEIGHT LBS	157

TOTAL WEIGHT LBS	222



NOTE:
THE ASSEMBLY IS SHOWN ON THE OUTSIDE OF THE TOWER.
IT MAY ALSO BE MOUNTED ON THE INSIDE OF TOWER, IF NECESSARY.

UNLESS OTHERWISE SPECIFIED
ALL DIMENSIONS INCLUDE
FINISHES AND ARE IN INCHES

TOLERANCES: FRACTIONS ± 1/16"
ANGLES ± 1/2 DEG.
DECIMALS ± .010"

MATERIAL:

TOLERANCES DO NOT APPLY
TO RAW MATERIAL

REV	DATE	DRW	CHK	DESCRIPTION

Sabre Industries™
INNOVATION DELIVERED

CONFIDENTIAL
This document and the information contained herein is the confidential trade secret property of Sabre Industries, Inc. ("Sabre") and must not be reproduced, copied or used, in whole or in part, for any purpose without the prior written consent of Sabre.
© 2025 Sabre Industries, Inc. All rights reserved.

LIGHTNING ROD W/STIFFENER & EXTENSION

SITE: WIPPER, OR

CUSTOMER: MARION COUNTY OREGON

JOB NO. 563423		SIZE	DRAWING NO.	REV
DATE	8/7/25	B	563423-LR	0
DRAWN BY	KMP			
CHECKED BY	ZAK		SCALE None	PAGE 1 OF 1

BOLT INSTALLATION DETAILS:

1. INSTALLATION OF BOLTS: BOLTS FOR TOWERS AND ANTENNAS SHALL BE INSTALLED WITH THE NUTS FACING TO THE OUTSIDE AND/OR TO THE TOP OF THE TOWER, UNLESS PROHIBITED BY LACK OF CLEARANCE.

2. TIGHTENING OF BOLTS: ALL HIGH STRENGTH BOLTS SHALL BE TIGHTENED TO A SNUG-TIGHT CONDITION, AS DEFINED BY AISC.

3. NUT LOCKING DEVICE: ALL NUTS SHALL BE EQUIPPED WITH SOME TYPE OF NUT LOCKING DEVICE. SEE THE INDIVIDUAL DRAWINGS FOR THE TYPE OF NUT LOCKING DEVICE TO BE USED FOR EACH INDIVIDUAL APPLICATION.

UNLESS OTHERWISE SPECIFIED
ALL DIMENSIONS INCLUDE
FINISHES AND ARE IN INCHES

TOLERANCES: FRACTIONS ± 1/16"
ANGLES ± 1/2 DEG.
DECIMALS ± .010"

MATERIAL:

TOLERANCES DO NOT APPLY TO RAW MATERIAL

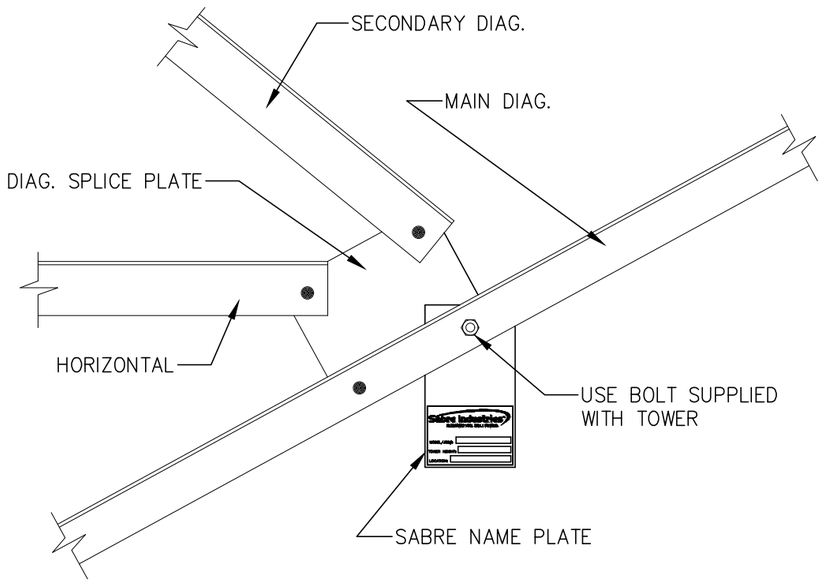
REV	DATE	DRW	CHK	DESCRIPTION
3	02/15/08	KLE	DLW	REVISED PER KEITH TINDALL
2	03/04/04	PSB	ZAK	REDRAWN ONTO "B" SIZE TITLEBLOCK.
1	03/06/01	JKW	PSB	REDRAWN IN AUTOCAD 2000i.

Sabre Industries™
INNOVATION DELIVERED

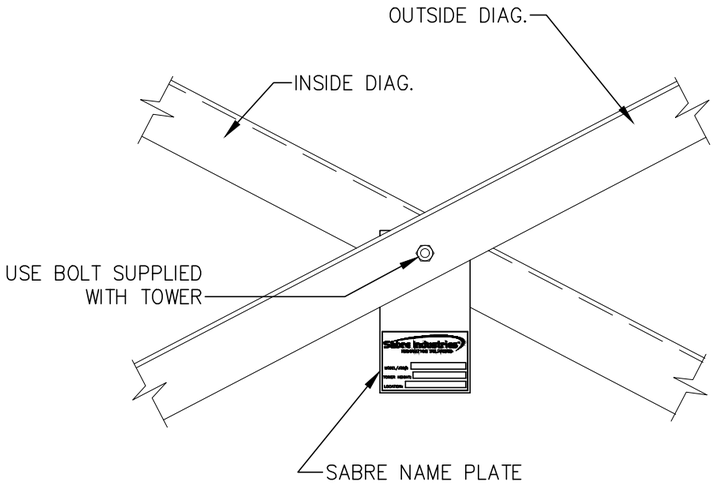
CONFIDENTIAL
This document and the information contained herein is the confidential trade secret property of Sabre Industries, Inc. ("Sabre") and must not be reproduced, copied or used, in whole or in part, for any purpose without the prior written consent of Sabre.
© 2022 Sabre Industries, Inc. All rights reserved.

BOLT INSTALLATION DETAILS

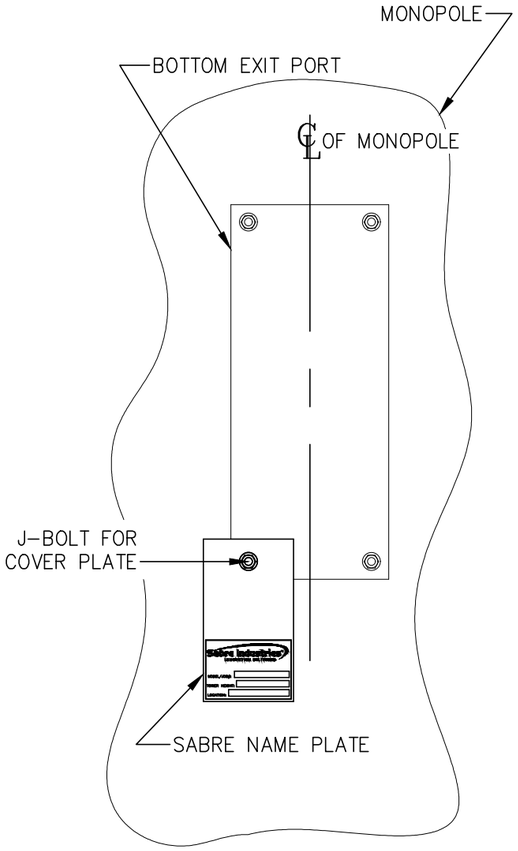
		SIZE	DRAWING NO.	REV
DATE	01/28/00	B	9014671	3
DRAWN BY	MJM			
CHECKED BY	KJT/DLW	SCALE None	PAGE 1 OF 1	



TYPICAL FOR MODEL S3TL, S4TL, S3R & S4R
SELF-SUPPORTING TOWER
(K-BRACE)

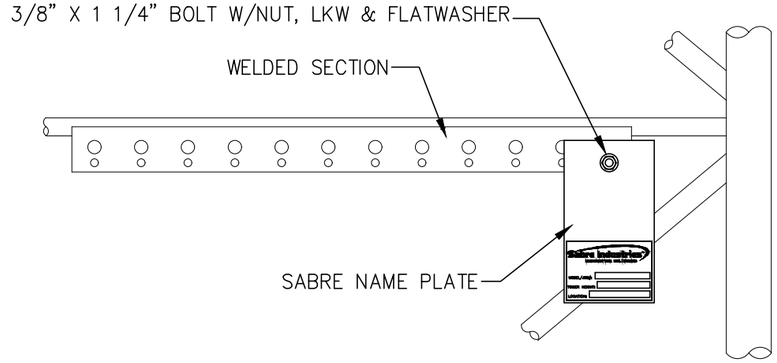


TYPICAL FOR MODEL S3TL, S4TL, S3R & S4R
SELF-SUPPORTING TOWER
(X-BRACE)

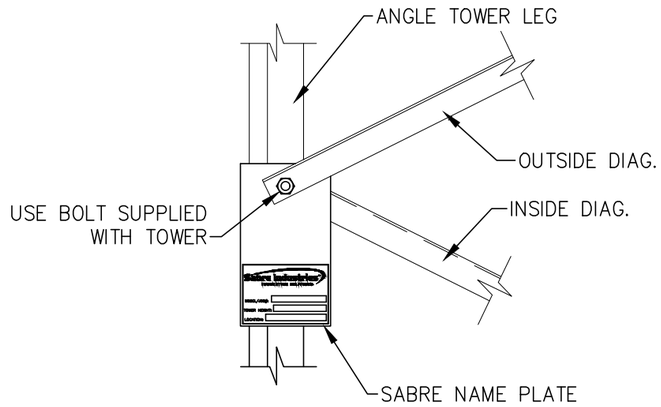


TYPICAL FOR MONOPOLE
STRUCTURE

NOTE:
NAME PLATE SHOULD BE MOUNTED AT
APPROXIMATELY EYE LEVEL WHEN POSSIBLE.



TYPICAL FOR MODEL 2400 / 3600 / 4400 / 4800 / 6000
WELDED GUYED TOWER



TYPICAL FOR MODEL 3000 / 3600 / 4800
ANGLE GUYED TOWER

UNLESS OTHERWISE SPECIFIED
ALL DIMENSIONS INCLUDE
FINISHES AND ARE IN INCHES

TOLERANCES: FRACTIONS ± 1/16"
ANGLES ± 1/2 DEG.
DECIMALS ± .010"

MATERIAL:

TOLERANCES DO NOT APPLY
TO RAW MATERIAL

REV	DATE	DRW	CHK	DESCRIPTION
7	05/25/21	FJM	DLW	UPDATED SABRE NAME PLATE LOGO
6	8/18/11	DSN	KTW	ADDED 4800 & 6000 WELDED GUYED TOWER.
5	3/30/04	MJM	ZAK	ADDED S4TL & S4R TO S.S. TOWER.
4	11/11/02	PSB	RGF	ADDED 2400 WELDED GUYED TOWER.
3	08/23/01	SMC	PSB	REVISED BOLT ON GUYED TOWER WAS 3/8 X 1"
				REVISED MONOPOLE INSTALLATION.
2	02/16/01	DEM	RGF	REDRAWN IN AUTOCAD 2000i
1	04/16/97	DEM	RGF	REDRAWN WITH NEW TITLE BLOCK

Sabre Industries™
INNOVATION DELIVERED

CONFIDENTIAL
This document and the information contained herein is the confidential trade secret property of Sabre Industries, Inc. ("Sabre") and must not be reproduced, copied or used, in whole or in part, for any purpose without the prior written consent of Sabre.
© 2022 Sabre Industries, Inc. All rights reserved.

OPTIONAL MOUNTING INSTALLATION
SABRE NAME PLATE

		SIZE	DRAWING NO.	REV
DATE	10/15/96	B	906956	7
DRAWN BY	DEM			
CHECKED BY	RGF	SCALE None	PAGE 1 OF 1	

NOTICE

ALL PARTS ARE TO BE INVENTORIED AND ANY
SHORTAGES REPORTED WITHIN 48 HOURS OF DELIVERY
TO THE CONTRACTING ERECTOR.

SHORTAGES REPORTED AFTER THIS TIME PERIOD WILL
BE CHARGED TO THE CONTRACTOR.

CALL 712-258-6690

TO REACH THE SABRE CONTRACTS DEPARTMENT.

AVISO

Todas las partes serán inventariadas y los faltantes reportados
por el contratista dentro de las 48 horas a partir de la entrega.

Los faltantes reportados después de 48 horas serán cargados al contratista.

Para aclaraciones llame a:

Sabre-Departamento de Contrataciones

(001) 712 258-6690

UNLESS OTHERWISE SPECIFIED
ALL DIMENSIONS INCLUDE
FINISHES AND ARE IN INCHES

TOLERANCES: FRACTIONS ± 1/16"
ANGLES ± 1/2 DEG.
DECIMALS ± .010"

MATERIAL:

TOLERANCES DO NOT APPLY
TO RAW MATERIAL

REV	DATE	DRW	CHK	DESCRIPTION
3	03/04/04	PSB	ZAK	REDRAWN ONTO "B" SIZE TITLEBLOCK.
2	02/25/02	CHH	RWM	ADDED SPANISH TEXT.
1	02/27/01	CHH	CE	REDRAWN IN AUTOCAD 2000i & UPDATED VERBAGE.

Sabre Industries™
INNOVATION DELIVERED

CONFIDENTIAL

This document and the information contained herein is the confidential trade secret property of Sabre Industries, Inc. ("Sabre") and must not be reproduced, copied or used, in whole or in part, for any purpose without the prior written consent of Sabre.
© 2022 Sabre Industries, Inc. All rights reserved.

INVENTORY REQUIREMENT SHEET

DATE	05/12/97
DRAWN BY	ZAK
CHECKED BY	JD

SIZE	DRAWING NO.	REV
B	907901	3

SCALE	PAGE
None	1 OF 1

EXHIBIT K

Sabre Industries™ INNOVATION DELIVERED

CUSTOMER : MARION COUNTY OREGON

SITE : WIPPER, OR

B.O.M. 180 FT. MODEL S3TL-HD2 SELF-SUPPORTING TOWER

PC=PIECE	OR=ORANGE
PLT=PALLET	WH=WHITE
BDL=BUNDLE	O/W=OR & WH
CRT=CRATE	N/R=NOT REQ'D
D=DRUM	SP=SPECIAL
BX=BOX	

ITEM NO.	NO. REQ'D.	DRAWING NUMBER	DRAWING REV	PART NO.	DESCRIPTION	TOTAL WEIGHT LBS.	PAINT	PACKING KIT	PACKING QTY OF PKG'S	PACKING PKG. NO.
1					**ANCHOR BOLTS AND TEMPLATES**					
2	18	C40041061	0	C40041061	ANCHOR BOLT ASSEMBLY, 1 3/4 Ø X 7'-3 (F1554 GR 105)	1305				
3					W/(5) NUTS 1 3/4 HEAVY HEX (A563 DH)					
4					(2) FLATWASHERS 1 3/4 (F436)					
5	6	C30139220	0	C30139220	PLATE, A.B. TEMPLATE 1 3/4"Ø A.B. ON 19"Ø B.C.	161				
6					**LEG TO LEG TEMPLATE MATERIAL**					
7	1 KIT			C30400341	LEG TO LEG TEMPLATE KIT, 23'-0 BASE SPREAD	517				
8					(6) 1 3/4"Ø A.B. ON A 19"Ø B.C.					
9										
10										
11										
12										
13										
14										
15										
16										
17										
18										
19										
20										

REV	DATE	DRW	CHK	DESCRIPTION

DATE	7/2/25	**JOB NO.**	563423
DRAWN BY	GCK	**PRINT NO.**	BOM-1
CHECKED BY	KCG	**PAGE**	1 OF 23

EXHIBIT K

Sabre Industries™
INNOVATION DELIVERED

CUSTOMER : MARION COUNTY OREGON

SITE : WIPPER, OR

B.O.M. 180 FT. MODEL S3TL-HD2 SELF-SUPPORTING TOWER

PC=PIECE	OR=ORANGE
PLT=PALLET	WH=WHITE
BDL=BUNDLE	O/W=OR & WH
CRT=CRATE	N/R=NOT REQ'D
D=DRUM	SP=SPECIAL
BX=BOX	

ITEM NO.	NO. REQ'D.	DRAWING NUMBER	DRAWING REV	PART NO.	DESCRIPTION	TOTAL WEIGHT LBS.	PAINT	PACKING KIT	PACKING QTY OF PKG'S	PACKING PKG. NO.
1					**TOWER LEGS**					
2	3	15-T11611441	0	15-T11611441	SECT. 15 LEG 14 Ø X .500 X 20'-0 5/16 W/STEP BOLTS	5508				
3	3	14-T11611443	0	14-T11611443	SECT. 14 LEG 14 Ø X .500 X 20'-0 5/16 W/STEP BOLTS	5618				
4	3	13-T11611445	0	13-T11611445	SECT. 13 LEG 10 3/4 Ø X .500 X 20'-0 5/16 W/STEP BOLTS	4625				
5	3	12-T11610309	0	12-T11610309	SECT. 12 LEG 10 3/4 Ø X .500 X 20'-0 5/16 W/STEP BOLTS	4336				
6	3	11-T1169117	0	11-T1169117	SECT. 11 LEG 8 5/8 Ø X .500 X 20'-0 5/16 W/STEP BOLTS	3504				
7	3	10-T1169819	0	10-T1169819	SECT. 10 LEG 8 5/8 Ø X .322 X 20'-0 5/16 W/STEP BOLTS	2270				
8	3	09-T1169975	0	09-T1169975	SECT. 9 LEG 5 9/16 Ø X .375 X 20'-0 5/16 W/STEP BOLTS	1758				
9	1	08-T1168025	0	08-T1168025	SECT. 8 LEG 4 Ø X .318 X 20'-0 5/16 W/STEP BOLTS	373				
10	2	08-T1168026	0	08-T1168026	SECT. 8 LEG 4 Ø X .318 X 20'-0 5/16	735				
11	1	07-T1165503	0	07-T1165503	SECT. 7 LEG 2 7/8 Ø X .203 X 20'-0 5/16 W/STEP BOLTS	219				
12	2	07-T1165504	0	07-T1165504	SECT. 7 LEG 2 7/8 Ø X .203 X 20'-0 5/16	428				
13										
14										
15										
16										
17										
18										
19										
20										

REV	DATE	DRW	CHK	DESCRIPTION

DATE	7/31/25	**JOB NO.**	563423
DRAWN BY	KMP	**PRINT NO.**	BOM-1
CHECKED BY	ZAK	**PAGE**	2 OF 23

EXHIBIT K

CUSTOMER : MARION COUNTY OREGON

SITE : WIPPER, OR

B.O.M. 180 FT. MODEL S3TL-HD2 SELF-SUPPORTING TOWER

PC=PIECE	OR=ORANGE
PLT=PALLET	WH=WHITE
BDL=BUNDLE	O/W=OR & WH
CRT=CRATE	N/R=NOT REQ'D
D=DRUM	SP=SPECIAL
BX=BOX	

ITEM NO.	NO. REQ'D.	DRAWING NUMBER	DRAWING REV	PART NO.	DESCRIPTION	TOTAL WEIGHT LBS.	PAINT	PACKING KIT	PACKING QTY OF PKG'S	PACKING PKG. NO.
1					**TOWER BRACING**					
2	1 KIT				**BRACING #15-T8101794 SECTION 15**	3451				
3					**CONSISTING OF THE MATERIAL LISTED BELOW**					
4	6	TS11269	0	TS11269	ANGLE, DIAGONAL 6 X 4 X 3/8 X 22'-11 3/16	1760				
5	6	TS11270	0	TS11270	ANGLE, DIAGONAL 6 X 4 X 3/8 X 22'-0 7/16	1691				
6					**SPLICE BOLTS TOP OF SECTION 15**					
7	31			C40026115	BOLT ASSEMBLY, 1 1/2 Ø X 6 1/2 A325	188				
8	1 KIT				**HARDWARE #TK01256 SECTION 15**	72				
9					**CONSISTING OF THE MATERIAL LISTED BELOW**					
10	7			C40026099	BOLT ASSEMBLY, 1 1/8 Ø X 3 1/4 A325	15				
11	25			C40026097	BOLT ASSEMBLY, 1 1/8 Ø X 2 3/4 A325	50				
12	7			C40047014	RINGFILL, 3/8 THICK - 1 1/8 Ø BOLT (3 X 3)	7				
13										
14										
15										
16										
17										
18										
19										
20										

REV	DATE	DRW	CHK	DESCRIPTION

DATE	7/31/25	**JOB NO.**	563423
DRAWN BY	KMP	**PRINT NO.**	BOM-1
CHECKED BY	ZAK	**PAGE**	3 OF 23

CUSTOMER : MARION COUNTY OREGON

SITE : WIPPER, OR

B.O.M. 180 FT. MODEL S3TL-HD2 SELF-SUPPORTING TOWER

PC=PIECE	OR=ORANGE
PLT=PALLET	WH=WHITE
BDL=BUNDLE	O/W=OR & WH
CRT=CRATE	N/R=NOT REQ'D
D=DRUM	SP=SPECIAL
BX=BOX	

ITEM NO.	NO. REQ'D.	DRAWING NUMBER	DRAWING REV	PART NO.	DESCRIPTION	TOTAL WEIGHT LBS.	PAINT	PACKING KIT	PACKING QTY OF PKG'S	PACKING PKG. NO.
1					**TOWER BRACING CONT'D**					
2	1 KIT				**BRACING #14-T8101795 SECTION 14**	3174				
3					**CONSISTING OF THE MATERIAL LISTED BELOW**					
4	6	TS11271	0	TS11271	ANGLE, DIAGONAL 6 X 4 X 3/8 X 21'-1 3/8	1621				
5	6	TS11272	0	TS11272	ANGLE, DIAGONAL 6 X 4 X 3/8 X 20'-2 7/8	1553				
6					**SPLICE BOLTS TOP OF SECTION 14**					
7	31			C40026166	BOLT ASSEMBLY, 1 1/2 Ø X 7 A325	196				
8	1 KIT				**HARDWARE #TK01256 SECTION 14**	72				
9					**CONSISTING OF THE MATERIAL LISTED BELOW**					
10	7			C40026099	BOLT ASSEMBLY, 1 1/8 Ø X 3 1/4 A325	15				
11	25			C40026097	BOLT ASSEMBLY, 1 1/8 Ø X 2 3/4 A325	50				
12	7			C40047014	RINGFILL, 3/8 THICK - 1 1/8 Ø BOLT (3 X 3)	7				
13										
14										
15										
16										
17										
18										
19										
20										

REV	DATE	DRW	CHK	DESCRIPTION

DATE	7/31/25	**JOB NO.**	563423
DRAWN BY	KMP	**PRINT NO.**	BOM-1
CHECKED BY	ZAK	**PAGE**	4 OF 23

EXHIBIT K

Sabre Industries™ INNOVATION DELIVERED

CUSTOMER : MARION COUNTY OREGON

SITE : WIPPER, OR

B.O.M. 180 FT. MODEL S3TL-HD2 SELF-SUPPORTING TOWER

PC=PIECE	OR=ORANGE
PLT=PALLET	WH=WHITE
BDL=BUNDLE	O/W=OR & WH
CRT=CRATE	N/R=NOT REQ'D
D=DRUM	SP=SPECIAL
BX=BOX	

ITEM NO.	NO. REQ'D.	DRAWING NUMBER	DRAWING REV	PART NO.	DESCRIPTION	TOTAL WEIGHT LBS.	PAINT	PACKING KIT	PACKING QTY OF PKG'S	PACKING PKG. NO.
1					**TOWER BRACING CONT'D**					
2	1 KIT				**BRACING #13-T8101796 SECTION 13**	2371				
3					**CONSISTING OF THE MATERIAL LISTED BELOW**					
4	6	TS11273	0	TS11273	ANGLE, DIAGONAL 4 X 4 X 3/8 X 19'-4 1/8	1239				
5	6	TS11274	0	TS11274	ANGLE, DIAGONAL 4 X 4 X 3/8 X 18'-5 15/16	1132				
6					**SPLICE BOLTS TOP OF SECTION 13**					
7	25			C40026115	BOLT ASSEMBLY, 1 1/2 Ø X 6 1/2 A325	152				
8	1 KIT				**HARDWARE #TK00353 SECTION 13**	54				
9					**CONSISTING OF THE MATERIAL LISTED BELOW**					
10	7			C40026073	BOLT ASSEMBLY, 1 Ø X 3 A325	12				
11	25			C40026071	BOLT ASSEMBLY, 1 Ø X 2 1/2 A325	41				
12	7			C40047007	RINGFILL, 3/8 THICK - 1 Ø BOLT	1				
13										
14										
15										
16										
17										
18										
19										
20										

REV	DATE	DRW	CHK	DESCRIPTION

DATE	7/31/25	**JOB NO.**	563423
DRAWN BY	KMP	**PRINT NO.**	BOM-1
CHECKED BY	ZAK	**PAGE**	5 OF 23

Sabre Industries™
INNOVATION DELIVERED

CUSTOMER : MARION COUNTY OREGON

SITE : WIPPER, OR

B.O.M. 180 FT. MODEL S3TL-HD2 SELF-SUPPORTING TOWER

PC=PIECE	OR=ORANGE
PLT=PALLET	WH=WHITE
BDL=BUNDLE	O/W=OR & WH
CRT=CRATE	N/R=NOT REQ'D
D=DRUM	SP=SPECIAL
BX=BOX	

ITEM NO.	NO. REQ'D.	DRAWING NUMBER	DRAWING REV	PART NO.	DESCRIPTION	TOTAL WEIGHT LBS.	PAINT	PACKING KIT	PACKING QTY OF PKG'S	PACKING PKG. NO.
1					**TOWER BRACING CONT'D**					
2	1 KIT				**BRACING #12-T8101797 SECTION 12**	1983				
3					**CONSISTING OF THE MATERIAL LISTED BELOW**					
4	6	TS11275	0	TS11275	ANGLE, DIAGONAL 4 X 3 1/2 X 3/8 X 17'-10 7/16	1015				
5	6	TS11276	0	TS11276	ANGLE, DIAGONAL 4 X 3 1/2 X 3/8 X 17'-0 9/16	968				
6					**SPLICE BOLTS TOP OF SECTION 12**					
7	25			C40026115	BOLT ASSEMBLY, 1 1/2 Ø X 6 1/2 A325	152				
8	1 KIT				**HARDWARE #TK00353 SECTION 12**	54				
9					**CONSISTING OF THE MATERIAL LISTED BELOW**					
10	7			C40026073	BOLT ASSEMBLY, 1 Ø X 3 A325	12				
11	25			C40026071	BOLT ASSEMBLY, 1 Ø X 2 1/2 A325	41				
12	7			C40047007	RINGFILL, 3/8 THICK - 1 Ø BOLT	1				
13										
14										
15										
16										
17										
18										
19										
20										

REV	DATE	DRW	CHK	DESCRIPTION

DATE	7/31/25	**JOB NO.**	563423
DRAWN BY	KMP	**PRINT NO.**	BOM-1
CHECKED BY	ZAK	**PAGE**	6 OF 23

Sabre Industries™
INNOVATION DELIVERED

CUSTOMER : MARION COUNTY OREGON

SITE : WIPPER, OR

B.O.M. 180 FT. MODEL S3TL-HD2 SELF-SUPPORTING TOWER

PC=PIECE	OR=ORANGE
PLT=PALLET	WH=WHITE
BDL=BUNDLE	O/W=OR & WH
CRT=CRATE	N/R=NOT REQ'D
D=DRUM	SP=SPECIAL
BX=BOX	

ITEM NO.	NO. REQ'D.	DRAWING NUMBER	DRAWING REV	PART NO.	DESCRIPTION	TOTAL WEIGHT LBS.	PAINT	PACKING KIT	PACKING QTY OF PKG'S	PACKING PKG. NO.
1					**TOWER BRACING CONT'D**					
2	1 KIT				**BRACING #11-T8101372 SECTION 11**	2397				
3					**CONSISTING OF THE MATERIAL LISTED BELOW**					
4	6	TS08563	0	TS08563	ANGLE, DIAGONAL 4 X 3 1/2 X 3/8 X 14'-7 7/8	832				
5	6	TS08562	0	TS08562	ANGLE, DIAGONAL 4 X 3 1/2 X 3/8 X 14'-0 13/16	799				
6	6	TS08561	0	TS08561	ANGLE, DIAGONAL 4 X 3 1/2 X 3/8 X 13'-5 13/16	766				
7					**SPLICE BOLTS TOP OF SECTION 11**					
8	19			C40026093	BOLT ASSEMBLY, 1 1/4 Ø X 5 A325	65				
9	1 KIT				**HARDWARE #TK00430 SECTION 11**	81				
10					**CONSISTING OF THE MATERIAL LISTED BELOW**					
11	10			C40026073	BOLT ASSEMBLY, 1 Ø X 3 A325	18				
12	38			C40026071	BOLT ASSEMBLY, 1 Ø X 2 1/2 A325	62				
13	10			C40047007	RINGFILL, 3/8 THICK - 1 Ø BOLT	1				
14										
15										
16										
17										
18										
19										
20										

REV	DATE	DRW	CHK	DESCRIPTION

DATE	7/31/25	**JOB NO.**	563423
DRAWN BY	KMP	**PRINT NO.**	BOM-1
CHECKED BY	ZAK	**PAGE**	7 OF 23

Sabre Industries™ INNOVATION DELIVERED

CUSTOMER : MARION COUNTY OREGON

SITE : WIPPER, OR

B.O.M. 180 FT. MODEL S3TL-HD2 SELF-SUPPORTING TOWER

PC=PIECE	OR=ORANGE
PLT=PALLET	WH=WHITE
BDL=BUNDLE	O/W=OR & WH
CRT=CRATE	N/R=NOT REQ'D
D=DRUM	SP=SPECIAL
BX=BOX	

ITEM NO.	NO. REQ'D.	DRAWING NUMBER	DRAWING REV	PART NO.	DESCRIPTION	TOTAL WEIGHT LBS.	PAINT	PACKING KIT	PACKING QTY OF PKG'S	PACKING PKG. NO.
1					**TOWER BRACING CONT'D**					
2	1 KIT				**BRACING #10-T8100820 SECTION 10**	1887				
3					**CONSISTING OF THE MATERIAL LISTED BELOW**					
4	6	TS05779	1	TS05779	ANGLE, DIAGONAL 4 X 4 X 5/16 X 12'-10 3/8	658				
5	6	TS05780	1	TS05780	ANGLE, DIAGONAL 4 X 4 X 5/16 X 12'-3 1/2	629				
6	6	TS05781	1	TS05781	ANGLE, DIAGONAL 4 X 4 X 5/16 X 11'-8 3/4	600				
7					**SPLICE BOLTS TOP OF SECTION 10**					
8	19			C40026094	BOLT ASSEMBLY, 1 1/4 Ø X 5 1/2 A325	69				
9	1 KIT				**HARDWARE #TK00437 SECTION 10**	79				
10					**CONSISTING OF THE MATERIAL LISTED BELOW**					
11	10			C40026072	BOLT ASSEMBLY, 1 Ø X 2 3/4 A325	17				
12	37			C40026071	BOLT ASSEMBLY, 1 Ø X 2 1/2 A325	61				
13	10			C40047010	RINGFILL, 1/2 THICK - 1 Ø BOLT	1				
14										
15										
16										
17										
18										
19										
20										

REV	DATE	DRW	CHK	DESCRIPTION

DATE	7/31/25	**JOB NO.**	563423
DRAWN BY	KMP	**PRINT NO.**	BOM-1
CHECKED BY	ZAK	**PAGE**	8 OF 23

Sabre Industries™ INNOVATION DELIVERED

CUSTOMER : MARION COUNTY OREGON

SITE : WIPPER, OR

B.O.M. 180 FT. MODEL S3TL-HD2 SELF-SUPPORTING TOWER

PC=PIECE	OR=ORANGE
PLT=PALLET	WH=WHITE
BDL=BUNDLE	O/W=OR & WH
CRT=CRATE	N/R=NOT REQ'D
D=DRUM	SP=SPECIAL
BX=BOX	

ITEM NO.	NO. REQ'D.	DRAWING NUMBER	DRAWING REV	PART NO.	DESCRIPTION	TOTAL WEIGHT LBS.	PAINT	PACKING KIT	PACKING QTY OF PKG'S	PACKING PKG. NO.
1					**TOWER BRACING CONT'D**					
2	1 KIT				**BRACING #09-T8100384 SECTION 09**	1612				
3					**CONSISTING OF THE MATERIAL LISTED BELOW**					
4	6	TS03786	1	TS03786	ANGLE, DIAGONAL 3 1/2 X 3 X 3/8 X 11'-5 3/8	564				
5	6	TS03787	1	TS03787	ANGLE, DIAGONAL 3 1/2 X 3 X 3/8 X 10'-10 13/16	537				
6	6	TS03788	1	TS03788	ANGLE, DIAGONAL 3 1/2 X 3 X 3/8 X 10'-4 7/16	511				
7					**SPLICE BOLTS TOP OF SECTION 09**					
8	19			C40026078	BOLT ASSEMBLY, 1 Ø X 4 1/4 A325	41				
9	1 KIT				**HARDWARE #TK00269 SECTION 09**	37				
10					**CONSISTING OF THE MATERIAL LISTED BELOW**					
11	10			C40026045	BOLT ASSEMBLY, 3/4 Ø X 2 1/2 A325	8				
12	38			C40026044	BOLT ASSEMBLY, 3/4 Ø X 2 1/4 A325	28				
13	10			C40047004	RINGFILL, 3/8 THICK - 3/4 Ø BOLT	1				
14										
15										
16										
17										
18										
19										
20										

REV	DATE	DRW	CHK	DESCRIPTION

DATE	7/31/25	**JOB NO.**	563423
DRAWN BY	KMP	**PRINT NO.**	BOM-1
CHECKED BY	ZAK	**PAGE**	9 OF 23

Sabre Industries™
INNOVATION DELIVERED

CUSTOMER : MARION COUNTY OREGON

SITE : WIPPER, OR

B.O.M. 180 FT. MODEL S3TL-HD2 SELF-SUPPORTING TOWER

PC=PIECE	OR=ORANGE
PLT=PALLET	WH=WHITE
BDL=BUNDLE	O/W=OR & WH
CRT=CRATE	N/R=NOT REQ'D
D=DRUM	SP=SPECIAL
BX=BOX	

ITEM NO.	NO. REQ'D.	DRAWING NUMBER	DRAWING REV	PART NO.	DESCRIPTION	TOTAL WEIGHT LBS.	PAINT	PACKING KIT	PACKING QTY OF PKG'S	PACKING PKG. NO.
1					**TOWER BRACING CONT'D**					
2	1 KIT				**BRACING #08-T8100421 SECTION 08**	1256				
3					**CONSISTING OF THE MATERIAL LISTED BELOW**					
4	6	TS04017	1	TS04017	ANGLE, DIAGONAL 2 1/2 X 2 1/2 X 3/8 X 9'-1 13/16	337				
5	6	TS04018	1	TS04018	ANGLE, DIAGONAL 2 1/2 X 2 1/2 X 3/8 X 8'-8 11/16	322				
6	6	TS04019	1	TS04019	ANGLE, DIAGONAL 2 1/2 X 2 1/2 X 3/8 X 8'-3 5/8	306				
7	6	TS04020	1	TS04020	ANGLE, DIAGONAL 2 1/2 X 2 1/2 X 3/8 X 7'-10 11/16	291				
8					**SPLICE BOLTS TOP OF SECTION 08**					
9	19			C40026078	BOLT ASSEMBLY, 1 Ø X 4 1/4 A325	41				
10	1 KIT				**HARDWARE #TK00348 SECTION 08**	49				
11					**CONSISTING OF THE MATERIAL LISTED BELOW**					
12	13			C40026045	BOLT ASSEMBLY, 3/4 Ø X 2 1/2 A325	10				
13	50			C40026044	BOLT ASSEMBLY, 3/4 Ø X 2 1/4 A325	37				
14	13			C40047004	RINGFILL, 3/8 THICK - 3/4 Ø BOLT	2				
15										
16										
17										
18										
19										
20										

REV	DATE	DRW	CHK	DESCRIPTION

DATE 7/31/25 **JOB NO.** 563423

DRAWN BY KMP **PRINT NO.** BOM-1

CHECKED BY ZAK **PAGE** 10 OF 23

Sabre Industries™ INNOVATION DELIVERED

CUSTOMER : MARION COUNTY OREGON

SITE : WIPPER, OR

B.O.M. 180 FT. MODEL S3TL-HD2 SELF-SUPPORTING TOWER

PC=PIECE	OR=ORANGE
PLT=PALLET	WH=WHITE
BDL=BUNDLE	O/W=OR & WH
CRT=CRATE	N/R=NOT REQ'D
D=DRUM	SP=SPECIAL
BX=BOX	

ITEM NO.	NO. REQ'D.	DRAWING NUMBER	DRAWING REV	PART NO.	DESCRIPTION	TOTAL WEIGHT LBS.	PAINT	PACKING KIT	PACKING QTY OF PKG'S	PACKING PKG. NO.
1					**TOWER BRACING**					
2	1 KIT				**BRACING #07-T8100168 SECTION 07**	726				
3					**CONSISTING OF THE MATERIAL LISTED BELOW**					
4	6	TS02040	1	TS02040	ANGLE, DIAGONAL 2 X 2 X 5/16 X 7'-5 1/2	182				
5	6	TS02039	1	TS02039	ANGLE, DIAGONAL 2 X 2 X 5/16 X 7'-0 13/16	173				
6	6	TS02038	1	TS02038	ANGLE, DIAGONAL 2 X 2 X 5/16 X 6'-8 5/16	163				
7	6	TS02037	1	TS02037	ANGLE, DIAGONAL 2 X 2 X 5/16 X 6'-3 15/16	155				
8	3	TS02036	1	TS02036	ANGLE, HORIZONTAL 2 X 2 X 5/16 X 4'-4 3/8	53				
9	1 KIT				**HARDWARE #TK00146 SECTION 07**	35				
10					**CONSISTING OF THE MATERIAL LISTED BELOW**					
11	13			C40026024	BOLT ASSEMBLY, 5/8 Ø X 2 1/4 A325	7				
12	57			C40026023	BOLT ASSEMBLY, 5/8 Ø X 2 A325	26				
13	13			C40047003	RINGFILL, 3/8 THICK - 5/8 Ø BOLT	2				
14										
15										
16										
17										
18										
19										
20										

REV	DATE	DRW	CHK	DESCRIPTION

DATE	7/31/25	**JOB NO.**	563423
DRAWN BY	KMP	**PRINT NO.**	BOM-1
CHECKED BY	ZAK	**PAGE**	11 OF 23

EXHIBIT K

CUSTOMER : MARION COUNTY OREGON

SITE : WIPPER, OR

B.O.M. 180 FT. MODEL S3TL-HD2 SELF-SUPPORTING TOWER

PC=PIECE	OR=ORANGE
PLT=PALLET	WH=WHITE
BDL=BUNDLE	O/W=OR & WH
CRT=CRATE	N/R=NOT REQ'D
D=DRUM	SP=SPECIAL
BX=BOX	

PACKING

ITEM NO.	NO. REQ'D.	DRAWING NUMBER	DRAWING REV	PART NO.	DESCRIPTION	TOTAL WEIGHT LBS.	PAINT	KIT	QTY OF PKG'S	PKG. NO.
1					**SAFETY CLIMB**					
2	1 KIT			C30012054	200' TUF-TUG SAFETY CLIMB MATERIAL	95				
3										
4										
5										
6										
7										
8										
9										
10										
11										
12										
13										
14										
15										
16										
17										
18										
19										
20										

REV	DATE	DRW	CHK	DESCRIPTION

DATE	7/31/25	**JOB NO.**	563423
DRAWN BY	KMP	**PRINT NO.**	BOM-1
CHECKED BY	ZAK	**PAGE**	12 OF 23

EXHIBIT K

CUSTOMER : MARION COUNTY OREGON

SITE : WIPPER, OR

B.O.M. 180 FT. MODEL S3TL-HD2 SELF-SUPPORTING TOWER

PC=PIECE	OR=ORANGE
PLT=PALLET	WH=WHITE
BDL=BUNDLE	O/W=OR & WH
CRT=CRATE	N/R=NOT REQ'D
D=DRUM	SP=SPECIAL
BX=BOX	

ITEM NO.	NO. REQ'D.	DRAWING NUMBER	DRAWING REV	PART NO.	DESCRIPTION	TOTAL WEIGHT LBS.	PAINT	PACKING KIT	PACKING QTY OF PKG'S	PACKING PKG. NO.
1					**SAFETY CLIMB MATERIAL**					
2	1 KIT			C30011049	SAFETY CLIMB BOTTOM MOUNT (14"Ø)	37				
3	1 KIT			C30011004	SAFETY CLIMB TOP MOUNT (2 3/4"Ø - 2 7/8"Ø)	27				
4	8 KITS			C30003001	SAFETY CLIMB INTERMEDIATE MOUNT	17				
5					**CLIMBING/CONSTRUCTION STEP BOLTS**					
6	373			C40044017	STEP BOLT ASSEMBLY, 5/8 Ø X 7 H.D.G.	373				
7										
8										
9										
10										
11										
12										
13										
14										
15										
16										
17										
18										
19										
20										

REV	DATE	DRW	CHK	DESCRIPTION

DATE	8/8/25	**JOB NO.**	563423
DRAWN BY	KMP	**PRINT NO.**	BOM-1
CHECKED BY	ZAK	**PAGE**	13 OF 23

EXHIBIT K

CUSTOMER : MARION COUNTY OREGON

SITE : WIPPER, OR

B.O.M. 180 FT. MODEL S3TL-HD2 SELF-SUPPORTING TOWER

PC=PIECE	OR=ORANGE
PLT=PALLET	WH=WHITE
BDL=BUNDLE	O/W=OR & WH
CRT=CRATE	N/R=NOT REQ'D
D=DRUM	SP=SPECIAL
BX=BOX	

ITEM NO.	NO. REQ'D.	DRAWING NUMBER	DRAWING REV	PART NO.	DESCRIPTION	TOTAL WEIGHT LBS.	PAINT	PACKING KIT	PACKING QTY OF PKG'S	PACKING PKG. NO.
1					**WAVEGUIDE LADDER (WG1)**					
2	18	CS00146	2	CS00146	ANGLE, WAVEGUIDE LADDER RAIL 20 FT. W/4 FT. RUNG SPC	540				
3	45	CS01619	0	CS01619	ANGLE, WAVEGUIDE SUPPORT (6 HOLE)	95				
4	18	CS00037	2	CS00037	PLATE, LADDER SPLICE	7				
5	46	CS00169	2	CS00169	CLIP, LADDER ATTACHMENT	25				
6					**WAVEGUIDE LADDER HARDWARE (WG1)**					
7	36			C40039002	J-BOLT ASSEMBLY, 3/8 Ø X 7 1/4 I.L.	13				
8	10			C40039001	J-BOLT ASSEMBLY, 3/8 Ø X 5 3/4 I.L.	3				
9	130			C40024004	BOLT ASSEMBLY, 3/8 Ø X 1 1/2 GRD 5	13				
10										
11										
12										
13										
14										
15										
16										
17										
18										
19										
20										

REV	DATE	DRW	CHK	DESCRIPTION

DATE	8/8/25	**JOB NO.**	563423
DRAWN BY	KMP	**PRINT NO.**	BOM-1
CHECKED BY	ZAK	**PAGE**	14 OF 23

EXHIBIT K

Sabre Industries™ INNOVATION DELIVERED

CUSTOMER : MARION COUNTY OREGON

SITE : WIPPER, OR

B.O.M. 180 FT. MODEL S3TL-HD2 SELF-SUPPORTING TOWER

PC=PIECE	OR=ORANGE
PLT=PALLET	WH=WHITE
BDL=BUNDLE	O/W=OR & WH
CRT=CRATE	N/R=NOT REQ'D
D=DRUM	SP=SPECIAL
BX=BOX	

ITEM NO.	NO. REQ'D.	DRAWING NUMBER	DRAWING REV	PART NO.	DESCRIPTION	TOTAL WEIGHT LBS.	PAINT	PACKING KIT	PACKING QTY OF PKG'S	PACKING PKG. NO.
1					**WAVEGUIDE LADDER (WG2)**					
2	18	CS00146	2	CS00146	ANGLE, WAVEGUIDE LADDER RAIL 20 FT. W/4 FT. RUNG SPC	540				
3	45	CS01619	0	CS01619	ANGLE, WAVEGUIDE SUPPORT (6 HOLE)	95				
4	18	CS00037	2	CS00037	PLATE, LADDER SPLICE	7				
5	46	CS00169	2	CS00169	CLIP, LADDER ATTACHMENT	25				
6					**WAVEGUIDE LADDER HARDWARE (WG2)**					
7	36			C40039002	J-BOLT ASSEMBLY, 3/8 Ø X 7 1/4 I.L.	13				
8	10			C40039001	J-BOLT ASSEMBLY, 3/8 Ø X 5 3/4 I.L.	3				
9	130			C40024004	BOLT ASSEMBLY, 3/8 Ø X 1 1/2 GRD 5	13				
10										
11										
12										
13										
14										
15										
16										
17										
18										
19										
20										

REV	DATE	DRW	CHK	DESCRIPTION

DATE	8/8/25	**JOB NO.**	563423
DRAWN BY	KMP	**PRINT NO.**	BOM-1
CHECKED BY	ZAK	**PAGE**	15 OF 23

EXHIBIT K

CUSTOMER : MARION COUNTY OREGON

SITE : WIPPER, OR

B.O.M. 180 FT. MODEL S3TL-HD2 SELF-SUPPORTING TOWER

PC=PIECE	OR=ORANGE
PLT=PALLET	WH=WHITE
BDL=BUNDLE	O/W=OR & WH
CRT=CRATE	N/R=NOT REQ'D
D=DRUM	SP=SPECIAL
BX=BOX	

ITEM NO.	NO. REQ'D.	DRAWING NUMBER	DRAWING REV	PART NO.	DESCRIPTION	TOTAL WEIGHT LBS.	PAINT	PACKING KIT	PACKING QTY OF PKG'S	PACKING PKG. NO.
1					**WAVEGUIDE LADDER (WG3)**					
2	18	CS00146	2	CS00146	ANGLE, WAVEGUIDE LADDER RAIL 20 FT. W/4 FT. RUNG SPC	540				
3	45	CS01619	0	CS01619	ANGLE, WAVEGUIDE SUPPORT (6 HOLE)	95				
4	18	CS00037	2	CS00037	PLATE, LADDER SPLICE	7				
5	46	CS00169	2	CS00169	CLIP, LADDER ATTACHMENT	25				
6					**WAVEGUIDE LADDER HARDWARE (WG3)**					
7	36			C40039002	J-BOLT ASSEMBLY, 3/8 Ø X 7 1/4 I.L.	13				
8	10			C40039001	J-BOLT ASSEMBLY, 3/8 Ø X 5 3/4 I.L.	3				
9	130			C40024004	BOLT ASSEMBLY, 3/8 Ø X 1 1/2 GRD 5	13				
10										
11										
12										
13										
14										
15										
16										
17										
18										
19										
20										

REV	DATE	DRW	CHK	DESCRIPTION

DATE	8/8/25	**JOB NO.**	563423
DRAWN BY	KMP	**PRINT NO.**	BOM-1
CHECKED BY	ZAK	**PAGE**	16 OF 23

CUSTOMER : MARION COUNTY OREGON

SITE : WIPPER, OR

B.O.M. 180 FT. MODEL S3TL-HD2 SELF-SUPPORTING TOWER

PC=PIECE	OR=ORANGE
PLT=PALLET	WH=WHITE
BDL=BUNDLE	O/W=OR & WH
CRT=CRATE	N/R=NOT REQ'D
D=DRUM	SP=SPECIAL
BX=BOX	

ITEM NO.	NO. REQ'D.	DRAWING NUMBER	DRAWING REV	PART NO.	DESCRIPTION	TOTAL WEIGHT LBS.	PAINT	PACKING KIT	PACKING QTY OF PKG'S	PACKING PKG. NO.
1					**LEG CAPS**					
2	1 KIT			C30008022	LEG CAP KIT, 3/4" BOLTS ON 6 1/2" B.C. (1" SPLICE PLATE)	11				
3					**3' SIDEARM MOUNT @ 179'**					
4	1 KIT			C10151103	3 FT. SIDEARM ASSEMBLY	82				
5	1			C10900105	PIPE ANTENNA MOUNTING KIT 2 3/8 Ø X 5'-0	22				
6	4			C40034032	U-BOLT ASSEMBLY 5/8 Ø X 5 3/16 C-C	9				
7					**Z-BRACKET PIPE MOUNT FOR SIDEARM @ 179'**					
8	1 KIT			C10174018	TAPERED LEG PIPE MOUNT KIT	64				
9	1			C10981407	ANTENNA MTG. PIPE 4 1/2 Ø X 7'-0	58				
10	4			C40034032	U-BOLT ASSEMBLY 5/8 Ø X 5 3/16 C-C	9				
11					**SWIVEL KNUCKLE TIEBACKS FOR SIDEARM @ 179'**					
12	2 KITS			C10179001	SWIVEL KNUCKLE TIEBACK KIT 2 3/8 Ø PIPE X 10'-0	118				
13					**Z-BRACKET FLUSH MOUNT @ 177'**					
14	1 KIT			C10174018	TAPERED LEG FLUSH MOUNT KIT	64				
15	1			C10981207	ANTENNA MTG. PIPE 2 3/8 Ø X 7'-0	23				
16	4			C40034023	U-BOLT ASSEMBLY 5/8 Ø X 3 1/16 C-C	5				
17					**3' SIDEARM MOUNTS @ 175'**					
18	2 KITS			C10151103	3 FT. SIDEARM ASSEMBLY	164				
19	2			C10900105	PIPE ANTENNA MOUNTING KIT 2 3/8 Ø X 5'-0	45				
20	8			C40034032	U-BOLT ASSEMBLY 5/8 Ø X 5 3/16 C-C	17				

REV	DATE	DRW	CHK	DESCRIPTION

DATE	8/8/25	**JOB NO.**	563423
DRAWN BY	KMP	**PRINT NO.**	BOM-1
CHECKED BY	ZAK	**PAGE**	17 OF 23

EXHIBIT K

CUSTOMER : MARION COUNTY OREGON

SITE : WIPPER, OR

B.O.M. 180 FT. MODEL S3TL-HD2 SELF-SUPPORTING TOWER

PC=PIECE	OR=ORANGE
PLT=PALLET	WH=WHITE
BDL=BUNDLE	O/W=OR & WH
CRT=CRATE	N/R=NOT REQ'D
D=DRUM	SP=SPECIAL
BX=BOX	

ITEM NO.	NO. REQ'D.	DRAWING NUMBER	DRAWING REV	PART NO.	DESCRIPTION	TOTAL WEIGHT LBS.	PAINT	PACKING KIT	PACKING QTY OF PKG'S	PACKING PKG. NO.
1					**Z-BRACKET PIPE MOUNTS FOR SIDEARMS @ 175'**					
2	2 KITS			C10174018	TAPERED LEG PIPE MOUNT KIT	127				
3	2			C10981407	ANTENNA MTG. PIPE 4 1/2 Ø X 7'-0	116				
4	8			C40034032	U-BOLT ASSEMBLY 5/8 Ø X 5 3/16 C-C	17				
5					**SWIVEL KNUCKLE TIEBACKS FOR SIDEARMS @ 175'**					
6	4 KITS			C10179002	SWIVEL KNUCKLE TIEBACK KIT 2 3/8 Ø PIPE X 13'-3	280				
7					**Z-BRACKET PIPE MOUNTS @ 173'**					
8	3 KITS			C10174018	TAPERED LEG PIPE MOUNT KIT	191				
9	3			C10981407	ANTENNA MTG. PIPE 4 1/2 Ø X 7'-0	175				
10	12			C40034032	U-BOLT ASSEMBLY 5/8 Ø X 5 3/16 C-C	26				
11					**8 FT. PARABOLIC ANTENNA ICE SHIELD @ 170'**					
12	1 KIT			C30085002	PARABOLIC ANTENNA ICE SHIELD, 6'-8' ANTENNAS	701				
13					**Z-BRACKET PIPE MOUNT @ 165'**					
14	1 KIT			C10174018	TAPERED LEG PIPE MOUNT KIT	64				
15	1			C10981407	ANTENNA MTG. PIPE 4 1/2 Ø X 7'-0	58				
16	4			C40034032	U-BOLT ASSEMBLY 5/8 Ø X 5 3/16 C-C	9				
17					**3' SIDEARM MOUNT @ 165'**					
18	1 KIT			C10151103	3 FT. SIDEARM ASSEMBLY	82				
19	1			C10900105	PIPE ANTENNA MOUNTING KIT 2 3/8 Ø X 5'-0	22				
20	4			C40034032	U-BOLT ASSEMBLY 5/8 Ø X 5 3/16 C-C	9				

REV	DATE	DRW	CHK	DESCRIPTION

DATE 8/8/25 **JOB NO.** 563423

DRAWN BY KMP **PRINT NO.** BOM-1

CHECKED BY ZAK **PAGE** 18 OF 23

Sabre Industries™
INNOVATION DELIVERED

CUSTOMER : MARION COUNTY OREGON

SITE : WIPPER, OR

B.O.M. 180 FT. MODEL S3TL-HD2 SELF-SUPPORTING TOWER

PC=PIECE	OR=ORANGE
PLT=PALLET	WH=WHITE
BDL=BUNDLE	O/W=OR & WH
CRT=CRATE	N/R=NOT REQ'D
D=DRUM	SP=SPECIAL
BX=BOX	

PACKING

ITEM NO.	NO. REQ'D.	DRAWING NUMBER	DRAWING REV	PART NO.	DESCRIPTION	TOTAL WEIGHT LBS.	PAINT	KIT	QTY OF PKG'S	PKG. NO.
1					**Z-BRACKET PIPE MOUNT FOR SIDEARM @ 165'**					
2	1 KIT			C10174018	TAPERED LEG PIPE MOUNT KIT	64				
3	1			C10981407	ANTENNA MTG. PIPE 4 1/2 Ø X 7'-0	58				
4	4			C40034032	U-BOLT ASSEMBLY 5/8 Ø X 5 3/16 C-C	9				
5					**SWIVEL KNUCKLE TIEBACKS FOR SIDEARM @ 165'**					
6	2 KITS			C10179002	SWIVEL KNUCKLE TIEBACK KIT 2 3/8 Ø PIPE X 13'-3	140				
7					**3' SIDEARM MOUNT @ 163'**					
8	1 KIT			C10151103	3 FT. SIDEARM ASSEMBLY	82				
9	1			C10900104	PIPE ANTENNA MOUNTING KIT 2 3/8 Ø X 4'-0	19				
10	4			C40034032	U-BOLT ASSEMBLY 5/8 Ø X 5 3/16 C-C	9				
11					**Z-BRACKET PIPE MOUNT FOR SIDEARM @ 163'**					
12	1 KIT			C10174018	TAPERED LEG PIPE MOUNT KIT	64				
13	1			C10981407	ANTENNA MTG. PIPE 4 1/2 Ø X 7'-0	58				
14	4			C40034032	U-BOLT ASSEMBLY 5/8 Ø X 5 3/16 C-C	9				
15					**SWIVEL KNUCKLE TIEBACKS FOR SIDEARM @ 163'**					
16	2 KITS			C10179002	SWIVEL KNUCKLE TIEBACK KIT 2 3/8 Ø PIPE X 13'-3	140				
17					**8 FT. PARABOLIC ANTENNA ICE SHIELD @ 155'**					
18	2 KITS			C30085002	PARABOLIC ANTENNA ICE SHIELD, 6'-8' ANTENNAS	1402				
19										
20										

REV	DATE	DRW	CHK	DESCRIPTION

DATE 8/8/25 **JOB NO.** 563423

DRAWN BY KMP **PRINT NO.** BOM-1

CHECKED BY ZAK **PAGE** 19 OF 23

Sabre Industries™
INNOVATION DELIVERED

CUSTOMER : MARION COUNTY OREGON

SITE : WIPPER, OR

B.O.M. 180 FT. MODEL S3TL-HD2 SELF-SUPPORTING TOWER

PC=PIECE	OR=ORANGE
PLT=PALLET	WH=WHITE
BDL=BUNDLE	O/W=OR & WH
CRT=CRATE	N/R=NOT REQ'D
D=DRUM	SP=SPECIAL
BX=BOX	

ITEM NO.	NO. REQ'D.	DRAWING NUMBER	DRAWING REV	PART NO.	DESCRIPTION	TOTAL WEIGHT LBS.	PAINT	PACKING KIT	PACKING QTY OF PKG'S	PACKING PKG. NO.
1					**Z-BRACKET PIPE MOUNTS @ 150'**					
2	2 KITS			C10174036	TAPERED LEG PIPE MOUNT KIT	129				
3	2			C10981407	ANTENNA MTG. PIPE 4 1/2 Ø X 7'-0	116				
4	8			C40034032	U-BOLT ASSEMBLY 5/8 Ø X 5 3/16 C-C	17				
5					**Z-BRACKET PIPE MOUNT @ 143'**					
6	1 KIT			C10174036	TAPERED LEG PIPE MOUNT KIT	65				
7	1			C10981407	ANTENNA MTG. PIPE 4 1/2 Ø X 7'-0	58				
8	4			C40034032	U-BOLT ASSEMBLY 5/8 Ø X 5 3/16 C-C	9				
9					**3' SIDEARM MOUNT @ 143'**					
10	1 KIT			C10151103	3 FT. SIDEARM ASSEMBLY	82				
11	1			C10900105	PIPE ANTENNA MOUNTING KIT 2 3/8 Ø X 5'-0	22				
12	4			C40034032	U-BOLT ASSEMBLY 5/8 Ø X 5 3/16 C-C	9				
13					**Z-BRACKET PIPE MOUNT FOR SIDEARM @ 143'**					
14	1 KIT			C10174036	TAPERED LEG PIPE MOUNT KIT	65				
15	1			C10981407	ANTENNA MTG. PIPE 4 1/2 Ø X 7'-0	58				
16	4			C40034032	U-BOLT ASSEMBLY 5/8 Ø X 5 3/16 C-C	9				
17					**SWIVEL KNUCKLE TIEBACKS FOR SIDEARM @ 143'**					
18	2 KITS			C10179002	SWIVEL KNUCKLE TIEBACK KIT 2 3/8 Ø PIPE X 13'-3	140				
19										
20										

REV	DATE	DRW	CHK	DESCRIPTION

DATE	8/8/25	**JOB NO.**	563423
DRAWN BY	KMP	**PRINT NO.**	BOM-1
CHECKED BY	ZAK	**PAGE**	20 OF 23

Sabre Industries™
INNOVATION DELIVERED

CUSTOMER : MARION COUNTY OREGON

SITE : WIPPER, OR

B.O.M. 180 FT. MODEL S3TL-HD2 SELF-SUPPORTING TOWER

PC=PIECE	OR=ORANGE
PLT=PALLET	WH=WHITE
BDL=BUNDLE	O/W=OR & WH
CRT=CRATE	N/R=NOT REQ'D
D=DRUM	SP=SPECIAL
BX=BOX	

ITEM NO.	NO. REQ'D.	DRAWING NUMBER	DRAWING REV	PART NO.	DESCRIPTION	TOTAL WEIGHT LBS.	PAINT	PACKING KIT	PACKING QTY OF PKG'S	PACKING PKG. NO.
1					**3' SIDEARM MOUNT @ 140'**					
2	1 KIT			C10151103	3 FT. SIDEARM ASSEMBLY	82				
3	1			C10900105	PIPE ANTENNA MOUNTING KIT 2 3/8 Ø X 5'-0	22				
4	4			C40034032	U-BOLT ASSEMBLY 5/8 Ø X 5 3/16 C-C	9				
5					**Z-BRACKET PIPE MOUNT FOR SIDEARM @ 140'**					
6	1 KIT			C10174053	TAPERED LEG PIPE MOUNT KIT	79				
7	1			C10981407	ANTENNA MTG. PIPE 4 1/2 Ø X 7'-0	58				
8	4			C40034032	U-BOLT ASSEMBLY 5/8 Ø X 5 3/16 C-C	9				
9					**SWIVEL KNUCKLE TIEBACKS FOR SIDEARM @ 140'**					
10	2 KITS			C10179011	SWIVEL KNUCKLE TIEBACK KIT 2 7/8 Ø PIPE X 15'-6	240				
11					**Z-BRACKET PIPE MOUNT @ 137'**					
12	1 KIT			C10174055	TAPERED LEG PIPE MOUNT KIT	83				
13	1			C10981407	ANTENNA MTG. PIPE 4 1/2 Ø X 7'-0	58				
14	4			C40034032	U-BOLT ASSEMBLY 5/8 Ø X 5 3/16 C-C	9				
15					**3' SIDEARM MOUNT @ 134'**					
16	1 KIT			C10151103	3 FT. SIDEARM ASSEMBLY	82				
17	1			C10900104	PIPE ANTENNA MOUNTING KIT 2 3/8 Ø X 4'-0	19				
18	4			C40034032	U-BOLT ASSEMBLY 5/8 Ø X 5 3/16 C-C	9				
19										
20										

REV	DATE	DRW	CHK	DESCRIPTION

DATE 8/8/25 **JOB NO.** 563423

DRAWN BY KMP **PRINT NO.** BOM-1

CHECKED BY ZAK **PAGE** 21 OF 23

CUSTOMER : MARION COUNTY OREGON

SITE : WIPPER, OR

B.O.M. 180 FT. MODEL S3TL-HD2 SELF-SUPPORTING TOWER

PC=PIECE	OR=ORANGE
PLT=PALLET	WH=WHITE
BDL=BUNDLE	O/W=OR & WH
CRT=CRATE	N/R=NOT REQ'D
D=DRUM	SP=SPECIAL
BX=BOX	

ITEM NO.	NO. REQ'D.	DRAWING NUMBER	DRAWING REV	PART NO.	DESCRIPTION	TOTAL WEIGHT LBS.	PAINT	PACKING KIT	PACKING QTY OF PKG'S	PACKING PKG. NO.
1					**Z-BRACKET PIPE MOUNT FOR SIDEARM @ 134'**					
2	1 KIT			C10174055	TAPERED LEG PIPE MOUNT KIT	83				
3	1			C10981407	ANTENNA MTG. PIPE 4 1/2 Ø X 7'-0	58				
4	4			C40034032	U-BOLT ASSEMBLY 5/8 Ø X 5 3/16 C-C	9				
5					**SWIVEL KNUCKLE TIEBACKS FOR SIDEARM @ 134'**					
6	2 KITS			C10179011	SWIVEL KNUCKLE TIEBACK KIT 2 7/8 Ø PIPE X 15'-6	240				
7					**3' SIDEARM MOUNT @ 127'**					
8	1 KIT			C10151103	3 FT. SIDEARM ASSEMBLY	82				
9	1			C10900105	PIPE ANTENNA MOUNTING KIT 2 3/8 Ø X 5'-0	22				
10	4			C40034032	U-BOLT ASSEMBLY 5/8 Ø X 5 3/16 C-C	9				
11					**Z-BRACKET PIPE MOUNT FOR SIDEARM @ 127'**					
12	1 KIT			C10174055	TAPERED LEG PIPE MOUNT KIT	83				
13	1			C10981407	ANTENNA MTG. PIPE 4 1/2 Ø X 7'-0	58				
14	4			C40034032	U-BOLT ASSEMBLY 5/8 Ø X 5 3/16 C-C	9				
15					**SWIVEL KNUCKLE TIEBACKS FOR SIDEARM @ 127'**					
16	2 KITS			C10179011	SWIVEL KNUCKLE TIEBACK KIT 2 7/8 Ø PIPE X 15'-6	240				
17										
18										
19										
20										

REV	DATE	DRW	CHK	DESCRIPTION

DATE	8/8/25	**JOB NO.**	563423
DRAWN BY	KMP	**PRINT NO.**	BOM-1
CHECKED BY	ZAK	**PAGE**	22 OF 23

EXHIBIT K

CUSTOMER : MARION COUNTY OREGON

SITE : WIPPER, OR

B.O.M. 180 FT. MODEL S3TL-HD2 SELF-SUPPORTING TOWER

PC=PIECE	OR=ORANGE
PLT=PALLET	WH=WHITE
BDL=BUNDLE	O/W=OR & WH
CRT=CRATE	N/R=NOT REQ'D
D=DRUM	SP=SPECIAL
BX=BOX	

ITEM NO.	NO. REQ'D.	DRAWING NUMBER	DRAWING REV	PART NO.	DESCRIPTION	TOTAL WEIGHT LBS.	PAINT	PACKING KIT	PACKING QTY OF PKG'S	PACKING PKG. NO.
1					**LIGHTNING ROD**					
2	1 KIT			C10174018	TAPERED LEG PIPE MOUNT KIT	64				
3	1	CW00032	2	CW00032	LIGHTNING ROD EXTENSION 2 7/8 O.D. X 21'-0	128				
4	4			C40034025	U-BOLT ASSEMBLY 5/8 Ø X 3 9/16 C-C	7				
5	1 KIT			C30986004	LIGHTNING ROD ASSY 3/4 Ø X 10'-0 CCS W/STIFFENER	22				
6					**MISCELLANEOUS**					
7	1			C40068001	COLD GALVANIZING SPRAY	1				
8	1	CS00500	2	CS00500	TOWER NAME PLATE	1				
9										
10										
11										
12										
13										
14										
15										
16										
17										
18										
19										
20										

REV	DATE	DRW	CHK	DESCRIPTION

DATE	8/8/25	**JOB NO.**	563423
DRAWN BY	KMP	**PRINT NO.**	BOM-1
CHECKED BY	ZAK	**PAGE**	23 OF 23

EXHIBIT K

BLACK MOUNTAIN CONSULTING LLC
22566 SW Washington St., Ste. 209 Sherwood, OR 97140
503.625.2517
www.blkmountain.com

October 6, 2024

Black Mountain Project No. 240031-GEO

Cushing Civil Engineers
107 SE Washington Street, Suite 265
Portland, Oregon 97214

Attention: Mr. Kenny McManaway

Subject: Geotechnical Engineering Evaluation
Wipper
11545 Summit Loop SE
Turner, Oregon 97392

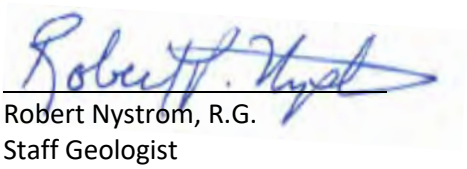
Black Mountain Consulting LLC (Black Mountain) is pleased to submit this report describing our recent geotechnical engineering evaluation for the Wipper tower site. The purpose of our work was to interpret general surface and subsurface site conditions in order to provide recommendations for design and construction. Our scope of services was authorized by Cushing Civil Engineers (CCE) on behalf of Marion County Public Works (Marion County), and consisted of a literature review, subsurface exploration, geotechnical analyses, and report preparation.

We prepared this report in accordance with generally accepted geotechnical engineering practices at the time we prepared it, for the exclusive use of CCE, Marion County, and their agents, for specific application to this project. Use or reliance upon this report by a third party is at their own risk. Black Mountain does not make any representation or warranty, express or implied, to such other parties as to the accuracy or completeness of this report or the suitability of its use by such other parties for any purpose whatever, known or unknown, to Black Mountain.

We appreciate the opportunity to be of service to you. If you have any questions, or if we can be of further assistance to you, please contact us at (503) 625.2517.

Respectfully Submitted,

Black Mountain Consulting LLC



Robert Nystrom, R.G.
Staff Geologist



EXPIRES 12/31/2024

Jeanne M. Niemer; P.E., G.E.
Principal Geotechnical Engineer

Attachment A — Figure 1 - Site Location Map
Figure 2 - Site & Exploration Plan

Attachment B — Subsurface Exploration Logs

Cushing Civil Engineers
Geotechnical Engineering Evaluation

Wipper
Turner, Oregon

240031-GEO
October 2024

PROJECT DESCRIPTION

The project is located at 11545 Summit Loop SE, near Turner, Marion County, Oregon, as shown on the attached *Site Location Map,* Figure 1. The proposed project will consist of constructing a new approximately 180-foot emergency communications tower adjacent to an existing equipment shelter. An existing tower and foundation will be removed after construction of the new tower.

SITE CONDITIONS

Regional Geology

The geology of the area consists of a complex group of basalt flows, tuffaceous sedimentary rocks, landslide debris flows and alluvial sedimentary deposits. The region is characterized by hilly-mountainous terrain and steep slopes created by recurring lava flows from local volcanic vents and subsequent erosion by numerous streams. The planned compound is located on a unit of middle Miocene age Wanapum Basalt (Tcw) (Walker, G.W. and MacLeod, N.S., 1991). Adjoining units consist of Marine sedimentary and tuffaceous rocks (Tsm) composed of fossils, tuffaceous and arkosic sandstone, siltstone and sandstone deposits, as well as Quaternary age sediments (Qs) composed of lacustrine and fluvial deposits that fill the valleys in this region. These sediments consist of unconsolidated to semi-consolidated lacustrine clay, silt, sand, and gravel and periodically include mudflow and fluvial deposits with discontinuous layers of peat (Piper, 1942, Allison, 1953, Wells and Peck, 1961). Valleys in the region are filled with Holocene and Pleistocene age terrace, pediment and lag gravels, cobbles, and boulders mixed with clay, silt and sand (Qt) (Walker, G.W. and MacLeod, N.S., 1991) and Holocene age alluvial deposits (Qal) consisting of sand, gravel, and silt (Walker, G.W. and MacLeod, N.S., 1991). Due to steep slopes in the region, Pleistocene to Holocene age landslides and debris-flows (Qls), composed of slope wash and colluvium, are common throughout the region. Other smaller units in the region consist of tuffaceous sedimentary rocks and volcanic conglomerates, pebble conglomerate, and air-fall tuffs (Tcss) (Walker, G.W. and MacLeod, N.S., 1991) and Upper and Middle Eocene epoch deposits of tuffaceous marine sandstone and siltstone (Tss) (Walker, G.W. and MacLeod, N.S., 1991).

Surface Conditions

The project site is located near the top of a broad plateau adjacent to an existing communication facility. The site is vacant and is relatively level.

Subsurface Conditions

We explored the subsurface conditions at the project site on October 3, 2024. Our exploration consisted of advancing two test pits as shown on the attached Site and Exploration Plan, Figure 2. We logged and classified the subsurface materials in general accordance with the Manual Visual Classification Method (ASTM D 2488).

We excavated Test Pit 1 (TP-1) at the planned tower site and encountered approximately 8 inches of dense to very dense sand and gravel (fill material) mantling basalt at about 8 inches below ground surface (bgs). We terminated our exploration, due to refusal, at approximately 1 foot bgs on very hard basalt (RH4). We excavated TP-2 at the planned tower site and encountered approximately 2 feet of dense to very dense sand and gravel (also fill material) mantling basalt at about 2 feet bgs. We terminated our exploration, due to refusal, at approximately 2.5 feet bgs on very hard basalt (RH4). The depth to the basalt bedrock undulates across the site.

We did not encounter groundwater at the time of our exploration. Well logs in the general area document static groundwater on the order of 60 – 130 feet bgs. Groundwater levels may fluctuate in response to changing precipitation patterns, off-site construction activities, and changes in site utilization.

SEISMIC HAZARD STUDY

Seismic Sources

There are three primary earthquake sources for this site: Cascadia Subduction Zone (CSZ) intraplate and interface earthquakes, and local crustal earthquakes that could occur in the North American Plate. CSZ intraplate earthquakes that could occur within the subducted Juan de Fuca plate are anticipated to have magnitudes on the order of 7.0 to 7.5, at a depth of about 40 to 60 km. This subduction is occurring beneath the North American Plate in the coastal regions between Vancouver Island and northern California. The subducting Juan de Fuca plate is mapped approximately 190 kilometers west of the site. They present a low-moderate hazard.

An interface event earthquake on the seismogenic portion of the interface between the Juan de Fuca Plate and the North American Plate is capable of generating earthquakes with a moment magnitude of between 8.5 and 9.0. A magnitude 8.5 is expected to correspond to an average 10 percent of being exceeded in 50 years, and a magnitude 9.0 corresponds to an average 2 percent of being exceeded in 50 years.

Local crustal earthquakes may occur from northeast-southwest trending faults in the region. The nearest known fault is the Salem-Eola Homocline located approximately 0.23 kilometers east of the site. This fault is classified as a homocline (uplifted blocks of rock) that has a reported slip rate of less than 0.2 mm/year.

CONCLUSIONS

The tower can be supported on a mat foundation that derives its support from the basalt that we encountered about one foot bgs. Rock anchors can provide additional resistance against overturning, if required.

Seismic Conditions

Based on our analysis of subsurface exploration logs and a review of published geologic maps, we interpret the on-site soil conditions to correspond to Site Class B/C, as defined by ASCE/SEI 7-22.

Site Specific Ground Motions

Our experience with ground motion modeling indicates that the site subsurface conditions are not susceptible to amplification beyond code spectra.

Liquefaction, Fault Rupture, Slope Stability and Tsunami Inundation

- The site soils are not susceptible to settlement from liquefaction during a design level earthquake.
- Because the nearest known fault is over six kilometers from the site, hazards from fault rupture are low.
- The site is located inland, outside of tsunami inundation areas.
- The site is relatively flat, and is therefore not susceptible to earthquake-induced slope instability.

Our specific recommendations are presented in the following sections.

GEOTECHNICAL DESIGN RECOMMENDATIONS

Seismic Design Parameters

Our recommended seismic design parameters are summarized in the table below, and were determined in accordance with ASCE/SEI 7-22.

Seismic Design Parameters		
	Short Period	**1 Second**
Mapped Spectral Acceleration Values	S_S=0.92	S_1=0.38
Site Soil Class	B/C	
Seismic Design Category	D	
Design Spectral Response Acceleration Parameters	S_{DS}=0.55	S_{D1}=0.26

For purposes of seismic site characterization, we extrapolated the soil conditions that we observed below the exploration termination depth, based on our knowledge of the regional geology.

Mat Foundation

The base of the mat foundation should be located at a minimum depth of three feet bgs, on the basalt. After excavation to design grade, the subgrade should be cleaned of material loosened by excavation. Irregularities resulting from the excavation should be filled with sand, lean concrete, or other suitable material to produce a level bearing surface for the foundation.

We recommend using an ultimate static bearing capacity of 12,000 pounds per square foot (psf) for design of the foundation. In accordance with the provisions of the current EIA/TIA 222 code, this static bearing pressure does not incorporate a factor of safety. We estimate post construction settlements will be less than one inch. We estimate that the differential settlement will be approximately half of the total settlement.

Lateral loads acting on the foundations can be resisted by passive earth pressure on one side of the foundation and by friction along the soil-concrete interface at the base of the foundation. We recommend using an ultimate foundation base friction coefficient of 0.72 for the basalt. A passive earth pressure of 900 pounds per-cubic-foot (pcf), expressed as an equivalent fluid unit weight, may be used for that portion of the foundation embedded more than one foot below finished exterior subgrade elevation. These lateral resistance values do not incorporate a safety factor, in accordance with the provisions of the current EIA/TIA 222 code. In order to develop these capacities, concrete must be poured neat in excavations, the adjacent grade must be level, and the static ground water level must remain below the base of the footing throughout the year. The passive pressure within the upper foot of embedment should be neglected.

Eccentric loads and moments acting on the foundation produce a skewed bearing pressure distribution to the ground. The mat foundation should be sized so that the resultant load acts within the middle third of the foundation for one-way and two-way eccentric loading to maintain a compressive contact pressure along the base of the foundation. The maximum bearing pressure from the eccentric loading must be less than the allowable bearing pressure.

Uplift loads can be resisted by the self-weight of the mat and the backfill directly overlying the embedded mat foundation. The overlying soils can be re-used as backfill over the mat provided it is prepared and placed in accordance with recommendations contained in the Structural Fill section of this report. For preliminary design purposes, the total unit weight of the overlying soils can be assumed to be 100 pounds per cubic foot (pcf). We anticipate that rock anchors may be required to resist overturning.

Excavations should be made in accordance with applicable Occupational Safety and Health Administration (OSHA) and state regulations. It is the contractor's responsibility to select the excavation and dewatering methods, to monitor the excavations for safety and to provide any shoring required to protect personnel and adjacent improvements.

Rock Anchors

Rock anchors should be installed a minimum of 10 feet into the hard basalt. We recommend using an allowable grout/ground interface bond strength of 60 psi for design. The upper two feet of embedment should be ignored for design purposes. The allowable grout/ground bond strength includes a factor of safety of 3. Rock anchors should be designed to meet the loading conditions as specified by the structural engineer.

Rock anchors should consist of steel bars installed in the center of a grouted drill hole. Steel bars should consist of #8 or larger deformed thread bar, in accordance with ASTM A 615, Grade 60 minimum and should be epoxy coated or hot dip galvanized for corrosion protection. The drill hole should be cleaned of deleterious material prior to placement of grout and steel and should be a minimum of one inch larger than the anchor diameter or as needed to provide sufficient cover between the ground and steel. Centralizers should be placed along the steel bar at a minimum of three feet from the bottom of the steel bar and three feet from the top of the steel bar with a maximum spacing of 10 feet. Centralizers should be fabricated from schedule 40 PVC pipe, steel, or material non-detrimental to the reinforcing steel. Grout properties and mix design as specified by the structural engineer.

Installation records for each rock anchor should include, at a minimum, drilling equipment and procedures, ground conditions during drilling, anchor number, anchor design load, type and size of reinforcing steel, total anchor length, and grout properties.

Verification Tests: We recommend that pre-production verification testing be performed on at least one anchor to verify the design of the anchor system and the construction methods proposed prior to installing the remaining production anchors. We should review the results of the verification test prior to beginning installation of the remaining anchors. The maximum verification test load should be 200 percent of the design load, as established by the structural engineer.

Proof Tests: Proof tests should be performed on the remaining anchors to verify consistent ground conditions and construction performance. The maximum proof test load should be 120 percent of the design load.

We recommend that a representative from Black Mountain be present for the duration of rock anchor construction and testing.

Spread Footings

Lightly loaded structures such as the equipment shelter can be supported on spread footings. Continuous-wall and isolated-spread footings should be at least 18 and 24 inches wide, respectively. For frost protection, the footings should be located at least 24 inches below the lowest adjacent grades or deeper if required by local building code.

Footings should bear directly on the basalt or on structural fill placed in accordance with our recommendations. Footings should be sized for an allowable bearing capacity of 2,500 psf. We estimate post construction settlements will be less than one inch for the above recommended bearing capacity. We estimate that the differential settlement will be approximately half of the total settlement. Our recommended bearing capacity is based on limiting settlements and includes a factor of safety of 3 against bearing capacity failure.

Lateral loads acting on the foundations can be resisted by passive earth pressures on the sides of the foundation and by friction along the soil-concrete interface at the base of the foundation. We recommend using an allowable passive earth pressure of 300 pounds per cubic foot (pcf) for foundations confined by the basalt or structural fill placed in accordance with our recommendations. The passive pressure within the upper two feet of embedment should be neglected. We recommend an allowable coefficient of friction of 0.36. In order to develop these capacities, concrete must be poured neat in excavations, the adjacent grade must be level, and the static ground water level must remain below the base of the footing throughout the year. These allowable lateral resistance values include a minimal factor of safety of 1.5.

Floor Slabs

We recommend a 6-inch-thick layer of imported granular structural fill be placed and compacted over the prepared subgrade. The granular fill should be placed in 6-inch-thick lifts and compacted to at least 95 percent of the maximum dry density, as determined by the American Society for Testing and Materials (ASTM) D 1557. A modulus of subgrade reaction value of 100 pounds per cubic inch (pci) may be used to design the floor slab.

Foundation Construction Considerations

A geotechnical engineer from Black Mountain (or their representative) should confirm suitable bearing conditions and evaluate the foundation subgrades. Observations should also confirm that loose or soft material, organics, unsuitable fill, or old topsoil zones were removed. Localized deepening of footing excavations may be required to penetrate any deleterious materials.

Because foundation stresses are transferred outward as well as downward into the bearing soils, all footing over-excavations should extend horizontally outward from the footing edge a distance equal to the one half the over-excavation depth for the structural backfill.

CONSTRUCTION RECOMMENDATIONS

Site Preparation

Clearing and Stripping: After surface and near-surface water sources have been controlled, the construction areas should be cleared and stripped of organic matter and other deleterious materials. Silt fences, hay bales, buffer zones of natural growth, sedimentation ponds, and granular haul roads should be used as required to reduce sediment transport during construction to acceptable levels.

Where present, fill and existing topsoil should be stripped and removed from proposed development locations and for a five-foot-margin around such areas. Based on our explorations, we anticipate the

depth of stripping to be less than about a foot, although greater stripping depths may be required if deleterious materials are encountered. Deleterious materials encountered during site preparation should be removed from the subgrade soils and hauled off site for disposal. Stripped material should be transported off site for disposal or stockpiled for use in landscaped areas. If stripping operations occur during wet weather, a generally greater stripping depth might be required in order to remove disturbed moisture-sensitive soils; therefore, stripping is best performed during a period of dry weather.

Excavations: We anticipate that site grading will be minimal. Where required, temporary soil cuts associated with site excavations or regrading activities should be adequately sloped back to prevent sloughing and collapse, unless a shoring box or other suitable excavation side wall bracing is provided. It is the responsibility of the contractor to ensure that excavations are properly sloped or braced for worker safety protection, in accordance with OSHA safety guidelines.

Dewatering: Based on our subsurface exploration, we do not anticipate groundwater seepage within the tower mat excavation. If water is encountered, we anticipate that pumping from sumps located in the trench will likely be effective in removing water resulting from seepage or perched groundwater.

Final Grades: Final site grades should slope downward away from the structure at a minimum of two percent and runoff should be conveyed to a suitable drainage outlet. Additionally, the area surrounding the structure could be capped with concrete, asphalt or compacted, low-permeability soils to reduce surface water infiltration into the subsurface soils near the foundation.

Structural Fill

The following recommendations for structural fill are provided for design and construction purposes, if required.

Materials: Structural fill includes any fill materials placed under footings, pavements, or driveways and backfill over the embedded mat foundation. Typical materials used for structural fill include: clean, well-graded sand and gravel; clean sand; crushed rock; controlled-density fill (CDF); lean-mix concrete; and various soil mixtures of silt, sand, and gravel. Recycled concrete, asphalt, and glass derived from pulverized parent materials may also be used as structural fill when combined with an equal volume or more of silt, sand, and/or gravel. Use of the on-site soils as structural fill is also feasible.

Placement and Compaction: When used as structural fill, the on-site soils should be placed in lifts with a maximum thickness of 8 inches and compacted to not less than 92 percent of the material's maximum dry density, as determined by ASTM D-1557. The on-site soils should be moisture-conditioned to within 3 percent of the optimum moisture content (ASTM D-1557). If the on-site soils cannot be properly moisture-conditioned, we recommend using imported granular material for structural fill.

Imported granular structural fill should consist of angular pit or quarry run rock, crushed rock, or crushed gravel and sand that is fairly well graded between coarse and fine particle sizes. The fill should contain no organic matter or other deleterious materials, have a maximum particle size of one inch, and have less than 5 percent passing the U.S. No. 200 Sieve. In deep excavations, or where subgrade soils require stabilization, the particle size may be increased to four inches. The percentage of fines can be increased to 12 percent of the material passing the U.S. No. 200 Sieve if placed during dry weather and provided the fill material is moisture-conditioned, as necessary, for proper compaction. The material should be placed in lifts with a maximum uncompacted thickness of 12 inches and be compacted to not less than 95 percent

of the maximum dry density, as determined by ASTM D-1557. During the wet season or when wet subgrade conditions exist, the initial lift thickness should be increased to 24 inches and should be compacted by rolling with a smooth-drum, nonvibratory roller.

CDF and lean-mix concrete do not require special placement or compaction procedures. Regardless of location or material, all structural fill should be placed over firm, unyielding subgrade soils. If earthwork takes place during freezing conditions, we recommend that all exposed subgrades be allowed to thaw and be recompacted prior to placing subsequent lifts of structural fill.

CONSTRUCTION OBSERVATIONS

Satisfactory earthwork performance depends on the quality of construction. Sufficient monitoring of the contractor's activities is a key part ensuring that work is completed in accordance with the construction drawings and specifications. We recommend that a representative from Black Mountain observe that the subsurface conditions are consistent with the anticipated conditions, and that foundation subgrades are suitable for placement of structural fill, rebar, or concrete for the new structures.

Some jurisdictions require a final letter of geotechnical compliance before they will provide a final permit. It is incumbent on the client to determine if a final letter of geotechnical compliance is required by the jurisdiction. If such a letter is required, a representative from Black Mountain MUST observe foundation subgrades PRIOR to concrete being poured for the foundation. If Black Mountain does not perform this observation, we cannot provide a final letter of geotechnical compliance, and a permit will not be eligible for final sign-off. ***It is the owner's responsibility to ensure that Black Mountain is notified in a timely manner (i.e., at least 48 hours prior to the required site observation) of the need for our services on site during construction.***

CLOSURE

We have prepared this report for use by the owner/developer and other members of the design and construction team for the proposed tower site. The opinions and recommendations contained within this report are not intended to be, nor should they be, construed as a warranty of subsurface conditions, but are forwarded to assist in the planning and design process.

We have made observations based on our explorations that indicate the soil conditions at only those specific locations and only to the depths penetrated. These observations do not necessarily reflect soil types, strata thickness, or water level variations that may exist in other locations. If subsurface conditions vary from those anticipated, Black Mountain will provide additional geotechnical recommendations, if necessary. The future performance and integrity of the improvements will depend largely on proper initial site preparation, drainage, and construction procedures. Observation by experienced geotechnical personnel should be considered an integral part of the construction process.

The conclusions and recommendations contained in this report are based on our understanding of the currently proposed project, as derived from written and verbal information that the client supplied to us. When the design is finalized, we recommend that our firm review to see that our recommendations have been interpreted and implemented as intended. If design changes are made, we request that we be

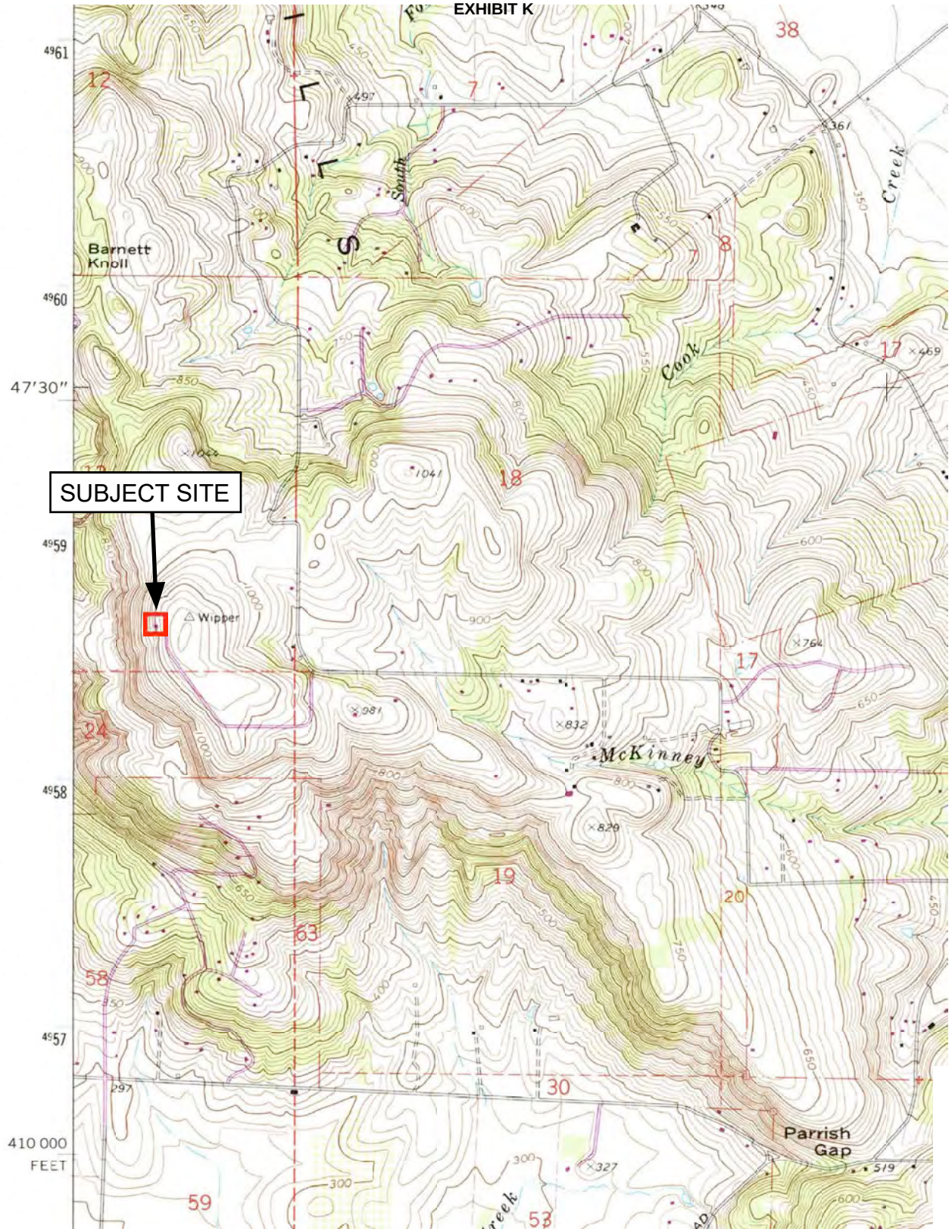
retained to review our conclusions and recommendations and to provide a written modification or verification.

The scope of our services does not include services related to construction safety precautions, and our recommendations are not intended to direct the contractor's methods, techniques, sequences, or procedures, except as specifically described in our report for consideration in design. Within the limitations of scope, schedule, and budget, our services have been executed in accordance with the generally accepted practices in this area at the time this report was prepared. No warranty or other conditions, express or implied, should be understood.

ATTACHMENT A

FIGURES

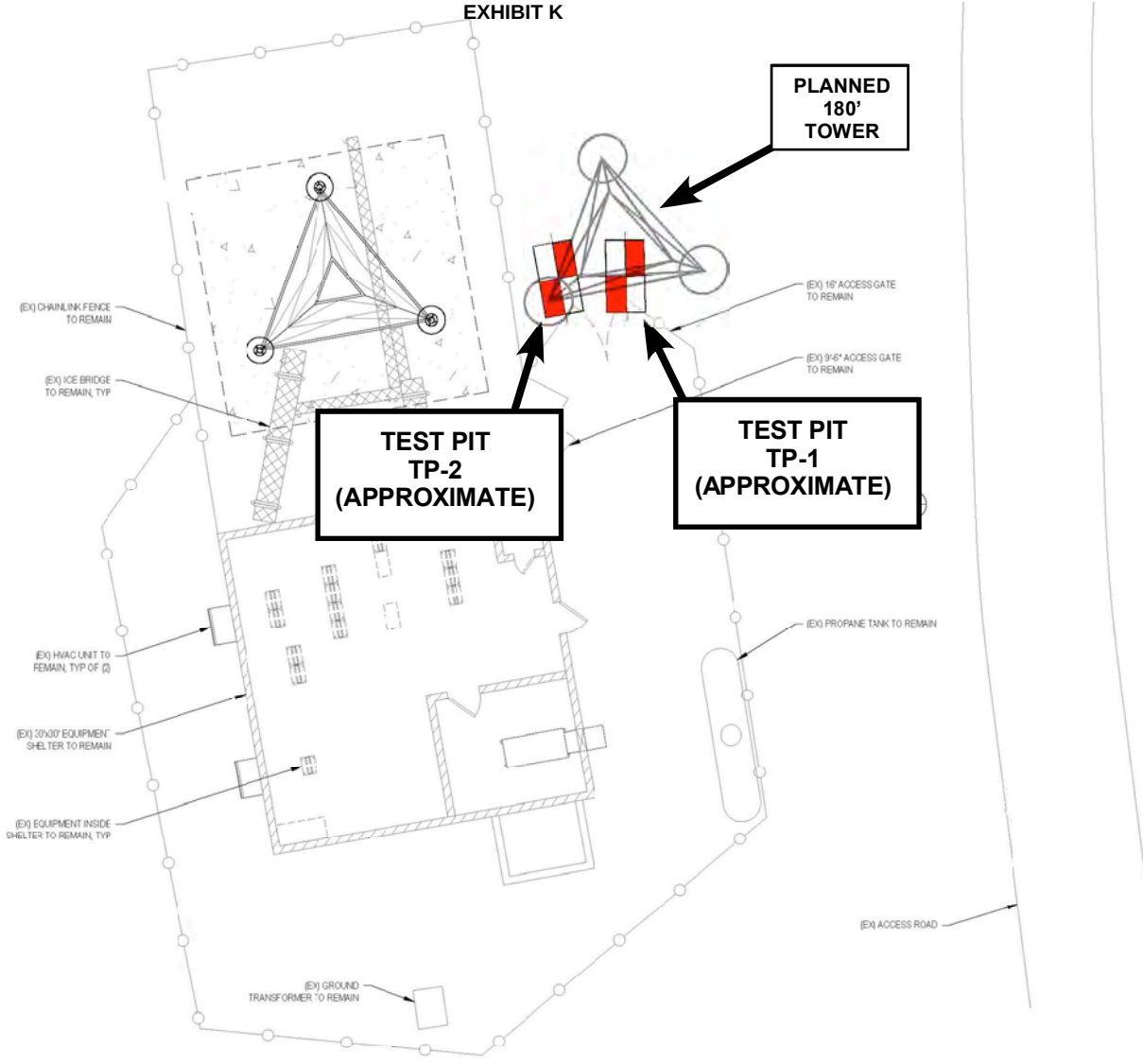
EXHIBIT K



Base Map Courtesy of U.S.G.S. Topographic Map "Turner, Oreg." (1969, photorevised 1986) Not to Scale

Black Mountain Consulting LLC 22566 SW Washington St., Ste. 209 Sherwood, OR 97140 TEL. 503.625-2517 | www.blkmountain.com	**FIGURE 1 -** Location Map	**Location** Wipper 11545 Summit Loop SE Turner, Oregon 97392
	Project : 240031	
	Client : Cushing Civil Engineers	**Date :** October 2024

EXHIBIT K



Drawing provided by Cushing Civil Engineers, Not to Scale

Black Mountain Consulting LLC
22566 SW Washington St., Ste. 209
Sherwood, OR 97140
TEL. 503.625-2517 | www.blkmountain.com

FIGURE 2 - Site & Exploration Plan

Project : 240031

Client : Cushing Civil Engineers

Location
Wipper
11545 Summit Loop SE
Turner, Oregon 97392

Date : October 2024

ATTACHMENT B

SUBSURFACE EXPLORATION LOGS

EXHIBIT K

GEOTECHNICAL TEST PIT LOG

Black Mountain Consulting LLC
22566 SW Washington St., Suite 209
Sherwood, Oregon 97140
TEL:503.625.2517

PROJECT
Wipper
Turner, Oregon 97392
Cushing Civil Engineers

Job Number: 240031

Test Pit No.: **TP-1**

Elevation Reference :
Ground Surface Elevation :

DEPTH (feet)		SAMPLE TYPE	SAMPLE NUMBER	POCKET PEN	TORVANE	GROUND WATER	OBSERVATIONS	TESTING
0	Dense, dry-damp, gray, SAND (SW) and GRAVEL (GW), fill material		1				Caterpillar 304	
	RK - Very hard, BASALT, (RH4) below 8"						BASALT undulates across the area	
	Test pit terminated, due to refusal, at approximately 12 inches bgs. No groundwater, seeps or seams encountered at the time of exploration.							
5								
10								
15								
20								
25								

LEGEND

DATE — Static Water Level

Perched Groundwater

Grab Sample

NWTPH-HCID / VOCs — Type of Analytical Testing Used

Test Pit Start Date: 10-3-24

Test Pit Completion Date: 10-3-24

Logged By: RN

EXHIBIT K

GEOTECHNICAL TEST PIT LOG

Black Mountain Consulting LLC
22566 SW Washington St., Suite 209
Sherwood, Oregon 97140
TEL:503.625.2517

PROJECT
Wipper
Turner, Oregon 97392
Cushing Civil Engineers

Job Number: 240031

Test Pit No.: **TP- 2**

Elevation Reference :
Ground Surface Elevation :

DEPTH (feet)		SAMPLE TYPE	SAMPLE NUMBER	POCKET PEN	TORVANE	GROUND WATER	OBSERVATIONS	TESTING
0	Dense, damp, gray, SAND (SW) and GRAVEL (GW), fill material		1				Caterpillar 304	
	RK - Very hard, BASALT, (RH4) below 2.5'						BASALT undulates across the area	
	Test pit terminated, due to refusal, at approximately 2.5' bgs. No groundwater, seeps or seams encountered at the time of exploration.							
5								
10								
15								
20								
25								

LEGEND

DATE Static Water Level

Perched Groundwater

Grab Sample

NWTPH-HCID VOCs Type of Analytical Testing Used

Test Pit Start Date: 10-3-24

Test Pit Completion Date: 10-3-24

Logged By: RN

EXHIBIT K

BLACK MOUNTAIN CONSULTING LLC
22566 SW Washington St., Ste. 209 Sherwood, OR 97140
503.625.2517
www.blkmountain.com

October 7, 2024

Black Mountain Project No. 240031-SRT

Cushing Civil Engineers
107 SE Washington Street, Suite 265
Portland, Oregon 97214

Attn: Mr. Kenny McManaway

Subject: Soil Resistivity Survey
Wipper
11545 Summit Loop SE
Turner, Oregon 97392

At your request, a representative of Black Mountain Consulting LLC (Black Mountain) visited the above referenced site on September 30, 2024 to perform soil resistivity testing. Two surveys were completed, at the approximate locations and orientations described in this report. We understand others will use these test results in their design of the antenna grounding system.

Please note that, due to high resistivity values at the lease area, a standard grounding design may not be appropriate and that a site-specific grounding design may be required.

We appreciate this opportunity to be of service.

Sincerely,

Black Mountain Consulting LLC

Robert Nystrom, R.G.
Staff Geologist

Methods:

The resistivity survey was completed using the Wenner Four-Electrode Method and the Miller Model 400A Soil Resistance Meter. The Wenner Four-Electrode Method requires that four metal electrodes be placed in a straight line, equal distance from one another. Each electrode is driven approximately 6 -12 inches below ground surface at 5, 10, 20, 30 and 40-foot spacing intervals. A current of known amperage is subsequently circulated into the soil through the end electrodes and the resulting voltage drop between the inner electrodes is measured, yielding the resistance (in ohms) of the soil. The correct unit for resistivity is the ohm-centimeter (Ω-cm). The following equation is used to calculate the resistivity (Ω-cm).

$$\rho = 191.5\, aR$$

Where:

ρ = soil resistance in ohm-cm (Ω-cm)

a = electrode separation (in feet)

R = resistance measured in ohms (Ω)

This method is in general accordance with ASTM method G57-06 (IEEE Standard 81).

Site Conditions:

The existing communication site is located adjacent to a field developed for agricultural production (immature pine trees). Several communication towers are located near the site and, due to the presence of these structures, local slopes, and underground utilities, both arrays were placed several yards from the site. Two equally spaced electrode arrays were established on the subject property. Array 1 was configured along a N-S axis that was placed approximately 28 yards west of the compound. Array 2 was configured along an E-W axis that was placed in the cultivated area approximately 24 yards east of the compound.

Surficial soils consist of damp fine sand and some gravel. No standing water was observed in the area. Black Mountain conducted a geotechnical exploration at the tower site on October 3, 2024 and encountered fine sand and gravel that extended to about 2.5 feet below ground surface (bgs). We encountered basalt bedrock at about 2.5 feet bgs and we terminated our exploration on this material at that depth. No groundwater was encountered in the exploration. The depth to the basalt bedrock undulates across the area and may have influenced the readings. There was sufficient space to perform 40-foot spacing on both arrays and the arrays were oriented approximately 90° to one another.

EXHIBIT K

Soil Resistivity Survey Results

Table 1: Soil Resistivity Data						
Site Name & Address:		**Wipper, 11545 Summit Loop SE, Turner, Oregon 97392**				
Company Performing Test (Include Name of Person & Date):		**Black Mountain Consulting LLC, Robert Nystrom, 9-30-2024**				
Test Instrument (Model #, Serial #, Date of Last Calibration):		**Miller Model 400A Soil Resistance Meter, #44500, Calibrated April 2024**				
Areas to be Measured	**Data Recordings**	**Distance Between Test Rods in Feet**				
		5	**10**	**20**	**30**	**40**
Array 1	Measured Resistance (Ω):	18	5	3	2.0	0.56
	Calculated Resistivity (Ω-cm):	17,235	9,192	9,958	11,490	4,290
Array 2	Measured Resistance (Ω):	35	15	5.4	3.5	2.3
	Calculated Resistivity (Ω-cm):	33,513	28,725	20,682	20,108	17,618
Area 3	Measured Resistance (Ω):					
	Calculated Resistivity (Ω-cm):					
Array 4	Measured Resistance (Ω):					
	Calculated Resistivity (Ω-cm):					
Additional Site Information						
Description of Soil as Seen as Site:		Sand, some gravel, basalt bedrock below 2.5'				
Soil Condition (Wet, Damp, or Dry):		Damp				
Weather:		Clear at time of survey: clear last 24 hours, 60° F				

SUBMITTAL PACKAGE

EXHIBIT K



Marion County

Prepared for:

Brian Nicholas
Marion County Public Works
555 CT ST NE
Salem, OR 97301-3980

Cummins Salesperson:

Mark Wahlberg CS931@cummins.com 503-307-7529

Cummins Project Manager:

Samantha Norman samantha.norman@cummins.com (425) 902-9513

PLEASE COMPLETE THIS SECTION OR PROVIDE SIGNOFF TO PROCEED

☐ **Revise with corrections provided** **Date:** 6/23/2025

☑ **Approved and released for production**

By (name and company): Brian Nicholas, Marion County Public Works Department

Requested delivery date: December 15, 2025

Requested delivery address: 5155 Silverton Road NE, Salem, OR 97305

Contact person and phone # for deliveries: Michael Pierce, 408.857.2040

Date 6/16/25 Rev _1

Salesforce O#
BMS #
Customer PO#

Serving Cummins Customers

Cummins power solutions are supported by the largest and best-trained worldwide-certified sales/distributor network in the industry. This network will help you select and install the critical power solution to meet the requirements of your specific application. This same network provides experts with advanced technology to make your life easier while providing a seamless support experience.

IMPORTANT: *The critical power solution information and specifications included in this pdf can be used by the site contractor(s) and/or engineer(s) to assist with planning for and accomplishing the overall power solution installation. Please forward this document to the appropriate personnel, as necessary.*

It is the obligation of the electrical contractor and reviewing engineer to determine that the item quantities and accuracy of this submittal is correct as required for the job. Any inaccuracies or deviations must be addressed with Cummins Inc. before release to manufacturing. Any releases of material to manufacturing by the above parties constitute an acceptance of the accuracy of the submittal. Any changes after release will be viewed as a change order, subject to pricing changes. Please take the time to review this package for accuracy to prevent any after-shipment problems that could cause delay in energization.

Cummins certifies that these drawings, material lists, specification and datasheets have been checked prior to submittal and they:

- *accurately depict the proposed equipment*
- *provide current information to the date of the submittal and*
- *present true and accurate equipment information.*

This Approval Drawing Package is submitted as our interpretation of the project requirements and/or the specifications for this job. Please note that issuance of these submittals shall not be deemed or interpreted as performance nor acceptance of your purchase order terms and conditions.

For questions or comments regarding this submittal, please contact the Cummins Project Manager listed on the title page.

Sales and Service

EXHIBIT K

Project: Marion County - Eastview Lane - Sourcewell
Quotation: Q-379776-06132025–13:53

13 June 2025

Qty	Submittal Applies to:
1	Eastview Lane
1	Crooked Finger
1	Lower Prospect
~~1~~	~~Mad Creek~~
1	McCully
Total = 4	

The Mad Creek site has been eliminated from the project. The total order quantity will be reduced by one (1), from the initial quantity of five (5) to the final quantity of four (4) outdoor generators.

Bill of Material

Feature Code	Description	Qty
C36N6	**C36N6, 36kW, 60Hz, Standby, Natural Gas/Propane Genset, 1800rpm engine**	**1**
Install-US-Stat	U.S. EPA, Stationary Emergency Application	
C36N6_C36 N6	C36N6, 36kW, 60Hz, Standby, Natural Gas/Propane Genset, 1800rpm engine	
C36N6_A331-2	Duty Rating - Standby Power (ESP)	
C36N6_L155-2	Emissions Certification - SI, EPA, Emergency, Stationary, 40CFR60	
C36N6_L090-2	Listing - UL 2200	
C36N6_L193-2	NFPA 110 Type 10 Level 1 Capable	
C36N6_L225-2	HCAI (formerly OSHPD) Seismic Pre-Approval Certification	
C36N6_L228-2	Cert - Seismic, IBC2000, IBC2003, IBC2006, IBC2009, IBC2011	
C36N6_B240-2	Exciter/Reg - Torque Match	
C36N6_R104-2	Voltage - 120/240, 1 Phase, 3 Wire	
C36N6_B949-2	Alternator - 60Hz, 4L, 240/120V, 1 Phase, 120C, 40C Ambient	
C36N6_A292-2	Alternator Heater, 120 Volt AC	
C36N6_F231-2	Aluminum Sound Attenuated Level 1 Enclosure, with Exhaust System	
C36N6_P176-2	Enclosure Color - Green, Aluminum	
C36N6_F252-2	Enclosure - Wind Load 180 MPH, ASCE7-10	
C36N6_F179-2	Skidbase - Housing Ready	
C36N6_H608-2	Control Mounting - Right Facing	
C36N6_H700-2	PowerCommand 1.1 Controller	
C36N6_KV03-2	Load Connection - Single	
C36N6_H012-2	Gauge - Oil Pressure	
C36N6_K796-2	Stop Switch - Emergency	
C36N6_H536-2	Control Display Language - English	
C36N6_KV17-2	Circuit Breaker, Location A, 150A, 2P, 600 Volts AC, 80%, UL	
C36N6_A366-2	Engine Governor - Electronic, Isochronous	
C36N6_C284-2	Single Gas Fuel - NG or LP Vapor	
C36N6_A422-2	Engine Starter - 12 Volt DC Motor	
C36N6_D041-2	Engine Air Cleaner - Normal Duty	
C36N6_A333-2	Battery Charging Alternator	
C36N6_BB89-2	Battery Charger - 6 Amp, Regulated	
C36N6_E125-2	Engine Cooling - Radiator, High Ambient Air Temperature, Ship Fitted	
C36N6_H389-2	Shutdown - Low Coolant Level	
C36N6_E089-2	Extension - Coolant Drain	
C36N6_H669-2	Engine Coolant - 50% Antifreeze, 50% Water Mixture	
C36N6_E154-2	Coolant Heater, Extreme Cold Ambient	
C36N6_H706-2	Engine Oil	
C36N6_L028-2	Genset Warranty - 2 Years Base	
C36N6_L050-2	Literature - English	
C36N6_A322-2	Packing - Skid, Poly Bag	
C36N6_F253-2	Larger Battery Rack	
C36N6_H268-2	Extension - Oil Drain	
A045P632	**Battery-Wet, 12V, Group 34, 850CCA [Shipped Loose]**	**1**
Miscellaneous	**Pilla Remote E-Stop [Shipped Loose]**	**1**

A054V134	**PC Lon Gateway, Lon Modbus, Lon Modbus/TCP Gateway**	**1**
Miscellaneous	**Acumen Telematics – Cloud - Wi-Fi + Cellular + Ethernet connectivity – Modbus + J1939 (Private – NA variant) - A068E639 [Shipped Loose]**	**1**
Service - start up & testing	**Service - Standard Start Up Service (no spec) and System Testing**	**1**

NOTES:

Cummins quote is valid for 30 days. This quotation is based on the bill of materials from the ESCO 911 project and email dated 4.30.25. Contractor to verify application meets requirements. All other specifications and drawings are excluded. We know of no addenda.

EXHIBIT K

Specification sheet

Spark-ignited generator set

20-40 kW Standby

EPA emissions



Description

Cummins® generator sets are fully integrated power generation systems providing optimum performance, reliability and versatility for stationary Standby applications.

Features

Gas engine - Rugged 4-cycle Cummins QSJ2.4 spark-ignited engine delivers reliable power. The electronic air/fuel ratio control provides optimum engine performance and fast response to load changes.

Alternator - Several alternator sizes offer selectable motor starting capability with low reactance 2/3 pitch windings, low waveform distortion with non-linear loads and fault clearing short-circuit capability.

Control system - The PowerCommand® 1.1 electronic control is standard equipment and provides total generator set system integration including automatic remote starting/stopping, precise frequency and voltage regulation, alarm and status message display, output metering, auto-shutdown at fault detection and NFPA 110 Level 1 compliance.

Cooling system - Standard cooling package provides reliable running at up to 50° C (122° F) ambient temperature.

Enclosures - The aesthetically appealing enclosure incorporates special designs that deliver one of the quietest generators of its kind. Aluminium material plus durable powder coat paint provides the best anti-corrosion performance. The generator set enclosure has been evaluated to withstand 180 MPH wind loads in accordance with ASCE7-10. The intelligent design has removable panels and service doors to provide easy access for service and maintenance.

NFPA - The generator set accepts full rated load in a single step in accordance with NFPA 110 for Level 1 systems.

Warranty and service - Backed by a comprehensive warranty and worldwide distributor network.

	Natural gas		Propane		
	Standby 60 Hz		Standby 60 Hz		Data sheets
Model	**kW**	**kVA**	**kW**	**kVA**	**60 Hz**
C20 N6	20	25	20	25	NAD-5693-EN
C25 N6	25	31	25	31	NAD-5695-EN
C30 N6	30	38	30	38	NAD-5696-EN
C36 N6	36	45	36	45	NAD-5697-EN
C40 N6	40	50	40	50	NAD-5698-EN

Our energy working for you.™

©2019 Cummins Inc. | NAS-5692 (10/24) A052F982

power.cummins.com

Generator set specifications

Governor regulation class	ISO8528 Part 1 Class G3*
Voltage regulation, no load to full load	± 1.0%
Random voltage variation	± 1.0%
Frequency regulation	Isochronous
Random frequency variation	± 0.25% @ 60 Hz
Radio frequency emissions compliance	Meets requirements of most industrial and commercial applications

* C36 N6 and C40 N6 are Class G2

Engine specifications

Aspiration	Naturally Aspirated (25kW), Turbocharged (30kW), Turbocharged and Aftercooled (36kW/40kW)
Bore	86.5 mm (3.4 in.)
Stroke	100.0 mm (3.94 in.)
Displacement	2.4 L (143.5 in^3)
Cylinder block	Cast iron, in-line 4 cylinder
Battery capacity	550 amps at ambient temperature of 0° F to 32° F (-18° C to 0° C)
Battery charging alternator	50 amps
Starting voltage	12 volt, negative ground
Lube oil filter type(s)	Spin-on with relief valve
Standard cooling system	50° C (122° F) ambient cooling system
Rated speed	1800 rpm

Alternator specifications

Design	Brushless, 4 pole, drip proof, revolving field
Stator	2/3 pitch
Rotor	Direct coupled, flexible disc
Insulation system	Class H per NEMA MG1-1.65
Standard temperature rise	120º C (248° F) Standby
Exciter type	Torque match (shunt) with EBS as option
Alternator cooling	Direct drive centrifugal blower
AC waveform Total Harmonic Distortion (THDV)	< 5% no load to full linear load, < 3% for any single harmonic
Telephone Influence Factor (TIF)	< 50 per NEMA MG1-22.43
Telephone Harmonic Factor (THF)	< 3%

Available voltages

1-phanse	3-phase			
• 120/240	• 120/208	• 120/240 delta	• 277/480	• 347/600

Generator set options

Fuel system
- Single fuel - natural gas or propane vapor, field selectable
- Dual fuel – natural gas and propane vapor auto changeover
- Low fuel gas pressure warning

Engine
- Engine air cleaner – normal or heavy duty
- Shut down – low oil pressure
- Extension – oil drain

Alternator
- 120° C (248° F) temperature rise alternator
- 105° C (221° F) temperature rise alternator
- PMG available on 36 kW and 40 kW
- Alternator heater, 120 V

Control
- AC output analog meters (bargraph)
- Stop switch – emergency
- Auxiliary output relays (2)
- Auxiliary configurable signal inputs (8) and relay outputs (8)

Electrical
- Single circuit breaker
- Dual circuit breakers
- 80% rated circuit breakers
- 100% rated circuit breakers

Enclosure
- Aluminium enclosure Sound Level 1 or Level 2, with muffler installed, sandstone or green color
- Open set

Cooling system
- Shutdown – low coolant level
- Warning – low coolant level
- Extension – coolant drain
- Cold weather options:
  - < 4° C (40° F) – cold weather
  - < -17° C (0° F) – extreme cold weather

Exhaust system
- Exhaust connector NPT

Generator set application
- Base barrier – elevated generator set
- Battery rack, larger battery
- Radiator outlet duct adapter

©2019 Cummins Inc. | NAS-5692 (10/24) A052F983

Generator set options (continued)

Warranty

- Base warranty – 2 year, 1000 hour, Standby
- Standby, 3 year, 1500 hour, parts
- Standby, 5 year, 2500 hour, parts
- Standby, 3 year, 1500 hour, parts and labor
- Standby, 5 year, 2500 hour, parts and labor
- Standby, 3 year, 1500 hour, parts, labor and travel
- Standby, 5 year, 2500 hour, parts, labor and travel

Note: Some options may not be available on all models - consult factory for availability.

Generator set accessories

- Extreme cold weather kit
- Battery rack, larger battery
- Battery heater kit
- HMI211RS in-home display, including pre-configured 12-inch harness
- HMI211 remote display, including pre-configured 12-inch harness
- HMI220 remote display
- Auxiliary output relays (2)
- Auxiliary configurable signal inputs (8) and relay outputs (8)
- Annunciator – RS485
- Remote monitoring device – Acumen®
- Battery charger – stand-alone, 12 V
- Circuit breakers
- Enclosure Sound Level 1 to Sound Level 2 upgrade kit
- Enclosure paint touch up kit
- Base barrier – elevated generator set
- Mufflers – industrial, residential or critical
- PMG available on 36 kW and 40 kW
- Alternator heater
- Maintenance and service kit
- Engine lift kit

Control system PowerCommand 1.1



PowerCommand control is an integrated generator set control system providing voltage regulation, engine protection, operator interface and isochronous governing (optional). Major features include:

- Battery monitoring and testing features and smart starting control system.
- Standard PCCNet interface to devices such as remote annunciator for NFPA 110 applications.
- Control boards potted for environmental protection.
- Control suitable for operation in ambient temperatures from -40 °C to +70 °C (-40 °F to +158 °F) and altitudes to 5000 meters (13,000 feet).
- Prototype tested; UL, CSA, and CE compliant.
- InPower™ PC-based service tool available for detailed diagnostics.

Operator/display panel

- Manual off switch
- Alpha-numeric display with pushbutton access for viewing engine and alternator data and providing setup, controls and adjustments (English or international symbols)
- LED lamps indicating generator set running, not in auto, common warning, common shutdown, manual run mode and remote start
- Suitable for operation in ambient temperatures from -40 °C to +70 °C
- Bargraph display (optional)

AC protection

- Over current warning and shutdown
- Over and under voltage shutdown
- Over and under frequency shutdown
- Over excitation (loss of sensing) fault
- Field overload

Engine protection

- Overspeed shutdown
- Low oil pressure warning and shutdown
- High coolant temperature warning and shutdown
- Low coolant level warning or shutdown
- Low coolant temperature warning
- High, low and weak battery voltage warning
- Fail to start (overcrank) shutdown
- Fail to crank shutdown
- Redundant start disconnect
- Cranking lockout
- Sensor failure indication
- Low fuel level warning or shutdown

Alternator data

- Line-to-Line and Line-to-Neutral AC volts
- 3-phase AC current
- Frequency
- Total kVa

Engine data

- DC voltage
- Lube oil pressure
- Coolant temperature
- Engine speed

©2019 Cummins Inc. | NAS-5692 (10/24) A052F982

Other data
- Generator set model data
- Start attempts, starts, running hours
- Fault history
- RS485 Modbus® interface
- Data logging and fault simulation (requires InPower service tool)

Digital governing (optional)
- Integrated digital electronic isochronous governor
- Temperature dynamic governing

Digital voltage regulation
- Integrated digital electronic voltage regulator
- 2-phase Line-to-Line sensing
- Configurable torque matching

Control functions
- Time delay start and cooldown
- Cycle cranking
- PCCNet interface
- (2) Configurable inputs
- (2) Configurable outputs
- Remote emergency stop
- Automatic Transfer Switch (ATS) control
- Generator set exercise, field adjustable

Options
- Auxiliary output relays (2)
- Remote annunciator with (3) configurable inputs and (4) configurable outputs
- PMG alternator excitation available on 36 kW and 40 kW
- Acumen® telematics for remote monitoring and control via Cummins PowerCommand Cloud
- Auxiliary, configurable signal inputs (8) and configurable relay outputs (8)
- Digital governing
- AC output analog meters (bargraph)
  - Color-coded graphical display of:
    - 3-phase AC voltage
    - 3-phase current
    - Frequency
    - kVa
- Remote operator panel

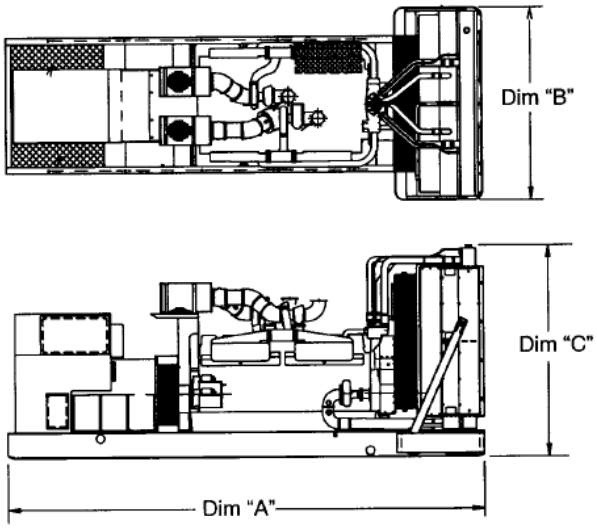
Ratings definitions

Emergency Standby Power (ESP):
Applicable for supplying power to varying electrical load for the duration of power interruption of a reliable utility source. Emergency Standby Power (ESP) is in accordance with ISO 8528. Fuel Stop power in accordance with ISO 3046, AS 2789, DIN 6271 and BS 5514.

Limited-Time Running Power (LTP):
Applicable for supplying power to a constant electrical load for limited hours. Limited-Time Running Power (LTP) is in accordance with ISO 8528.

Prime Power (PRP):
Applicable for supplying power to varying electrical load for unlimited hours. Prime Power (PRP) is in accordance with ISO 8528. Ten percent overload capability is available in accordance with ISO 3046, AS 2789, DIN 6271 and BS 5514.

Base Load (Continuous) Power (COP):
Applicable for supplying power continuously to a constant electrical load for unlimited hours. Continuous Power (COP) in accordance with ISO 8528, ISO 3046, AS 2789, DIN 6271 and BS 5514.



This outline drawing is for reference only. See respective model data sheet for specific model outline drawing number.

Do not use for installation design

©2019 Cummins Inc. | NAS-5692 (10/24) A052F982

Model	Dim "A" mm (in.)	Dim "B" mm (in.)	Dim "C" mm (in.)	Set weight* dry kg (lbs)	Set weight* wet kg (lbs)
Open set					
C20 N6	1669 (65.7)	864 (34)	1123 (44.2)	423 (933)	440 (969)
C25 N6	1669 (65.7)	864 (34)	1123 (44.2)	441 (972)	457 (1008)
C30 N6	2225 (87.6)	864 (34)	1123 (44.2)	491 (1083)	508 (1119)
C36 N6	2225 (87.6)	864 (34)	1123 (44.2)	520 (1146)	536 (1182)
C40 N6	2225 (87.6)	864 (34)	1123 (44.2)	548 (1208)	564 (1244)
Sound attenuated enclosure Level 1					
C20 N6	1829 (72)	864 (34)	1156 (45.5)	469 (1034)	485 (1070)
C25 N6	1829 (72)	864 (34)	1156 (45.5)	487 (1073)	503 (1109)
C30 N6	2388 (94)	864 (34)	1156 (45.5)	542 (1195)	558 (1231)
C36 N6	2388 (94)	864 (34)	1156 (45.5)	571 (1258)	587 (1294)
C40 N6	2388 (94)	864 (34)	1156 (45.5)	599 (1320)	615 (1356)
Sound attenuated enclosure Level 2					
C20 N6	2073 (81.6)	864 (34)	1156 (45.5)	474 (1045)	490 (1081)
C25 N6	2073 (81.6)	864 (34)	1156 (45.5)	492 (1084)	508 (1120)
C30 N6	2626 (103.4)	864 (34)	1156 (45.5)	547 (1206)	563 (1242)
C36 N6	2626 (103.4)	864 (34)	1156 (45.5)	576 (1269)	592 (1305)
C40 N6	2626 (103.4)	864 (34)	1156 (45.5)	604 (1331)	620 (1367)

* Weights based on 1-phase generator set. Weights may vary with a different configuration.

Codes and standards

Codes or standards compliance may not be available with all model configurations – consult factory for availability.

ISO 9001 **ISO 14001** **ISO 45001**	This product was manufactured in a facility whose quality management system is certified to ISO 9001 and its Health Safety Environmental Management Systems certified to ISO 14001 and ISO 45001.	UL LISTED	This product is listed to UL 2200, Stationary Engine Generator Assemblies
PTS	The Prototype Test Support (PTS) program verifies the performance integrity of the generator set design. Cummins products bearing the PTS symbol meet the prototype test requirements of NFPA 110 for Level 1 systems.	UNITED STATES ENVIRONMENTAL PROTECTION AGENCY	Engine certified to U.S. EPA SI Stationary Emission Regulation 40 CFR, Part 60. U.S. applications must be applied per this EPA regulation.
CSA	All low voltage models are CSA certified to product class 4215-01 and available with CSA B149.1 fuel train.	IBC INTERNATIONAL BUILDING CODE	The generator set package is available certified for seismic application in accordance with International Building Code.

Warning: Back feed to a utility system can cause electrocution and/or property damage. Do not connect to any building's electrical system except through an approved device or after building main switch is open.

For more information contact your local Cummins distributor or visit power.cummins.com

Our energy working for you.™

©2019 Cummins Inc. All rights reserved. Cummins is a registered trademark of Cummins Inc. PowerCommand, Acumen, AmpSentry, InPower and "Our energy working for you." are trademarks of Cummins Inc. Other company, product, or service names may be trademarks or service marks of others. Specifications are subject to change without notice.

NAS-5692 (10/24) A052F982

Generator set data sheet

Model: C36 N6
kW rating: 36.0 natural gas Standby
36.0 propane Standby
Frequency: 60 Hz
Fuel type: Natural gas/propane
Emissions level: EPA emissions

Fuel consumption

	Natural gas				Propane			
	Standby				Standby			
	kW (kVA)				kW (kVA)			
Ratings	36.0 (45.0)				36.0 (45.0)			
Load	**1/4**	**1/2**	**3/4**	**Full**	**1/4**	**1/2**	**3/4**	**Full**
scfh	202.3	292.3	382.3	472.3	79.8	114.1	148.4	182.7
m³/hr	5.73	8.28	10.83	13.3	2.26	3.23	4.20	5.17

Engine

	Natural gas	Propane
	Standby rating	Standby rating
Engine model	QSJ2.4G-G6	
Configuration	Cast iron, in-line 4 cylinder	
Aspiration	Turbo	
Gross engine power output, kW_m (bhp)	[redacted]	52 (70)
Bore, mm (in.)	86.5 (3.41)	
Stroke, mm (in.)	100.0 (3.94)	
Rated speed, rpm	1800	
Compression ratio	9.5:1	
Lube oil capacity, L (qt)	4 (4.54)	
Overspeed limit, rpm	2250	

Fuel supply pressure

Minimum operating pressure, kPa (in H_2O)	1.5 (6.0)
Maximum operating pressure, kPa (in H_2O)	3.2 (13.0)

©2017 Cummins Inc. I NAD-5697 (4/25)

Air	Natural gas Standby rating	Propane Standby rating
Combustion air, m^3/min (scfm)	[redacted]	1.8 (62.5)
Maximum air cleaner restriction, kPa (in H_2O)	1.49 (6.0)	
Alternator cooling air, m^3/min (scfm)	N/A	

Exhaust

Exhaust flow at rated load, m^3/min (cfm)	[redacted] (260.2)	6.3 (225.9)
Exhaust temperature, °C (°F)	632 [redacted]169)	638 (1181)
Exhaust back pressure (maximum allowable at engine), kPa (in H_2O)	5.0 (20)	5.0 (20)
Exhaust back pressure (actual with factory fitted muffler), kPa (in H_2O)	1.47 (5.9)	

Standard set-mounted radiator cooling

Ambient design, °C (°F)	50 (122)
Fan load, kW (HP)	2.2 (3.0)
Coolant capacity (with radiator), L (US gal)	10 (2.7)
Cooling system air flow, m^3/min (scfm)	144.2 (5150)
Maximum cooling air flow static restriction, kPa (in H_2O)	0.12 (0.5)

Weights[2]

Unit dry weight kgs (lbs)	548 (1294)
Unit wet weight kgs (lbs)	603 (1330)

Notes:
[1]For non-standard remote installations contact your local Cummins representative.
[2]Weights represent a set with 1-phase with sound level 1 enclosure.

©2017 Cummins Inc. | NAD-5697 (4/25)

Alternator data

Standard alternators		Natural gas/ propane single phase table	Natural gas/propane three phase table			
Maximum temperature rise above 40 °C ambient		120 °C	120 °C	120 °C	120 °C	120 °C
Feature code		B949-2	B986-2	B946-2	B943-2	B952-2
Alternator data sheet number		ADS-579	ADS-577	ADS-577	ADS-577	ADS-577
Voltage ranges		120/240	120/240	120/208	277/480	347/600
Voltage feature code		R104-2	R106-2	R098-2	R002-2	R114-2
Surge kW		43.0/43.0	43.1/43.1	43.1/43.1	43.1/43.1	43.1/43.1
Motor starting kVA (at 90% sustained voltage)	Shunt	68	86	86	86	86
	EBS	112	135	135	135	135
Full load current amps at Standby rating		150	108	125	54	43

Optional alternators for improved motor starting capability		Natural gas/ propane single phase table	Natural gas/propane three phase table			
Maximum temperature rise above 40 °C ambient		105 °C	105 °C	105 °C	105 °C	105 °C
Feature code		BB96-2	BB94-2	BB93-2	BB95-2	BB92-2
Alternator data sheet number		ADS-579	ADS-579	ADS-579	ADS-579	ADS-579
Voltage ranges		120/240	120/240	120/208	277/480	347/600
Voltage feature code		R104-2	R106-2	R098-2	R002-2	R114-2
Surge kW		41.5/41.5	43.4/43.4	43.4/43.4	43.4/43.4	43.4/43.4
Motor starting kVA (at 90% sustained voltage)	Shunt	76	95	95	95	95
	PMG	120	NA	NA	NA	NA
	EBS	NA	150	150	150	150
Full load current amps at Standby rating		150	108	125	54	43

©2017 Cummins Inc. I NAD-5697 (4/25)

Derating factors

Natural gas/propane

Standby	Natural gas: Engine power available up to 762 m (2500 ft) at ambient temperatures up to 40 °C (104 °F). Above these elevations derate at 4% per 305 m (1000 ft) and 2% per 10 °C above 40 °C (104 °F). Propane: Engine power available up to 1005 m (3300 ft) at ambient temperatures up to 40 °C (104 °F). Above these elevations derate at 4% per 305 m (1000 ft) and 2% per 10 °C above 40 °C (104 °F).

Ratings definitions

Emergency Standby Power (ESP):	**Limited-Time Running Power (LTP):**	**Prime Power (PRP):**	**Base Load (Continuous) Power (COP):**
Applicable for supplying power to varying electrical load for the duration of power interruption of a reliable utility source. Emergency Standby Power (ESP) is in accordance with ISO 8528. Fuel stop power in accordance with ISO 3046, AS 2789, DIN 6271 and BS 5514.	Applicable for supplying power to a constant electrical load for limited hours. Limited-Time Running Power (LTP) is in accordance with ISO 8528.	Applicable for supplying power to varying electrical load for unlimited hours. Prime Power (PRP) is in accordance with ISO 8528. Ten percent overload capability is available in accordance with ISO 3046, AS 2789, DIN 6271 and BS 5514.	Applicable for supplying power continuously to a constant electrical load for unlimited hours. Continuous Power (COP) is in accordance with ISO 8528, ISO 3046, AS 2789, DIN 6271 and BS 5514.

Formulas for calculating full load currents:

Three phase output

$$\frac{\text{kW} \times 1000}{\text{Voltage} \times 1.73 \times 0.8}$$

Single phase output

$$\frac{\text{kW} \times \text{SinglePhaseFactor} \times 1000}{\text{Voltage}}$$

Warning: Back feed to a utility system can cause electrocution and/or property damage. Do not connect to any building's electrical system except through an approved device or after building main switch is open.

For more information contact your local Cummins distributor or visit power.cummins.com

Our energy working for you.™

©2017 Cummins Inc. All rights reserved. Cummins is a registered trademark of Cummins Inc. PowerCommand, AmpSentry, InPower and "Our energy working for you." are trademarks of Cummins Inc. Other company, product, or service names may be trademarks or service marks of others. Specifications are subject to change without notice.
NAD-5697 (4/25)

Specification Sheet

PowerCommand® 1.1 Control System



Description

The PowerCommand control system is a microprocessor-based generator set monitoring, metering and control system designed to meet the demands of today's engine driven generator sets. The integration of all control functions into a single control system provides enhanced reliability and performance compared to conventional generator set control systems. These control systems have been designed and tested to meet the harsh environment in which gensets are typically applied.

Features

Easy to view: HMI 211RS for residential use. 128 x 64 pixel graphic LED backlight LCD.

Easy to use: Tactile buttons for generator set start/stop. Residential Standby display for convenient use.

Modbus® interface: Eliminates need for MODLON.

Progressive protective functions: Advanced Overcurrent Protection – Generator set monitoring & protection.

Digital voltage regulation: Single phase full wave SCR type regulator compatible with either shunt or PMSG systems.

Digital engine speed governing: Provides isochronous frequency regulation.

12 and 24 VDC battery operation.

Automatic mains failure: Smooth & automatic transfer and re-transfer of load from utility to generator set & vice-versa.

Exerciser clock: Runs generator set exerciser routines for dependability of operation.

Warranty and service: Backed by a comprehensive warranty and worldwide distributor service network.

Certification: Suitable for us on generator sets that are designed, manufactured, tested and certified to relevant UL, NFPA, ISO, IEC Mil Std., CE, UKCA and CSA standards.

©2019 Cummins Inc. | PDS-1566 | PD00000147 | (01/22)

PowerCommand Digital Generator Set Control PCC 1302



Description

The PowerCommand generator set control is suitable for use on a wide range of generator sets in non-paralleling applications. The PowerCommand control is compatible with shunt or PMG excitation style. It is suitable for use with reconnectable or non-reconnectable generators, and it can be configured for any frequency, voltage and power connection from 120-600 VAC Line-to-Line.

Power for this control system is derived from the generator set starting batteries. The control functions over a voltage range from 8 VDC to 30 VDC.

Features

- 12 and 24 VDC battery operation.
- Digital voltage regulation.
- Digital engine speed governing (where applicable) - Provides isochronous frequency regulation.
- Full authority engine communications (where applicable) - Provides communication and control with the Engine Control Module (ECM).
- Common harnessing - with higher feature Cummins controls allows for easy field upgrades.
- Generator set monitoring - Monitors status of all critical engine and alternator functions.
- Digital genset metering (AC and DC).
- Genset battery monitoring system - to sense and warn against a weak battery condition.
- Engine starting - Includes relay drivers for starter, fuel shut off (FSO), glow plug/spark ignition power and switch B+ applications.
- Generator set protection - Protects engine and alternator.
- Advanced serviceability - using InPower™, a PC-based software service tool.
- Environmental protection - The control system is designed for reliable operation in harsh environments. The main control board is a fully encapsulated module that is protected from the elements.
- Exerciser function – Routine exercising of generator set.
- Supports dual fuel control.
- Automatic Mains Failure function built in generator set controller. Modbus interface - for interconnecting to customer equipment.
- Configurable inputs and outputs - Four discrete inputs and two dry contact relay outputs.
- Warranty and service - Backed by a comprehensive warranty and worldwide distributor service network.
- Certifications - Suitable for use on generator sets that are designed, manufactured, tested and certified to relevant UL, NFPA, ISO, IEC, Mil Std., CE, UKCA and CSA standards.

Base Control Functions

HMI capability

Operator adjustments - The HMI includes provisions for many set up and adjustment functions.

Generator set hardware data - Access to the control and software part number, generator set rating in kVA and generator set model number is provided from the HMI or InPower™.

Data logs - Includes engine run time, controller on time, number of start attempts.

Fault history - Provides a record of the most recent fault conditions with control hours time stamp. Up to 10 events are stored in the control non-volatile memory.

Alternator data

- Voltage (single or three phase Line-to-Line and Line-to-Neutral)
- Current (single or three phase)
- kVA (three phase and total)
- Frequency
- Engine data
- Starting battery voltage
- Engine speed
- Engine temperature
- Engine oil pressure
- Partial Full Authority Engine (FAE) data (where applicable)
- Service adjustments - The HMI includes provisions for adjustment and calibration of generator set control functions. Adjustments are protected by a password. Functions include:
- Engine speed governor adjustments
- Voltage regulation adjustments
- Cycle cranking
- Configurable fault set up
- Configurable output set up
- Meter calibration
- Units of measurement

©2019 Cummins Inc. | PDS-1566 | PD00000147 | (01/22)

Engine control

SAE-J1939 CAN interface to full authority ECMs (where applicable) - Provides data swapping between genset and engine controller for control, metering and diagnostics.

12 VDC/24 VDC battery operations - PowerCommand will operate either on 12 VDC or 24 VDC batteries.

Isochronous governing (where applicable) - Capable of controlling engine speed within +/-0.25% for any steady state load from no load to full load. Frequency drift will not exceed +/-0.5% for a 33 °C (60 °F) change in ambient temperature over an 8 hour period.

Temperature dependent governing dynamics (with electronic governing) - Modifies the engine governing control parameters as a function of engine temperature. This allows the engine to be more responsive when warm and more stable when operating at lower temperature levels.

Remote start mode - Accepts a ground signal from remote devices to automatically start the generator set and immediately accelerate to rated speed and voltage. The remote start signal will also wake up the control from sleep mode. The control can incorporate a time delay start and stop.

Remote and local Emergency stop - The control accepts a ground signal from a local (genset mounted) or remote (facility mounted) Emergency stop switch to cause the generator set to immediately shut down. The generator set is prevented from running or cranking with the switch engaged. If in sleep mode, activation of either Emergency stop switch will wake up the control.

Sleep mode - The control includes a configurable low current draw state to minimize starting battery current draw when the genset is not operating. The control can also be configured to go into a low current state while in auto for Prime applications or applications without a battery charger.

Engine starting - The control system supports automatic engine starting. Primary and backup start disconnects are achieved by one of three methods: magnetic pickup, battery charging alternator feedback or main alternator output frequency. The control also supports configurable glow plug control when applicable.

Cycle cranking - Configurable for the number of starting cycles (1 to 7) and duration of crank and rest periods. Control includes starter protection algorithms to prevent the operator from specifying a starting sequence that might be damaging.

Time delay start and stop (cooldown) - Configurable for time delay of 0-300 seconds prior to starting after receiving a remote start signal and for time delay of 0-600 seconds prior to shut down after signal to stop in normal operation modes. Default for both time delay periods is 0 seconds.

Alternator control

The control includes an integrated line-to-line sensing voltage regulation system that is compatible with shunt or PMG excitation systems. The voltage regulation system is full wave rectified and has an SCR output for good motor starting capability. Major system features include:

Digital output voltage regulation - Capable of regulating output voltage to within +/-1.0% for any loads between no load and full load. Voltage drift will not exceed +/-1.5% for a 40 ºC (104 ºF) change in temperature in an eight hour period. On engine starting or sudden load acceptance, voltage is controlled to a maximum of 5% overshoot over nominal level.

The automatic voltage regulator feature can be disabled to allow the use of an external voltage regulator.

Torque-matched V/Hz overload control - The voltage roll-off set point and rate of decay (i.e. the slope of the V/Hz curve) is adjustable in the control.

Protective Functions

On operation of a protective function the control will indicate a fault by illuminating the appropriate status LED on the HMI, as well as display the fault code and fault description on the LCD. The nature of the fault and time of occurrence are logged in the control. The service manual and InPower service tool provide service keys and procedures based on the service codes provided. Protective functions include:

Battle short mode

When enabled and the battle short switch is active, the control will allow some shutdown faults to be bypassed. If a bypassed shutdown fault occurs, the fault code and description will still be annunciated, but the genset will not shutdown. This will be followed by a fail to shutdown fault. Emergency stop shutdowns and others that are critical for proper operation are not bypassed. Please refer to the Control Application Guide or Manual for list of these faults.

Configurable alarm and status inputs

The control accepts up to four alarm or status inputs (configurable contact closed to ground or open) to indicate a configurable (customer-specified) condition. The control is programmable for warning, shutdown or status indication and for labelling the input.

Emergency stop

Annunciated whenever either Emergency stop signal is received from external switch.

General engine protection

Low and high battery voltage warning - Indicates status of battery charging system (failure) by continuously monitoring battery voltage.

Weak battery warning - The control system will test the battery each time the generator set is signaled to start and indicate a warning if the battery indicates impending failure.

Fail to start (overcrank) shutdown - The control system will indicate a fault if the generator set fails to start by the completion of the engine crack sequence.

Fail to crank shutdown - Control has signaled starter to crank engine but engine does not rotate.

Cranking lockout - The control will not allow the starter to attempt to engage or to crank the engine when the engine is rotating.

Hydro mechanical fuel system engine protection

Overspeed shutdown - Default setting is 115% of nominal.

Low lube oil pressure warning/shutdown - Level is pre-set (configurable with InPower) to match the capabilities of the engine used. Control includes time delays to prevent nuisance alarms.

High lube oil temperature warning/shutdown - Level is pre-set (configurable with InPower) to match the capabilities of the engine used. Control includes time delays to prevent nuisance alarms.

High engine temperature warning/shutdown - Level is pre-set (configurable with InPower) to match the capabilities of the engine used. Control includes time delays to prevent nuisance alarms.

Low coolant temperature warning - Indicates that engine temperature may not be high enough for a 10 second start or proper load acceptance.

Sensor failure indication - Logic is provided on the base control to detect analog sensor or interconnecting wiring failures.

©2019 Cummins Inc. | PDS-1566 | PD00000147 | (01/22)

Full authority electronic engine protection

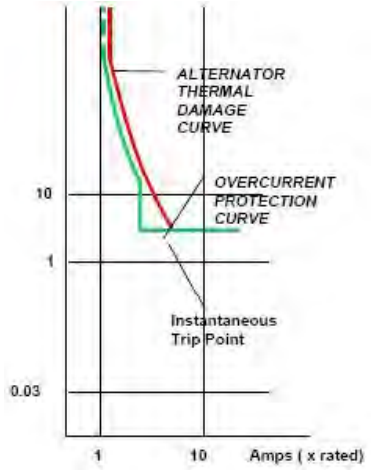
Engine fault detection is handled inside the engine ECM. Fault information is communicated via the SAE-J1939 data link for annunciation in the HMI

Alternator protection

High AC voltage shutdown (59) - Output voltage on any phase exceeds pre-set values. Time to trip is inversely proportional to amount above threshold. Values adjustable from 105-130% of nominal voltage, with time delay adjustable from 0.1-10 seconds. Default value is 110% for 10 seconds.

Low AC voltage shutdown (27) - Voltage on any phase has dropped below a pre-set value. Adjustable over a range of 50-95% of reference voltage, time delay 2-20 seconds. Default value is 85% for 10 seconds.

Overcurrent warning/shutdown - Implementation of the thermal damage curve with instantaneous trip level calculated based on current transformer ratio and application power rating.



-

Under frequency shutdown (81 u) - Generator set output frequency cannot be maintained. Settings are adjustable from 2-10 Hz below nominal governor set point, for a 5-20 second time delay. Default: 6 Hz, 10 seconds.

Over frequency shutdown/warning (81o) - Generator set is operating at a potentially damaging frequency level. Settings are adjustable from 2-10 Hz above nominal governor set point for a 1-20 second time delay. Default: 6 Hz, 10 seconds, enabled.

Loss of sensing voltage shutdown - Shutdown of generator set will occur on loss of voltage sensing inputs to the control.

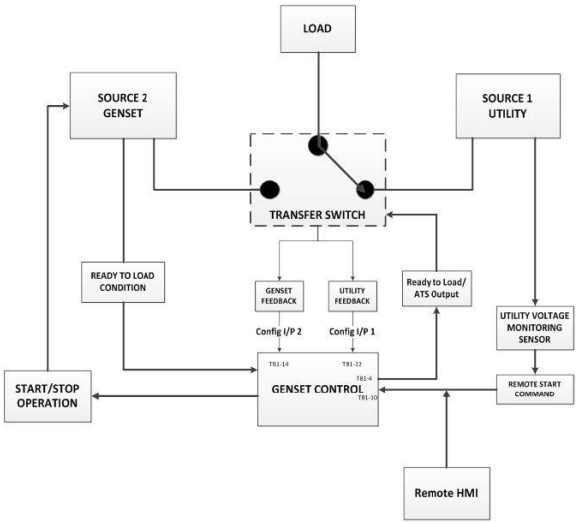
Field overload shutdown - Uses field voltage to shutdown generator set when a field overload condition occurs.

Advanced Functions

Automatic mains failure*

The built in AMF feature provides the automatic transfer and re-transfer of the load from utility to generator set and vice-versa.

- Automatically starts-stops the generator set in the event of utility failure.
- Annunciates faults.



-

* A utility voltage monitoring sensor (as shown in the AMF diagram above) must be connected in order to use the AMF feature on the 1302 control. Use Schneider Electric Relay RSB1A120U7 and Socket RSZE1S35M.

Exerciser clock

The exerciser clock runs the generator set exerciser routines for dependability of operation.

Field Control Interface

Input signals to the base control include:

- Remote start
- Local and Emergency stop
- Configurable inputs: Control includes (4) input signals from customer discrete devices that are configurable for warning, shutdown or status indication, as well as message displayed.

Output signals from the PowerCommand control include:

- Configurable relay outputs: Control includes (2) relay output contacts rated at 2 A. These outputs can be configured to activate on any control warning or shutdown fault as well as ready to load, not in auto, common alarm, common warning and common shutdown.
- Ready to load (generator set running) signal: Operates when the generator set has reached 90% of rated speed and voltage and latches until generator set is switched to off or idle mode.

©2019 Cummins Inc. | PDS-1566 | PD00000147 | (01/22)

PowerCommand Human Machine Interface HMI211



Description

This control system includes an intuitive operator interface panel that allows for complete genset control as well as system metering, fault annunciation, configuration and diagnostics. The interface includes five generator set status LED lamps with both internationally accepted symbols and English text to comply with customer needs. The interface also includes an LED backlit LCD display with tactile feel soft-switches for easy operation and screen navigation. It is configurable for units of measurement and has adjustable screen contrast and brightness.

The *run/off/auto* switch function is integrated into the interface panel.

All data on the control can be viewed by scrolling through screens with the navigation keys. The control displays the current active fault and a time-ordered history of the five previous faults.

Features

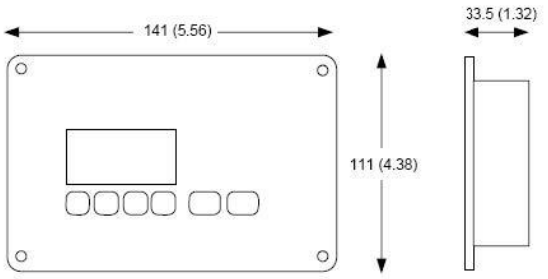
- LED indicating lamps:
  - Remote start
  - Not in auto
  - Shutdown
  - Warning
  - Auto
  - Run
- 128 x 64 pixels graphic LED backlight LCD.
- Four tactile feel membrane switches for LCD defined operation. The functions of these switches are defined dynamically on the LCD.
- Two tactile feel membrane switches dedicated for off and back.
- Allows for complete genset control setup.
- Certifications: Suitable for use on generator sets that are designed, manufactured, tested and certified to relevant UL, NFPA, ISO, IEC, Mil Std., CE, UKCA and CSA standards.
- HMI 211RS provides convenience for residential use.

Communications Connections

PC tool interface - This RS-485 communication port allows the HMI to communicate with a personal computer running InPower.

This RS-485 communication port allows the HMI to communicate with the main control board.

Mechanical Drawing



HMI

Dimensions: mm (inches)

Software

InPower (beyond 6.0 version) is a PC-based software service tool that is designed to directly communicate to PowerCommand generator sets and transfer switches, to facilitate service and monitoring of these products.

Environment

The control is designed for proper operation without recalibration in ambient temperatures from -40 ºC (-40 ºF) to +70º C (158 ºF), and for storage from -55 ºC (-67 ºF) to +80 ºC (176 ºF). Control will operate with humidity up to 95%, non-condensing.

The HMI is designed for proper operation in ambient temperatures from -40 ºC* (-40 ºF) to +70 ºC (158 ºF), and for storage from -40 ºC* (-40 ºF) to +80 ºC (176 ºF).

The control board is fully encapsulated to provide superior resistance to dust and moisture. Display panel has a single membrane surface, which is impervious to effects of dust, moisture, oil and exhaust fumes. This panel uses a sealed membrane to provide long reliable service life in harsh environments.

The control system is specifically designed and tested for resistance to RFI/EMI and to resist effects of vibration to provide a long reliable life when mounted on a generator set. The control includes transient voltage surge suppression to provide compliance to referenced standards.

* Heater accessory (pn: A040H853) is available for enhanced operation below -20 ºC

Certifications

PowerCommand meets or exceeds the requirements of the following codes and standards:

- NFPA 110 for level 1 and 2 systems.
- ISO 8528-4: 1993 compliance, controls and switchgear.
- CE and UKCA marking: The control system is suitable for use on generator sets to be CE and UKCA-marked.
- EN 50081-1,2 residential/light industrial emissions or industrial emissions.
- EN 50082-1,2 residential/light industrial or industrial susceptibility.
- ISO 7637-2, level 2; DC supply surge voltage test.
- Mil Std. 202C, Method 101 and ASTM B117: Salt fog test.
- PowerCommand control systems and generator sets are designed and manufactured in ISO 9001 certified facilities.
- UL 6200 recognized and suitable for use on UL 2200 Listed generator sets.
- CSA C282-M1999 compliance.
- CSA 22.2 No. 14 M91 industrial controls.

©2019 Cummins Inc. | PDS-1566 | PD00000147 | (01/22)

Warranty

All components and subsystems are covered by an express limited one year warranty. Other optional and extended factory warranties and local distributor maintenance agreements are available

Accessories

1301-1302 Upgrade Kit (HM)	0541-1431
PowerCommand 500 (LAN)	A040X126
Remote HMI 211	0541-1394
Remote HMI 211RS	A046K103
I/O Expansion (Aux 101)	0541-1291
HMI Heater Accessory Kit	A040H853

Parts Ordering Information

1302 Control Board	0327-1617-02
1302 control Board – Arrow	A043W505
Aux 104 (Governor Control)	0327-1507
HMI 211 Without Heater	0300-6014
HMI 211 with Heater	A026G237

Additional Resources

Resource	Where to find
1302 Service Manual	QSOL
Accessories Catalog	cumminspower.com
Additional Controls Information	PowerSuite Library

PCCNet COMPATIBLE

For more information contact your local Cummins distributor or visit power.cummins.com

Our energy working for you.™

©2019 Cummins Inc. All rights reserved. Cummins is a registered trademark of Cummins Inc. PowerCommand, AmpSentry, InPower and “Our energy working for you.” are trademarks of Cummins Inc. Other company, product, or service names may be trademarks or service marks of others. Specifications are subject to change without notice.
PDS-1566 | PD00000147 | (01/22)

Alternator data sheet

Frame size: CA115-V14

Characteristics

No of bearings:		1	
Weights:	**Stator assembly**:	289.5 lb	131.3 kg
	Rotor assembly:	147.8 lb	67 kg
	Complete assembly:	437 lb	198 kg
Maximum speed:		2250 rpm	
Insulation system:	Class H throughout		

		60 Hz (winding no)				
		208 (311)	600 (17)	480 (41)	240 (06)	240 (311)
Excitation current:	Full load	2.12	1.89	2.10	1.47	2.12
Excitation current:	No load	0.47	0.45	0.57	0.69	0.47
3 Ø Ratings (0.8 power factor)		208 (311)	600 (17)	480 (41)	240 (06)	240 (311)
(Based on specific temperature rise at 40 °C ambient temperature)						
120 °C Rise peak Standby ratings	kW	40	40	40		40
	kVA	50	50	50		50
105 °C Rise peak Standby ratings	kW	36.6	36.60	36.60		36.6
	kVA	45.75	45.75	45.75		45.75
1 Ø Ratings (1.0 power factor)		208 (311)	600 (17)	480 (41)	240 (06)	240 (311)
(Based on specific temperature rise at 40 °C ambient temperature)						
120 °C Rise peak Standby ratings	kW				36	
	kVA				36	
105 °C Rise peak Standby ratings	kW				33	
	kVA				33	
Reactances (per unit ± 30%)		208 (311)	600 (17)	480 (41)	240 (06)	240 (311)
(Based on full load at 105 °C rise rating)						
Synchronous		2.02	2.06	2.06	1.22	2.02
Transient		0.12	0.12	0.12	0.10	0.12
Subtransient		0.08	0.08	0.08	0.07	0.08
Negative sequence		0.16	0.16	0.16	0.16	0.16
Zero sequence		0.08	0.10	0.09	0.08	0.08
Motor starting		208 (311)	600 (17)	480 (41)	240 (06)	240 (311)
Maximum kVA (90% sustained voltage)						
(At 20°C nominal generator & ambient temperature)						
	(EBS)	150	150	150	112	150
	(Shunt)	95	95	95	68	95

Alternator data sheet

Frame size: CA115-V14

Time constants (sec)	208 (311)	600 (17)	480 (41)	240 (06)	240 (311)
Transient	0.026	0.026	0.026	0.026	0.026
Subtransient	0.006	0.006	0.006	0.006	0.006
Open circuit	0.62	0.62	0.62	0.52	0.62
DC	0.006	0.005	0.005	0.006	0.006
Windings (@ 20° C)	208 (311)	600 (17)	480 (41)	240 (06)	240 (311)
Stator resistance (Ohms per phase)	0.238	0.350	0.518	0.048	0.238
Rotor resistance (Ohms)	0.944	0.944	0.944	0.944	0.944
Number of leads	12	12	12	4	12

Data Sheet

Circuit Breakers

Description

This Data sheet provides circuit breaker manufacturer part numbers and specifications. The Circuit breaker box description is the rating of that breaker box installation on a Cummins Generator. Please refer to the website of the circuit breaker manufacturer for breaker specific ratings and technical information.

Applicable Models

Engine	Models					
Kubota	C10D6	C15D6	C20D6			
QSJ2.4	C20N6	C25N6	C30N6	C30N6H	C36N6	C36N6H
	C40N6	C40N6H	C50N6H	C60N6H		
B3.3	C25D6	C30D6	C35D6	C40D6	C50D6	C60D6
QSJ5.9G	C45N6	C50N6	C60N6	C70N6	C80N6	C100N6
QSJ8.9G	C125N6	C150N6	C175N6B	C200N6B		
QSB5	DSFAC	DSFAD	DSFAE	C50D6C	C60D6C	C80D6C
	C100D6C	C125D6C				
QSB7	DSGAA	DSGAB	DSGAC	DSGAD	DSGAE	
		C125D6D	C150D6D	C175D6D	C200D6D	
QSL9	DSHAD	DQDAA	DQDAB	DQDAC		
QSM11	DQHAB					
QSX15	DFEJ	DFEK				

Instructions

1. Locate the circuit breaker feature code or part number and use the charts below to find the corresponding manufacturer circuit breaker catalog number.

2. Use the first letter of the circuit breaker catalog number to determine the "frame" of the breaker. If the first letter is an “N”, use the second letter. Then follow the corresponding website link from the table below to find the breaker catalog number description.

Please refer to the catalog numbering systems page, which is given in the chart, to understand the nomenclature of the catalog number.

Frame	Catalog name*	Catalog number description page(s)
P	0612CT0101 http://www.schneider-electric.us/en/download/document/0612CT0101/	16-17
H, J, and L	0611CT1001 http://www.schneider-electric.us/en/download/document/0611CT1001/	8-9
Q	0734CT0201 http://www.schneider-electric.us/en/download/document/0734CT0201/	4

*The following link may also be used to search specifically by the breaker part number or for the catalog name listed above. http://products.schneider-electric.us/technical-library/

©2020 Cummins Inc. | NAS-6236-EN (05/25) A056F944

3. Search the catalog by using the first 3 letters of the breaker catalog number and the first 5 numbers to find information such as trip curves, accessories, and dimensional details regarding the circuit breaker.

*If the catalog number starts with “N”, skip the N and begin your search with the second letter.

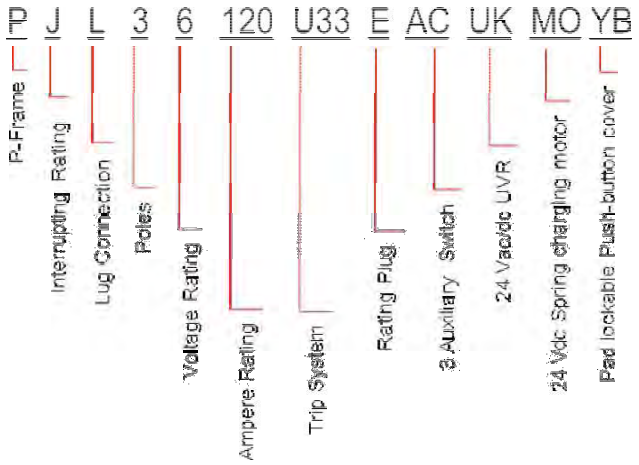
*If the first 3 letters are “PJP,” the search will not work. You will need to start with just “PJ” and use the description pages to obtain the information you are looking for on the “PJP.”

Example

After finding your circuit breaker catalog number to be "PJL36120U33EACUKMOYB," navigate to the P-frame catalog by using the link provided.

Look at pages 16-17 of the pdf catalog to find the nomenclature of the breaker.

Search the P-frame spec sheet using the search "PJL36120.”



©2022 Cummins Inc. | NAS-6236-EN (05/25) A056F944

EXHIBIT K

Feature Code	Breaker Box Description	Cummins Part #	Manufacturer	Breaker Catalog Number	Trip Unit	Plug Type
KV10-2	CB,Loc A,50A,2P,600VAC,80%,UL	A043E181	Schneider Electric	HDL26050	Thermal Magnetic	N/A
KV11-2	CB,Loc A,60A,2P,600VAC,80%,UL	A043E179	Schneider Electric	HDL26060	Thermal Magnetic	N/A
KV12-2	CB,Loc A,70A,2P,600VAC,80%,UL	A043E169	Schneider Electric	HDL26070	Thermal Magnetic	N/A
KV13-2	CB,Loc A,80A,2P,600VAC,80%,UL	A043D328	Schneider Electric	HDL26080	Thermal Magnetic	N/A
KV14-2	CB,Loc A,90A,2P,600VAC,80%,UL	A043D326	Schneider Electric	HDL26090	Thermal Magnetic	N/A
KV15-2	CB,Loc A,100A,2P,600VAC,80%,UL	A043D324	Schneider Electric	HDL26100	Thermal Magnetic	N/A
KV16-2	CB,Loc A,125A,2P,600VAC,80%,UL	A043D274	Schneider Electric	HDL26125	Thermal Magnetic	N/A
KV17-2	CB,Loc A,150A,2P,600VAC,80%,UL	A043C676	Schneider Electric	HDL26150	Thermal Magnetic	N/A
KV18-2	CB,Loc A,175A,2P,600VAC,80%,UL	A043E202	Schneider Electric	JDL26175	Thermal Magnetic	N/A
KV19-2	CB,Loc A,200A,2P,600VAC,80%,UL	A043E199	Schneider Electric	JDL26200	Thermal Magnetic	N/A
KV20-2	CB,Loc A,225A,2P,600VAC,80%,UL	A043E195	Schneider Electric	JDL26225	Thermal Magnetic	N/A
KV21-2	CB,Loc A,250A,2P,600VAC,80%,UL	A043E193	Schneider Electric	JDL26250	Thermal Magnetic	N/A
KV30-2	CB,Loc A,15A,3P,600VAC,80%,UL	A043L506	Schneider Electric	HDL36015	Thermal Magnetic	N/A
KV31-2	CB,Loc A,20A,3P,600VAC,80%,UL	A043L480	Schneider Electric	HDL36020	Thermal Magnetic	N/A
KV32-2	CB,Loc A,25A,3P,600VAC,80%,UL	A043L508	Schneider Electric	HDL36025	Thermal Magnetic	N/A
KV33-2	CB,Loc A,30A,3P,600VAC,80%,UL	A043L475	Schneider Electric	HDL36030	Thermal Magnetic	N/A
KV34-2	CB,Loc A,40A,3P,600VAC,80%,UL	A043L464	Schneider Electric	HDL36040	Thermal Magnetic	N/A

©2022 Cummins Inc. | NAS-6236-EN (05/25) A056F944

Cooling system data
C36 N6

High ambient air temperature radiator cooling system

	Fuel type	Duty	Rating (Kw)	Max cooling @ air flow static restriction, unhoused (inches water/mm water)					Housed in free air, no air discharge restriction	
				0.0/0.0	0.25/6.4	0.5/12.7	0.75/19.1	1.0/25.4	F231	F217
				Maximum allowable ambient temperature, degree C						
60 Hz	Natural Gas	Standby	36	55	55	55	N/A	N/A	55	

High ambient air temperature radiator cooling system

	Fuel type	Duty	Rating (Kw)	Max cooling @ air flow static restriction, unhoused (inches water/mm water)					Housed in free air, no air discharge restriction	
				0.0/0.0	0.25/6.4	0.5/12.7	0.75/19.1	1.0/25.4	F231	F217
				Maximum allowable ambient temperature, degree C						
60 Hz	Propane	Standby	36	55	55	55	N/A	N/A	55	55

Notes:

1. Data shown are anticipated cooling performance for typical generator set.
2. Cooling data is based on 1000 ft (305 m) site test location.
3. Generator set power output may need to be reduced at high ambient conditions. Refer generator set data sheet for derate schedules.
4. Cooling performance may be reduced due to several factors including but not limited to: Incorrect installation, improper operation, fouling of the cooling system, and other site installation variables.

Sound Data
C36 N6
QSJ2.4 60Hz

Sound Pressure Level @ 7 meters, dB(A)

See notes 1-6 listed below

Configuration		Position (note 1)								8 Position Average
		1	2	3	4	5	6	7	8	
Standard – unhoused	Infinite Exhaust	77.9	79.7	76.2	76.1	75.1	78.4	77.6	76.5	77.4
F231-2 – sound attenuated level 1	Mounted	71.0	68.8	65.2	65.2	65.7	65.8	65.0	67.6	67.3
F217-2 – sound attenuated level 2	Mounted	65.4	67.2	64.8	65.7	65.8	66.6	63.8	64.5	65.6

Sound Power Level, dB(A)

See notes 2-4, 7, 8 listed below

Configuration		Octave band center frequency (Hz)										Overall Sound Power Level
		31.5	63	125	250	500	1000	2000	4000	8000	16000	
Standard – unhoused	Infinite Exhaust	45.9	63.8	76.0	87.4	100.8	99.7	96.5	95.3	93.2	85.5	105.1
F231-2 – sound attenuated level 1	Mounted	49.1	75.7	77.7	87.8	89.8	85.1	83.5	81.0	81.1	73.5	95.0
F217-2 – sound attenuated level 2	Mounted	49.6	77.3	76.4	87.9	91.2	86.9	84.5	83.5	83.3	72.1	94.1

Exhaust Sound Power Level, dB(A)

See notes 2, 9 listed below

Open Exhaust (no muffler) @ rated load	Octave band center frequency (Hz)										Overall Sound Power Level
	31.5	63	125	250	500	1000	2000	4000	8000	16000	
	36.9	80.3	93.4	104.1	99.9	104.3	106.1	102.7	100.7	93.7	111.4

Note:

1. Position 1 faces the generator front per ISO 8528-10. The positions proceed around the generator set in a counter-clockwise direction in 45° increments. All position are at 7 m (23 ft) from surface of the generator set and 1.2 m (48 in.) from floor level.
2. Sound levels are subject to instrumentation, measurement, installation and manufacturing variability.
3. Data based on full rated load.
4. Sound data with generator sets with infinite exhaust do not include exhaust noise.
5. Sound pressure levels are measured per ANSI S1.13 and ANSI S12.18, as applicable.
6. Reference sound pressure is 20 µPa.
7. Sound power levels per ISO 3744 and ISO 8528-10, as applicable.
8. Reference power = 1 pw (10^{-12} W).
9. Exhaust sound power levels are per ISO 6798, as applicable.

EXHIBIT K

Exhaust emission data sheet
C36 N6
60 Hz Spark ignited generator set
EPA emissions

Engine information:			
Model:	QSJ2.4	Bore:	3.41 in. (86.5 mm)
Type:	4 cycle, in-line, 4 cylinder	Stroke:	3.94 in. (100 mm)
Aspiration:	Naturally aspirated	Displacement:	146.46 cu. in. (2.4 liters)
Compression ratio:	9.5:1		
Emission control device:	Electronic air/fuel ratio control, and closed-loop breather system.		

	Natural gas	Propane
Performance data	**Standby**	**Standby**
BHP @ 1800 RPM (60 Hz)	70	70
Fuel consumption (SCFH)	472.3	182.7
Air to fuel ratio	14.4	14.6
Exhaust gas flow (CFM)	269.2	225.9
Exhaust gas temperature (°F)	1400	1475
Exhaust emission data		
HC (Total unburned hydrocarbons)*	39	419
NOx (Oxides of nitrogen as NO2)	1260	1188
CO (Carbon monoxide)	9972	17657
		Values are ppmvd
HC (Total unburned hydrocarbons)*	0.06	0.52
NOx (Oxides of nitrogen as NO2)	5.09	4.04
CO (Carbon monoxide)	29.30	42.43
		Values are Grams per HP-Hour

*HC includes all NMHC, VOC, POC, and ROC constituents (Non-Methane HC, Volatile Organic Compounds, Precursor Organic Compounds, and Reactive Organic Compounds).

Test conditions

Data was recorded during steady-state rated engine speed (± 25 RPM) with full load (± 2%). Pressures, temperatures, and emission rates were stabilized.

Fuel specification:

Natural gas	Dry gas as received from Supplier (1000 BTU/SCF).
Propane	Meets the requirements for Commercial Grade Propane under the ASTM D1835 Standard Specification for Liquefied Gases
Fuel temperature	60 ± 9 °F at Flow Transmitter
Fuel pressure	14.73 PSIA ± 0.5 PSIA at Flow Transmitter
Intake air temperature:	77 ± 9 °F at inlet
Barometric pressure:	29.92 in. Hg ± 1 in. Hg
Humidity:	NOx measurement corrected to 75 grains H2O/lb dry air

The NOx, HC, and CO emission data tabulated here were from a single engine under the test conditions shown above. These data are subjected to instrumentation and engine-to-engine variability. Field emission test data are not guaranteed to these levels. Actual field test results may vary due to test site conditions, installation, fuel specification, test procedures and instrumentation. Engine operation with excessive air intake or exhaust restriction beyond published maximum limit, or with improper maintenance, may results in elevated emission levels.

EXHIBIT K

2024 EPA Exhaust Emission Compliance Statement

C36 N6

Standby

60 Hz Spark Ignited Generator Set

Compliance Information:

The engine used in this generator set complies with U.S. EPA emissions regulations under the provisions of 40 CFR Part 60, Stationary Emergency Spark-Ignited emissions limits when tested on 6 mode cycle of Part 90.

Engine Manufacturer:	Cummins Inc.
EPA Certificate Number:	RCEXB02.4AAA-002
Effective Date:	8/21/2023
Date Issued:	8/21/2023
EPA Engine Family (Cummins Emissions Family):	RCEXB02.4AAA

Engine Information:

Model:	QSJ2.4	Bore:	3.41 in. (86 mm)
Engine Nameplate HP:	70	Stroke:	3.94 in. (100 mm)
Type:	4 Cycle, In-Line, 4 Cylinder	Displacement:	146.5 cu. in. (2 liters)
Aspiration:	Turbocharged Aftercooled	Compression Ratio:	9.5:1
Emission Control Device:	Electronic Air/Fuel Ratio Control and Closed-Loop Breather System		

U.S. Environmental Protection Agency Station Emergency SI Emission Limits

	Grams per BHP-hr		Grams per kW_m-hr	
Natural Gas	**NOx + NMHC**	**CO**	**NOx + NMHC**	**CO**
EPA Emissions Limit	10.0	387	13.4	519

	Grams per BHP-hr		Grams per kWm-hr	
Propane (LP)	**NOx + THC**	**CO**	**NOx + THC**	**CO**
EPA Emissions Limit	10.0	387	13.4	519

Tests conducted using alternate methods, instrumentation, fuel or reference conditions can yield different results.

Engine operation with excessive air intake or exhaust restriction beyond published maximum limits, or with improper maintenance, may result in elevated emission levels.

VMC GROUP
THE POWER OF TOGETHER

CERTIFICATE OF COMPLIANCE
SEISMIC DESIGN OF NONSTRUCTURAL COMPONENTS AND SYSTEMS

Certification No.

VMA-51070-01C (Revision 11)

Expiration Date: 4/30/2026

Certification Parameters:

The nonstructural products (mechanical and/or electrical components) listed on this certificate are CERTIFIED[1] FOR SEISMIC APPLICATIONS in accordance with the following building code[2] releases.

IBC 2018, 2015, 2012

The following model designations, options, and accessories are included in this certification. Reference report number VMA-51070-01 as issued by VMC Group for a complete list of certified models, included accessories/options, and certified installation methods.

Cummins Power Generation, Inc.; Gas Generators
C20-200N6 Series; 20kW - 200kW

The above referenced equipment is **APPROVED** for seismic application when properly installed[3], used as intended, and contains a Seismic Certification Label referencing this Certificate of Compliance[4]. As limited by the tabulated values, below grade, grade, and roof-level installations, installations in essential facilities, for life safety applications, and/or of equipment containing hazardous contents are permitted and included in this certification with an Equipment Importance Factor assigned as I_p=1.5. The equipment is qualified by successful seismic shake table testing at the nationally recognized Dynamic Certification Laboratories under the review of the ISO Accredited Product Certification Agency, the VMC Group.

Certified Seismic Design Levels			
Certified **IBC**	**Importance $I_p \leq 1.5$** Soil Classes A-E Risk Categories I-IV Design Categories A-F	z/h ≤ 1.0	z/h = 0.0
		$S_{DS} \leq 2.500$ g	$S_{DS} \leq 2.500$ g

Certified Seismic Installation Methods
Rigid Mounting From Unit Base To Rigid Structure

HEADQUARTERS
113 Main Street
Bloomingdale, NJ 07403
Phone: 973.838.1780
Toll Free: 800.569.8423
Fax: 973.492.8430

CALIFORNIA
180 Promenade Circle
Suite 300
Sacramento, CA 95834
Phone: 916.634.7771

TEXAS
11930 Brittmoore Park Drive
Houston, TX 77041
Phone: 713.466.0003
Fax: 713.466.1355

thevmcgroup.com

VMC GROUP
THE POWER OF TOGETHER

CERTIFICATE OF COMPLIANCE

SEISMIC DESIGN OF NONSTRUCTURAL COMPONENTS AND SYSTEMS

Certified Product Table:

Model	Max Rating [kW]	Max Depth [in]	Max Width [in]	Max Height [in]	Max Weight [lb]
C20N6	20	82	34	46	1,110
C22N6	22				1,150
C25N6	25				
C30N6, C30N6H	30				1,300
C36N6, C36N6H	36	104			1,380
C40N6, C40N6H	40				1,420
C45N6, C45N6H	45				2,580
C50N6, C50N6H	50				2,600
C60N6, C60N6H	60				2,900
C70N6	70	136	40	58	2,870
C80N6	80				3,030
C100N6	100				3,170
C125N6	125	160		72	3,770
C150N6	150				4,350
C175N6, C200N6	200				4,663
C200N6				83	4,140

Note: "H" indicates high speed (3600RPM, as opposed to the standard 1800RPM)
Note: Dimensions and Weight include sound level 2 (SL2) enclosure baffle

Group	Type	S_{DS} (z/h=0)	S_{DS} (z/h=1)	A_{Flex-H}	A_{Rig-H}	A_{Flex-V}	A_{Rig-V}	F_p/W_p
Seismic	AC156	2.500	2.500	4.000	3.000	1.667	0.667	1.875

This certification includes the open generator set and the enclosed generator set. The generator set and included options shall be a catalogue design and factory supplied. The generator set and applicable options shall be installed an attached to the building structure per the manufacturer supplied seismic installation instructions. This certification excludes all non-factory supplied accessories, including but not limited to mufflers, isolation/restraint devices, remote control panels, remote radiators, pumps and other electrical/mechanical components.

IBC CERTIFIED VMC GROUP

VMA-51070-01C (Revision 11)
Issue Date: Friday, July 3, 2015
Revision Date: Friday, April 28, 2023
Expiration Date: Thursday, April 30, 2026

VMC GROUP
THE POWER OF TOGETHER

CERTIFICATE OF COMPLIANCE
SEISMIC DESIGN OF NONSTRUCTURAL COMPONENTS AND SYSTEMS

Notes & Comments:

1. All equipment listed herein successfully passed the seismic acceptance criteria for shake testing non-structural components and systems as set forth in the ICC AC-156. The Test Response Spectrum (TRS) enveloped the Required Response Spectrum (RRS) for all units tested. The tested units were representative sample(s) of a contingent of models and all remained captive and structurally sound after the seismic shake simulation. The units also remained functionally operational after the simulation testing as functional testing was completed by the equipment manufacturer before and after the seismic simulations. Although a seismic qualified unit inherently contains some wind resisting capacity, that capacity is undetermined and is excluded from this certification. Snow/Ice loads have been neglected and thus limit the unit to be installed both indoors (covered by an independent protective structure) and out of doors (exposed to accumulating snow/ice) for ground snow loads no greater than 30 psf for all applications.

2. The following building codes are addressed under this certification:
   IBC 2018 referencing ASCE7-16 and ICC-ES AC-156
   IBC 2015 referencing ASCE7-10 and ICC-ES AC-156
   IBC 2012 referencing ASCE7-10 and ICC-ES AC-156

3. Refer to the manufacturer supplied installation drawings for anchor requirements and mounting considerations for seismic applications. Required anchor locations, size, style, and load capacities (tension and shear) may be specified on the installation drawings or specified by a 3rd party. Mounting requirement details such as anchor brand, type, embedment depth, edge spacing, anchor-to-anchor spacing, concrete strength, special inspection, wall design, and attachment to non-building structures must be outlined and approved by the Engineer of Record for the project or building. Structural walls, structural floors, and housekeeping pads must also be seismically designed and approved by the project or building Structural Engineer of Record to withstand the seismic anchor loads as defined on the installation drawings. The installing contractor is responsible for ensuring the proper installation of all anchors and mounting hardware.

4. For this certificate and certification to remain valid, this certificate must correspond to the "Seismic Certification Label" found affixed to the unit by the factory. The label ensures the manufacturer built the unit in conformance to the IBC seismic design criteria set forth by the Certified Seismic Qualification Agency, the VMC Group, and meets the seismic design levels claimed by this certificate.

5. Mechanical, Electrical, and Plumbing connections to the equipment must be flexibly attached as to not transfer load through the connection. The structural integrity of any conduit, cable trays, piping, ductwork and/or flexible connections is the responsibility of others. This certification makes no statements of compliance in regards to NEMA, IP, UL, CSA, or other relevant standards after a seismic event. For compliance to other relevant standards, please contact the manufacturer.

6. This certificate applies to units manufactured at:
   Cummins Power Generation Inc., 1400 73rd Ave. NE, Minneapolis, MN 55432

7. This certification follows the VMC Group's ISO-17065 Scheme.

John P. Giuliano, PE
President, VMC Group

IAS ACCREDITED Product Certification Agency

VMA-51070-01C (Revision 11)
Issue Date: Friday, July 3, 2015
Revision Date: Friday, April 28, 2023
Expiration Date: Thursday, April 30, 2026

IBC CERTIFIED VMC GROUP

EXHIBIT K

Prototype Test Support (PTS)
60 Hz test summary

Generator set models

C20 N6, C22 N6, C25 N6, C30 N6, C36 N6, C40 N6, C30 N6H, C36 N6H, C40 N6H, C45 N6H, C50 N6H, C60 N6H

Representative prototype

Model: C40 N6H
Alternator: CA115-T12
Engine: QSJ2.4

The following summarizes prototype testing conducted on the designated representative prototype of the specified models. This testing is conducted to verify the complete generator set electrical and mechanical design integrity. Prototype testing is conducted only on generator sets not sold as new equipment.

Maximum surge power: 52.3 kW

The generator set was evaluated to determine the stated maximum surge power.

Maximum motor starting: 76 kVA

The generator set was tested to simulate motor starting by applying the specified kVA load at low lagging power factor (0.4 or lower). With this load applied, the generator set recovered to a minimum of 90% rated voltage.

Alternator temperature rise:

The highest rated temperature rise (120 °C) test results are reported as follows to verify that worst case temperature rises do not exceed allowable NEMA MG1 limits for class H insulation. Tests were conducted per IEEE 115, rise by resistance and embedded detector, with the rated voltages. Only the highest temperatures are reported.

Location	Maximum rise (ºC)
Alternator stator	103
Alternator rotor	101
Exciter stator	53
Exciter rotor	65

Torsional analysis and testing:

The generator set was tested to verify that the design is not subjected to harmful torsional stresses. A spectrum analysis of the transducer output was conducted over the speed range of 1650 to 1950 RPM.

Cooling system: 50 °C ambient
0.5 in. H_2O restriction

The cooling system was tested to determine ambient temperature and static restriction capabilities. The test was performed at full rated load in elevated ambient temperature under static restriction conditions.

Durability:

The generator set was subjected to a minimum 1000 hour endurance test operating at variable load up to the Standby rating based upon MIL-STD-705 to verify structural soundness and durability of the design.

Electrical and mechanical strength:

The generator set was tested to several single phase and three phase faults to verify that the generator can safely withstand the forces associated with short circuit conditions. The generator set was capable of producing full rated output at the conclusion of the testing.

Steady state performance:

The generator set was tested to verify steady state operating performance was within the specified maximum limits.

Voltage regulation:	± 1%
Random voltage variation:	± 1%
Frequency regulation:	± 0.25%
Random frequency variation:	± 0.25%

Transient performance:

The generator set was tested to verify single step loading capability as required by NFPA 110 and verify acceptable voltage and frequency response on load addition or rejection. The following results were recorded at 0.8 power factor :

Full load acceptance:

Voltage dip:	14.4%
Recovery time:	2.6 seconds
Frequency dip:	4.6%
Recovery time:	2.7 seconds

Full load rejection:

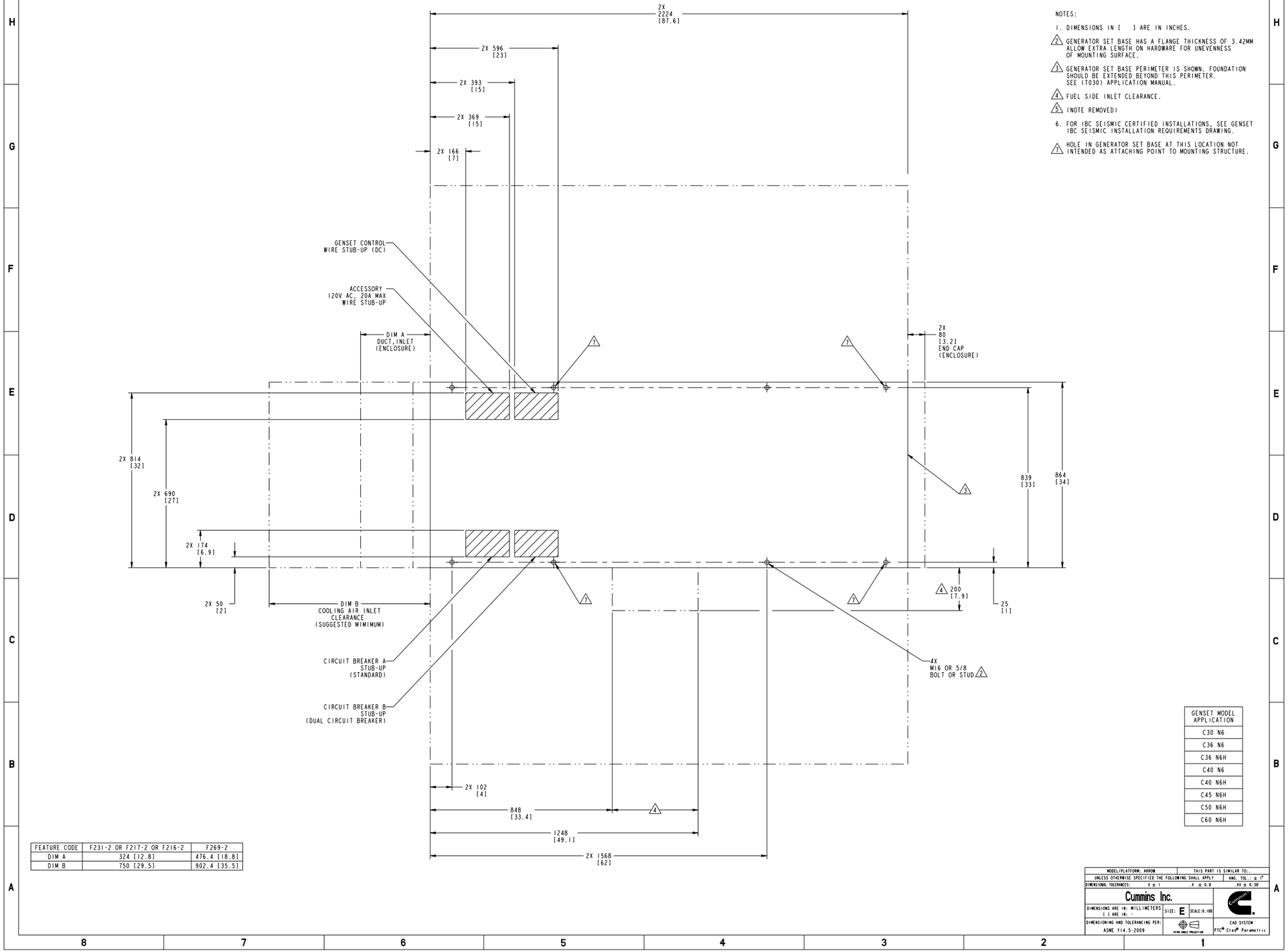
Voltage rise:	11.5%
Recovery time:	3.4 seconds
Frequency rise:	5.6%
Recovery time:	3.4 seconds

Harmonic analysis:

(per MIL-STD-705B, method 601.4)

	Line to Line		Line to Neutral	
Harmonic	No load	Full load	No load	Full load
3	0.3	3.5	0.3	3.2
5	1.1	1.0	0.9	0.9
7	0.7	0.4	0.7	0.3
9	0.0	0.5	0.0	0.4
11	0.2	0.1	0.1	0.1
13	0.1	0.1	0.0	0.0
15	0.0	0.1	0.0	0.1

EXHIBIT K



NOTES:

1. DIMENSIONS IN [ ] ARE IN INCHES.
2. GENERATOR SET BASE HAS A FLANGE THICKNESS OF 3.42MM ALLOW EXTRA LENGTH ON HARDWARE FOR UNEVENNESS OF MOUNTING SURFACE.
3. GENERATOR SET BASE PERIMETER IS SHOWN, FOUNDATION SHOULD BE EXTENDED BEYOND THIS PERIMETER. SEE (T030) APPLICATION MANUAL.
4. FUEL SIDE INLET CLEARANCE.
5. (NOTE REMOVED)
6. FOR IBC SEISMIC CERTIFIED INSTALLATIONS, SEE GENSET IBC SEISMIC INSTALLATION REQUIREMENTS DRAWING.
7. HOLE IN GENERATOR SET BASE AT THIS LOCATION NOT INTENDED AS ATTACHING POINT TO MOUNTING STRUCTURE.

GENSET MODEL APPLICATION
C30 N6
C36 N6
C36 N6H
C40 N6
C40 N6H
C45 N6H
C50 N6H
C60 N6H

FEATURE CODE	F231-2 OR F217-2 OR F216-2	F269-2
DIM A	324 [12.8]	476.4 [18.8]
DIM B	750 [29.5]	902.4 [35.5]

MODEL/PLATFORM: ARROW		THIS PART IS SIMILAR TO:
UNLESS OTHERWISE SPECIFIED THE FOLLOWING SHALL APPLY		ANG. TOL.: ± 1°
DIMENSIONAL TOLERANCES:	X ± 1	.X ± 0.8 .XX ± 0.30
Cummins Inc.		
DIMENSIONS ARE IN: MILLIMETERS [ ] ARE IN:	SIZE: E	SCALE:0.180
DIMENSIONING AND TOLERANCING PER: ASME Y14.5-2009	THIRD ANGLE PROJECTION	CAD SYSTEM PTC® Creo® Parametric

Document Generated: **13MAY2021 14:20 GMT**

Cummins Data Classification:
Cummins Confidential

This document (and the information shown thereon) is **Confidential and Proprietary** and shall not be disclosed to others in hard copy or electronic form, reproduced by any means, or used for any purpose without written consent of Cummins Inc.

Part Number: **A044T182** Part Revision: **H**

Part Name: **OUTLINE,GENSET**

Drawing Category: **Detail** State: **Released**

EXHIBIT K

PTC® Creo® Parametric

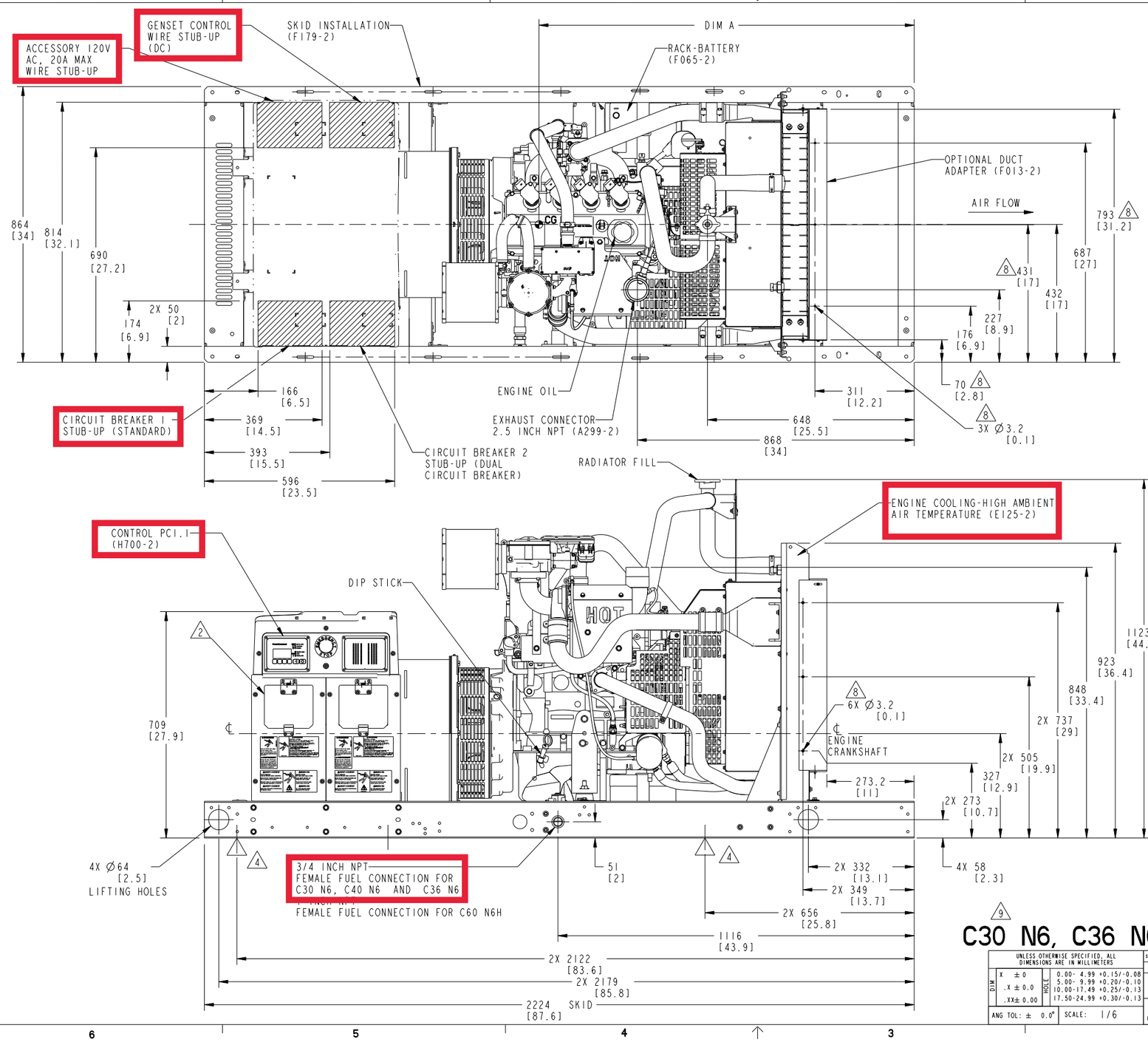
REL NO	LTR	NO	REVISION	DWN	CKD	APVD	DATE
ECO-163223	F	1	ZONE C2, ADD NOTE 9	RP	JP	J.BUTLER	04JUL16

NOTES:

1. DIMENSIONS SHOWN IN [ ] ARE IN INCHES.
2. REFER TO CIRCUIT BREAKER OUTLINE DRAWING FOR ELECTRICAL STUB-UP AREA FOR SPECIFIC BREAKERS.
3. CONTROL INTERFACE CONNECTIONS SHOULD BE MADE WITH FLEXIBLE CONNECTIONS.
4. Ø21 [0.8] HOLES MARKED BY △ FOR SECURING TO MOUNTING SURFACE.
5. OIL DRAIN EXTENSION: 3/8 INCH HOSE ID.
6. FOR IBC SEISMIC CERTIFIED INSTALLATION, SEE GENSET IBC SEISMIC INSTALLATIION REQUIREMENT DRAWING.
7. DRY WEIGHT = WET WEIGHT-16 KG (35 LB).
8. Ø3.2 HOLES FOR CUSTOMER-SUPPLIED COOLING EXHAUST AIR DUCT ADAPTER.
9. C30 N6 MODEL IS ONLY TURBOCHARGED, NOT AFTER-COOLED.

TABULATION

ALT DATA SHEET #	DIM A	DIM B	GENSET WET WEIGHT KG	GENSET WET WEIGHT LB
ADS-574	1140	401	498	1097
ADS-576	1153	384	508	1119
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
ADS-579	1189	395	536	1182
ADS-580	1202	393	564	1244
ADS-581	1213	391	574	1266
ADS-584	1218	390	597	1317



C30 N6, C36 N6, C40 N6, C60 N6H

UNLESS OTHERWISE SPECIFIED, ALL DIMENSIONS ARE IN MILLIMETERS					
DIM	X ±0	HOLE	0.00- 4.99 +0.15/-0.08	SIM to NONE	DWN V_MOHITE
	.X ±0.0		5.00- 9.99 +0.20/-0.10	DO NOT SCALE PRINT	CKD I_VOLETY
	.XX±0.00		10.00-17.49 +0.25/-0.13		APVD D_GILLETT
			17.50-24.99 +0.30/-0.13		DATE 22MAY13
ANG TOL: ± 0.0°		SCALE: 1/6		- CONFIDENTIAL - PROPERTY OF CUMMINS POWER GENERATION GROUP	FOR INTERPRETATION OF DIMENSIONING AND TOLERANCING, SEE ASME Y14.5M-1994 / FIRST USED ON ARROW

CUMMINS POWER GENERATION

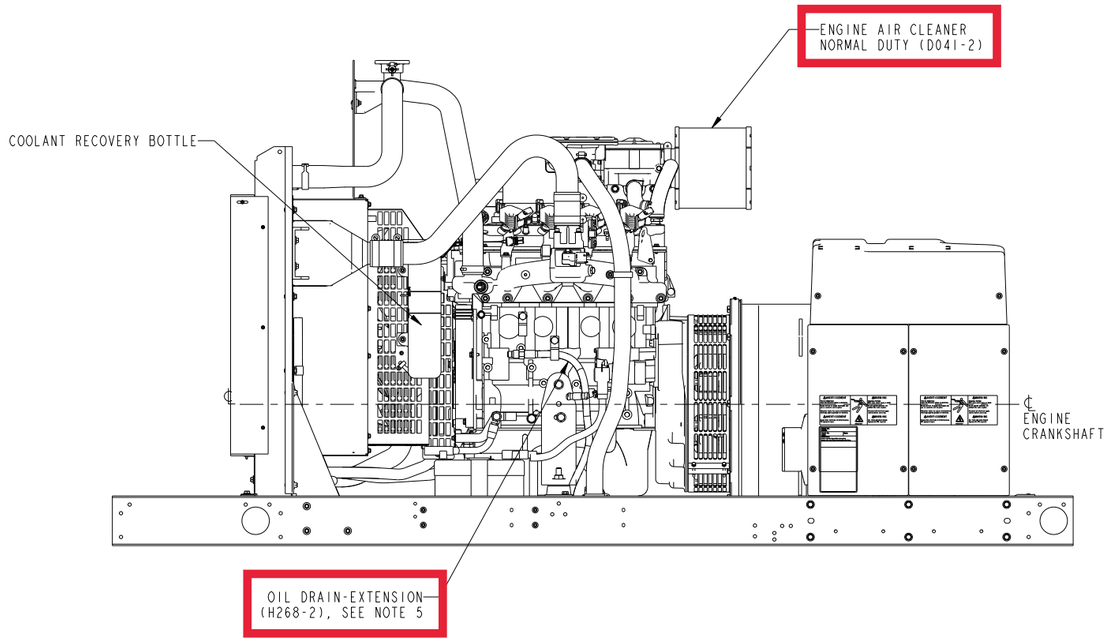
SITE CODE PGF

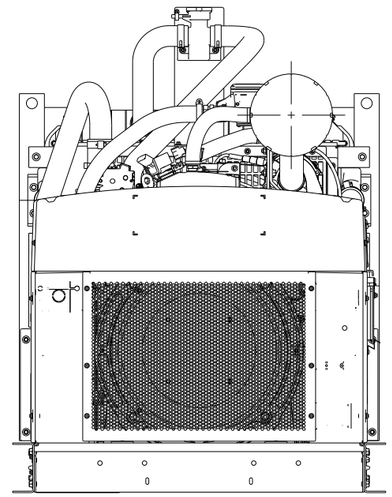
OUTLINE,GENSET

DWG SIZE D | A045C217 | SHEET 1 of 2 | DWG REV F

PTC® Creo® Parametric

REL NO	LTR	NO	REVISION	DWN	CKD	APVD	DATE
ECO-163223	F	-	---	RP	JP	J.BUTLER	04JUL16





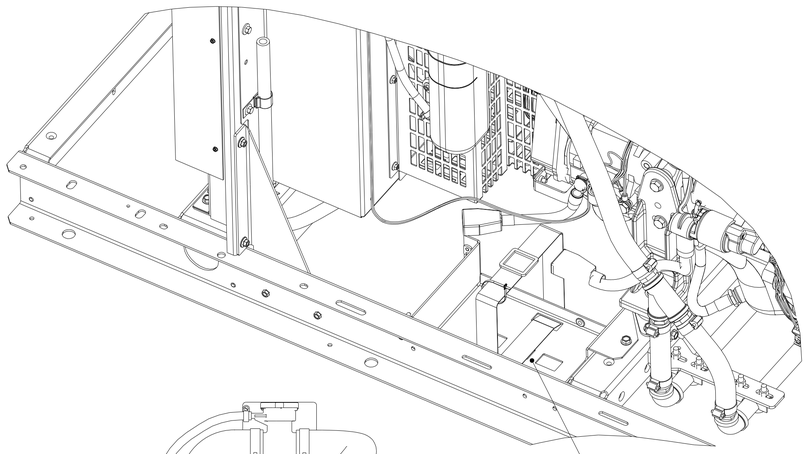
△9

C30 N6, C36 N6, C40 N6, C60 N6H

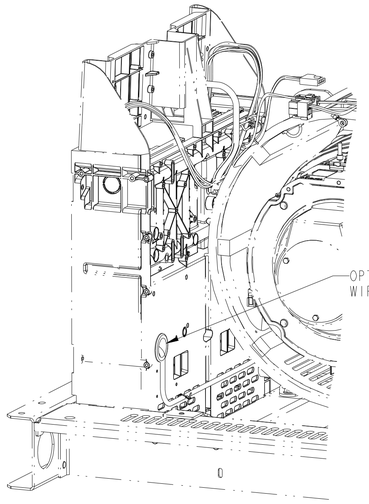
UNLESS OTHERWISE SPECIFIED, ALL DIMENSIONS ARE IN MILLIMETERS			SIM TO NONE	DWN V_MOHITE	CUMMINS POWER GENERATION
DIM: X ±0 / .X ±0.0 / .XX±0.00	HOLE: 0.00-4.99 +0.15/-0.08; 5.00-9.99 +0.20/-0.10; 10.00-17.49 +0.25/-0.13; 17.50-24.99 +0.30/-0.13		DO NOT SCALE PRINT	CKD I_VOLETY	OUTLINE,GENSET
ANG TOL: ± 0.0°	SCALE: 1/6		- CONFIDENTIAL - PROPERTY OF CUMMINS POWER GENERATION GROUP	APVD D_GILLETT DATE 22MAY13 FOR INTERPRETATION OF DIMENSIONING AND TOLERANCING, SEE ASME Y14.5M-1994	FIRST USED ON ARROW	SITE CODE PGF	DWG SIZE D A045C217 SHEET 2 or 2 DWG REV F

PTC® Creo® Parametric

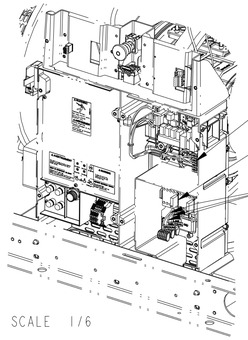
REL NO	LTR	NO	REVISION	DWN	CKD	APVD	DATE
ECO-149443	E	3	ZONE D5; ADDED VIEW TO SHOW LARGER BATTERY TRAY OPTION (F253-2)	-	-	-	-
				DKS	MMJ	M. JAWALE	20JAN15
		4	ZONE A2; 500W COOLANT HTR OPTION WAS (H036-2), ADDED 1000W COOLANT HTR OPTION (E154-2)	-	-	-	-
				-	-	-	-
				DKS	MMJ	M. JAWALE	20JAN15



LARGER BATTERY TRAY (F253-2)



OPTIONAL AC DEVICE WIRE ENTRY

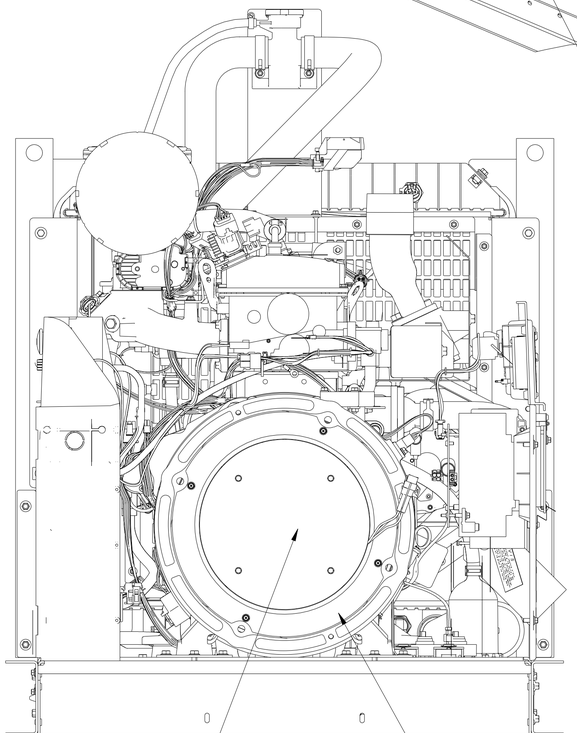


AUX SIGNALS (KS53-2)

RELAYS (KS52-2)

AC TERMINAL CONNECTIONS (ALT HTR, BATT CHARGER, COOLANT HTR)

SCALE 1/6



EXCITER/REG-PMG/EBS (BI84-2 OR B979-2)

ALTERNATOR HEATER
120V, 30W, 1PH
120V, 100W, 1PH
(A292-2)

DOME AND MESH REMOVED FOR CLARITY

EXHAUST CONNECTOR 2.5 INCH NPT- MALE (A299-2)

LOW COOLANT SHUTDOWN (H389-2) / WARNING(SENSOR) (H527-2)

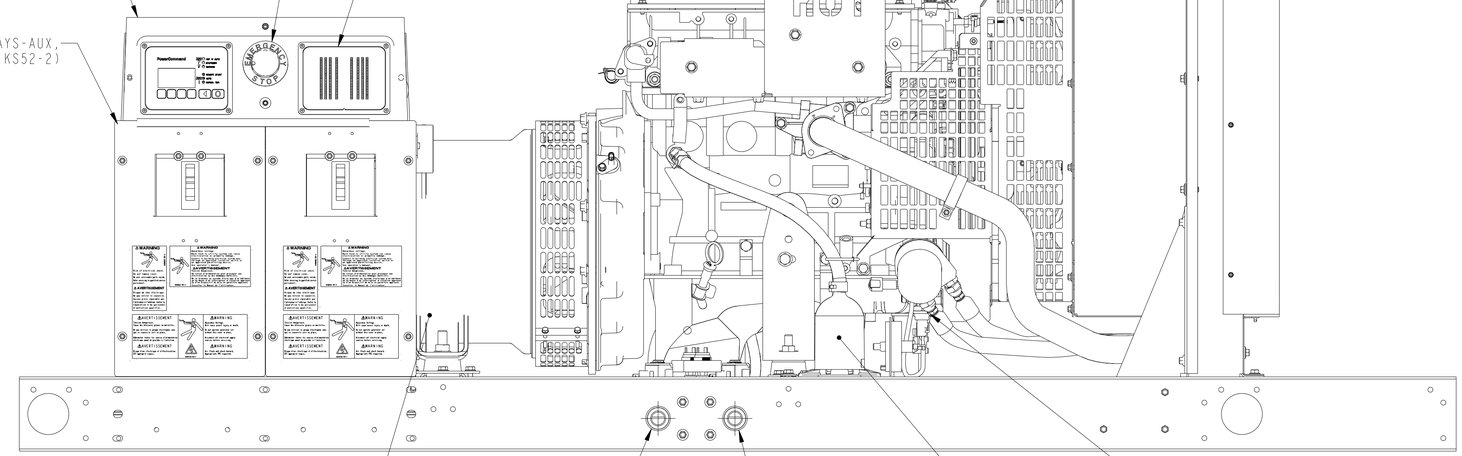
DUCT ADAPTER - RADIATOR OUTLET (F013-2)

STOP SWITCH EMERGENCY (K796-2)

SIGNALS-AUX, I/O (KS53-2)

METERS-AC OUTPUT ANALOG (H728-2)

RELAYS-AUX, QTY 2 (KS52-2)



BATTERY CHARGER (B927-2) (FAR SIDE)

3/4 INCH NPT-FEMALE FUEL CONNECTION NATURAL GAS

3/4 INCH NPT-FEMALE FUEL CONNECTION PROPANE

COOLANT HTR
120V, 500W, 1PH
(E153-2)
120V, 1000W, 1PH
(E154-2)

ENGINE OIL PROTECTION/ PRESSURE GAUGE (H012-2)

C30 N6, C36 N6, C40 N6, C36 N6H, C40 N6H, C45 N6H, C50 N6H

UNLESS OTHERWISE SPECIFIED, ALL DIMENSIONS ARE IN MILLIMETERS

DIM: X ± 1, .X ± 0.8, .XX ± 0.38

HOLE: 0.00- 4.99 +0.15/-0.08; 5.00- 9.99 +0.20/-0.10; 10.00-17.49 +0.25/-0.13; 17.50-24.99 +0.30/-0.13

ANG TOL: ± 0.5° SCALE: 1/4

SIM TO NONE

DO NOT SCALE PRINT

- CONFIDENTIAL - PROPERTY OF CUMMINS POWER GENERATION GROUP

DWN C_BADGUJAR

CKD S_DULAM

APVD D_GILLETT

DATE 10JUN13

FOR INTERPRETATION OF DIMENSIONING AND TOLERANCING, SEE ASME Y14.5M-1994

FIRST USED ON ARROW

SITE CODE PGF

CUMMINS POWER GENERATION

OUTLINE, GENSET OPTIONS

DWG SIZE D | A045C215 | SHEET 2 of 3 | DWG REV E

Drawing Name: A045C216 Revision: E
Part Name: A045C215 Revision: E
Sheet 2 of 4

PTC® Creo® Parametric

REL NO	LTR	NO	REVISION	DWN	CKD	APVD	DATE
ECO-178681	E	1	ZONE A4; F231-2 AND F216-2___	--	--	--	--
			CONFIGURATIONS WAS F231-2___	--	--	--	--
			CONFIGURATION	PPP	KAM	W.WINGFIELD	09JUL18
		2	UPDATE VIEWS PICTORIALLY	PPP	KAM	W.WINGFIELD	09JUL18

EXHIBIT K

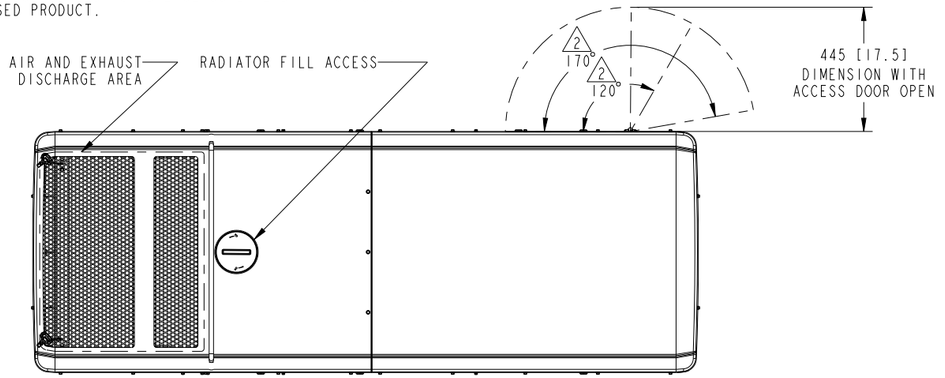
NOTES:

1. DIM [] IN INCHES

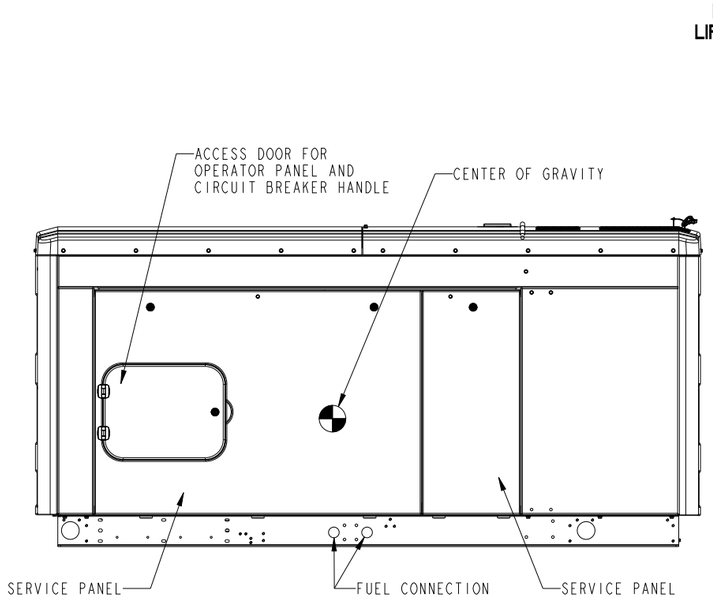
2. 120° AND 170° ARE DETENTED OPEN ANGLE FOR HINGE.

3. WHEN THE HOUSING INSTALLED ON AN OPEN GENERATOR SET, THE TOTAL WEIGHT WILL INCREASE BY 98 KG (216 LBS). THIS INCLUDES THE MUFFLER.

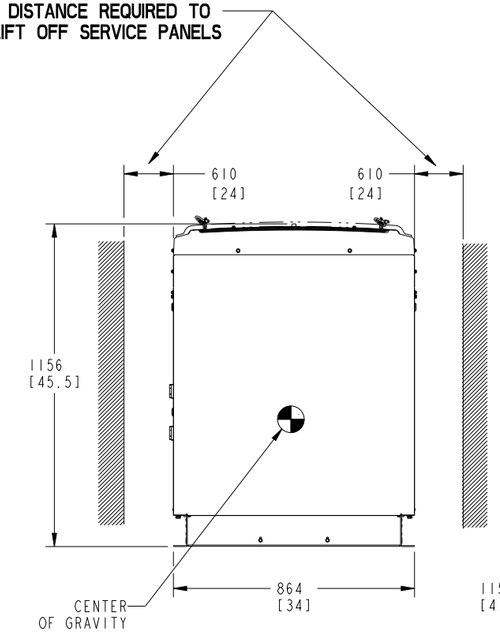
4. THE CENTER OF GRAVITY(CG) OF THE GENERATOR SET WHEN EQUIPPED WITH THIS HOUSING SHIFTS APPROXIMATELY 8MM (0.31 INCH) TOWARDS THE AIR DISCHARGE END OF THE HOUSING AND 38MM (1.5 INCH) HIGHER FROM THE GROUND. COMPARED TO THE EQUIVALENT NON-HOUSED PRODUCT WITH THE F179 SKID. SEE HOUSING READY SKID BASE OUTLINE DRAWING FOR CG LOCATION OF NON HOUSED PRODUCT.



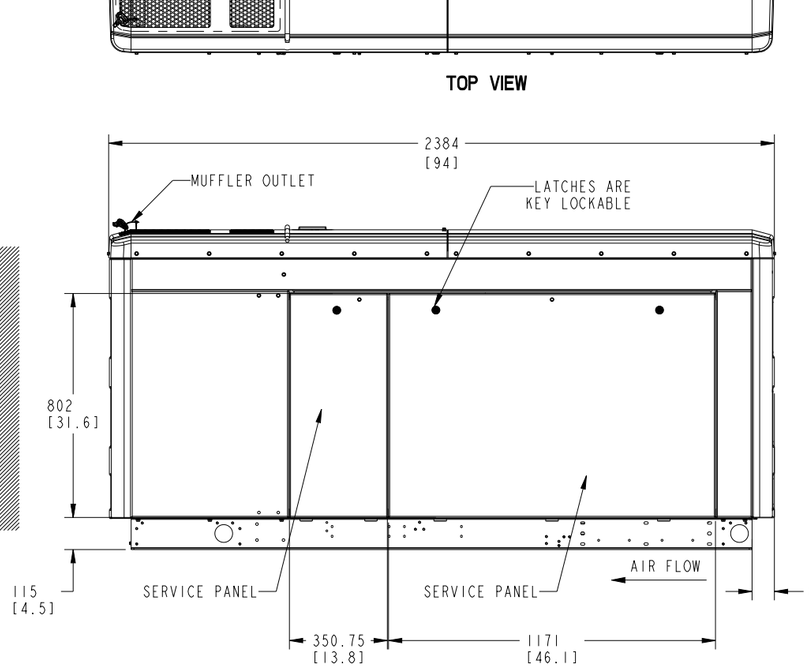
TOP VIEW



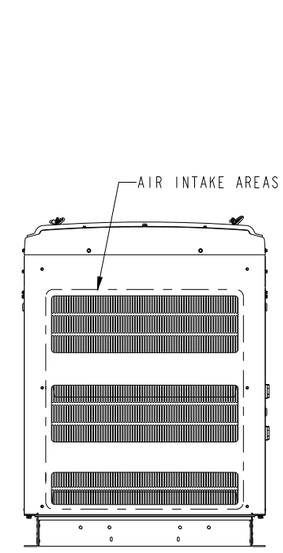
RIGHT SIDE VIEW



OUTLET VIEW



LEFT SIDE VIEW



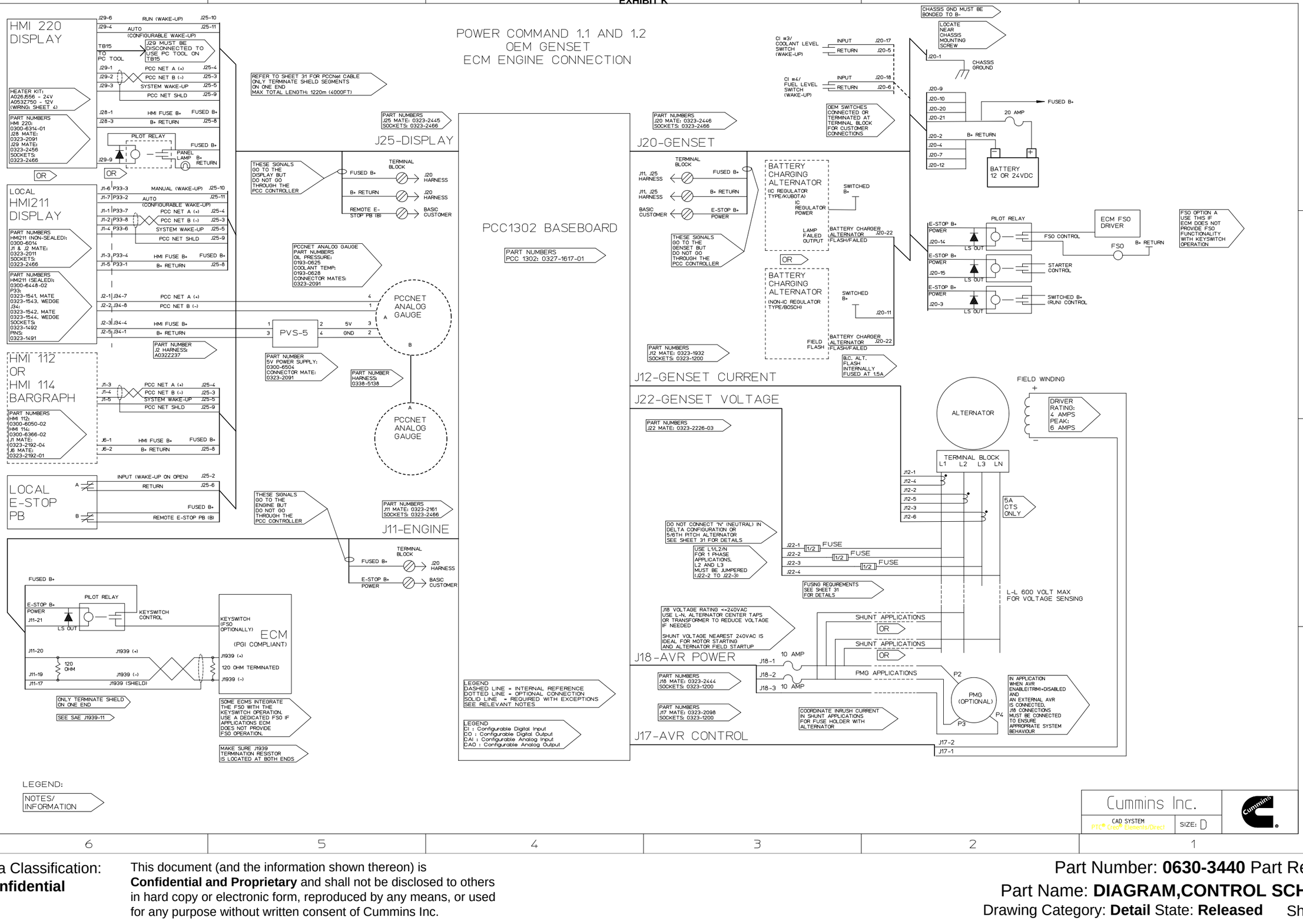
INLET VIEW

F231-2 AND F216-2 ENCLOSURE CONFIGURATIONS

UNLESS OTHERWISE SPECIFIED, ALL DIMENSIONS ARE IN MILLIMETERS	SIM TO NONE	DWN S_GAMBHIRE		CUMMINS POWER GENERATION	
DIM: X ±1; .X ±0.8; .XX± 0.38 — HOLE: 0.00- 4.99 +0.15/-0.08; 5.00- 9.99 +0.20/-0.10; 10.00-17.49 +0.25/-0.13; 17.50-24.99 +0.30/-0.13	DO NOT SCALE PRINT	CKD T_RADKE		OUTLINE,ENCLOSURE	
ANG TOL: ± 0.5° SCALE: 1/10	- CONFIDENTIAL - PROPERTY OF CUMMINS POWER GENERATION GROUP	APVD J_MATTHEWS	SITE CODE		
		DATE 17JAN13	PGF	SIZE D — A043J729 — SHEET 1 OF 2 — DWG REV E	
	FOR INTERPRETATION OF DIMENSIONING AND TOLERANCING, SEE ASME Y14.5M-1994	FIRST USED ON ARROW			

Drawing Name: A043J730 Revision: E
Part Name: A043J729 Revision: E
ECO-178681 Sheet 1 of 3

POWER COMMAND 1.1 AND 1.2 OEM GENSET ECM ENGINE CONNECTION

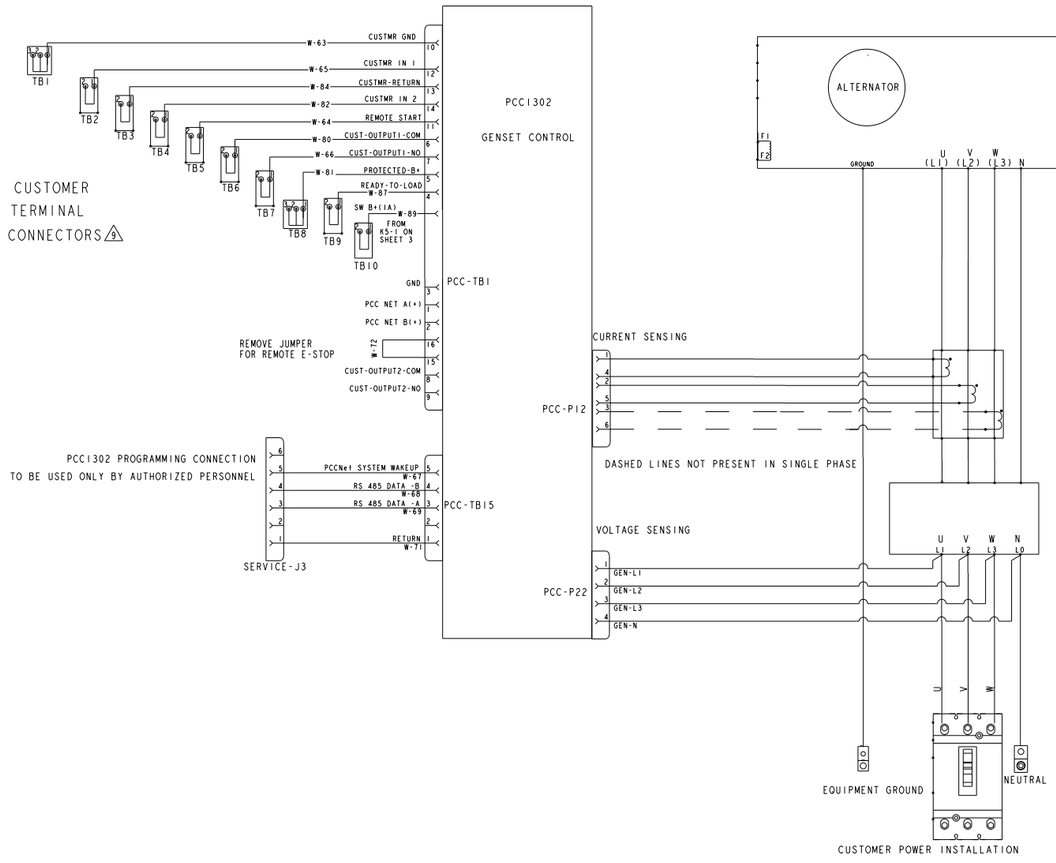


Document Generated: **24JAN2024 14:38 GMT**

Cummins Data Classification:
Cummins Confidential

This document (and the information shown thereon) is **Confidential and Proprietary** and shall not be disclosed to others in hard copy or electronic form, reproduced by any means, or used for any purpose without written consent of Cummins Inc.

EXHIBIT K



NOTES:-

1. ALL CIRCUIT ARE SHOWN DE-ENERGIZED
2. PAGE 1- CUSTOMER CONNECTIONS FOR CONTROL & POWER CONNECTIONS TO CIRCUIT BREAKER
3. PAGE 2- ENGINE CONTROL MODULE (ECM) INTERFACE TO ENGINE SENSORS, COILS, STARTER, BATTERY, BATTERY CHARGING ALTERNATOR, LOW COOLANT LEVEL (OPTIONAL) FUEL PRESSURE SWITCH (OPTIONAL)
4. PAGE 3- PCC1302 INTERFACE, DISPLAY AND BARGRAPH (OPTIONAL)
5. PAGE 4- ALTERNATOR INTERFACE SHUNT EXCITATION & PERMANENT MAGNET EXCITATION (PMG)
6. PAGE 5- ALTERNATOR INTERFACE ELECTRONIC BOOST SYSTEM (EBS) EXCITATION
7. PAGE 6- OPTIONS: AUX101, AC RELAYS, BATTERY CHARGER, SECONDARY CIRCUIT BREAKER, COOLANT HEATER & ALTERNATOR HEATER.
8. PAGE 7- SINGLE RA TRANSFER SWITCH / MULTIPLE RA TRANSFER SWITCHES / OTEC AND RSS TRANSFER SWITCHES.

9

CUSTOMER CONNECTIONS

TERMINAL NAME (WAGO)	SIGNAL NAME	DESCRIPTION
TB1	CUSTOMER GROUND	CUSTOMER GROUND (3A)
TB2	CUSTOMER INPUT 1	DISCRETE SWITCH CONNECT THE OTHER SIDE OF SWITCH TO TB3
TB3	CUSTOMER INPUT RETURN	CUSTOMER INPUT SWITCH RETURN SIGNAL
TB4	CUSTOMER INPUT 2	DISCRETE SWITCH CONNECT THE OTHER SIDE OF SWITCH TO TB3
TB5	REMOTE START	ACTIVE LOW (GND) CONNECT THE REMOTE START RETURN TO TB1
TB6	CUSTOMER OUTPUT1-COM	CUSTOMER OUTPUT1 RELAY CONTACT COMMON
TB7	CUSTOMER OUTPUT1	NORMALLY OPEN RELAY CONTACT RATINGS: 3.5A,30VDC
TB8	PROTECTED B+	CUSTOMER FUSED BATTERY OUTPUT (3A)
TB9	READY TO LOAD	LOW SIDE DRIVER OUPUT RATINGS: 250MA,1A INRUSH,30VDC,100 uA OFF STATE LEAKAGE
TB10	SWITCHED B+	ACTIVE HIGH WHEN GENERATOR IS RUNNING 12VDC (1A MAX)

10. THE CRANK SENSOR IS INTENTIONALLY CONNECTED TO PIN 33 ON THE ECM CALLED CAM 1, AND THE CAM SENSOR TO PINS 1 & 2 ON THE ECM CALLED CRK_POS & CRK_NEG. THIS IS DUE TO INTERNAL HARDWARE AND NAMING OF PINS ON THE ECM.

ALTERNATOR VOLTAGE WIRING
SEE DIAGRAMS:
A044D428 FOR CAI25 & CAI35 ALTERNATORS
A044D432 FOR CAI15 ALTERNATORS
USE OUTER CIRCUIT BREAKER POLES FOR SINGLE PHASE
SEE INSIDE THE BREAKER BOX AND ON THE BREAKER FOR LUG TORQUE

MODEL/PLATFORM: ARROW		THIS PART IS SIMILAR TO: -	
Cummins Inc.			
DIMENSIONS ARE IN: MILLIMETERS [ ] ARE IN: -	SIZE: A0	SCALE: 1:1	
DIMENSIONING AND TOLERANCING PER: ASME Y14.5-2009	THIRD ANGLE PROJECTION	CAD SYSTEM: PTC® Creo® Parametric	

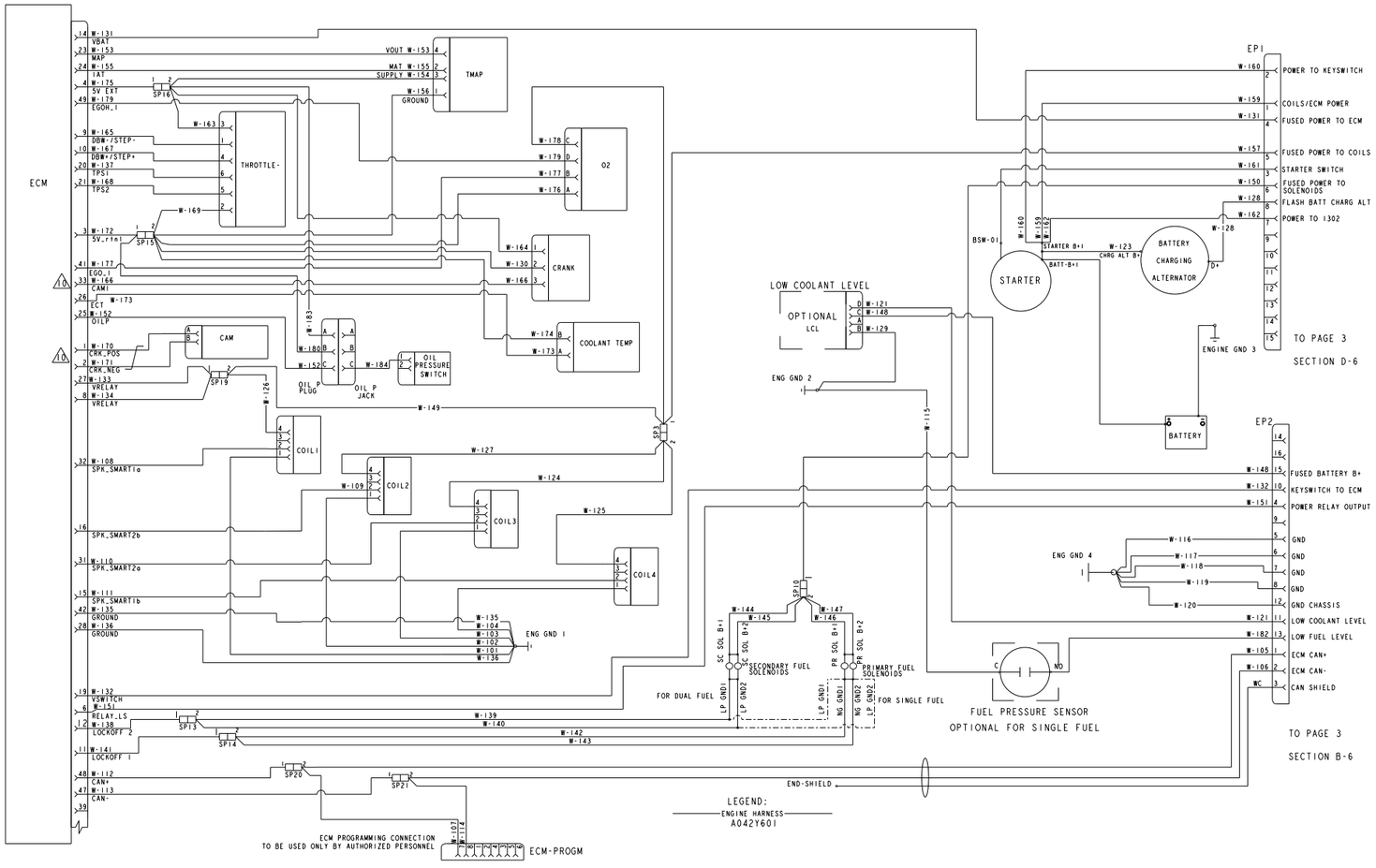
Document Generated: **20OCT2023 17:41 GMT**

Cummins Data Classification:
Cummins Confidential

This document (and the information shown thereon) is **Confidential and Proprietary** and shall not be disclosed to others in hard copy or electronic form, reproduced by any means, or used for any purpose without written consent of Cummins Inc.

Part Number: **A044K485** Part Revision: **N**
Part Name: **DIAGRAM,WIRING**
Drawing Category: **Detail** State: **Released**

EXHIBIT K



MODEL/PLATFORM: ARROW	THIS PART IS SIMILAR TO: -
Cummins Inc.	
DIMENSIONS ARE IN: MILLIMETERS UNLESS OTHERWISE SPECIFIED ARE IN: -	SIZE: A0 SCALE: 1/1
DIMENSIONING AND TOLERANCING PER: ASME Y14.5-2009	CAD SYSTEM PTC® Creo® Parametric

Document Generated: **20OCT2023 17:41 GMT**

Cummins Data Classification:
Cummins Confidential

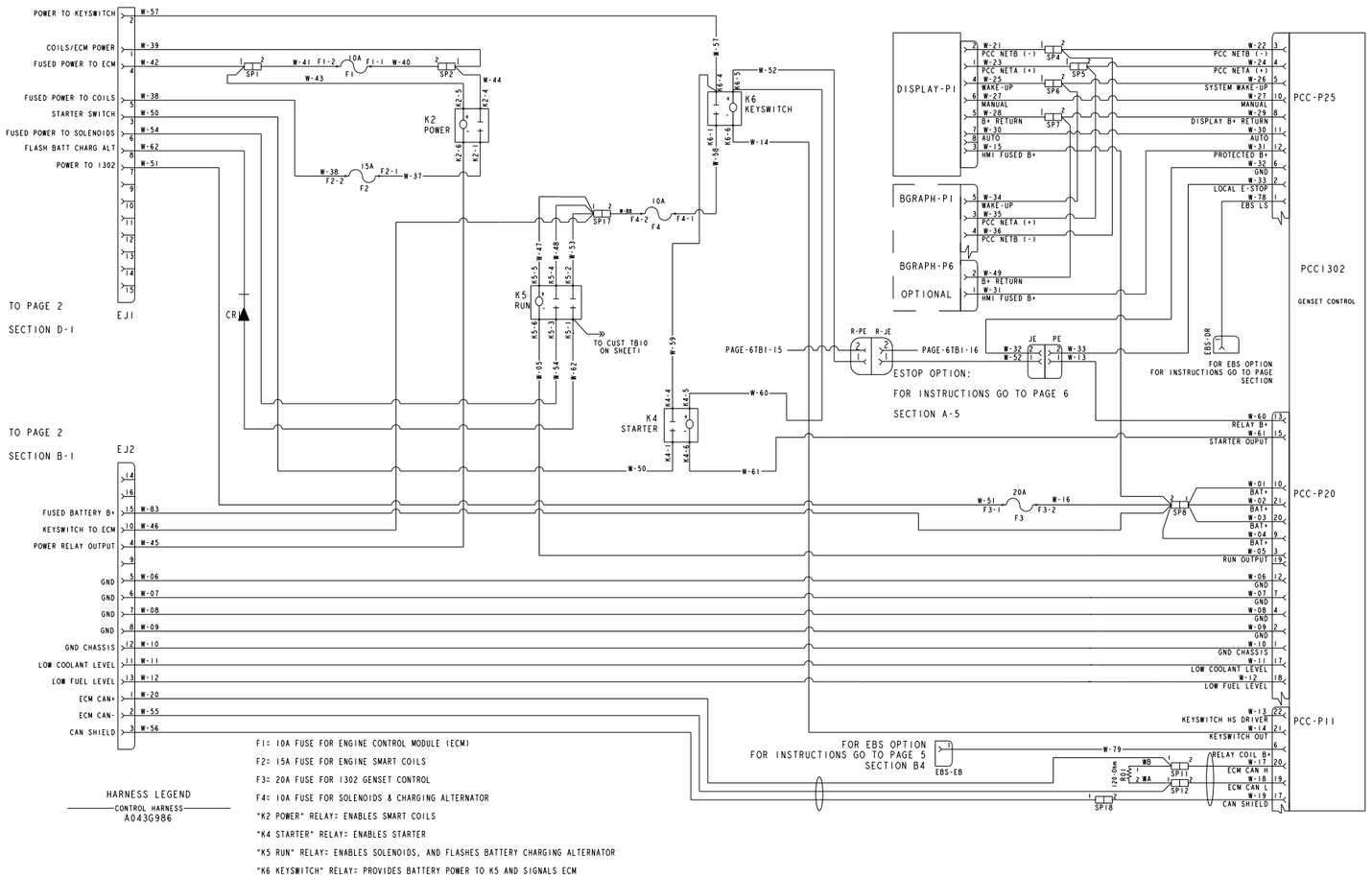
This document (and the information shown thereon) is **Confidential and Proprietary** and shall not be disclosed to others in hard copy or electronic form, reproduced by any means, or used for any purpose without written consent of Cummins Inc.

Part Number: **A044K485** Part Revision: **N**

Part Name: **DIAGRAM,WIRING**

Drawing Category: **Detail** State: **Released**

EXHIBIT K



Document Generated: **20OCT2023 17:41 GMT**

Cummins Data Classification:
Cummins Confidential

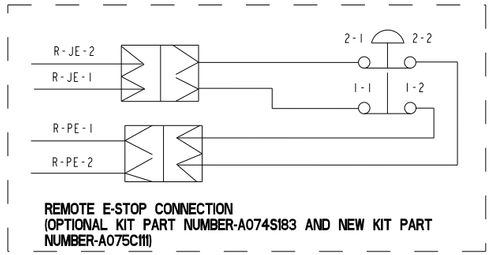
This document (and the information shown thereon) is **Confidential and Proprietary** and shall not be disclosed to others in hard copy or electronic form, reproduced by any means, or used for any purpose without written consent of Cummins Inc.

Part Number: **A044K485** Part Revision: **N**

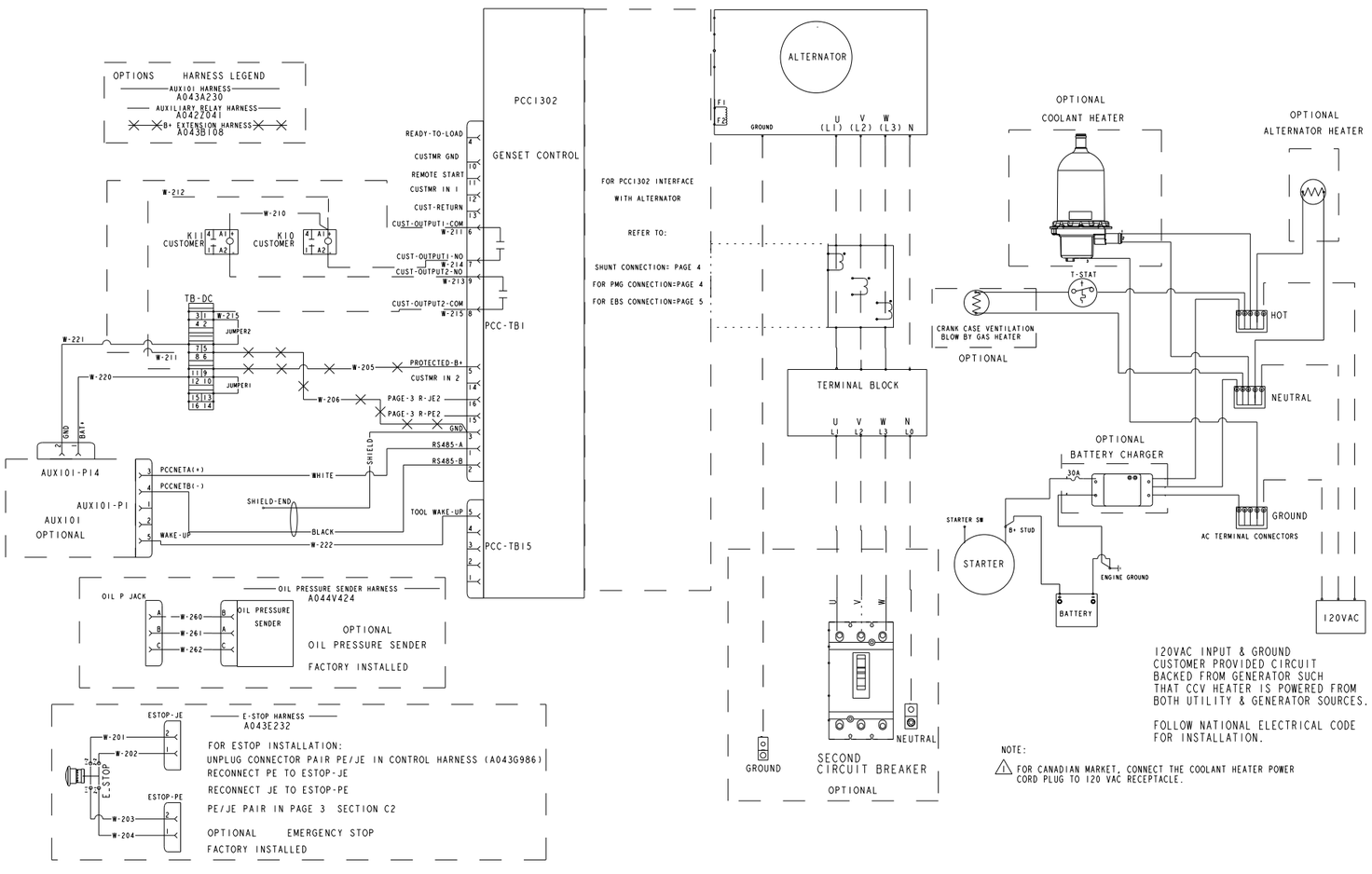
Part Name: **DIAGRAM,WIRING**

Drawing Category: **Detail** State: **Released**

EXHIBIT K



REMOTE E-STOP CONNECTION
(OPTIONAL KIT PART NUMBER-A074S183 AND NEW KIT PART NUMBER-A075C111)



MODEL/PLATFORM: ARROW	THIS PART IS SIMILAR TO: -
Cummins Inc.	
DIMENSIONS ARE IN: MILLIMETERS [ ] ARE IN: -	SIZE: A0 SCALE: 1:1
DIMENSIONING AND TOLERANCING PER: ASME Y14.5-2009	CAD SYSTEM PTC® Creo® Parametric

Document Generated: **20OCT2023 17:41 GMT**

Cummins Data Classification:
Cummins Confidential

This document (and the information shown thereon) is **Confidential and Proprietary** and shall not be disclosed to others in hard copy or electronic form, reproduced by any means, or used for any purpose without written consent of Cummins Inc.

Part Number: **A044K485** Part Revision: **N**
Part Name: **DIAGRAM,WIRING**
Drawing Category: **Detail** State: **Released**

Commercial
Extended Warranty Statements

Our energy working for you.™

Cummins Power Generation

Commercial Extended Warranty Statements

Feature Codes
L040
L093
L028
L030
L031
L041

Our energy working for you.™

Power Generation

Limited Standby 2 Year or 1,500 hour Comprehensive Extended Warranty – L028

Commercial Generating Set

When purchased, this limited extended warranty applies to Cummins Power Generation® branded commercial generating sets and associated accessories (hereinafter referred to as "Product").

This warranty covers any failures of the Product, under normal use and service, which result from a defect in material or factory workmanship.

Warranty Period:

The warranty start date is the date of initial start up, first rental, demonstration or 18 months after factory ship date, whichever is sooner. The coverage duration is 2 years from warranty start date or 1,500 hours or whichever occurs first.

Emergency Standby Power (ESP) is defined as the maximum power available during a variable electrical power sequence, under the stated operating conditions, for which a generating set is capable of delivering in the event of a utility power outage. The permissible average power output over 24 hours of operation shall not exceed 70% of the ESP.

Cummins Power Generation® Responsibilities:

In the event of a failure of the Product during the extended warranty period due to defects in material or workmanship, Cummins Power Generation® will only be responsible for the following costs:

- All parts and labor required to repair the Product.
- Reasonable travel expenses to and from the Product site location.
- Maintenance items that are contaminated or damaged by a warrantable failure.

Owner Responsibilities:

The owner will be responsible for the following:

- Notifying Cummins Power Generation® distributor or dealer within 30 days of the discovery of failure.
- Installing, operating, commissioning and maintaining the Product in accordance with Cummins Power Generation®'s published policies and guidelines.
- Providing evidence for date of commissioning.
- Providing sufficient access to and reasonable ability to remove the Product from the installation in the event of a warrantable failure.

In addition, the owner will be responsible for:

- Incremental costs and expenses associated with Product removal and reinstallation resulting from non-standard installations.
- Costs associated with rental of generating sets used to replace the Product being repaired.
- Costs associated with labor overtime and premium shipping requested by the owner.
- All downtime expenses, fines, all applicable taxes, and other losses resulting from a warrantable failure.

Limitations:

This limited extended warranty does not cover Product failures resulting from:

- Inappropriate use relative to designated power rating.
- Inappropriate use relative to application guidelines.
- Normal wear and tear.
- Improper and/or unauthorized installation.
- Owner's or operator's negligence, accidents or misuse.
- Lack of maintenance or unauthorized repair.
- Noncompliance with any Cummins Power Generation® published guideline or policy.
- Use of improper or contaminated fuels, coolants or lubricants.
- Improper storage before and after commissioning.
- Owner's delay in making Product available after notification of potential Product problem.

- Use of steel enclosures within 60 miles of the coast of salt water when aluminum or an alternate non-corrosive material enclosure option is available.
- Replacement parts and accessories not authorized by Cummins Power Generation®.
- Use of Battle Short Mode.
- Owner or operator abuse or neglect such as: operation without adequate coolant or lubricants; overfueling; overspeeding; lack of maintenance to lubricating, cooling or air intake systems; late servicing and maintenance; improper storage, starting, warm-up, run-in or shutdown practices, or for progressive damage resulting from a defective shutdown or warning device.
- Damage to parts, fixtures, housings, attachments and accessory items that are not part of the generating set.

This limited extended warranty does not cover costs resulting from:

- Difficulty in gaining access to the Product.
- Repair of cosmetic damage to enclosures.

Items not covered by this limited extended warranty:

- Batteries
- Enclosures
- Coolant heating elements
- Maintenance items

Aftertreatment component failures

.

www.cumminspower.com

CUMMINS POWER GENERATION® RIGHT TO FAILED COMPONENTS:

Failed components claimed under warranty remain the property of Cummins Power Generation®. Cummins Power Generation® has the right to reclaim any failed component that has been replaced under warranty.

THE WARRANTIES SET FORTH HEREIN ARE THE SOLE WARRANTIES MADE BY CUMMINS POWER GENERATION ® IN REGARD TO THE PRODUCT. CUMMINS POWER GENERATION® MAKES NO OTHER WARRANTIES, EXPRESS OR IMPLIED, OR OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE.

IN NO EVENT IS CUMMINS POWER GENERATION® LIABLE FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES.

This limited extended warranty shall be enforced to the maximum extent permitted by applicable law. This limited extended warranty gives the owner specific rights that may vary from state to state or from jurisdiction to jurisdiction.

Product Model Number:_____

Product Serial Number:_____

Date in Service:_____

May 2, 2025

Prepared by

Felecia Ramirez
(971) 940-8053
ls698@cummins.com

We are pleased to provide you this quotation based on your inquiry.

Item	Description	Qty
1	**C36N6, 36kW, 60Hz, Standby, Natural Gas/Propane Genset, 1800rpm engine** **U.S. EPA, Stationary Emergency Application** **C36N6, 36kW, 60Hz, Standby, Natural Gas/Propane Genset, 1800rpm engine** **Duty Rating - Standby Power (ESP)** **Emissions Certification - SI, EPA, Emergency, Stationary, 40CFR60** **Listing - UL 2200** **NFPA 110 Type 10 Level 1 Capable** **HCAI (formerly OSHPD) Seismic Pre-Approval Certification** **Cert - Seismic, IBC2000, IBC2003, IBC2006, IBC2009, IBC2011** **Exciter/Reg - Torque Match** **Voltage - 120/240, 1 Phase, 3 Wire** **Alternator - 60Hz, 4L, 240/120V, 1 Phase, 120C, 40C Ambient** **Alternator Heater, 120 Volt AC** **Aluminum Sound Attenuated Level 1 Enclosure, with Exhaust System** **Enclosure Color - Green, Aluminum** **Enclosure - Wind Load 180 MPH, ASCE7-10** **Skidbase - Housing Ready** **Control Mounting - Right Facing** **PowerCommand 1.1 Controller** **Load Connection - Single** **Gauge - Oil Pressure** **Stop Switch - Emergency** **Control Display Language - English** **Circuit Breaker, Location A, 150A, 2P, 600 Volts AC, 80%, UL** **Engine Governor - Electronic, Isochronous** **Single Gas Fuel - NG or LP Vapor** **Engine Starter - 12 Volt DC Motor** **Engine Air Cleaner - Normal Duty**	1

	Battery Charging Alternator **Battery Charger - 6 Amp, Regulated** **Engine Cooling - Radiator, High Ambient Air Temperature, Ship Fitted** **Shutdown - Low Coolant Level** **Extension - Coolant Drain** **Engine Coolant - 50% Antifreeze, 50% Water Mixture** **Coolant Heater, Extreme Cold Ambient** **Engine Oil** **Genset Warranty - 2 Years Base** **Literature - English** **Packing - Skid, Poly Bag** **Larger Battery Rack** **Extension - Oil Drain**	
2	**Battery-Wet, 12V, Group 34, 850CCA [Shipped Loose]**	1
3	**Pilla Remote E-Stop [Shipped Loose]**	1
4	**PC Lon Gateway, Lon Modbus, Lon Modbus/TCP Gateway**	1
5	**Acumen Telematics – Cloud - Wi-Fi + Cellular + Ethernet connectivity – Modbus + J1939 (Private – NA variant) - A068E639 [Shipped Loose]**	1
6	**Service - Standard Start Up Service (no spec) and System Testing**	1

QUOTE TOTAL: $ 25,639.38

Quote value does not include any tax.

NOTES:

Cummins quote is valid for 30 days. This quotation is based on the bill of materials from the ESCO 911 project and email dated 4.30.25. Contractor to verify application meets requirements. All other specifications and drawings are excluded. We know of no addenda.

LEAD TIME:

Submittals:
Typical submittal lead time is 2-4 weeks after receipt of purchase order.
Equipment:
Current lead-time is 22-24 weeks after submittal approval and release for production. Lead times are subject to change.

Please feel free to contact me if you require any additional information; or if you have any further questions or concerns that I may be of assistance with.

Thank you for choosing Cummins.

Submitted by:

Felecia Ramirez, Inside Sales Representative- PG
ls698@cummins.com
(971) 940-8053

Quotation: Q-379840-20250502-0947

May 2, 2025

Prepared by

Felecia Ramirez
(971) 940-8053
ls698@cummins.com

We are pleased to provide you this quotation based on your inquiry.

Item	Description	Qty
1	**C36N6, 36kW, 60Hz, Standby, Natural Gas/Propane Genset, 1800rpm engine** **U.S. EPA, Stationary Emergency Application** **C36N6, 36kW, 60Hz, Standby, Natural Gas/Propane Genset, 1800rpm engine** **Duty Rating - Standby Power (ESP)** **Emissions Certification - SI, EPA, Emergency, Stationary, 40CFR60** **Listing - UL 2200** **NFPA 110 Type 10 Level 1 Capable** **HCAI (formerly OSHPD) Seismic Pre-Approval Certification** **Cert - Seismic, IBC2000, IBC2003, IBC2006, IBC2009, IBC2011** **Exciter/Reg - Torque Match** **Voltage - 120/240, 1 Phase, 3 Wire** **Alternator - 60Hz, 4L, 240/120V, 1 Phase, 120C, 40C Ambient** **Alternator Heater, 120 Volt AC** **Aluminum Sound Attenuated Level 1 Enclosure, with Exhaust System** **Enclosure Color - Green, Aluminum** **Enclosure - Wind Load 180 MPH, ASCE7-10** **Skidbase - Housing Ready** **Control Mounting - Right Facing** **PowerCommand 1.1 Controller** **Load Connection - Single** **Gauge - Oil Pressure** **Stop Switch - Emergency** **Control Display Language - English** **Circuit Breaker, Location A, 150A, 2P, 600 Volts AC, 80%, UL** **Engine Governor - Electronic, Isochronous** **Single Gas Fuel - NG or LP Vapor** **Engine Starter - 12 Volt DC Motor** **Engine Air Cleaner - Normal Duty**	1

	Battery Charging Alternator **Battery Charger - 6 Amp, Regulated** **Engine Cooling - Radiator, High Ambient Air Temperature, Ship Fitted** **Shutdown - Low Coolant Level** **Extension - Coolant Drain** **Engine Coolant - 50% Antifreeze, 50% Water Mixture** **Coolant Heater, Extreme Cold Ambient** **Engine Oil** **Genset Warranty - 2 Years Base** **Literature - English** **Packing - Skid, Poly Bag** **Larger Battery Rack** **Extension - Oil Drain**	
2	**Battery-Wet, 12V, Group 34, 850CCA [Shipped Loose]**	1
3	**Pilla Remote E-Stop [Shipped Loose]**	1
4	**PC Lon Gateway, Lon Modbus, Lon Modbus/TCP Gateway**	1
5	**Acumen Telematics – Cloud - Wi-Fi + Cellular + Ethernet connectivity – Modbus + J1939 (Private – NA variant) - A068E639 [Shipped Loose]**	1
6	**Service - Standard Start Up Service (no spec) and System Testing**	1

QUOTE TOTAL: $ 25,639.38

Quote value does not include any tax.

NOTES:

Cummins quote is valid for 30 days. This quotation is based on the bill of materials from the ESCO 911 project and email dated 4.30.25. Contractor to verify application meets requirements. All other specifications and drawings are excluded. We know of no addenda.

LEAD TIME:

Submittals:
Typical submittal lead time is 2-4 weeks after receipt of purchase order.
Equipment:
Current lead-time is 22-24 weeks after submittal approval and release for production. Lead times are subject to change.

Please feel free to contact me if you require any additional information; or if you have any further questions or concerns that I may be of assistance with.

Thank you for choosing Cummins.

Submitted by:

Felecia Ramirez, Inside Sales Representative- PG
ls698@cummins.com
(971) 940-8053

Quotation: Q-379957-20250502-0931

May 2, 2025

Prepared by

Felecia Ramirez
(971) 940-8053
ls698@cummins.com

We are pleased to provide you this quotation based on your inquiry.

Item	Description	Qty
1	**C36N6, 36kW, 60Hz, Standby, Natural Gas/Propane Genset, 1800rpm engine** **U.S. EPA, Stationary Emergency Application** **C36N6, 36kW, 60Hz, Standby, Natural Gas/Propane Genset, 1800rpm engine** **Duty Rating - Standby Power (ESP)** **Emissions Certification - SI, EPA, Emergency, Stationary, 40CFR60** **Listing - UL 2200** **NFPA 110 Type 10 Level 1 Capable** **HCAI (formerly OSHPD) Seismic Pre-Approval Certification** **Cert - Seismic, IBC2000, IBC2003, IBC2006, IBC2009, IBC2011** **Exciter/Reg - Torque Match** **Voltage - 120/240, 1 Phase, 3 Wire** **Alternator - 60Hz, 4L, 240/120V, 1 Phase, 120C, 40C Ambient** **Alternator Heater, 120 Volt AC** **Aluminum Sound Attenuated Level 1 Enclosure, with Exhaust System** **Enclosure Color - Green, Aluminum** **Enclosure - Wind Load 180 MPH, ASCE7-10** **Skidbase - Housing Ready** **Control Mounting - Right Facing** **PowerCommand 1.1 Controller** **Load Connection - Single** **Gauge - Oil Pressure** **Stop Switch - Emergency** **Control Display Language - English** **Circuit Breaker, Location A, 150A, 2P, 600 Volts AC, 80%, UL** **Engine Governor - Electronic, Isochronous** **Single Gas Fuel - NG or LP Vapor** **Engine Starter - 12 Volt DC Motor** **Engine Air Cleaner - Normal Duty**	1

	Battery Charging Alternator **Battery Charger - 6 Amp, Regulated** **Engine Cooling - Radiator, High Ambient Air Temperature, Ship Fitted** **Shutdown - Low Coolant Level** **Extension - Coolant Drain** **Engine Coolant - 50% Antifreeze, 50% Water Mixture** **Coolant Heater, Extreme Cold Ambient** **Engine Oil** **Genset Warranty - 2 Years Base** **Literature - English** **Packing - Skid, Poly Bag** **Larger Battery Rack** **Extension - Oil Drain**	
2	**Battery-Wet, 12V, Group 34, 850CCA [Shipped Loose]**	1
3	**Pilla Remote E-Stop [Shipped Loose]**	1
4	**PC Lon Gateway, Lon Modbus, Lon Modbus/TCP Gateway**	1
5	**Acumen Telematics – Cloud - Wi-Fi + Cellular + Ethernet connectivity – Modbus + J1939 (Private – NA variant) - A068E639 [Shipped Loose]**	1
6	**Service - Standard Start Up Service (no spec) and System Testing**	1

QUOTE TOTAL: $ 25,887.83

Quote value does not include any tax.

NOTES:

Cummins quote is valid for 30 days. This quotation is based on the bill of materials from the ESCO 911 project and email dated 4.30.25. Contractor to verify application meets requirements. All other specifications and drawings are excluded. We know of no addenda.

LEAD TIME:

Submittals:
Typical submittal lead time is 2-4 weeks after receipt of purchase order.
Equipment:
Current lead-time is 22-24 weeks after submittal approval and release for production. Lead times are subject to change.

Please feel free to contact me if you require any additional information; or if you have any further questions or concerns that I may be of assistance with.

Thank you for choosing Cummins.

Submitted by:

Felecia Ramirez, Inside Sales Representative- PG
ls698@cummins.com
(971) 940-8053

Quotation: Q-379951-20250502-0940

SUBMITTAL PACKAGE



Marion County

Prepared for:

Brian Nicholas
Marion County Public Works
555 CT ST NE
Salem, OR 97301-3980

Cummins Salesperson:

Mark Wahlberg CS931@cummins.com 503-307-7529

Cummins Project Manager:

Samantha Norman samantha.norman@cummins.com (425) 902-9513

PLEASE COMPLETE THIS SECTION OR PROVIDE SIGNOFF TO PROCEED

☐ **Revise with corrections provided** **Date:** 6/23/2025

☑ **Approved and released for production**

By (name and company): Brian Nicholas, Marion County Public Works Department

Requested delivery date: December 15, 2025

Requested delivery address: 5155 Silverton Road NE, Salem, OR 97305

Contact person and phone # for deliveries: Michael Pierce, 408.857.2040

Salesforce O#

BMS #

Customer PO#

Date 6/16/25 Rev _1

Serving Cummins Customers

Cummins power solutions are supported by the largest and best-trained worldwide-certified sales/distributor network in the industry. This network will help you select and install the critical power solution to meet the requirements of your specific application. This same network provides experts with advanced technology to make your life easier while providing a seamless support experience.

IMPORTANT: *The critical power solution information and specifications included in this pdf can be used by the site contractor(s) and/or engineer(s) to assist with planning for and accomplishing the overall power solution installation. Please forward this document to the appropriate personnel, as necessary.*

It is the obligation of the electrical contractor and reviewing engineer to determine that the item quantities and accuracy of this submittal is correct as required for the job. Any inaccuracies or deviations must be addressed with Cummins Inc. before release to manufacturing. Any releases of material to manufacturing by the above parties constitute an acceptance of the accuracy of the submittal. Any changes after release will be viewed as a change order, subject to pricing changes. Please take the time to review this package for accuracy to prevent any after-shipment problems that could cause delay in energization.

Cummins certifies that these drawings, material lists, specification and datasheets have been checked prior to submittal and they:

- *accurately depict the proposed equipment*
- *provide current information to the date of the submittal and*
- *present true and accurate equipment information.*

This Approval Drawing Package is submitted as our interpretation of the project requirements and/or the specifications for this job. Please note that issuance of these submittals shall not be deemed or interpreted as performance nor acceptance of your purchase order terms and conditions.

For questions or comments regarding this submittal, please contact the Cummins Project Manager listed on the title page.

June 5, 2025

Submittal Applies to:
North Fork
House Mountain

We are pleased to provide you this quotation based on your inquiry.

Item	Description	Qty
1	**C36N6, 36kW, 60Hz, Standby, Natural Gas/Propane Genset, 1800rpm engine** **U.S. EPA, Stationary Emergency Application** **C36N6, 36kW, 60Hz, Standby, Natural Gas/Propane Genset, 1800rpm engine** **Duty Rating - Standby Power (ESP)** **Emissions Certification - SI, EPA, Emergency, Stationary, 40CFR60** **Listing - UL 2200** **NFPA 110 Type 10 Level 1 Capable** **HCAI (formerly OSHPD) Seismic Pre-Approval Certification** **Cert - Seismic, IBC2000, IBC2003, IBC2006, IBC2009, IBC2011** **Exciter/Reg - Torque Match** **Voltage - 120/240, 1 Phase, 3 Wire** **Alternator - 60Hz, 4L, 240/120V, 1 Phase, 120C, 40C Ambient** **Duct Adaptor - Radiator Outlet** **Alternator Heater, 120 Volt AC** **Enclosure - None** **Enclosure Color - None** **Skidbase - Housing Ready** **Control Mounting - Right Facing** **PowerCommand 1.1 Controller** **Load Connection - Single** **Gauge - Oil Pressure** **Stop Switch - Emergency** **Control Display Language - English** **Circuit Breaker, Location A, 150A, 2P, 600 Volts AC, 80%, UL** **Engine Governor - Electronic, Isochronous** **Single Gas Fuel - NG or LP Vapor** **Engine Starter - 12 Volt DC Motor** **Exhaust Connector - NPT**	2

	Engine Air Cleaner - Normal Duty **Battery Charging Alternator** **Battery Charger - 6 Amp, Regulated** **Engine Cooling - Radiator, High Ambient Air Temperature, Ship Fitted** **Shutdown - Low Coolant Level** **Extension - Coolant Drain** **Engine Coolant - 50% Antifreeze, 50% Water Mixture** **Coolant Heater, Extreme Cold Ambient** **Engine Oil** **Genset Warranty - 2 Years Base** **Literature - English** **Packing - Skid, Poly Bag** **Larger Battery Rack** **Extension - Oil Drain**	
2	**Muffler, Critical-Side Inlet, End Outlet, 2.5"NPT**	2
3	**Exhaust Tube Assembly, Flex-2.5"NPT x 30"L**	2
4	**Battery-Wet, 12V, Group 34, 850CCA [Shipped Loose]**	2
5	**PC Lon Gateway, Lon Modbus, Lon Modbus/TCP Gateway**	1
6	**Acumen Telematics – Cloud - Wi-Fi + Cellular + Ethernet connectivity – Modbus + J1939 (Private – NA variant) - A068E639 [Shipped Loose]**	1
7	**Service - Standard Start Up Service (no spec) and System Testing**	2

QUOTE TOTAL: $ 50,700.50

Quote value does not include any tax.

NOTES:

6/5/25 - Change order to reflect two indoor generators, rather than two outdoor generators per the 6.4.25 email request.

5/6/25 - Updated quote to add extra generator per the 5.6.25 email request.

Cummins quote is valid for 30 days.

This quotation is based on the bill of materials from the ESCO 911 project and email dated 4.30.25. Contractor to verify application meets requirements. All other specifications and drawings are excluded. We know of no addenda.

LEAD TIME:

Submittals:
Typical submittal lead time is 2-4 weeks after receipt of purchase order.
Equipment:
Current lead-time is 29-31 weeks after submittal approval and release for production. Lead times are subject to change.

Specification sheet

Spark-ignited generator set

20-40 kW Standby

EPA emissions



Description

Cummins® generator sets are fully integrated power generation systems providing optimum performance, reliability and versatility for stationary Standby applications.

Features

Gas engine - Rugged 4-cycle Cummins QSJ2.4 spark-ignited engine delivers reliable power. The electronic air/fuel ratio control provides optimum engine performance and fast response to load changes.

Alternator - Several alternator sizes offer selectable motor starting capability with low reactance 2/3 pitch windings, low waveform distortion with non-linear loads and fault clearing short-circuit capability.

Control system - The PowerCommand® 1.1 electronic control is standard equipment and provides total generator set system integration including automatic remote starting/stopping, precise frequency and voltage regulation, alarm and status message display, output metering, auto-shutdown at fault detection and NFPA 110 Level 1 compliance.

Cooling system - Standard cooling package provides reliable running at up to 50° C (122° F) ambient temperature.

Enclosures - The aesthetically appealing enclosure incorporates special designs that deliver one of the quietest generators of its kind. Aluminium material plus durable powder coat paint provides the best anti-corrosion performance. The generator set enclosure has been evaluated to withstand 180 MPH wind loads in accordance with ASCE7-10. The intelligent design has removable panels and service doors to provide easy access for service and maintenance.

NFPA - The generator set accepts full rated load in a single step in accordance with NFPA 110 for Level 1 systems.

Warranty and service - Backed by a comprehensive warranty and worldwide distributor network.

	Natural gas		Propane		
	Standby 60 Hz		Standby 60 Hz		Data sheets
Model	**kW**	**kVA**	**kW**	**kVA**	**60 Hz**
C20 N6	20	25	20	25	NAD-5693-EN
C25 N6	25	31	25	31	NAD-5695-EN
C30 N6	30	38	30	38	NAD-5696-EN
C36 N6	36	45	36	45	NAD-5697-EN
C40 N6	40	50	40	50	NAD-5698-EN

Our energy working for you.™

©2019 Cummins Inc. | NAS-5692 (10/24) A052F982

Generator set specifications

Governor regulation class	ISO8528 Part 1 Class G3*
Voltage regulation, no load to full load	± 1.0%
Random voltage variation	± 1.0%
Frequency regulation	Isochronous
Random frequency variation	± 0.25% @ 60 Hz
Radio frequency emissions compliance	Meets requirements of most industrial and commercial applications

* C36 N6 and C40 N6 are Class G2

Engine specifications

Aspiration	Naturally Aspirated (25kW), Turbocharged (30kW), Turbocharged and Aftercooled (36kW/40kW)
Bore	86.5 mm (3.4 in.)
Stroke	100.0 mm (3.94 in.)
Displacement	2.4 L (143.5 in^3)
Cylinder block	Cast iron, in-line 4 cylinder
Battery capacity	550 amps at ambient temperature of 0° F to 32° F (-18° C to 0° C)
Battery charging alternator	50 amps
Starting voltage	12 volt, negative ground
Lube oil filter type(s)	Spin-on with relief valve
Standard cooling system	50° C (122° F) ambient cooling system
Rated speed	1800 rpm

Alternator specifications

Design	Brushless, 4 pole, drip proof, revolving field
Stator	2/3 pitch
Rotor	Direct coupled, flexible disc
Insulation system	Class H per NEMA MG1-1.65
Standard temperature rise	120º C (248° F) Standby
Exciter type	Torque match (shunt) with EBS as option
Alternator cooling	Direct drive centrifugal blower
AC waveform Total Harmonic Distortion (THDV)	< 5% no load to full linear load, < 3% for any single harmonic
Telephone Influence Factor (TIF)	< 50 per NEMA MG1-22.43
Telephone Harmonic Factor (THF)	< 3%

Available voltages

1-phanse	3-phase			
• 120/240	• 120/208	• 120/240 delta	• 277/480	• 347/600

Generator set options

Fuel system
- Single fuel - natural gas or propane vapor, field selectable
- Dual fuel – natural gas and propane vapor auto changeover
- Low fuel gas pressure warning

Engine
- Engine air cleaner – normal or heavy duty
- Shut down – low oil pressure
- Extension – oil drain

Alternator
- 120° C (248° F) temperature rise alternator
- 105° C (221° F) temperature rise alternator
- PMG available on 36 kW and 40 kW
- Alternator heater, 120 V

Control
- AC output analog meters (bargraph)
- Stop switch – emergency
- Auxiliary output relays (2)
- Auxiliary configurable signal inputs (8) and relay outputs (8)

Electrical
- Single circuit breaker
- Dual circuit breakers
- 80% rated circuit breakers
- 100% rated circuit breakers

Enclosure
- Aluminium enclosure Sound Level 1 or Level 2, with muffler installed, sandstone or green color
- Open set

Cooling system
- Shutdown – low coolant level
- Warning – low coolant level
- Extension – coolant drain
- Cold weather options:
  - < 4° C (40° F) – cold weather
  - < -17° C (0° F) – extreme cold weather

Exhaust system
- Exhaust connector NPT

Generator set application
- Base barrier – elevated generator set
- Battery rack, larger battery
- Radiator outlet duct adapter

©2019 Cummins Inc. | NAS-5692 (10/24) A052F983

Generator set options (continued)

Warranty

- Base warranty – 2 year, 1000 hour, Standby
- Standby, 3 year, 1500 hour, parts
- Standby, 5 year, 2500 hour, parts
- Standby, 3 year, 1500 hour, parts and labor
- Standby, 5 year, 2500 hour, parts and labor
- Standby, 3 year, 1500 hour, parts, labor and travel
- Standby, 5 year, 2500 hour, parts, labor and travel

Note: Some options may not be available on all models - consult factory for availability.

Generator set accessories

- Extreme cold weather kit
- Battery rack, larger battery
- Battery heater kit
- HMI211RS in-home display, including pre-configured 12-inch harness
- HMI211 remote display, including pre-configured 12-inch harness
- HMI220 remote display
- Auxiliary output relays (2)
- Auxiliary configurable signal inputs (8) and relay outputs (8)
- Annunciator – RS485
- Remote monitoring device – Acumen®
- Battery charger – stand-alone, 12 V
- Circuit breakers
- Enclosure Sound Level 1 to Sound Level 2 upgrade kit
- Enclosure paint touch up kit
- Base barrier – elevated generator set
- Mufflers – industrial, residential or critical
- PMG available on 36 kW and 40 kW
- Alternator heater
- Maintenance and service kit
- Engine lift kit

Control system PowerCommand 1.1



PowerCommand control is an integrated generator set control system providing voltage regulation, engine protection, operator interface and isochronous governing (optional). Major features include:

- Battery monitoring and testing features and smart starting control system.
- Standard PCCNet interface to devices such as remote annunciator for NFPA 110 applications.
- Control boards potted for environmental protection.
- Control suitable for operation in ambient temperatures from -40 °C to +70 °C (-40 °F to +158 °F) and altitudes to 5000 meters (13,000 feet).
- Prototype tested; UL, CSA, and CE compliant.
- InPower™ PC-based service tool available for detailed diagnostics.

Operator/display panel

- Manual off switch
- Alpha-numeric display with pushbutton access for viewing engine and alternator data and providing setup, controls and adjustments (English or international symbols)
- LED lamps indicating generator set running, not in auto, common warning, common shutdown, manual run mode and remote start
- Suitable for operation in ambient temperatures from -40 °C to +70 °C
- Bargraph display (optional)

AC protection

- Over current warning and shutdown
- Over and under voltage shutdown
- Over and under frequency shutdown
- Over excitation (loss of sensing) fault
- Field overload

Engine protection

- Overspeed shutdown
- Low oil pressure warning and shutdown
- High coolant temperature warning and shutdown
- Low coolant level warning or shutdown
- Low coolant temperature warning
- High, low and weak battery voltage warning
- Fail to start (overcrank) shutdown
- Fail to crank shutdown
- Redundant start disconnect
- Cranking lockout
- Sensor failure indication
- Low fuel level warning or shutdown

Alternator data

- Line-to-Line and Line-to-Neutral AC volts
- 3-phase AC current
- Frequency
- Total kVa

Engine data

- DC voltage
- Lube oil pressure
- Coolant temperature
- Engine speed

©2019 Cummins Inc. | NAS-5692 (10/24) A052F982

Other data
- Generator set model data
- Start attempts, starts, running hours
- Fault history
- RS485 Modbus® interface
- Data logging and fault simulation (requires InPower service tool)

Digital governing (optional)
- Integrated digital electronic isochronous governor
- Temperature dynamic governing

Digital voltage regulation
- Integrated digital electronic voltage regulator
- 2-phase Line-to-Line sensing
- Configurable torque matching

Control functions
- Time delay start and cooldown
- Cycle cranking
- PCCNet interface
- (2) Configurable inputs
- (2) Configurable outputs
- Remote emergency stop
- Automatic Transfer Switch (ATS) control
- Generator set exercise, field adjustable

Options
- Auxiliary output relays (2)
- Remote annunciator with (3) configurable inputs and (4) configurable outputs
- PMG alternator excitation available on 36 kW and 40 kW
- Acumen® telematics for remote monitoring and control via Cummins PowerCommand Cloud
- Auxiliary, configurable signal inputs (8) and configurable relay outputs (8)
- Digital governing
- AC output analog meters (bargraph)
  - Color-coded graphical display of:
    - 3-phase AC voltage
    - 3-phase current
    - Frequency
    - kVa
- Remote operator panel

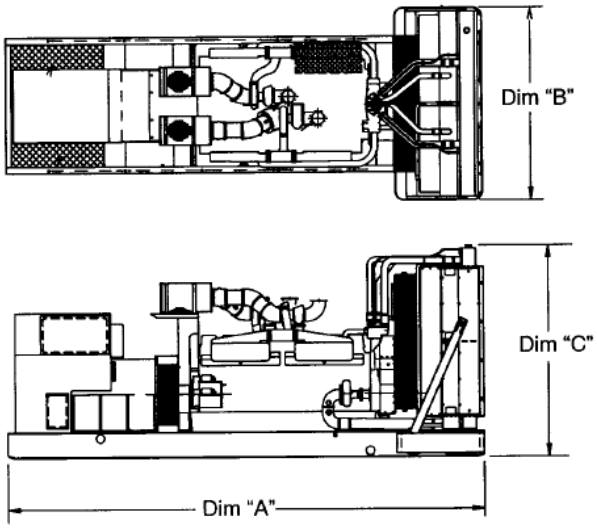
Ratings definitions

Emergency Standby Power (ESP):
Applicable for supplying power to varying electrical load for the duration of power interruption of a reliable utility source. Emergency Standby Power (ESP) is in accordance with ISO 8528. Fuel Stop power in accordance with ISO 3046, AS 2789, DIN 6271 and BS 5514.

Limited-Time Running Power (LTP):
Applicable for supplying power to a constant electrical load for limited hours. Limited-Time Running Power (LTP) is in accordance with ISO 8528.

Prime Power (PRP):
Applicable for supplying power to varying electrical load for unlimited hours. Prime Power (PRP) is in accordance with ISO 8528. Ten percent overload capability is available in accordance with ISO 3046, AS 2789, DIN 6271 and BS 5514.

Base Load (Continuous) Power (COP):
Applicable for supplying power continuously to a constant electrical load for unlimited hours. Continuous Power (COP) in accordance with ISO 8528, ISO 3046, AS 2789, DIN 6271 and BS 5514.



This outline drawing is for reference only. See respective model data sheet for specific model outline drawing number.

Do not use for installation design

©2019 Cummins Inc. | NAS-5692 (10/24) A052F982

Model	Dim "A" mm (in.)	Dim "B" mm (in.)	Dim "C" mm (in.)	Set weight* dry kg (lbs)	Set weight* wet kg (lbs)
Open set					
C20 N6	1669 (65.7)	864 (34)	1123 (44.2)	423 (933)	440 (969)
C25 N6	1669 (65.7)	864 (34)	1123 (44.2)	441 (972)	457 (1008)
C30 N6	2225 (87.6)	864 (34)	1123 (44.2)	491 (1083)	508 (1119)
C36 N6	2225 (87.6)	864 (34)	1123 (44.2)	520 (1146)	536 (1182)
C40 N6	2225 (87.6)	864 (34)	1123 (44.2)	548 (1208)	564 (1244)
Sound attenuated enclosure Level 1					
C20 N6	1829 (72)	864 (34)	1156 (45.5)	469 (1034)	485 (1070)
C25 N6	1829 (72)	864 (34)	1156 (45.5)	487 (1073)	503 (1109)
C30 N6	2388 (94)	864 (34)	1156 (45.5)	542 (1195)	558 (1231)
C36 N6	2388 (94)	864 (34)	1156 (45.5)	571 (1258)	587 (1294)
C40 N6	2388 (94)	864 (34)	1156 (45.5)	599 (1320)	615 (1356)
Sound attenuated enclosure Level 2					
C20 N6	2073 (81.6)	864 (34)	1156 (45.5)	474 (1045)	490 (1081)
C25 N6	2073 (81.6)	864 (34)	1156 (45.5)	492 (1084)	508 (1120)
C30 N6	2626 (103.4)	864 (34)	1156 (45.5)	547 (1206)	563 (1242)
C36 N6	2626 (103.4)	864 (34)	1156 (45.5)	576 (1269)	592 (1305)
C40 N6	2626 (103.4)	864 (34)	1156 (45.5)	604 (1331)	620 (1367)

* Weights based on 1-phase generator set. Weights may vary with a different configuration.

Codes and standards

Codes or standards compliance may not be available with all model configurations – consult factory for availability.

ISO 9001 **ISO 14001** **ISO 45001**	This product was manufactured in a facility whose quality management system is certified to ISO 9001 and its Health Safety Environmental Management Systems certified to ISO 14001 and ISO 45001.	UL LISTED	This product is listed to UL 2200, Stationary Engine Generator Assemblies
PTS	The Prototype Test Support (PTS) program verifies the performance integrity of the generator set design. Cummins products bearing the PTS symbol meet the prototype test requirements of NFPA 110 for Level 1 systems.	UNITED STATES ENVIRONMENTAL PROTECTION AGENCY	Engine certified to U.S. EPA SI Stationary Emission Regulation 40 CFR, Part 60. U.S. applications must be applied per this EPA regulation.
CSA	All low voltage models are CSA certified to product class 4215-01 and available with CSA B149.1 fuel train.	IBC INTERNATIONAL BUILDING CODE	The generator set package is available certified for seismic application in accordance with International Building Code.

Warning: Back feed to a utility system can cause electrocution and/or property damage. Do not connect to any building's electrical system except through an approved device or after building main switch is open.

For more information contact your local Cummins distributor or visit power.cummins.com

Our energy working for you.™

©2019 Cummins Inc. All rights reserved. Cummins is a registered trademark of Cummins Inc. PowerCommand, Acumen, AmpSentry, InPower and "Our energy working for you." are trademarks of Cummins Inc. Other company, product, or service names may be trademarks or service marks of others. Specifications are subject to change without notice.

NAS-5692 (10/24) A052F982

Generator set data sheet

Model:	**C36 N6**
kW rating:	**36.0 natural gas Standby**
	36.0 propane Standby
Frequency:	**60 Hz**
Fuel type:	**Natural gas/propane**
Emissions level:	**EPA emissions**

Fuel consumption

	Natural gas				Propane			
	Standby				Standby			
	kW (kVA)				kW (kVA)			
Ratings	36.0 (45.0)				36.0 (45.0)			
Load	**1/4**	**1/2**	**3/4**	**Full**	**1/4**	**1/2**	**3/4**	**Full**
scfh	202.3	292.3	382.3	472.3	79.8	114.1	148.4	182.7
m³/hr	5.73	8.28	10.83	13.36	2.26	3.23	4.20	5.17

Engine

	Natural gas	Propane
	Standby rating	**Standby rating**
Engine model	QSJ2.4G-G6	
Configuration	Cast iron, in-line 4 cylinder	
Aspiration	Turbo	
Gross engine power output, kW_m (bhp)	52 (70)	52 (70)
Bore, mm (in.)	86.5 (3.41)	
Stroke, mm (in.)	100.0 (3.94)	
Rated speed, rpm	1800	
Compression ratio	9.5:1	
Lube oil capacity, L (qt)	4 (4.54)	
Overspeed limit, rpm	2250	

Fuel supply pressure

Minimum operating pressure, kPa (in H_2O)	1.5 (6.0)
Maximum operating pressure, kPa (in H_2O)	3.2 (13.0)

©2017 Cummins Inc. I NAD-5697 (4/25)

Air	Natural gas Standby rating	Propane Standby rating
Combustion air, m^3/min (scfm)	[redacted]	1.8 (62.5)
Maximum air cleaner restriction, kPa (in H_2O)	1.49 (6.0)	
Alternator cooling air, m^3/min (scfm)	N/A	

Exhaust

Exhaust flow at rated load, m^3/min (cfm)	[redacted] (260.2)	6.3 (225.9)
Exhaust temperature, °C (°F)	632 [redacted]169)	638 (1181)
Exhaust back pressure (maximum allowable at engine), kPa (in H_2O)	5.0 (20)	5.0 (20)
Exhaust back pressure (actual with factory fitted muffler), kPa (in H_2O)	1.47 (5.9)	

Standard set-mounted radiator cooling

Ambient design, °C (°F)	50 (122)
Fan load, kW (HP)	2.2 (3.0)
Coolant capacity (with radiator), L (US gal)	10 (2.7)
Cooling system air flow, m^3/min (scfm)	144.2 (5150)
Maximum cooling air flow static restriction, kPa (in H_2O)	0.12 (0.5)

Weights[2]

Unit dry weight kgs (lbs)	548 (1294)
Unit wet weight kgs (lbs)	603 (1330)

Notes:
[1]For non-standard remote installations contact your local Cummins representative.
[2]Weights represent a set with 1-phase with sound level 1 enclosure.

©2017 Cummins Inc. | NAD-5697 (4/25)

Alternator data

Standard alternators		Natural gas/ propane single phase table	Natural gas/propane three phase table			
Maximum temperature rise above 40 °C ambient		120 °C	120 °C	120 °C	120 °C	120 °C
Feature code		B949-2	B986-2	B946-2	B943-2	B952-2
Alternator data sheet number		ADS-579	ADS-577	ADS-577	ADS-577	ADS-577
Voltage ranges		120/240	120/240	120/208	277/480	347/600
Voltage feature code		R104-2	R106-2	R098-2	R002-2	R114-2
Surge kW		43.0/43.0	43.1/43.1	43.1/43.1	43.1/43.1	43.1/43.1
Motor starting kVA (at 90% sustained voltage)	Shunt	68	86	86	86	86
	EBS	112	135	135	135	135
Full load current amps at Standby rating		150	108	125	54	43

Optional alternators for improved motor starting capability		Natural gas/ propane single phase table	Natural gas/propane three phase table			
Maximum temperature rise above 40 °C ambient		105 °C	105 °C	105 °C	105 °C	105 °C
Feature code		BB96-2	BB94-2	BB93-2	BB95-2	BB92-2
Alternator data sheet number		ADS-579	ADS-579	ADS-579	ADS-579	ADS-579
Voltage ranges		120/240	120/240	120/208	277/480	347/600
Voltage feature code		R104-2	R106-2	R098-2	R002-2	R114-2
Surge kW		41.5/41.5	43.4/43.4	43.4/43.4	43.4/43.4	43.4/43.4
Motor starting kVA (at 90% sustained voltage)	Shunt	76	95	95	95	95
	PMG	120	NA	NA	NA	NA
	EBS	NA	150	150	150	150
Full load current amps at Standby rating		150	108	125	54	43

©2017 Cummins Inc. I NAD-5697 (4/25)

Derating factors

Natural gas/propane

Standby	Natural gas: Engine power available up to 762 m (2500 ft) at ambient temperatures up to 40 °C (104 °F). Above these elevations derate at 4% per 305 m (1000 ft) and 2% per 10 °C above 40 °C (104 °F). Propane: Engine power available up to 1005 m (3300 ft) at ambient temperatures up to 40 °C (104 °F). Above these elevations derate at 4% per 305 m (1000 ft) and 2% per 10 °C above 40 °C (104 °F).

Ratings definitions

Emergency Standby Power (ESP):	**Limited-Time Running Power (LTP):**	**Prime Power (PRP):**	**Base Load (Continuous) Power (COP):**
Applicable for supplying power to varying electrical load for the duration of power interruption of a reliable utility source. Emergency Standby Power (ESP) is in accordance with ISO 8528. Fuel stop power in accordance with ISO 3046, AS 2789, DIN 6271 and BS 5514.	Applicable for supplying power to a constant electrical load for limited hours. Limited-Time Running Power (LTP) is in accordance with ISO 8528.	Applicable for supplying power to varying electrical load for unlimited hours. Prime Power (PRP) is in accordance with ISO 8528. Ten percent overload capability is available in accordance with ISO 3046, AS 2789, DIN 6271 and BS 5514.	Applicable for supplying power continuously to a constant electrical load for unlimited hours. Continuous Power (COP) is in accordance with ISO 8528, ISO 3046, AS 2789, DIN 6271 and BS 5514.

Formulas for calculating full load currents:

Three phase output

$$\frac{\text{kW} \times 1000}{\text{Voltage} \times 1.73 \times 0.8}$$

Single phase output

$$\frac{\text{kW} \times \text{SinglePhaseFactor} \times 1000}{\text{Voltage}}$$

Warning: Back feed to a utility system can cause electrocution and/or property damage. Do not connect to any building's electrical system except through an approved device or after building main switch is open.

For more information contact your local Cummins distributor or visit power.cummins.com

Our energy working for you.™

©2017 Cummins Inc. All rights reserved. Cummins is a registered trademark of Cummins Inc. PowerCommand, AmpSentry, InPower and "Our energy working for you." are trademarks of Cummins Inc. Other company, product, or service names may be trademarks or service marks of others. Specifications are subject to change without notice.
NAD-5697 (4/25)

Specification Sheet

PowerCommand® 1.1 Control System



Description

The PowerCommand control system is a microprocessor-based generator set monitoring, metering and control system designed to meet the demands of today's engine driven generator sets. The integration of all control functions into a single control system provides enhanced reliability and performance compared to conventional generator set control systems. These control systems have been designed and tested to meet the harsh environment in which gensets are typically applied.

Features

Easy to view: HMI 211RS for residential use. 128 x 64 pixel graphic LED backlight LCD.

Easy to use: Tactile buttons for generator set start/stop. Residential Standby display for convenient use.

Modbus® interface: Eliminates need for MODLON.

Progressive protective functions: Advanced Overcurrent Protection – Generator set monitoring & protection.

Digital voltage regulation: Single phase full wave SCR type regulator compatible with either shunt or PMSG systems.

Digital engine speed governing: Provides isochronous frequency regulation.

12 and 24 VDC battery operation.

Automatic mains failure: Smooth & automatic transfer and re-transfer of load from utility to generator set & vice-versa.

Exerciser clock: Runs generator set exerciser routines for dependability of operation.

Warranty and service: Backed by a comprehensive warranty and worldwide distributor service network.

Certification: Suitable for us on generator sets that are designed, manufactured, tested and certified to relevant UL, NFPA, ISO, IEC Mil Std., CE, UKCA and CSA standards.

©2019 Cummins Inc. | PDS-1566 | PD00000147 | (01/22)

PowerCommand Digital Generator Set Control PCC 1302



Description

The PowerCommand generator set control is suitable for use on a wide range of generator sets in non-paralleling applications. The PowerCommand control is compatible with shunt or PMG excitation style. It is suitable for use with reconnectable or non-reconnectable generators, and it can be configured for any frequency, voltage and power connection from 120-600 VAC Line-to-Line.

Power for this control system is derived from the generator set starting batteries. The control functions over a voltage range from 8 VDC to 30 VDC.

Features

- 12 and 24 VDC battery operation.
- Digital voltage regulation.
- Digital engine speed governing (where applicable) - Provides isochronous frequency regulation.
- Full authority engine communications (where applicable) - Provides communication and control with the Engine Control Module (ECM).
- Common harnessing - with higher feature Cummins controls allows for easy field upgrades.
- Generator set monitoring - Monitors status of all critical engine and alternator functions.
- Digital genset metering (AC and DC).
- Genset battery monitoring system - to sense and warn against a weak battery condition.
- Engine starting - Includes relay drivers for starter, fuel shut off (FSO), glow plug/spark ignition power and switch B+ applications.
- Generator set protection - Protects engine and alternator.
- Advanced serviceability - using InPower™, a PC-based software service tool.
- Environmental protection - The control system is designed for reliable operation in harsh environments. The main control board is a fully encapsulated module that is protected from the elements.
- Exerciser function – Routine exercising of generator set.
- Supports dual fuel control.
- Automatic Mains Failure function built in generator set controller. Modbus interface - for interconnecting to customer equipment.
- Configurable inputs and outputs - Four discrete inputs and two dry contact relay outputs.
- Warranty and service - Backed by a comprehensive warranty and worldwide distributor service network.
- Certifications - Suitable for use on generator sets that are designed, manufactured, tested and certified to relevant UL, NFPA, ISO, IEC, Mil Std., CE, UKCA and CSA standards.

Base Control Functions

HMI capability

Operator adjustments - The HMI includes provisions for many set up and adjustment functions.

Generator set hardware data - Access to the control and software part number, generator set rating in kVA and generator set model number is provided from the HMI or InPower™.

Data logs - Includes engine run time, controller on time, number of start attempts.

Fault history - Provides a record of the most recent fault conditions with control hours time stamp. Up to 10 events are stored in the control non-volatile memory.

Alternator data

- Voltage (single or three phase Line-to-Line and Line-to-Neutral)
- Current (single or three phase)
- kVA (three phase and total)
- Frequency
- Engine data
- Starting battery voltage
- Engine speed
- Engine temperature
- Engine oil pressure
- Partial Full Authority Engine (FAE) data (where applicable)
- Service adjustments - The HMI includes provisions for adjustment and calibration of generator set control functions. Adjustments are protected by a password. Functions include:
- Engine speed governor adjustments
- Voltage regulation adjustments
- Cycle cranking
- Configurable fault set up
- Configurable output set up
- Meter calibration
- Units of measurement

©2019 Cummins Inc. | PDS-1566 | PD00000147 | (01/22)

Engine control

SAE-J1939 CAN interface to full authority ECMs (where applicable) - Provides data swapping between genset and engine controller for control, metering and diagnostics.

12 VDC/24 VDC battery operations - PowerCommand will operate either on 12 VDC or 24 VDC batteries.

Isochronous governing (where applicable) - Capable of controlling engine speed within +/-0.25% for any steady state load from no load to full load. Frequency drift will not exceed +/-0.5% for a 33 °C (60 °F) change in ambient temperature over an 8 hour period.

Temperature dependent governing dynamics (with electronic governing) - Modifies the engine governing control parameters as a function of engine temperature. This allows the engine to be more responsive when warm and more stable when operating at lower temperature levels.

Remote start mode - Accepts a ground signal from remote devices to automatically start the generator set and immediately accelerate to rated speed and voltage. The remote start signal will also wake up the control from sleep mode. The control can incorporate a time delay start and stop.

Remote and local Emergency stop - The control accepts a ground signal from a local (genset mounted) or remote (facility mounted) Emergency stop switch to cause the generator set to immediately shut down. The generator set is prevented from running or cranking with the switch engaged. If in sleep mode, activation of either Emergency stop switch will wake up the control.

Sleep mode - The control includes a configurable low current draw state to minimize starting battery current draw when the genset is not operating. The control can also be configured to go into a low current state while in auto for Prime applications or applications without a battery charger.

Engine starting - The control system supports automatic engine starting. Primary and backup start disconnects are achieved by one of three methods: magnetic pickup, battery charging alternator feedback or main alternator output frequency. The control also supports configurable glow plug control when applicable.

Cycle cranking - Configurable for the number of starting cycles (1 to 7) and duration of crank and rest periods. Control includes starter protection algorithms to prevent the operator from specifying a starting sequence that might be damaging.

Time delay start and stop (cooldown) - Configurable for time delay of 0-300 seconds prior to starting after receiving a remote start signal and for time delay of 0-600 seconds prior to shut down after signal to stop in normal operation modes. Default for both time delay periods is 0 seconds.

Alternator control

The control includes an integrated line-to-line sensing voltage regulation system that is compatible with shunt or PMG excitation systems. The voltage regulation system is full wave rectified and has an SCR output for good motor starting capability. Major system features include:

Digital output voltage regulation - Capable of regulating output voltage to within +/-1.0% for any loads between no load and full load. Voltage drift will not exceed +/-1.5% for a 40 ºC (104 ºF) change in temperature in an eight hour period. On engine starting or sudden load acceptance, voltage is controlled to a maximum of 5% overshoot over nominal level.

The automatic voltage regulator feature can be disabled to allow the use of an external voltage regulator.

Torque-matched V/Hz overload control - The voltage roll-off set point and rate of decay (i.e. the slope of the V/Hz curve) is adjustable in the control.

Protective Functions

On operation of a protective function the control will indicate a fault by illuminating the appropriate status LED on the HMI, as well as display the fault code and fault description on the LCD. The nature of the fault and time of occurrence are logged in the control. The service manual and InPower service tool provide service keys and procedures based on the service codes provided. Protective functions include:

Battle short mode

When enabled and the battle short switch is active, the control will allow some shutdown faults to be bypassed. If a bypassed shutdown fault occurs, the fault code and description will still be annunciated, but the genset will not shutdown. This will be followed by a fail to shutdown fault. Emergency stop shutdowns and others that are critical for proper operation are not bypassed. Please refer to the Control Application Guide or Manual for list of these faults.

Configurable alarm and status inputs

The control accepts up to four alarm or status inputs (configurable contact closed to ground or open) to indicate a configurable (customer-specified) condition. The control is programmable for warning, shutdown or status indication and for labelling the input.

Emergency stop

Annunciated whenever either Emergency stop signal is received from external switch.

General engine protection

Low and high battery voltage warning - Indicates status of battery charging system (failure) by continuously monitoring battery voltage.

Weak battery warning - The control system will test the battery each time the generator set is signaled to start and indicate a warning if the battery indicates impending failure.

Fail to start (overcrank) shutdown - The control system will indicate a fault if the generator set fails to start by the completion of the engine crack sequence.

Fail to crank shutdown - Control has signaled starter to crank engine but engine does not rotate.

Cranking lockout - The control will not allow the starter to attempt to engage or to crank the engine when the engine is rotating.

Hydro mechanical fuel system engine protection

Overspeed shutdown - Default setting is 115% of nominal.

Low lube oil pressure warning/shutdown - Level is pre-set (configurable with InPower) to match the capabilities of the engine used. Control includes time delays to prevent nuisance alarms.

High lube oil temperature warning/shutdown - Level is pre-set (configurable with InPower) to match the capabilities of the engine used. Control includes time delays to prevent nuisance alarms.

High engine temperature warning/shutdown - Level is pre-set (configurable with InPower) to match the capabilities of the engine used. Control includes time delays to prevent nuisance alarms.

Low coolant temperature warning - Indicates that engine temperature may not be high enough for a 10 second start or proper load acceptance.

Sensor failure indication - Logic is provided on the base control to detect analog sensor or interconnecting wiring failures.

©2019 Cummins Inc. | PDS-1566 | PD00000147 | (01/22)

Full authority electronic engine protection

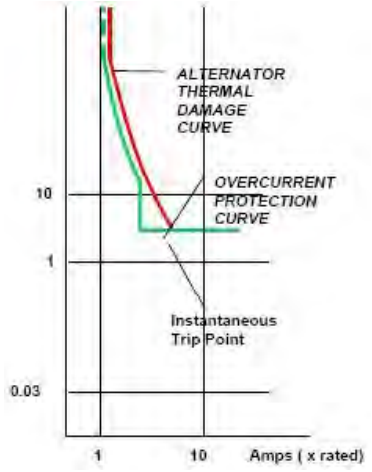
Engine fault detection is handled inside the engine ECM. Fault information is communicated via the SAE-J1939 data link for annunciation in the HMI

Alternator protection

High AC voltage shutdown (59) - Output voltage on any phase exceeds pre-set values. Time to trip is inversely proportional to amount above threshold. Values adjustable from 105-130% of nominal voltage, with time delay adjustable from 0.1-10 seconds. Default value is 110% for 10 seconds.

Low AC voltage shutdown (27) - Voltage on any phase has dropped below a pre-set value. Adjustable over a range of 50-95% of reference voltage, time delay 2-20 seconds. Default value is 85% for 10 seconds.

Overcurrent warning/shutdown - Implementation of the thermal damage curve with instantaneous trip level calculated based on current transformer ratio and application power rating.



-

Under frequency shutdown (81 u) - Generator set output frequency cannot be maintained. Settings are adjustable from 2-10 Hz below nominal governor set point, for a 5-20 second time delay. Default: 6 Hz, 10 seconds.

Over frequency shutdown/warning (81o) - Generator set is operating at a potentially damaging frequency level. Settings are adjustable from 2-10 Hz above nominal governor set point for a 1-20 second time delay. Default: 6 Hz, 10 seconds, enabled.

Loss of sensing voltage shutdown - Shutdown of generator set will occur on loss of voltage sensing inputs to the control.

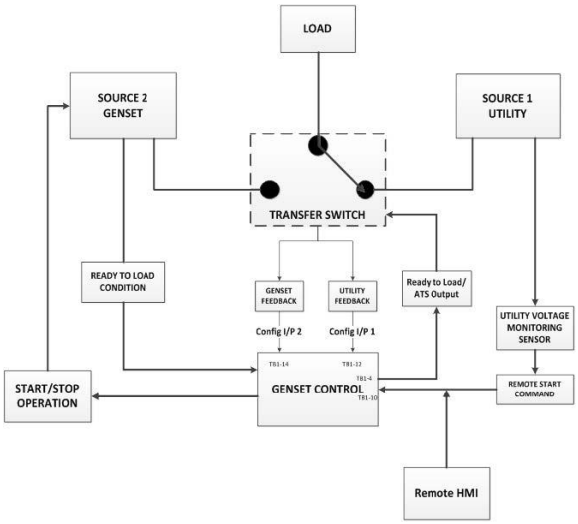
Field overload shutdown - Uses field voltage to shutdown generator set when a field overload condition occurs.

Advanced Functions

Automatic mains failure*

The built in AMF feature provides the automatic transfer and re-transfer of the load from utility to generator set and vice-versa.

- Automatically starts-stops the generator set in the event of utility failure.
- Annunciates faults.



-

* A utility voltage monitoring sensor (as shown in the AMF diagram above) must be connected in order to use the AMF feature on the 1302 control. Use Schneider Electric Relay RSB1A120U7 and Socket RSZE1S35M.

Exerciser clock

The exerciser clock runs the generator set exerciser routines for dependability of operation.

Field Control Interface

Input signals to the base control include:

- Remote start
- Local and Emergency stop
- Configurable inputs: Control includes (4) input signals from customer discrete devices that are configurable for warning, shutdown or status indication, as well as message displayed.

Output signals from the PowerCommand control include:

- Configurable relay outputs: Control includes (2) relay output contacts rated at 2 A. These outputs can be configured to activate on any control warning or shutdown fault as well as ready to load, not in auto, common alarm, common warning and common shutdown.
- Ready to load (generator set running) signal: Operates when the generator set has reached 90% of rated speed and voltage and latches until generator set is switched to off or idle mode.

©2019 Cummins Inc. | PDS-1566 | PD00000147 | (01/22)

PowerCommand Human Machine Interface HMI211



Description

This control system includes an intuitive operator interface panel that allows for complete genset control as well as system metering, fault annunciation, configuration and diagnostics. The interface includes five generator set status LED lamps with both internationally accepted symbols and English text to comply with customer needs. The interface also includes an LED backlit LCD display with tactile feel soft-switches for easy operation and screen navigation. It is configurable for units of measurement and has adjustable screen contrast and brightness.

The *run/off/auto* switch function is integrated into the interface panel.

All data on the control can be viewed by scrolling through screens with the navigation keys. The control displays the current active fault and a time-ordered history of the five previous faults.

Features

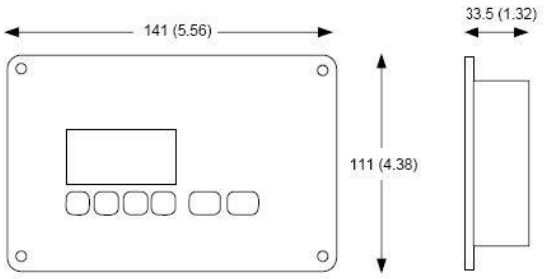
- LED indicating lamps:
  - Remote start
  - Not in auto
  - Shutdown
  - Warning
  - Auto
  - Run
- 128 x 64 pixels graphic LED backlight LCD.
- Four tactile feel membrane switches for LCD defined operation. The functions of these switches are defined dynamically on the LCD.
- Two tactile feel membrane switches dedicated for off and back.
- Allows for complete genset control setup.
- Certifications: Suitable for use on generator sets that are designed, manufactured, tested and certified to relevant UL, NFPA, ISO, IEC, Mil Std., CE, UKCA and CSA standards.
- HMI 211RS provides convenience for residential use.

Communications Connections

PC tool interface - This RS-485 communication port allows the HMI to communicate with a personal computer running InPower.

This RS-485 communication port allows the HMI to communicate with the main control board.

Mechanical Drawing



HMI

Dimensions: mm (inches)

Software

InPower (beyond 6.0 version) is a PC-based software service tool that is designed to directly communicate to PowerCommand generator sets and transfer switches, to facilitate service and monitoring of these products.

Environment

The control is designed for proper operation without recalibration in ambient temperatures from -40 ºC (-40 ºF) to +70º C (158 ºF), and for storage from -55 ºC (-67 ºF) to +80 ºC (176 ºF). Control will operate with humidity up to 95%, non-condensing.

The HMI is designed for proper operation in ambient temperatures from -40 ºC* (-40 ºF) to +70 ºC (158 ºF), and for storage from -40 ºC* (-40 ºF) to +80 ºC (176 ºF).

The control board is fully encapsulated to provide superior resistance to dust and moisture. Display panel has a single membrane surface, which is impervious to effects of dust, moisture, oil and exhaust fumes. This panel uses a sealed membrane to provide long reliable service life in harsh environments.

The control system is specifically designed and tested for resistance to RFI/EMI and to resist effects of vibration to provide a long reliable life when mounted on a generator set. The control includes transient voltage surge suppression to provide compliance to referenced standards.

* Heater accessory (pn: A040H853) is available for enhanced operation below -20 ºC

Certifications

PowerCommand meets or exceeds the requirements of the following codes and standards:

- NFPA 110 for level 1 and 2 systems.
- ISO 8528-4: 1993 compliance, controls and switchgear.
- CE and UKCA marking: The control system is suitable for use on generator sets to be CE and UKCA-marked.
- EN 50081-1,2 residential/light industrial emissions or industrial emissions.
- EN 50082-1,2 residential/light industrial or industrial susceptibility.
- ISO 7637-2, level 2; DC supply surge voltage test.
- Mil Std. 202C, Method 101 and ASTM B117: Salt fog test.
- PowerCommand control systems and generator sets are designed and manufactured in ISO 9001 certified facilities.
- UL 6200 recognized and suitable for use on UL 2200 Listed generator sets.
- CSA C282-M1999 compliance.
- CSA 22.2 No. 14 M91 industrial controls.

©2019 Cummins Inc. | PDS-1566 | PD00000147 | (01/22)

Warranty

All components and subsystems are covered by an express limited one year warranty. Other optional and extended factory warranties and local distributor maintenance agreements are available

Accessories

1301-1302 Upgrade Kit (HM)	0541-1431
PowerCommand 500 (LAN)	A040X126
Remote HMI 211	0541-1394
Remote HMI 211RS	A046K103
I/O Expansion (Aux 101)	0541-1291
HMI Heater Accessory Kit	A040H853

Parts Ordering Information

1302 Control Board	0327-1617-02
1302 control Board – Arrow	A043W505
Aux 104 (Governor Control)	0327-1507
HMI 211 Without Heater	0300-6014
HMI 211 with Heater	A026G237

Additional Resources

Resource	Where to find
1302 Service Manual	QSOL
Accessories Catalog	cumminspower.com
Additional Controls Information	PowerSuite Library

PCCNet COMPATIBLE

For more information contact your local Cummins distributor or visit power.cummins.com

Our energy working for you.™

©2019 Cummins Inc. All rights reserved. Cummins is a registered trademark of Cummins Inc. PowerCommand, AmpSentry, InPower and “Our energy working for you.” are trademarks of Cummins Inc. Other company, product, or service names may be trademarks or service marks of others. Specifications are subject to change without notice.
PDS-1566 | PD00000147 | (01/22)

Alternator data sheet

Frame size: CA115-V14

Characteristics

No of bearings:		1	
Weights:	**Stator assembly**:	289.5 lb	131.3 kg
	Rotor assembly:	147.8 lb	67 kg
	Complete assembly:	437 lb	198 kg
Maximum speed:		2250 rpm	
Insulation system:	Class H throughout		

		60 Hz (winding no)				
		208 (311)	600 (17)	480 (41)	240 (06)	240 (311)
Excitation current:	Full load	2.12	1.89	2.10	1.47	2.12
Excitation current:	No load	0.47	0.45	0.57	0.69	0.47
3 Ø Ratings (0.8 power factor)		208 (311)	600 (17)	480 (41)	240 (06)	240 (311)
(Based on specific temperature rise at 40 °C ambient temperature)						
120 °C Rise peak Standby ratings	kW	40	40	40		40
	kVA	50	50	50		50
105 °C Rise peak Standby ratings	kW	36.6	36.60	36.60		36.6
	kVA	45.75	45.75	45.75		45.75
1 Ø Ratings (1.0 power factor)		208 (311)	600 (17)	480 (41)	240 (06)	240 (311)
(Based on specific temperature rise at 40 °C ambient temperature)						
120 °C Rise peak Standby ratings	kW				36	
	kVA				36	
105 °C Rise peak Standby ratings	kW				33	
	kVA				33	
Reactances (per unit ± 30%)		208 (311)	600 (17)	480 (41)	240 (06)	240 (311)
(Based on full load at 105 °C rise rating)						
Synchronous		2.02	2.06	2.06	1.22	2.02
Transient		0.12	0.12	0.12	0.10	0.12
Subtransient		0.08	0.08	0.08	0.07	0.08
Negative sequence		0.16	0.16	0.16	0.16	0.16
Zero sequence		0.08	0.10	0.09	0.08	0.08
Motor starting		208 (311)	600 (17)	480 (41)	240 (06)	240 (311)
Maximum kVA (90% sustained voltage)						
(At 20°C nominal generator & ambient temperature)						
	(EBS)	150	150	150	112	150
	(Shunt)	95	95	95	68	95

Alternator data sheet

Frame size: CA115-V14

Time constants (sec)	208 (311)	600 (17)	480 (41)	240 (06)	240 (311)
Transient	0.026	0.026	0.026	0.026	0.026
Subtransient	0.006	0.006	0.006	0.006	0.006
Open circuit	0.62	0.62	0.62	0.52	0.62
DC	0.006	0.005	0.005	0.006	0.006
Windings (@ 20° C)	208 (311)	600 (17)	480 (41)	240 (06)	240 (311)
Stator resistance (Ohms per phase)	0.238	0.350	0.518	0.048	0.238
Rotor resistance (Ohms)	0.944	0.944	0.944	0.944	0.944
Number of leads	12	12	12	4	12

Data Sheet

Circuit Breakers

Description

This Data sheet provides circuit breaker manufacturer part numbers and specifications. The Circuit breaker box description is the rating of that breaker box installation on a Cummins Generator. Please refer to the website of the circuit breaker manufacturer for breaker specific ratings and technical information.

Applicable Models

Engine	Models					
Kubota	C10D6	C15D6	C20D6			
QSJ2.4	C20N6	C25N6	C30N6	C30N6H	C36N6	C36N6H
	C40N6	C40N6H	C50N6H	C60N6H		
B3.3	C25D6	C30D6	C35D6	C40D6	C50D6	C60D6
QSJ5.9G	C45N6	C50N6	C60N6	C70N6	C80N6	C100N6
QSJ8.9G	C125N6	C150N6	C175N6B	C200N6B		
QSB5	DSFAC	DSFAD	DSFAE	C50D6C	C60D6C	C80D6C
	C100D6C	C125D6C				
QSB7	DSGAA	DSGAB	DSGAC	DSGAD	DSGAE	
		C125D6D	C150D6D	C175D6D	C200D6D	
QSL9	DSHAD	DQDAA	DQDAB	DQDAC		
QSM11	DQHAB					
QSX15	DFEJ	DFEK				

Instructions

1. Locate the circuit breaker feature code or part number and use the charts below to find the corresponding manufacturer circuit breaker catalog number.

2. Use the first letter of the circuit breaker catalog number to determine the "frame" of the breaker. If the first letter is an “N”, use the second letter. Then follow the corresponding website link from the table below to find the breaker catalog number description.

Please refer to the catalog numbering systems page, which is given in the chart, to understand the nomenclature of the catalog number.

Frame	Catalog name*	Catalog number description page(s)
P	0612CT0101 http://www.schneider-electric.us/en/download/document/0612CT0101/	16-17
H, J, and L	0611CT1001 http://www.schneider-electric.us/en/download/document/0611CT1001/	8-9
Q	0734CT0201 http://www.schneider-electric.us/en/download/document/0734CT0201/	4

*The following link may also be used to search specifically by the breaker part number or for the catalog name listed above. http://products.schneider-electric.us/technical-library/

©2020 Cummins Inc. | NAS-6236-EN (05/25) A056F944

3. Search the catalog by using the first 3 letters of the breaker catalog number and the first 5 numbers to find information such as trip curves, accessories, and dimensional details regarding the circuit breaker.

*If the catalog number starts with “N”, skip the N and begin your search with the second letter.

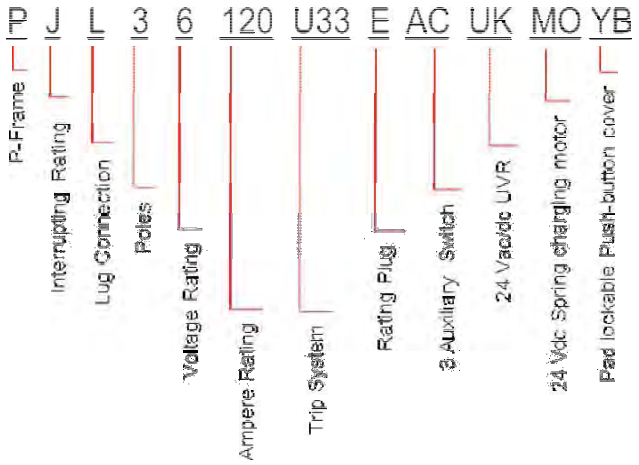
*If the first 3 letters are “PJP,” the search will not work. You will need to start with just “PJ” and use the description pages to obtain the information you are looking for on the “PJP.”

Example

After finding your circuit breaker catalog number to be "PJL36120U33EACUKMOYB," navigate to the P-frame catalog by using the link provided.

Look at pages 16-17 of the pdf catalog to find the nomenclature of the breaker.

Search the P-frame spec sheet using the search "PJL36120.”



©2022 Cummins Inc. | NAS-6236-EN (05/25) A056F944

EXHIBIT K

Feature Code	Breaker Box Description	Cummins Part #	Manufacturer	Breaker Catalog Number	Trip Unit	Plug Type
KV10-2	CB,Loc A,50A,2P,600VAC,80%,UL	A043E181	Schneider Electric	HDL26050	Thermal Magnetic	N/A
KV11-2	CB,Loc A,60A,2P,600VAC,80%,UL	A043E179	Schneider Electric	HDL26060	Thermal Magnetic	N/A
KV12-2	CB,Loc A,70A,2P,600VAC,80%,UL	A043E169	Schneider Electric	HDL26070	Thermal Magnetic	N/A
KV13-2	CB,Loc A,80A,2P,600VAC,80%,UL	A043D328	Schneider Electric	HDL26080	Thermal Magnetic	N/A
KV14-2	CB,Loc A,90A,2P,600VAC,80%,UL	A043D326	Schneider Electric	HDL26090	Thermal Magnetic	N/A
KV15-2	CB,Loc A,100A,2P,600VAC,80%,UL	A043D324	Schneider Electric	HDL26100	Thermal Magnetic	N/A
KV16-2	CB,Loc A,125A,2P,600VAC,80%,UL	A043D274	Schneider Electric	HDL26125	Thermal Magnetic	N/A
KV17-2	CB,Loc A,150A,2P,600VAC,80%,UL	A043C676	Schneider Electric	HDL26150	Thermal Magnetic	N/A
KV18-2	CB,Loc A,175A,2P,600VAC,80%,UL	A043E202	Schneider Electric	JDL26175	Thermal Magnetic	N/A
KV19-2	CB,Loc A,200A,2P,600VAC,80%,UL	A043E199	Schneider Electric	JDL26200	Thermal Magnetic	N/A
KV20-2	CB,Loc A,225A,2P,600VAC,80%,UL	A043E195	Schneider Electric	JDL26225	Thermal Magnetic	N/A
KV21-2	CB,Loc A,250A,2P,600VAC,80%,UL	A043E193	Schneider Electric	JDL26250	Thermal Magnetic	N/A
KV30-2	CB,Loc A,15A,3P,600VAC,80%,UL	A043L506	Schneider Electric	HDL36015	Thermal Magnetic	N/A
KV31-2	CB,Loc A,20A,3P,600VAC,80%,UL	A043L480	Schneider Electric	HDL36020	Thermal Magnetic	N/A
KV32-2	CB,Loc A,25A,3P,600VAC,80%,UL	A043L508	Schneider Electric	HDL36025	Thermal Magnetic	N/A
KV33-2	CB,Loc A,30A,3P,600VAC,80%,UL	A043L475	Schneider Electric	HDL36030	Thermal Magnetic	N/A
KV34-2	CB,Loc A,40A,3P,600VAC,80%,UL	A043L464	Schneider Electric	HDL36040	Thermal Magnetic	N/A

©2022 Cummins Inc. | NAS-6236-EN (05/25) A056F944

Cooling system data
C36 N6

High ambient air temperature radiator cooling system

	Fuel type	Duty	Rating (Kw)	Max cooling @ air flow static restriction, unhoused (inches water/mm water)					Housed in free air, no air discharge restriction	
				0.0/0.0	0.25/6.4	0.5/12.7	0.75/19.1	1.0/25.4	F231	F217
				Maximum allowable ambient temperature, degree C						
60 Hz	Natural Gas	Standby	36	55	55	55	N/A	N/A	55	55

High ambient air temperature radiator cooling system

	Fuel type	Duty	Rating (Kw)	Max cooling @ air flow static restriction, unhoused (inches water/mm water)					Housed in free air, no air discharge restriction	
				0.0/0.0	0.25/6.4	0.5/12.7	0.75/19.1	1.0/25.4	F231	F217
				Maximum allowable ambient temperature, degree C						
60 Hz	Propane	Standby	36	55	55	55	N/A	N/A	55	55

Notes:

1. Data shown are anticipated cooling performance for typical generator set.
2. Cooling data is based on 1000 ft (305 m) site test location.
3. Generator set power output may need to be reduced at high ambient conditions. Refer generator set data sheet for derate schedules.
4. Cooling performance may be reduced due to several factors including but not limited to: Incorrect installation, improper operation, fouling of the cooling system, and other site installation variables.

Sound Data
C36 N6
QSJ2.4 60Hz

Sound Pressure Level @ 7 meters, dB(A)

See notes 1-6 listed below

Configuration		Position (note 1)								8 Position Average
		1	2	3	4	5	6	7	8	
Standard – unhoused	Infinite Exhaust	77.9	79.7	76.2	76.1	75.1	78.4	77.6	76.5	77.4
F231-2 – sound attenuated level 1	Mounted	71.0	68.8	65.2	65.2	65.7	65.8	65.0	67.6	67.3
F217-2 – sound attenuated level 2	Mounted	65.4	67.2	64.8	65.7	65.8	66.6	63.8	64.5	65.6

Sound Power Level, dB(A)

See notes 2-4, 7, 8 listed below

Configuration		Octave band center frequency (Hz)										Overall Sound Power Level
		31.5	63	125	250	500	1000	2000	4000	8000	16000	
Standard – unhoused	Infinite Exhaust	45.9	63.8	76.0	87.4	100.8	99.7	96.5	95.3	93.2	85.5	105.1
F231-2 – sound attenuated level 1	Mounted	49.1	75.7	77.7	87.8	89.8	85.1	83.5	81.0	81.1	73.5	95.0
F217-2 – sound attenuated level 2	Mounted	49.6	77.3	76.4	87.9	91.2	86.9	84.5	83.5	83.3	72.1	94.1

Exhaust Sound Power Level, dB(A)

See notes 2, 9 listed below

Open Exhaust (no muffler) @ rated load	Octave band center frequency (Hz)										Overall Sound Power Level
	31.5	63	125	250	500	1000	2000	4000	8000	16000	
	36.9	80.3	93.4	104.1	99.9	104.3	106.1	102.7	100.7	93.7	111.4

Note:

1. Position 1 faces the generator front per ISO 8528-10. The positions proceed around the generator set in a counter-clockwise direction in 45° increments. All position are at 7 m (23 ft) from surface of the generator set and 1.2 m (48 in.) from floor level.
2. Sound levels are subject to instrumentation, measurement, installation and manufacturing variability.
3. Data based on full rated load.
4. Sound data with generator sets with infinite exhaust do not include exhaust noise.
5. Sound pressure levels are measured per ANSI S1.13 and ANSI S12.18, as applicable.
6. Reference sound pressure is 20 µPa.
7. Sound power levels per ISO 3744 and ISO 8528-10, as applicable.
8. Reference power = 1 pw (10^{-12} W).
9. Exhaust sound power levels are per ISO 6798, as applicable.

EXHIBIT K

Exhaust emission data sheet
C36 N6
60 Hz Spark ignited generator set
EPA emissions

Engine information:			
Model:	QSJ2.4	Bore:	3.41 in. (86.5 mm)
Type:	4 cycle, in-line, 4 cylinder	Stroke:	3.94 in. (100 mm)
Aspiration:	Naturally aspirated	Displacement:	146.46 cu. in. (2.4 liters)
Compression ratio:	9.5:1		
Emission control device:	Electronic air/fuel ratio control, and closed-loop breather system.		

	Natural gas	Propane
Performance data	**Standby**	**Standby**
BHP @ 1800 RPM (60 Hz)	70	70
Fuel consumption (SCFH)	472.3	182.7
Air to fuel ratio	14.4	14.6
Exhaust gas flow (CFM)	269.2	225.9
Exhaust gas temperature (°F)	1400	1475
Exhaust emission data		
HC (Total unburned hydrocarbons)*	39	419
NOx (Oxides of nitrogen as NO2)	1260	1188
CO (Carbon monoxide)	9972	17657
		Values are ppmvd
HC (Total unburned hydrocarbons)*	0.06	0.52
NOx (Oxides of nitrogen as NO2)	5.09	4.04
CO (Carbon monoxide)	29.30	42.43
		Values are Grams per HP-Hour

*HC includes all NMHC, VOC, POC, and ROC constituents (Non-Methane HC, Volatile Organic Compounds, Precursor Organic Compounds, and Reactive Organic Compounds).

Test conditions

Data was recorded during steady-state rated engine speed (± 25 RPM) with full load (± 2%). Pressures, temperatures, and emission rates were stabilized.

Fuel specification:

Natural gas	Dry gas as received from Supplier (1000 BTU/SCF).
Propane	Meets the requirements for Commercial Grade Propane under the ASTM D1835 Standard Specification for Liquefied Gases
Fuel temperature	60 ± 9 °F at Flow Transmitter
Fuel pressure	14.73 PSIA ± 0.5 PSIA at Flow Transmitter
Intake air temperature:	77 ± 9 °F at inlet
Barometric pressure:	29.92 in. Hg ± 1 in. Hg
Humidity:	NOx measurement corrected to 75 grains H2O/lb dry air

The NOx, HC, and CO emission data tabulated here were from a single engine under the test conditions shown above. These data are subjected to instrumentation and engine-to-engine variability. Field emission test data are not guaranteed to these levels. Actual field test results may vary due to test site conditions, installation, fuel specification, test procedures and instrumentation. Engine operation with excessive air intake or exhaust restriction beyond published maximum limit, or with improper maintenance, may results in elevated emission levels.

EXHIBIT K

2024 EPA Exhaust Emission Compliance Statement

C36 N6

Standby

60 Hz Spark Ignited Generator Set

Compliance Information:

The engine used in this generator set complies with U.S. EPA emissions regulations under the provisions of 40 CFR Part 60, Stationary Emergency Spark-Ignited emissions limits when tested on 6 mode cycle of Part 90.

Engine Manufacturer:	Cummins Inc.
EPA Certificate Number:	RCEXB02.4AAA-002
Effective Date:	8/21/2023
Date Issued:	8/21/2023
EPA Engine Family (Cummins Emissions Family):	RCEXB02.4AAA

Engine Information:

Model:	QSJ2.4	Bore:	3.41 in. (86 mm)
Engine Nameplate HP:	70	Stroke:	3.94 in. (100 mm)
Type:	4 Cycle, In-Line, 4 Cylinder	Displacement:	146.5 cu. in. (2 liters)
Aspiration:	Turbocharged Aftercooled	Compression Ratio:	9.5:1
Emission Control Device:	Electronic Air/Fuel Ratio Control and Closed-Loop Breather System		

U.S. Environmental Protection Agency Station Emergency SI Emission Limits

	Grams per BHP-hr		Grams per kW_m-hr	
Natural Gas	**NOx + NMHC**	**CO**	**NOx + NMHC**	**CO**
EPA Emissions Limit	10.0	387	13.4	519

	Grams per BHP-hr		Grams per kWm-hr	
Propane (LP)	**NOx + THC**	**CO**	**NOx + THC**	**CO**
EPA Emissions Limit	10.0	387	13.4	519

Tests conducted using alternate methods, instrumentation, fuel or reference conditions can yield different results.

Engine operation with excessive air intake or exhaust restriction beyond published maximum limits, or with improper maintenance, may result in elevated emission levels.

VMC GROUP
THE POWER OF TOGETHER

CERTIFICATE OF COMPLIANCE
SEISMIC DESIGN OF NONSTRUCTURAL COMPONENTS AND SYSTEMS

Certification No.

VMA-51070-01C (Revision 11)

Expiration Date: 4/30/2026

Certification Parameters:

The nonstructural products (mechanical and/or electrical components) listed on this certificate are CERTIFIED[1] FOR SEISMIC APPLICATIONS in accordance with the following building code[2] releases.

IBC 2018, 2015, 2012

The following model designations, options, and accessories are included in this certification. Reference report number VMA-51070-01 as issued by VMC Group for a complete list of certified models, included accessories/options, and certified installation methods.

Cummins Power Generation, Inc.; Gas Generators
C20-200N6 Series; 20kW - 200kW

The above referenced equipment is **APPROVED** for seismic application when properly installed[3], used as intended, and contains a Seismic Certification Label referencing this Certificate of Compliance[4]. As limited by the tabulated values, below grade, grade, and roof-level installations, installations in essential facilities, for life safety applications, and/or of equipment containing hazardous contents are permitted and included in this certification with an Equipment Importance Factor assigned as I_p=1.5. The equipment is qualified by successful seismic shake table testing at the nationally recognized Dynamic Certification Laboratories under the review of the ISO Accredited Product Certification Agency, the VMC Group.

Certified Seismic Design Levels			
Certified **IBC**	**Importance $I_p \leq 1.5$** Soil Classes A-E Risk Categories I-IV Design Categories A-F	z/h ≤ 1.0	z/h = 0.0
		$S_{DS} \leq 2.500$ g	$S_{DS} \leq 2.500$ g

Certified Seismic Installation Methods
Rigid Mounting From Unit Base To Rigid Structure

HEADQUARTERS
113 Main Street
Bloomingdale, NJ 07403
Phone: 973.838.1780
Toll Free: 800.569.8423
Fax: 973.492.8430

CALIFORNIA
180 Promenade Circle
Suite 300
Sacramento, CA 95834
Phone: 916.634.7771

TEXAS
11930 Brittmoore Park Drive
Houston, TX 77041
Phone: 713.466.0003
Fax: 713.466.1355

thevmcgroup.com

VMC GROUP
THE POWER OF TOGETHER

CERTIFICATE OF COMPLIANCE

SEISMIC DESIGN OF NONSTRUCTURAL COMPONENTS AND SYSTEMS

Certified Product Table:

Model	Max Rating [kW]	Max Depth [in]	Max Width [in]	Max Height [in]	Max Weight [lb]
C20N6	20	82	34	46	1,110
C22N6	22				1,150
C25N6	25				
C30N6, C30N6H	30				1,300
C36N6, C36N6H	36	104			1,380
C40N6, C40N6H	40				1,420
C45N6, C45N6H	45				2,580
C50N6, C50N6H	50				2,600
C60N6, C60N6H	60				2,900
C70N6	70	136	40	58	2,870
C80N6	80				3,030
C100N6	100				3,170
C125N6	125	160		72	3,770
C150N6	150				4,350
C175N6, C200N6	200				4,663
C200N6				83	4,140

Note: "H" indicates high speed (3600RPM, as opposed to the standard 1800RPM)
Note: Dimensions and Weight include sound level 2 (SL2) enclosure baffle

Group	Type	S_{DS} (z/h=0)	S_{DS} (z/h=1)	A_{Flex-H}	A_{Rig-H}	A_{Flex-V}	A_{Rig-V}	F_p/W_p
Seismic	AC156	2.500	2.500	4.000	3.000	1.667	0.667	1.875

This certification includes the open generator set and the enclosed generator set. The generator set and included options shall be a catalogue design and factory supplied. The generator set and applicable options shall be installed an attached to the building structure per the manufacturer supplied seismic installation instructions. This certification excludes all non-factory supplied accessories, including but not limited to mufflers, isolation/restraint devices, remote control panels, remote radiators, pumps and other electrical/mechanical components.

IBC CERTIFIED VMC GROUP

VMA-51070-01C (Revision 11)
Issue Date: Friday, July 3, 2015
Revision Date: Friday, April 28, 2023
Expiration Date: Thursday, April 30, 2026

VMC GROUP
THE POWER OF TOGETHER

CERTIFICATE OF COMPLIANCE
SEISMIC DESIGN OF NONSTRUCTURAL COMPONENTS AND SYSTEMS

Notes & Comments:

1. All equipment listed herein successfully passed the seismic acceptance criteria for shake testing non-structural components and systems as set forth in the ICC AC-156. The Test Response Spectrum (TRS) enveloped the Required Response Spectrum (RRS) for all units tested. The tested units were representative sample(s) of a contingent of models and all remained captive and structurally sound after the seismic shake simulation. The units also remained functionally operational after the simulation testing as functional testing was completed by the equipment manufacturer before and after the seismic simulations. Although a seismic qualified unit inherently contains some wind resisting capacity, that capacity is undetermined and is excluded from this certification. Snow/Ice loads have been neglected and thus limit the unit to be installed both indoors (covered by an independent protective structure) and out of doors (exposed to accumulating snow/ice) for ground snow loads no greater than 30 psf for all applications.

2. The following building codes are addressed under this certification:
   IBC 2018 referencing ASCE7-16 and ICC-ES AC-156
   IBC 2015 referencing ASCE7-10 and ICC-ES AC-156
   IBC 2012 referencing ASCE7-10 and ICC-ES AC-156

3. Refer to the manufacturer supplied installation drawings for anchor requirements and mounting considerations for seismic applications. Required anchor locations, size, style, and load capacities (tension and shear) may be specified on the installation drawings or specified by a 3rd party. Mounting requirement details such as anchor brand, type, embedment depth, edge spacing, anchor-to-anchor spacing, concrete strength, special inspection, wall design, and attachment to non-building structures must be outlined and approved by the Engineer of Record for the project or building. Structural walls, structural floors, and housekeeping pads must also be seismically designed and approved by the project or building Structural Engineer of Record to withstand the seismic anchor loads as defined on the installation drawings. The installing contractor is responsible for ensuring the proper installation of all anchors and mounting hardware.

4. For this certificate and certification to remain valid, this certificate must correspond to the "Seismic Certification Label" found affixed to the unit by the factory. The label ensures the manufacturer built the unit in conformance to the IBC seismic design criteria set forth by the Certified Seismic Qualification Agency, the VMC Group, and meets the seismic design levels claimed by this certificate.

5. Mechanical, Electrical, and Plumbing connections to the equipment must be flexibly attached as to not transfer load through the connection. The structural integrity of any conduit, cable trays, piping, ductwork and/or flexible connections is the responsibility of others. This certification makes no statements of compliance in regards to NEMA, IP, UL, CSA, or other relevant standards after a seismic event. For compliance to other relevant standards, please contact the manufacturer.

6. This certificate applies to units manufactured at:
   Cummins Power Generation Inc., 1400 73rd Ave. NE, Minneapolis, MN 55432

7. This certification follows the VMC Group's ISO-17065 Scheme.

John P. Giuliano, PE
President, VMC Group

IAS ACCREDITED Product Certification Agency

VMA-51070-01C (Revision 11)
Issue Date: Friday, July 3, 2015
Revision Date: Friday, April 28, 2023
Expiration Date: Thursday, April 30, 2026

IBC CERTIFIED VMC GROUP

EXHIBIT K

Prototype Test Support (PTS)
60 Hz test summary

Generator set models

C20 N6, C22 N6, C25 N6, C30 N6, C36 N6, C40 N6, C30 N6H, C36 N6H, C40 N6H, C45 N6H, C50 N6H, C60 N6H

Representative prototype

Model: C40 N6H
Alternator: CA115-T12
Engine: QSJ2.4

The following summarizes prototype testing conducted on the designated representative prototype of the specified models. This testing is conducted to verify the complete generator set electrical and mechanical design integrity. Prototype testing is conducted only on generator sets not sold as new equipment.

Maximum surge power: 52.3 kW

The generator set was evaluated to determine the stated maximum surge power.

Maximum motor starting: 76 kVA

The generator set was tested to simulate motor starting by applying the specified kVA load at low lagging power factor (0.4 or lower). With this load applied, the generator set recovered to a minimum of 90% rated voltage.

Alternator temperature rise:

The highest rated temperature rise (120 °C) test results are reported as follows to verify that worst case temperature rises do not exceed allowable NEMA MG1 limits for class H insulation. Tests were conducted per IEEE 115, rise by resistance and embedded detector, with the rated voltages. Only the highest temperatures are reported.

Location	Maximum rise (ºC)
Alternator stator	103
Alternator rotor	101
Exciter stator	53
Exciter rotor	65

Torsional analysis and testing:

The generator set was tested to verify that the design is not subjected to harmful torsional stresses. A spectrum analysis of the transducer output was conducted over the speed range of 1650 to 1950 RPM.

Cooling system: 50 °C ambient
0.5 in. H_2O restriction

The cooling system was tested to determine ambient temperature and static restriction capabilities. The test was performed at full rated load in elevated ambient temperature under static restriction conditions.

Durability:

The generator set was subjected to a minimum 1000 hour endurance test operating at variable load up to the Standby rating based upon MIL-STD-705 to verify structural soundness and durability of the design.

Electrical and mechanical strength:

The generator set was tested to several single phase and three phase faults to verify that the generator can safely withstand the forces associated with short circuit conditions. The generator set was capable of producing full rated output at the conclusion of the testing.

Steady state performance:

The generator set was tested to verify steady state operating performance was within the specified maximum limits.

Voltage regulation:	± 1%
Random voltage variation:	± 1%
Frequency regulation:	± 0.25%
Random frequency variation:	± 0.25%

Transient performance:

The generator set was tested to verify single step loading capability as required by NFPA 110 and verify acceptable voltage and frequency response on load addition or rejection. The following results were recorded at 0.8 power factor :

Full load acceptance:

Voltage dip:	14.4%
Recovery time:	2.6 seconds
Frequency dip:	4.6%
Recovery time:	2.7 seconds

Full load rejection:

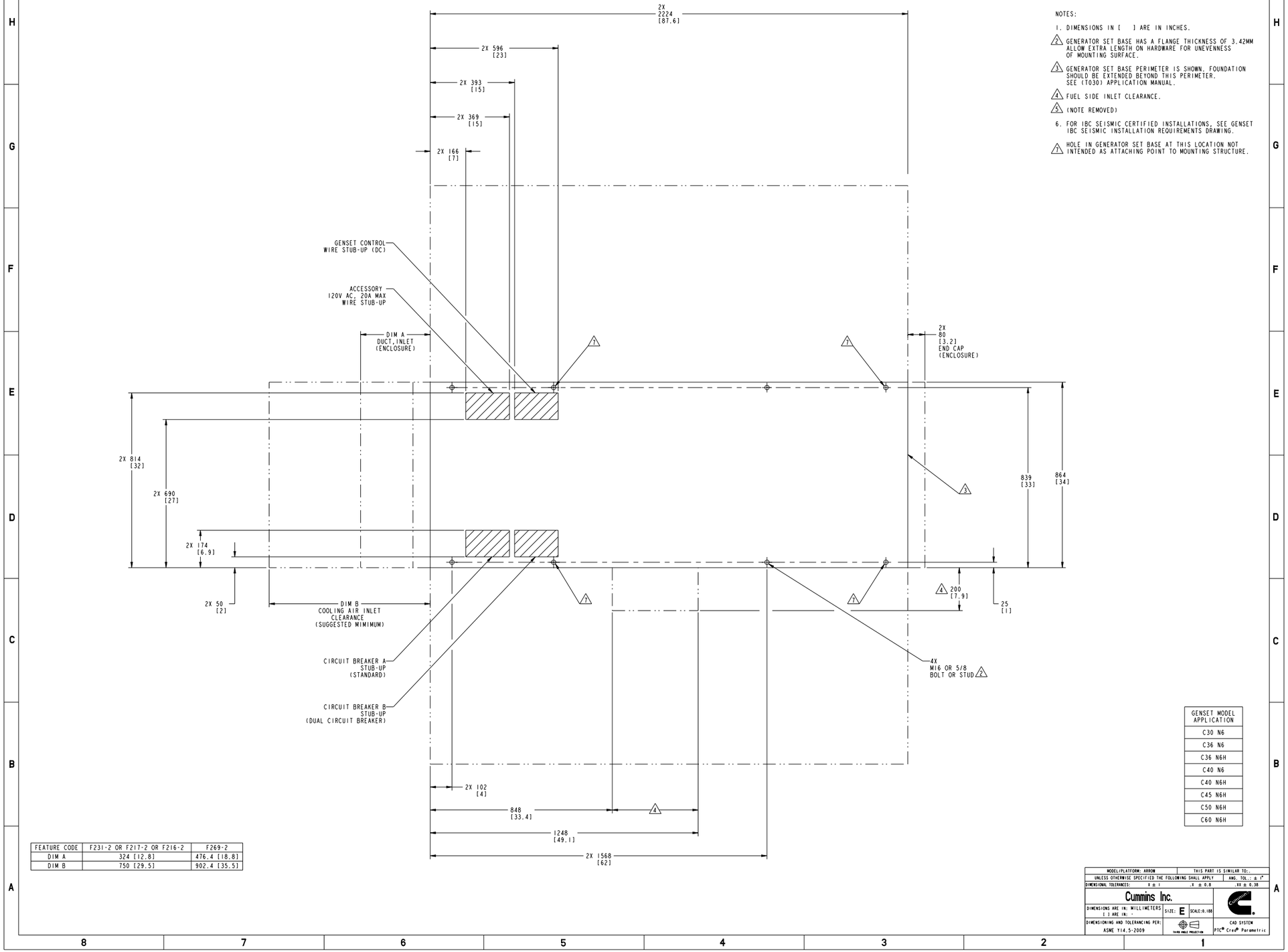
Voltage rise:	11.5%
Recovery time:	3.4 seconds
Frequency rise:	5.6%
Recovery time:	3.4 seconds

Harmonic analysis:

(per MIL-STD-705B, method 601.4)

	Line to Line		Line to Neutral	
Harmonic	No load	Full load	No load	Full load
3	0.3	3.5	0.3	3.2
5	1.1	1.0	0.9	0.9
7	0.7	0.4	0.7	0.3
9	0.0	0.5	0.0	0.4
11	0.2	0.1	0.1	0.1
13	0.1	0.1	0.0	0.0
15	0.0	0.1	0.0	0.1

EXHIBIT K



NOTES:

1. DIMENSIONS IN [ ] ARE IN INCHES.
2. GENERATOR SET BASE HAS A FLANGE THICKNESS OF 3.42MM ALLOW EXTRA LENGTH ON HARDWARE FOR UNEVENNESS OF MOUNTING SURFACE.
3. GENERATOR SET BASE PERIMETER IS SHOWN, FOUNDATION SHOULD BE EXTENDED BEYOND THIS PERIMETER. SEE (T030) APPLICATION MANUAL.
4. FUEL SIDE INLET CLEARANCE.
5. (NOTE REMOVED)
6. FOR IBC SEISMIC CERTIFIED INSTALLATIONS, SEE GENSET IBC SEISMIC INSTALLATION REQUIREMENTS DRAWING.
7. HOLE IN GENERATOR SET BASE AT THIS LOCATION NOT INTENDED AS ATTACHING POINT TO MOUNTING STRUCTURE.

GENSET MODEL APPLICATION
C30 N6
C36 N6
C36 N6H
C40 N6
C40 N6H
C45 N6H
C50 N6H
C60 N6H

FEATURE CODE	F231-2 OR F217-2 OR F216-2	F269-2
DIM A	324 [12.8]	476.4 [18.8]
DIM B	750 [29.5]	902.4 [35.5]

MODEL/PLATFORM: ARROW		THIS PART IS SIMILAR TO:
UNLESS OTHERWISE SPECIFIED THE FOLLOWING SHALL APPLY		ANG. TOL.: ± 1°
DIMENSIONAL TOLERANCES:	X ± 1	.X ± 0.8 .XX ± 0.30
Cummins Inc.		
DIMENSIONS ARE IN: MILLIMETERS [ ] ARE IN:	SIZE: E	SCALE:0.180
DIMENSIONING AND TOLERANCING PER: ASME Y14.5-2009	THIRD ANGLE PROJECTION	CAD SYSTEM PTC® Creo® Parametric

Document Generated: **13MAY2021 14:20 GMT**

Cummins Data Classification:
Cummins Confidential

This document (and the information shown thereon) is **Confidential and Proprietary** and shall not be disclosed to others in hard copy or electronic form, reproduced by any means, or used for any purpose without written consent of Cummins Inc.

Part Number: **A044T182** Part Revision: **H**

Part Name: **OUTLINE,GENSET**

Drawing Category: **Detail** State: **Released**

EXHIBIT K

PTC® Creo® Parametric

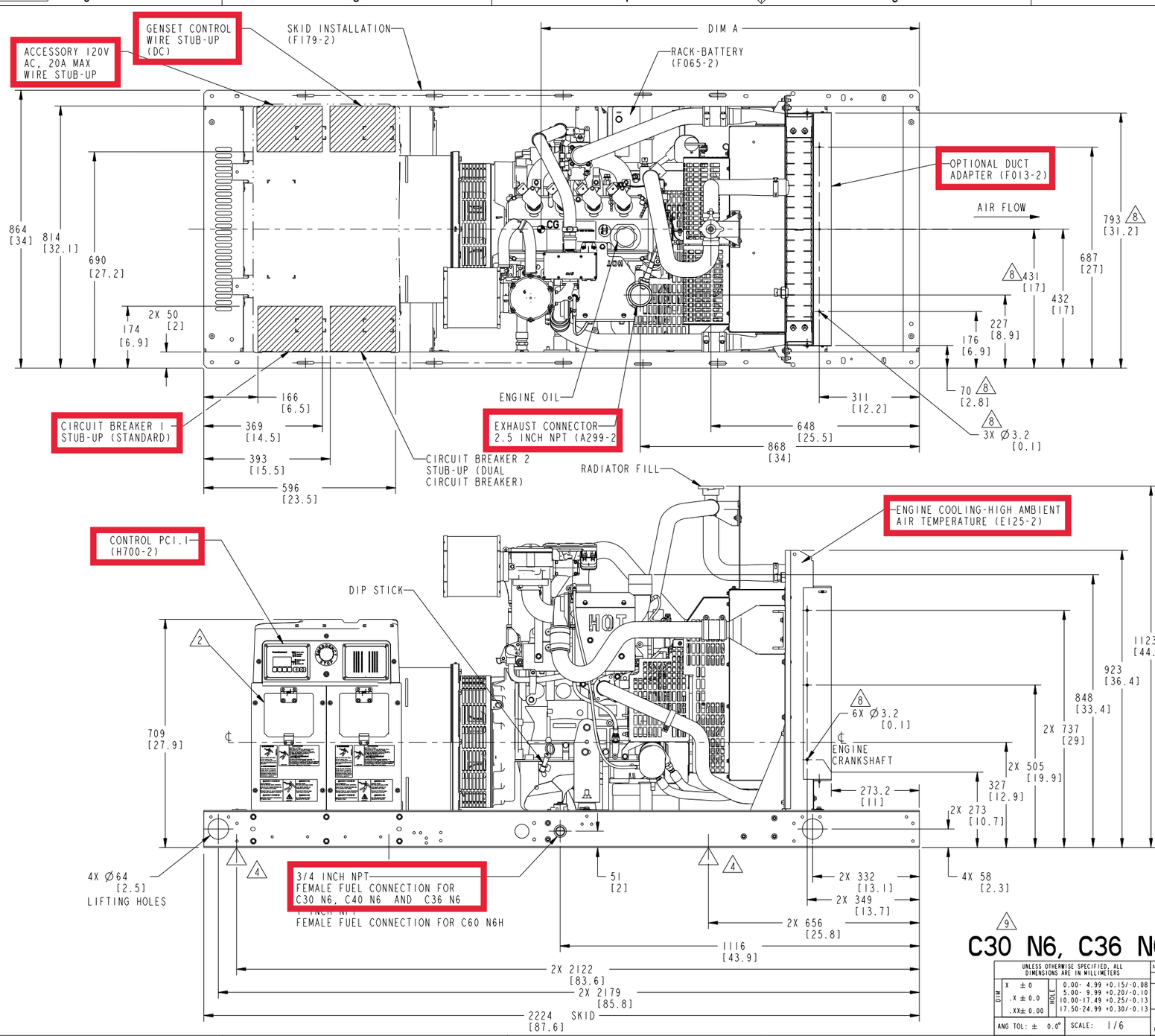
REL NO	LTR	NO	REVISION	DWN	CKD	APVD	DATE
ECO-163223	F	1	ZONE C2, ADD NOTE 9	RP	JP	J.BUTLER	04JUL16

NOTES:

1. DIMENSIONS SHOWN IN [ ] ARE IN INCHES.
2. REFER TO CIRCUIT BREAKER OUTLINE DRAWING FOR ELECTRICAL STUB-UP AREA FOR SPECIFIC BREAKERS.
3. CONTROL INTERFACE CONNECTIONS SHOULD BE MADE WITH FLEXIBLE CONNECTIONS.
4. Ø21 [0.8] HOLES MARKED BY △ FOR SECURING TO MOUNTING SURFACE.
5. OIL DRAIN EXTENSION: 3/8 INCH HOSE ID.
6. FOR IBC SEISMIC CERTIFIED INSTALLATION, SEE GENSET IBC SEISMIC INSTALLATIION REQUIREMENT DRAWING.
7. DRY WEIGHT = WET WEIGHT-16 KG (35 LB).
8. Ø3.2 HOLES FOR CUSTOMER-SUPPLIED COOLING EXHAUST AIR DUCT ADAPTER.
9. C30 N6 MODEL IS ONLY TURBOCHARGED, NOT AFTER-COOLED.

TABULATION

ALT DATA SHEET #	DIM A	DIM B	GENSET WET WEIGHT KG	GENSET WET WEIGHT LB
ADS-574	1140	401	498	1097
ADS-576	1153	384	508	1119
ADS-579	1189	395	536	1182
ADS-581	1213	391	574	1266
ADS-584	1218	390	597	1317



UNLESS OTHERWISE SPECIFIED, ALL DIMENSIONS ARE IN MILLIMETERS

DIM		HOLE	
	X ± 0		0.00- 4.99 +0.15/-0.08
	.X ± 0.0		5.00- 9.99 +0.20/-0.10
	.XX± 0.00		10.00-17.49 +0.25/-0.13
			17.50-24.99 +0.30/-0.13

ANG TOL: ± 0.0° SCALE: 1/6

SIM to NONE
DO NOT SCALE PRINT
- CONFIDENTIAL - PROPERTY OF CUMMINS POWER GENERATION GROUP

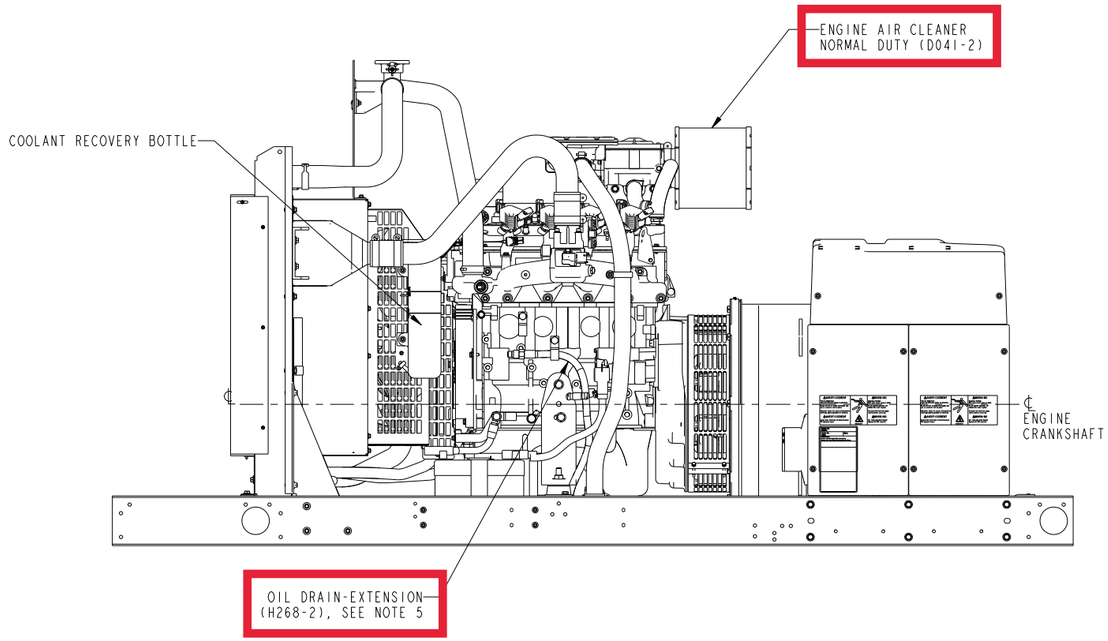
DWN V_MOHITE
CKD I_VOLETY
APVD D_GILLETT
DATE 22MAY13
FIRST USED ON ARROW
FOR INTERPRETATION OF DIMENSIONING AND TOLERANCING, SEE ASME Y14.5M-1994

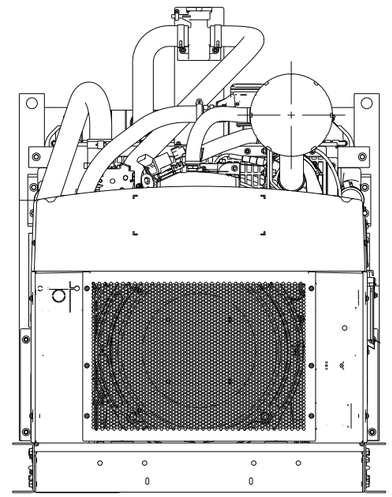
CUMMINS POWER GENERATION
SITE CODE PGF
OUTLINE,GENSET
DWG SIZE D A045C217 SHEET 1 of 2 DWG REV F

Drawing Name: A045C218 Revision: F
Part Name: A045C217 Revision: F
ECO-163223 Sheet 1 of 3

PTC® Creo® Parametric

REL NO	LTR	NO	REVISION	DWN	CKD	APVD	DATE
ECO-163223	F	-	---	RP	JP	J.BUTLER	04JUL16





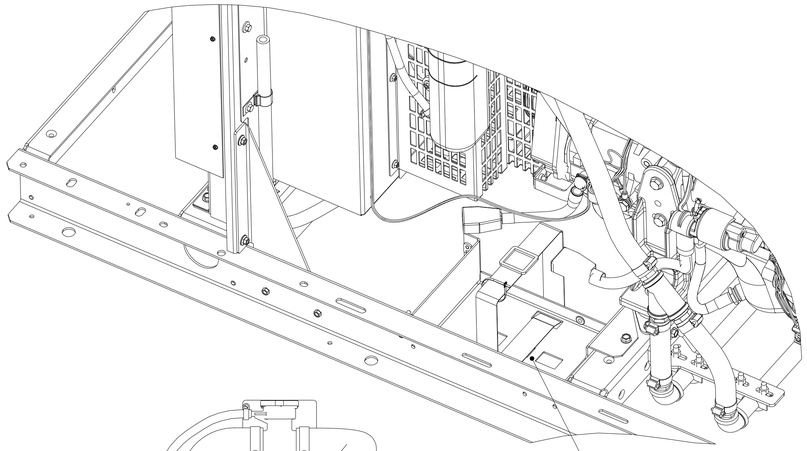
△9

C30 N6, C36 N6, C40 N6, C60 N6H

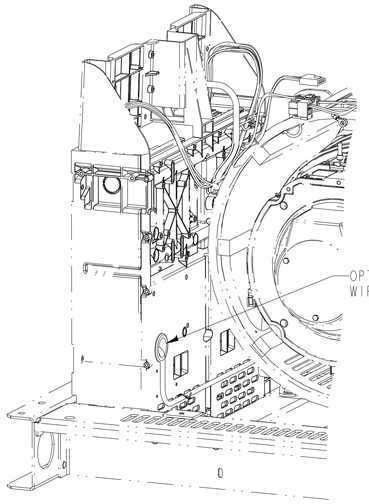
UNLESS OTHERWISE SPECIFIED, ALL DIMENSIONS ARE IN MILLIMETERS			SIM TO NONE	DWN V_MOHITE	CUMMINS POWER GENERATION
DIM: X ±0 / .X ±0.0 / .XX±0.00	HOLE: 0.00-4.99 +0.15/-0.08; 5.00-9.99 +0.20/-0.10; 10.00-17.49 +0.25/-0.13; 17.50-24.99 +0.30/-0.13		DO NOT SCALE PRINT	CKD I_VOLETY	OUTLINE,GENSET
ANG TOL: ± 0.0°	SCALE: 1/6		- CONFIDENTIAL - PROPERTY OF CUMMINS POWER GENERATION GROUP	APVD D_GILLETT DATE 22MAY13 FOR INTERPRETATION OF DIMENSIONING AND TOLERANCING, SEE ASME Y14.5M-1994	FIRST USED ON ARROW	SITE CODE PGF	DWG SIZE D A045C217 SHEET 2 or 2 DWG REV F

PTC® Creo® Parametric

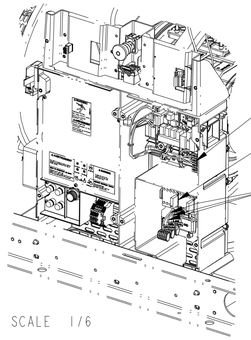
REL NO	LTR	NO	REVISION	DWN	CKD	APVD	DATE
ECO-149443	E	3	ZONE D5; ADDED VIEW TO SHOW LARGER BATTERY TRAY OPTION (F253-2)	-	-	-	-
				DKS	MMJ	M. JAWALE	20JAN15
		4	ZONE A2; 500W COOLANT HTR OPTION WAS (H036-2), ADDED 1000W COOLANT HTR OPTION (E154-2)	-	-	-	-
				-	-	-	-
				DKS	MMJ	M. JAWALE	20JAN15



LARGER BATTERY TRAY (F253-2)



OPTIONAL AC DEVICE WIRE ENTRY



AUX SIGNALS (KS53-2)

RELAYS (KS52-2)

AC TERMINAL CONNECTIONS (ALT HTR, BATT CHARGER, COOLANT HTR)

SCALE 1/6

EXHAUST CONNECTOR 2.5 INCH NPT- MALE (A299-2)

LOW COOLANT SHUTDOWN (H389-2) / WARNING(SENSOR) (H527-2)

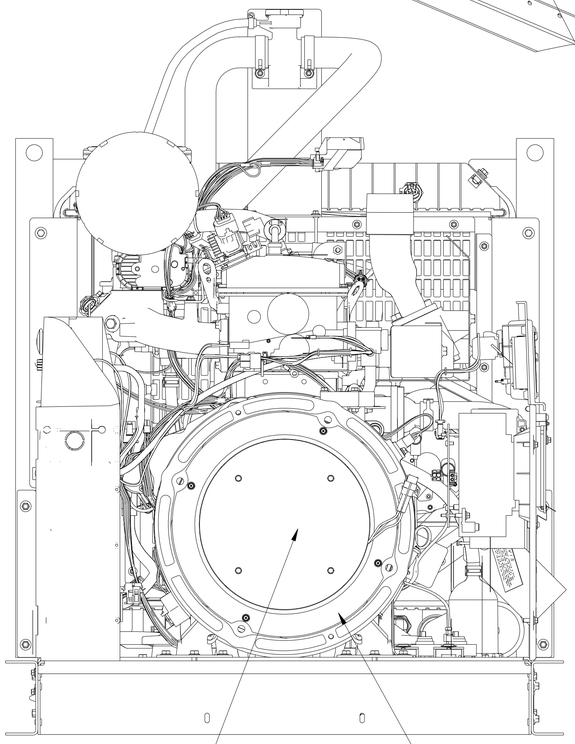
DUCT ADAPTER - RADIATOR OUTLET (F013-2)

STOP SWITCH EMERGENCY (K796-2)

SIGNALS-AUX, I/O (KS53-2)

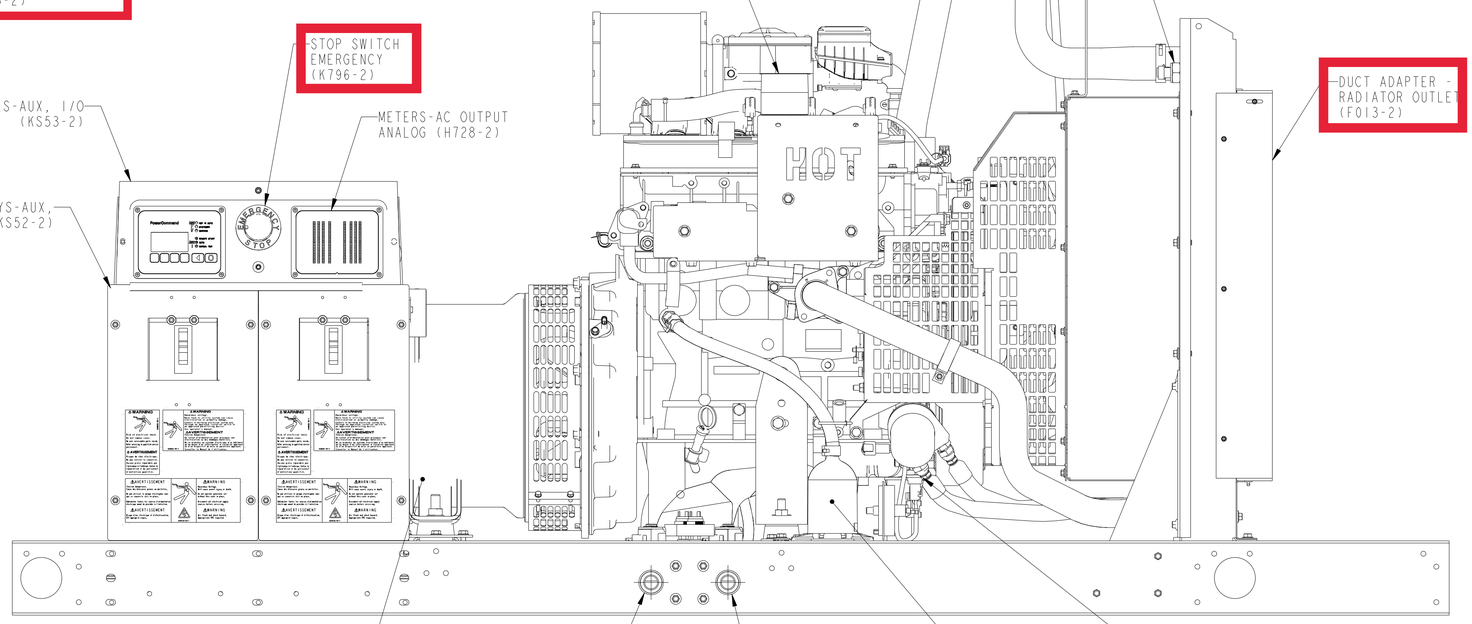
METERS-AC OUTPUT ANALOG (H728-2)

RELAYS-AUX, QTY 2 (KS52-2)



EXCITER/REG-PMG/EBS (B184-2 OR B979-2)

ALTERNATOR HEATER 120V, 30W, 1PH 120V, 100W, 1PH (A292-2)



BATTERY CHARGER (B927-2) (FAR SIDE)

3/4 INCH NPT-FEMALE FUEL CONNECTION NATURAL GAS

3/4 INCH NPT-FEMALE FUEL CONNECTION PROPANE

COOLANT HTR 120V, 500W, 1PH (E153-2) 120V, 1000W, 1PH (E154-2)

ENGINE OIL PROTECTION/ PRESSURE GAUGE (H012-2)

DOME AND MESH REMOVED FOR CLARITY

C30 N6, C36 N6, C40 N6, C36 N6H, C40 N6H, C45 N6H, C50 N6H

UNLESS OTHERWISE SPECIFIED, ALL DIMENSIONS ARE IN MILLIMETERS

DIM: X ± 1; .X ± 0.8; .XX ± 0.38

HOLE: 0.00- 4.99 +0.15/-0.08; 5.00- 9.99 +0.20/-0.10; 10.00-17.49 +0.25/-0.13; 17.50-24.99 +0.30/-0.13

ANG TOL: ± 0.5° SCALE: 1/4

SIM TO NONE

DO NOT SCALE PRINT

- CONFIDENTIAL - PROPERTY OF CUMMINS POWER GENERATION GROUP

DWN C_BADGUJAR

CKD S_DULAM

APVD D_GILLETT

DATE 10JUN13

FOR INTERPRETATION OF DIMENSIONING AND TOLERANCING, SEE ASME Y14.5M-1994

FIRST USED ON ARROW

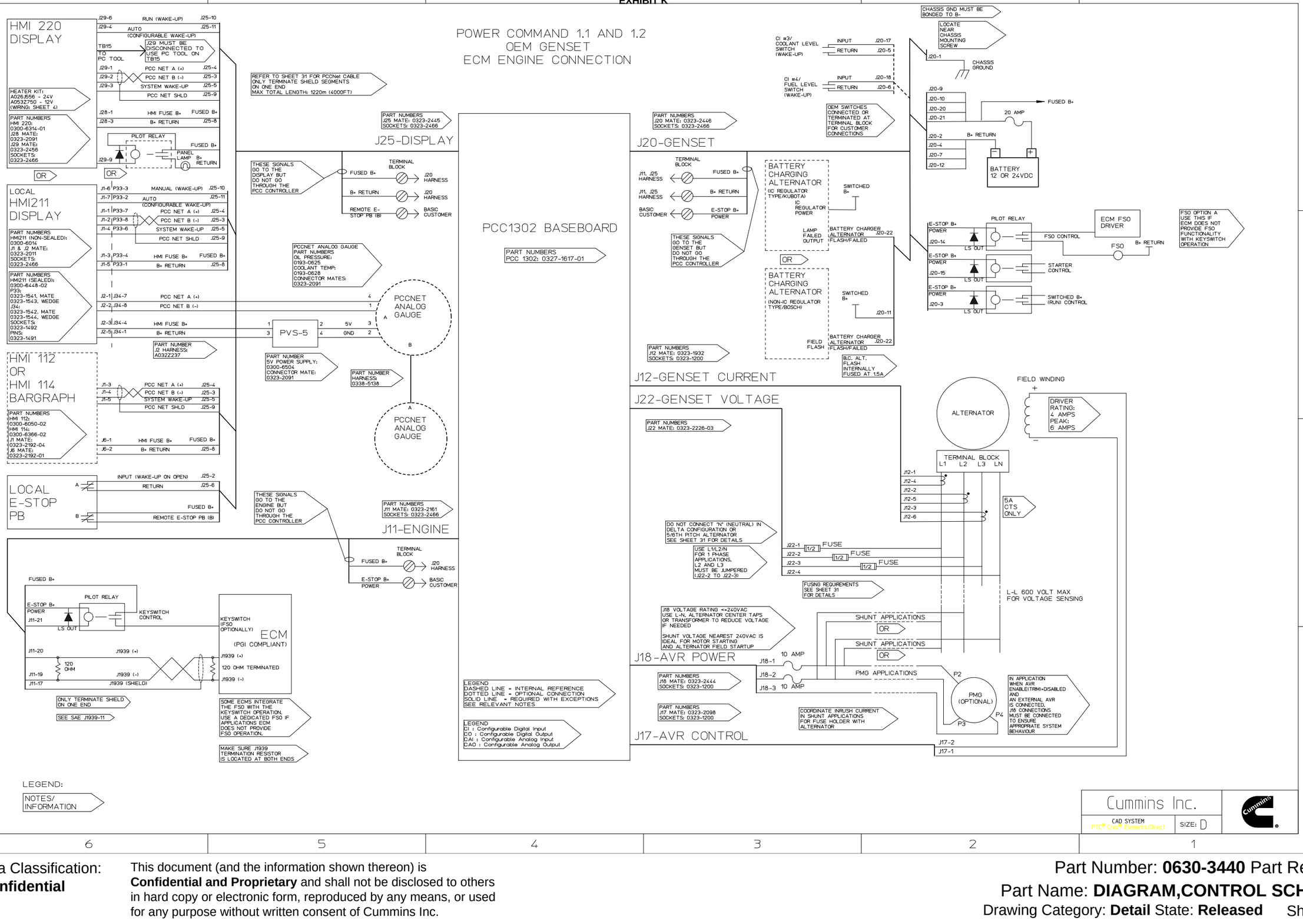
SITE CODE PGF

CUMMINS POWER GENERATION

OUTLINE, GENSET OPTIONS

SIZE D | A045C215 | SHEET 2 of 3 | DWG REV. E

POWER COMMAND 1.1 AND 1.2 OEM GENSET ECM ENGINE CONNECTION

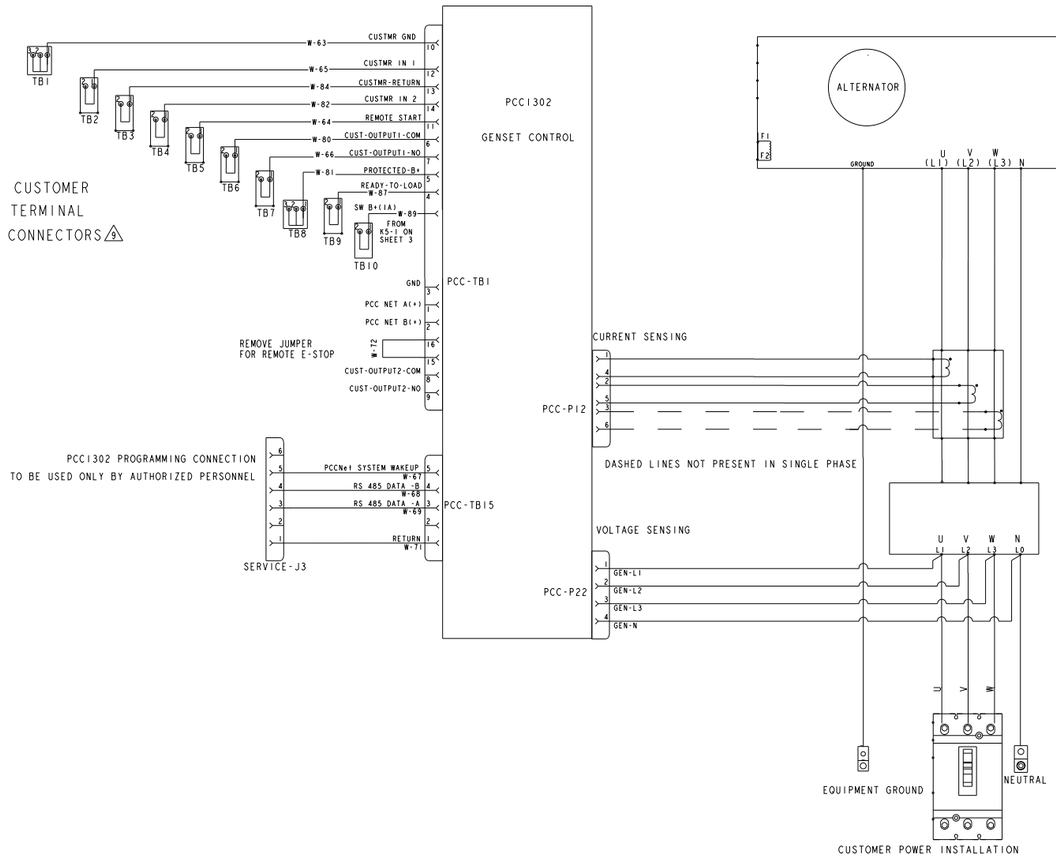


Document Generated: **24JAN2024 14:38 GMT**

Cummins Data Classification:
Cummins Confidential

This document (and the information shown thereon) is **Confidential and Proprietary** and shall not be disclosed to others in hard copy or electronic form, reproduced by any means, or used for any purpose without written consent of Cummins Inc.

EXHIBIT K



NOTES:-

1. ALL CIRCUIT ARE SHOWN DE-ENERGIZED
2. PAGE 1- CUSTOMER CONNECTIONS FOR CONTROL & POWER CONNECTIONS TO CIRCUIT BREAKER
3. PAGE 2- ENGINE CONTROL MODULE (ECM) INTERFACE TO ENGINE SENSORS, COILS, STARTER, BATTERY, BATTERY CHARGING ALTERNATOR, LOW COOLANT LEVEL (OPTIONAL) FUEL PRESSURE SWITCH (OPTIONAL)
4. PAGE 3- PCC1302 INTERFACE, DISPLAY AND BARGRAPH (OPTIONAL)
5. PAGE 4- ALTERNATOR INTERFACE SHUNT EXCITATION & PERMANENT MAGNET EXCITATION (PMG)
6. PAGE 5- ALTERNATOR INTERFACE ELECTRONIC BOOST SYSTEM (EBS) EXCITATION
7. PAGE 6- OPTIONS: AUX101, AC RELAYS, BATTERY CHARGER, SECONDARY CIRCUIT BREAKER, COOLANT HEATER & ALTERNATOR HEATER.
8. PAGE 7- SINGLE RA TRANSFER SWITCH / MULTIPLE RA TRANSFER SWITCHES / OTEC AND RSS TRANSFER SWITCHES.

9

CUSTOMER CONNECTIONS

TERMINAL NAME (WAGO)	SIGNAL NAME	DESCRIPTION
TB1	CUSTOMER GROUND	CUSTOMER GROUND (3A)
TB2	CUSTOMER INPUT 1	DISCRETE SWITCH CONNECT THE OTHER SIDE OF SWITCH TO TB3
TB3	CUSTOMER INPUT RETURN	CUSTOMER INPUT SWITCH RETURN SIGNAL
TB4	CUSTOMER INPUT 2	DISCRETE SWITCH CONNECT THE OTHER SIDE OF SWITCH TO TB3
TB5	REMOTE START	ACTIVE LOW (GND) CONNECT THE REMOTE START RETURN TO TB1
TB6	CUSTOMER OUTPUT1-COM	CUSTOMER OUTPUT1 RELAY CONTACT COMMON
TB7	CUSTOMER OUTPUT1	NORMALLY OPEN RELAY CONTACT RATINGS: 3.5A,30VDC
TB8	PROTECTED B+	CUSTOMER FUSED BATTERY OUTPUT (3A)
TB9	READY TO LOAD	LOW SIDE DRIVER OUPUT RATINGS: 250MA,1A INRUSH,30VDC,100 uA OFF STATE LEAKAGE
TB10	SWITCHED B+	ACTIVE HIGH WHEN GENERATOR IS RUNNING 12VDC (1A MAX)

10. THE CRANK SENSOR IS INTENTIONALLY CONNECTED TO PIN 33 ON THE ECM CALLED CAM 1, AND THE CAM SENSOR TO PINS 1 & 2 ON THE ECM CALLED CRK_POS & CRK_NEG. THIS IS DUE TO INTERNAL HARDWARE AND NAMING OF PINS ON THE ECM.

ALTERNATOR VOLTAGE WIRING
SEE DIAGRAMS:
A044D428 FOR CAI25 & CAI35 ALTERNATORS
A044D432 FOR CAI15 ALTERNATORS
USE OUTER CIRCUIT BREAKER POLES FOR SINGLE PHASE
SEE INSIDE THE BREAKER BOX AND ON THE BREAKER FOR LUG TORQUE

MODEL/PLATFORM: ARROW		THIS PART IS SIMILAR TO: -	
Cummins Inc.			
DIMENSIONS ARE IN: MILLIMETERS [ ] ARE IN: -	SIZE: A0	SCALE: 1:1	
DIMENSIONING AND TOLERANCING PER: ASME Y14.5-2009	THIRD ANGLE PROJECTION	CAD SYSTEM: PTC® Creo® Parametric	

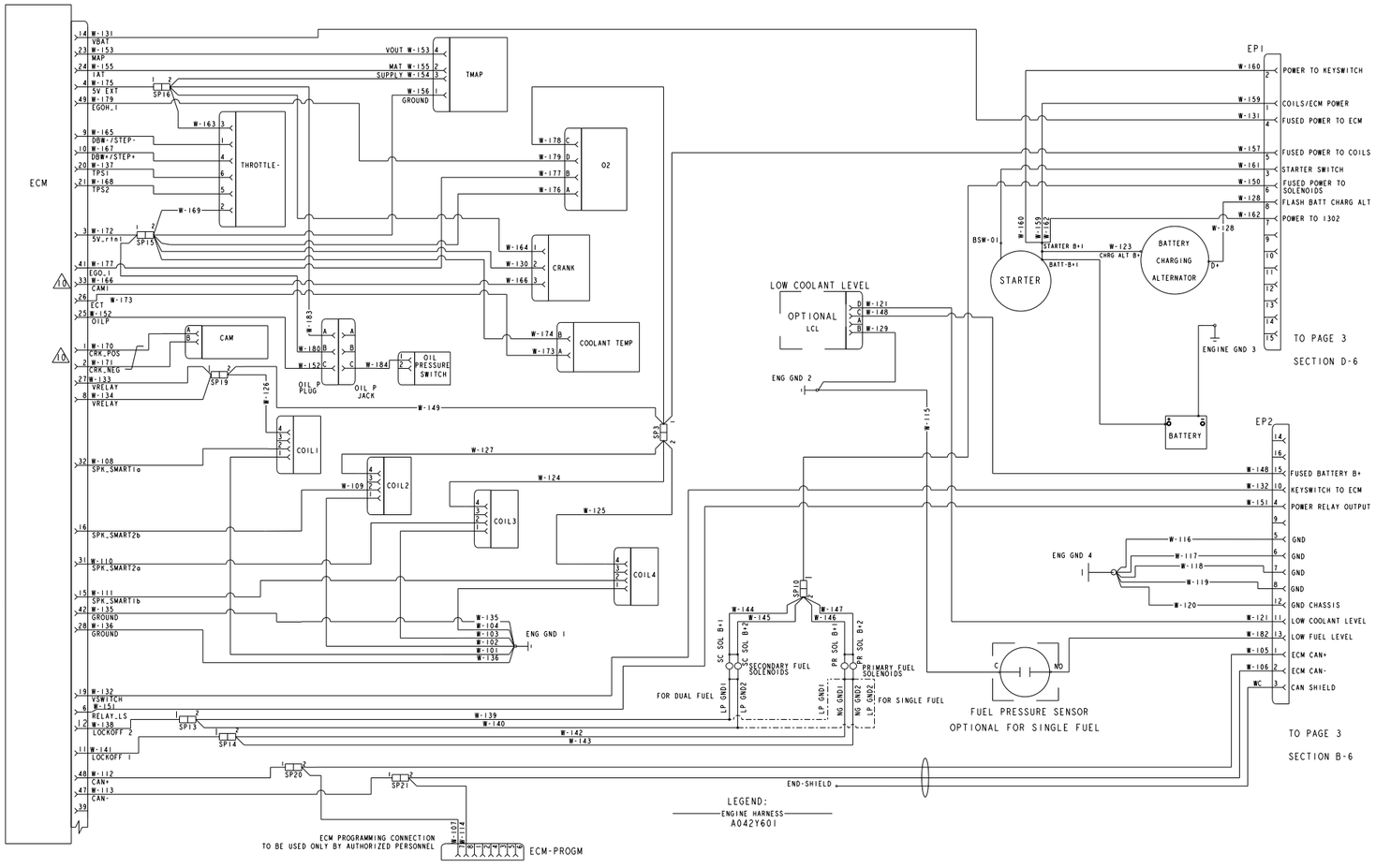
Document Generated: **20OCT2023 17:41 GMT**

Cummins Data Classification:
Cummins Confidential

This document (and the information shown thereon) is **Confidential and Proprietary** and shall not be disclosed to others in hard copy or electronic form, reproduced by any means, or used for any purpose without written consent of Cummins Inc.

Part Number: **A044K485** Part Revision: **N**
Part Name: **DIAGRAM,WIRING**
Drawing Category: **Detail** State: **Released**

EXHIBIT K



MODEL/PLATFORM: ARROW	THIS PART IS SIMILAR TO: -
Cummins Inc.	
DIMENSIONS ARE IN: MILLIMETERS UNLESS OTHERWISE SPECIFIED ARE IN: -	SIZE: A0 SCALE: 1/1
DIMENSIONING AND TOLERANCING PER: ASME Y14.5-2009	CAD SYSTEM PTC® Creo® Parametric

Document Generated: **20OCT2023 17:41 GMT**

Cummins Data Classification:
Cummins Confidential

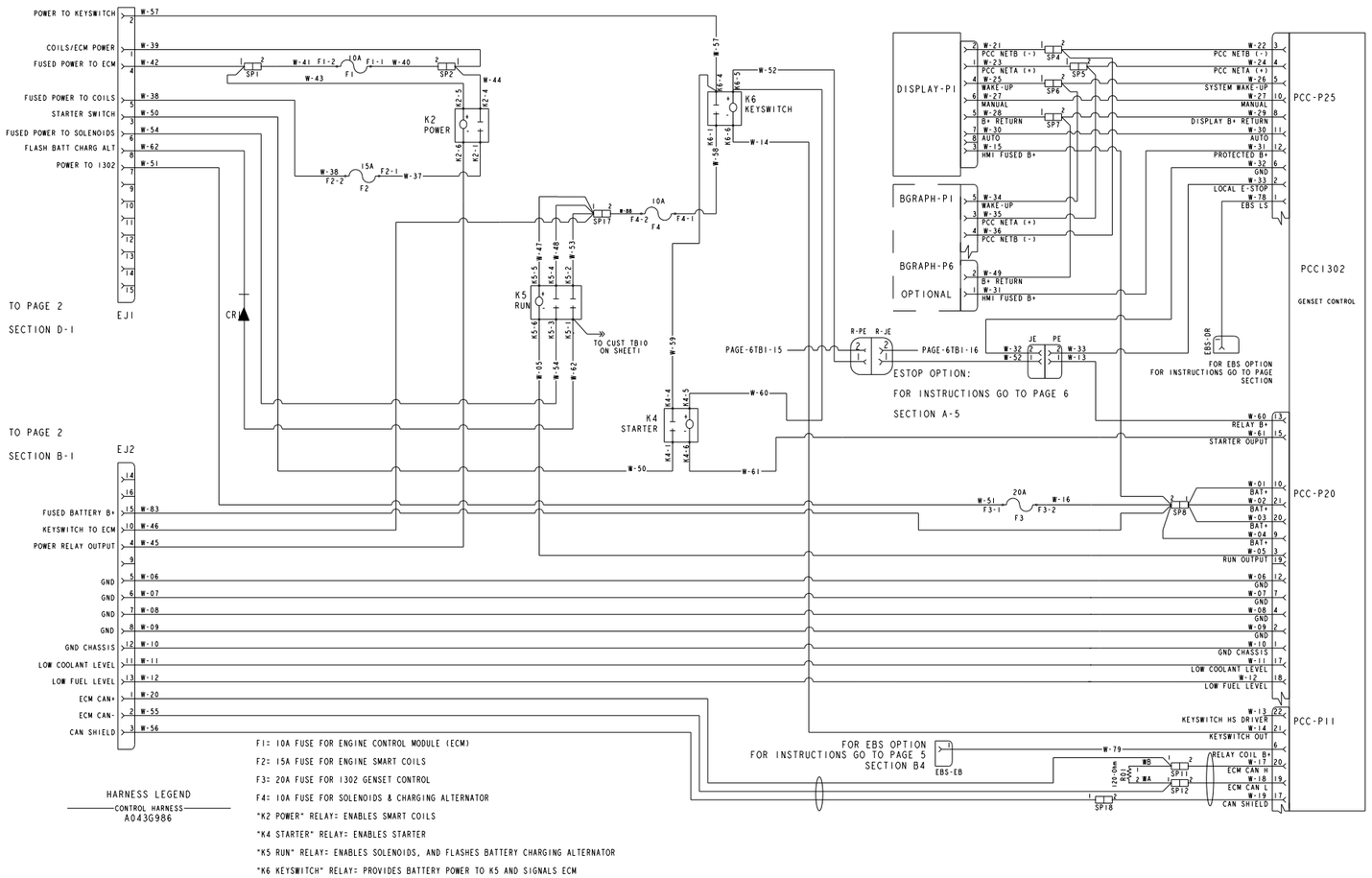
This document (and the information shown thereon) is **Confidential and Proprietary** and shall not be disclosed to others in hard copy or electronic form, reproduced by any means, or used for any purpose without written consent of Cummins Inc.

Part Number: **A044K485** Part Revision: **N**

Part Name: **DIAGRAM,WIRING**

Drawing Category: **Detail** State: **Released**

EXHIBIT K



Document Generated: **20OCT2023 17:41 GMT**

Cummins Data Classification:
Cummins Confidential

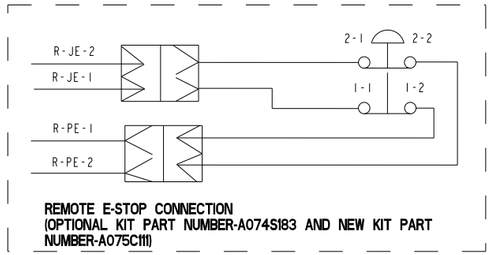
This document (and the information shown thereon) is **Confidential and Proprietary** and shall not be disclosed to others in hard copy or electronic form, reproduced by any means, or used for any purpose without written consent of Cummins Inc.

Part Number: **A044K485** Part Revision: **N**

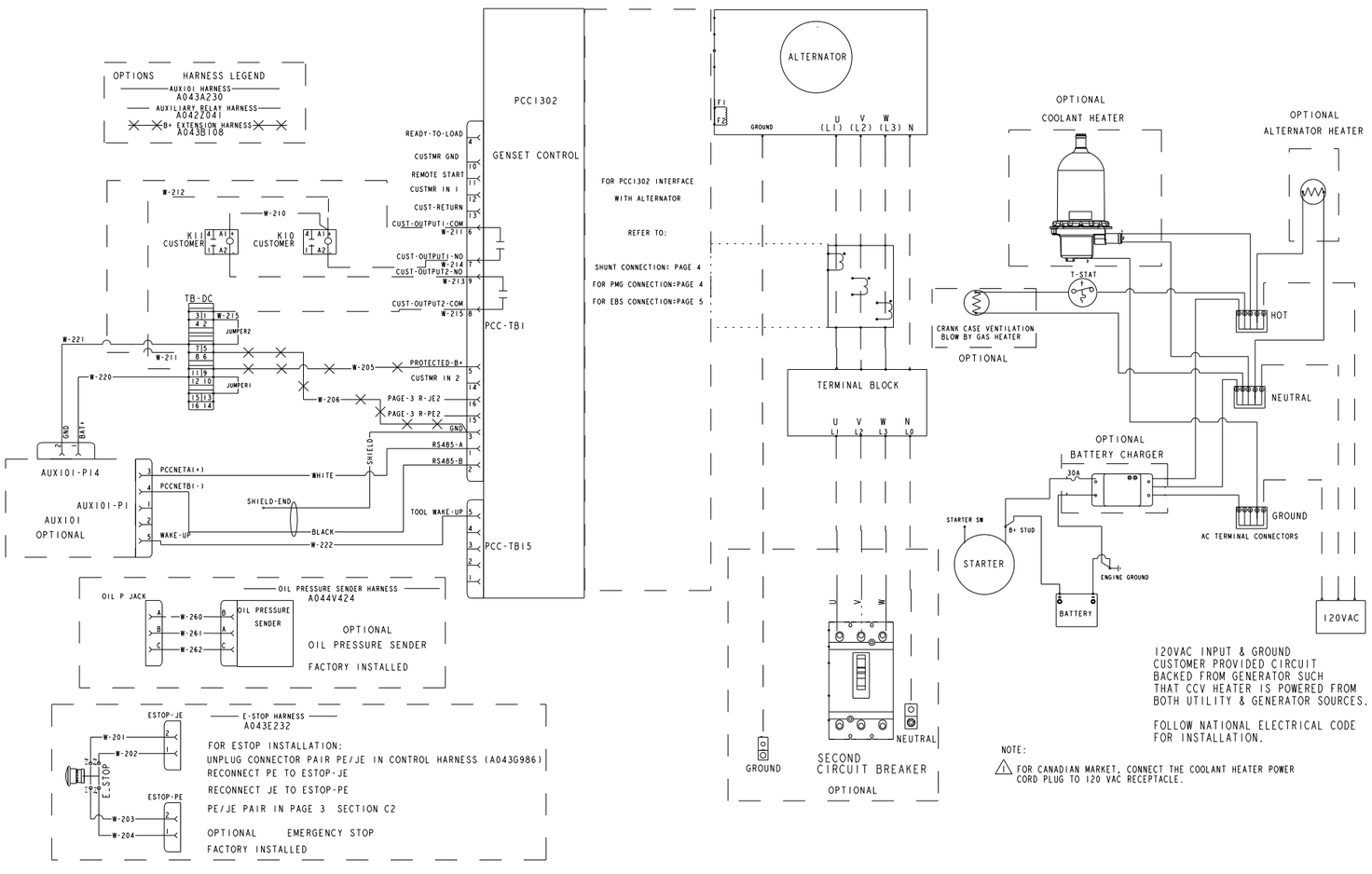
Part Name: **DIAGRAM,WIRING**

Drawing Category: **Detail** State: **Released**

EXHIBIT K



REMOTE E-STOP CONNECTION
(OPTIONAL KIT PART NUMBER-A074S183 AND NEW KIT PART NUMBER-A075C111)



MODEL/PLATFORM: ARROW	THIS PART IS SIMILAR TO: -
Cummins Inc.	
DIMENSIONS ARE IN: MILLIMETERS [ ] ARE IN: -	SIZE: A0 SCALE: 1:1
DIMENSIONING AND TOLERANCING PER: ASME Y14.5-2009	CAD SYSTEM PTC® Creo® Parametric

Document Generated: **20OCT2023 17:41 GMT**

Cummins Data Classification:
Cummins Confidential

This document (and the information shown thereon) is **Confidential and Proprietary** and shall not be disclosed to others in hard copy or electronic form, reproduced by any means, or used for any purpose without written consent of Cummins Inc.

Part Number: **A044K485** Part Revision: **N**
Part Name: **DIAGRAM,WIRING**
Drawing Category: **Detail** State: **Released**

Commercial
Extended Warranty Statements

Our energy working for you.™

Cummins Power Generation

Commercial Extended Warranty Statements

Feature Codes
L040
L093
L028
L030
L031
L041

Our energy working for you.™

Power Generation

Limited Standby 2 Year or 1,500 hour Comprehensive Extended Warranty – L028

Commercial Generating Set

When purchased, this limited extended warranty applies to Cummins Power Generation® branded commercial generating sets and associated accessories (hereinafter referred to as "Product").

This warranty covers any failures of the Product, under normal use and service, which result from a defect in material or factory workmanship.

Warranty Period:

The warranty start date is the date of initial start up, first rental, demonstration or 18 months after factory ship date, whichever is sooner. The coverage duration is 2 years from warranty start date or 1,500 hours or whichever occurs first.

Emergency Standby Power (ESP) is defined as the maximum power available during a variable electrical power sequence, under the stated operating conditions, for which a generating set is capable of delivering in the event of a utility power outage. The permissible average power output over 24 hours of operation shall not exceed 70% of the ESP.

Cummins Power Generation® Responsibilities:

In the event of a failure of the Product during the extended warranty period due to defects in material or workmanship, Cummins Power Generation® will only be responsible for the following costs:

- All parts and labor required to repair the Product.
- Reasonable travel expenses to and from the Product site location.
- Maintenance items that are contaminated or damaged by a warrantable failure.

Owner Responsibilities:

The owner will be responsible for the following:

- Notifying Cummins Power Generation® distributor or dealer within 30 days of the discovery of failure.
- Installing, operating, commissioning and maintaining the Product in accordance with Cummins Power Generation®'s published policies and guidelines.
- Providing evidence for date of commissioning.
- Providing sufficient access to and reasonable ability to remove the Product from the installation in the event of a warrantable failure.

In addition, the owner will be responsible for:

- Incremental costs and expenses associated with Product removal and reinstallation resulting from non-standard installations.
- Costs associated with rental of generating sets used to replace the Product being repaired.
- Costs associated with labor overtime and premium shipping requested by the owner.
- All downtime expenses, fines, all applicable taxes, and other losses resulting from a warrantable failure.

Limitations:

This limited extended warranty does not cover Product failures resulting from:

- Inappropriate use relative to designated power rating.
- Inappropriate use relative to application guidelines.
- Normal wear and tear.
- Improper and/or unauthorized installation.
- Owner's or operator's negligence, accidents or misuse.
- Lack of maintenance or unauthorized repair.
- Noncompliance with any Cummins Power Generation® published guideline or policy.
- Use of improper or contaminated fuels, coolants or lubricants.
- Improper storage before and after commissioning.
- Owner's delay in making Product available after notification of potential Product problem.

- Use of steel enclosures within 60 miles of the coast of salt water when aluminum or an alternate non-corrosive material enclosure option is available.
- Replacement parts and accessories not authorized by Cummins Power Generation®.
- Use of Battle Short Mode.
- Owner or operator abuse or neglect such as: operation without adequate coolant or lubricants; overfueling; overspeeding; lack of maintenance to lubricating, cooling or air intake systems; late servicing and maintenance; improper storage, starting, warm-up, run-in or shutdown practices, or for progressive damage resulting from a defective shutdown or warning device.
- Damage to parts, fixtures, housings, attachments and accessory items that are not part of the generating set.

This limited extended warranty does not cover costs resulting from:

- Difficulty in gaining access to the Product.
- Repair of cosmetic damage to enclosures.

Items not covered by this limited extended warranty:

- Batteries
- Enclosures
- Coolant heating elements
- Maintenance items

Aftertreatment component failures

.

www.cumminspower.com

CUMMINS POWER GENERATION® RIGHT TO FAILED COMPONENTS:

Failed components claimed under warranty remain the property of Cummins Power Generation®. Cummins Power Generation® has the right to reclaim any failed component that has been replaced under warranty.

THE WARRANTIES SET FORTH HEREIN ARE THE SOLE WARRANTIES MADE BY CUMMINS POWER GENERATION ® IN REGARD TO THE PRODUCT. CUMMINS POWER GENERATION® MAKES NO OTHER WARRANTIES, EXPRESS OR IMPLIED, OR OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE.

IN NO EVENT IS CUMMINS POWER GENERATION® LIABLE FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES.

This limited extended warranty shall be enforced to the maximum extent permitted by applicable law. This limited extended warranty gives the owner specific rights that may vary from state to state or from jurisdiction to jurisdiction.

Product Model Number:_____

Product Serial Number:_____

Date in Service:_____

May 6, 2025

Prepared by

Felecia Ramirez
(971) 940-8053
ls698@cummins.com

We are pleased to provide you this quotation based on your inquiry.

Item	Description	Qty
1	**C36N6, 36kW, 60Hz, Standby, Natural Gas/Propane Genset, 1800rpm engine** **U.S. EPA, Stationary Emergency Application** **C36N6, 36kW, 60Hz, Standby, Natural Gas/Propane Genset, 1800rpm engine** **Duty Rating - Standby Power (ESP)** **Emissions Certification - SI, EPA, Emergency, Stationary, 40CFR60** **Listing - UL 2200** **NFPA 110 Type 10 Level 1 Capable** **HCAI (formerly OSHPD) Seismic Pre-Approval Certification** **Cert - Seismic, IBC2000, IBC2003, IBC2006, IBC2009, IBC2011** **Exciter/Reg - Torque Match** **Voltage - 120/240, 1 Phase, 3 Wire** **Alternator - 60Hz, 4L, 240/120V, 1 Phase, 120C, 40C Ambient** **Alternator Heater, 120 Volt AC** **Aluminum Sound Attenuated Level 1 Enclosure, with Exhaust System** **Enclosure Color - Green, Aluminum** **Enclosure - Wind Load 180 MPH, ASCE7-10** **Skidbase - Housing Ready** **Control Mounting - Right Facing** **PowerCommand 1.1 Controller** **Load Connection - Single** **Gauge - Oil Pressure** **Stop Switch - Emergency** **Control Display Language - English** **Circuit Breaker, Location A, 150A, 2P, 600 Volts AC, 80%, UL** **Engine Governor - Electronic, Isochronous** **Single Gas Fuel - NG or LP Vapor** **Engine Starter - 12 Volt DC Motor** **Engine Air Cleaner - Normal Duty**	2

	Battery Charging Alternator **Battery Charger - 6 Amp, Regulated** **Engine Cooling - Radiator, High Ambient Air Temperature, Ship Fitted** **Shutdown - Low Coolant Level** **Extension - Coolant Drain** **Engine Coolant - 50% Antifreeze, 50% Water Mixture** **Coolant Heater, Extreme Cold Ambient** **Engine Oil** **Genset Warranty - 2 Years Base** **Literature - English** **Packing - Skid, Poly Bag** **Larger Battery Rack** **Extension - Oil Drain**	
2	**Battery-Wet, 12V, Group 34, 850CCA [Shipped Loose]**	2
3	**Pilla Remote E-Stop [Shipped Loose]**	2
4	**PC Lon Gateway, Lon Modbus, Lon Modbus/TCP Gateway**	1
5	**Acumen Telematics – Cloud - Wi-Fi + Cellular + Ethernet connectivity – Modbus + J1939 (Private – NA variant) - A068E639 [Shipped Loose]**	1
6	**Service - Standard Start Up Service (no spec) and System Testing**	2

QUOTE TOTAL: $ 50,700.50

Quote value does not include any tax.

NOTES:

5/6/25 - Updated quote to add extra generator per the 5.6.25 email request.

Cummins quote is valid for 30 days.

This quotation is based on the bill of materials from the ESCO 911 project and email dated 4.30.25. Contractor to verify application meets requirements. All other specifications and drawings are excluded. We know of no addenda.

LEAD TIME:

Submittals:
Typical submittal lead time is 2-4 weeks after receipt of purchase order.
Equipment:
Current lead-time is 22-24 weeks after submittal approval and release for production. Lead times are subject to change.

Please feel free to contact me if you require any additional information; or if you have any further questions or concerns that I may be of assistance with.

Thank you for choosing Cummins.

Submitted by:

Quotation: Q-380543-20250506-1132

SUBMITTAL PACKAGE



Marion County

Prepared for:

Brian Nicholas
Marion County Public Works
555 CT ST NE
Salem, OR 97301-3980

Cummins Salesperson:

Mark Wahlberg CS931@cummins.com 503-307-7529

Cummins Project Manager:

Samantha Norman samantha.norman@cummins.com (425) 902-9513

PLEASE COMPLETE THIS SECTION OR PROVIDE SIGNOFF TO PROCEED

☐ **Revise with corrections provided** **Date:** 6/23/2025

☑ **Approved and released for production**

By (name and company): Brian Nicholas, Marion County Public Works Department

Requested delivery date: December 15, 2025

Requested delivery address: 5155 Silverton Road NE, Salem, OR 97305

Contact person and phone # for deliveries: Michael Pierce, 408.857.2040

Salesforce O#

BMS #

Customer PO#

Date 6/16/25 Rev _1

Serving Cummins Customers

Cummins power solutions are supported by the largest and best-trained worldwide-certified sales/distributor network in the industry. This network will help you select and install the critical power solution to meet the requirements of your specific application. This same network provides experts with advanced technology to make your life easier while providing a seamless support experience.

IMPORTANT: *The critical power solution information and specifications included in this pdf can be used by the site contractor(s) and/or engineer(s) to assist with planning for and accomplishing the overall power solution installation. Please forward this document to the appropriate personnel, as necessary.*

It is the obligation of the electrical contractor and reviewing engineer to determine that the item quantities and accuracy of this submittal is correct as required for the job. Any inaccuracies or deviations must be addressed with Cummins Inc. before release to manufacturing. Any releases of material to manufacturing by the above parties constitute an acceptance of the accuracy of the submittal. Any changes after release will be viewed as a change order, subject to pricing changes. Please take the time to review this package for accuracy to prevent any after-shipment problems that could cause delay in energization.

Cummins certifies that these drawings, material lists, specification and datasheets have been checked prior to submittal and they:

- *accurately depict the proposed equipment*
- *provide current information to the date of the submittal and*
- *present true and accurate equipment information.*

This Approval Drawing Package is submitted as our interpretation of the project requirements and/or the specifications for this job. Please note that issuance of these submittals shall not be deemed or interpreted as performance nor acceptance of your purchase order terms and conditions.

For questions or comments regarding this submittal, please contact the Cummins Project Manager listed on the title page.

13 June 2025

Bill of Material

Feature Code	Description	Qty
OTECB	**OTECB, OTEC Transfer Switch-Electronic Control: 150A/225A/260A**	~~8~~ 7
OTECB_OTEC150	OTEC150, Transfer Switch, PowerCommand, 150 Amp	
OTECB_M086-7	Interface - Communication Network, MODBUS TCP Module	
OTECB_A046-7	Listing - UL 1008/CSA Certification	
OTECB_A080-7	IBC Seismic Certification	
OTECB_A035-7	Application - Utility to Genset	
OTECB_B001-7	Cabinet - Type 1	
OTECB_A028-7	Poles - 3 (Solid Neutral)	
OTECB_A044-7	Frequency - 60 Hz	
OTECB_A041-7	System - Single Phase, 2 or 3 Wire	
OTECB_R023-7	Voltage - 240 Volts AC	
OTECB_M033-7	Genset Starting Battery - 12V DC	
OTECB_C110-7	PC40 Control	
OTECB_G004-7	Transfer Switch Warranty - 2 Year Comprehensive	

Note: due to elimination of the Mad Creek site, the quantity of ATS released for production is reduced by one (1), from the original Purchase Order quantity of eight (8) to the new quantity of seven (7) ATS.

POWERCOMMAND®
OTEC TRANSFER SWITCH

POWERCOMMAND® 40-11 CONTROL | OPEN TRANSITION | 40 A-1200 A

AUTOMATIC TRANSFER SWITCH

DESCRIPTION

The OTEC series transfer switch provides the basic features typically required for primary source and generator set monitoring, generator set starting and load transfer functions for emergency standby power applications. They are suitable for use in emergency, legally required, and optional standby circuits in commercial and light industrial applications. The OTEC transfer switch features the new PowerCommand® 40-11 control with a comprehensive feature list to suit a wide variety of ATS applications.

FEATURES

PowerCommand® 40-11 control – A fully featured microprocessor-based control with LCD digital display and tactile-feel soft-switches for easy operation and screen navigation. Control highlights include front panel PC software configuration, three phase sensing on both sources, sync check, phase rotation and imbalance sensing, and event logging. Additional optional features include load shed from standby source, Modbus RTU and TCP network communication, and configurable output contact modules. Completely network compatible with the new Cummins transfer switch remote annunciator. Please see the S-6560 PowerCommand® 40-11 control specification sheet for the full description, benefits, and features.

Programmed transition – Open transition timing can be adjusted to completely disconnect the load from both sources for a programmed time period, as recommended by NEMA MG-1 for transfer of inductive loads.



Advanced transfer switch mechanism – Unique bi-directional linear actuator provides virtually frictionless constant force, straight-line transfer switch action during automatic operation.

Positive interlocking – Mechanical and electrical interlocking prevent source-to-source connection through the power or control wiring.

Main contacts – Heavy-duty silver alloy contacts used with multi-leaf arc chutes are rated for motor loads or total system load transfer. They require no routine contact maintenance. Continuous load current not to exceed 100% of switch rating and tungsten loads not to exceed 30% of switch rating.

Ease of service and access – Single-plug harness connection and compatible terminal markings simplify servicing. Access space is ample. Door-mounted controls are field-programmable; no special tools are required.

Complete product line – Cummins is a single source supplier with a wide range of equipment, accessories, and services to suit virtually any backup power application.

Warranty and service - Products are backed by a comprehensive warranty and a worldwide network of distributors with factory-trained service technicians.

TRANSFER SWITCH MECHANISM

- Transfer switch mechanism is electrically operated and mechanically held in the Source 1 and Source 2 positions. The transfer switch incorporates electrical and mechanical interlocks to prevent inadvertent interconnection of the sources.
- Independent break-before-make action is used for both 3-pole and 4-pole simultaneously switched neutral. This design allows use of sync check operation when required, or control of the operating speed of the transfer switch for proper transfer of motor and rectifier-based loads (programmed transition feature).
- True 4-pole switching allows for proper ground (earth) fault sensing and consistent, reliable operation for the life of the transfer switch. The neutral poles of the transfer switch have the same ratings as the phase poles and are operated by a common crossbar mechanism, eliminating the possibility of incorrect neutral operation at any point in the operating cycle, or due to failure of a neutral operator.
- Electrical interlocks prevent simultaneous closing signals to normal and emergency contacts and interconnection of normal and emergency sources through the control wiring.
- High pressure silver alloy contacts resist burning and pitting. Separate arcing surfaces further protect the main contacts. Contact wear is reduced by multiple leaf arc chutes that cool and quench the arcs. Barriers



separate the phases to prevent interphase flashover. A transparent protective cover allows visual inspection while inhibiting inadvertent contact with energized components.

- Switch mechanism, including contact assemblies, is UL 1008 certified to verify suitability for applications requiring high endurance switching capability for the life of the transfer switch. Withstand and closing ratings are validated using the same set of contacts, further demonstrating the robust nature of the design.

SPECIFICATIONS	
Voltage rating	Up to 600 V AC, 50 or 60 Hz.
Arc interruption	Multiple leaf arc chutes provide dependable arc interruption.
Neutral bar	A full current-rated neutral bar with lugs is standard on enclosed 3-pole transfer switches.
Auxiliary contacts	Two isolated contacts (one for each source) indicating switch position are provided for customer use. Contacts are normally open, and close to indicate connection to the source. Wired to terminal block for easy access. Rated at 10 A Continuous and 250 V AC maximum.
Operating temperature	-22 ˚F (-30 ˚C) to 140 ˚F (60 ˚C)
Storage temperature	-40 ˚F (-40 ˚C) to 140 ˚F (60 ˚C)
Humidity	Up to 95 % relative, non-condensing
Altitude	Up to 10,000 ft (3,000 m) without derating
Surge withstand ratings	Voltage surge performance and testing in compliance with the requirements of IEEE C62.41 (Category B3) and IEEE C62.45.
Total transfer time (source-to-source)	Will not exceed 6 cycles at 60 Hz with normal voltage applied to the actuator and without programmed transition enabled.
Manual operation*	Transfer switch mechanisms are equipped with means to manually transfer. All sources must be de-energized before manual operation is attempted.

**See Operator Manual for further details.*

TRANSITION MODES

Open delayed transition – In this transition mode the time required for the transfer switch to transfer between sources is adjustable so that the load- generated voltages decay to a safe level before connecting to an energized source. Recommended by NEMA MG-1 to prevent nuisance tripping breakers and load damage. Adjustable 0.5 secs - 10 minutes, and default 0.5 seconds.

Open in-phase translation – Initiates open transition transfer when in-phase monitor senses both sources are in phase (voltage, phase, and frequency). Operates in a break-before-make sequence. Includes ability to enable programmed transition as a backup. The module waits indefinitely for synchronization unless the 'Return to programmed transition' function is active in which case after 2 minutes it performs a programmed delayed transfer.

UL 1008 WITHSTAND AND CLOSING RATINGS (WCR)

The transfer switches listed below must be protected by circuit breakers or fuses. Referenced drawings include detailed listings of specific breakers or fuse types that must be used with the respective transfer switches. Consult with your distributor/dealer to obtain the necessary drawings. Withstand and Closing Ratings (WCR) are stated in symmetrical RMS amperes.

BREAKER PROTECTION

Frame	Amperage rating (A)	MOLDED CASE CIRCUIT BREAKER (MCCB) PROTECTION				SPECIAL CIRCUIT BREAKER PROTECTION		
		With specific manufacturers MCCB (kA at 480V)	With specific manufacturers MCCB (kA at 600V)	Max MCCB ratings (A)	Drawing reference	With specific Current limiting breakers (kA at 600V)	Max. Current limiting breakers CLB rating (A)	Drawing reference
A	40, 70, 125 (3-pole only)	14	14	225	A050J441	200	225	A048J566
	40, 70, 125 (4-pole only)	30	30	400	A048E949	200	400	A051D533
B	150, 225, 260	30	30	400	A048E949	200	400	A051D533
C	300, 400, 600	65	65	1200	A056M829	200	1200	A048J564
D	800, 1000	65	50	1400	A056M821	200	1400	A048J562
E	1200	85	65	1600	A056M825	200	1600	A048P186

FUSE PROTECTION

Frame	Amperage rating (A)	WCR with current limiting fuses (kA)	Fuse size and type	Drawing reference
A	40, 70, 125 (3-pole only)	200	200 A, Class: J, RK1, RK5	A050J441
	40, 70, 125 (4-pole only)	200	1200 A Class L or T, or 600A class J, RK1, RK5	A048E949
B	150, 225, 260	200	1200 A Class L or T, or 600A class J, RK1, RK5	A048E949
C	300, 400, 600	200	1200 A Class L or T, or 600A class J, RK1, RK5	A056M829
D	800, 1000	200	2000 A Class L or 1200 A Class T or 600 A Class J, RK1, RK5	A056M821
E	1200	200	2000 A Class L or 1200 A Class T or 600 A Class J, RK1, RK5	A056M825

All WCR values are at 600 V

TIME BA[illegible] RATINGS: 0.05S (3-CYCLES AT 60 HZ)

Frame	Amperage rating (A)	[illegible]CB (kA at Vmax and below)	Max. MCCB rating (A)	Drawing reference
C	300, 400, 600	25 at 60[illegible]	1200	A056M829
D	800, 1000	35 at 600 V	[illegible]	A056M821
E	1200	42 at 600 V	1600	A05[illegible]

TRANSFER SWITCH LUG CAPACITIES

Frame	Amperage rating (A)	Cables per phase	Certified Cable Size	Part Number
A	40, 70, 3-pole	1	#14 AWG - 2/0	0332-3084 **
			#12 AWG - 2/0	0332-3085 ***
	40, 4-pole	1	#14 AWG - 2/0	0332-3514-01
	70, 4-pole	1	#6 AWG - 300MCM	0332-3038
	125, 3-pole	1	#14 AWG - 2/0	0332-3084 **
			#12 AWG - 2/0	0332-3085 ***
	125, 4-pole	1	#6 AWG - 300MCM	0332-3038
B	150, 225	1	#6 AWG - 300MCM	0332-3038
	260	1	#6 AWG - 400MCM	0332-3039
C	300, 400	2*	3/0 - 600MCM & #4 AWG - 250MCM	0332-2704
	600	2	250 - 500MCM	0332-2660
D	800, 1000	4	250 - 500MCM	0332-2736
E	1200	4	500-750MCM ^	0332-2736 ****
			#2 AWG – 600MCM ^^	0332-1557 ****
			1/0 - 750MCM ^^^	0332-3036

All lugs 90°C rated and accept copper or aluminum wire unless indicated otherwise.
Refer to the latest NFPA 70 Article 310 - Conductors for general wiring for the ampacity calculations.
** One cable for each lug range listed*
*** Load*
**** Emergency and normal*
***** See A030H735 drawing for lugs specifications*
^ Compression lug adapter suitable for 500-750MCM (Optional feature N032-7)
^^ #2 AWG – 600MCM (Standard feature N045-7)
^^^1/0 - 750MCM (Optional feature N066-7)

ENCLOSURE

The transfer switch and control are wall-mounted in a key-locking enclosure. Wire bend space complies with NEC.

DIMENSIONS – TRANSFER SWITCH IN UL TYPE 1 ENCLOSURE

Frame	Amperage rating (A)	Height		Width		Depth		Weight	
		in	mm	in	mm	in	mm	lb	kg
A	40, 70, 125 3-pole	27	686	20.5	521	12	305	148	67
	40, 70, 125 4-pole	35.5	902	26	660	16	406	214	97
B	150, 225	35.5	902	26	660	16	406	214	97
	260	43.5	1105	28.5	724	16	406	238	108
C	300, 400, 600	54	1372	25.5	648	18	457	322	146
D	800, 1000	68	1727	30	762	19.5	495	448	203
E	1200	90	2286	39	991	27	698	862	391

DIMENSIONS – TRANSFER SWITCH IN UL TYPE 3R, 4, 4X, OR 12 ENCLOSURES										
Frame	Amperage rating (A)	Height		Width		Depth		Weight		Cabinet Type
		in	mm	in	mm	in	mm	lb	kg	
A	40, 70, 125 3-pole	34	864	26.5	673	12.5	318	220	100	3R, 4
		46	1168	32	813	16	406	307	139	4X
		34	864	26.5	673	12.5	318	201	91	12
	40, 70, 125 4-pole	42.5	1080	30.5	775	16	406	304	138	3R, 4
		46	1168	32	813	16	406	335	152	4X
		42.5	1080	30.5	775	16	406	287	130	12
B	150, 225	42.5	1080	30.5	775	16	406	304	138	3R, 4
		46	1168	32	813	16	406	335	152	4X
		42.5	1080	30.5	775	16	406	287	130	12
	260	46	1168	32	813	16	406	322	146	3R, 4
		46	1168	32	813	16	406	335	152	4X
		46	1168	32	813	16	406	304	138	12
C	300, 400, 600	59	1499	27.5	699	16.5	419	415	188	3R, 4
		73.5	1867	32.5	826	19.5	495	520	236	4X
		59	1499	27.5	699	16.5	419	397	180	12
D	800, 1000	73.5	1867	32.5	826	19.5	495	588	267	3R, 4
		73.5	1867	32.5	826	19.5	495	588	267	4X
		73.5	1867	32.5	826	19.5	495	556	252	12
E	1200	90	2286	39	991	27	698	891	404	3R, 4
		90	2286	39	991	27	698	891	404	4X
		90	2286	39	991	27	698	873	396	12

ENCLOSURE ACCESS FOR CABLE INSTALLATION AND MAINTENANCE

All frames allow for top, side, and bottom cable entry. NEC Requires Minimum 36” Front Access. Additional front clearance is needed to remove the mechanism. Refer to the outline drawing.

OTEC DRAWING PART NUMBERS				
Frame	Amperage rating (A)	Outline Drawing		
		Type 1, 3R, 12, 4, 4X (3 Pole)	Type 1, 3R, 12, 4, 4X (4 Pole)	Open Construction
A	40, 70, 125	A074K565	A074K632	A074K681
B	150, 225	A074K575	A074K587	
	260	A074K613	A074K634	
C	300, 400, 600	A074K635	A074K645	
D	800, 1000	A074K646	A074K658	
E	1200	A074K659		A074K695

WIRING DIAGRAM PART NUMBERS

Frame	Amperage rating (A)	Wiring Diagram				
		Utility to Genset (120 – 480 V)	Utility to Genset (600 V)	Interconnection	Utility to Genset, Open Construction (120 – 480 V)	Utility to Genset, Open Construction (600 V)
A	40, 70, 125 (3-pole)	A074P733	A074P730	A065H780	A074P731	A074P732
	40, 70, 125 (4-pole)					
B	150, 225					
	260					
C	300, 400, 600					
D	800, 1000	A074P729				
E	1200					

SUBMITTAL DETAIL

Model

- 40, 70, 125 A, (3- and 4-pole)
- 150, 225, 260 A
- 300, 400, 600 A
- 800, 1000 A
- 1200 A

Poles

- A028 Poles – 3 (solid neutral)
- A029 Poles – 4 (switched neutral)

Application

- A035 Utility-to-genset

Frequency

- A044 60 Hz
- A045 50 Hz

Phase

- A041 single phase, 2-wire or 3-wire
- A042 three phase, 3-wire or 4-wire

Voltage ratings

- R020 120V
- R038 190V
- R021 208V
- R022 220V
- R023 240V
- R024 380V
- R025 416V
- R035 440 V
- R026 480 V
- R027 600 V

Enclosure

- B001 Type 1: Indoor use, provides some protection against dirt (similar to IEC type IP30)
- B002 Type 3R: Intended for outdoor use, provides some protection from dirt, rain, and snow (similar to IEC type IP34)
- B003 Type 4: Indoor or outdoor use, provides some protection from wind-blown dust and water spray (similar to IEC type IP65)
- B004 open construction: no enclosure - includes automatic transfer switch and controls.
- B010 Type 12: Indoor use, some protection from dust (similar to IEC type IP61).
- B025 Type 4X: Stainless steel, indoor or outdoor use, provides some protection from corrosion (similar to IEC Type IP65).

Standards

- A046 UL 1008/CSA certification
- A080 IBC seismic certification

Control voltage

- M033 12V, Genset starting voltage.
- M034 24V, Genset starting voltage.

Control options

- M032 Elevator signal relay
- M081 MODBUS RS485 Communication module
- M079 integral control power supply provides DC voltage to control from source power.
- M086 Ethernet communication module
- L216 1X auxiliary relay I/O module
- L217 2X auxiliary relay I/O module

Auxiliary relays

- Relays are UL Listed, and factory installed. All relays provide (2) normally closed isolated contacts rated 10A @ 600 VAC. Relay terminals accept (1) 18 gauge to (2) 12-gauge wires per terminal.
- L101 24 VDC coil - installed, not wired (for customer use).
- L102 24 VDC coil - emergency position – relay energized when switch is in source 2 (emergency) position.
- L103 24 VDC coil - normal position - relay energized when switch is in source 1 (normal) position.
- L201 12 VDC coil installed, not wired (for customer use)
- L202 12 VDC coil - emergency position – relay energized when switch is in source 2 (emergency) position.
- L203 12 VDC coil - normal position - relay energized when switch is in source 1 (normal) position.

Optional Cable Lugs

- N032 Lug adapters, compression, ½ stab (1200A only)
- N045 Cable lugs, mechanical, 600 MCM, 4 per pole (1200A only)
- N066 Cable lugs, mechanical, 750 MCM, 4 per pole (1200A only)

Miscellaneous

- C027 Cover - guard
- M003 Terminal block - 30 points (not wired)

Optional features

- M080 Anti-condensation heater for outdoor enclosures
- L214 Load shed from standby source
- M085 Load power monitoring

Accessories

- AC-170 Accessories specification sheet
- A065L320 Control panel cover guard

Request for quotation (RFQ)

- Z555 Nonconfigurable spec [ETO]

Warranty

- G004 2-years, comprehensive
- G007 5-years, comprehensive
- G014 3-years, comprehensive
- G015 10-years, comprehensive

Shipping

- A051 Packing - export box (800 – 1000 A)

CODES AND STANDARDS

UL	All switches are UL 1008 Listed with UL 50E Type Rated cabinets and UL Listed CU-AL terminals.	**NEC®**	Suitable for use in emergency, legally required and Standby and Critical Operations Power Systems (COPS) applications per NEC 700, 701, 702 and 708.
NEMA	All switches comply with NEMA ICS 10.	**ISO®**	All switches are designed and manufactured in facilities certified to ISO 9001.
CSA®	All switches are certified to CSA C22.2 No. 178.1 switching of electrical energy in emergency or other systems, up to 600 VAC and 4 kA.	**IBC®**	All switches are certified to IBC 2018.
IEEE	All switches comply with IEEE 446 Recommended Practice for Emergency and Standby Power Systems.	**EMC**	Display controllers meet the following Electromagnetic Compatibility (EMC) standards: • EN 61000-6-2 Generic Immunity Standard for the Industrial Environment. • EN 61000-6-4 Generic Emission Standard for the Industrial Environment.
NFPA®	All switches comply with NFPA 70, 99 and 110 (Level 1).		

For more information, please contact your local Cummins distributor or visit cummins.com.

Our energy working for you. ™

©2023 Cummins Inc.

S-6556 OTEC Spec Sheet NSE - PD00000752 - Rev. 02/25

All rights reserved. Cummins is a registered trademark of Cummins Inc. PowerCommand, AmpSentry, InPower and "Our energy working for you." are trademarks of Cummins Inc. Other company, product, or service names may be trademarks or service marks of others. Specifications are subject to change without notice.

POWERCOMMAND® 40-11 TRANSFER SWITCH CONTROL

OTEC TRANSFER SWITCHES

DESCRIPTION

The PowerCommand® 40-11 Transfer Switch Control is a sophisticated microprocessor-based control with the basic features you need for primary source and generator set monitoring, generator set starting and load transfer functions for emergency standby power applications.

The control human machine interface (HMI) includes a LCD display with tactile-feel soft-switches for easy operation and screen navigation. All data on the control can be viewed by scrolling through screens with a display scroll button. The control displays the current active fault, fault occurrences and time ordered history of the 10 previous faults with respect to Real Time Clock Stamp and Engine Running Time.

FEATURES

Digital display – The PowerCommand® 40-11 offers a clear back-lit LCD 4-line text display, showing system status, contextual icons and warnings. The display is also equipped with 5 red and 4 green LEDs indicating operational status.

Modbus network communication – Modbus network communications capable. Optional Modbus RTU RS485 connection (1 serial port) and TCP Ethernet communication module (1 RJ45 port).



Diagnostics and reporting – Detailed event logging with enhanced fault codes, alert lists, power event history, and source statistics enhances diagnostic capability during service events and provides the ability to meet any reporting requirements.

PC & Front Panel Configurations – The modules can be easily configured using the PC software. Selected front panel editing is also available.

Ease of service and access – Built-in plug-and-play control with minimized point-to-point connections and compatible terminal markings simplify servicing.

Complete product line – Cummins is a single source supplier with full scope of power system solutions, integration, and service capability, from paralleling to system level controls, switchgear, and remote connectivity.

Warranty and service – Products are backed by a comprehensive warranty and a worldwide network of distributors with factory-trained service technicians.



Isometric (ISO) projection: front views

HUMAN MACHINE INTERFACE (HMI) CAPABILITIES



- Display scroll button
- Info button
- LED indicates source power connected
- Tactile push button transfers load to S1
- Tactile push button selects '**STOP**' mode
- Tactile push button selects '**MANUAL**' mode
- Common Alarm Status LED
- LED indicates source available
- Tactile push button transfers load to S2
- Tactile push button to select '**MODE**' function
- Tactile push button to select '**AUTO**' mode

CONTROL FUNCTIONS

TRANSFER INHIBIT

When transfer inhibit external input is active, the control does not automatically transfer the transfer switch to a standby source even when the preferred source fails.

RETRANSFER INHIBIT

When retransfer inhibit external input is active, the control does not automatically retransfer the transfer switch to a preferred source even when the preferred source returns.

REAL TIME CLOCK

This feature is used by the control for fault and event time stamping and as a reference for exerciser schedules and exception schedules.

TEST – REMOTE

Test feature allows the user to automatically test the standby source and the transfer switch. The test command can be issued from the remote source.

The test has following types available:

- Remote Start On Load
- Remote Start Off Load

ELEVATOR SIGNAL

This optional feature allows an elevator connected to the system to come to a complete stop before the switch transfers.

EXERCISER SCHEDULER

The Scheduler allows the user to configure pre-set automatic starting and stopping of the Generator (when in Auto mode).

BANK 1 / BANK 2

Each Bank of the Exercise Scheduler is used to give up to 8 scheduled runs per bank, 16 in total. This run schedule is configurable to repeat every 7 days (weekly) or every 28 days (monthly). Do Not Transfer, Off Load and On Load. Each scheduler bank configured differently either to weekly or monthly based exercises.

SOURCE AVAILABILITY

This feature monitors the frequency and voltage sensors on the preferred and standby sources to determine and declare the availability status of the two sources, irrespective of which source is connected to the load. It declares the states as event codes. Preferred/Standby Available - active inactive.

VOLTAGE SENSING

3-phase sensing on Source 1 and Source 2 (up to 600 Vac with no need for additional PTs). Plant battery voltage monitoring.

ALPHANUMERIC DISPLAY

- S2 Voltage L1-N
- S2 Voltage L-L
- S2 Frequency
- S1 Voltage L1-N
- S1 Voltage L-L
- S1 Frequency
- Battery voltage
- Current alarms with icons
- Event log
- Scheduler
- About

LOAD SHED

This feature allows the user to shed/disconnect the electrical load from a standby source. This feature is typically used to reduce non-emergency load demand on the generator when the generator is in an overload condition.

LOAD POWER MONITORING

This feature allows the monitoring of the following parameters on the load side of the transfer switch using the display, or remotely via the optional communication modules:

- Amps: L1 - L2 - L3
- Watts: L1 - L2 - L3 - Total
- VA: L1 - L2 - L3 - Total
- Var: L1 - L2 - L3 - Total
- Power Factor: L1 - L2 - L3 - Average

RELAY EXPANSION MODULE DSE2157

This feature allows the user to provide additional output to the control system, up to 16 user configurable dry contact sets - 8 NO, 8 Form-C.

TIME DELAYS

The following adjustable time delays are built into the transfer switch control. External modules to accomplish these delays are not required.

- **Start Delay** (Also known as Time Delay Engine Start, TDES adjustable from 0 to 10 hours)
- **Warming** (Also known as Time Delay Normal to Emergency, TDNE adjustable from 0 to 1 hour)
- **Elevator Delay** (Also known as Time Delay Elevator, TDEL adjustable from 0 to 5 minutes)
- **Non-sync Transfer Time** (Also known as Time Delay Programmed Transition, TDPT adjustable from 0.5 s to 10 minutes)
- **Return Delay** (Also known as Time Delay Emergency to Normal, TDEN adjustable from 0 to 5 hours)
- **Cooling** (Also known as Time Delay Engine Cool-down, TDEC adjustable from 0 to 1 hour)

LED INDICATOR LIGHTS

- Auto mode (RED)
- Source 1 available (GREEN)
- Source 2 available (GREEN)
- Source 1 connected to load (GREEN)
- Source 2 connected to load (GREEN)
- Common Alarm indicator (RED)
- Select Operating mode (RED)
- Stop mode (RED)
- Manual Mode (RED)

EVENTS LOG

The control displays information on up to 10 events displayed in chronological order, beginning with the most recent event, about either source. The event information includes the following:

- Failure modes
- Warning
- Tests and exercises
- User-driven inputs (e.g., override, transfer inhibit)

SUPPORTED APPLICATIONS

APPLICATION TYPES

- Utility - Generator Set

COMMUNICATIONS

The PowerCommand® 40-11 Transfer Switch Control features an optional network communication module.

Features include:

- Optional Modbus® RTU RS485 communication module (1 isolated serial port) TCP Ethernet communication module (1 RJ45 port)
- USB port for service tool interface

PROTECTION

PHASE ROTATION AND VOLTAGE IMBALANCE SENSING

- Source 1 and Source 2

UNDER-VOLTAGE SENSING

- 3-phase normal, 3-phase emergency, Accuracy: ±2 % of full-scale phase to phase
- Phase to neutral voltage range 50Vac to 414Vac.
- Phase to phase voltage range 86Vac to 717Vac.

OVERVOLTAGE SENSING

- 3-phase normal, 3-phase emergency, Accuracy: ±2 % of full-scale phase to phase
- Phase to neutral voltage range 52Vac to 416Vac.
- Phase to phase voltage range 90Vac to 720Vac.

OVER/UNDER FREQUENCY SENSING

- Normal and emergency
- Accuracy: ±0.2 Hz
- Frequency range 3.5 – 75 Hz

SYNC CHECK

- For in-phase transfer

ENVIRONMENT

Operating Temperature Range	Control operates over an ambient temperature range: -30 ºC to 70 ºC.
Storage Temperature Range	The control operates after being exposed to Storage Temperatures in the range of -40 ºC to 85ºC.
Ingress Protection	The front panel is to be IP65.
Sun Protection	Suitable for outdoor use with respect to exposure to Ultraviolet Light, Water exposure and Immersion in accordance with UL 746C.

CODES AND STANDARDS

c UL us	The PC40-11 control is a UL Recognized Component Marked for United States and Canada.	NFPA	Capable of being used on systems compliant with NFPA 70, 99 and 110 (Level 1).
UK CA	The PC40-11 control fulfills the requirements of UKCA standard product directives.	NEMA	Control and display as installed in a transfer switch enclosure comply with NEMA 4X and IP65 at the transfer switch level - if the transfer switch enclosure is also NEMA 4X & IP65 compliant.
RoHS	The control is RoHS compliant.	NEC®	Capable of being used on systems suitable for use in emergency, legally required and Standby and Critical Operations Power Systems (COPS) applications per NEC 700, 701, 702 and 708.
CE	Fulfills the requirements of relevant European product directives.	LVD	The unit is designed to comply with European directive 72/23/EEC by complying with harmonized European safety standard BS EN 60950.
CSA®	All switches are certified to CSA C22.2 No. 178.1 switching of electrical energy in emergency or other systems, up to 600 VAC and 4 kA.	IEEE	The control is IEEE C37.90.2 certified. Capable of being used on IEEE 446 compliant systems; Recommended Practice for Emergency and Standby Power Systems.
EMC	The control is tested to meet the following CE Electromagnetic Compatibility (EMC) standards for EN 61000 series (electromagnetic compatibility): • EN 61000-6-2 Generic Immunity Standard • EN 61000-6-4 Generic Emissions		

For more information, please contact your local Cummins distributor or visit cummins.com Our energy working for you™

All rights reserved. Cummins is a registered trademark of Cummins Inc. PowerCommand, AmpSentry, InPower and "Our energy working for you." are trademarks of Cummins Inc. Other company, product, or service names may be trademarks or service marks of others. Specifications are subject to change without notice.

Cummins Inc.
Box 3005
Columbus, IN 47202-3005 U.S.A.
1-800-CUMMINS™ (1-800-286-6467) cummins.com
S-6560-EN PD00000756 - Produced in U.S.A. Rev. 05/25 © 2023 Cummins Inc.

VMC GROUP
THE POWER OF TOGETHER

CERTIFICATE OF COMPLIANCE
SEISMIC DESIGN OF NONSTRUCTURAL COMPONENTS AND SYSTEMS

Certification No.

VMA-52956-01C (Revision 7)

Expiration Date: 7/31/2026

Certification Parameters:

The nonstructural products (mechanical and/or electrical components) listed on this certificate are CERTIFIED[1] FOR SEISMIC APPLICATIONS in accordance with the following building code[2] releases.

IBC 2021, 2018, 2015, 2012

The following model designations, options, and accessories are included in this certification. Reference report number VMA-52956-01 as issued by The VMC Group for a complete list of certified models, included accessories/options, and certified installation methods.

Cummins Power Generation, Inc.; Automatic & By-Pass Transfer Switches
OTEC, OTECSE, BTPC, CBL; 40-1200 Amp

The above referenced equipment is **APPROVED** for seismic application when properly installed[3], used as intended, and contains a Seismic Certification Label referencing this Certificate of Compliance[4]. As limited by the tabulated values, below grade, grade, and roof-level installations, installations in essential facilities, for life safety applications, and/or of equipment containing hazardous contents are permitted and included in this certification with an Equipment Importance Factor assigned as I_p=1.5. The equipment is qualified by successful seismic shake table testing at the nationally recognized Clark Dynamic Test Laboratory, Environmental Testing Laboratories, and Dynamic Certification Laboratories under the review of the ISO Accredited Product Certification Agency, the VMC Group.

Certified Seismic Design Levels[8]			
Certified **IBC**	**Importance $I_p \leq 1.5$** Soil Classes A-E Risk Categories I-IV Design Categories A-F	z/h ≤ 1.0	z/h = 0.0
		$S_{DS} \leq 2.270$ g	$S_{DS} \leq 2.500$ g

The qualified seismic design level stated is the highest for all series this certificate covers. For more information, see the certified product tables on page 2.

Certified Seismic Installation Methods[9]	
Directly To Structural Wall	Rigid Mounting From Unit Base To Rigid Structure
Combination Rigid Mounting from Unit Base to Rigid Structure and Directly to Structural Wall	

HEADQUARTERS
113 Main Street
Bloomingdale, NJ 07403
Phone: 973.838.1780
Toll Free: 800.569.8423
Fax: 973.492.8430

CALIFORNIA
180 Promenade Circle
Suite 300
Sacramento, CA 95834
Phone: 916.634.7771

TEXAS
11930 Brittmoore Park Drive
Houston, TX 77041
Phone: 713.466.0003
Fax: 713.466.1355

thevmcgroup.com

VMC GROUP
THE POWER OF TOGETHER

CERTIFICATE OF COMPLIANCE

SEISMIC DESIGN OF NONSTRUCTURAL COMPONENTS AND SYSTEMS

Certified Product Table:

Model	Amp Range	Frame	NEMA Rating	Height [in.]	Width [in.]	Depth [in.]	Max Weight [lbs]	Mounting
OTEC	40, 70, 125	A	1, 3R, 4, 4X, 12	46	32	16	336	Rigid Wall
	150, 225, 260	B						
	300, 400, 600	C		74	21	32.4	521	
	800, 1000	D				33	589	
OTECSE	40, 70, 100, 125	A-SE	1, 3R, 12	43.4	32	16.3	364	
	150, 200, 225, 250	B-SE		74	34	20	611	
	300, 400, 600	C-SE		74.5	22.4	34.4	651	
BTPC	150-260	B	1, 3R, 4, 12	72	36	23	564	Rigid Base
	300-600	C		84			639	
	800-1000	D		90	48	28	1100	
CBL	150-600	C		84	36	23	810	
	800-1000	D					1179	
OTEC	1200	E	1, 3R, 4, 12, 4X	93.3	27.5	39	891	
OTECSE	800-1000	D-SE	1, 3R, 4, 12		27.8		1034	
OTEC	1200	E	1, 3R, 4, 12, 4X	93.3	27.5	39	891	Combination Rigid Base/Wall
OTECSE	800-1000	D-SE	1, 3R, 4, 12				1034	

Group	Type	S_{DS} (z/h=0)	S_{DS} (z/h=1)	A_{Flex-H}	A_{Rig-H}	A_{Flex-V}	A_{Rig-V}	F_p/W_p
All Models	AC156	2.50	2.27	3.63	2.72	1.67	0.67	1.70
Any Model with P80 Controller			2.00	3.20	2.40			1.50

This certification includes the Automatic & By-Pass Transfer Switches and included factory supplied options. This certification only covers accessories and options listed on the product matrix. The ATS shall be installed per the manufacturer supplied seismic installation instructions. For a list of certified options please directly contact the manufacturer. This certification excludes all non-factory supplied accessories and options, including but not limited to isolation/restraint devices, other electrical/mechanical components and their connections. Flexibility in the connections must be maintained as to not transmit load into the equipment.

IBC CERTIFIED VMC GROUP

VMA-52956-01C (Revision 7)
Issue Date: Monday, December 16, 2019
Revision Date: Tuesday, October 8, 2024
Expiration Date: Friday, July 31, 2026

VMC GROUP
THE POWER OF TOGETHER

CERTIFICATE OF COMPLIANCE
SEISMIC DESIGN OF NONSTRUCTURAL COMPONENTS AND SYSTEMS

Notes & Comments:

1. All equipment listed herein successfully passed the seismic acceptance criteria for shake testing non-structural components and systems as set forth in the ICC AC-156. The Test Response Spectrum (TRS) enveloped the Required Response Spectrum (RRS) for all units tested. The tested units were representative sample(s) of a contingent of models and all remained captive and structurally sound after the seismic shake simulation. The units also remained functionally operational after the simulation testing as functional testing was completed by the equipment manufacturer before and after the seismic simulations. Although a seismic qualified unit inherently contains some wind resisting capacity, that capacity is undetermined and is excluded from this certification. Snow/Ice loads have been neglected and thus limit the unit to be installed both indoors (covered by an independent protective structure) and out of doors (exposed to accumulating snow/ice) for ground snow loads no greater than 30 psf for all applications.

2. The following building codes are addressed under this certification:
   IBC 2021 referencing ASCE7-16 and ICC-ES AC-156
   IBC 2018 referencing ASCE7-16 and ICC-ES AC-156
   IBC 2015 referencing ASCE7-10 and ICC-ES AC-156
   IBC 2012 referencing ASCE7-10 and ICC-ES AC-156

3. Refer to the manufacturer supplied installation drawings for anchor requirements and mounting considerations for seismic applications. Required anchor locations, size, style, and load capacities (tension and shear) may be specified on the installation drawings or specified by a 3rd party. Mounting requirement details such as anchor brand, type, embedment depth, edge spacing, anchor-to-anchor spacing, concrete strength, special inspection, wall design, and attachment to non-building structures must be outlined and approved by the Engineer of Record for the project or building. Structural walls, structural floors, and housekeeping pads must also be seismically designed and approved by the project or building Structural Engineer of Record to withstand the seismic anchor loads as defined on the installation drawings. The installing contractor is responsible for ensuring the proper installation of all anchors and mounting hardware.

4. For this certificate and certification to remain valid, this certificate must correspond to the "Seismic Certification Label" found affixed to the unit by the factory. The label ensures the manufacturer built the unit in conformance to the IBC seismic design criteria set forth by the Certified Seismic Qualification Agency, the VMC Group, and meets the seismic design levels claimed by this certificate.

5. Mechanical, Electrical, and Plumbing connections to the equipment must be flexibly attached as to not transfer load through the connection. The structural integrity of any conduit, cable trays, piping, ductwork and/or flexible connections is the responsibility of others. This certification makes no statements of compliance in regards to NEMA, IP, UL, CSA, or other relevant standards after a seismic event. For compliance to other relevant standards, please contact the manufacturer.

6. This certificate applies to units manufactured at:
   Cummins Power Systems Eje 122 # 200 Zona Industrial CP 78395 San Luis Potosi SLP México
   Cummins Natural Gas Engines 409 S. Norris Street Clovis, NM 88101 U.S.A.

7. This certification follows the VMC Group's ISO-17065 Scheme.

8. The qualified seismic design level stated is the highest for all series this certificate covers. For more information, see the certified product tables on page 2.

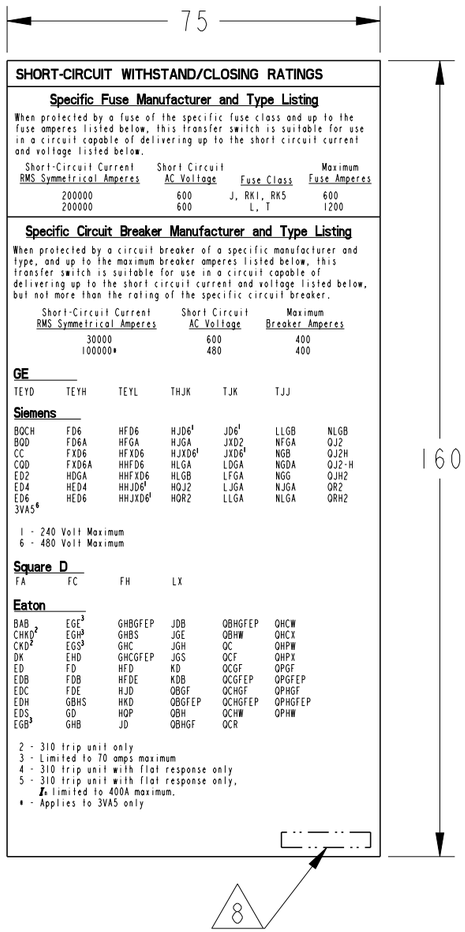
9. The certified seismic installation methods stated are a summary for all product lines this certificate covers. For individual certified seismic installation methods, see the certified product tables.

John P. Giuliano, PE
President, VMC Group

IAS ACCREDITED Product Certification Agency

VMA-52956-01C (Revision 7)
Issue Date: Monday, December 16, 2019
Revision Date: Tuesday, October 8, 2024
Expiration Date: Friday, July 31, 2026

IBC CERTIFIED VMC GROUP



SHORT-CIRCUIT WITHSTAND/CLOSING RATINGS

Specific Fuse Manufacturer and Type Listing

When protected by a fuse of the specific fuse class and up to the fuse amperes listed below, this transfer switch is suitable for use in a circuit capable of delivering up to the short circuit current and voltage listed below.

Short-Circuit Current RMS Symmetrical Amperes	Short Circuit AC Voltage	Fuse Class	Maximum Fuse Amperes
200000	600	J, RK1, RK5	600
200000	600	L, T	1200

Specific Circuit Breaker Manufacturer and Type Listing

When protected by a circuit breaker of a specific manufacturer and type, and up to the maximum breaker amperes listed below, this transfer switch is suitable for use in a circuit capable of delivering up to the short circuit current and voltage listed below, but not more than the rating of the specific circuit breaker.

Short-Circuit Current RMS Symmetrical Amperes	Short Circuit AC Voltage	Maximum Breaker Amperes
30000	600	400
100000*	480	400

GE

TEYD TEYH TEYL THJK TJK TJJ

Siemens

BQCH	FD6	HFD6	HJD6[1]	JD6[1]	LLGB	NLGB
BQD	FD6A	HFGA	HJGA	JXD2	NFGA	QJ2
CC	FXD6	HFXD6	HJXD6[1]	JXD6[1]	NGB	QJ2H
CQD	FXD6A	HHFD6	HLGA	LDGA	NGDA	QJ2-H
ED2	HDGA	HHFXD6	HLGB	LFGA	NGG	QJH2
ED4	HED4	HHJD6[1]	HQJ2	LJGA	NJGA	QR2
ED6	HED6	HHJXD6[1]	HQR2	LLGA	NLGA	QRH2
3VA5[4]						

1 - 240 Volt Maximum
6 - 480 Volt Maximum

Square D

FA FC FH LX

Eaton

BAB	EGE[3]	GHBGFEP	JDB	QBHGFEP	QHCW
CHKD[2]	EGH[3]	GHBS	JGE	QBHW	QHCX
CKD[2]	EGS[3]	GHC	JGH	QC	QHPW
DK	EHD	GHCGFEP	JGS	QCF	QHPX
ED	FD	HFD	KD	QCGF	QPGF
EDB	FDB	HFDE	KDB	QCGFEP	QPGFEP
EDC	FDE	HJD	QBGF	QCHGF	QPHGF
EDH	GBHS	HKD	QBGFEP	QCHGFEP	QPHGFEP
EDS	GD	HQP	QBH	QCHW	QPHW
EGB[3]	GHB	JD	QBHGF	QCR	

2 - 310 trip unit only
3 - Limited to 70 amps maximum
4 - 310 trip unit with flat response only
5 - 310 trip unit with flat response only, I^2t limited to 400A maximum.
* - Applies to 3VA5 only

NOTES:

1. LABEL SHOWN ON PRINT IS NOT ARTWORK. VENDOR ARTWORK CREATED TO PRODUCE THIS LABEL MUST BE SIGNED OFF BY CUMMINS ENGINEERING.
2. ALL TEXT TO BE HELVETICA SANS SERIF OR EQUIVALENT.
3. BLACK TEXT AND WHITE BACKGROUND.
4. MATERIAL THICKNESS: 10 MIL.
5. SEE CUMMINS MATERIAL SPECIFICATIONS FOR APPLICATION INFORMATION.
6. IF CORNERS SHOWN SQUARE, RADIUS OPTIONAL.
7. IF CSA AGENCY APPROVAL REQUIRED LOCATE VENDOR CSA IDENTIFICATION MARK IN LOWER RIGHT HAND CORNER.
8. PART NUMBER & REVISION LETTER TO BE LOCATED WHERE SHOWN IN THE FOLLOWING FORMAT: PART NUMBER LTR (EXAMPLE: A123B456 A).

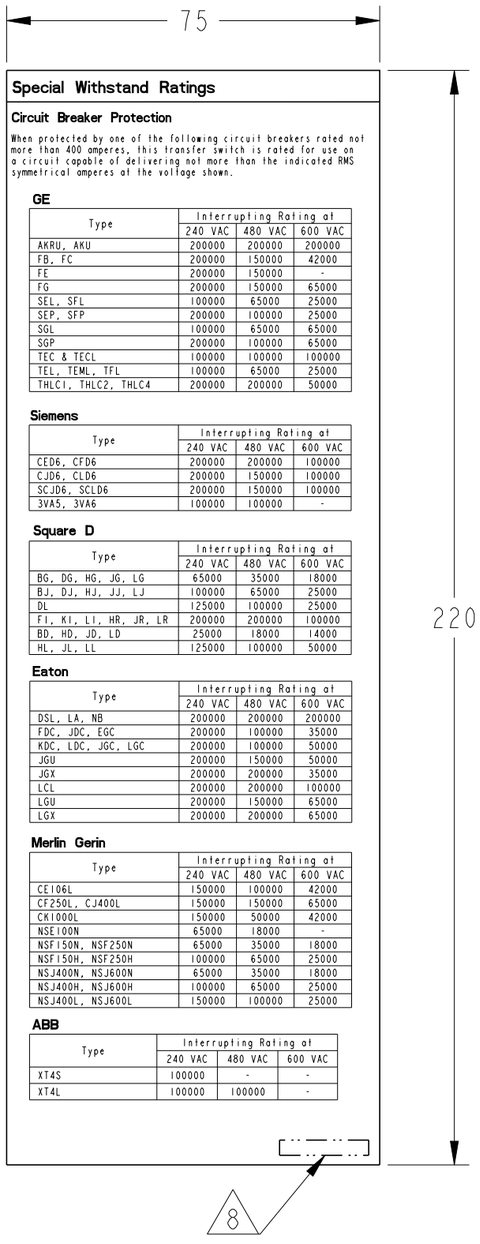
MODEL/PLATFORM: OT 150-260A	THIS PART IS SIMILAR TO:
UNLESS OTHERWISE SPECIFIED THE FOLLOWING SHALL APPLY	ANG. TOL.: ± 1°
DIMENSIONAL TOLERANCES: X ± 1	.X ± 0.8 .XX ± 0.38
Cummins Inc.	
DIMENSIONS ARE IN: MILLIMETERS [ ] ARE IN: - / SIZE: A3 / SCALE:1	
DIMENSIONING AND TOLERANCING PER: ASME Y14.5-2009 / THIRD ANGLE PROJECTION	CAD SYSTEM PTC® Creo® Parametric

Document Generated: 22DEC2022 15:05 GMT

Cummins Data Classification:
Cummins Confidential

This document (and the information shown thereon) is **Confidential and Proprietary** and shall not be disclosed to others in hard copy or electronic form, reproduced by any means, or used for any purpose without written consent of Cummins Inc.

EXHIBIT K



Special Withstand Ratings

Circuit Breaker Protection

When protected by one of the following circuit breakers rated not more than 400 amperes, this transfer switch is rated for use on a circuit capable of delivering not more than the indicated RMS symmetrical amperes at the voltage shown.

GE

Type	Interrupting Rating at		
	240 VAC	480 VAC	600 VAC
AKRU, AKU	200000	200000	200000
FB, FC	200000	150000	42000
FE	200000	150000	-
FG	200000	150000	65000
SEL, SFL	100000	65000	25000
SEP, SFP	200000	100000	25000
SGL	100000	65000	65000
SGP	200000	100000	65000
TEC & TECL	100000	100000	100000
TEL, TEML, TFL	100000	65000	25000
THLC1, THLC2, THLC4	200000	200000	50000

Siemens

Type	Interrupting Rating at		
	240 VAC	480 VAC	600 VAC
CED6, CFD6	200000	200000	100000
CJD6, CLD6	200000	150000	100000
SCJD6, SCLD6	200000	150000	100000
3VA5, 3VA6	100000	100000	-

Square D

Type	Interrupting Rating at		
	240 VAC	480 VAC	600 VAC
BG, DG, HG, JG, LG	65000	35000	18000
BJ, DJ, HJ, JJ, LJ	100000	65000	25000
DL	125000	100000	25000
FI, KI, LI, HR, JR, LR	200000	200000	100000
BD, HD, JD, LD	25000	18000	14000
HL, JL, LL	125000	100000	50000

Eaton

Type	Interrupting Rating at		
	240 VAC	480 VAC	600 VAC
DSL, LA, NB	200000	200000	200000
FDC, JDC, EGC	200000	100000	35000
KDC, LDC, JGC, LGC	200000	100000	50000
JGU	200000	150000	50000
JGX	200000	200000	35000
LCL	200000	200000	100000
LGU	200000	150000	65000
LGX	200000	200000	65000

Merlin Gerin

Type	Interrupting Rating at		
	240 VAC	480 VAC	600 VAC
CE106L	150000	100000	42000
CF250L, CJ400L	150000	150000	65000
CK1000L	150000	50000	42000
NSE100N	65000	18000	-
NSF150N, NSF250N	65000	35000	18000
NSF150H, NSF250H	100000	65000	25000
NSJ400N, NSJ600N	65000	35000	18000
NSJ400H, NSJ600H	100000	65000	25000
NSJ400L, NSJ600L	150000	100000	25000

ABB

Type	Interrupting Rating at		
	240 VAC	480 VAC	600 VAC
XT4S	100000	-	-
XT4L	100000	100000	-

8

NOTES:

1. LABEL SHOWN ON PRINT IS NOT ARTWORK. VENDOR ARTWORK CREATED TO PRODUCE THIS LABEL MUST BE SIGNED OFF BY CUMMINS ENGINEERING.
2. ALL TEXT TO BE HELVETICA SANS SERIF, OR EQUIVALENT.
3. BLACK TEXT AND WHITE BACKGROUND.
4. MATERIAL THICKNESS: 10 MIL.
5. SEE CUMMINS MATERIAL SPECIFICATIONS FOR APPLICATION INFORMATION.
6. IF CORNERS SHOWN SQUARE, RADIUS OPTIONAL.
7. IF CSA AGENCY APPROVAL REQUIRED LOCATE VENDOR CSA IDENTIFICATION MARK IN LOWER RIGHT HAND CORNER.

8. PART NUMBER & REVISION LETTER TO BE LOCATED WHERE SHOWN IN THE FOLLOWING FORMAT: PART NUMBER LTR (EXAMPLE: A123B456 A).

MODEL/PLATFORM: BT/BTPC 150-260A	THIS PART IS SIMILAR TO:	
UNLESS OTHERWISE SPECIFIED THE FOLLOWING SHALL APPLY		ANG. TOL.: ± 1°
DIMENSIONAL TOLERANCES: X ± 1	.X ± 0.8	.XX ± 0.38
Cummins Inc.		
DIMENSIONS ARE IN: MILLIMETERS [ ] ARE IN: -	SIZE: A3 SCALE:1	
DIMENSIONING AND TOLERANCING PER: ASME Y14.5-2009	THIRD ANGLE PROJECTION	CAD SYSTEM PTC® Creo® Parametric

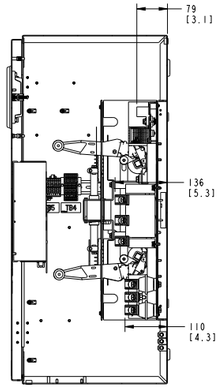
Document Generated: **22DEC2022 15:05 GMT**

Cummins Data Classification:
Cummins Confidential

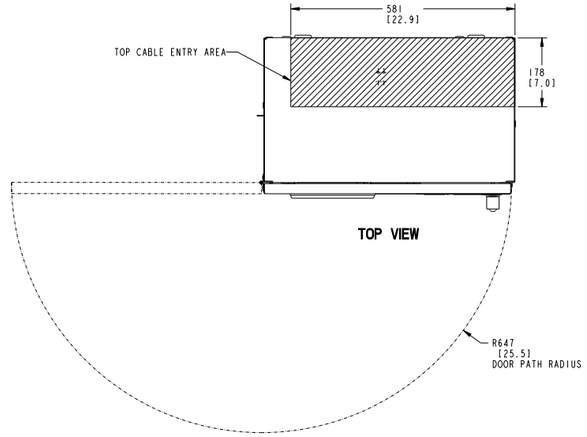
This document (and the information shown thereon) is **Confidential and Proprietary** and shall not be disclosed to others in hard copy or electronic form, reproduced by any means, or used for any purpose without written consent of Cummins Inc.

Part Number: **A051D533** Part Revision: **C**
Part Name: **LABEL,INFORMATION**
Drawing Category: **Detail** State: **Released**

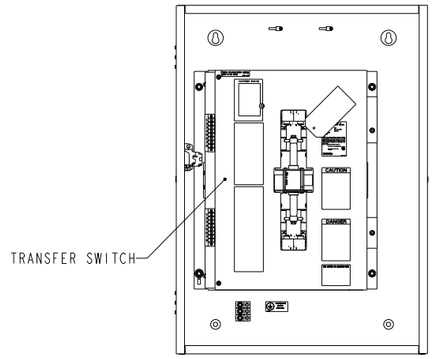
EXHIBIT K



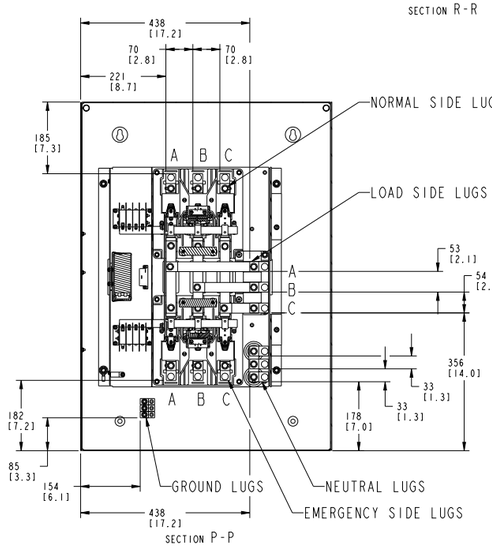
SECTION R-R



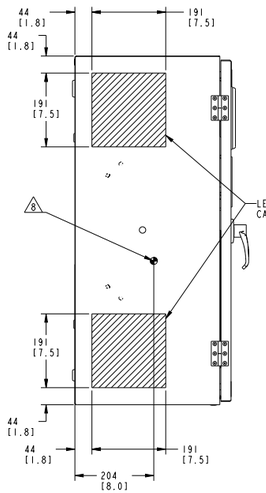
TOP VIEW



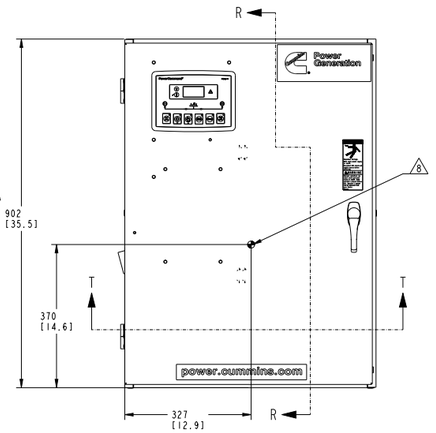
FRONT VIEW
DOOR HIDDEN FOR CLEAR VISUALIZATION



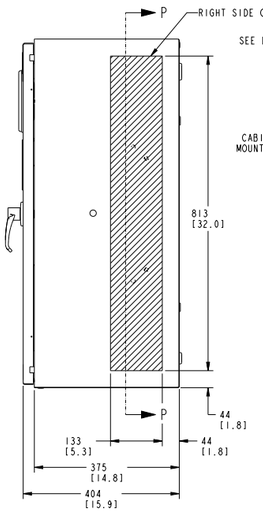
SECTION P-P



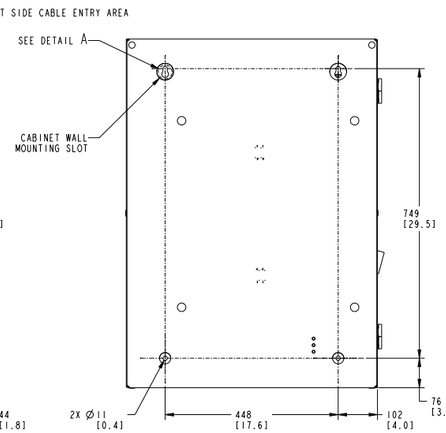
LEFT SIDE VIEW



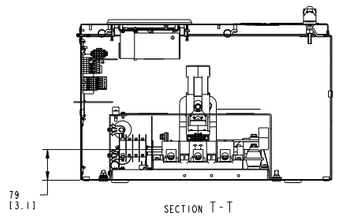
FRONT VIEW



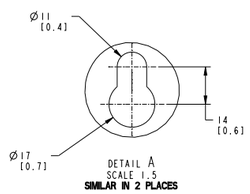
RIGHT SIDE VIEW



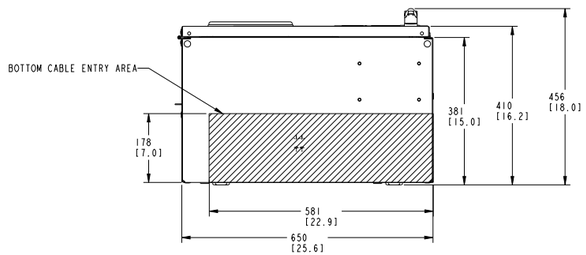
REAR VIEW



SECTION T-T



DETAIL A
SCALE 1.5
SIMILAR IN 2 PLACES



BOTTOM VIEW

NOTES:

1. APPROXIMATE WEIGHT BASED ON CAD MODEL (NOT FOR INSPECTION):
   FOR TYPE 1: 213.8 LBS (97 KG)
   FOR TYPE 3R & 4: 304.2 LBS (138 KG)
   FOR TYPE 12: 286.6 LBS (130 KG)
   FOR TYPE 4X: 335.1 LBS (152 KG)
2. MECHANICAL LUG CAPACITY:
   #6-300 MCM CU-AL (QTY 1 WIRE)
   GROUND LUG CAPACITY:
   #14-1/0 CU-AL (QTY 1 WIRE)
3. USE SEPARATE CONDUITS FOR CONTROL WIRING AND POWER WIRING. DO NOT COMBINE.
4. SHADED AREA INDICATES WIRING & CABLE ENTRANCE AREA. DO NOT INSTALL OUTSIDE OF SHADED AREA.
5. WIRE BENDING SPACE CONFORMS TO NATIONAL ELECTRIC CODE (NFPA70).
6. CLEARANCE: NEC REQUIRED MINIMUM 36 INCHES FOR FRONT CLEARANCE.
7. ALL DIMENSIONS ARE REFERENCE, UNLESS SPECIFICALLY TOLERANCED.
8. CENTER OF GRAVITY IS APPROXIMATE.
9. FOR UNITS WITH BOLTED DOOR CLAMPS; DO NOT TIGHTEN WITH IMPACT DRIVER AND USE THE FOLLOWING TORQUE REQUIREMENTS: 5/16-18: 13.6-16.3 Nm

OTEC 150-225A, 3 POLE, TYPE 1

LAST DATUM LETTER USED:		LAST REFERENCE LETTER USED: A	
MODEL/PLATFORM: OTEC 150-225A		THIS PART IS SIMILAR TO:	

Cummins Inc.
DIMENSIONS ARE IN: MILLIMETERS [ ] ARE IN: INCHES
SIZE: A0 SCALE:0.229
DIMENSIONING AND TOLERANCING PER: ASME Y14.5-2009
THIRD ANGLE PROJECTION
CAD SYSTEM PTC® Creo® Parametric

Document Generated: **18SEP2023 05:45 GMT**

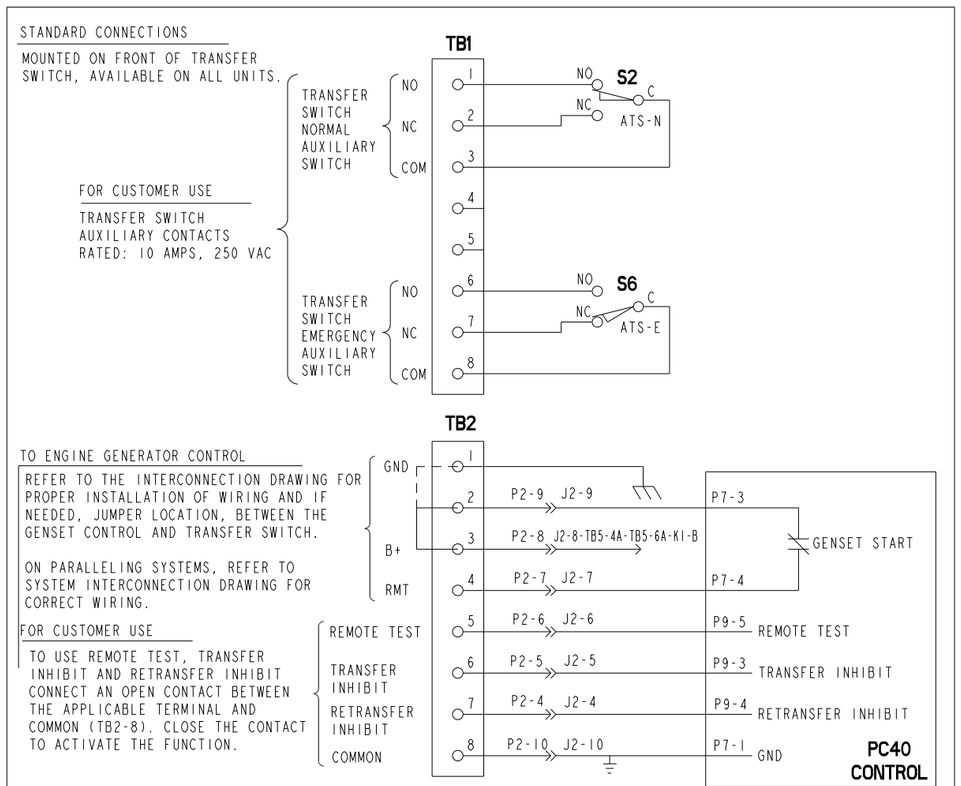
Cummins Data Classification:
Cummins Confidential

This document (and the information shown thereon) is **Confidential and Proprietary** and shall not be disclosed to others in hard copy or electronic form, reproduced by any means, or used for any purpose without written consent of Cummins Inc.

Part Number: **A074K575** Part Revision: **A**
Part Name: **OUTLINE,ENCLOSURE**
Drawing Category: **Outline** State: **Released**

EXHIBIT K

CUSTOMER CONNECTIONS (STANDARD)

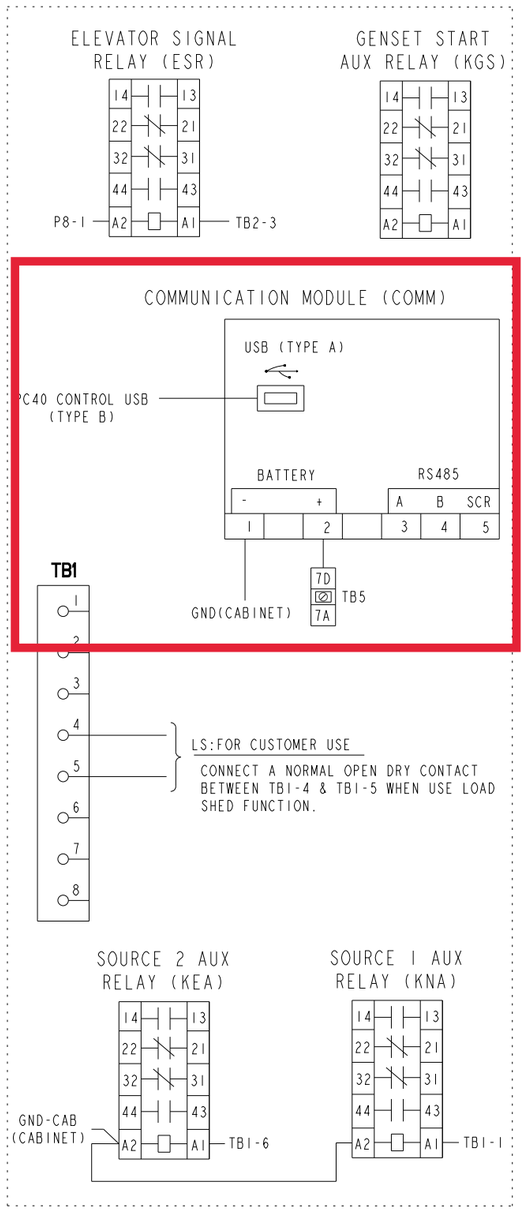


S2,S3,S4 AND S5 NORMAL POSITION AUXILIARY SWITCH
S6,S7,S8 AND S9 EMERGENCY POSITION AUXILIARY SWITCH
K1 OPEN EMERGENCY RELAY
K2 OPEN NORMAL RELAY
K3 CLOSE RELAY
CB MAIN CIRCUIT BREAKER
CB1 CIRCUIT BREAKER
M1 LINEAR MOTOR
C1 MOTOR RUN CAPACITOR

UTILITY TO GENSET
3 AND 4 POLE
OTEC 40-600 AMP & OTECSE 40-125 AMP
120 VOLT 1 PHASE L-N
220 VOLT 1 PHASE
240 VOLT 1 PHASE
190 VOLT 3 PHASE
208 VOLT 3 PHASE
220 VOLT 3 PHASE
240 VOLT 3 PHASE
380 VOLT 3 PHASE
415 VOLT 3 PHASE
440 VOLT 3 PHASE
480 VOLT 3 PHASE

OPTIONS:
COMM: COMMUNICATION MODULE
ESR: ELEVATOR SIGNAL RELAY
KGS: GENSET START AUX RELAY
KNA: SOURCE 1 AUX RELAY
KEA: SOURCE 2 AUX RELAY
LPCM: LOAD PHASE CURRENT MONITORING
LS: LOAD SHED

CUSTOMER CONNECTIONS (OPTIONAL)



NOTES:

1. TB1 AND TB2 ARE MOUNTED ON THE FRONT OF THE TRANSFER SWITCH.
2. ALL DEVICES ARE SHOWN DE-ENERGIZED, WITH THE TRANSFER SWITCH CLOSED TO NORMAL. 4 POLE TRANSFER SWITCH SHOWN. ON 3 POLE MODELS THE SWITCHED NEUTRAL POLE IS REPLACED WITH A SOLID NEUTRAL BAR. P1-11 AND P1-5 ARE CONNECTED TO NEUTRAL BAR ON 3 POLE MODELS. ON SHEET 3.
3. FOR SINGLE PHASE UNITS: 120/240V, 3 WIRE - CONNECT POWER CABLES TO A AND C 120V L-N, 2 WIRE - CONNECT POWER CABLES TO A AND NEUTRAL.
4. FOR OTECSE MODEL, LIST OF MAIN CIRCUIT BREAKER TYPE SHOWN BELOW: SWITCH RATING: MAIN CIRCUIT BREAKER TYPE 40-125A SQUARE D, TYPE 'HG'.
5. WIRING FOR RELAYS KNA AND KEA IS TYPICAL. POWER CONNECTIONS MAY VARY SLIGHTLY IF MORE OR LESS RELAYS ARE USED.
6. WHEN INSTALLING MULTIPLE RELAYS JUMPER GROUNDS TOGETHER INSTEAD OF RUNNING LEADS ALL THE WAY BACK TO GROUND. WHEN INSTALLING MULTIPLE RELAYS WITH THE SAME FUNCTION CONNECT TOGETHER FOR EASIER WIRING ON SHEET 5.
7. KGS PROVIDED UNWIRED FOR ADDITIONAL GENSET START WIRING LOGIC TO MEET ANY LOCAL CODE OR INSTALLATION REQUIREMENTS. REFER TO THE INTERCONNECTION DRAWING FOR PROPER INSTALLATION OF WIRING. ON SHEET 5.
8. ON ALL SINGLE PHASE, 2 OR 3 WIRE UNITS: THE WIRE CONNECTED FROM J1-2 TO P4-6 IS NOT PRESENT. THE WIRE CONNECTED FROM J1-14 TO P4-2 IS NOT PRESENT. IN ADDITION, ON 120 VOLT L-N, 2 WIRE UNITS: THE WIRE CONNECTED FROM K1-4 TO TB4-2A WILL BE CONNECTED FROM K1-4 TO TB4-3A THE WIRE CONNECTED FROM K2-4 TO TB4-5A WILL BE CONNECTED FROM K2-4 TO TB4-6A ON SHEET 2.
9. ELEVATOR SIGNAL RELAY SHOWN DE-ENERGIZED. RELAY CHANGES STATE DURING THE ELEVATOR DELAY TIME.
10. CAUTION: DO NOT DISCONNECT THE CURRENT MODULE WHILE THE CURRENT TRANSFORMERS ARE ENERGIZED UNLESS THE SECONDARIES ARE SHORTED. TO SHORT SECONDARIES ATTACH THE SHORTING BAR TO THE CENTER OF TB6-4 TO TB6-7 BEING SURE TO TIGHTEN EACH SCREW. ON SHEET 4, 5.
11. THE CURRENT TRANSFORMERS ARE SHORTED DURING SHIPPING. TO ACTIVATE, REMOVE THE SHORTING BAR FROM THE CENTER OF TB6-4 TO TB6-7 BY LOOSENING ALL OF THE SCREWS AND LIFTING IT OUT OF THE TERMINAL BLOCK. SAVE FOR REUSE. ON SHEET 4, 5.
12. FOR SINGLE PHASE TWO WIRE SYSTEM, CT2 AND CT3 WILL BE REMOVED. FOR SINGLE PHASE THREE WIRE SYSTEM, CT3 WILL BE REMOVED. ON SHEET 4, 5.

MODEL/PLATFORM: OTEC			THIS PART IS SIMILAR TO: A065K034
Cummins Inc.			
DIMENSIONS ARE IN: MILLIMETERS [ ] ARE IN: -	SIZE: A0	SCALE:1	
DIMENSIONING AND TOLERANCING PER: ASME Y14.5-2009	THIRD ANGLE PROJECTION		CAD SYSTEM PTC® Creo® Parametric

Document Generated: **30NOV2023 13:54 GMT**

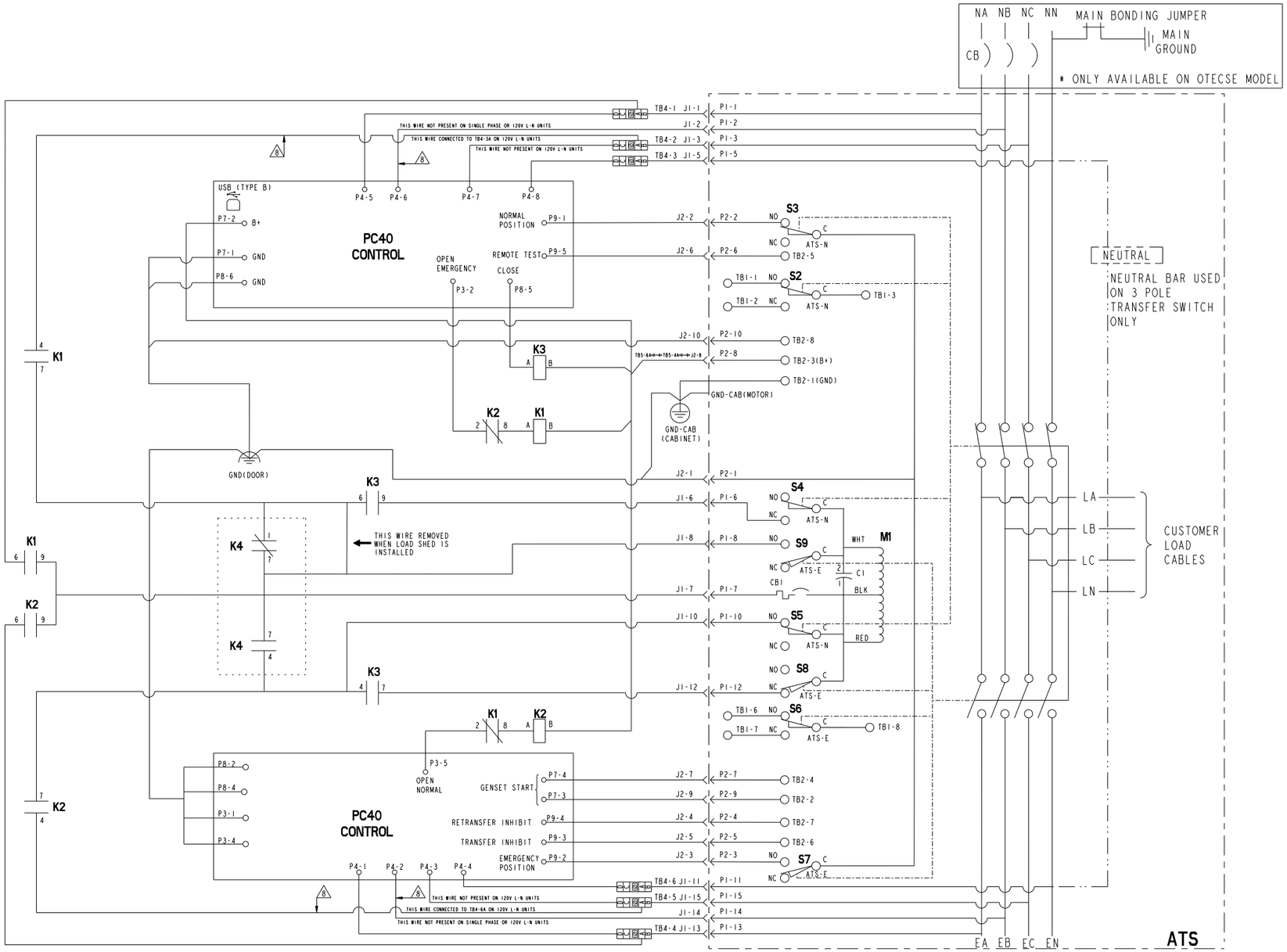
Cummins Data Classification:
Cummins Confidential

This document (and the information shown thereon) is **Confidential and Proprietary** and shall not be disclosed to others in hard copy or electronic form, reproduced by any means, or used for any purpose without written consent of Cummins Inc.

Part Number: **A074P733** Part Revision: **B**
Part Name: **DIAGRAM,SCHEMATIC**
Drawing Category: **Detail** State: **Released**

EXHIBIT K

STANDARD SCHEMATIC DIAGRAM



Cummins Inc.
DIMENSIONS ARE IN: MILLIMETERS [ ] ARE IN: -
SIZE: A0 SCALE:1
DIMENSIONING AND TOLERANCING PER: ASME Y14.5-2009
THIRD ANGLE PROJECTION
CAD SYSTEM PTC® Creo® Parametric

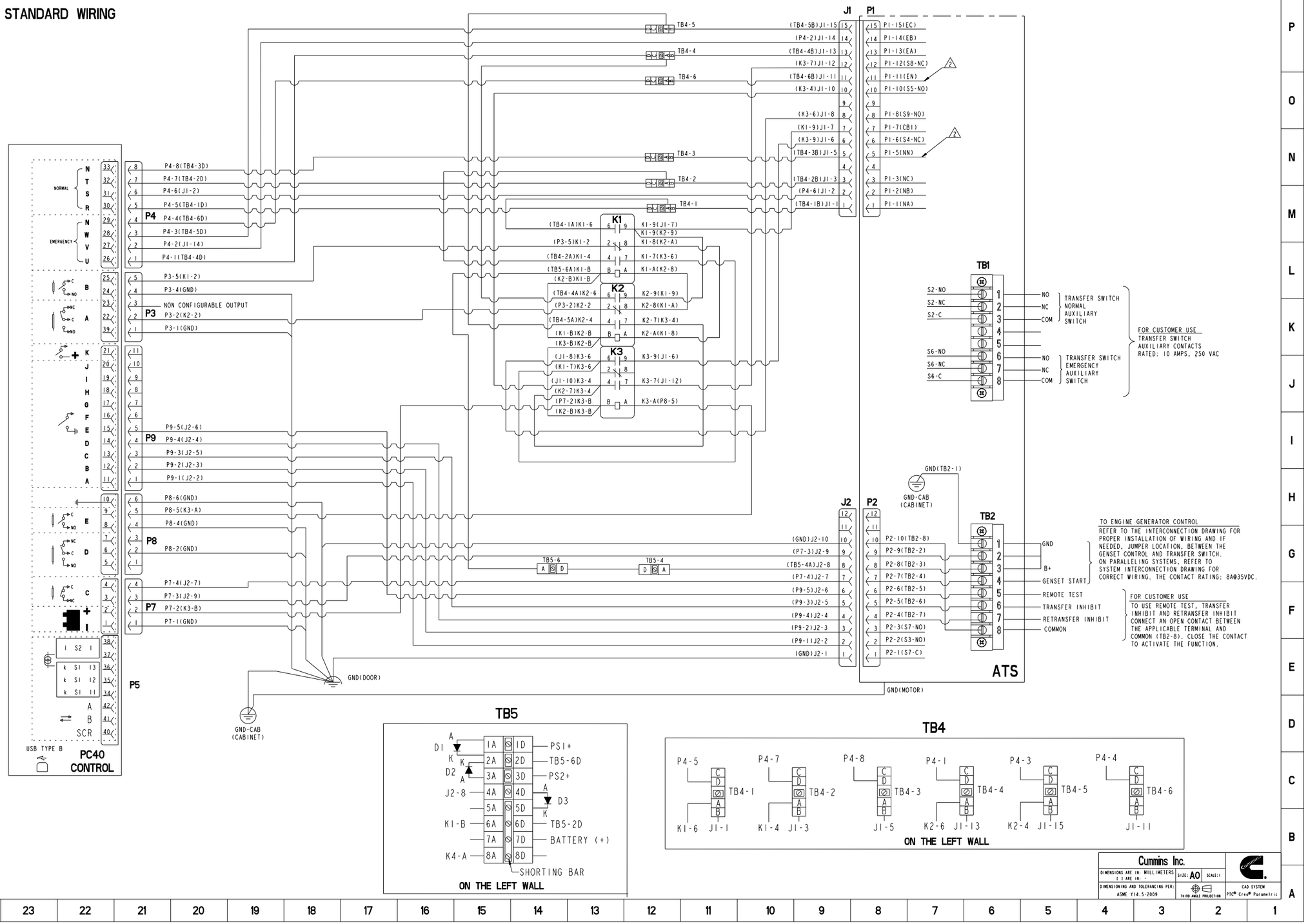
Document Generated: **30NOV2023 13:54 GMT**

Cummins Data Classification:
Cummins Confidential

This document (and the information shown thereon) is **Confidential and Proprietary** and shall not be disclosed to others in hard copy or electronic form, reproduced by any means, or used for any purpose without written consent of Cummins Inc.

EXHIBIT K

STANDARD WIRING



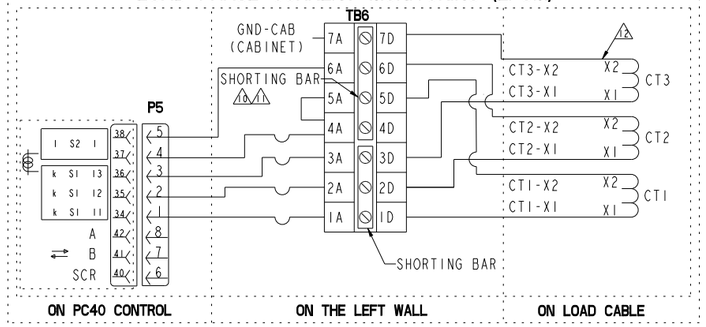
Document Generated: **30NOV2023 13:54 GMT**

Cummins Data Classification:
Cummins Confidential

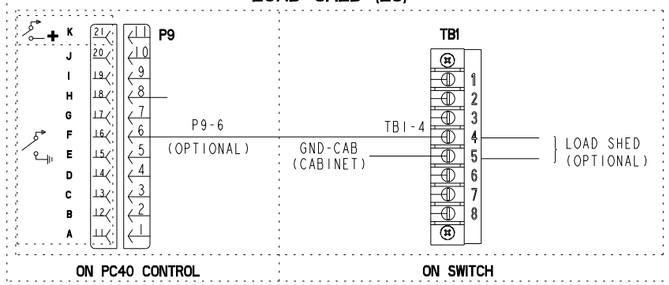
This document (and the information shown thereon) is **Confidential and Proprietary** and shall not be disclosed to others in hard copy or electronic form, reproduced by any means, or used for any purpose without written consent of Cummins Inc.

OPTIONAL WIRING

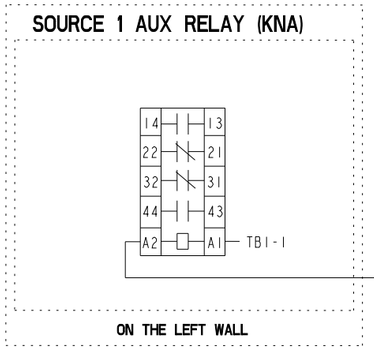
LOAD PHASE CURRENT MONITORING (LPCM)



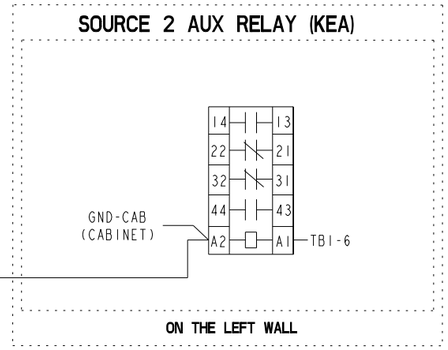
LOAD SHED (LS)



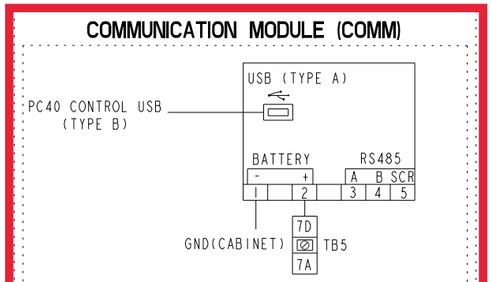
SOURCE 1 AUX RELAY (KNA)



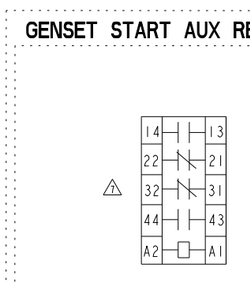
SOURCE 2 AUX RELAY (KEA)



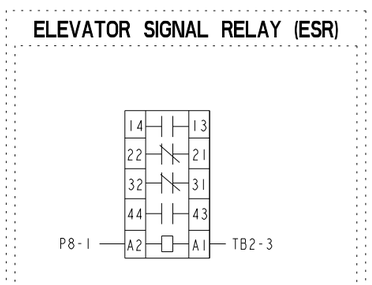
COMMUNICATION MODULE (COMM)



GENSET START AUX RELAY (KGS)



ELEVATOR SIGNAL RELAY (ESR)



Cummins Inc.
DIMENSIONS ARE IN: MILLIMETERS [ ] ARE IN: -
SIZE: A0 SCALE:1
DIMENSIONING AND TOLERANCING PER: ASME Y14.5-2009
THIRD ANGLE PROJECTION
CAD SYSTEM PTC® Creo® Parametric

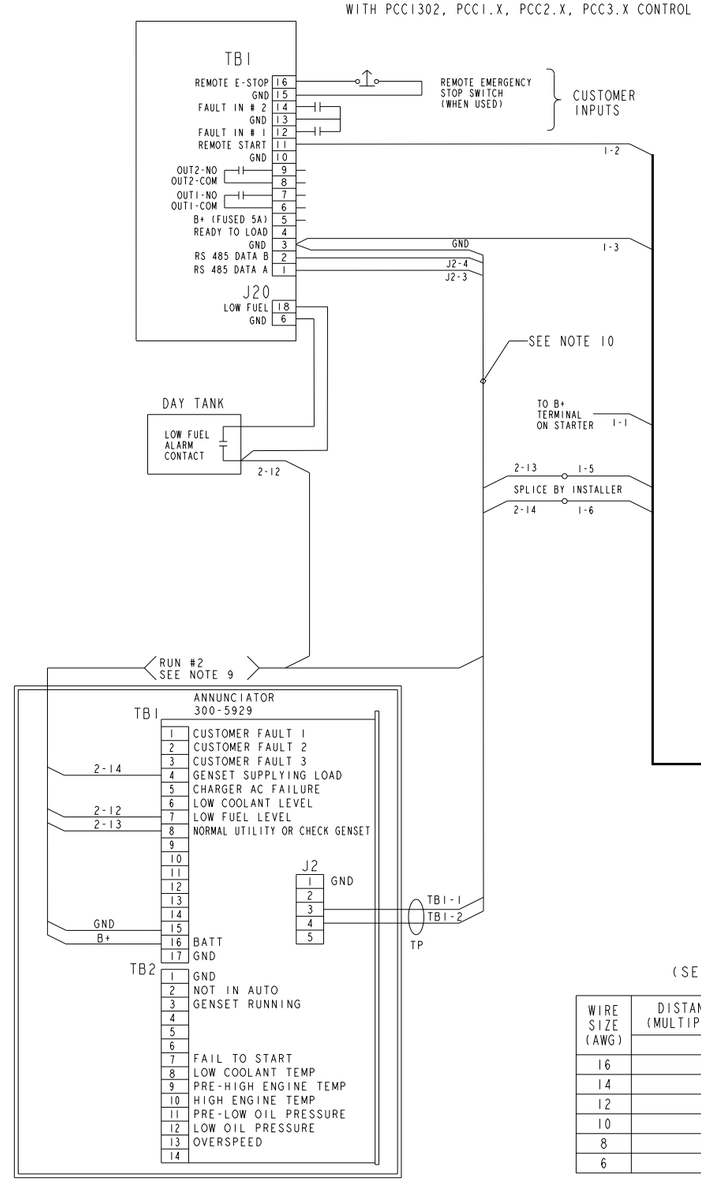
Document Generated: **30NOV2023 13:54 GMT**

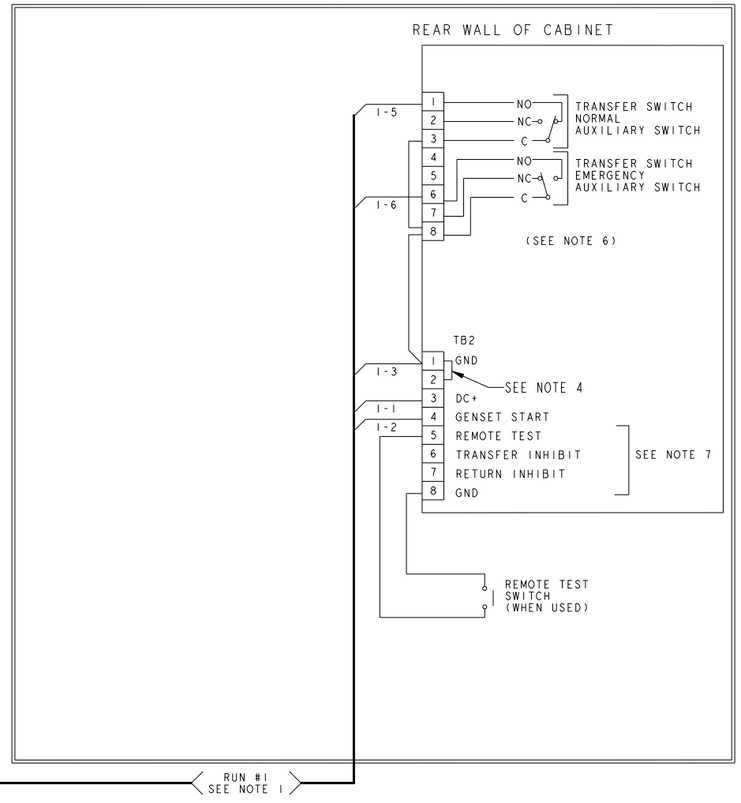
Cummins Data Classification:
Cummins Confidential

This document (and the information shown thereon) is **Confidential and Proprietary** and shall not be disclosed to others in hard copy or electronic form, reproduced by any means, or used for any purpose without written consent of Cummins Inc.

OTEC UTILITY TO GENSET

CUMMINS GENERATOR SET
WITH PCC1302, PCC1.X, PCC2.X, PCC3.X CONTROL





(SEE NOTE 1)

WIRE SIZE (AWG)	DISTANCE IN FEET, ONE WAY (MULTIPLY BY 0.3 FOR METERS)
	A
16	1000
14	1600
12	2400
10	4000
8	-
6	-

NOTE:

1. RUN #1-GENSET TO TRANSFER SWITCH-LEAD SIZE SHOULD BE AS COL.A.
2. RUN #2-GENSET TO ANNUNCIATOR-ALL LEADS, USE COL.A.
3. FOR MULTIPLE TRANSFER SWITCHES, DUPLICATE RUN #1 FOR EACH SWITCH. DAISY CHAIN CONNECTION IS ACCEPTABLE PROVIDED WIRE SIZE & DISTANCE TO THE LAST SWITCH MEET THE SPECS IN NOTE 1.
4. INSTALL JUMPER BETWEEN TB2-1 & TB2-2.
5. USE STRANDED TWISTED PAIR WIRES WHEN CONNECTING DATA1 AND DATA2 TO THE NETWORK.
6. TRANSFER SWITCH SHOWN CLOSED TO NORMAL.
7. CONNECT AN OPEN DRY CONTACT BETWEEN THE APPLICABLE TERMINAL AND COMMON (TB2-8). FOR REMOTE TEST, TRANSFER INHIBIT AND RETURN INHIBIT. CLOSE TO ACTIVATE.
8. CONTACTS RATED: 2 AMPS AT 30 VDC OR 0.60 AMPS AT 120 VAC.
9. REFER TO 0900-0301 FOR INSTALLATION OF 0300-5929.
10. NETWORK CONNECTIONS: USE BELDEN 9729 24 GAUGE TWISTED, STRANDED, SHIELDED CABLE. SHIELD SHOULD BE GROUNDED AT ONE END. TOTAL NETWORK LENGTH NOT TO EXCEED 4000 FEET. UP TO 20 NODES CAN BE CONNECTED TO THE NETWORK. (NOTE ANY COMMUNICATIONS WIRE CONNECTED TO THE GENSET SHOULD BE STRANDED CABLE.).

Cummins Inc.		
DIMENSIONS ARE IN: MILLIMETERS [ ] ARE IN: -	SIZE: A1	SCALE: 1/1
DIMENSIONING AND TOLERANCING PER: ASME Y14.5-2009	THIRD ANGLE PROJECTION	CAD SYSTEM PTC® Creo® Parametric

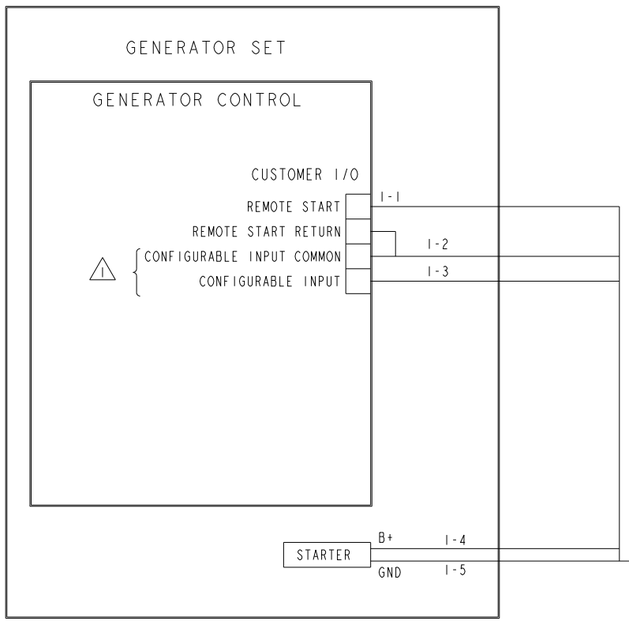
Document Generated: 13SEP2022 03:14 GMT

Cummins Data Classification:
Cummins Confidential

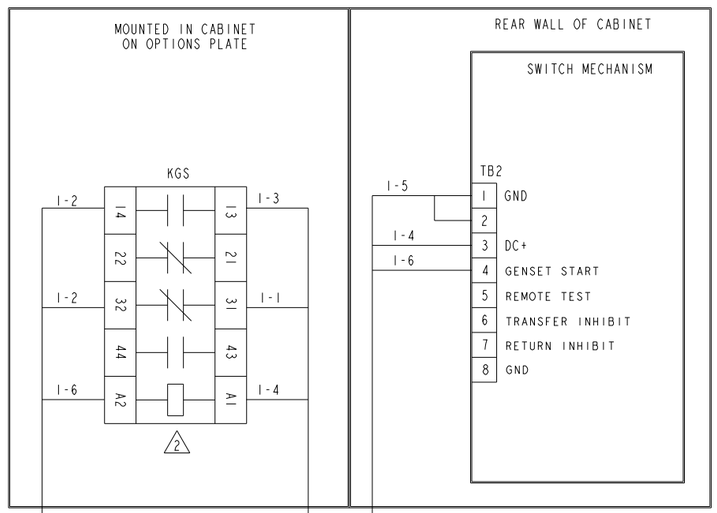
This document (and the information shown thereon) is **Confidential and Proprietary** and shall not be disclosed to others in hard copy or electronic form, reproduced by any means, or used for any purpose without written consent of Cummins Inc.

NFPA 70 ARTICLE 700.10(D)(3) COMPLIANT GENERATOR CONTROL WIRING

CUMMINS PCC 1302, PCC2300, PCC3300 GENERATOR SET CONTROLS



SINGLE ATS CONFIGURATION



NOTES:

1. THESE PHYSICAL CONNECTIONS CAN BE ANY OF THE ONBOARD CONFIGURABLE CUSTOMER INPUTS AVAILABLE FROM THE GENSET CONTROL BOARD OR AUX I01 OR I02 BOARDS CONFIGURED FOR FUNCTION POINTER "START SIGNAL INTEGRITY"
2. KGS IS PROVIDED STANDARD. RELAY CAN ALSO BE ORDERED BY SELECTING FEATURE L101-7 OR L201-7 WHEN CONFIGURING PRODUCT OR AS AN ACCESSORY KIT.
3. REFERENCE TECHNICAL SERVICE BULLETIN TSB180133 FOR ADDITIONAL INFORMATION.

Cummins Inc.		
DIMENSIONS ARE IN: MILLIMETERS [ ] ARE IN: -	SIZE: A1	SCALE:1/1
DIMENSIONING AND TOLERANCING PER: ASME Y14.5-2009	THIRD ANGLE PROJECTION	CAD SYSTEM PTC® Creo® Parametric

Document Generated: 13SEP2022 03:14 GMT

Cummins Data Classification:
Cummins Confidential

This document (and the information shown thereon) is **Confidential and Proprietary** and shall not be disclosed to others in hard copy or electronic form, reproduced by any means, or used for any purpose without written consent of Cummins Inc.

Power Electronics
Extended Warranty Statements

Our energy working for you.™

Cummins Power Generation

Power Electronics Extended Warranty Statements

Feature Codes

G004
G006
G007
G008
G013

Our energy working for you.™

Power Generation

Limited 2 Year Comprehensive Extended Warranty – G004

Transfer Switch and Paralleling Systems

When purchased, this limited extended warranty applies to all Cummins Power Generation® branded Transfer Switches, Paralleling Systems and associated accessories (hereinafter referred to as "Product").

This limited extended warranty covers any failures of the Product, under normal use and service, which result from a defect in material or factory workmanship.

Warranty Period:

The limited extended warranty start date is the date of commissioning†, demonstration or 18 months after factory ship date, whichever is sooner. The coverage duration is 2 years from warranty start date.

† Date of commissioning not to exceed date of Generator Set initial start-up.

Cummins Power Generation® Responsibilities:

In the event of a failure of the Product during the limited extended warranty period due to defects in material or workmanship, Cummins Power Generation® will only be responsible for the following costs:

- All parts and labor required to repair the Product
- Reasonable travel expenses to and from the Product site location..

Owner Responsibilities:

The owner will be responsible for the following:

- Notifying Cummins Power Generation® distributor or dealer within 30 days of the discovery of failure.
- Installing, operating, commissioning and maintaining the Product in accordance with Cummins Power Generation®'s published policies and guidelines.
- Providing evidence for date of commissioning.
- Providing sufficient access to and reasonable ability to remove the Product from the installation in the event of a warrantable failure.

In addition, the owner will be responsible for:

- Incremental costs and expenses associated with Product removal and reinstallation resulting from non-standard installations.
- Costs associated with rental of power generating equipment used to replace the Product being repaired.
- Costs associated with labor overtime and premium shipping requested by the owner.
- All downtime expenses, fines, all applicable taxes, and other losses resulting from a warrantable failure.

Limitations:

This limited extended warranty does not cover Product failures resulting from:

- Inappropriate use relative to designated power rating.
- Inappropriate use relative to application guidelines.
- Non-conformance to applicable industry standards for installation
- Normal wear and tear.
- Improper and/or unauthorized installation.
- Owner's or operator's negligence, accidents or misuse.
- Lack of maintenance or unauthorized repair.
- Noncompliance with any Cummins Power Generation® published guideline or policy.
- Improper storage before and after commissioning.
- Owner's delay in making Product available after notification of potential Product problem.

- Use of steel enclosures within 60 miles of the coast of salt water when aluminum or an alternate non-corrosive material enclosure option is available.
- Replacement parts and accessories not authorized by Cummins Power Generation®.
- Owner or operator abuse or neglect such as: late servicing and maintenance and improper storage.
- Damage to parts, fixtures, housings, attachments and accessory items that are not part of the transfer switch or paralleling system.

This limited extended warranty does not cover costs resulting from:

- Difficulty in gaining access to the Product.
- Repair of cosmetic damage to enclosures.

CUMMINS POWER GENERATION® RIGHT TO FAILED COMPONENTS:
Failed components claimed under warranty remain the property of Cummins Power Generation®. Cummins Power Generation® has the right to reclaim any failed component that has been replaced under warranty.

www.cumminspower.com

THE WARRANTIES SET FORTH HEREIN ARE THE SOLE WARRANTIES MADE BY CUMMINS POWER GENERATION ® IN REGARD TO THE PRODUCT. CUMMINS POWER GENERATION® MAKES NO OTHER WARRANTIES, EXPRESS OR IMPLIED, OR OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE.

IN NO EVENT IS CUMMINS POWER GENERATION® LIABLE FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES.

This limited extended warranty shall be enforced to the maximum extent permitted by applicable law. This limited warranty gives the owner specific rights that may vary from state to state or from jurisdiction to jurisdiction.

Product Model Number:_____

Product Serial Number:_____

Date in Service:_____

KOHLER®

Model: 36CCL

208- 600 V **Gas**

ISO 9001 KOHLER® NATIONALLY REGISTERED

EPA-Certified for Stationary Emergency Applications

Ratings Range

		60 Hz
Standby:	**kW**	30- 36
	kVA	30- 45



The Kohler® Advantage

- **High Quality Power**
  Kohler generators provide advanced voltage and frequency regulation along with ultra-low levels of harmonic distortion for excellent generator power quality to protect your valuable electronics.
- **Extraordinary Reliability**
  Kohler is known for extraordinary reliability and performance and backs that up with a premium five-year or 2000 hour limited warranty.
- **All-Aluminum Sound Enclosure**
  Durable aluminum sound-attenuating enclosure.

Generator Set Ratings

				Natural Gas 130°C Rise Standby Rating		LP Gas 130°C Rise Standby Rating	
Alternator	**Voltage**	**Ph**	**Hz**	**kW/kVA**	**Amps**	**kW/kVA**	**Amps**
4D8.3	120/208	3	60	36/45	125	36/45	125
	127/220	3	60	36/45	119	36/45	119
	120/240	3	60	36/45	109	36/45	109
	120/240	1	60	30/30	125	30/30	125
	139/240	3	60	36/45	109	36/45	109
	220/380	3	60	36/45	69	36/45	69
	277/480	3	60	36/45	55	36/45	55
	347/600	3	60	36/45	44	36/45	44
4P7BX	120/208	3	60	36/45	125	36/45	125
	127/220	3	60	36/45	119	36/45	119
	120/240	3	60	36/45	109	36/45	109
	120/240	1	60	30/30	125	30/30	125
	139/240	3	60	36/45	109	36/45	109
	220/380	3	60	36/45	69	36/45	69
	277/480	3	60	36/45	55	36/45	55
4E8.3	120/240	1	60	36/36	150	36/36	150
4Q7BX	120/240	1	60	36/36	150	36/36	150

Standard Features

- Kohler Co. provides one-source responsibility for the generating system and accessories.
- The generator set and its components are prototype-tested, factory-built, and production-tested.
- The generator set accepts rated load in one step.
- A five-year/2000 hour limited warranty covers all generator set systems and components. A five-year extended comprehensive limited warranty is also available.
- Engine Features
  - Powerful and reliable 2.2 L turbocharged liquid-cooled engine
  - Electronic engine management system.
  - Simple field conversion between natural gas and LPG fuels while maintaining emission certification.
- Innovative Cooling System
  - Electronically controlled fan speeds minimize generator set sound signature.
- Alternator features:
  - Kohler's wound field excitation system with its unique PowerBoost™ design delivers great voltage response and short-circuit capability.
  - The unique Fast-Response® X excitation system delivers excellent voltage response and short-circuit capability using a rare-earth, permanent magnet (PM)-excited alternator.
  - The brushless, rotating-field alternator has broadrange reconnectability.
- Kohler designed controller for one-source system integration and remote communication. See Controller on page 3.
- Certifications
  - The generator set engine is certified by the Environmental Protection Agency (EPA) to conform to the New Source Performance Standard (NSPS) for stationary spark-ignited emissions.
  - UL 2200/cUL listing is available.
  - The generator set meets NFPA 110, Level 1, when equipped with the necessary accessories and installed per NFPA standards.
  - CSA certification is available.
  - Accepted by the Massachusetts Board of Registration of Plumbers and Gas Fitters.
- Approved for stationary standby applications in locations served by a reliable utility source.

RATINGS: All three-phase units are rated at 0.8 power factor. All single-phase units are rated at 1.0 power factor. *Standby Ratings:* The standby rating is applicable to varying loads for the duration of a power outage. There is no overload capability for this rating. Ratings are in accordance with ISO-8528-1 and ISO-3046-1. Obtain technical information bulletin (TIB-101) for ratings guidelines, complete ratings definitions, and site condition derates. The generator set manufacturer reserves the right to change the design or specifications without notice and without any obligation or liability whatsoever.

EXHIBIT K

Alternator Specifications

Specifications		Alternator
Manufacturer		Kohler
Exciter type		Brushless, Wound-Field
Leads: quantity, type		
4D		12, Reconnectable
4E		4, 110- 120/220- 240 V
4PX		12, Reconnectable
4QX		4, 110- 120/220- 240 V
Voltage regulator		Solid State, Volts/Hz
Insulation:		NEMA MG1
Material		Class H
Temperature rise		130°C, Standby
Bearing: quantity, type		1, Sealed
Coupling		Flexible Disc
Amortisseur windings		Full
Voltage regulation, no-load to full-load		Controller Dependent
One-step load acceptance		100% of Rating
Unbalanced load capability		100% of Rated Standby Current
Peak motor starting kVA:		(35% dip for voltages below)
480 V	4D8.3 (12 lead)	120
240 V	4E8.3 (4 lead)	74
480 V	4P7BX (12 lead)	180
240 V	4Q7BX (4 lead)	113

- NEMA MG1, IEEE, and ANSI standards compliance for temperature rise and motor starting.
- Sustained short-circuit current enabling downstream circuit breakers to trip without collapsing the alternator field.
- Self-ventilated and dripproof construction.
- Windings are vacuum-impregnated with epoxy varnish for dependability and long life.
- Superior voltage waveform from a two-thirds pitch stator and skewed rotor.

Application Data

Engine

Engine Specifications	
Manufacturer	Kohler
Engine: model, type	KG2204T, 2.2 L, 4-Cycle Turbocharged
Cylinder arrangement	In-line 4
Displacement, L (cu. in.)	2.2 (134.25)
Bore and stroke, mm (in.)	91 x 86 (3.5 x 3.4)
Compression ratio	10.5:1
Piston speed, m/min. (ft./min.)	340 (1016)
Main bearings: quantity, type	5, plain alloy steel
Rated rpm	1800
Max power at rated RPM, kW (HP)	
LPG	47.8 (64.1)
Natural Gas	47.6 (63.9)
Cylinder head material	Cast Iron
Piston type and material	High Silicon Aluminum
Crankshaft material	Nodular Iron
Valve (exhaust) material	Forged Steel
Governor type	Electronic
Frequency regulation, no-load to full-load	Isochronous
Frequency regulation, steady state	±1.0%
Frequency	Fixed
Air cleaner type, all models	Dry

Engine Electrical

Engine Electrical System	
Ignition system	Electronic
Battery charging alternator:	
Ground (negative/positive)	Negative
Volts (DC)	14
Ampere rating	90
Starter motor rated voltage (DC)	12
Battery, recommended cold cranking amps (CCA):	
Qty., rating for -18°C (0°F)	One, 630
Battery voltage (DC)	12
Battery group size	24

Exhaust

Exhaust System	
Exhaust manifold type	Dry
Exhaust temperature at rated kW, dry exhaust, °C (°F)	633 (1171)
Maximum allowable back pressure, kPa (in. Hg)	7.5 (2.2)

Fuel

Fuel System	
Fuel type	Natural Gas or LPG
Fuel supply line inlet	1 NPTF
Natural gas fuel supply pressure, kPa (in. H_2O)	1.2- 2.7 (5-11)
LPG vapor withdrawal fuel supply pressure, kPa (in. H_2O)	1.2- 2.7 (5-11)

Fuel Composition Limits *	Nat. Gas	LP Gas
Methane, % by volume	90 min.	—
Ethane, % by volume	4.0 max.	—
Propane, % by volume	1.0 max.	85 min.
Propene, % by volume	0.1 max.	5.0 max.
C_4 and higher, % by volume	0.3 max.	2.5 max.
Sulfur, ppm mass	25 max.	
Lower heating value, MJ/m^3 (Btu/ft^3), min.	33.2 (890)	84.2 (2260)

* Fuels with other compositions may be acceptable. If your fuel is outside the listed specifications, contact your local distributor for further analysis and advice.

EXHIBIT K

Application Data

Lubrication

Lubricating System	
Type	Full Pressure
Oil pan capacity, L (qt.) §	4.2 (4.4)
Oil added during oil change (on average), L (qt.) §	3.3 (3.5)
Oil pan capacity with filter, L (qt.) §	8.5 (9.0)
Oil filter: quantity, type §	1, Cartridge

§ Kohler recommends the use of Kohler Genuine oil and filters.

Cooling

Radiator System	
Ambient temperature, °C (°F)	50 (122)
Engine jacket water capacity, L (gal.)	2.65 (0.7)
Radiator system capacity, including engine, L (gal.)	13.2 (3.5)
Engine jacket water flow, Lpm (gpm)	62 (16.4)
Heat rejected to cooling water at rated kW, dry exhaust, kW (Btu/min.)	24 (1365)
Water pump type	Centrifugal
Fan diameter, including blades, mm (in.)	qty. 3 @ 406 (16)
Fan power requirements (powered by engine battery charging alternator)	12 VDC, 18 amps each

Operation Requirements

Air Requirements	
Radiator-cooled cooling air, m^3/min. (scfm)‡	51 (1800)
Combustion air, m^3/min. (cfm)	1.6 (57)
Air over engine m^3/min. (cfm)	25 (883)

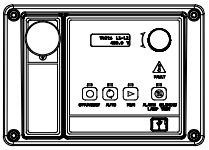
† Air density = 1.20 kg/m^3 (0.075 lbm/ft^3)

Fuel Consumption ‡	
Natural Gas, m^3/hr. (cfh) at % load	**Standby Ratings**
100%	13.4 (473)
75%	11.2 (394)
50%	8.9 (315)
25%	6.7 (236)
0%	4.5 (158)
LP Gas, m^3/hr. (cfh) at % load	**Standby Ratings**
100%	5.4 (190)
75%	4.3 (151)
50%	3.2 (112)
25%	2.1 (73)
0%	1.0 (34)

‡ Nominal fuel rating: Natural gas, 37 MJ/m^3 (1000 Btu/$ft.^3$)
LP vapor, 93 MJ/m^3 (2500 Btu/$ft.^3$)

LP vapor conversion factors:
8.58 $ft.^3$ = 1 lb.
0.535 m^3 = 1 kg.
36.39 $ft.^3$ = 1 gal.

Controller



APM402 Controller

Provides advanced control, system monitoring, and system diagnostics for optimum performance and compatibility.

- Digital display and menu control provide easy local data access
- Measurements are selectable in metric or English units
- Remote communication thru a PC via network or serial configuration
- Controller supports Modbus® protocol
- Integrated hybrid voltage regulator with ±0.5% regulation
- Built-in alternator thermal overload protection
- NFPA 110 Level 1 capability

Refer to G6-161 for additional controller features and accessories.

Modbus® is a registered trademark of Schneider Electric.

Sound Enclosure

- Durable aluminum, sound-attenuating enclosure with quiet operation of 57 dB(A) log average @ 7 m (23 ft.) at no load.
- Internally mounted silencer.
- Fade-, scratch, and corrosion-resistant Kohler® Power Armor™ automotive-grade textured finish.
- Acoustic insulation that meets UL 94 HF1 flammability classification and repels moisture absorption.

KOHLER

KOHLER CO., Kohler, Wisconsin 53044 USA
Phone 920-457-4441, Fax 920-459-1646
For the nearest sales and service outlet in the US and Canada, phone 1-800-544-2444
KOHLERPower.com

Standard Features

- Alternator Protection
- Aluminum Sound Enclosure with Enclosed Silencer
- Battery Rack and Cables
- Flexible Fuel Line
- Gas Fuel System (includes fuel mixer, electronic secondary gas regulator, gas solenoid valve, and flexible fuel line between the engine and the skid-mounted fuel system components)
- Integral Vibration Isolation
- Local Emergency Stop Switch
- Low Fuel Pressure Switch (with NFPA fuel module)
- Oil Drain Extension
- Operation and Installation Literature
- Standard 5-Year Limited Warranty

Available Options

Approvals and Listings

❑ CSA Certified
❑ UL 2200 Listing

Controller

❑ 15-Relay Dry Contact Board
❑ Communication Products
❑ Input/Output Module (2 inputs, 5 outputs)
❑ Lockable Emergency Stop (lockout/tagout)
❑ Manual Key Switch
❑ Manual Speed Adjust
❑ Remote Annunciator Panel
❑ Remote Emergency Stop
❑ Run Relay

Enclosure Accessories

❑ Enclosure Doors for 291 kph (181 mph) Wind Load

Starting Aids*

❑ Block Heater, 110- 120 V
❑ Block Heater, 220- 240 V

Oil Pan Heater*

❑ Oil Pan Heater, 110- 120 V
❑ Oil Pan Heater, 190- 240 V

* One block heater or oil pan heater is required for ambient temperatures below 0°C (32°F). At temperatures below - 18°C (0°F) installation of both heaters is required.

Electrical System

❑ Alternator Strip Heater
❑ Battery
❑ Battery Charger, 6 Amp
❑ Battery Charger, 10 Amp w/Alarms
❑ Battery Heater
❑ Temperature Compensation for 10 Amp Battery Charger

Miscellaneous

❑ Air Cleaner Restriction Indicator
❑ Certified Test Report
❑ Engine Fluids Added
❑ Maintenance Kit (filters, spark plugs, oil)
❑ Rated Power Factor Testing

Literature

❑ General Maintenance
❑ NFPA 110
❑ Overhaul
❑ Production

Warranty

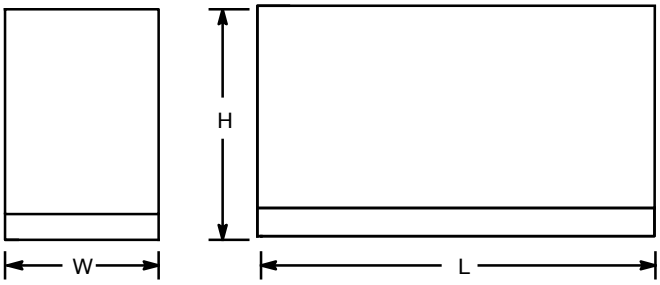
❑ Extended 5-Year/2000 Hour Comprehensive Limited Warranty

Other Options

❑ _____
❑ _____
❑ _____
❑ _____
❑ _____
❑ _____
❑ _____
❑ _____

Dimensions and Weights

Overall Size, L x W x H, mm (in.):	2280 x 830 x 1182 (89.8 x 32.7 x 46.5)
Weight, with engine fluids, kg (lb.):	635 (1432)



NOTE: This drawing is provided for reference only and should not be used for planning. Contact your local distributor for more detailed information.

DISTRIBUTED BY:

© 2018 Kohler Co. All rights reserved.

KOHLER

Model KSS

Automatic Transfer Switches
Standard Specific-Breaker Rated

ISO 9001 KOHLER POWER SYSTEMS NATIONALLY REGISTERED



Available Controllers

- Decision-Maker® MPAC 750
- Decision-Maker® MPAC 1200

Ratings

Model	Current	Voltage, Frequency
KSS	40–600 amps	208–600 VAC, 50/60 Hz
	800–1000 amps	208–480 VAC, 50/60 Hz

Transfer Switch Standard Features

- UL 1008 listed at 208–480 VAC file #E58962 (automatic), #E86894 (nonautomatic)
- CSA certification available
- IBC seismic certification available
- Standard-transition operation
- Silver tungsten alloy contacts on 400–600 amp models
- Solid or switched neutral
- Available with either automatic or non-automatic control (non-automatic control requires the Decision-Maker® MPAC 1200 controller)
- Available in 2, 3, or 4 pole configurations
- High withstand/closing ratings, for use with specific breakers only
- Electrically operated, mechanically held mechanism
- Double-throw, mechanically interlocked design (break-before-make power contacts)
- Enclosed arc chambers with arc chutes
- Front-accessible contacts for easy inspection
- Main shaft auxiliary position-indicating contacts (see page 3 for contact ratings)
- Standard one-year limited warranty. Extended limited warranties are available.

EXHIBIT K

Available Automatic Transfer Switch Controllers

Select one of the following controllers for your automatic transfer switch.

Decision-Maker® MPAC 750 Controller



- Test pushbutton
- Exercise pushbutton
- LED indicators: Source available, transfer switch position, service required (fault), and “not in auto”
- Programmable voltage pickup and dropout settings
- Programmable time delays
- Seven day generator exerciser
- Two programmable inputs and two programmable outputs
- Modbus communication standard
- RS-485 communication standard
- Ethernet communication optional

For more information about Decision-Maker® MPAC 750 features and functions, see specification sheet G11-126.

Decision-Maker® MPAC 1200 Controller



- LCD display, 4 lines x 20 characters, backlit
- Complete programming and viewing capability at the door using the keypad and LCD display
- LED indicators: Source available, transfer switch position, service required (fault), and “not in auto”
- Programmable voltage and frequency pickup and dropout settings
- Programmable time delays
- Programmable generator exerciser
- Time-based load control
- Two programmable inputs and two programmable outputs
- Up to four I/O extension modules available
- Modbus communication standard
- RS-485 communication standard
- Ethernet communication optional

For more information about Decision-Maker® MPAC 1200 features and functions, see specification sheet G11-127.

Codes and Standards

The ATS meets or exceeds the requirements of the following specifications:

- Underwriters Laboratories UL 1008, Standard for Automatic Transfer Switches for Use in Emergency Standby Systems file #E58962 (automatic), #E86894 (nonautomatic)
- CSA C22.2 No. 178 certification available, file #LR58301
- NFPA 70, National Electrical Code
- NFPA 99, Essential Electrical Systems for Health Care Facilities
- NFPA 110, Emergency and Standby Power Systems
- IEEE Standard 446, IEEE Recommended Practice for Emergency and Standby Power Systems for Commercial and Industrial Applications
- NEMA Standard ICS 10-2005, Electromechanical AC Transfer Switch Equipment
- EN61000-4-4 Fast Transient Immunity Severity Level 4
- IEC 60947-6-1, Low Voltage Switchgear and Control Gear; Multifunction Equipment; Automatic Transfer Switching Equipment
- EN61000-4-5 Surge Immunity Class 4 (voltage sensing and programmable inputs only)
- IEC Specifications for EMI/EMC Immunity:
  - CISPR 11, Radiated Emissions
  - IEC 1000-4-2, Electrostatic Discharge
  - IEC 1000-4-3, Radiated Electromagnetic Fields
  - IEC 1000-4-4, Electrical Fast Transients (Bursts)
  - IEC 1000-4-5, Surge Voltage
  - IEC 1000-4-6, Conducted RF Disturbances
  - IEC 1000-4-8, Magnetic Fields
  - IEC 1000-4-11, Voltage Dips and Interruptions
- IEEE 472 (ANSI C37.90A) Ring Wave Test
- Seismic certification in accordance with the International Building Code is available. (Accessory kit is required for seismic certification.)
  - IBC 2000, referencing ASCE 7-98 and ICC AC-156
  - IBC 2003, referencing ASCE 7-02 and ICC AC-156
  - IBC 2006, referencing ASCE 7-05 and ICC AC-156
  - IBC 2009, referencing ASCE 7-05 and ICC AC-156
  - IBC 2012, referencing ASCE 7-10 and ICC AC-156

EXHIBIT K

Application Data

Environmental Specifications	
Operating Temperature	–20°C to 70°C (–4°F to 158°F)
Storage Temperature	–40°C to 85°C (–40°F to 185°F)
Humidity	5% to 95% noncondensing

UL-Listed Solderless Screw-Type Terminals for External Power Connections				
Model	Switch Rating, Amps	Range of Wire Sizes, Copper or Aluminum*		
		Normal, Emergency, and Load	Neutral	Ground
KSS	40–150	(1) #8 to 3/0 AWG	(3) #6 – 3/0 AWG	(3) #6 – 3/0 AWG
	200–225	(1) #6 AWG to 250 KCMIL	(3) #4 – 600 KCMIL or (6) 1/0 – 250 KCMIL	
	260	(1) #6 AWG to 350 KCMIL		
	400	(1) #4 AWG to 600 KCMIL or (2) #6 AWG to 250 KCMIL		
	600	(2) #2 AWG to 600 KCMIL	(6) #2 – 600 KCMIL	(3) #4 – 600 KCMIL or (6) 1/0 – 250 KCMIL
	800	(2) #1/0 AWG to 750 KCMIL	(12) #2 – 600 KCMIL	
	1000	(4) #2 AWG to 600 KCMIL		
* Use 60°C minimum wire for #14 to #1 AWG. Use 75°C minimum wire for 1/0 AWG and larger.				

Contact Ratings				
	Resistive Load	Inductive Load	Motor Load	
			NC	NO
Engine Start Contacts	2 A @ 30 VDC	N/A	N/A	N/A
Auxiliary Contacts, (40–600A) ‡	15 A @ 250 VAC	N/A	N/A	N/A
Auxiliary Contacts, (800–1000A) ‡	15 A @ 480 VAC	15 A @ 250 VAC; 6 A @ 500 VAC	5 A @ 125 VAC; 3 A @ 250 VAC; 1.5 A @ 500 VAC	2.5 A @ 125 VAC; 1.5 A @ 250 VAC; 0.75 A @ 500 VAC
‡ Auxiliary position-indicating contacts, one set Normal and one set Emergency				

Weights and Dimensions

Note: Always use the transfer switch dimension drawing for planning and installation. Weights and dimensions may vary for different configurations. See your local distributor for dimension drawings.

Weights and dimensions are shown for transfer switches in NEMA type 1 and type 3R enclosures. Consult the factory for open units and other enclosures.

Amps	NEMA Type	Dimensions mm (in.)			Weight kg (lb.)			ADV Drawing
		Height	Width	Depth §	2-Pole	3-Pole	4-Pole	
40–225	1, 3R	791 (31.1)	450 (17.7)	316 (12.5)	28 (62)	30 (65)	31 (68)	ADV-8584
260	1, 3R	1219 (48.0)	560 (22.0)	362 (14.3)	52 (115)	56 (123)	59 (131)	ADV-8586
400	1, 3R	1223 (48.1)	560 (22.0)	362 (14.3)	52 (115)	56 (123)	59 (131)	ADV-8588
600	1, 3R	1702 (67.0)	610 (24.0)	514 (20.2)	179 (395)	183 (403)	186 (410)	ADV-8590
800	1, 3R	1932 (76.1)	864 (34.0)	515 (20.3)	N/A	226 (498)	236 (520)	ADV-8592
1000	1, 3R	1932 (76.1)	864 (34.0)	515 (20.3)	N/A	231 (509)	241 (531)	ADV-8592
§ Allow enough room to fully open the door for inspection and service per NEC and local codes. The NEMA type 3R enclosures have a security cover on the controller that extends 54 mm (2.1 in.) beyond the door.								

EXHIBIT K

Withstand and Close-On Ratings (WCR)

Ratings Summary

The transfer switch is rated for use on a circuit capable of delivering not more than the RMS symmetrical Amperes listed at the specified maximum voltage below, but no greater than the interrupting capacity of the selected circuit breaker or fuse. Circuit breakers and fuses are supplied by the customer.

Certified Withstand Current Ratings in RMS Symmetrical Amperes ¶											
	With Current-Limiting Fuses				Specific Coordinated Breaker Rating, (see the following tables)			Any Breaker Ratings **			
Switch Rating, Amps	Fuse Class	Fuse Size, Max Amps	Maximum Circuit Amps		Maximum Voltage	Maximum Circuit Amps		Maximum Voltage	Maximum Circuit Amps		Time Duration, Seconds Max.
			480 VAC	600 VAC		480 VAC	600 VAC		480 VAC	600 VAC	
40–150	J	400	200,000	200,000	600 V	30,000	22,000	600 V	10,000	10,000	0.025
200–225	J	400	200,000	N/A	600 V	30,000	22,000	600 V	10,000	10,000	
260	N/A	N/A	N/A	N/A	480 V	35,000	N/A	N/A	N/A	N/A	N/A
400	J	600	200,000	200,000	600 V	50,000	42,000	600 V	35,000	35,000	0.050
	RK5 RK1	600	100,000	N/A							
600	N/A	N/A	N/A	N/A	600 V	50,000	42,000	N/A	N/A	N/A	N/A
800	L	3000	200,000	N/A	480 V	65,000	N/A	N/A	N/A	N/A	N/A
1000	L	4000									

¶ All values are available symmetrical RMS Amperes and tested in accordance with the withstand/closing requirements of UL 1008.

** Applicable to breakers with instantaneous trip elements.

Ratings with Specific Manufacturers' Circuit Breakers

Withstand and close-on ratings (WCR) in RMS symmetrical Amperes for specific manufacturers' circuit breakers.

Switch Rating, Amps	Molded-Case Circuit Breakers				
	Voltage, Max.	WCR, Amps RMS	Manufacturer	Type	Max. Size, Amps
40 80 100 150 200 225	480	30,000	Eaton	FCL	100
				JGS, JGH, JGC, JGU, JGX, JBD, JD, HJD, JDC, LCL, LCLA	250
				LDC, CLDC, KDB, KD, HKD, KDC, LD, CLD, HLD, CHLD	400
			ITE/Siemens	CED6, HED4, HED6	125
				CFD6, FD6A, FXD6, HFD6, HFXD6, HHFD6, HHFXD6	250
				CJD6	400
			General Electric	SEL, SEP, THLC1	150
				THLC2	225
				SFH, SFL, SFP	250
				SGH, SGL, SGP, FGN, FGH, FGL, FGP	400
			Schneider	HG, HJ, HL, HR	150
				JJ, JL, JR	250
				LG, LJ, LL, LR	400
	600	22,000	Eaton	JGS, JGH, JGC, JGU, JGX, JDB, JD, HJD, JDC, LCL, LCLA	250
				LDC, CLDC, KDB, KD, HKD, KDC, LD, CLD, HLD, CHLD	400
			ITE/Siemens	CED6, HED4, HED6	125
				CFD6, FD6, FXD6, HFD6, HFXD6, HHFD6, HHFXD6	250
			General Electric	SEL, SEP, THLC1	150
				THLC2	225
				SFH, SFL, SFP	250
				SGH, SGL, SGP, FGN, FGH, FGL, FGP	400

EXHIBIT K

Switch Rating, Amps	Molded-Case Circuit Breakers				
	Voltage, Max.	WCR, Amps RMS	Manufacturer	Type	Max. Size, Amps
260	480	35,000	Eaton	JGS, JGH, JGC, JGU, JGX, JDB, JD, HJD, JDC, LCL, LCLA	250
				LDC, CLDC, LD, CLD, HLD, CHLD, KDB, KD, HKD, KDC	400
			ITE/Siemens	CED6, HED4, HHED6	125
				CFD6, FD6, FXD6, HFD6, HFXD6, HHFD6, HHFXD6	250
			General Electric	SEL, SEP, THLC1	150
				THLC2	225
				SFH, SFL, SFP	250
				SGH	350
				SGH, SGL, SGP, FGN, FGH, FGL, FGP	400
			Schneider	HG, HJ, HL, HR	150
				JJ, JL, JR	250
				LG, LJ, LL, LR	400
400	480	50,000	Eaton	HJD, JDC, JGC, JGH, JGU, JGX	250
				CHLD4, CLD, HLD4, CLDC, LDC, KDC, HKD, CHMDL4, CMDL4	400
				CHLD6, HDL6, CHMDL6, CMDL6, CLDC, CLD6, LDC6, CLDC6	600
				CHMDL8, HMDL8, MDL8, CMDL8	800
			ITE/Siemens	CFD6, HFD6, HFXD6, HHFD6, HHFXD6	250
			General Electric	SFL, SFP	250
				FGL, FGP	600
			Schneider	LJ, LL, LR	600
	600	42,000	Eaton	JGU, JGX	250
				CLDC4, KDC, LDC4	400
				CLDC6, LDC6, NB Tri-Pac	600
				NB Tri-Pac	800
			ITE/Siemens	CFD6	250
				CJD6, SCLD6	400
				CLD6, HHLD6, HHLXD6, SCLD6	600
				CMD6, HMD6, HMXD6,SCMD6, SHMD6	800
			General Electric	THLC1	150
				FGL4, FGP4, THLC4, TLB4	400
				SGL, SGP, FGL6, FGP6	600
				SKL8, SKP8	800
			Schneider	JL, JR	250

EXHIBIT K

Switch Rating, Amps	Molded-Case Circuit Breakers				
	Voltage, Max.	WCR, Amps RMS	Manufacturer	Type	Max. Size, Amps
600	480	50,000	Eaton	HJD, JDC, JGC, JGH, JGU, JGX	250
				CHLD4, CLD, HLD4, CLDC, LDC, KDC, HKD, CHMDL4, CMDL4	400
				CHLD6, HLD6, CHMDL6, CMDL6, CLDC6, LDC6, CLD6, CLDC	600
				CHMDL8, HMDL8, MDL8, CMDL8	800
			ITE/Siemens	CFD6, HFD6, HFXD6, HHFD6, HHFXD6	250
			General Electric	SFL, SFP	250
				FGL, FGP	600
			Schneider	LJ, LL, LR	600
	600	42,000	Eaton	JGU, JGX	250
				CLDC4, KDC, LDC4	400
				CLDC6, LDC6, NB Tri-Pac	600
				NB Tri-Pac	800
			ITE/Siemens	CFD6	250
				CJD6, SCLD6	400
				CLD6, HHLD6, HHLXD6, SCLD6	600
				CMD6, HMD6, HMXD6, SCMD6, SHMD6	800
			General Electric	THLC1	150
				FGL4, FGP4, THLC4, TLB4	400
				SGL, SGP, FGL6, FGP6	600
				SKL8, SKP8	800
			Schneider	JL, JR	250
800 1000	480	65,000	Eaton/ Cutler-Hammer	TRI-PAC NB, CHMDL, HMDL, CHND, HND, NDC, CNDC	800
				TRI-PAC NB, CNDC, NDC, CRDC, TRI-PAC PB, RDC, CHND, HND, RD. CRD	1200
			Schneider/ Square D	MJ, PJ, PL, RJ	800
				PJ, PL, RL	1000
			ITE/Siemens	CMD6, HMD6, SCMD6, SHMD6, CND6, HND6, SCND6, SHND6, CPD6	800
				CND6, HND6, SCND6, CPD6, SHND6, HPD6	1200
			General Electric	TB8, TC, THC, THP	1000
				THC, THP, TRP	1200

Transfer Switch Accessories

Accessories are available either factory-installed or as loose kits, unless otherwise noted.

❑ CSA Certification

❑ Digital Meter (with MPAC 1200 only)

- Measure and display voltage, current, frequency, and power for both sources
- Programmable visual alarms for high voltage, low voltage, and high current
- Three digital outputs
- Serial port for optional network connections
- Password-protected programming menus
- Joystick operation
- Factory-installed
- Three digital outputs
- Joystick operation

❑ Extended Limited Warranties

- 2-year basic
- 5-year basic
- 5-year comprehensive
- 10-year major components

❑ Export Packaging

❑ Heater, Anti-Condensation

- Hygrostat-controlled 120 VAC strip heater (customer-supplied voltage source required)
- 100 or 250 watts (sized for enclosure)
- Protective 15 amp circuit breaker

❑ Literature Kits

- Production literature kit (one kit is included with each transfer switch)
- Overhaul literature kit

❑ Neutral Assembly

- Available as loose kit for open units

❑ RSA III Remote Serial Annunciator

- Monitors the generator set
- Monitors Normal and Emergency source status and connection
- Monitors ATS common alarm
- Allows remote testing of the ATS

For more information, see specification sheet G6-139.

❑ Seismic Certification

- Certification depends on application and geographic location. Contact your distributor for details.
- Available for 40–1000 amp KSS models with NEMA 1, 3R, 4, 4X, and 12 enclosures

❑ Surge Protection Device (SPD)

- Surge protection reduces transient voltages to harmless levels
- Protection modes: L-L / L-N / L-G / N-G
- Replaceable phase and neutral cartridges for service
- Frequency: 50–60 Hz
- Operating Temperature Range: –40 to 176°F (–40 to 80°C)
- Remote contacts for customer-supplied status indicators:
  Contacts: 1 NO, 1 NC
  Min Load: 12VDC / 10 mA
  Max. Load: 250 VAC / 1 A
  Wire Size (max.): 16AWG
- Fuse protection: 30 amps / 600 V
- UL 1449, 3rd Edition for Type 2 applications
- IEC 61-643-1, 2nd Edition T2/11
- See additional specifications below

Additional Controller Accessories

See the controller spec sheet for more information.

❑ Accessory Modules (with MPAC 1200 only)

- Alarm Module
- External Battery Supply Module
- Input/Output Module
- High-Power Input/Output Module

❑ Controller Disconnect Switch

❑ Ethernet Communications

❑ Current Sensing Kit (with MPAC 1200 only)

❑ Line-to-Neutral Voltage Monitoring (with MPAC 1200 only)

❑ Padlockable User Interface Cover

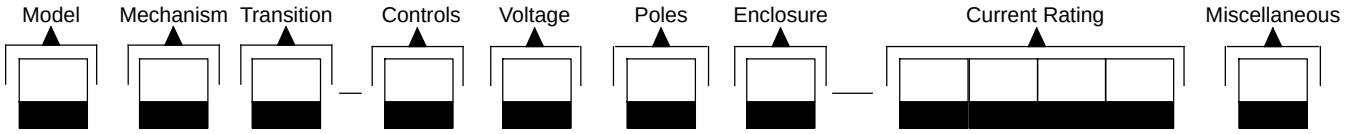
❑ Supervised Transfer Control Switch (with MPAC 1200 only)

SPD Specifications

Nominal Voltage (V ±15%)	Max. Discharge Current (kA)	Phase	Poles	UL VPR 3rd Ed (L-N/N-G/L-G) (kV)	Limiting Voltage, (L-N/N-G/L-G) (kV)		Short Circuit Withstand Current (kA)	Maximum Continuous Operating Voltage (VAC)
					at 3kA	at 10kA		
240/120	40	Split	3	0.6 / 1.2 / 0.7	0.6 / 0.4 / 0.6	0.8 / 0.7 / 0.8	200	175 / 350
208/120	40	Wye	4	0.6 / 1.2 / 0.7	0.6 / 0.4 / 0.6	0.8 / 0.7 / 0.8	200	175 / 350
480/277	40	Wye	4	1.0 / 1.2 / 1.1	1.0 / 0.4 / 1.0	1.2 / 0.7 / 1.2	200	320 / 460
240/120	40	HLD	4	1.0 / 1.2 / 1.1	1.0 / 0.4 / 1.0	1.2 / 0.7 / 1.2	200	320 / 460
600/347	40	Wye	4	1.3 / 1.2 / 1.4	1.3 / 0.4 / 1.3	1.5 / 0.7 / 1.5	200	440 / 880

KOHLER CO., Kohler, Wisconsin 53044 USA
Phone 920-457-4441, Fax 920-459-1646
For the nearest sales and service outlet in the US and Canada, phone 1-800-544-2444
KOHLERPower.com

Model Designation



Record the transfer switch model designation in the boxes. The transfer switch model designation defines characteristics and ratings as explained below.

Sample Model Designation: KSS-JCNA-0100S

Model

K: Kohler

Mechanism

S: Standard (Specific-Breaker)

Transition

S: Standard

Controller

A: Decision-Maker® MPAC 1200, Automatic
B: Decision-Maker® MPAC 1200, Non-Automatic
J: Decision-Maker® MPAC 750, Automatic

Voltage/Frequency

C: 208 Volts/60 Hz
D: 220 Volts/50 Hz
F: 240 Volts/60 Hz
G: 380 Volts/50 Hz
H: 400 Volts/50 Hz
J: 416 Volts/50 Hz
K: 440 Volts/60 Hz
M: 480 Volts/60 Hz
N: 600 Volts/60 Hz
P: 380 Volts/60 Hz
R: 220 Volts/60 Hz

Number of Poles/Wires

N: 2 Poles/3 Wires, Solid Neutral
T: 3 Poles/4 Wires, Solid Neutral
V: 4 Poles/4 Wires, Switched Neutral

Enclosure

A: NEMA 1
B: NEMA 12
C: NEMA 3R
D: NEMA 4
F: NEMA 4X
G: Open Unit

Current, Amps

0040	0200	600
0080	0225	800
0100	0260	1000
0150	0400	

Connections

S: Standard

Note: Some selections are not available for every model. Contact your Kohler distributor for availability.

DISTRIBUTED BY:

Availability is subject to change without notice. Kohler Co. reserves the right to change the design or specifications without notice and without any obligation or liability whatsoever. Contact your local Kohler® Power Systems distributor for availability.

© 2014, 2016 by Kohler Co. All rights reserved.

Docusign Envelope ID: DBCB7DD9-CF59-44B5-91B6-AE99631720B3

EXHIBIT L

GENERAL CONDITIONS FOR CONSTRUCTION FOR MARION COUNTY (v2024)

The General Conditions for Construction for Marion County (v2024) are incorporated by reference and are available for download on the Marion County website at:
https://www.co.marion.or.us/PW/Engineering/Pages/default.aspx