Contract Review Sheet

Public Improvement Agreements **BS-6426-25**

Title: **Medical Examiner Office Relocation & Remodel**

Contractor's Name: **Woodburn Construction CM/GC, LLC**

Department: **Business Services Department** Contact: **Vanessa Keck**

Analyst: **Kathleen George** Phone #: **(503) 566-3910**

Term - Date From: **Execution** Expires: **December 31, 2025**

Original Contract Amount: **$ 454,000.00** Previous Amendments Amount: **$ -**

Current Amendment: **$ -** New Contract Total: **$ 454,000.00** Amd% **0%**

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

Source Selection Method: **20-0255 Invitation to Bid** ITB# **BS1610-24**

Description of Services or Grant Award

Medical Examiner new site remodel and renovation located at 3060 Center St NE, Salem, Oregon

Desired BOC Session Date: **1/29/2025** Contract should be in DocuSign by: **1/8/2025**

Agenda Planning Date **1/16/2025** Printed packets due in Finance: **1/14/2025**

Management Update **1/14/2025** BOC upload / Board Session email: **1/15/2025**

BOC Session Presenter(s) **Terry Stoner, Tamra Goettsch** Code: **Y**

REQUIRED APPROVALS

DocuSigned by: E4502AF8CAA542C... 1/13/2025
Finance - Contracts — Date

DocuSigned by: Vanessa K Keck 5E8DDDD1062444E... 1/15/2025
Contract Specialist — Date

Signed by: Scott Norris 60C08A6F7982400... 1/14/2025
Legal Counsel — Date

DocuSigned by: Jan Fritz DC16354248DE4EC... 1/15/2025
Chief Administrative Officer — Date

MARION COUNTY BOARD OF COMMISSIONERS

Board Session Agenda Review Form

Meeting date: January 29, 2025

Department: Business Services

Title: Medical Examiner Office Relocation & Remodel

Management Update/Work Session Date: January 14, 2025 **Audio/Visual aids** ☐

Time Required: 15 min **Contact:** Tamra Goettsch **Phone:** x3200

Requested Action:
Consider approval of the Public Improvement with Woodburn Construction CM/GC, LLC for the relocation and remodel of the new location for Medical Examiners office.

Issue, Description & Background:
Relocation and tenant improvement to the space located at 3060 Center St NE to better suit the needs of the Medical Examiners office. Tenant improvements include painting throughout, adding a divider wall, replacing carpet, upgrading the restroom to meet ADA compliance, adding a locker room with shower, adding a biohazard processing area with sink, and installation of a backup generator.

Financial Impacts:
Total cost $454,000.00 CIP 24-019

Impacts to Department & External Agencies:
No other impact to other departments. Project coordination to be managed by Business Services

List of attachments:
Public Improvement Agreement and Attachments 1 through 3

Presenter:
Tamra Goettsch & Terry Stoner

Department Head Signature:
Signed by:
Tamra Goettsch
E4D545951879444...

MARION COUNTY PUBLIC IMPROVEMENT AGREEMENT
for
Medical Examiner Office Relocation & Remodel

This Agreement for the Medical Examiner Office Relocation & Remodel (the "Agreement"), made by and between Marion County, a political subdivision of the state of Oregon, on behalf of Business Services Department, hereinafter called OWNER, and Woodburn Construction CM/GC, LLC hereinafter called the CONTRACTOR (collectively the "Parties"), is effective on the date this Agreement has been signed by all the Parties and all required Marion County governmental approvals have been obtained. Unless otherwise defined in the Invitation to Bid or in this Agreement, the capitalized terms used herein are defined in Section A.1 of the Marion County General Conditions for Public Improvement Contracts.

WITNESSETH:

1. Contract Price, Contract Documents and Work.
The CONTRACTOR, in consideration of the sum of $454,000.00 (the "Contract Price"), to be paid to the CONTRACTOR by OWNER in the manner and at the time hereinafter provided, and subject to the terms and conditions provided for in the Invitation to Bid, this Public Improvement Agreement 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.

The Contract Price includes the following items: Contractor shall be responsible for furnishing all labor, materials, tools, and equipment necessary to complete the Work as described in Attachment 1 through 3.

2. Representatives.
Unless otherwise specified in the Contract Documents, the OWNER designates Tamra Goettsch as its Authorized Representative in the administration of this Contract. The above-named individual shall be the initial point of contact for matters related to performance, payment, authorization, and to carry out the responsibilities of the OWNER. CONTRACTOR has named Bert Bartholomew its Authorized Representative to act on its behalf.

County delegates to the individual listed below the authority and responsibility for issuing approvals, providing notices, receiving notices, issuing directives, authorizing change orders, and avoiding and resolving disputes: Wesley Miller

3. Contract Dates.
PROJECT START DATE: January 29, 2025
SUBSTANTIAL COMPLETION: October 31, 2025
FINAL COMPLETION: December 31, 2025

4. RESERVED

5. Integration
The contract documents constitute the entire agreement between the parties. no waiver, consent, modification or change of terms of this contract shall bind either party unless in writing and signed by both parties. Such waiver, consent, modification or change, if made, shall be effective only in the specific instance and for the specific purpose given. there are no other understandings, agreements, or representations, oral or written, not specified herein regarding this contract. contractor, by the signature below of its authorized representative, hereby acknowledges that it has read this contract, understands it, and agrees to be bound by its terms and conditions.

6. Authority to Execute

Contractor covenants, represents, and warrants to Owner that the person(s) executing this Contract on behalf of the Contractor have the actual authority to bind the Contractor to the terms of the Agreement.

In witness whereof, Marion County, a political subdivision of the state of Oregon, on behalf of Board of Commissioners, executes this Agreement and the CONTRACTOR does execute the same as of the day and year of this Agreement first above written.

In witness whereof, Marion County, a political subdivision of the state of Oregon, on behalf of Business Services Department, executes this Agreement and the CONTRACTOR does execute the same as of the day and year of this Agreement first above written.

7. CONTRACTOR DATA:

CONTRACTOR NAME: Woodburn Construction CM/GC, LLC
CONTRACTOR ADDRESS: 683 RJ Glatt Circle
CONTRACTOR ADDRESS: Woodburn, OR 97071
CONTRACTOR'S CCB # & Expiration Date: 221992, August 1, 2026

CONTRACTOR'S SIGNATURE: _____
Date

MARION COUNTY SIGNATURES
BOARD OF COMMISSIONERS:

_____
Chair Date

_____
Commissioner Date

_____
Commissioner Date

Authorized Signature: Signed by: Tamra Goettsch E4D545951879444... 1/14/2025
Department Director or designee Date

Authorized Signature: DocuSigned by: Jan Fritz DC16351248DE4EC... 1/15/2025
Chief Administrative Officer Date

Reviewed by Signature: Signed by: Scott Norris 60C98A6E708240B... 1/14/2025
Marion County Legal Counsel Date

Reviewed by Signature: DocuSigned by: E4592AF8CAA542C... 1/13/2025
Marion County Contracts & Procurement Date

MARION COUNTY
GENERAL CONDITIONS FOR
PUBLIC IMPROVEMENT CONTRACTS

September 1. 2014 Edition, Revised February 14, 2022

Changes to the General Conditions (including any additions, deletions, or substitutions) should only be made by Supplemental General Conditions, unless the General Conditions are specifically modified in the Public Improvement Agreement (which has a higher order of precedence under Section A.3 of the General Conditions). The text of these General Conditions should not otherwise be altered.

TABLE OF SECTIONS

MARION COUNTY
GENERAL CONDITIONS FOR PUBLIC IMPROVEMENT CONTRACTS
("General Conditions")

SECTION A GENERAL PROVISIONS

A.1 DEFINITION OF TERMS

In the Contract Documents the following terms shall be as defined below:

ARCHITECT/ENGINEER means the Person appointed by the Owner to make drawings and specifications and, to provide contract administration of the Work contemplated by the Contract to the extent provided herein or by supplemental instruction of Owner (under which Owner may delegate responsibilities of the Owner's Authorized Representative to the Architect/Engineer), in accordance with ORS Chapter 671 (Architects) or ORS Chapter 672 (Engineers) and administrative rules adopted thereunder.

CHANGE ORDER means a written order issued by the Owner's Authorized Representative to the Contractor requiring a change in the Work within the general scope of the Contract Documents, issued under the changes provisions of Section D.1 including Owner's written change directives as well as changes reflected in a writing executed by the parties to this Contract and, if applicable, establishing a Contract Price or Contract Time adjustment for the changed Work.

CLAIM means a demand by Contractor pursuant to Section D.3 for review of the denial of Contractor's initial request for an adjustment of Contract terms, payment of money, extension of Contract Time or other relief, submitted in accordance with the requirements and within the time limits established for review of Claims in these General Conditions.

CONTRACT means the written agreement between the Owner and the Contractor comprised of the Contract Documents which describe the Work to be done and the obligations between the parties.

CONTRACT DOCUMENTS means the Solicitation Document and addenda thereto, the Marion County Public Improvement Agreement Form, General Conditions, Supplemental General Conditions, if any, the accepted Offer, Plans, Specifications, amendments, and Change Orders.

CONTRACT PERIOD as set forth in the Contract Documents, means the total period of time beginning with the issuance of the Notice to Proceed and concluding upon Final Completion.

CONTRACT PRICE means the total of the awarded Offer amount, as increased or decreased by the price of approved alternates and Change Orders.

CONTRACT TIME means any incremental period of time allowed under the Contract to complete any portion of the Work as reflected in the project schedule.

CONTRACTOR means the Person awarded the Contract for the Work contemplated.

DAYS are calendar days, including weekdays, weekends, and holidays, unless otherwise specified.

DIRECT COSTS means, unless otherwise provided in the Contract Documents, the cost of materials, including sales tax, cost of delivery; cost of labor, including social security, old age and unemployment insurance, and fringe benefits required by agreement or custom; worker's compensation insurance; project specific insurance (including, without limitation, Builder's Risk Insurance and Builder's Risk Installation Floater); bond premiums, rental cost of equipment, and machinery required for execution of the work; and the additional costs of field personnel directly attributable to the Work.

FINAL COMPLETION means the final completion of all requirements under the Contract, including Contract Closeout as described in Section K but excluding Warranty Work as described in Section I.2, and the final payment and release of all retainage, if any, released.

FORCE MAJEURE means an act, event or occurrence caused by fire, riot, war, acts of God, nature, sovereign, or public enemy, strikes, freight embargoes or any other act, event or occurrence that is beyond the control of the party to this Contract who is asserting Force Majeure.

NOTICE TO PROCEED means the official written notice from the Owner stating that the Contractor is to proceed with the Work defined in the Contract Documents. Notwithstanding the Notice to Proceed, Contractor shall not be authorized to proceed with the Work until all initial Contract requirements, including the Contract, performance bond and payment bond, and certificates of insurance, have been fully executed and submitted to Owner in a suitable form.

OFFER means a bid in connection with an invitation to bid and a proposal in connection with a request for proposals.

OFFEROR means a bidder in connection with an invitation to bid and a proposer in connection with a request for proposals.

OVERHEAD means those items which may be included in the Contractor's markup (general and administrative expense and profit) and that shall not be charged as Direct Cost of the Work, including without limitation such Overhead expenses as wages or salary of personnel above the level of foreman (i.e., superintendents and project managers), expenses of Contractor's offices at the job site (e.g. job trailer) including expenses of personnel staffing the job site office, and Commercial General Liability Insurance and Automobile Liability Insurance.

OWNER means Marion County acting by and through the governmental entity identified in the Solicitation Document.

OWNER'S AUTHORIZED REPRESENTATIVE means those individuals identified in writing by the Owner to act on behalf of the Owner for this project. Owner may elect, by written notice to Contractor, to delegate certain duties of the Owner's Authorized Representative to more than one party, including without limitation, to an Architect/Engineer. However, nothing in these General Conditions is intended to abrogate the separate design professional responsibilities of Architects under ORS Chapter 671 or of Engineers under ORS Chapter 672.

PERSON means an entity doing business as a sole proprietorship, a partnership, a joint venture, a corporation, a limited liability company or partnership, or any other entity possessing the legal capacity to contract.

PLANS means the drawings which show the location, type, dimensions, and details of the Work to be done under the Contract.

PUNCHLIST means the list of Work yet to be completed or deficiencies which need to be corrected to achieve Final Completion of the Contract.

RECORD DOCUMENT means the as-built Plans, Specifications, testing and inspection records, product data, samples, manufacturer, and distributor/supplier warranties evidencing transfer to Owner, operational and maintenance manuals, shop drawings, Change Orders, correspondence, certificate(s) of occupancy, and other documents listed in Subsection B.9.1 of these General Conditions, recording all Services performed.

SOLICITATION DOCUMENT means an invitation to bid or request for proposal or request for quotes.

SPECIFICATION means any description of the physical or functional characteristics of the Work, or of the nature of a supply, service, or construction item. Specifications may include a description of any requirement for inspecting, testing, or preparing a supply, service or construction item for delivery and the quantities or qualities of materials to be furnished under the Contract. Specifications generally will state the results or products to be obtained and may, on occasion, describe the method and manner of doing the work to be performed. Specifications may be incorporated by reference and/or may be attached to the Contract.

SUBCONTRACTOR means a Person having a direct contract with the Contractor, or another Subcontractor, to perform one or more items of the Work.

SUBSTANTIAL COMPLETION means the date when the Owner accepts in writing the construction, alteration, or repair of the improvement to real property or any designated portion thereof as having reached that state of completion when it may be used or occupied for its intended purpose. Substantial Completion of facilities with operating systems occurs only after thirty (30) continuous Days of successful, trouble-free operation of the operating systems as provided in Section K.4.2.

SUBSTITUTIONS means items that in function, performance, reliability, quality, and general configuration are the same or better than the product(s) specified. Approval of any substitute item shall be solely determined by the Owner's Authorized Representative. The decision of the Owner's Authorized Representative is final.

SUPPLEMENTAL GENERAL CONDITIONS means those conditions that remove from, add to, or modify these General Conditions. Supplemental General Conditions may be included in the Solicitation Document or may be a separate attachment to the Contract.

WORK means the furnishing of all materials, equipment, labor, transportation, services, and incidentals necessary to successfully complete any individual item or the entire Contract and the carrying out of duties and obligations imposed by the Contract Documents.

A.2 SCOPE OF WORK

The Work contemplated under this Contract includes all labor, materials, transportation, equipment, and services for, and incidental to, the completion of all construction work in connection with the project

described in the Contract Documents. The Contractor shall perform all Work necessary so that the project can be legally occupied and fully used for the intended use as set forth in the Contract Documents.

A.3 INTERPRETATION OF CONTRACT DOCUMENTS

A.3.1 Unless otherwise specifically defined in the Contract Documents, words which have well-known technical meanings or construction industry meanings are used in the Contract Documents in accordance with such recognized meanings. Contract Documents are intended to be complementary. Whatever is called for in one, is interpreted to be called for in all. However, in the event of conflicts or discrepancies among the Contract Documents, interpretations will be based on the following descending order of precedence:

A.3.1.1 Contract amendments and Change Orders, with those of later date having precedence over those of an earlier date;

A.3.1.2 The Supplemental General Conditions;

A.3.1.3 The Marion County Public Improvement Agreement Form;

A.3.1.4 The General Conditions

A.3.1.5 The Plans and Specifications

A.3.1.6 The Solicitation Document and any addenda thereto;

A.3.1.7 The accepted Offer.

A.3.2 In the case of an inconsistency between Plans and Specifications or within either document not clarified by addendum, the better quality or greater quantity of Work shall be provided in accordance with the Owner or Owner's Authorized Representative's interpretation in writing.

A.3.3 If the Contractor finds discrepancies in, or omissions from the Contract Documents, or if the Contractor is in doubt as to their meaning, the Contractor shall at once notify the Owner or Owner's Authorized Representative. Matters concerning performance under, and interpretation of requirements of, the Contract Documents will be decided by the Owner's Authorized Representative, who may delegate that duty in some instances to the Architect/Engineer. Responses to Contractor's requests for interpretation of Contract Documents will be made in writing by Owner's Authorized Representative (or the Architect/Engineer) within any time limits agreed upon or otherwise with reasonable promptness. Interpretations and decisions of the Owner's Authorized Representative (or Architect/Engineer) will be consistent with the intent of and reasonably inferable from the Contract Documents. Contractor shall not proceed without direction in writing from the Owner's Authorized Representative (or Architect/Engineer).

A.3.4 References to standard specifications, manuals, codes of any technical society, organization or association, to the laws or regulations of any governmental authority, whether such reference be specific or by implication, shall mean the latest standard specification, manual, code, laws or regulations in effect in the jurisdiction where the project is occurring on the first published date of the Solicitation Document, except as may be otherwise specifically stated.

A.4 EXAMINATION OF PLANS, SPECIFICATIONS, AND SITE

A.4.1 It is understood that the Contractor, before submitting an Offer, has made a careful examination of the Contract Documents; has become fully informed as to the quality and quantity of materials and the character of the Work required; and has made a careful examination of the location and conditions of the Work and the sources of supply for materials. The Owner will in no case be responsible for any loss or for any unanticipated costs that may be suffered by the Contractor resulting from the Contractor's failure to acquire full information in advance regarding all conditions pertaining to the Work. No oral agreement or conversation with any officer, agent, or personnel of the Owner, or with the Architect/Engineer either before or after the execution of this Contract, shall affect or modify any of the terms or obligations herein contained.

A.4.2 Should the Plans or Specifications fail to particularly describe the materials, kind of goods, or details of construction of any aspect of the Work, Contractor shall have the duty to make inquiry of the Owner and Architect/Engineer as to what is required prior to performance of the Work. Absent Specifications to the contrary, the materials or processes that would normally be used to produce first quality finished Work shall be considered a part of the Contract requirements.

A.4.3 Any design errors or omissions noted by the Contractor shall be reported promptly to the Owner's Authorized Representative, including without limitation, any nonconformity with applicable laws, statutes, ordinances, building codes, rules, and regulations.

A.4.4 If the Contractor believes that additional cost or Contract Time is involved because of clarifications or instructions issued by the Owner's Authorized Representative (or Architect/Engineer) in response to the Contractor's notices or requests for information, the Contractor must submit a written request to the Owner's Authorized Representative, setting forth the nature and specific extent of the request, including all time and cost impacts against the Contract as soon as possible, but no later than thirty (30) Days after receipt by Contractor of the clarifications or instructions issued. If the Owner's Authorized Representative denies Contractor's request for additional compensation, additional Contract Time, or other relief that Contractor believes results from the clarifications or instructions, the Contractor may proceed to file a Claim under Section D.3, Claims Review Process. If the Contractor fails to perform the obligations of Sections A.4.1 to A.4.3, the Contractor shall pay such costs and damages to the Owner as would have been avoided if the Contractor had performed such obligations.

A.5 INDEPENDENT CONTRACTOR STATUS

The service or services to be performed under this Contract are those of an independent contractor as defined in ORS 670.600. Contractor represents and warrants that it is not an officer, employee, or agent of the Owner.

A.6 RETIREMENT SYSTEM STATUS AND TAXES

Contractor represents and warrants that it is not a contributing member of the Public Employees' Retirement System and will be responsible for any federal or state taxes applicable to payment received under this Contract. Contractor will not be eligible for any benefits from these Contract payments of federal Social Security, employment insurance, workers' compensation, or the Public Employees' Retirement System, except as a self-employed individual. Unless the Contractor is subject to backup withholding, Owner will not withhold from such payments any amount(s) to cover Contractor's federal or state tax obligations.

A.7 GOVERNMENT EMPLOYMENT STATUS

A.7.1 If this payment is to be charged against federal funds, Contractor represents and warrants that it is not currently employed by the Federal Government. This does not preclude the Contractor from holding another contract with the Federal Government.

A.7.2 Contractor represents and warrants that Contractor is not an employee of the Marion County for purposes of performing Work under this Contract.

SECTION B ADMINISTRATION OF THE CONTRACT

B.1 OWNER'S ADMINISTRATION OF THE CONTRACT

B.1.1 The Owner's Authorized Representative will provide administration of the Contract as described in the Contract Documents (1) during construction (2) until final payment is due and (3) during the one-year period for correction of Work. The Owner's Authorized Representative will act on behalf of the Owner to the extent provided in the Contract Documents, unless modified in writing in accordance with other provisions of the Contract. In performing these tasks, the Owner's Authorized Representative may rely on the Architect/Engineer or other consultants to perform some or all of these tasks.

B.1.2 The Owner's Authorized Representative will visit the site at intervals appropriate to the stage of the Contractor's operations (1) to become generally familiar with and to keep the Owner informed about the progress and quality of the portion of the Work completed, (2) to endeavor to guard the Owner against defects and deficiencies in the Work, and (3) to determine in general if Work is being performed in a manner indicating that the Work, when fully completed, will be in accordance with the Contract Documents. The Owner's Authorized Representative will not make exhaustive or continuous on-site inspections to check the quality or quantity of the Work. The Owner's Authorized Representative will neither have control over or charge of, nor be responsible for the construction means, methods, techniques, sequences, or procedures, or for the safety precautions and programs in connection with the Work.

B.1.3 Except as otherwise provided in the Contract Documents or when direct communications have been specifically authorized, the Owner and Contractor shall endeavor to communicate with each other through the Owner's Authorized Representative or designee about matters arising out of or relating to the Contract. Communications by and with the Architect/Engineer's consultants shall be through the Architect/Engineer. Communications by and with Subcontractors and material suppliers shall be through the Contractor. Communications by and with separate contractors shall be through the Owner's Authorized Representative.

B.1.4 Based upon the Architect/Engineer's evaluations of the Contractor's Application for Payment, or unless otherwise stipulated by the Owner's Authorized Representative, the Architect/Engineer will review and certify the amounts due the Contractor and will issue Certificates for Payment in such amounts.

B.2 CONTRACTOR'S MEANS AND METHODS; MITIGATION OF IMPACTS

B.2.1 The Contractor shall supervise and direct the Work, using the Contractor's best skill and attention. The Contractor shall be solely responsible for and have control over construction means, methods, techniques, sequences, and procedures and for coordinating all portions of the Work under the

Contract, unless the Contract Documents give other specific instructions concerning these matters. If the Contract Documents give specific instructions concerning construction means, methods, techniques, sequences or procedures, the Contractor shall evaluate the jobsite safety thereof and, except as stated below, shall be fully and solely responsible for the jobsite safety of such means, methods, techniques, sequences, or procedures.

B.2.2 The Contractor is responsible to protect and maintain the Work during construction and to mitigate any adverse impacts to the project, including those caused by authorized changes, which may affect cost, schedule, or quality.

B.2.3 The Contractor is responsible for the actions of all its personnel, laborers, suppliers, and Subcontractors on the project. The Contractor shall enforce strict discipline and good order among Contractor's employees and other persons carrying out the Work. The Contractor shall not permit employment of persons who are unfit or unskilled for the tasks assigned to them.

B.2.4 Contractor agrees that it will commence performance of the Work in a timely manner and will achieve the Contract Times in the Contract Documents.

B.3 MATERIALS AND WORKMANSHIP

B.3.1 The intent of the Contract Documents is to provide for the construction and completion in every detail of the Work described. All Work shall be performed in a professional manner and unless the means or methods of performing a task are specified elsewhere in the Contract Documents, Contractor shall employ methods that are generally accepted and used by the industry, in accordance with industry standards.

B.3.2 The Contractor is responsible to perform the Work as required by the Contract Documents. Defective Work shall be corrected at the Contractor's expense.

B.3.3 Work done and materials furnished shall be subject to inspection and/or observation and testing by the Owner's Authorized Representative to determine if they conform to the Contract Documents. Inspection of the Work by the Owner's Authorized Representative does not relieve the Contractor of responsibility for the Work in accordance with the Contract Documents.

B.3.4 Contractor shall furnish adequate facilities, as required, for the Owner's Authorized Representative to have safe access to the Work including without limitation walkways, railings, ladders, tunnels, and platforms. Producers, suppliers, and fabricators shall also provide proper facilities and access to their facilities.

B.3.5 The Contractor shall furnish Samples of materials for testing by the Owner's Authorized Representative and include the cost of the Samples in the Contract Price.

B.4 PERMITS

Contractor shall obtain and pay for all necessary permits and licenses, except for those specifically excluded in the Supplemental General Conditions, for the construction of the Work, for temporary obstructions, enclosures, opening of streets for pipes, walls, utilities, environmental Work, etc., as required for the project. Contractor shall be responsible for all violations of the law, in connection with the construction or caused by obstructing streets, sidewalks or otherwise. Contractor shall give all requisite notices to public authorities. The Contractor shall pay all royalties and license fees. The

Contractor shall defend all suits or claims for infringement of any patent or other proprietary rights and save harmless and blameless from loss, on account thereof, Marion County, and its departments, divisions, members, and employees.

B.5 COMPLIANCE WITH GOVERNMENT LAWS AND REGULATIONS

B.5.1 Contractor shall comply with all federal, state, and local laws, codes, regulations and ordinances applicable to the Work and the Contract. Failure to comply with such requirements shall constitute a breach of Contract and shall be grounds for Contract termination. Without limiting the generality of the foregoing, Contractor expressly agrees to comply with the following as applicable: i) Title VI and VII of Civil Rights Act of 1964, as amended; (ii) Section 503 and 504 of the Rehabilitation Act of 1973, as amended; (iii) the Health Insurance Portability and Accountability Act of 1996; (iv) the Americans with Disabilities Act of 1990, as amended; (v) ORS Chapter 659A; as amended (vi) all regulations and administrative rules established pursuant to the foregoing laws; and (vii) all other applicable requirements of federal and state civil rights and rehabilitation statutes, rules and regulations. Owner's performance under the Contract is conditioned upon Contractor's compliance with the provisions of ORS 279C.505, 279C.510, 279C.515, 279C.520, and 279C.530, which are incorporated by reference herein.

B.5.2 Contractor shall comply with all applicable requirements of federal and state civil rights and rehabilitation statutes, rules, and regulations; and

B.5.2.1 Contractor shall not discriminate against Disadvantaged, Minority, Women or Emerging Small Business enterprises, as those terms are defined in ORS 200.005, or a business enterprise that is owned or controlled by or that employs a disabled veteran, as that term is defined in ORS 408.225, in the awarding of subcontracts.

B.5.2.2 Contractor shall maintain, in current and valid form, all licenses and certificates required by law, regulation, or this Contract when performing the Work.

B.5.3 Unless contrary to federal law, Contractor shall certify that it shall not accept a bid from Subcontractors to perform Work as described in ORS 701.005 under this Contract unless such Subcontractors are registered with the Construction Contractors Board in accordance with ORS 701.035 to 701.055 at the time they submit their bids to the Contractor.

B.5.4 Unless contrary to federal law, Contractor shall certify that each landscape contractor, as defined in ORS 671.520(2), performing Work under this Contract holds a valid landscape contractor's license issued pursuant to ORS 671.560.

B.5.5 The following notice is applicable to Contractors who perform excavation Work. ATTENTION: Oregon law requires you to follow rules adopted by the Oregon Utility Notification Center. Those rules are set forth in OAR 952-001-0010 through OAR 952-001-0090. You may obtain copies of the rules by calling the center at (503)232-1987.

B.5.6 Failure to comply with any or all of the requirements of B.5.1 through B.5.5 shall be a breach of Contract and constitute grounds for Contract termination. Damages or costs resulting from such noncompliance shall be the responsibility of Contractor.

B.6 SUPERINTENDENCE

Contractor shall keep on the site, during the progress of the Work, a competent superintendent and any necessary assistants who shall be satisfactory to the Owner and who shall represent the Contractor on the site. Directions given to the superintendent by the Owner's Authorized Representative shall be confirmed in writing to the Contractor.

B.7 INSPECTION

B.7.1 Owner's Authorized Representative shall have access to the Work at all times.

B.7.2 Inspection of the Work will be made by the Owner's Authorized Representative at its discretion. The Owner's Authorized Representative will have authority to reject Work that does not conform to the Contract Documents. Any Work found to be not in conformance with the Contract Documents, in the discretion of the Owner's Authorized Representative, shall be removed and replaced at the Contractor's expense.

B.7.3 Contractor shall make or obtain at the appropriate time all tests, inspections, and approvals of portions of the Work required by the Contract Documents or by laws, ordinances, rules, regulations, or orders of public authorities having jurisdiction. Unless otherwise provided, the Contractor shall make arrangements for such tests, inspections and approvals with an independent testing laboratory or entity acceptable to the Owner, or with the appropriate public authority, and shall bear all related costs of tests, inspections and approvals. Tests or inspections conducted pursuant to the Contract Documents shall be made promptly to avoid unreasonable delay in the Work. The Contractor shall give the Owner's Authorized Representative timely notice of when and where tests and inspections are to be made so that the Owner's Authorized Representative may be present for such procedures. Required certificates of testing, inspection or approval shall, unless otherwise required by the Contract Documents, be secured by the Contractor, and promptly delivered to the Owner's Authorized Representative.

B.7.4 As required by the Contract Documents, Work done, or material used without inspection or testing by the Owner's Authorized Representative may be ordered removed at the Contractor's expense.

B.7.5 If directed to do so any time before the Work is accepted, the Contractor shall uncover portions of the completed Work for inspection. After inspection, the Contractor shall restore such portions of Work to the standard required by the Contract. If the Work uncovered is unacceptable or was done without sufficient notice to the Owner's Authorized Representative, the uncovering and restoration shall be done at the Contractor's expense. If the Work uncovered is acceptable and was done with sufficient notice to the Owner's Authorized Representative, the uncovering and restoration will be paid for as a Change Order.

B.7.6 If any testing or inspection reveals failure of the portions of the Work to comply with requirements established by the Contract Documents, all costs made necessary by such failure, including those of repeated procedures and compensation for the Owner's Authorized Representative's and Architect/Engineer's services and expenses, shall be at the Contractor's expense.

B.7.7 When the United States government participates in the cost of the Work, or the Owner has an agreement with other public or private organizations, or if any portion of the Work is being performed for a third party or near third party facilities, representatives of these organizations have the right to inspect the Work affecting their interests or property. Their right to inspect shall not make them a

party to the Contract and shall not interfere with the rights of the parties of the Contract. Instructions or orders of such parties shall be transmitted to the Contractor, through the Owner's Authorized Representative.

B.8 SEVERABILITY

If any provision of this Contract is declared by a court to be illegal or in conflict with any law, the validity of the remaining terms and provisions shall not be affected, and the rights and obligations of the parties shall be construed and enforced as if the Contract did not contain the particular provision held to be invalid.

B.9 ACCESS TO RECORDS

B.9.1 Contractor shall keep, at all times on the Work site, one record copy of the complete Contract Documents, including the Plans, Specifications, Change Orders and addenda, in good order and marked currently to record field changes and selections made during construction, and one record copy of Shop Drawings, Product Data, Samples and similar submittals, and shall at all times give the Owner's Authorized Representative access thereto.

B.9.2 Contractor shall retain and the Owner and its duly authorized representatives shall have access to, for a period not less than ten (10) years, all Record Documents, financial and accounting records, and other books, documents, papers, and records of Contractor which are pertinent to the Contract including records pertaining to Overhead and indirect costs, for the purpose of making audit, examination, excerpts, and transcripts. If for any reason, any part of the Contract is involved in litigation, Contractor shall retain all such records until all litigation is resolved. The Owner and/or its agents shall continue to be provided full access to the records during litigation.

B.10 WAIVER

Failure of the Owner to enforce any provision of this Contract shall not constitute a waiver or relinquishment by the Owner of the right to such performance in the future nor of the right to enforce any other provision of this Contract.

B.11 SUBCONTRACTS AND ASSIGNMENT

B.11.1 Contractor shall require each Subcontractor, to the extent of the Work to be performed by the Subcontractor, to be bound by the terms and conditions of these General Conditions, and to assume toward the Contractor all of the obligations and responsibilities which the Contractor assumes toward the Owner thereunder, unless (1) the same are clearly inapplicable to the subcontract at issue because of legal requirements or industry practices, or (2) specific exceptions are requested by Contractor and approved in writing by Owner. Where appropriate, Contractor shall require each Subcontractor to enter into similar agreements with sub-subcontractors at any level.

B.11.2 At Owner’s request, Contractor shall submit to Owner prior to their execution either Contractor’s form of subcontract, or the subcontract to be executed with any particular Subcontractor. If Owner disapproves such form, Contractor shall not execute the form until the matters disapproved are resolved to Owner’s satisfaction. Owner’s review, comment upon or approval of any such form shall not relieve Contractor of its obligations under this Agreement or be deemed a waiver of such obligations of Contractor.

B.11.3 Contractor shall not assign, sell, or transfer its rights, or delegate its responsibilities under this Contract, in whole or in part, without the prior written approval of the Owner. No such written

approval shall relieve Contractor of any obligations of this Contract, and any transferee shall be considered the agent of the Contractor and bound to perform in accordance with the Contract Documents. Contractor shall remain liable as between the original parties to the Contract as if no assignment had occurred.

B.12 SUCCESSORS IN INTEREST

The provisions of this Contract shall be binding upon and shall accrue to the benefit of the parties to the Contract and their respective permitted successors and assigns.

B.13 OWNER'S RIGHT TO DO WORK

Owner reserves the right to perform other or additional work at or near the project site with other forces than those of the Contractor. If such work takes place within or next to the project site, Contractor will coordinate work with the other contractors or forces, cooperate with all other contractors or forces, carry out the Work in a way that will minimize interference and delay for all forces involved, place and dispose of materials being used so as not to interfere with the operations of another, and join the Work with the work of the others in an acceptable manner and perform it in proper sequence to that of the others. The Owner's Authorized Representative will resolve any disagreements that may arise between or among Contractor and the other contractors over the method or order of doing all work (including the Work). In case of unavoidable interference, the Owner's Authorized Representative will establish work priority (including the Work) which generally will be in the sequence that the contracts were awarded.

B.14 OTHER CONTRACTS

In all cases and at any time, the Owner has the right to execute other contracts related to or unrelated to the Work of this Contract. The Contractor of this Contract will fully cooperate with any and all other contractors without additional cost to the Owner in the manner described in section B.13.

B.15 GOVERNING LAW

This Contract shall be governed by and construed in accordance with the laws of the State of Oregon without regard to principles of conflict of laws.

B.16 LITIGATION

Any Claim between Owner and Contractor that arises from or relates to this Contract and that is not resolved through the Claims Review Process in Section D.3 shall be brought and conducted solely and exclusively within the Circuit Court of Marion County for the State of Oregon; provided, however, if a Claim 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 section be construed as a waiver by the Marion County 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 THIS CONTRACT HEREBY CONSENTS TO THE IN PERSONAM JURISDICTION OF THE COURTS REFERENCED IN THIS SECTION B.16.

B.17 ALLOWANCES

B.17.1 The Contractor shall include in the Contract Price all allowances stated in the Contract Documents. Items covered by allowances shall be supplied for such amounts and by such persons or entities as the Owner may direct.

B.17.2 Unless otherwise provided in the Contract Documents:

B.17.2.1 when finally reconciled, allowances shall cover the cost to the Contractor of materials and equipment delivered at the site and all required taxes, less applicable trade discounts;

B.17.2.2 Contractor's costs for unloading and handling at the site, labor, installation costs, Overhead, profit and other expenses contemplated for stated allowance amounts shall be included in the Contract Price but not in the allowances;

B.17.2.3 whenever costs are more than or less than allowances, the Contract Price shall be adjusted accordingly by Change Order. The amount of the Change Order shall reflect

(a) the difference between actual costs and the allowances under Section B.17.2.1 and

(b) changes in Contractor's costs under Section B.17.2.2.

B.17.2.4 Unless Owner requests otherwise, Contractor shall provide to Owner a proposed fixed price for any allowance work prior to its performance.

B.18 SUBMITTALS, SHOP DRAWINGS, PRODUCT DATA AND SAMPLES

B.18.1 The Contractor shall prepare and keep current, for the Architect's/Engineer's approval (or for the approval of Owner's Authorized Representative if approval authority has not been delegated to the Architect/Engineer), a schedule and list of submittals which is coordinated with the Contractor's construction schedule and allows the Architect/Engineer reasonable time to review submittals. Owner reserves the right to finally approve the schedule and list of submittals. Submittals include, without limitation, Shop Drawings, Product Data, and Samples which are described below:

B.18.1.1 Shop Drawings are drawings, diagrams, schedules, and other data specially prepared for the Work by the Contractor or a Subcontractor (including any sub-subcontractor), manufacturer, supplier, or distributor to illustrate some portion of the Work.

B.18.1.2 Product Data are illustrations, standard schedules, performance charts, instructions, brochures, diagrams, and other information furnished by the Contractor to illustrate materials or equipment for some portion of the Work.

B.18.1.3 Samples are physical examples which illustrate materials, equipment or workmanship and establish standards by which the Work will be judged.

B.18.2 Shop Drawings, Product Data, Samples, and similar submittals are not Contract Documents. The purpose of their submittal is to demonstrate for those portions of the Work for which submittals are required by the Contract Documents the way by which the Contractor proposes to conform to the information given and the design concept expressed in the Contract Documents. Review of submittals by the Architect/Engineer is not conducted for the purpose of determining the accuracy and completeness of other details such as dimensions and quantities, or for substantiating instructions for installation or performance of equipment or systems, or for approval of safety precautions or, unless otherwise specifically stated by the Architect/Engineer, of any construction means, methods, techniques, sequences or procedures, all of which remain the responsibility of the Contractor as required by the Contract Documents. The Architect/Engineer's review of the Contractor's submittals shall not relieve the Contractor of its obligations under the Contract Documents. The Architect/Engineer's approval of a specific item shall not indicate approval of an assembly of which

the item is a component. Informational submittals upon which the Architect/Engineer is not expected to take responsive action may be so identified in the Contract Documents. Submittals which are not required by the Contract Documents may be returned by the Architect/Engineer without action.

B.18.3 The Contractor shall review for compliance with the Contract Documents, approve and submit to the Architect/Engineer Shop Drawings, Product Data, Samples and similar submittals required by the Contract Documents with reasonable promptness and in such sequence as to cause no delay in the Work or in the activities of the Owner or of separate contractors. Submittals which are not marked as reviewed for compliance with the Contract Documents and approved by the Contractor may be returned by the Architect/Engineer without action.

B.18.4 By approving and submitting Shop Drawings, Product Data, Samples and similar submittals, the Contractor represents that the Contractor has determined and verified materials, field measurements and field construction criteria related thereto, or will do so, and has checked and coordinated the information contained within such submittals with the requirements of the Work and of the Contract Documents.

B.18.5 The Contractor shall perform no portion of the Work for which the Contract Documents require submittal and review of Shop Drawings, Product Data, Samples or similar submittals until the respective submittal has been approved by the Architect/Engineer.

B.18.6 The Work shall be in accordance with approved submittals except that the Contractor shall not be relieved of responsibility for deviations from requirements of the Contract Documents by the Architect/Engineer's review or approval of Shop Drawings, Product Data, Samples or similar submittals unless the Contractor has specifically informed the Architect/Engineer in writing of such deviation at the time of submittal and (i) the Architect/Engineer has given written approval to the specific deviation as a minor change in the Work, or (ii) a Change Order has been executed by Owner authorizing the deviation. The Contractor shall not be relieved of responsibility for errors or omissions in Shop Drawings, Product Data, Samples or similar by the Architect/Engineer's review or approval thereof.

B.18.7 In the event that Owner elects not to have the obligations and duties described under this Section B.18 performed by the Architect/Engineer, or in the event no Architect/Engineer is employed by Owner on the project, all obligations and duties assigned to the Architect/Engineer hereunder shall be performed by the Owner's Authorized Representative.

B.19 SUBSTITUTIONS

The Contractor may make Substitutions only with the consent of the Owner, after evaluation by the Owner's Authorized Representative and only if price or time change must be made through a Change Order, all other substitutions may be communicated through email. Substitutions shall be subject to the requirements of the bid documents. By making requests for Substitutions, the Contractor represents that the Contractor has personally investigated the proposed substitute product; represents that the Contractor will provide the same warranty for the Substitution that the Contractor would for the product originally specified unless approved otherwise; certifies that the cost data presented is complete and includes all related costs under this Contract including redesign costs, and waives all claims for additional costs related to the Substitution which subsequently become apparent; and will coordinate the installation of the accepted Substitution, making such changes as may be required for the Work to be completed in all respects.

B.20 USE OF PLANS AND SPECIFICATIONS

Plans, Specifications, and related Contract Documents furnished to Contractor by Owner or Owner's Architect/Engineer shall be used solely for the performance of the Work under this Contract. Contractor and its Subcontractors and suppliers are authorized to use and reproduce applicable portions of such documents appropriate to the execution of the Work, but shall not claim any ownership or other interest in them beyond the scope of this Contract, and no such interest shall attach. Unless otherwise indicated, all common law, statutory and other reserved rights, in addition to copyrights, are retained by Owner.

B.21 FUNDS AVAILABLE AND AUTHORIZED

Owner reasonably believes at the time of entering into this Contract that sufficient funds are available and authorized for expenditure to finance the cost of this Contract within the Owner's appropriation or limitation. Contractor understands and agrees that, to the extent that in the event the Board of Commissioners of the County reduces, changes, eliminates, or otherwise modifies the funding the cost of this contract, the CONTRACTOR agrees to abide by any such decision, including termination of this agreement.

B.22 NO THIRD-PARTY BENEFICIARIES

Owner and Contractor are the only parties to this Contract and are the only parties entitled to enforce its terms. Nothing in this Contract gives, is intended to give, or shall be construed to give or provide any benefit or right, whether directly, indirectly, or otherwise, to third persons unless such third persons are individually identified by name herein and expressly described as intended beneficiaries of the terms of this Contract.

SECTION C WAGES AND LABOR

C.1 MINIMUM WAGE RATES ON PUBLIC WORKS

Contractor shall comply fully with the provisions of ORS 279C.800 through 279C.870. Documents establishing those conditions, as determined by the Commissioner of the Bureau of Labor and Industries (BOLI), are included as attachments to or are incorporated by reference in the Contract Documents. Contractor shall pay workers at not less than the specified minimum hourly rate of wage, and shall include that requirement in all subcontracts.

C.2 PAYROLL CERTIFICATION; ADDITIONAL RETAINAGE; FEE REQUIREMENTS

C.2.1 In accordance with ORS 279C.845, the Contractor and every Subcontractor shall submit written certified statements to the Owner's Authorized Representative, on the form prescribed by the Commissioner of the Bureau of Labor and Industries, certifying the hourly rate of wage paid each worker which the Contractor or the Subcontractor has employed on the project and further certifying that no worker employed on the project has been paid less than the prevailing rate of wage or less than the minimum hourly rate of wage specified in the Contract, which certificate and statement shall be verified by the oath of the Contractor or the Subcontractor that the Contractor or Subcontractor has read the certified statement, that the Contractor or Subcontractor knows the contents of the certified statement and that to the Contractor's or Subcontractor's best knowledge and belief the certified statement is true. The certified statements shall set out accurately and completely the payroll records for the prior week including the name and address of each worker, the worker's correct classification, rate of pay, daily and weekly number of hours worked, deductions made, and actual wages paid. Certified statements for each week during which the Contractor or Subcontractor has employed a

worker on the project shall be submitted once a month, by the fifth business day of the following month.

The Contractor and Subcontractors shall preserve the certified statements for a period of ten (10) years from the date of completion of the Contract.

C.2.2 Pursuant to ORS 279C.845(7), the Owner shall retain 25 percent of any amount earned by the Contractor on this public works project until the Contractor has filed the certified statements required by section C.2.1. The Owner shall pay to the Contractor the amount retained under this subsection within 14 days after the Contractor files the required certified statements, regardless of whether a Subcontractor has failed to file certified statements.

C.2.3 Pursuant to ORS 279C.845(8), the Contractor shall retain 25 percent of any amount earned by a first-tier Subcontractor on this public works project until the first-tier Subcontractor has filed with the Owner the certified statements required by C.2.1. Before paying any amount retained under this subsection, the Contractor shall verify that the first-tier Subcontractor has filed the certified statement. Within 14 days after the first-tier Subcontractor files the required certified statement the Contractor shall pay the first-tier Subcontractor any amount retained under this subsection.

C.2.4 In accordance with statutory requirements, and administrative rules promulgated by the Commissioner of the Bureau of Labor and Industries, the fee required by ORS 279C.825(1) will be paid by Owner to the Commissioner.

C.3 PROMPT PAYMENT AND CONTRACT CONDITIONS

C.3.1 Pursuant to ORS 279C.505 and as a condition to Owner's performance hereunder, the Contractor shall:

C.3.1.1 Make payment promptly, as due, to all persons supplying to Contractor labor or materials for the prosecution of the Work provided for in this Contract.

C.3.1.2 Pay all contributions or amounts due the State Industrial Accident Fund from such Contractor or Subcontractor incurred in the performance of the Contract.

C.3.1.3 Not permit any lien or claim to be filed or prosecuted against the Owner on account of any labor or material furnished. Contractor will not assign any claims that Contractor has against Owner, or assign any sums due by Owner, to Subcontractors, suppliers, or manufacturers, and will not make any agreement or act in any way to give Subcontractors a claim or standing to make a claim against the Owner.

C.3.1.4 Pay to the Department of Revenue all sums withheld from employees pursuant to ORS 316.167.

C.3.1.5 Demonstrate that an employee drug testing program is in place as follows:

(a) Contractor represents and warrants that Contractor has in place at the time of the execution of this Contract, and shall maintain during the term of this Contract, a Qualifying Employee Drug Testing Program for its employees that includes, at a minimum, the following:

(1) A written employee drug testing policy,

(2) Required drug testing for all new Subject Employees or, alternatively, required testing of all Subject Employees every 12 months on a random selection basis, and

(3) Required testing of a Subject Employee when the Contractor has reasonable cause to believe the Subject Employee is under the influence of drugs.

A drug testing program that meets the above requirements will be deemed a "Qualifying Employee Drug Testing Program." For the purposes of this section, an employee is a "Subject Employee" only if that employee will be working on the project job site.

(b) Contractor shall require each Subcontractor providing labor for the project to:

(1) Demonstrate to the Contractor that it has a Qualifying Employee Drug Testing Program for the Subcontractor's Subject Employees, and represent and warrant to the Contractor that the Qualifying Employee Drug Testing Program is in place at the time of subcontract execution and will continue in full force and effect for the duration of the subcontract, or

(2) Require that the Subcontractor's Subject Employees participate in the Contractor's Qualifying Employee Drug Testing Program for the duration of the subcontract.

C.3.2 Pursuant to ORS 279C.515, and as a condition to Owner's performance hereunder, Contractor agrees:

C.3.2.1 If Contractor fails, neglects or refuses to pay promptly a person's claim for labor or services that the person provides to the Contractor or a Subcontractor in connection with the project as such claim becomes due, the proper officer that represents the Owner may pay the amount of the claim and charge the amount of the payment against funds due or to become due Contractor under this Contract. Paying a claim in this manner shall not relieve the Contractor or the Contractor's surety from obligation with respect to an unpaid claim.

C.3.2.2 If the Contractor or a first-tier Subcontractor fails, neglects or refuses to pay a person that provides labor or materials in connection with the public contract for a public improvement within thirty (30) Days after receiving payment from Owner or a contractor, the contractor or first-tier Subcontractor owes the person the amount due plus interest charges that begin at the end of the 10-Day period within which payment is due under ORS 279C.580(4) and that end upon final payment, unless payment is subject to a good faith dispute as defined in ORS 279C.580. The rate of interest on the amount due is nine percent per annum. The amount of interest may not be waived.

C.3.2.3 If the Contractor or a Subcontractor fails, neglects or refuses to pay a person that provides labor or materials in connection with the Contract, the person may file a complaint with the Construction Contractors Board, unless payment is subject to a good faith dispute as defined in ORS 279C.580. Every contract related to this Contract must contain a similar clause.

C.3.3 Pursuant to ORS 279C.580, Contractor shall include in each subcontract for property or services the Contractor enters into with a first-tier Subcontractor, including a material supplier, for the purpose of performing a construction contract:

C.3.3.1 A payment clause that obligates the Contractor to pay the first-tier Subcontractor for satisfactory performance under the subcontract within ten (10) Days out of amounts the Owner pays to the Contractor under the Contract;

C.3.3.2 A clause that requires the Contractor to provide the first-tier Subcontractor with a standard form that the first-tier Subcontractor may use as an application for payment or as another method by which the Subcontractor may claim a payment due from the Contractor;

C.3.3.3 A clause that requires the Contractor, except as otherwise provided in this paragraph, to use the same form and regular administrative procedures for processing payments during the entire term of the subcontract. The Contractor may change the form or the regular administrative procedures the Contractor uses for processing payments if the Contractor:

(a) Notifies the Subcontractor in writing at least 45 days before the date on which the Contractor makes the change; and

(b) Includes with the written notice a copy of the new or changed form or a description of the new or changed procedure.

C.3.3.4 An interest penalty clause that obligates the Contractor, if the Contractor does not pay the first-tier Subcontractor within thirty (30) Days after receiving payment from Owner, to pay the first-tier Subcontractor an interest penalty on amounts due in each payment the Contractor does not make in accordance with the payment clause included in the subcontract under Section C.3.3.1 of this subsection. Contractor or first-tier Subcontractor is not obligated to pay an interest penalty if the only reason that the Contractor or first-tier Subcontractor did not make payment when payment was due is that the Contractor or first-tier Subcontractor did not receive payment from Owner or Contractor when payment was due. The interest penalty applies to the period that begins on the day after the required payment date and that ends on the date on which the amount due is paid; and is computed at the rate specified in ORS 279C.515(2).

C.3.3.5 A clause which requires each of Contractor's Subcontractors to include, in each of their contracts with lower-tier Subcontractors or suppliers, provisions to the effect that the first- tier Subcontractor shall pay its lower-tier Subcontractors and suppliers in accordance with the provisions of paragraphs C.3.3.1 through C.3.3.4 above and requiring each of their Subcontractors and suppliers to include such clauses in their subcontracts and supply contracts.

C.3.4 All employers, including Contractor, that employ subject workers who work under this contract in the Marion County shall comply with ORS 656.017 and provide the required Workers' Compensation coverage, unless such employers are exempt under ORS 656.126. Contractor shall ensure that each of its Subcontractors complies with these requirements.

C.4 PAYMENT FOR MEDICAL CARE

Pursuant to ORS 279C.530, and as a condition to Owner's performance hereunder, Contractor shall promptly, as due, make payment to any person, partnership, association or corporation furnishing medical, surgical, and hospital care or other needed care and attention, incident to sickness or injury, to the employees of such Contractor, all sums of which the Contractor agrees to pay for such services and all moneys and sums which the Contractor has collected or deducted from the wages of personnel pursuant to any law, contract or agreement for the purpose of providing or paying for such services.

C.5 HOURS OF LABOR

As a condition to Owner's performance hereunder, Contractor shall comply with ORS 279C.520, as amended from time to time and incorporated herein by this reference:

Pursuant to ORS 279C.520 and as a condition to Owner's performance hereunder, no person shall be employed to perform Work under this Contract for more than ten (10) hours in any one day or forty (40) hours in any one week, except in cases of necessity, emergency or where public policy absolutely requires it. In such instances, Contractor shall pay the employee at least time and a half pay:

C.5.1 For all overtime in excess of eight (8) hours a day or forty (40) hours in any one week when the work week is five consecutive Days, Monday through Friday; or

C.5.2 For all overtime in excess of ten (10) hours a day or forty (40) hours in any one week when the work week is four consecutive Days, Monday through Friday; and

C.5.3 For all Work performed on Saturday and on any legal holiday specified in ORS 279C.540.

This section C.5 will not apply to Contractor's Work under this Contract if Contractor is currently a party to a collective bargaining agreement with any labor organization.

This Section C.5 shall not excuse Contractor from completion of the Work within the time required under this Contract.

SECTION D CHANGES IN THE WORK

D.1 CHANGES IN WORK

D.1.1 The terms of this Contract shall not be waived, altered, modified, supplemented or amended in any manner whatsoever without prior written approval of the Owner's Authorized Representative, and then only in a manner consistent with the Change Order provisions of this Section D.1 and after any necessary approvals required by public contracting laws have been obtained. Otherwise, a formal contract amendment is required, which shall not be effective until its execution by the parties to this Contract and all approvals required by public contracting laws have been obtained.

D.1.2 It is mutually agreed that changes in Plans, quantities, or details of construction are inherent in the nature of construction and may be necessary or desirable during the course of construction. Within the general scope of this Contract, the Owner's Authorized Representative may at any time, without notice to the sureties and without impairing the Contract, require changes consistent with this Section D.1. All Change Order Work shall be executed under the conditions of the Contract Documents. Such changes may include, but are not limited to:

D.1.2.1 Modification of specifications and design.

D.1.2.2 Increases or decreases in quantities.

D.1.2.3 Increases or decreases to the amount of Work.

D.1.2.4 Addition or elimination of any Work item.

D.1.2.5 Change in the duration of the project.

D.1.2.6 Acceleration or delay in performance of Work.

D.1.2.7 Deductive changes.

Deductive changes are those that reduce the scope of the Work, and shall be made by mutual agreement whenever feasible, as determined by Owner. In cases of suspension or partial termination under Section J, Owner reserves the right to unilaterally impose a deductive change and to self-perform such Work, for which the provisions of B.13 (Owner's Right to Do Work) shall then apply.

Adjustments in compensation shall be made under the provisions of D.1.3, in which costs for deductive changes shall be based upon a Direct Costs adjustment together with the related percentage markup specified for profit, Overhead and other indirect costs, unless otherwise agreed to by Owner.

D.1.3 The Owner and Contractor agree that Change Order Work shall be administered and compensated according to the following:

D.1.3.1 Unit pricing may be utilized at the Owner's option when unit prices or solicitation alternates were provided that established the cost for additional Work, and a binding obligation exists under the Contract on the parties covering the terms and conditions of the additional Work.

D.1.3.2 If the Owner elects not to utilize unit pricing, or in the event that unit pricing is not available or appropriate, fixed pricing may be used for Change Order Work. In fixed pricing the basis of payments or total price shall be agreed upon in writing between the parties to the Contract, and shall be established before the Work is done whenever feasible. The mark-ups set forth in D.1.3.3 shall be utilized by the parties as a guide in establishing fixed pricing, and will not be exceeded by Owner without adequate justification. Cost and price data relating to Change Orders shall be supplied by Contractor to Owner upon request, but Owner shall be under no obligation to make such requests.

D.1.3.3 In the event that unit pricing and fixed pricing are not utilized, then Change Order Work shall be performed on a cost reimbursement basis for Direct Costs. Such Work shall be compensated on the basis of the actual, reasonable and allowable cost of labor, equipment, and material furnished on the Work performed. In addition, the following markups shall be added to the Contractor's or Subcontractor's Direct Costs as full compensation for profit, Overhead and other indirect costs for Work directly performed with the Contractor's or Subcontractor's own forces:

On Labor..... 15%
On Equipment..... 10%
On Materials..... 10%

When Change Order Work under D.1.3.3 is invoiced by an authorized Subcontractor at any level, each ascending tier Subcontractor or Contractor will be allowed a 5% supplemental mark-up on each piece of subcontract Work covered by such Change Order.

Payments made to the Contractor shall be complete compensation for Overhead, profit, and all costs that were incurred by the Contractor or by other forces furnished by the Contractor,

including Subcontractors, for Change Order Work. Owner may establish a maximum cost for Change Order Work under this Section D.1.3.3, which shall not be exceeded for reimbursement without additional written authorization from Owner. Contractor shall not be required to complete such Change Order Work without additional authorization.

D.1.4 Any necessary adjustment of Contract Time that may be required as a result of a Change Order must be agreed upon by the parties before the start of the Change Order Work unless Owner's Authorized Representative authorizes Contractor to start the Work before agreement on Contract Time adjustment. Contractor shall submit any request for additional compensation (and additional Contract Time if Contractor was authorized to start Work before an adjustment of Contract Time was approved) as soon as possible but no later than thirty (30) Days after receipt of the Change Order. If Contractor's request for additional compensation or adjustment of Contract Time is not made within the thirty (30) day time limit, Contractor's requests pertaining to that Change Order are barred. The thirty (30) day time limit for making requests shall not be extended for any reason, including without limitation Contractor's claimed inability to determine the amount of additional compensation or adjustment of Contract Time, unless an extension is granted in writing by Owner. If the Owner's Authorized Representative denies Contractor's request for additional compensation or adjustment of Contract Time, Contractor may proceed to file a Claim under Section D.3, Claims Review Process. No other reimbursement, compensation, or payment will be made, except as provided in Section D.1.5 for impact claims.

D.1.5 If any Change Order Work under Section D.1.3 causes an increase or decrease in the Contractor's cost of, or the Contract Time required for the performance of, any other part of the Work under this Contract, the Contractor must submit a written request to the Owner's Authorized Representative, setting forth the nature and specific extent of the request, including all time and cost impacts against the Contract as soon as possible, but no later than thirty (30) Days after receipt of the Change Order by Contractor.

The thirty (30) day time limit applies to claims of Subcontractors, suppliers, or manufacturers that may be affected by the Change Order and that request additional compensation or an extension of Contract Time to perform; Contractor has responsibility for contacting its Subcontractors, suppliers, or manufacturers within the thirty (30) day time limit, and including their requests with Contractor's requests. If the request involves Work to be completed by Subcontractors, or materials to be furnished by suppliers or manufacturers, such requests shall be submitted to the Contractor in writing with full analysis and justification for the compensation and additional Contract Time requested. The Contractor will analyze and evaluate the merits of the requests submitted by Subcontractors, suppliers, and manufacturers to Contractor prior to including those requests and Contractor's analysis and evaluation of those requests with Contractor's requests for additional compensation or Contract Time that Contractor submits to the Owner's Authorized Representative. Failure of Subcontractors, suppliers, manufacturers or others to submit their requests to Contractor for inclusion with Contractor's requests submitted to Owner's Authorized Representative within the time period and by the means described in this section shall constitute a waiver of these Subcontractor claims. The Owner's Authorized Representative and the Owner will not consider direct requests or claims from Subcontractors, suppliers, manufacturers or others not a party to this Contract. The consideration of such requests and claims under this section does not give any person, not a party to the Contract the right to bring a claim against the Marion County, whether in this claims process, in litigation, or in any dispute resolution process.

If the Owner's Authorized Representative denies the Contractor's request for additional compensation or an extension of Contract Time, the Contractor may proceed to file a Claim under Section D.3, Claims Review Process.

D.1.6 No request or Claim by the Contractor for additional costs or an extension of Contract Time shall be allowed if made after receipt of final payment application under this Contract. Contractor agrees to submit its final payment application within ninety (90) days after Substantial Completion, unless written extension is granted by Owner. Contractor shall not delay final payment application for any reason, including without limitation nonpayment of Subcontractors, suppliers, manufacturers or others not a party to this Contract, or lack of resolution of a dispute with Owner or any other person of matters arising out of or relating to the Contract. If Contractor fails to submit its final payment application within ninety (90) days after Substantial Completion, and Contractor has not obtained written extension by Owner, all requests or Claims for additional costs or an extension of Contract Time shall be waived.

D.1.7 It is understood that changes in the Work are inherent in construction of this type. The number of changes, the scope of those changes, and the effect they have on the progress of the original Work cannot be defined at this time. The Contractor is notified that numerous changes may be required and that there will be no compensation made to the Contractor directly related to the number of changes. Each change will be evaluated for extension of Contract Time and increase or decrease in compensation based on its own merit.

D.2 DELAYS

D.2.1 Delays in construction include "Avoidable Delays", which are defined in Section D.2.1.1, and "Unavoidable Delays", which are defined in Section D.2.1.2. The effect of Avoidable Delays is described in Section D.2.2 and the effect of Unavoidable Delays is described in Section D.2.3.

D.2.1.1 Avoidable Delays include any delays other than Unavoidable Delays, and include delays that otherwise would be considered Unavoidable Delays but that:

(a) Could have been avoided by the exercise of care, prudence, foresight, and diligence on the part of the Contractor or its Subcontractors.

(b) Affect only a portion of the Work and do not necessarily prevent or delay the prosecution of other parts of the Work nor the completion of the whole Work within the Contract Time.

(c) Do not impact activities on the accepted critical path schedule.

(d) Are associated with the reasonable interference of other contractors employed by the Owner that do not necessarily prevent the completion of the whole Work within the Contract Time.

D.2.1.2 Unavoidable Delays include delays other than Avoidable Delays that are:

(a) Caused by any actions of the Owner, Owner's Authorized Representative, or any other employee or agent of the Owner, or by separate contractor employed by the Owner.

(b) Caused by any site conditions which differ materially from what was represented in the Contract Documents or from conditions that would normally be expected to exist and be

inherent to the construction activities defined in the Contract Documents. The Contractor shall notify the Owner's Authorized Representative immediately of differing site conditions before the area has been disturbed, but not more than fourteen (14) days after the condition has been encountered. The Owner's Authorized Representative will investigate the area and make a determination as to whether or not the conditions differ materially from either the conditions stated in the Contract Documents or those which could reasonably be expected in execution of this particular Contract. If Contractor and the Owner's Authorized Representative agree that a differing site condition exists, any additional compensation or additional Contract Time will be determined based on the process set forth in Section D.1.5 for Change Order Work. If the Owner's Authorized Representative disagrees that a differing site condition exists and denies Contractor's request for additional compensation or Contract Time, Contractor may proceed to file a Claim under Section D.3, Claims Review Process.

(c) Caused by Force Majeure acts, events or occurrences that could not have been avoided by the exercise of care, prudence, foresight, and diligence on the part of the Contractor or its Subcontractors.

(d) Caused by adverse weather conditions. Any adverse weather conditions must be substantiated by documentary evidence that weather conditions were abnormal for the specific time period claimed, could not have been anticipated by the Contractor, and adversely impacted the project in a manner that could not be avoided by rescheduling the Work or by implementing measures to protect against the weather so that the Work could proceed. A rain, windstorm, high water, or other natural phenomenon for the specific locality of the Work, which might reasonably have been anticipated from the previous 10-year historical records of the general locality of the Work, shall not be construed as abnormal. The parties agree that rainfall greater than the following levels cannot be reasonably anticipated:

(1) Daily rainfall equal to, or greater than, 0.50 inch during a month when the monthly rainfall exceeds the normal monthly average by twenty-five percent (25 %) or more.

(2) daily rainfall equal to, or greater than, 0.75 inch at any time.

The Office of the Environmental Data Service of the National Oceanic and Atmospheric Administration of the U.S. Department of Commerce nearest the project site shall be considered the official agency of record for weather information.

D.2.2 Except as otherwise provided in ORS 279C.315, Contractor shall not be entitled to additional compensation or additional Contract Time for Avoidable Delays.

D.2.3 In the event of Unavoidable Delays, based on principles of equitable adjustment, Contractor may be entitled to the following:

D.2.3.1 Contractor may be entitled to additional compensation or additional Contract Time, or both, for Unavoidable Delays described in Section D.2.1.2 (a) and (b).

D.2.3.2 Contractor may be entitled to additional Contract Time for Unavoidable Delays described in Section D.2.1.2 (c) and (d).

In the event of any requests for additional compensation or additional Contract Time, or both, as applicable, arising under this Section D.2.3 for Unavoidable Delays, other than requests for additional compensation or additional Contract Time for differing site conditions for which a review process is established under Section D.2.1.2 (b), Contractor shall submit a written notification of the delay to the Owner's Authorized Representative within two (2) Days of the occurrence of the cause of the delay. This written notification shall state the cause of the potential delay, the project components impacted by the delay, and the anticipated additional Contract Time or the additional compensation, or both, as applicable, resulting from the delay. Within seven (7) Days after the cause of the delay has been mitigated, or in no case more than thirty (30) Days after the initial written notification, the Contractor shall submit to the Owner's Authorized Representative, a complete and detailed request for additional compensation or additional Contract Time, or both, as applicable, resulting from the delay.

If the Owner's Authorized Representative denies Contractor's request for additional compensation or adjustment of Contract Time, the Contractor may proceed to file a Claim under Section D.3, Claims Review Process.

If Contractor does not timely submit the notices required under this Section D.2., then unless otherwise prohibited by law, Contractor's Claim shall be barred.

D.3 CLAIMS REVIEW PROCESS

D.3.1 All Contractor Claims shall be referred to the Owner's Authorized Representative for review. Contractor's Claims, including Claims for additional compensation or additional Contract Time, shall be submitted in writing by Contractor to the Owner's Authorized Representative within five (5) Days after a denial of Contractor's initial request for an adjustment of Contract terms, payment of money, extension of Contract Time or other relief, provided that such initial request has been submitted in accordance with the requirements and within the time limits established in these General Conditions. Within thirty (30) Days after the initial Claim, Contractor shall submit to the Owner's Authorized Representative, a complete and detailed description of the Claim (the "Detailed Notice") that includes all information required by Section D.3.2. Unless the Claim is made in accordance with these time requirements, it shall be waived.

D.3.2 The Detailed Notice of the Claim shall be submitted in writing by Contractor and shall include a detailed, factual statement of the basis of the Claim, pertinent dates, Contract provisions which support or allow the Claim, reference to or copies of any documents which support the Claim, the dollar value of the Claim, and the Contract Time extension requested for the Claim. If the Claim involves Work to be completed by Subcontractors, the Contractor will analyze and evaluate the merits of the Subcontractor claim prior to forwarding it and that analysis and evaluation to the Owner's Authorized Representative. The Owner's Authorized Representative and the Owner will not consider direct claims from Subcontractors, suppliers, manufacturers, or others not a party to this Contract. Contractor agrees that it will make no agreement, covenant, or assignment, nor will it commit any other act that will permit or assist any Subcontractor, supplier, manufacturer, or other to directly or indirectly make a claim against Owner.

D.3.3 The Owner's Authorized Representative will review all Claims and take one or more of the following preliminary actions within ten (10) Days of receipt of the Detailed Notice of a Claim: (1) request additional supporting information from the Contractor; (2) inform the Contractor and Owner in writing of the time required for adequate review and response; (3) reject the Claim in whole or in part

and identify the reasons for rejection; (4) based on principles of equitable adjustment, recommend approval of all or part of the Claim; or (5) propose an alternate resolution.

D.3.4 The Owner's Authorized Representative's decision shall be final and binding on the Contractor unless appealed by written notice to the Owner within fifteen (15) Days of receipt of the decision. The Contractor must present written documentation supporting the Claim within fifteen (15) Days of the notice of appeal. After receiving the appeal documentation, the Owner, through its Chief Administrative Officer (CAO), shall review the materials and render a decision within thirty (30) Days after receiving the appeal documents.

D.3.5 The decision of the Owner shall be final and binding unless the Contractor delivers to the Owner its requests for mediation, which shall be a non-binding process, within fifteen (15) Days of the date of the Owner's decision.

D.3.6 The parties are fully committed to working with each other throughout the Project and agree to communicate regularly with each other at all times so as to avoid or minimize disputes or disagreements. If disputes or disagreements do arise, Contractor and Owner each commit to resolving such disputes or disagreements in an amicable, professional and expeditious manner so as to avoid unnecessary losses, delays and disruptions to the Work.

D.3.7 The mediation process will be considered to have commenced as of the date the Contractor delivers the request. Both parties acknowledge and agree that participation in mediation is a prerequisite to commencement of litigation of any disputes relating to the Contract. Both parties further agree to exercise their best efforts in good faith to resolve all disputes within sixty (60) Days of the commencement of the mediation through the mediation process set forth herein.

In the event that a lawsuit must be filed within this sixty (60) day period in order to preserve a cause of action, the parties agree that notwithstanding the filing, they shall proceed diligently with the mediation to its conclusion prior to actively prosecuting the lawsuit, and shall seek from the Court in which the lawsuit is pending such stays or extensions, including the filing of an answer, as may be necessary to facilitate the mediation process. Further, in the event settlements are reached on any issues through mediation, the parties agree to promptly submit the appropriate motions and orders documenting the settlement to the Court for its signature and filing.

D.3.8 The mediator shall be an individual mutually acceptable to both parties, but in the absence of agreement each party shall select a temporary mediator and the temporary mediators shall jointly select the permanent mediator. Each party shall pay its own costs for the time and effort involved in mediation. The cost of the mediator shall be split equally between the two parties. Both parties agree to exercise their best effort in good faith to resolve all disputes in mediation. Participation in mediation is a mandatory requirement of both the Owner and the Contractor. The schedule, time and place for mediation will be mutually acceptable, or, failing mutual agreement, shall be as established by the mediator. The parties agree to maintain the confidentiality of mediation, if any, and shall execute all necessary documents to give effect to such confidentiality to the extent allowed by law. In any event, the parties shall not subpoena the mediator or otherwise require the mediator to produce records, notes or work product, or to testify in any future proceedings as to information disclosed or representations made in the course of mediation, except to the extent disclosure is required by law.

D.3.9 Owner may at any time and at its discretion issue a construction change directive adding to, modifying or reducing the scope of Work. Contractor and Owner shall negotiate the need for any additional compensation or additional Contract Time related to the change, subject to the procedures for submitting requests or Claims for additional compensation or additional Contract Time established in this Section D. Unless otherwise directed by Owner's Authorized Representative, Contractor shall proceed with the Work while any request or Claim is pending, including but not limited to, a request or Claim for additional compensation or additional Contract Time resulting from Work under a Change Order or construction change directive. Regardless of the review period or the final decision of the Owner's Authorized Representative, the Contractor shall continue to diligently pursue the Work as identified in the Contract Documents. In no case is the Contractor justified or allowed to cease Work without a written stop work order from the Owner or Owner's Authorized Representative.

SECTION E PAYMENTS

E.1 SCHEDULE OF VALUES

The Contractor shall submit, at least ten (10) Days prior to submission of its first application for progress payment, a schedule of values ("Schedule of Values") for the contracted Work. This schedule will provide a breakdown of values for the contracted Work and will be the basis for progress payments. The breakdown will demonstrate reasonable, identifiable, and measurable components of the Work. Unless objected to by the Owner's Authorized Representative, this schedule shall be used as the basis for reviewing Contractor's applications for payment. If objected to by Owner's Authorized Representative, Contractor shall revise the schedule of values and resubmit the same for approval of Owner's Authorized Representative.

E.2 APPLICATIONS FOR PAYMENT

E.2.1 Owner shall make progress payments on the Contract monthly as Work progresses. Payments shall be based upon estimates of Work completed and the Schedule of Values. All payments shall be approved by the Owner's Authorized Representative. A progress payment shall not be considered acceptance or approval of any Work or waiver of any defects therein. Owner shall pay to Contractor interest on the progress payment, not including retainage, due the Contractor. The interest shall commence thirty (30) Days after the receipt of invoice ("application for payment") from the Contractor or fifteen (15) Days after the payment is approved by the Owner's Authorized Representative, whichever is the earlier date. The rate of interest shall equal three times the discount rate on 90-day commercial paper in effect at the Federal Reserve Bank in the Federal Reserve district that includes Oregon on the date that is thirty (30) Days after receipt of the application for payment from the Contract or fifteen (15) Days after the payment is approved by the Owner, whichever is the earlier date, but the rate of interest shall not exceed thirty (30) percent. Notwithstanding the foregoing, in instances when an application for payment is filled out incorrectly, or when there is any defect or impropriety in any submitted application or when there is a good faith dispute, Owner shall so notify the Contractor within fifteen (15) Days stating the reason or reasons the application for payment is defective or improper or the reasons for the dispute. A defective or improper application for payment, if corrected by the Contractor within seven (7) Days of being notified by the Owner, shall not cause a payment to be made later than specified in this section unless interest is also paid. Accrual of interest will be postponed when payment on the principal is delayed because of disagreement between the Owner and the Contractor.

Owner reserves the right, instead of requiring the Contractor to correct or resubmit a defective or improper application for payment, to reject the defective or improper portion of the application for payment and pay the remainder of the application for payment that is correct and proper. Owner makes this election; the Contractor will be required to arrange to receive EFT/ACH payments.

E.2.2 Contractor shall submit to the Owner's Authorized Representative, an application for each payment and, if required, receipts or other vouchers showing payments for materials and labor, including payments to Subcontractors. Contractor shall include, in its application for payment, a schedule of the percentages of the various parts of the Work completed, based on the Schedule of Values which shall aggregate to the payment application total, and shall include, on the face of each copy thereof, a certificate in substantially the following form:

"I, the undersigned, hereby certify that the above bill is true and correct, and the payment therefore, has not been received.

Signed: _____”

E.2.3 Generally, applications for payment will be accepted only for materials that have been installed. Under special conditions, applications for payment for stored materials will be accepted at Owner's sole discretion. Such a payment, if made, will be subject to the following conditions:

E.2.3.1 The request for stored material shall be submitted at least thirty (30) Days in advance of the application for payment on which it appears. Applications for payment shall be entertained for major equipment, components or expenditures only.

E.2.3.2 The Contractor shall submit applications for payment showing the quantity and cost of the material stored.

E.2.3.3 The material shall be stored in a bonded warehouse and Owner's Authorized Representative shall be granted the right to access the material for the purpose of removal or inspection at any time during the Contract Period.

E.2.3.4 The Contractor shall name the Owner as co- insured on the insurance policy covering the full value of the property while in the care and custody of the Contractor until it is installed. A certificate noting this coverage shall be issued to the Owner.

E.2.3.5 Payments shall be made for materials only. The submitted amount of the application for payment shall be reduced by the cost of transportation and for the cost of an inspector to check the delivery at out of town storage sites. The cost of said inspection shall be borne solely by the Contractor.

E.2.3.6 Within sixty (60) Days of the application for payment, the Contractor shall submit evidence of payment covering the material stored.

E.2.3.7 Payment for stored materials shall in no way indicate acceptance of the materials or waive any rights under this Contract for the rejection of the Work or materials not in conformance with the Contract Documents.

E.2.3.8 All required documentation must be submitted with the respective application for payment.

E.2.4 The Owner reserves the right to withhold all or part of a payment, or may nullify in whole or part any payment previously made, to such extent as may be necessary in the Owner's opinion to protect the Owner from loss because of:

E.2.4.1 Work that is defective and not remedied, or that has been demonstrated or identified as failing to conform with the Contract Documents,

E.2.4.2 third party claims filed or evidence reasonably indicating that such claims will likely be filed unless security acceptable to the Owner is provided by the Contractor;

E.2.4.3 failure of the Contractor to make payments properly to Subcontractors or for labor, materials or equipment (in which case Owner may issue checks made payable jointly to Owner and such unpaid persons under this provision, or directly to Subcontractors and suppliers at any level under Section C.3.2.1);

E.2.4.4 reasonable evidence that the Work cannot be completed for the unpaid balance of the Contract Price;

E.2.4.5 damage to the Owner or another contractor;

E.2.4.6 reasonable evidence that the Work will not be completed within the Contract Time required by the Contract, and that the unpaid balance would not be adequate to cover actual or liquidated damages for the anticipated delay;

E.2.4.7 failure to carry out the Work in accordance with the Contract Documents; or

E.2.4.8 assessment of liquidated damages when withholding is made for offset purposes.

E.2.5 Subject to the provisions of the Contract Documents, the amount of each progress payment shall be computed as follows:

E.2.5.1 Take that portion of the Contract Price properly allocable to completed Work as determined by multiplying the percentage completion of each portion of the Work by the share of the total Contract Price allocated to that portion of the Work in the Schedule of Values, less retainage as provided in Section E.5. Pending final determination of cost to the Owner of changes in the Work, no amounts for changes in the Work can be included in application for payment until the Contract Price has been adjusted by Change Order;

E.2.5.2 Add that portion of the Contract Price properly allocable to materials and equipment delivered and suitably stored at the site for subsequent incorporation in the completed construction (or, if approved in advance by the Owner pursuant to Section E.2.3, suitably stored off the site at a location agreed upon in writing), less retainage as provided in Section E.5;

E.2.5.3 Subtract the aggregate of previous payments made by the Owner; and

E.2.5.4 Subtract any amounts for which the Owner's Authorized Representative has withheld or nullified payment as provided in the Contract Documents.

E.2.6 Contractor's applications for payment may not include requests for payment for portions of the Work for which the Contractor does not intend to pay to a Subcontractor or material supplier.

E.2.7 The Contractor warrants to Owner that title to all Work covered by an application for payment will pass to the Owner no later than the time of payment. The Contractor further warrants that upon submittal of an application for payment all Work for which payments are received from the Owner shall be free and clear of liens, claims, security interests or encumbrances in favor of the Contractor, Subcontractors, material suppliers, or other persons or entities making a claim by reason of having provided labor, materials and equipment relating to the Work.

E.2.8 If Contractor disputes any determination by Owner's Authorized Representative regarding any application for payment, Contractor nevertheless shall continue to prosecute expeditiously the Work. No payment made hereunder shall be or be construed to be final acceptance or approval of that portion of the Work to which such partial payment relates or shall relieve Contractor of any of its obligations hereunder.

E.3 PAYROLL CERTIFICATION REQUIREMENT

Payroll certification is required before payments are made on the Contract. Refer to Section C.2 for this information.

E.4 DUAL PAYMENT SOURCES

Contractor shall not be compensated for Work performed under this Contract from any state agency other than the agency that is a party to this Contract.

E.5 RETAINAGE

E.5.1 Retainage shall be withheld and released in accordance with ORS 279C.550 to 279C.580:

E.5.1.1 Owner reserves the right in its sole discretion to not withhold retainage from progress payments or to begin withholding retainage at any time. If Owner withholds retainage from progress payments the amount to be retained will not exceed five percent of the payment. As Work progresses, Owner may reduce the amount of the retainage and may eliminate retainage on any remaining monthly Contract payments after 50 percent of the Work under the Contract is completed if, in the Owner's opinion, such Work is progressing satisfactorily. Elimination or reduction of retainage shall be allowed only upon written application by the Contractor, which application shall include written approval of Contractor's surety; except that when the Work is 97-1/2 percent completed the Owner may, at its discretion and without application by the Contractor, reduce the retained amount to 100 percent of the value of the Work remaining to be done. Upon receipt of written application by the Contractor, Owner shall respond in writing within a reasonable time.

E.5.1.2 If retainage is withheld, unless the Contractor requests and the Owner accepts a form of retainage described in options (a) or (b) below, the Owner will deposit that retainage in an interest-bearing account, established through the Owner, in a bank, savings bank, trust company or savings association for the benefit of Owner, with interest from such account accruing to the Contractor as required by ORS 279C.560. In accordance with the provisions of ORS 279C.560 and any applicable administrative rules, unless the Owner finds in writing that accepting bonds, securities or other instruments described in option (a) below or a security bond described in option (b)

below poses an extraordinary risk that is not typically associated with the bond, security or instrument, the Owner will approve the Contractor's written request:

(a) to be paid amounts which would otherwise have been retained from progress payments where Contractor has deposited acceptable bonds, securities or other instruments of equal value with Owner or in a custodial account or other mutually agreed account satisfactory to Owner, with an approved bank or trust company to be held in lieu of the cash retainage for the benefit of Owner. Interest or earnings on the bonds, securities or other instruments shall accrue to the Contractor. The Contractor shall execute and provide such documentation and instructions respecting the bonds, securities and other instruments as the Owner may require to protect its interests. To be permissible the bonds, securities and other instruments must be of a character approved by the Chief Administrative Officer, including but not limited to:

(1) Bills, certificates, notes or bonds of the United States.

(2) Other obligations of the United States or agencies of the United States.

(3) Obligations of a corporation wholly owned by the federal government.

(4) Indebtedness of the Federal National Mortgage Association.

(5) General obligation bonds of the State of Oregon or a political subdivision of the State of Oregon.

(6) Irrevocable letters of credit issued by an insured institution, as defined in ORS 706.008; or

(b) that the Contractor be allowed, with the approval of the Owner, to deposit a surety bond for the benefit of Owner, in a form acceptable to Owner, in lieu of all or a portion of funds retained, or to be retained. Such bond and any proceeds therefrom shall be made subject to all claims and liens in the manner and priority as set forth for retainage under ORS 279C.550 to 279C.570 and 279C.600 to ORS 279C.625.

Where the Owner has accepted the Contractor's election of option (a) or (b) above, Owner may recover from Contractor any additional costs incurred through such election by reducing Contractor's final payment. Where the Owner has agreed to Contractor's request to deposit a surety bond under option (b), Contractor shall accept like bonds from Subcontractors and suppliers on the project from which Contractor has required retainage.

(c) For a contract over $500,000, if the Contractor requests that the Owner deposit the retainage in an interest-bearing escrow account under ORS 279C.570(2), the Contractor shall execute such documentation and instructions respecting the interest-bearing escrow account as the Owner may require to protect its interests, including but not limited to a provision that no funds may be paid from the account to anyone without the Owner's advance written authorization.

(d) For a contract of $500,000 or less, the Owner shall deposit the retainage in an interest-bearing account under ORS 279C.560(5). The Owner will use an interest-bearing account in a bank, savings bank, trust company or savings association as provided under ORS 279C.560(5).

E.5.1.3 The retainage held by Owner shall be included in and paid to the Contractor as part of the final payment of the Contract Price. The Owner shall pay to Contractor interest at the rate of one and one-half percent per month on the final payment due Contractor, interest to commence thirty (30) Days after the Work under the Contract has been completed and accepted and to run until the date Contractor shall notify Owner in writing when the Contractor considers the Work complete and Owner shall, within fifteen (15) Days after receiving the written notice, either accept the Work or notify the Contractor of Work yet to be performed on the Contract. If Owner does not within the time allowed notify the Contractor of Work yet to be performed to fulfill contractual obligations, the interest provided by this subsection shall commence to run thirty (30) Days after the end of the 15-Day period.

E.5.1.4 In accordance with the provisions of ORS 279C.560, if the Owner accepts bonds, securities or other instruments deposited as provided in paragraph (a) of subsection E.5.1.2, the Owner shall reduce the moneys held as retainage in an amount equal to the value of the bonds, securities and other instruments and pay the amount of the reduction to the Contractor in accordance with ORS 279C.570.

E.5.1.5 Contractor agrees that if Contractor elects to reserve retainage from any progress payment due to any Subcontractor or supplier, such retainage shall not exceed five percent of the payment, and the Contractor shall comply with all applicable legal requirements.

E.5.1.6 The Contractor shall comply with all applicable legal requirements for withholding and releasing retainage and for prompt payments, including but not limited to those in ORS Chapters 279C and 701, and 49 CFR 26.29.

E.5.2 As provided in subsections C.2.2 and C.2.3, additional withholding in the amount of 25% of amounts earned shall be withheld and released in accordance with ORS 279C.845(7) when the Contractor fails to file certified statements as required by section C.2.1.

E.6 FINAL PAYMENT

E.6.1 Upon completion of all the Work under this Contract, the Contractor shall notify the Owner's Authorized Representative, in writing, that Contractor has completed Contractor's part of the Contract and shall request final payment. Upon receipt of such notice the Owner's Authorized Representative will inspect the Work, and if acceptable, submit to the Owner a recommendation as to acceptance of the completed Work and the final estimate of the amount due the Contractor. If the Work is not acceptable, Owner will notify Contractor within fifteen (15) Days of Contractor's request for final payment. Upon approval of this final estimate by the Owner and compliance by the Contractor with provisions in Section K.3 AFFIDAVIT/RELEASE OF LIENS AND CLAIMS, and other provisions as may be applicable, the Owner shall pay to the Contractor all monies due under the provisions of these Contract Documents.

E.6.2 Neither final payment nor any remaining retained percentage shall become due until the Contractor submits to the Owner’s Authorized Representative (1) a notarized affidavit/release of liens and claims in a form satisfactory to Owner that states that payrolls, bills for materials and equipment, and other

indebtedness connected with the Work for which the Owner or the Owner's property might be responsible or encumbered (less amounts withheld by Owner) have been paid or otherwise satisfied, (2) a certificate evidencing that insurance required by the Contract Documents to remain in force after final payment is currently in effect and will not be canceled or allowed to expire until at least thirty (30) Days' prior written notice has been given to the Owner, (3) a written statement that the Contractor knows of no substantial reason that the insurance will not be renewable to cover the period required by the Contract Documents, (4) consent of surety, if any, to final payment and (5), if required by the Owner, other data establishing payment or satisfaction of obligations, such as receipts, releases and waivers of liens, claims, security interests or encumbrances arising out of the Contract, to the extent and in such form as may be designated by the Owner. If a Subcontractor refuses to furnish a release or waiver required by the Owner, the Contractor may furnish a bond satisfactory to the Owner to indemnify the Owner against such lien. If such lien remains unsatisfied after payments are made, the Contractor shall refund to the Owner all money that the Owner may be compelled to pay in discharging such lien, including all costs and reasonable attorneys' fees.

E.6.3 Acceptance of final payment by the Contractor, a Subcontractor or material supplier shall constitute a waiver of claims by that payee except those previously made in writing and identified by that payee as unsettled at the time of final application for payment.

SECTION F JOB SITE CONDITIONS

F.1 USE OF PREMISES

Contractor shall confine equipment, storage of materials and operation of Work to the limits indicated by Contract Documents, law, ordinances, permits or directions of the Owner's Authorized Representative. Contractor shall follow the Owner's Authorized Representative's instructions regarding use of premises, if any.

F.2 PROTECTION OF WORKERS, PROPERTY, AND THE PUBLIC

F.2.1 Contractor shall maintain continuous and adequate protection of all of the Work from damage, and shall protect the Owner's Authorized Representative, workers and property from injury or loss arising in connection with this Contract. Contractor shall remedy acceptably to the Owner, any damage, injury, or loss, except such as may be directly due to errors in the Contract Documents or caused by authorized representatives or personnel of the Owner. Contractor shall adequately protect adjacent property as provided by law and the Contract Documents.

F.2.2 Contractor shall take all necessary precautions for the safety of all personnel on the job site and shall comply with the Contract Documents and all applicable provisions of federal, state and municipal safety laws and building codes to prevent accidents or injury to persons on, about or adjacent to the premises where the Work is being performed. Contractor shall erect and properly maintain at all times, as required by the conditions and progress of the Work, all necessary safeguards for protection of workers and the public against any hazards created by construction. Contractor shall designate a responsible employee or associate on the Work site, whose duty shall be the prevention of accidents. The name and position of the person designated shall be reported to the Owner's Authorized Representative. The Owner's Authorized Representative has no responsibility for Work site safety. Work site safety is the responsibility of the Contractor.

F.2.3 Contractor shall not enter upon private property without first obtaining permission from the property owner or its duly authorized representative. Contractor shall be responsible for the preservation of all public and private property along and adjacent to the Work contemplated under the Contract and shall use every precaution necessary to prevent damage thereto. In the event the Contractor damages any property, the Contractor shall at once notify the property owner and make, or arrange to make, full restitution. Contractor shall immediately and in writing, report to the Owner's Authorized Representative, all pertinent facts relating to such property damage and the ultimate disposition of the claim for damage.

F.2.4 Contractor is responsible for protection of adjacent work areas including impacts brought about by activities, equipment, labor, utilities, and materials on the site.

F.2.5 Contractor shall at all times direct its activities in such a manner as to minimize adverse effects on the environment. Handling of all materials will be conducted so no release will occur that may pollute or become hazardous.

F.2.6 In an emergency affecting the safety of life or of the Work or of adjoining property, the Contractor, without special instruction or authorization from the Owner's Authorized Representative, shall act reasonably to prevent threatened loss or injury, and shall so act, without appeal, if instructed by the Owner's Authorized Representative. Any compensation claimed by the Contractor on account of emergency work shall be determined in accordance with Section D.

F.3 CUTTING AND PATCHING

F.3.1 Contractor shall be responsible for coordinating all cutting, fitting, or patching of the Work to make its several parts come together properly and fit to receive or be received by work of other contractors or Subcontractors shown upon, or reasonably implied by, the Contract Documents.

F.3.2 Contractor shall be responsible for restoring all cut, fitted, or patched surfaces to an original condition; provided, however, that if a different condition is specified in the Contract Documents, then Contractor shall be responsible for restoring such surfaces to the condition specified in the Contract Documents.

F.4 CLEANING UP

From time to time as may be ordered by the Owner the Contractor shall, at its own expense, clean up and remove all refuse and unused materials of any kind resulting from the Work. If Contractor fails to do so within twenty-four hours after notification by the Owner the work may be done by others and the cost charged to the Contractor and deducted from payment due the Contractor.

F.5 ENVIRONMENTAL CONTAMINATION

F.5.1 Contractor will be held responsible for and shall indemnify, defend (with counsel of Owner’s choice) and hold harmless Owner from and against any costs, expenses, damages, claims, and causes of action, (including attorney fees), or any of them, resulting from all spills, releases, discharges, leaks and disposal of environmental pollution, including storage, transportation, and handling during the performance of the Contract which occur as a result of, or are contributed by, the negligence or actions of Contractor or its personnel, agents, or Subcontractors or any failure to perform in accordance with the Contract Documents (except to the extent otherwise void under ORS 30.140). Nothing in this section F.5.1 shall limit Contractor's responsibility for obtaining insurance coverages

required under Section G.3 of these General Conditions, and Contractor shall take no action that would void or impair such coverages

F.5.1.1 Contractor agrees to promptly dispose of such spills, releases, discharge or leaks to the satisfaction of Owner and proper regulatory agencies in a manner that complies with applicable federal, state, and local laws and regulations. Cleanup shall be at no cost to the Owner and be performed by properly qualified personnel.

F.5.1.2 Contractor shall obtain the Owner's written consent prior to bringing onto the Work site any (i) environmental pollutants or (ii) hazardous substances or materials, as the same or reasonably similar terms are used in any applicable federal, state, or local statutes, rules or ordinances. Notwithstanding such written consent from the Owner, the Contractor, at all times, shall:

(a) properly handle, use and dispose of all environmental pollutants and hazardous substances or materials brought onto the Work site, in accordance with all applicable federal, state, or local statutes, rules, or ordinances;

(b) be responsible for any and all spills, releases, discharges, or leaks of (or from) environmental pollutants or hazardous substances or materials which Contractor has brought onto the Work site; and

(c) promptly clean up, without cost to the Owner, such spills, releases, discharges, or leaks to the Owner's satisfaction and in compliance with all applicable federal, state, or local statutes, rules or ordinances.

F.5.2 Contractor shall report all reportable quantity releases to applicable federal, state, and local regulatory and emergency response agencies. Reportable quantities are found in 40 CFR Part 302, Table 302.4 for hazardous substances and in OAR 340-142-0050 for all products addressed therein. Upon discovery, regardless of quantity, Contractor must telephonically report all releases to the Owner. A written follow-up report shall be submitted to Owner within 48 hours of the telephonic report. Such written report shall contain, as a minimum:

F.5.2.1 Description of items released (identity, quantity, manifest no., and all other documentation required by law.)

F.5.2.2 Whether amount of items released is EPA/DEQ reportable, and, if so, when it was reported.

F.5.2.3 Exact time and location of release, including a description of the area involved.

F.5.2.4 Containment procedures initiated.

F.5.2.5 Summary of communications about the release Contractor has had with members of the press or State officials other than Owner.

F.5.2.6 Description of cleanup procedures employed or to be employed at the site, including disposal location of spill residue.

F.5.2.7 Personnel injuries, if any, resulting from, or aggravated by, the release.

F.6 ENVIRONMENTAL CLEAN-UP

F.6.1 Unless disposition of environmental pollution is specifically a part of this Contract or was caused by the Contractor (reference F.5 Environmental Contamination), Contractor shall immediately notify Owner of any hazardous substance(s) which Contractor discovers or encounters during performance of the Work required by this Contract. "Hazardous substance(s)" means any hazardous, toxic and radioactive materials and those substances defined as “hazardous substances,” “hazardous materials,” “hazardous wastes,” “toxic substances,” or other similar designations in any federal, state, or local law, regulation, or ordinance, including without limitation asbestos, polychlorinated biphenyl (PCB), or petroleum, and any substances, materials or wastes regulated in 40 CFR, Part 261 and defined as hazardous in 40 CFR S 261.3. In addition to notifying Owner of any hazardous substance(s) discovered or encountered, Contractor shall immediately cease working in any particular area of the project where a hazardous substance(s) has been discovered or encountered if continued work in such area would present a risk or danger to the health or wellbeing of Contractor's or any Subcontractor's work force.

F.6.2 Upon being notified by Contractor of the presence of hazardous substance(s) on the project site, Owner shall arrange for the proper disposition of such hazardous substance(s).

F.7 FORCE MAJEURE

A party to this Contract shall not be held responsible for delay or default due to Force Majeure acts, events or occurrences unless they could have been avoided by the exercise of reasonable care, prudence, foresight, and diligence by that party. The Owner may terminate this Contract upon written notice after determining that delay or default caused by Force Majeure acts, events or occurrences will reasonably prevent successful performance of the Contract.

SECTION G INDEMNITY, BONDING, AND INSURANCE

G.1 RESPONSIBILITY FOR DAMAGES / INDEMNITY

G.1.1 Contractor shall be responsible for all damage to property, injury to persons, and loss, expense, inconvenience, and delay that may be caused by, or result from, the carrying out of the Work to be done under this Contract, or from any act, omission or neglect of the Contractor, its Subcontractors, personnel, or agents.

G.1.2 Contractor agrees to indemnify, defend (with counsel approved by Owners), reimburse and hold harmless Owners, their partners, owners, board members, officers, employees, agents and volunteers (the “Indemnified Parties”) for, from and against any and all threatened, alleged or actual all claims, suits, allegations, damages, liabilities, costs, expenses, losses and judgments, including, but not limited to, those which relate to personal or real property damage (including to the Project itself or otherwise), personal injury or death, attorney and expert/consultant fees and costs, and both economic and non-economic losses, to the extent caused by the negligence, breach of contract, breach of warranty (express or implied), or other act or omission of Contractor, its employees, Agents and Subcontractors, or anyone for whose acts Contractor is responsible (the Indemnitor). If claims are asserted against any of the Indemnified Parties by an employee of the Indemnitor, the Contractor’s indemnification obligation and other obligations under this section shall not be limited by any limitation on the amount or type of damages, compensation, or benefits payable to the employee by or for the Indemnitor under workers’ compensation acts, disability benefit acts, or other employee benefit acts.

G.2 PERFORMANCE AND PAYMENT SECURITY; PUBLIC WORKS BOND

G.2.1 When the Contract Price is $100,000 or more (or $50,000 or more in the case of Contracts for highways, bridges and other transportation projects) the Contractor shall furnish and maintain in effect at all times during the Contract Period, a performance bond in a sum equal to the Contract Price, and a separate payment bond also in a sum equal to the Contract Price. The bonds may be required if the Contract Price is less than the above thresholds, if required by the Contract Documents.

G.2.2 Bond forms furnished by the Owner and notarized by awarded Contractor's surety company authorized to do business in Oregon are the only acceptable forms of performance and payment security, unless otherwise specified in the Contract Documents.

G.2.3 Before execution of the Contract Contractor shall file with the Construction Contractors Board, and maintain in full force and effect, the separate public works bond required by Oregon Laws 2005, Chapter 360, and OAR 839-025-0015, unless otherwise exempt under those provisions. The Contractor shall also include in every subcontract a provision requiring the Subcontractor to have a public works bond filed with the Construction Contractors Board before starting Work, unless otherwise exempt, and shall verify that the Subcontractor has filed a public works bond before permitting the Subcontractor to start Work.

G.3 INSURANCE

G.3.1 Primary Coverage: Insurance carried by Contractor under this Contract shall be the primary coverage and non-contributory with any other insurance and self- insurance, and the Owner's insurance is excess and solely for damages or losses for which the Owner is responsible. The coverages indicated are minimums unless otherwise specified in the Contract Documents.

G.3.2 Workers' Compensation: All employers, including Contractor, that employ subject workers who work under this contract in the State of Oregon shall comply with ORS 656.017 and provide the required Workers' Compensation coverage, unless such employers are exempt under ORS 656.126. This shall include Employer's Liability Insurance with coverage limits of not less than $100,000 for each accident. Contractors who perform the Work without the assistance or labor of any employee need not obtain such coverage if the Contractor certifies so in writing. Contractor shall ensure that each of its Subcontractors complies with these requirements. The Contractor shall require proof of such Workers' Compensation by receiving and keeping on file a certificate of insurance from each Subcontractor or anyone else directly employed by either the Contractor or its Subcontractors.

G.3.3 Builder's Risk Insurance:

G.3.3.1 Builder's Risk: During the term of this Contract, for new construction the Contractor shall obtain and keep in effect Builder's Risk insurance on an all risk form, including earthquake and flood, for an amount equal to the full amount of the Contract. Any deductible shall not exceed $50,000 for each loss, except the earthquake and flood deductible shall not exceed 2 percent of each loss or $50,000, whichever is more. The policy will include as loss payees the Owner, the Contractor and its Subcontractors as their interests may appear.

G.3.3.2 Builder's Risk Installation Floater: For other than new construction the Contractor shall obtain and keep in effect during the term of this Contract, a Builder's Risk Installation Floater for coverage of the Contractor's labor, materials and equipment to be used for completion of the

Work performed under this Contract. The minimum amount of coverage to be carried shall be equal to the full amount of the Contract. This insurance shall include as loss payees the Owner, the Contractor and its Subcontractors as their interests may appear.

G.3.3.3 Such insurance shall be maintained until Owner has occupied the facility.

G.3.3.4 A loss insured under the Builder's Risk insurance shall be adjusted by the Owner and made payable to the Owner for the insureds, as their interests may appear. The Contractor shall pay Subcontractors their just shares of insurance proceeds received by the Contractor, and by appropriate agreements, written where legally required for validity, shall require Subcontractors to make payments to their Sub-subcontractors in similar manner. The Owner shall have power to adjust and settle a loss with insurers.

G.3.4 Liability Insurance:

G.3.4.1 Commercial General Liability: Contractor shall obtain, at Contractor's expense, and keep in effect during the term of this Contract, Commercial General Liability Insurance covering bodily injury and property damage in a form and with coverages that are satisfactory to the Owner. This insurance shall include personal injury liability, products and completed operations, and contractual liability coverage for the indemnity provided under this Contract (to the extent contractual liability coverage for the indemnity is available in the marketplace) and shall be issued on an occurrence basis. Contractor shall provide proof of insurance of not less than combined single limit, or the equivalent, of not less than: □ $200,000; □ $500,000; □ $1,000,000; □ $2,000,000 each occurrence for Bodily Injury and Property Damage. The policy, or an endorsement or amendment to the policy, must provide that the County and its agents, board members, officers, employees, and volunteers are "additional insureds", but only with respect to the Contractor's Services to be provided under this Contract.

G.3.4.2 Automobile Liability: Contractor shall obtain, at Contractor's expense, and keep in effect during the term of this Contract, Automobile Liability Insurance covering owned, non-owned and/or hired vehicles, as applicable. The coverage may be written in combination with the Commercial General Liability Insurance. Contractor shall provide proof of insurance of not less than the amounts □ Minimum amounts required by the Oregon Financial Responsibility Law (ORS 806.060 and 806.070); □ $200,000; □ $500,000; or □ $1,000,000 per occurrence, for Bodily Injury and Property Damage, including coverage for all owned, hired, or non-owned vehicles, as applicable. The policy, or an endorsement or amendment to the policy, must provide that the County and its board members, officers, agents, employees, and volunteers are "additional insureds", but only with respect to the Consultant's Services to be provided under this Contract.

G.3.4.3 "Tail" Coverage: If any of the required liability insurance is arranged on a "claims made" basis, "tail" coverage will be required at the completion of this Contract for a duration of 24 months or the maximum time period available in the marketplace if less than 24 months. Contractor will be responsible for furnishing certification of "tail" coverage as described or continuous "claims made" liability coverage for 24 months following Final Completion. Continuous "claims made" coverage will be acceptable in lieu of "tail" coverage, provided its retroactive date is on or before the effective date of this Contract. This will be a condition of the final acceptance of Work or services and related warranty (if any).

G.3.5 Excess/Umbrella Insurance: A combination of primary and excess/umbrella insurance is acceptable to meet the minimum coverage requirements for Commercial General Liability and Automobile Liability Insurance. In such case, the insurance certificate must include a list of the policies that fall under the excess/umbrella insurance. Sample wording is "The Excess/Umbrella policy is excess over primary Commercial General Liability and primary Automobile Liability Insurance."

G.3.6 Additional Insured: The liability insurance coverage, except Professional Liability if included, required for performance of this Contract shall include the Marion County, its departments, divisions, officers, and employees, as Additional Insureds but only with respect to the Contractor's activities to be performed under this Contract.

If Contractor cannot obtain an insurer to name the Marion County, its departments, divisions, officers and employees as Additional Insureds, Contractor shall obtain at Contractor's expense, and keep in effect during the term of this Contract, Owners and Contractors Protective Liability Insurance, naming the Marion County, its departments, divisions, officers and employees as Named Insureds with not less than a $1,500,000.00 limit per occurrence. This policy must be kept in effect for 12 months following Final Completion. As evidence of coverage, Contractor shall furnish the actual policy to Owner prior to execution of the Contract.

G.3.7 Certificate(s) of Insurance: As evidence of the insurance coverage required by this Contract, the Contractor shall furnish certificate(s) of insurance to the Owner prior to execution of the Contract. The certificate(s) will specify all of the parties who are Additional Insureds or Loss Payees. Insurance coverage required under this Contract shall be obtained from insurance companies or entities acceptable to the Owner that are allowed to provide such insurance under Oregon law. Eligible insurers include admitted insurers that have been issued a certificate of authority from the Oregon Department of Consumer and Business Services authorizing them to do an insurance business in the state of Oregon, and certain non-admitted surplus lines insurers that satisfy the requirements of applicable Oregon law and are approved by the Owner. The Contractor shall be financially responsible for all deductibles, self-insured retentions and/or self- insurance included hereunder. Any deductible, self- insured retention and/or self-insurance in excess of $50,000 shall be approved by the Owner in writing prior execution of the Contract and is subject to Owner's approval. The Contractor shall immediately notify the Owner's Authorized Representative in writing of any change in insurance coverage.

SECTION H SCHEDULE OF WORK

H.1 CONTRACT PERIOD

H.1.1 Time is of the essence on this Contract. The Contractor shall at all times carry on the Work diligently, without delay and punctually fulfill all requirements herein. Contractor shall commence Work on the site within fifteen (15) Days of Notice to Proceed, unless directed otherwise.

H.1.2 Unless specifically extended by Change Order, all Work shall be complete by the date contained in the Contract Documents. The Owner shall have the right to accelerate the completion date of the Work, which may require the use of overtime. Such accelerated Work schedule shall be an acceleration in performance of Work under Section D.1.2.6 and shall be subject to the Change Order process of Section D.1.

H.1.3 The Owner shall not waive any rights under the Contract by permitting the Contractor to continue or complete in whole or in part the Work after the date described in Section H.1.2 above.

H.2 SCHEDULE

Contractor shall provide, by or before the pre- construction conference, a detailed schedule for review and acceptance by the Owner. The submitted schedule must illustrate Work by significant project components, significant labor trades, long lead items, broken down by building and/or floor where applicable. Each schedule item shall account for no greater than 5 % of the monetary value of the project or 5 % of the available Contract Time. Schedules with activities of less than one day or valued at less than 1% of the Contract will be considered too detailed and will not be accepted. Schedules lacking adequate detail, or unreasonably detailed, will be rejected. Included within the schedule are the following: Notice to Proceed, Substantial Completion, and Final Completion. Schedules will be updated monthly and submitted with the monthly payment application. Acceptance of the Schedule by the Owner does not constitute agreement by the Owner, as to the Contractor's sequencing, means, methods, or allocated Contract Time. Any positive difference between the Contractor's scheduled completion and the Contract completion date is float owned by the Owner. Owner reserves the right to negotiate the float if it is deemed to be in Owner’s best interest to do so. In no case shall the Contractor make a request for additional compensation for delays if the Work is completed within the Contract Time but after Contractor's scheduled completion.

H.3 PARTIAL OCCUPANCY OR USE

The Owner may occupy or use any completed or partially completed portion of the Work at any stage, provided such occupancy or use is consented to by public authorities having jurisdiction over the Work. Such partial occupancy or use may commence whether or not the portion is substantially complete, provided the Owner and Contractor have reasonably accepted in writing the responsibilities assigned to each of them for payments, retainage, if any, security, insurance or self-insurance, maintenance, heat, utilities, and damage to the Work, and have agreed in writing concerning the period for correction of the Work and commencement of warranties required by the Contract Documents with respect to such portion of the Work. Approval by the Contractor to partial occupancy or use shall not be unreasonably withheld. Immediately prior to such partial occupancy or use, the Owner and Contractor shall jointly inspect the area to be occupied or portion of the Work to be used in order to determine and record the condition of the Work. Partial occupancy or use of a portion or portions of the Work shall not constitute acceptance of Work not complying with the requirements of the Contract Documents.

SECTION I CORRECTION OF WORK

I.1 CORRECTION OF WORK BEFORE FINAL PAYMENT

The Contractor warrants to the Owner that materials and equipment furnished under the Contract will be of good quality and new unless otherwise required or permitted by the Contract Documents, that the Work will be free from defects, and that the Work will conform to the requirements of the Contract Documents. Work failing to conform to these requirements shall be deemed defective. Contractor shall promptly remove from the premises and replace all defective materials and equipment as determined by the Owner's Authorized Representative, whether incorporated in the Work or not. Removal and replacement shall be without loss or expense to the Owner, and Contractor shall bear the cost of repairing all Work destroyed or damaged by such removal or replacement. Contractor shall be allowed a period of no longer than thirty (30) Days after Substantial Completion for completion of defective (punch list) work, unless otherwise agreed. At the end of that period, or earlier if requested by the Contractor, Owner

shall arrange for inspection of the Work by the Architect/Engineer. Should the Work not be complete, and all corrections made, the costs for all subsequent re-inspections shall be borne by the Contractor. If Contractor fails to complete the punch list work within the above time period, Owner may perform such work and Contractor shall reimburse Owner all costs of the same within ten (10) days after demand without affecting Contractor's obligations.

I.2 WARRANTY WORK

I.2.1 Neither the final certificate of payment nor any provision of the Contract Documents shall relieve the Contractor from responsibility for defective Work and, unless a longer period is specified, Contractor shall correct all defects that appear in the Work within a period of one year from the date of issuance of the written notice of Substantial Completion by the Owner except for latent defects which will be remedied by the Contractor at any time they become apparent.

I.2.2 The Owner shall give Contractor notice of defects with reasonable promptness. Contractor shall perform such warranty work within a reasonable time after Owner's demand. If Contractor fails to complete the warranty work within such period as Owner determines reasonable, or at any time in the event of warranty work consisting of emergency repairs, Owner may perform such work and Contractor shall reimburse Owner all costs of the same within ten (10) Days after demand without affecting Contractor's obligations.

I.2.3 This provision does not negate guarantees or warranties for periods longer than one year including without limitation such guarantees or warranties required by other sections of the Contract Documents for specific installations, materials, processes, equipment or fixtures.

I.2.4 In addition to Contractor's warranty, manufacturer's warranties shall pass to the Owner and shall not take effect until affected Work has been accepted in writing by the Owner's Authorized Representative.

I.2.5 The one-year period for correction of Work shall be extended with respect to portions of Work performed after Substantial Completion by the period of time between Substantial Completion and the actual performance of the Work and shall be extended by corrective Work performed by the Contractor pursuant to this Section, as to the Work corrected. The Contractor shall remove from the site portions of the Work which are not in accordance with the requirements of the Contract Documents and are neither corrected by the Contractor nor accepted by the Owner.

I.2.6 Nothing contained in this Section I.2 shall be construed to establish a period of limitation with respect to other obligations which the Contractor might have under the Contract Documents. Establishment of the period for correction of Work as described in this Section I.2 relates only to the specific obligation of the Contractor to correct the Work and has no relationship to the time within which the obligation to comply with the Contract Documents may be sought to be enforced, nor to the time within which proceedings may be commenced to establish the Contractor's liability with respect to the Contractor's obligations other than specifically to correct the Work.

I.2.7 If the Owner prefers to accept Work which is not in accordance with the requirements of the Contract Documents, the Owner may do so instead of requiring its removal and correction, in which case the Contract Price will be reduced as appropriate and equitable. Such adjustment shall be affected whether or not final payment has been made.

SECTION J SUSPENSION AND/OR TERMINATION OF THE WORK

J.1 OWNER'S RIGHT TO SUSPEND THE WORK

J.1.1 The Owner and/or the Owner's Authorized Representative has the authority to suspend portions or all of the Work due to the following causes:

J.1.1.1 Failure of the Contractor to correct unsafe conditions;

J.1.1.2 Failure of the Contractor to carry out any provision of the Contract;

J.1.1.3 Failure of the Contractor to carry out orders;

J.1.1.4 Conditions, in the opinion of the Owner's Authorized Representative, which are unsuitable for performing the Work;

J.1.1.5 Time required to investigate differing site conditions;

J.1.1.6 Any reason considered to be in the public interest.

J.1.2 The Owner shall notify Contractor and the Contractor's Surety in writing of the effective date and time of the suspension and Owner shall notify Contractor and Contractor’s surety in writing to resume Work.

J.2 CONTRACTOR'S RESPONSIBILITIES

J.2.1 During the period of the suspension, Contractor is responsible to continue maintenance at the project just as if the Work were in progress. This includes, but is not limited to, protection of completed Work, maintenance of access, protection of stored materials, temporary facilities, and clean-up.

J.2.2 When the Work is recommenced after the suspension, the Contractor shall replace or renew any Work damaged during the suspension, remove any materials or facilities used as part of temporary maintenance, and complete the project in every respect as though its prosecution had been continuous and without suspension.

J.3 COMPENSATION FOR SUSPENSION

Depending on the reason for suspension of the Work, the Contractor or the Owner may be due compensation by the other party. If the suspension was required due to acts or omissions of Contractor, the Owner may assess the Contractor actual costs of the suspension in terms of administration, remedial work by the Owner's forces or another contractor to correct the problem associated with the suspension, rent of temporary facilities, and other actual costs related to the suspension. If the suspension was caused by acts or omissions of the Owner, the Contractor shall be due compensation which shall be defined using Section D, Changes in Work. If the suspension was required through no fault of the Contractor or the Owner, neither party owes the other for the impact.

J.4 OWNER'S RIGHT TO TERMINATE CONTRACT

J.4.1 The Owner may, without prejudice to any other right or remedy, and after giving Contractor seven (7) Days’ written notice and an opportunity to cure, terminate the Contract in whole or in part under the following conditions:

J.4.1.1 If Contractor should voluntarily or involuntarily, seek protection under the United States Bankruptcy Code and Contractor as debtor-in- possession or the Trustee for the estate fails to assume the Contract within a reasonable time;

J.4.1.2 If Contractor should make a general assignment for the benefit of Contractor's creditors;

J.4.1.3 If a receiver should be appointed on account of Contractor's insolvency;

J.4.1.4 If Contractor should repeatedly refuse or fail to supply an adequate number of skilled workers or proper materials to carry on the Work as required by the Contract Documents, or otherwise fail to perform the Work in a timely manner;

J.4.1.5 If Contractor should repeatedly fail to make prompt payment to Subcontractors or for material or labor, or should disregard laws, ordinances or the instructions of the Owner or its Authorized Representative; or

J.4.1.6 If Contractor is otherwise in material breach of any part of the Contract.

J.4.2 At any time that any of the above occurs, Owner may exercise all rights and remedies available to Owner at law or in equity, and in addition, Owner may take possession of the premises and of all materials and appliances and finish the Work by whatever method it may deem expedient. In such case, the Contractor shall not be entitled to receive further payment until the Work is completed. If the Owner's cost of finishing the Work exceeds the unpaid balance of the Contract Price, Contractor shall pay the difference to the Owner.

J.5 TERMINATION FOR CONVENIENCE

J.5.1 Owner may terminate the Contract in whole or in part whenever Owner determines that termination of the Contract is in the best interest of the public.

J.5.2 The Owner will provide the Contractor with seven (7) Days' prior written notice of a termination for public convenience. After such notice, the Contractor shall provide the Owner with immediate and peaceful possession of the premises and materials located on and off the premises for which the Contractor received progress payment under Section E. Compensation for Work terminated by the Owner under this provision will be according to Section E. In no circumstance shall Contractor be entitled to lost profits for Work not performed due to termination.

J.6 ACTION UPON TERMINATION

J.6.1 Upon receiving a notice of termination, and except as directed otherwise by the Owner, Contractor shall immediately cease placing further subcontracts or orders for materials, services, or facilities. In addition, Contractor shall terminate all subcontracts or orders to the extent they relate to the Work terminated and, with the prior written approval of the Owner, settle all outstanding liabilities and termination settlement proposals arising from the termination of subcontracts and orders.

J.6.2 As directed by the Owner, Contractor shall upon termination transfer title and deliver to the Owner all Record Documents, information, and other property that, if the Contract had been completed, would have been required to be furnished to the Owner.

SECTION K CONTRACT CLOSE OUT

K.1 RECORD DOCUMENTS

As a condition of final payment (refer also to section E.6), Contractor shall comply with the following: Contractor shall provide to Owner's Authorized Representative, one hard copy set and one electronic set of Record Documents of the entire project. Record Documents shall depict the project as constructed and shall reflect each and every change, modification, and deletion made during the construction. Record Documents are part of the Work and shall be provided prior to the Owner's issuance of final payment. Record Documents include all modifications to the Contract Documents unless otherwise directed.

K.2 OPERATION AND MAINTENANCE MANUALS

As part of the Work, Contractor shall submit two completed operation and maintenance manuals ("O & M Manuals") and one (1) digital copy for review by the Owner's Authorized Representative prior to submission of any pay request for more than 75% of the Work. No payments beyond 75% will be made by the Owner until the 0 & M Manuals have been received. The O & M Manuals shall contain training information, phone list of consultants, manufacturers, installer and suppliers, manufacturer's printed data, schematic diagrams of systems, appropriate equipment indices, warranties and bonds. The Owner's Authorized Representative shall review and return one O & M Manual for any modifications or additions required. Prior to submission of its final pay request, Contractor shall deliver three (3) complete and approved sets and one (1) digital copy of O & M Manuals to the Owner's Authorized Representative.

K.3 AFFIDAVIT/RELEASE OF LIENS AND CLAIMS

As a condition of final payment, the Contractor shall submit to the Owner's Authorized Representative a notarized affidavit/release of liens and claims form, in a form satisfactory to Owner, which states that all Subcontractors and suppliers have been paid in full, all disputes with property owners have been resolved, all obligations on the project have been satisfied, all monetary claims and indebtedness have been paid, and that, to the best of the Contractor's knowledge, there are no claims of any kind outstanding against the project. The Contractor shall indemnify, defend (with counsel of Owner's choice) and hold harmless the Owner from all claims for labor and materials finished under this Contract. The Contractor shall furnish complete and valid releases or waivers, satisfactory to the Owner, of all liens arising out of or filed in connection with the Work.

K.4 COMPLETION NOTICES

K.4.1 Contractor shall provide Owner’s Authorized Representative notice of both Substantial and Final Completion. The certificate of Substantial Completion shall state the date of Substantial Completion, the responsibilities of the Owner and Contractor for security, maintenance, heat, utilities, damage to the Work and insurance, and the time within which the Contractor shall finish all items on the punchlist accompanying the Certificate. Both completion notices must be signed by the Contractor and the Owner to be valid. The Owner shall provide the final signature on the notices. The notices shall take effect on the date they are signed by the Owner.

K.4.2 Substantial Completion of a facility with operating systems (e.g., mechanical, electrical, HVAC) shall be that degree of completion that has provided a minimum of thirty (30) continuous Days of successful, trouble-free operation, which period shall begin after all performance and acceptance testing has been successfully demonstrated to the Owner's Authorized Representative. All equipment contained in the Work, plus all other components necessary to enable the Owner to operate the facility in the manner that was intended, shall be complete on the Substantial Completion date. The

Contractor may request that a punch list be prepared by the Owner's Authorized Representative with submission of the request for the Substantial Completion notice.

K.5 TRAINING

As part of the Work, and prior to submission of the request for final payment, the Contractor shall schedule with the Owner's Authorized Representative, training sessions for all equipment and systems, as required in the individual specifications sections. Contractor shall schedule training sessions at least four weeks in advance of the date of training to allow Owner personnel adequate notice. The O & M Manual shall be used as a basis for training. Training shall be a formal session, held after the equipment and/or system is completely installed and operational in its normal operating environment.

K.6 EXTRA MATERIALS

As part of the Work, Contractor shall provide spare parts, extra maintenance materials, and other materials or products in the quantities specified in the specifications, prior to final payment. Delivery point for extra materials shall be designated by the Owner's Authorized Representative.

K.7 ENVIRONMENTAL CLEAN-UP

As part of the Final Completion notice, or as a separate written notice submitted with or before the notice of Final Completion, the Contractor shall notify the Owner that all environmental pollution clean-up performed as a part of this Contract has been disposed of in accordance with all applicable rules, regulations, laws, and statutes of all agencies having jurisdiction over such environmental pollution. The notice shall reaffirm the indemnification given under Section F.5.1 above.

K.8 CERTIFICATE OF OCCUPANCY

The Contractor shall not be granted Final Completion or receive final payment if the Owner has not received an unconditioned certificate of occupancy from the appropriate state and/or local building officials, unless failure to obtain an unconditional certificate of occupancy is due to the fault or neglect of Owner.

K.9 OTHER CONTRACTOR RESPONSIBILITIES

The Contractor shall be responsible for returning to the Owner all items issued during construction such as keys, security passes, site admittance badges, and all other pertinent items. The Contractor shall be responsible for notifying the appropriate utility companies to transfer utility charges from the Contractor to the Owner. The utility transfer date shall not be before Substantial Completion and may not be until Final Completion if the Owner does not take beneficial use of the facility and the Contractor's forces continue with the Work.

K.10 SURVIVAL

All warranty and indemnification provisions of this Contract, and all of Contractor’s other obligations under this Contract that are not fully performed by the time of Final Completion or termination, shall survive Final Completion or any termination of the Contract

SECTION L LEGAL RELATIONS & RESPONSIBILITIES

L.1 LAWS TO BE OBSERVED

In compliance with ORS 279C.525, Sections L.2 through L.4 contain lists of federal, state, and local agencies of which the Owner has knowledge that have enacted ordinances or regulations relating to

environmental pollution and the preservation of natural resources that may affect the performance of the Contract:

L.2 FEDERAL AGENCIES

Agriculture, Department of
Forest Service
Soil Conservation Service
Coast Guard
Defense, Department of
Army Corps of Engineers
Energy, Department of
Federal Energy Regulatory Commission
Environmental Protection Agency
Health and Human Services
Department of Housing and Urban Development
Department of Solar Energy and Energy Conservation Bank
Interior, Department of
Bureau of Land Management
Bureau of Indian Affairs
Bureau of Mines
Bureau of Reclamation
Geological Survey
Minerals Management Service
U.S. Fish and Wildlife Service
Labor, Department of
Mine Safety and Health Administration
Occupation Safety and Health Administration
Transportation, Department of
Federal Highway Administration
Water Resources Council

L.3 STATE AGENCIES

Administrative Services, Department of
Agriculture, Department of
Soil and Water Conservation Commission
Columbia River Gorge Commission
Energy, Department of
Environmental Quality, Department of
Fish and Wildlife, Department of
Forestry, Department of
Geology and Mineral Industries, Department of
Human Resources, Department of
Consumer and Business Services, Department of
Land Conservation and Development Commission
Parks and Recreation, Department of
State Lands, Division of
Water Resources Department of

L.4 LOCAL AGENCIES

City Councils
County Courts
County Commissioner, Board of
Design Commissions
Historical Preservation Commission
Planning Commissions

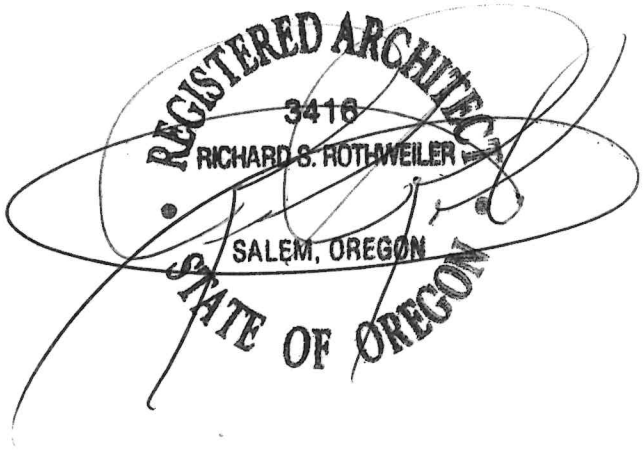
ATTACHMENT 1

SECTION 000101
PROJECT TITLE PAGE

PROJECT MANUAL
FOR

MARION COUNTY ME OFFICE RENOVATION
ARCHITECT'S PROJECT NUMBER: 2023.0080.000
MARION COUNTY

DATE: SEPTEMBER 23, 2024



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IN THE EVENT CONFLICTS ARE DISCOVERED BETWEEN THE ORIGINAL SIGNED AND SEALED DOCUMENTS PREPARED BY THE ARCHITECTS AND/OR THEIR CONSULTANTS, AND THE COPY OF THE DOCUMENTS TRANSMITTED BY MAIL, FAX, ELECTRONICALLY OR OTHERWISE, THE ORGINAL SIGNED AND SEALED DOCUMENTS SHALL GOVERN.

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END OF SECTION

SECTION 024100
DEMOLITION

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Selective demolition of building elements for alteration purposes.

B. Abandonment and removal of existing utilities and utility structures.

1.02 SUBMITTALS

A. Demolition Plan: Submit demolition plan as specified by OSHA and local authorities.
   1. Indicate extent of demolition, removal sequence, bracing and shoring, and location and construction of barricades and fences.
   2. Identify demolition firm and submit qualifications.

B. Project Record Documents: Accurately record actual locations of capped and active utilities and subsurface construction.

PART 2 PRODUCTS -- NOT USED

PART 3 EXECUTION

3.01 SCOPE

A. Remove concrete slabs on grade as indicated on drawings.

B. Remove other items indicated, for relocation.

C. Fill excavations, open pits, and holes in ground areas generated as result of removals, using specified fill; compact fill as required so that required rough grade elevations do not subside within one year after completion.

3.02 GENERAL PROCEDURES AND PROJECT CONDITIONS

A. Comply with applicable codes and regulations for demolition operations and safety of adjacent structures and the public.
   1. Obtain required permits.
   2. Use of explosives is not permitted.
   3. Take precautions to prevent catastrophic or uncontrolled collapse of structures to be removed; do not allow worker or public access within range of potential collapse of unstable structures.
   4. Provide, erect, and maintain temporary barriers and security devices.
   5. Use physical barriers to prevent access to areas that could be hazardous to workers or the public.
   6. Conduct operations to minimize effects on and interference with adjacent structures and occupants.
   7. Do not close or obstruct roadways or sidewalks without permit.
   8. Conduct operations to minimize obstruction of public and private entrances and exits; do not obstruct required exits at any time; protect persons using entrances and exits from removal operations.
   9. Obtain written permission from owners of adjacent properties when demolition equipment will traverse, infringe upon or limit access to their property.

B. Do not begin removal until receipt of notification to proceed from Owner.

C. Do not begin removal until built elements to be salvaged or relocated have been removed.

D. Protect existing structures and other elements that are not to be removed.
   1. Provide bracing and shoring.
   2. Prevent movement or settlement of adjacent structures.
   3. Stop work immediately if adjacent structures appear to be in danger.

E. Minimize production of dust due to demolition operations; do not use water if that will result in ice, flooding, sedimentation of public waterways or storm sewers, or other pollution.

F. If hazardous materials are discovered during removal operations, stop work and notify Architect and Owner; hazardous materials include regulated asbestos containing materials, lead, PCB's, and mercury.

3.03 EXISTING UTILITIES

A. Coordinate work with utility companies; notify before starting work and comply with their requirements; obtain required permits.

B. Protect existing utilities to remain from damage.

C. Do not disrupt public utilities without permit from authority having jurisdiction.

D. Do not close, shut off, or disrupt existing life safety systems that are in use without at least 7 days prior written notification to Owner.

E. Do not close, shut off, or disrupt existing utility branches or take-offs that are in use without at least 3 days prior written notification to Owner.

F. Locate and mark utilities to remain; mark using highly visible tags or flags, with identification of utility type; protect from damage due to subsequent construction, using substantial barricades if necessary.

G. Remove exposed piping, valves, meters, equipment, supports, and foundations of disconnected and abandoned utilities.

3.04 SELECTIVE DEMOLITION FOR ALTERATIONS

A. Drawings showing existing construction and utilities are based on casual field observation and existing record documents only.
   1. Verify that construction and utility arrangements are as indicated.
   2. Report discrepancies to Architect before disturbing existing installation.
   3. Beginning of demolition work constitutes acceptance of existing conditions that would be apparent upon examination prior to starting demolition.

B. Separate areas in which demolition is being conducted from other areas that are still occupied.
   1. Provide, erect, and maintain temporary dustproof partitions of construction indicated on drawings in locations indicated on drawings.

C. Maintain weatherproof exterior building enclosure except for interruptions required for replacement or modifications; take care to prevent water and humidity damage.

D. Remove existing work as indicated and as required to accomplish new work.
   1. Remove rotted wood, corroded metals, and deteriorated masonry and concrete; replace with new construction specified.
   2. Remove items indicated on drawings.

E. Services (Including but not limited to HVAC, Plumbing, Fire Protection, Electrical, and Telecommunications): Remove existing systems and equipment as indicated.
   1. Maintain existing active systems that are to remain in operation; maintain access to equipment and operational components.
   2. Where existing active systems serve occupied facilities but are to be replaced with new services, maintain existing systems in service until new systems are complete and ready for service.
   3. Verify that abandoned services serve only abandoned facilities before removal.
   4. Remove abandoned pipe, ducts, conduits, and equipment, including those above accessible ceilings; remove back to source of supply where possible, otherwise cap stub and tag with identification.

F. Protect existing work to remain.
   1. Prevent movement of structure; provide shoring and bracing if necessary.
   2. Perform cutting to accomplish removals neatly and as specified for cutting new work.
   3. Repair adjacent construction and finishes damaged during removal work.
   4. Patch as specified for patching new work.

3.05 DEBRIS AND WASTE REMOVAL

A. Remove debris, junk, and trash from site.

B. Leave site in clean condition, ready for subsequent work.

C. Clean up spillage and wind-blown debris from public and private lands.

END OF SECTION

SECTION 030505
UNDER-SLAB VAPOR BARRIER

PART 1 GENERAL

1.01 SUMMARY

A. Products supplied under this section:
   1. Vapor barrier and installation accessories for installation under concrete slabs.

B. Related sections:
   1. Section 033000 Cast-in-Place Concrete

1.02 REFERENCES

A. American Society for Testing and Materials (ASTM):
   1. ASTM E1745- 11Standard Specification for Plastic Water Vapor Retarders Used in Contact with Soil or Granular Fill Under Concrete Slabs.
   2. ASTM E1643- 11Selection, Design, Installation, and Inspection of Water Vapor Retarders Used in Contact with Earth or Granular Fill Under Concrete Slabs.

B. Technical Reference - American Concrete Institute (ACI):
   1. ACI 302.2R-06 Guide for Concrete Slabs that Receive Moisture-Sensitive Flooring Materials.

1.03 SUBMITTALS

A. Quality control/assurance:
   1. Summary of test results per paragraph 9.3 of ASTM E1745.
   2. Manufacturer’s samples and literature.
   3. Manufacturer’s installation instructions for placement, seaming, penetration repair, and perimeter seal per ASTM E1643.
   4. All mandatory ASTM E1745 testing must be performed on a single production roll per ASTM E1745 Section 8.1.

PART 2 PRODUCTS

2.01 MATERIALS

A. Vapor barrier shall have all of the following qualities:
   1. Maintain permeance of less than 0.01 Perms as tested in accordance with mandatory conditioning tests per ASTM E1745 Section 7.1 (7.1.1-7.1.5).
   2. Other performance criteria:
      a. Strength: ASTM E1745 Class A.
      b. Thickness: 15 mils minimum
      c. Provide third party documentation that all testing was performed on a single production roll per ASTM E1745 Section 8.1
   3. Vapor barrier products:
      a. Basis of Design: Stego Wrap Vapor Barrier (15-mil) by Stego Industries LLC., (877) 464-7834 www.stegoindustries.com <http://www.stegoindustries.com>.
      b. No substitutions.

2.02 ACCESSORIES

A. Seams :
   1. Stego Tape by Stego Industries LLC.

B. Penetrations of Vapor barrier:
   1. Stego Mastic by Stego Industries LLC.
   2. Stego Tape by Stego Industries LLC.

C. Perimeter/edge seal:
   1. Stego Crete Claw by Stego Industries LLC.
   2. StegoTack Tape (double sided) by Stego Industries LLC.

PART 3 EXECUTION

3.01 PREPARATION

A. Ensure that subsoil is approved by Architect or Geotechnical Engineer.
   1. Level and compact base material.

3.02 INSTALLATION

A. Install vapor barrier in accordance ASTM E1643.
   1. Unroll vapor barrier with the longest dimension parallel with the direction of the concrete placement and face laps away from the expected direction of the placement whenever possible.
   2. Extend vapor barrier to the perimeter of the slab. If practicable, terminate it at the top of the slab, otherwise (a) at a point acceptable to the structural engineer or (b) where obstructed by impediments, such as dowels, waterstops, or any other site condition requiring early termination of the vapor barrier. At the point of termination, seal vapor barrier to the foundation wall, grade beam or slab itself.
   3. Seal vapor barrier to the entire perimeter wall or footing/grade beam with double sided StegoTack Tape per manufacturer’s instructions. Ensure the concrete is clean and dry prior to adhering tape.
   4. Overlap joints 6 inches and seal with manufacturer’s seam tape.
   5. Seal all penetrations (including pipes) per manufacturer’s instructions.
   6. Avoid the use of non-permanent stakes driven through vapor barrier.
   7. If non-permanent stakes are driven through vapor barrier, repair as recommended by vapor barrier manufacturer.
   8. Repair damaged areas with vapor barrier material of similar (or better) permeance, puncture and tensile.

END OF SECTION

SECTION 031000
CONCRETE FORMING AND ACCESSORIES

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Formwork for cast-in-place concrete, with shoring, bracing and anchorage.

B. Openings for other work.

C. Form accessories.

D. Form stripping.

1.02 RELATED REQUIREMENTS

A. Section 032000 - Concrete Reinforcing.

B. Section 033000 - Cast-in-Place Concrete.

1.03 REFERENCE STANDARDS

A. ACI 117 - Specifications for Tolerances for Concrete Construction and Materials; 2010 (Reapproved 2015).

B. ACI 301 - Specifications for Structural Concrete; 2016.

C. ACI 318 - Building Code Requirements for Structural Concrete and Commentary; 2014 (Errata 2018).

D. ACI 347R - Guide to Formwork for Concrete; 2014, with Errata (2017).

E. ASME A17.1 - Safety Code for Elevators and Escalators; 2019.

1.04 SUBMITTALS

A. Shop Drawings: Indicate joint layout and pattern as shown on drawings for review and approval.

PART 2 PRODUCTS

2.01 FORMWORK - GENERAL

A. Provide concrete forms, accessories, shoring, and bracing as required to accomplish cast-in-place concrete work.

B. Design and construct concrete that complies with design with respect to shape, lines, and dimensions.

C. Chamfer top and outside corners of concrete walls and as detailed in drawings.

D. Comply with applicable state and local codes with respect to design, fabrication, erection, and removal of formwork.

E. Comply with relevant portions of ACI 301, ACI 318, ACI 347R, ACI 301, ACI 318, ACI 347R, ACI 301, ACI 318, and ACI 347R.

2.02 WOOD FORM MATERIALS

A. Form Materials: At the discretion of the Contractor. Surfaces left exposed are to be constructed of materials that are clean with true edges.

2.03 FORMWORK ACCESSORIES

A. Form Ties: Snap-off type, plastic, fixed length, free of defects that could leave holes larger than 1 inch in concrete surface.

B. Form Release Agent: Capable of releasing forms from hardened concrete without staining or discoloring concrete or forming bugholes and other surface defects, compatible with concrete and form materials, and not requiring removal for satisfactory bonding of coatings to be applied.
   1. Composition: Colorless, reactive, water-based or solvent-based compound.
   2. Do not use materials containing diesel oil or petroleum-based compounds.
   3. VOC Content: In compliance with applicable local, State, and federal regulations.
   4. Products:
      a. SpecChem, LLC; Bio Strip WB (water-based): www.specchemllc.com/#sle.
      b. W. R. Meadows, Inc; Duogard: www.wrmeadows.com/#sle.
      c. Substitutions: Refer to Owner Provided Front End Specifications.

C. Filler Strips for Chamfered Corners: Rigid plastic type; 3/4 inch size; maximum possible lengths. Unless noted otherwise per drawings.

D. Nails, Spikes, Lag Bolts, Through Bolts, Anchorages: Sized as required, of sufficient strength and character to maintain formwork in place while placing concrete.

E. Embedded Anchor Shapes, Plates, Angles and Bars: As specified in Section 051200.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify lines, levels and centers before proceeding with formwork. Ensure that dimensions agree with drawings.

3.02 EARTH FORMS

A. Earth forms are permitted on footings below grade only.

3.03 ERECTION - FORMWORK

A. Erect formwork, shoring and bracing to achieve design requirements, in accordance with requirements of ACI 301.

B. Provide bracing to ensure stability of formwork. Shore or strengthen formwork subject to overstressing by construction loads.

C. Arrange and assemble formwork to permit dismantling and stripping. Do not damage concrete during stripping. Permit removal of remaining principal shores.

D. Align joints and make watertight. Keep form joints to a minimum.

E. Obtain approval before framing openings in structural members that are not indicated on drawings.

F. Coordinate this section with other sections of work that require attachment of components to formwork.

G. If formwork is placed after reinforcement, resulting in insufficient concrete cover over reinforcement, request instructions from Architect before proceeding.

3.04 APPLICATION - FORM RELEASE AGENT

A. Apply form release agent on formwork in accordance with manufacturer's recommendations.

B. Do not apply form release agent where concrete surfaces will receive special finishes that are affected by agent. Soak inside surfaces of untreated forms with clean water. Keep surfaces coated prior to placement of concrete. Contractor to verify all waterproofing agents are in conformance with form release agents.

3.05 INSERTS, EMBEDDED PARTS, AND OPENINGS

A. Provide formed openings where required for items to be embedded in passing through concrete work.

B. Locate and set in place items that will be cast directly into concrete.

C. Coordinate with work of other sections in forming and placing openings, slots, reglets, recesses, sleeves, bolts, anchors, other inserts, and components of other work.

D. Install accessories in accordance with manufacturer's instructions, so they are straight, level, and plumb. Ensure items are not disturbed during concrete placement.

E. Install waterstops in accordance with manufacturer's instructions, so they are continuous without displacing reinforcement.

3.06 FORM CLEANING

A. Clean forms as erection proceeds, to remove foreign matter within forms.

B. Clean formed cavities of debris prior to placing concrete.

3.07 FORMWORK TOLERANCES

A. Construct formwork to maintain tolerances required by ACI 117, unless otherwise indicated.

B. Construct and align formwork for elevator hoistway in accordance with ASME A17.1.

C. Camber slabs and beams 1/4 inch per 10 feet.

3.08 FORM REMOVAL

A. Do not remove forms or bracing until concrete has gained sufficient strength to carry its own weight and imposed loads.

B. Loosen forms carefully. Do not wedge pry bars, hammers, or tools against finish concrete surfaces scheduled for exposure to view.

END OF SECTION

SECTION 032000
CONCRETE REINFORCING

PART 1 GENERAL

1.01 SCOPE OF WORK TO INCLUDE:

A. All cast-in-place building slabs and footings to recieve reinforcing.

1.02 SECTION INCLUDES

A. Reinforcing steel for cast-in-place concrete.

B. Supports and accessories for steel reinforcement.

1.03 RELATED REQUIREMENTS

A. Section 031000 - Concrete Forming and Accessories.

B. Section 033000 - Cast-in-Place Concrete.

1.04 REFERENCE STANDARDS

A. ACI 301 - Specifications for Structural Concrete; 2016.

B. ASTM A615/A615M - Standard Specification for Deformed and Plain Carbon-Steel Bars for Concrete Reinforcement; 2020.

C. ASTM A1064/A1064M - Standard Specification for Carbon-Steel Wire and Welded Wire Reinforcement, Plain and Deformed, for Concrete; 2018a.

D. CRSI (DA4) - Manual of Standard Practice; 2009.

1.05 SUBMITTALS

A. Shop Drawings: Include bar schedules, shapes of bent bars, spacing of bars, and location of splices.

1.06 QUALITY ASSURANCE

A. Perform work of this section in accordance with ACI 301.

PART 2 PRODUCTS

2.01 REINFORCEMENT

A. Reinforcing Steel: ASTM A615/A615M, Grade 60 (60,000 psi).
   1. Plain billet-steel bars.
   2. Unfinished.

B. Stirrup Steel: ASTM A1064/A1064M steel wire, unfinished.

C. Reinforcement Accessories:
   1. Tie Wire: Annealed, minimum 16 gauge, 0.0508 inch.
   2. Chairs, Bolsters, Bar Supports, Spacers: Sized and shaped for adequate support of reinforcement during concrete placement.
   3. Provide galvanized components for placement within 1-1/2 inches of weathering surfaces.

2.02 FABRICATION

A. Fabricate concrete reinforcing in accordance with CRSI (DA4) - Manual of Standard Practice.

B. Welding of reinforcement is not permitted.

C. Locate reinforcing splices not indicated on drawings at point of minimum stress.
   1. Review locations of splices with Architect.

PART 3 EXECUTION

3.01 PLACEMENT

A. Place, support and secure reinforcement against displacement. Do not deviate from required position.

B. Do not displace or damage vapor barrier.

C. Accommodate placement of formed openings.

D. Maintain concrete cover around reinforcing per structural engineer.

E. Comply with applicable code for concrete cover over reinforcement.

END OF SECTION

SECTION 033000
CAST-IN-PLACE CONCRETE

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Floors and slabs on grade.

B. Joint devices associated with concrete work.

C. Concrete curing.

1.02 RELATED REQUIREMENTS

A. Section 031000 - Concrete Forming and Accessories: Forms and accessories for formwork.

B. Section 032000 - Concrete Reinforcing.

C. Section 079200 - Joint Sealants: Products and installation for sealants and joint fillers for saw cut joints and isolation joints in slabs.

1.03 REFERENCE STANDARDS

A. ACI 211.1 - Standard Practice for Selecting Proportions for Normal, Heavyweight, and Mass Concrete; 1991 (Reapproved 2009).

B. ACI 301 - Specifications for Structural Concrete; 2016.

C. ACI 302.1R - Guide to Concrete Floor and Slab Construction; 2015.

D. ACI 304R - Guide for Measuring, Mixing, Transporting, and Placing Concrete; 2000 (Reapproved 2009).

E. ACI 305R - Guide to Hot Weather Concreting; 2010.

F. ACI 306R - Guide to Cold Weather Concreting; 2016.

G. ACI 308R - Guide to External Curing of Concrete; 2016.

H. ACI 318 - Building Code Requirements for Structural Concrete and Commentary; 2014 (Errata 2018).

I. ASTM C33/C33M - Standard Specification for Concrete Aggregates; 2018.

J. ASTM C39/C39M - Standard Test Method for Compressive Strength of Cylindrical Concrete Specimens; 2021.

K. ASTM C94/C94M - Standard Specification for Ready-Mixed Concrete; 2021a.

L. ASTM C109/C109M - Standard Test Method for Compressive Strength of Hydraulic Cement Mortars (Using 2-in. or [50 mm] Cube Specimens); 2021.

M. ASTM C143/C143M - Standard Test Method for Slump of Hydraulic-Cement Concrete; 2020.

N. ASTM C150/C150M - Standard Specification for Portland Cement; 2022.

O. ASTM C173/C173M - Standard Test Method for Air Content of Freshly Mixed Concrete by the Volumetric Method; 2016.

P. ASTM C260/C260M - Standard Specification for Air-Entraining Admixtures for Concrete; 2010a (Reapproved 2016).

Q. ASTM C309 - Standard Specification for Liquid Membrane-Forming Compounds for Curing Concrete; 2019.

R. ASTM C330/C330M - Standard Specification for Lightweight Aggregates for Structural Concrete; 2017a.

S. ASTM C494/C494M - Standard Specification for Chemical Admixtures for Concrete; 2019.

T. ASTM C618 - Standard Specification for Coal Fly Ash and Raw or Calcined Natural Pozzolan for Use in Concrete; 2019.

U. ASTM C685/C685M - Standard Specification for Concrete Made by Volumetric Batching and Continuous Mixing; 2017.

V. ASTM C1107/C1107M - Standard Specification for Packaged Dry, Hydraulic-Cement Grout (Nonshrink); 2017.

W. ASTM C1240 - Standard Specification for Silica Fume Used in Cementitious Mixtures; 2020.

X. ASTM C1315 - Standard Specification for Liquid Membrane-Forming Compounds Having Special Properties for Curing and Sealing Concrete; 2019.

Y. ASTM C1602/C1602M - Standard Specification for Mixing Water Used in the Production of Hydraulic Cement Concrete; 2012.

Z. ASTM D1751 - Standard Specification for Preformed Expansion Joint Filler for Concrete Paving and Structural Construction (Nonextruding and Resilient Bituminous Types); 2018.

AA. ASTM E1155 - Standard Test Method for Determining FF Floor Flatness and FL Floor Levelness Numbers; 2020.

BB. ASTM E1155M - Standard Test Method for Determining F(F) Floor Flatness and F(L) Floor Levelness Numbers (Metric); 2014.

CC. ASTM E1643 - Standard Practice for Selection, Design, Installation and Inspection of Water Vapor Retarders Used in Contact with Earth or Granular Fill Under Concrete Slabs; 2018a.

1.04 SUBMITTALS

A. Product Data: Submit manufacturers' data on manufactured products showing compliance with specified requirements and installation instructions.

B. Mix Design: Submit proposed concrete mix design.
   1. Indicate proposed mix design complies with requirements of ACI 301, Section 4 - Concrete Mixtures. Indicate minimum 30 break test results of mix to be used.

C. Test Reports: Submit report for each test or series of tests specified.

D. Control Joint Layout: provid layout to be reviewed prior to concrete placement.

E. Project Record Documents: Accurately record actual locations of embedded utilities and components that will be concealed from view upon completion of concrete work.

1.05 QUALITY ASSURANCE

A. Perform work of this section in accordance with ACI 301 and ACI 318.

B. Follow recommendations of ACI 305R when concreting during hot weather.

C. Follow recommendations of ACI 306R when concreting during cold weather.

PART 2 PRODUCTS

2.01 FORMWORK

A. Comply with requirements of Section 031000.

2.02 REINFORCEMENT MATERIALS

A. Comply with requirements of Section 032000.

2.03 CONCRETE MATERIALS

A. Cement: ASTM C150/C150M, Type I - Normal Portland type.
   1. Acquire all cement for entire project from same source. Course aggregate shall exceed fine aggregate.

B. Fine and Coarse Aggregates: ASTM C33/C33M.
   1. Acquire all aggregates for entire project from same source. Course aggregate shall exceed fine aggregate.

C. Lightweight Aggregate: ASTM C330/C330M.

D. Fly Ash: ASTM C618, Class C or F. Max 20 percent substitution.

E. Calcined Pozzolan: ASTM C618, Class N.

F. Silica Fume: ASTM C1240, proportioned in accordance with ACI 211.1.

G. Water: ASTM C1602/C1602M; clean, potable, and not detrimental to concrete.

H. Thickness: per drawings.

2.04 ADMIXTURES

A. Do not use chemicals that will result in soluble chloride ions in excess of 0.1 percent by weight of cement.

B. Air Entrainment Admixture: ASTM C260/C260M.

C. Water Reducing Admixture: ASTM C494/C494M Type A.

2.05 ACCESSORY MATERIALS

A. Non-Shrink Cementitious Grout: Premixed compound consisting of non-metallic aggregate, cement, water reducing and plasticizing agents.
   1. Grout: Comply with ASTM C1107/C1107M.
   2. Minimum Compressive Strength at 28 Days, ASTM C109/C109M: 6,000 pounds per square inch.

2.06 BONDING AND JOINTING PRODUCTS

A. Slab Isolation Joint Filler: 1/2 inch thick, height equal to slab thickness, with removable top section that will form 1/2 inch deep sealant pocket after removal.
   1. Material: ASTM D1751, cellulose fiber.
   2. Manufacturers:
      a. W. R. Meadows, Inc; Fiber Expansion Joint Filler with Snap-Cap: www.wrmeadows.com/#sle.
      b. Substitutions: Refer to Owner Profided Front End Specifications.

B. Slab Construction Joint Devices: Combination keyed joint form and screed, galvanized steel, with rectangular or round knockout holes for conduit or rebar to pass through joint form at 6 inches on center; ribbed steel stakes for setting.

2.07 CURING MATERIALS

A. Curing and Sealing Compound, Moisture Emission-Reducing, Membrane-Forming: Liquid, membrane-forming, clear sealer, for application to newly-placed concrete; capable of providing adequate bond for flooring adhesives, initially and over the long term; with sufficient moisture vapor impermeability to prevent deterioration of flooring adhesives due to moisture emission.
   1. Use this product to cure and seal all slabs to receive adhesively applied flooring or roofing.
   2. Comply with ASTM C309 and ASTM C1315 Type I Class A.
   3. VOC Content: Less than 100 g/L.

B. Curing Compound, Non-dissipating that acts a sealer as well: Liquid, membrane-forming, clear, non-yellowing acrylic; complying with ASTM C309.
   1. Application: Use at interior exposed concrete, refer to finish schedule for sealed concrete call out.
   2. Vehicle: Water-based.
   3. Gloss: Low.
   4. Solids by Mass: 15 percent, minimum.
   5. VOC Content: OTC compliant.
   6. Coats: 2 minimum
   7. Manufacturers:

a. SpecChem, LLC; Cure and Seal WB: www.specchemllc.com/#sle.
b. Substitutions: Refer to Owner Provided Front End Specifications.

C. Water: Potable, not detrimental to concrete.

2.08 CONCRETE MIX DESIGN

A. Proportioning Normal Weight Concrete: Comply with ACI 211.1 recommendations.

B. Admixtures: Add acceptable admixtures as recommended in ACI 211.1 and at rates recommended or required by manufacturer.

C. Normal Weight Concrete:
1. Compressive Strength, when tested in accordance with ASTM C39/C39M at 28 days: As indicated on drawings, refer to structural drawings.
a. Exterior Concrete: 3500 minimum PSI
b. Footing Concrete: 4000 minimum PSI
c. Structural concrete for walls, columns, beams, and structural slabs: 4000 minimum PSI
d. Topping slabs on metla deck: 3000 minimum PSI
2. Fly Ash Content: Maximum 20 percent of cementitious materials by weight.
3. Calcined Pozzolan Content: Maximum 5 percent of cementitious materials by weight.
4. Silica Fume Content: Maximum 5 percent of cementitious materials by weight.
5. Water-Cement Ratio: Maximum 46 percent by weight for slabs, Maximum 50 percent for other concrete components, refer to structural drawings.
6. Total Air Content: 4 percent, determined in accordance with ASTM C173/C173M.
7. Maximum Slump: 6 inches for footings, 4 inches for slabs.
8. Maximum Aggregate Size: 1-1/2 inch.

2.09 MIXING

A. On Project Site: Mix in drum type batch mixer, complying with ASTM C685/C685M. Mix each batch not less than 1-1/2 minutes and not more than 5 minutes.

B. Transit Mixers: Comply with ASTM C94/C94M.

C. Adding Water: If concrete arrives on-site with slump less than suitable for placement, do not add water that exceeds the maximum water-cement ratio or exceeds the maximum permissible slump.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify lines, levels, and dimensions before proceeding with work of this section.

3.02 PREPARATION

A. Verify that forms are clean and free of rust before applying release agent.

B. Coordinate placement of embedded items with erection of concrete formwork and placement of form accessories.

C. Where new concrete is to be bonded to previously placed concrete, prepare existing surface by cleaning and applying bonding agent in according to bonding agent manufacturer's instructions.

D. In locations where new concrete is doweled to existing work, drill holes in existing concrete, insert steel dowels and pack solid with non-shrink grout.

E. Interior Slabs on Grade: Install vapor retarder under interior slabs on grade. Comply with ASTM E1643. Lap joints minimum 6 inches. Seal joints, seams and penetrations watertight with manufacturer's recommended products and follow manufacturer's written instructions. Repair damaged vapor retarder before covering.
1. Vapor Retarder Over Granular Fill: Install compactible granular fill before placing vapor retarder as shown on the drawings.

3.03 PLACING CONCRETE

A. Place concrete in accordance with ACI 304R.

B. Place concrete for floor slabs in accordance with ACI 302.1R for Floor Flatness and Floor Level.

C. Maintain records of concrete placement. Record date, location, quantity, air temperature, and test samples taken.

D. Ensure reinforcement, inserts, waterstops, embedded parts, and formed construction joint devices will not be disturbed during concrete placement.

E. Place concrete continuously without construction (cold) joints wherever possible; where construction joints are necessary, before next placement prepare joint surface by removing laitance and exposing the sand and sound surface mortar, by sandblasting or high-pressure water jetting.

F. Finish floors level and flat, unless otherwise indicated, within the tolerances specified below.

3.04 SLAB JOINTING

A. Locate joints as indicated on the drawings or as determined in field. Coordinate with floor finishes and with Architect and Engineer.

B. Anchor joint fillers and devices to prevent movement during concrete placement.

C. Isolation Joints: Use preformed joint filler with removable top section for joint sealant, total height equal to thickness of slab, set flush with top of slab.

D. Saw Cut Contraction Joints: Saw cut joints before concrete fully sets, within 4 to 12 hours after placing; use 3/16 inch thick blade and cut at least 1-1/2 inch deep but not less than one quarter (1/4) the depth of the slab.

E. Construction Joints: Where not otherwise indicated, use metal combination screed and key form, with removable top section for joint sealant.

F. Construction Joints: Provide at frequence and method as detailed in documents. Coordinate final layout with Architect.

3.05 FLOOR FLATNESS AND LEVELNESS TOLERANCES

A. Maximum Variation of Surface Flatness:
   1. Exposed Concrete Floors: 1/4 inch in 10 feet.
   2. Under Seamless Resilient Flooring: 1/4 inch in 10 feet.
   3. Under Carpeting: 1/4 inch in 10 feet.

B. Correct the slab surface if tolerances are less than specified.

C. Measure F(F) Floor Flatness and F(L) Floor Levelness in accordance with ASTM E1155 (ASTM E1155M), within 48 hours after slab installation; report both composite overall values and local values for each measured section.

D. Correct defects by grinding or by removal and replacement of the defective work. Areas requiring corrective work will be identified. Re-measure corrected areas by the same process.

3.06 CONCRETE FINISHING

A. Repair surface defects, including tie holes, immediately after removing formwork.

B. Unexposed Form Finish: Rub down or chip off fins or other raised areas 1/4 inch or more in height.

C. Concrete Slabs: Finish to requirements of ACI 302.1R, and as follows:
   1. Surfaces to Receive Thick Floor Coverings: "Wood float" as described in ACI 302.1R; thick floor coverings include ceramic tile with full bed setting system.

2. Surfaces to Receive Thin Floor Coverings: "Steel trowel" as described in ACI 302.1R; thin floor coverings include carpeting, resilient flooring, seamless flooring, and thin set ceramic tile.
3. Decorative Exposed Surfaces: "Steel trowel" as described in ACI 302.1R; use steel-reinforced plastic trowel blades instead of steel blades to avoid black-burnish marks; decorative exposed surfaces include surfaces to be polished.
4. Other Surfaces to Be Left Exposed: Trowel as described in ACI 302.1R, minimizing burnish marks and other appearance defects.

3.07 CURING AND PROTECTION

A. Comply with requirements of ACI 308R. Immediately after placement, protect concrete from premature drying, excessively hot or cold temperatures, and mechanical injury.

B. Maintain concrete with minimal moisture loss at relatively constant temperature for period necessary for hydration of cement and hardening of concrete.
   1. Normal concrete: Not less than seven days.

C. Formed Surfaces: Cure by moist curing with forms in place for full curing period.

D. Surfaces Not in Contact with Forms:
   1. Slabs and Floors To Receive Adhesive-Applied Flooring: Curing compounds and other surface coatings are usually considered unacceptable by flooring and adhesive manufacturers. If such materials must be used, either obtain the approval of the flooring and adhesive manufacturers prior to use or remove the surface coating after curing to flooring manufacturer's satisfaction.
   2. Initial Curing: Start as soon as free water has disappeared and before surface is dry. Keep continuously moist for not less than three days by water-fog spray.
      a. Spraying: Spray water over floor slab areas and maintain wet.
   3. Final Curing: Begin after initial curing but before surface is dry.
      a. Moisture-Retaining Sheet: Lap strips not less than 3 inches and seal with waterproof tape or adhesive; secure at edges.
      b. Curing Compound: Apply in two coats at right angles, using application rate recommended by manufacturer.

3.08 FIELD QUALITY CONTROL

A. Provide free access to concrete operations at project site and cooperate with appointed firm.

B. Submit proposed mix design of each class of concrete to inspection and testing firm for review prior to commencement of concrete operations.

C. Tests of concrete and concrete materials may be performed at any time to ensure compliance with specified requirements.

D. Compressive Strength Tests: ASTM C39/C39M, for each test, mold and cure three concrete test cylinders. Obtain test samples for every 50 cubic yards or less of concrete placed.

E. Take one additional test cylinder during cold weather concreting, cured on job site under same conditions as concrete it represents.

F. Perform one slump test for each set of test cylinders taken, following procedures of ASTM C143/C143M.

3.09 DEFECTIVE CONCRETE

A. Test Results: The testing agency shall report test results in writing to Architect and Contractor within 24 hours of test.

B. Defective Concrete: Concrete not complying with required lines, details, dimensions, tolerances or specified requirements.

C. Repair or replacement of defective concrete will be determined by the Architect. The cost of additional testing shall be borne by Contractor when defective concrete is identified.

		Cast-in-Place Concrete 033000 - 7

3.10 PROTECTION

A. Do not permit traffic over unprotected concrete floor surface until fully cured.

B. Contractor to take responsiblity for damage/vandalism for the first 24 hours following each concrete pour. Concrete will be required to be replaced.

END OF SECTION

SECTION 061000
ROUGH CARPENTRY

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Structural dimension lumber framing.
B. Nonstructural dimension lumber framing.
C. Rough opening framing for doors, windows, and roof openings.
D. Preservative treated wood materials.
E. Miscellaneous framing and sheathing.
F. Concealed wood blocking, nailers, and supports.
G. Miscellaneous wood nailers, furring, and grounds.

1.02 RELATED REQUIREMENTS

A. Section 076200 - Sheet Metal Flashing and Trim: Sill flashings.

1.03 REFERENCE STANDARDS

A. ASTM A153/A153M - Standard Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware; 2016a.
B. ASTM C557 - Standard Specification for Adhesives for Fastening Gypsum Wallboard to Wood Framing; 2003 (Reapproved 2017).
C. ASTM D3498 - Standard Specification for Adhesives for Field-Gluing Wood Structural Panels (Plywood or Oriented Strand Board) to Wood Based Floor System Framing; 2019a.
D. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials; 2021a.
E. AWPA U1 - Use Category System: User Specification for Treated Wood; 2018.
F. PS 2 - Performance Standard for Wood-Based Structural-Use Panels; 2010.
G. PS 20 - American Softwood Lumber Standard; 2020.
H. WWPA G-5 - Western Lumber Grading Rules; 2017.

1.04 DELIVERY, STORAGE, AND HANDLING

A. General: Cover wood products to protect against moisture. Support stacked products to prevent deformation and to allow air circulation.

1.05 WARRANTY

A. Correct defective Work within a one year period after Date of Substantial Completion.

PART 2 PRODUCTS

2.01 GENERAL REQUIREMENTS

A. Dimension Lumber: Comply with PS 20 and requirements of specified grading agencies.
   1. Species: Douglas Fir-Larch, unless otherwise indicated.
   2. If no species is specified, provide species graded by the agency specified; if no grading agency is specified, provide lumber graded by grading agency meeting the specified requirements.
   3. Grading Agency: Grading agency whose rules are approved by the Board of Review, American Lumber Standard Committee at www.alsc.org, and who provides grading service for the species and grade specified; provide lumber stamped with grade mark unless otherwise indicated.

4. Lumber of other species or grades is acceptable provided structural and appearance characteristics are equivalent to or better than products specified.

2.02 DIMENSION LUMBER FOR CONCEALED APPLICATIONS

A. Grading Agency: Western Wood Products Association; WWPA G-5.

B. Sizes: Nominal sizes as indicated on drawings, S4S.

C. Moisture Content: Kiln-dry or MC15.

D. Stud Framing (2 by 2 through 2 by 6):
   1. Species: Douglas Fir-Larch.
   2. Grade: No. 2 unless otherwise noted on plans.

E. Miscellaneous Framing, Blocking, Nailers, Grounds, and Furring:
   1. Lumber: S4S, No. 2 or Standard Grade.
   2. Boards: Standard or No. 3.

2.03 STRUCTURAL COMPOSITE LUMBER

A. At Contractor's option, structural composite lumber may be substituted for concealed dimension lumber and timbers.

B. Structural Composite Lumber: Factory fabricated beams, headers, and columns, of sizes and types indicated on drawings; structural capacity as published by manufacturer.

2.04 CONSTRUCTION PANELS

A. Subflooring: Any PS 2 type, rated Sheathing, plywood, 23/32 inch thick, Tongue and groove, pressure treated where noted on drawings
   1. Span Rating: 48/24
   2. Performance Category: 3/4 PERF CAT.

B. Underlayment: APA Underlayment; plywood, Exposure 2, 1/4 inch thick.

C. Communications and Electrical Room Mounting Boards: PS 1 A-D plywood, or medium density fiberboard; 1/2 inch thick; flame spread index of 25 or less, smoke developed index of 450 or less, when tested in accordance with ASTM E84. Refer to plan for locations.

2.05 ACCESSORIES

A. Fasteners and Anchors:
   1. Metal and Finish: Hot-dipped galvanized steel complying with ASTM A153/A153M for high humidity and preservative-treated wood locations, unfinished steel elsewhere.
   2. Interior Partition Securement: Simpson DTC clip, 18 ga, typically at all interior walls.

B. Subfloor Adhesives: Waterproof, air cure type, cartridge dispensed; adhesives designed for subfloor applications and complying with either ASTM C557 or ASTM D3498.
   1. Construction Adhesives: Adhesives complying with ASTM C557 or ASTM D3498.
      a. Manufacturers:
         1) Franklin International, Inc; Titebond Fast Set Polyurethane Construction Adhesive: www.titebond.com/#sle.
         2) Substitutions: See Section 016000 - Product Requirements.

2.06 FACTORY WOOD TREATMENT

A. Treated Lumber and Plywood: Comply with requirements of AWPA U1 - Use Category System for wood treatments determined by use categories, expected service conditions, and specific applications.
   1. Preservative-Treated Wood: Provide lumber and plywood marked or stamped by an ALSC-accredited testing agency, certifying level and type of treatment in accordance with AWPA standards.

B. Preservative Treatment:
   1. Preservative Pressure Treatment of Lumber Above Grade: AWPA U1, Use Category UC3B, Commodity Specification A using waterborne preservative.
      a. Kiln dry lumber after treatment to maximum moisture content of 15 percent.
      b. Treat lumber exposed to weather as detailed.
      c. Treat lumber in contact with masonry or concrete.
      d. Treat lumber in other locations as indicated.
   2. Preservative Pressure Treatment of Plywood Above Grade: AWPA U1, Use Category UC2 and UC3B, Commodity Specification F using waterborne preservative.
      a. Kiln dry plywood after treatment to maximum moisture content of 19 percent.
      b. Treat plywood in contact with masonry or concrete.
      c. Treat plywood in other locations as indicated.

PART 3 EXECUTION

3.01 PREPARATION

A. Where wood framing bears on cementitious foundations, install full width sill flashing continuous over top of foundation, lap ends of flashing minimum of 4 inches and seal.

B. Coordinate installation of rough carpentry members specified in other sections.

3.02 INSTALLATION - GENERAL

A. Select material sizes to minimize waste.

B. Reuse scrap to the greatest extent possible; clearly separate scrap for use on site as accessory components, including: shims, bracing, and blocking.

C. Where treated wood is used on interior, provide temporary ventilation during and immediately after installation sufficient to remove indoor air contaminants.

3.03 FRAMING INSTALLATION

A. Set structural members level, plumb, and true to line. Discard pieces with defects that would lower required strength .

B. Make provisions for temporary construction loads, and provide temporary bracing sufficient to maintain structure in true alignment and safe condition until completion of erection and installation of permanent bracing.

C. Install structural members full length without splices .

D. Comply with member sizes, spacing, and configurations indicated, and fastener size and spacing indicated, but not less than required by applicable codes.

E. Install horizontal spanning members with crown edge up and not less than 1-1/2 inches of bearing at each end.

F. Construct double joist headers at floor and ceiling openings and under wall stud partitions that are parallel to floor joists; use metal joist hangers unless otherwise detailed.

G. Provide bridging at joists in excess of 8 feet span as detailed. Fit solid blocking at ends of members.

H. Frame wall openings with single full height studs at each jamb unless otherwise noted; support headers on single cripple stud unless otherwise noted.

I. Interior walls to be terminated below roof trusses or other floor joists. Provide a 3/4" air gap to be left between top of wall and bottom of structure. Attach DTC clip to secure wall in place. Space DTC clips at 4'-0" where applicable or between every other truss.

J. Interior walls where no structure is above, contractor has the option to provide 45 degree supports anchored to structure (above) and to the top of the wall using (2) wood screws (minimum) on both ends of support. Space bracing members at three feet on center as required to support wall.

3.04 BLOCKING, NAILERS, AND SUPPORTS

A. Provide framing and blocking members as indicated or as required to support finishes, fixtures, specialty items, and trim.

B. In framed assemblies that have concealed spaces, provide solid wood fireblocking as required by applicable local code, to close concealed draft openings between floors and between top story and roof/attic space; other material acceptable to authorities having jurisdiction may be used in lieu of solid wood blocking.

C. In walls, provide blocking attached to studs as backing and support for wall-mounted items, unless item can be securely fastened to two or more studs or other method of support is explicitly indicated.

D. Where ceiling-mounting is indicated, provide blocking and supplementary supports above ceiling, unless other method of support is explicitly indicated.

E. Provide the following specific nonstructural framing and blocking:
   1. Cabinets and shelf supports.
   2. Wall brackets.
   3. Handrails.
   4. Grab bars.
   5. Toilet accessories.
   6. Wall-mounted door stops.
   7. Wall paneling and trim.

3.05 INSTALLATION OF CONSTRUCTION PANELS

A. Subflooring: Glue and nail to framing; staples are not permitted. Secure panels with long dimension perpendicular to framing members, with ends staggered and over firm bearing.

B. Communications and Electrical Room Mounting Boards: Secure with screws to studs with edges over firm bearing; space fasteners at maximum 24 inches on center on all edges and into studs in field of board.
   1. At fire-rated walls, install board over wall board indicated as part of the fire-rated assembly.
   2. Where boards are indicated as full floor-to-ceiling height, install with long edge of board parallel to studs.
   3. Install adjacent boards without gaps.
   4. Size: 48 by 96 inches, installed horizontally.

3.06 TOLERANCES

A. Framing Members: 1/4 inch from true position, maximum.

B. Variation from Plane, Other than Floors: 1/4 inch in 10 feet maximum, and 1/4 inch in 30 feet maximum.

3.07 CLEANING

A. Prevent sawdust and wood shavings from entering the storm drainage system.

END OF SECTION

SECTION 062000
FINISH CARPENTRY

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Finish carpentry items.

B. Wood door frames, (glazed frames as scheduled).

C. Wood casings and moldings.

1.02 RELATED REQUIREMENTS

A. Section 061000 - Rough Carpentry: Support framing, grounds, and concealed blocking.

B. Section 099123 - INTERIOR PAINTING: Painting of finish carpentry items.

1.03 REFERENCE STANDARDS

A. AWI/AWMAC/WI (AWS) - Architectural Woodwork Standards, 2nd Edition; 2014, with Errata (2016).

B. AWMAC/WI (NAAWS) - North American Architectural Woodwork Standards, U.S. Version 4.0; 2021.

1.04 SUBMITTALS

A. Shop Drawings: Indicate materials, component profiles, fastening methods, jointing details, and accessories.
   1. Scale of Drawings: 1-1/2 inch to 1 foot, minimum.
   2. Provide information as required by AWI/AWMAC/WI (AWS) or AWMAC/WI (NAAWS).

1.05 DELIVERY, STORAGE, AND HANDLING

A. Store finish carpentry items under cover, elevated above grade, and in a dry, well-ventilated area not exposed to heat or sunlight.

B. Protect from moisture damage.

C. Handle materials and products to prevent damage to edges, ends, or surfaces.

PART 2 PRODUCTS

2.01 FINISH CARPENTRY ITEMS

A. Quality Standard: Custom Grade, in accordance with AWI/AWMAC/WI (AWS) or AWMAC/WI (NAAWS), unless noted otherwise.

B. Surface Burning Characteristics: Provide materials having fire and smoke properties as required by applicable code.

C. Interior Woodwork Items:
   1. Window Moldings, Bases, Casings, and Miscellaneous Trim: Douglas Fir; prepare for paint finish.
   2. Door and Pocket Door Frames: Clear white pine; prepare for paint finish.

2.02 LUMBER MATERIALS

A. Hardwood Lumber: Cedar species, quarter sawn, maximum moisture content of 6 percent; with vertical grain, of quality suitable for transparent finish.

2.03 FASTENINGS

A. Adhesive for Purposes Other Than Laminate Installation: Suitable for the purpose; not containing formaldehyde or other volatile organic compounds.

B. Fasteners: Of size and type to suit application; standard finish in concealed locations and galvanized finish in exposed exterior locations.

2.04 ACCESSORIES

A. Lumber for Shimming and Blocking: Softwood lumber of hardwood species.

B. Plastic Edge Trim: Extruded convex shaped; smooth finish; self locking serrated tongue; of width to match component thickness; color as selected.
   1. Manufacturers: Dollken Woodtape: www.doellken-woodtape.com, 800-426-6362 or equal.

C. Wood Filler: Solvent base, tinted to match surface finish color.

2.05 FABRICATION

A. Shop assemble work for delivery to site, permitting passage through building openings.

B. Shop prepare and identify components for book match grain matching during site erection.

C. When necessary to cut and fit on site, provide materials with ample allowance for cutting. Provide trim for scribing and site cutting.

2.06 SHOP FINISHING

A. Sand work smooth and set exposed nails.

B. Apply wood filler in exposed nail indentations.

C. On items to receive transparent finishes, use wood filler that matches surrounding surfaces and is of type recommended for the applicable finish.

D. Stain, seal, and varnish exposed to view surfaces. Brush apply only.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify adequacy of backing and support framing.

B. Verify mechanical, electrical, and building items affecting work of this section are placed and ready to receive this work.

3.02 INSTALLATION

A. Install custom fabrications in accordance with AWI/AWMAC/WI (AWS) or AWMAC/WI (NAAWS) requirements for grade indicated.

B. Set and secure materials and components in place, plumb and level.

C. Carefully scribe work abutting other components, with maximum gaps of 1/32 inch. Do not use additional overlay trim to conceal larger gaps.

D. Install components with nails at 36 inch on center.

3.03 PREPARATION FOR SITE FINISHING

A. Set exposed fasteners. Apply wood filler in exposed fastener indentations. Sand work smooth.

B. Site Finishing: See Section 099123.

C. Before installation, prime paint surfaces of items or assemblies to be in contact with cementitious materials.

3.04 TOLERANCES

A. Maximum Variation from True Position: 1/16 inch.

B. Maximum Offset from True Alignment with Abutting Materials: 1/32 inch.

END OF SECTION

SECTION 064100
ARCHITECTURAL WOOD CASEWORK

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Fabricated cabinet units

B. Hardware.

C. Factory finishing.

D. Preparation for installing utilities.

1.02 RELATED REQUIREMENTS

A. Section 061000 - Rough Carpentry: Support framing, grounds, and concealed blocking.

B. Section 123600 - Countertops.

1.03 REFERENCE STANDARDS

A. AWI/AWMAC/WI (AWS) - Architectural Woodwork Standards, 2nd Edition; 2014, with Errata (2016).

B. AWMAC/WI (NAAWS) - North American Architectural Woodwork Standards, U.S. Version 4.0; 2021.

C. BHMA A156.9 - American National Standard for Cabinet Hardware; 2015.

D. NEMA LD 3 - High-Pressure Decorative Laminates; 2005.

1.04 SUBMITTALS

A. Shop Drawings: Indicate materials, component profiles, fastening methods, jointing details, and accessories.
   1. Scale of Drawings: 1-1/2 inch to 1 foot, minimum.

B. Product Data: Provide data for hardware accessories.

C. Samples: Submit actual samples of architectural cabinet construction, minimum 12 inches square, illustrating proposed cabinet substrate and finish.

D. **Cabinet and counter materials must contain no added urea-formaldehyde resins.**

1.05 QUALITY ASSURANCE

A. Fabricator Qualifications: Company specializing in fabricating the products specified in this section with minimum five years of documented experience.
   1. Company with at least one project in the past 5 years with value of woodwork within 20 percent of cost of woodwork for this Project.
   2. Accredited participant in the specified certification program prior to the commencement of fabrication and throughout the duration of the project.

1.06 DELIVERY, STORAGE, AND HANDLING

A. Protect units from moisture damage.

1.07 FIELD CONDITIONS

A. During and after installation of custom cabinets, maintain temperature and humidity conditions in building spaces at same levels planned for occupancy.

PART 2 PRODUCTS

2.01 CABINETS

A. Quality Grade: Unless otherwise indicated provide products of quality specified by AWI//AWMAC/WI (AWS) for Custom Grade.

B. Cabinets: Plastic Laminate
   1. Finish - Exposed Exterior Surfaces: Decorative laminate.
   2. Finish - Exposed Interior Surfaces: Decorative laminate.
   3. Finish - Concealed Surfaces: Melamine.
   4. Door and Drawer Front Retention Profiles: Fixed panel.
   5. Casework Construction Type: Type A - Frameless.
   6. Grained Face Layout for Cabinet and Door Fronts: Flush panel.
      a. Custom Grade: Doors, drawer fronts and false fronts wood grain to run and match vertically within each cabinet unit.
   7. Cabinet Design Series: As indicated on drawings.
   8. Case Materials: plywood
   9. Shelves: melamine finish
   10. Drawer Materials: Melamine
   11. Drawer Bottom: Melamine
   12. Drawer Construction: Butt Joint with Captive Bottom
   13. Drawer Glides: Full Extension Ball Bearing Side Mount with 100 lb rating
   14. Cabinet Doors and Drawer Fronts: Flush style.
   15. Drawer Construction Technique: Dovetail joints.

2.02 WOOD-BASED COMPONENTS

A. Wood fabricated from old growth timber is not permitted.

B. Formaldehyde Free Panel Products: provide fiberboard, particleboard and plywood products made with binders and adhesives containing no urea formaldehyde.

2.03 LAMINATE MATERIALS

A. Manufacturers:
   1. Formica Corporation: www.formica.com/#sle.
   2. Wilsonart LLC: www.wilsonart.com/#sle.
   3. Substitutions: Refer to Owner's Front End Specifications.

B. High Pressure Decorative Laminate (HPDL): NEMA LD 3, types as recommended for specific applications.

2.04 COUNTERTOPS

A. Countertops: See Section 123600.

2.05 ACCESSORIES

A. Adhesive: Type recommended by AWI/AWMAC to suit application.

B. Plastic Edge Banding: 3MM Extruded PVC, convex shaped; smooth finish; self locking serrated tongue; of width to match component thickness.
   1. Color: As selected by Architect from manufacturer's standard range.
   2. Use at all exposed plywood edges.
   3. Use at all exposed shelf edges.
   4. Manufacturers: Dollken Woodtape: www.doellken-woodtape.com, 800-426-6362 or equal.

C. Fasteners: Size and type to suit application.

D. Bolts, Nuts, Washers, Lags, Pins, and Screws: Of size and type to suit application; galvanized or chrome-plated finish in concealed locations and stainless steel or chrome-plated finish in exposed locations.

E. Concealed Joint Fasteners: Threaded steel.

F. Grommets: Standard plastic grommets for cut-outs, in color to match adjacent surface.

2.06 HARDWARE

A. Hardware: BHMA A156.9, types as recommended by fabricator for quality grade specified.

B. Adjustable Shelf Supports: Standard side-mounted system using recessed metal shelf standards or multiple holes for pin supports and coordinated self rests, satin chrome finish, for nominal 1 inch spacing adjustments.

C. Fixed Specialty Shelf Supports:
   1. Color: to be selected from manufacturers standard colors.

D. Drawer and Door Pulls: "U" shaped wire pull, steel with chrome finish, 4 inch centers.

E. Cabinet Locks: Keyed cylinder, five keys, all keyed the same steel with satin finish.
   1. Lock manufacturer: Schlage/Olympus
      a. Products:
         1) Door Locks: CL777R / Olympus 7005 with Schlage original FSIC cylinders (Part # 23-030 626) in KA101 cylinder keyway.
            (a) If the cupboard has two doors, the lock is to be installed on the righ hand door, and the left hand door is to be automatically secured by the closing of the RH door using the CompX/Timberline D200DL-BLK double door latch kit.
         2) Drawer Locks: CL888R / Olympus 8005 with Schlage original FSIC cylinders (Part # 23-030 626) in KA101 cylinder keyway.
      b. Classroom casework locks for each classroom are keyed alike to themselves, under a master key system for the school in question. Keyways can be E, EF, or F.
      c. Provide strike plates for each lock
      d. Finish: 626
   2. Provide locks at all doors and drawers in Rooms 105 and 119.

F. Catches: Magnetic.

G. Drawer Slides:
   1. Typical Drawers:
      a. Type: Full extension. with ball bearing side mount with 100 lb rating. with polymer stop cushions
      b. Static Load Capacity: Commercial grade.
      c. Mounting: Side mounted.
      d. Stops: Integral type.
      e. Manufacturers:
         1) Accuride International, Inc; 7432: www.accuride.com/#sle.
         2) Knape & Vogt Manufacturing Company; 8400: www.knapeandvogt.com/#sle.
         3) Substitutions: Refer to Owner's Front End Specifications.
   2. File Drawers:
      a. Type: Full extension. with ball bearing side mount with 150 lb rating. with hold-in feature to prevent bounceback
      b. Manufacturers:
         1) Accuride International, Inc; 4032: www.accuride.com/#sle.
         2) Knape & Vogt Manufacturing Company; 8500: www.knapeandvogt.com/#sle.
         3) Substitutions: Refer to Owner's Front End Specifications..

H. Hinges: European style concealed self-closing type, steel with polished finish.

2.07 FABRICATION

A. Assembly: Shop assemble cabinets for delivery to site in units easily handled and to permit passage through building openings.

B. Fitting: When necessary to cut and fit on site, provide materials with ample allowance for cutting. Provide matching trim for scribing and site cutting.

C. Plastic Laminate: Apply plastic laminate finish in full uninterrupted sheets consistent with manufactured sizes. Fit corners and joints hairline; secure with concealed fasteners. Slightly bevel arises. Locate counter butt joints minimum 2 feet from sink cut-outs.
   1. Apply laminate backing sheet to reverse side of plastic laminate finished surfaces.

D. Provide cutouts for plumbing fixtures and appliances. Verify locations of cutouts from on-site dimensions. Prime paint cut edges.

2.08 SHOP FINISHING

A. Sand work smooth and set exposed nails and screws.

B. For opaque finishes, apply wood filler in exposed nail and screw indentations and sand smooth.

C. On items to receive transparent finishes, use wood filler matching or blending with surrounding surfaces and of types recommended for applied finishes.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify adequacy of backing and support framing.

B. Verify location and sizes of utility rough-in associated with work of this section.

3.02 INSTALLATION

A. Install work in accordance with AWI/AWMAC/WI (AWS) or AWMAC/WI (NAAWS) requirements for grade indicated.

B. Set and secure custom cabinets in place, assuring that they are rigid, plumb, and level.

C. Use fixture attachments in concealed locations for wall mounted components.

D. Use concealed joint fasteners to align and secure adjoining cabinet units.

E. Carefully install casework abutting other components, with maximum gaps of 1/8 inch. Provide additional overlay trim to narrow gap as required to 1/32 inch.

F. Secure cabinets to floor using appropriate angles and anchorages.

G. Countersink anchorage devices at exposed locations. Conceal with solid wood plugs of species to match surrounding wood; finish flush with surrounding surfaces.

3.03 ADJUSTING

A. Adjust installed work.

B. Adjust moving or operating parts to function smoothly and correctly.

3.04 CLEANING

A. Clean casework, counters, shelves, hardware, fittings, and fixtures.

END OF SECTION

SECTION 068316
FIBERGLASS REINFORCED PANELING

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Fiberglass reinforced plastic panels.

B. Trim.

1.02 REFERENCE STANDARDS

A. ASTM D256 - Standard Test Methods for Determining the Izod Pendulum Impact Resistance of Plastics; 2010 (Reapproved 2018).

B. ASTM D2583 - Standard Test Method for Indentation Hardness of Rigid Plastics by Means of a Barcol Impressor; 2013a.

C. ASTM D3273 - Standard Test Method for Resistance to Growth of Mold on the Surface of Interior Coatings in an Environmental Chamber; 2021.

D. ASTM D5319 - Standard Specification for Glass-Fiber Reinforced Polyester Wall and Ceiling Panels; 2017.

E. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials; 2021a.

1.03 SUBMITTALS

A. Product Data: Provide data on specified products, describing physical and performance characteristics; including sizes, patterns and colors available; and installation instructions.

B. Samples: Submit two samples 4x4 inch in size illustrating material and surface design of panels.

C. Maintenance Materials: Furnish the following for Owner's use in maintenance of project.

1.04 DELIVERY, STORAGE, AND HANDLING

A. Store panels flat, indoors, on a clean, dry surface. Remove packaging and allow panels to acclimate to room temperature for 48 hours prior to installation.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Fiberglass Reinforced Plastic Panels:
   1. Crane Composites, Inc; Fire-X Glasbord: www.cranecomposites.com.
   2. Marlite, Inc; Class 1/A, standard FRP: www.marlite.com/#sle.
   3. Panolam FRP, Class A; Panolarm Industries International Inc; www.panolam.com
   4. Substitutions: Refer to Owner's Front End Specifications.

2.02 PANEL SYSTEMS

A. Wall Panels:
   1. Panel Size: 4 by 8 feet.
   2. Panel Thickness (min.): 0.09 inch.
   3. Surface Design: Embossed.
   4. Color: White or Beige, final color selection by Architect.
   5. Attachment Method: Adhesive only, with trim and sealant in joints.

2.03 MATERIALS

A. Panels: Fiberglass reinforced plastic (FRP), complying with ASTM D5319.
   1. Surface Burning Characteristics: Maximum flame spread index of 25 and smoke developed index of 450; when system tested in accordance with ASTM E84.
   2. Mold Resistance: Score of 10, when tested in accordance with ASTM D3273.
   3. Scratch Resistance: Barcol hardness score greater than 35, when tested in accordance with ASTM D2583.
   4. Impact Strength: Greater than 6 ft lb force per inch, when tested in accordance with ASTM D256.

B. Trim: Vinyl; color coordinating with panel.

C. Adhesive: Type recommended by panel manufacturer.

D. Sealant: Type recommended by panel manufacturer; white.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify existing conditions and substrate flatness before starting work.

B. Verify that substrate conditions are ready to receive the work of this section.

3.02 INSTALLATION - WALLS

A. Install panels in accordance with manufacturer's instructions.

B. Cut and drill panels with carbide tipped saw blades, drill bits, or snips.

C. Apply adhesive to the back side of the panel using trowel as recommended by adhesive manufacturer.

D. Apply panels to wall with seams plumb and pattern aligned with adjoining panels.

E. Install panels with manufacturer's recommended gap for panel field and corner joints.

F. Place trim on panel before fastening edges, as required.

G. Fill channels in trim with sealant before attaching to panel.

H. Install trim with adhesive and screws or nails, as required.

I. Seal gaps at floor, ceiling, and between panels with applicable sealant to prevent moisture intrusion.

J. Remove excess sealant after paneling is installed and prior to curing.

END OF SECTION

SECTION 072100
THERMAL INSULATION

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Batt insulation and vapor retarder in exterior wall construction.

B. Batt insulation for filling crevices in exterior wall and roof.

1.02 RELATED REQUIREMENTS

A. Section 061000 - Rough Carpentry: Installation requirements for board insulation over steep slope roof sheathing or roof structure.

1.03 REFERENCE STANDARDS

A. ASTM C665 - Standard Specification for Mineral-Fiber Blanket Thermal Insulation for Light Frame Construction and Manufactured Housing; 2017.

B. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials; 2021a.

C. ASTM E136 - Standard Test Method for Assessing Combustibility of Materials Using a Vertical Tube Furnace at 750°C; 2019a.

1.04 SUBMITTALS

A. Product Data: Provide data on product characteristics, performance criteria, and product limitations.

B. ABAA Field Quality Control Submittals: Submit third-party reports of testing and inspection required by ABAA QAP.

C. Manufacturer's Certificate: Certify that products meet or exceed specified requirements.

D. Manufacturer's Installation Instructions: Include information on special environmental conditions required for installation and installation techniques.

E. ABAA Manufacturer Qualification: Submit documentation of current evaluation of proposed manufacturer and materials.

F. ABAA Installer Qualification: Submit documentation of current contractor accreditation and current installer certification. Keep copies of contractor accreditation and installer certification on project site during and after installation. Present on-site documentation upon request.

1.05 QUALITY ASSURANCE

A. Air Barrier Association of America (ABAA) Quality Assurance Program (QAP); www.airbarrier.org/#sle:
   1. Installer Qualification: Use accredited contractors, certified installers, evaluated materials, and third-party field quality control audit.
   2. Manufacturer Qualification: Use evaluated materials from a single manufacturer regularly engaged in air barrier material manufacture. Use secondary materials approved in writing by primary material manufacturer.

B. Preinstallation Conference: meet with the Owner, General Contractor, Architect, Installer, Manufacturer's representative, and isntallers whose work interfaces with the work. Conduct conference at project site.

1.06 FIELD CONDITIONS

A. Do not install insulation adhesives when temperature or weather conditions are detrimental to successful installation.

PART 2 PRODUCTS

2.01 APPLICATIONS

A. Insulation in Wood Framed Walls: Batt insulation with separate vapor retarder.

2.02 BATT INSULATION MATERIALS

A. Glass Fiber Batt Insulation: Flexible preformed batt or blanket, complying with ASTM C665; friction fit.
   1. Flame Spread Index: 25 or less, when tested in accordance with ASTM E84.
   2. Smoke Developed Index: 450 or less, when tested in accordance with ASTM E84.
   3. Combustibility: Non-combustible, when tested in accordance with ASTM E136.
   4. Thermal Resistance: R - 21, for exterior walls, see plans..
   5. Facing: Unfaced.
   6. Products:
      a. CertainTeed Corporation: www.certainteed.com.
      b. Johns Manville: www.jm.com.
      c. Owens Corning Corporation: www.ocbuildingspec.com.
   7. Substitutions: Refer to Owner's Front End Specifications.

B. Sound Attenuation Fiber Batt Insulation: Flexible preformed batt or blanket, complying with ASTM C665; friction fit.
   1. Flame Spread Index: 25 or less, when tested in accordance with ASTM E84.
   2. Smoke Developed Index: 450 or less, when tested in accordance with ASTM E84.
   3. Combustibility: Non-combustible, when tested in accordance with ASTM E136.
   4. Thickness: 3 inch for all NEW interior walls.
   5. Facing: Unfaced.
   6. Manufacturers:
      a. Owens Corning Corporation; Sound Attenuation Batts Fiber Glass: www.ocbuildingspec.com.
   7. Substitutions: Refer to Owner's Front End Specifications.

2.03 ACCESSORIES

A. Tape joints of rigid insulation in accordance with roofing and insulation manufacturers' instructions.

B. Nails or Staples: Steel wire; electroplated or galvanized; type and size to suit application.

C. Adhesive: Type recommended by board insulation manufacturer for application.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that substrate, adjacent materials, and insulation materials are dry and that substrates are ready to receive insulation.

3.02 BATT INSTALLATION

A. Install insulation and vapor retarder in accordance with manufacturer's instructions.

B. Install in exterior wall and roof spaces without gaps or voids. Do not compress insulation.

C. Trim insulation neatly to fit spaces. Insulate miscellaneous gaps and voids.

D. Fit insulation tightly in cavities and tightly to exterior side of mechanical and electrical services within the plane of the insulation.

E. Retain insulation batts in place:
   1. Friction fit in wood stud cavity. Provide spindle fasteners at 12 inches on center as required.
   2. Friction fit in wood floor/ceiling assemblies. Provide mesh or spindle fastenders at 12 inches on center as required.
   3. Impaling clip of unfinished steel with washer retainer and clips, to be adhered to surface to receive insulation, length to suit insulation thickness and substrate, capable of securely and rigidly fastening insulation in place.

F. Tape seal butt ends, lapped flanges, and tears or cuts in membrane.

G. At wood framing, place vapor retarder on warm side of insulation by stapling at 6 inches on center. Lap and seal sheet retarder joints over face of member.

H. At metal framing, place vapor retarder on warm side of insulation; lap and seal sheet retarder joints over face of member

I. Tape seal tears or cuts in vapor retarder.

J. Extend vapor retarder tightly to full perimeter of adjacent window and door frames and other items interrupting the plane of the membrane; tape seal in place.

K. Coordinate work of this section with requirements for vapor retarder, see Section 072600.

3.03 PROTECTION

A. Do not permit installed insulation to be damaged prior to its concealment.

END OF SECTION

SECTION 072500
INFILTRATION BARRIER

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Vapor Retarders: Materials to make exterior walls and joints around frames of openings in exterior walls water vapor resistant.

B. Air Barriers (Infiltration Barrier): Materials that form a system to stop passage of air through exterior walls and joints around frames of openings in exterior walls.

1.02 RELATED REQUIREMENTS

A. Section 061000 - Rough Carpentry: Water-resistive barrier under exterior cladding.

1.03 REFERENCE STANDARDS

A. ASTM D1970/D1970M - Standard Specification for Self-Adhering Polymer Modified Bituminous Sheet Materials Used as Steep Roofing Underlayment for Ice Dam Protection; 2020.

B. ASTM E96/E96M - Standard Test Methods for Water Vapor Transmission of Materials; 2016.

1.04 SUBMITTALS

A. Product Data: Provide data on material characteristics.

B. Shop Drawings: Provide drawings of special joint conditions.

C. Manufacturer's Installation Instructions: Indicate preparation, installation methods, and storage and handling criteria.

1.05 QUALITY ASSURANCE

A. Preinstallation Conference: meet with the Owner, General Contractor, Architect, Installer, Manufacturer's representative, and isntallers whose work interfaces with the work. Conduct conference at project site.

1.06 MOCK-UPS

A. Install air barrier materials in mock-up specified in Section 072500.

1.07 WARRANTY

A. Provide manufacturer's warranty for flashing and water-resistive barrier systems.
   1. Manufacturer to pay for the cost of the materials and labor to completely resolve problems, including, but not limited to, failure of product to perform to manfacturer's published specifications.
   2. Warranty Period: 10 years from Date of Substantial Completion.

1.08 FIELD CONDITIONS

A. Maintain temperature and humidity recommended by materials manufacturers before, during, and after installation.

PART 2 PRODUCTS

2.01 VAPOR RETARDER MATERIALS (AIR BARRIER AND WATER-RESISTIVE)

A. Vapor Retarder Sheet: ASTM D1970/D1970M.
   1. Type: polyamide film Flame retardant vapor barrier facing consisting of aluminium foil, fiberglass reinforming yarn and natural draft paper laminted with a flame retardant adhesive.
   2. Water Vapor Permeance: 0.05 perm, maximum, when tested in accordance with ASTM E96/E96M.

3. Manufacturers:
   a. FSK-25 BI; Johns Mansville.
   b. Substitutions: Refer to Owner's Front End Specifications.

2.02 ACCESSORIES

A. Sealants, Tapes, and Accessories Used for Sealing Water-Resistive Barrier and Adjacent Substrates: As indicated or complying with water-resistive barrier manufacturer's installation instructions.

B. Membrane Flashing: Self-adhesive sheet flashing complying with ASTM D1970/D1970M, except slip resistance requirement is waived if not installed on a roof.
   1. Composition: SBS Rubberized Asphalt
   2. Thickness: 45 mil, nominal; exception from ASTM D1970.
   3. Products:
      a. Henry; Blueskin SA; www.henry.com.
      b. Substitutions: Refer to Owner's Front End Specifiations.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that surfaces and conditions comply with requirements of this section.

3.02 PREPARATION

A. Remove projections, protruding fasteners, and loose or foreign matter that might interfere with proper installation.

B. Clean and prime substrate surfaces to receive adhesives and sealants in accordance with manufacturer's installation instructions.

3.03 INSTALLATION

A. Install materials in accordance with manufacturer's installation instructions.

B. Apply sealants and adhesives within recommended temperature range in accordance with manufacturer's installation instructions.

3.04 FIELD QUALITY CONTROL

A. Owner’s Inspection and Testing: Cooperate with Owner’s testing agency.
   1. Allow access to work areas and staging.
   2. Notify Owner’s testing agency in writing of schedule for work of this section to allow sufficient time for testing and inspection.
   3. Do not cover work of this section until testing and inspection is accepted.

B. Do not cover installed water-resistive barriers until required inspections have been completed.

C. Obtain approval of installation procedures from water-resistive barrier manufacturer based on a mock-up installed in place, prior to proceeding with remainder of installation.

D. Take digital photographs of each portion of installation prior to covering up weather barriers.

3.05 PROTECTION

A. Do not leave materials exposed to weather longer than recommended by manufacturer.

END OF SECTION

SECTION 079200
JOINT SEALANTS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Nonsag gunnable joint sealants.

B. Joint backings and accessories.

C. Owner-provided field quality control.

1.02 RELATED REQUIREMENTS

A. Section 072500 - INFILTRATION BARRIER: Sealants required in conjunction with water-resistive barriers.

B. Section 092116 - Gypsum Board Assemblies: Sealing acoustical and sound-rated walls and ceilings.

1.03 REFERENCE STANDARDS

A. ASTM C834 - Standard Specification for Latex Sealants; 2017.

B. ASTM C920 - Standard Specification for Elastomeric Joint Sealants; 2018.

C. ASTM C1193 - Standard Guide for Use of Joint Sealants; 2016.

D. ASTM C1330 - Standard Specification for Cylindrical Sealant Backing for Use with Cold Liquid-Applied Sealants; 2018.

E. ASTM C1521 - Standard Practice for Evaluating Adhesion of Installed Weatherproofing Sealant Joints; 2019 (Reapproved 2020).

1.04 SUBMITTALS

A. Product Data for Sealants: Submit manufacturer's technical data sheets for each product to be used, that includes the following.
   1. Physical characteristics, including movement capability, VOC content, hardness, cure time, and color availability.
   2. List of backing materials approved for use with the specific product.
   3. Substrates that product is known to satisfactorily adhere to and with which it is compatible.
   4. Substrates the product should not be used on.

B. Product Data for Accessory Products: Submit manufacturer's technical data sheet for each product to be used, including physical characteristics, installation instructions, and recommended tools.

C. Color Cards for Selection: Where sealant color is not specified, submit manufacturer's color cards showing standard colors available for selection.

1.05 QUALITY ASSURANCE

A. Manufacturer Qualifications: Company specializing in manufacturing the products specified in this section with minimum five years documented experience.

B. Installer Qualifications: Company specializing in performing the work of this section and with at least five years of documented experience.

C. Owner will employ an independent testing agency to perform the field quality control inspection and testing as referenced in PART 3 of this section and as follows, to prepare and submit the field quality control plan and log, and to provide recommendations of remedies in the case of failure.
   1. Contractor shall cooperate with testing agency and repair failures discovered and destructive test location damage.

D. Field Quality Control Plan:
   1. Visual inspection of entire length of sealant joints.
   2. Destructive field adhesion testing of sealant joints, except interior acrylic latex sealant.
      a. For each different sealant and substrate combination, allow for one test every 100 feet in the first 1000 linear feet, and one test per 1000 linear feet thereafter, or once per floor on each elevation.
      b. If any failures occur in the first 1000 linear feet, continue testing at frequency of one test per 500 linear feet at no extra cost to Owner.
   3. Field Quality Control Log Form: Show same data fields as on Preinstallation Field Adhesion Test Log, with known information filled out and lines for multiple tests per sealant/substrate combinations; include visual inspection and specified field testing; allow for possibility that more tests than minimum specified may be necessary.

E. Field Adhesion Test Procedures:
   1. Allow sealants to fully cure as recommended by manufacturer before testing.
   2. Have a copy of the test method document available during tests.
   3. Record the type of failure that occurred, other information required by test method, and the information required on the Field Quality Control Log.
   4. When performing destructive tests, also inspect the opened joint for proper installation characteristics recommended by manufacturer, and report any deficiencies.
   5. Deliver the samples removed during destructive tests in separate sealed plastic bags, identified with project, location, test date, and test results, to Owner.
   6. If any combination of sealant type and substrate does not show evidence of minimum adhesion or shows cohesion failure before minimum adhesion, report results to Architect.

F. Test Method: Test joint sealants according to Method A, Field-Applied Sealant Joint Hand Pull Tab, in Appendix X1.1 in ASTM C1193 or Method A, Tail Procedure in ASTM C1521

G. Destructive Field Adhesion Test: Test for adhesion in accordance with ASTM C1521, using Destructive Tail Procedure.
   1. Sample: At least 18 inches long.
   2. Minimum Elongation Without Adhesive Failure: Consider the tail at rest, not under any elongation stress; multiply the stated movement capability of the sealant in percent by two; then multiply 1 inch by that percentage; if adhesion failure occurs before the "1 inch mark" is that distance from the substrate, the test has failed.
   3. If either adhesive or cohesive failure occurs prior to minimum elongation, take necessary measures to correct conditions and re-test; record each modification to products or installation procedures.
   4. Record results on Field Quality Control Log.
   5. Repair failed portions of joints.

1.06 WARRANTY

A. Manufacturer's standard form in which joint-sealant manufacturer agrees to furnishjoint sealants to repair or replace those that do not comply with performance and other requirements specified in this section within specified warranty period.
   1. Warranty Period for Silicone Sealants: 20 years from date of Substantial Completion.
   2. Warranty Period for Polyurea Sealants: 1 years from date of Substantial Completion.
   3. Warranty Period for All Other Sealants: 5 years from date of Substantial Completion.

PART 2 PRODUCTS

2.01 JOINT SEALANTS - GENERAL

A. Colors: As selected by Architect from standard product range.

2.02 NONSAG JOINT SEALANTS

A. Type 1 - Single component, nonsag, Non-Staining Silicone Sealant: ASTM C920, Type S, Grade NS, Class 50, for use NT; not expected to withstand continuous water immersion or traffic.
   1. Color: Match adjacent finished surfaces.
   2. Location: Control, expansion and isolation joints in steel or aluminum.
   3. Manufacturers:
      a. Dow; DOWSIL 795 Silicone Building Sealant: www.dow.com/#sle.
      b. Pecora Corporation; 864: www.pecora.com/#sle.
      c. Sika Corporation; Sikasil WS-295: www.usa.sika.com/#sle.
      d. Tremco Commercial Sealants & Waterproofing; Spectrem 2: www.tremcosealants.com/#sle.
      e. Substitutions: Refore to Owner's Front End Specifications.

B. Type 2 - Single component, nonsag, Non-Staining Silicone Sealant: ASTM C920, Type S, Grade NS, Class 100/50, for use NT
   1. Color: Match adjacent finished surfaces.
   2. Cure Type: Single-component, neutral moisture curing.
   3. Location:
      a. Exterior joints in vertical and nontraffic surfaces, unless otherwise indicated.
      b. Vertical control and expansion joints on exposed interior surfaces of exterior walls.
      c. Interior perimeter joints of exterior openings.
   4. Sanding of Joints: Provide sanded joints at joints occuring in concrete and masonry surfaces
   5. Stain-Test-Response Characteristics: Nonstaining to porous substrates per ASTM C1248.
   6. Manufacturers:
      a. Dow Chemical Company; 790 Silicone Building Sealant: consumer.dow.com/en-us/industry/ind-building-construction.html/#sle.
      b. Pecora Corporation; 890: www.pecora.com/#sle.
      c. Tremco Commercial Sealants & Waterproofing; Spectrem 1: www.tremcosealants.com/#sle.
      d. Substitutions: Refer to Owner's Front End Specifications.

C. Type 3 - Mildew-Resistant Silicone Sealant: Single Component, ASTM C920, Grade NS, Uses NT; Class 25
   1. Color: Clear.
   2. Location:
      a. Interior joints between plumbing fixtures and adjoining walls, floors and counters.
      b. Interior joints between cabinetry and counters and adjoining walls.
   3. Manufacturers:
      a. Dow Corning Corporation; DOWSIL 786 Mildew Resistant Silicone Building Sealant.
      b. Momentive Performance Materials; Sanitary SCS1700
      c. Pecora Corporation; 898
      d. Sika Corporation, Construction Products Divison, Sikasil GP
      e. Tremco Commercial Sealants & Waterproofing; Tremsil 200 Sanitary or Tremsil 600
      f. Substitutions: Refer to Owner's Front End Specifications.

D. Type 4 - Silicone USDA Approved Sealant: Single Component, ASTM C920, Type S, Grade NS, Uses NT; Class 25
   1. Color: Clear.
   2. Location:
      a. Interior joints between plumbing fixtures and adjoining walls, floors and counters.
      b. Interior joints between cabinetry and counters and adjoining walls.

3. Manufacturers:
   a. Dow Corning Corporation; DOWSIL 786 Mildew Resistant Silicone Building Sealant.
   b. Momentive Performance Materials; Sanitary SCS1002
   c. Pecora Corporation; 898
   d. Sika Corporation, Construction Products Divison, Sikasil-N-Plus
   e. Tremco Commercial Sealants & Waterproofing; Tremsil 600
   f. Substitutions: Refer to Owner's Front End Specifications.

E. Type 5 - Single component, nonsag, Urethane Joint Sealant: ASTM C920, Type S, Grade NS, Class 50, for use NT
   1. Color: Match adjacent finished surfaces.
   2. Location:
      a. Within the field of fiber cement siding.
      b. Interior painted concrete and unit masonry surfaces.
   3. Sanding of Joints: Provide sanded joints at joints occuring in concrete and masonry surfaces
   4. Stain-Test-Response Characteristics: Nonstaining to porous substrates per ASTM C1248.
   5. Manufacturers:
      a. Dow Chemical Company; 790 Silicone Building Sealant: consumer.dow.com/en-us/industry/ind-building-construction.html/#sle.
      b. Pecora Corporation; 890: www.pecora.com/#sle.
      c. Tremco Commercial Sealants & Waterproofing; Spectrem 1: www.tremcosealants.com/#sle.
      d. Substitutions: Refer to Owner's Front End Specifcations.

F. Type 6 - Acrylic Latex: ASTM C834, Type OP, Grade NF,single component, non-staining, non-bleeding, non-sagging; not intended for exterior use.
   1. Color: Standard colors matching finished surfaces, Type OP (opaque).
   2. Grade: ASTM C834; Grade 0 Degrees F (Minus 18 Degrees C).
   3. Location: Perimeter joints between interior wall surfaces and frames of interior doors and elevator entrances.
   4. Manufacturers:
      a. Pecora Corporation; AC-20+: www.pecora.com/#sle.
      b. Tremco Commercial Sealants & Waterproofing; Tremflex 834: www.tremcosealants.com/#sle.
      c. Substitutions: Refer to Owner's Front End Specifications.

2.03 ACCESSORIES

A. Backer Rod: Cylindrical cellular foam rod with surface that sealant will not adhere to, compatible with specific sealant used, and recommended by backing and sealant manufacturers for specific application.
   1. Type for Joints Not Subject to Pedestrian or Vehicular Traffic: ASTM C1330; Type C - Closed Cell Polyethylene.
   2. Closed Cell and Bi-Cellular: 25 to 33 percent larger in diameter than joint width.
   3. Manufacturers:
      a. MasterSeal 921; www.master-builders-solutions.basf.us.
      b. Substitutions: Refer to Owner's Front End Specifications.

B. Backing Tape: Self-adhesive polyethylene tape with surface that sealant will not adhere to and recommended by tape and sealant manufacturers for specific application.

C. Masking Tape: Self-adhesive, nonabsorbent, non-staining, removable without adhesive residue, and compatible with surfaces adjacent to joints and sealants.

D. Joint Cleaner: Non-corrosive and non-staining type, type recommended by sealant manufacturer; compatible with joint forming materials.

E. Primers: Type recommended by sealant manufacturer to suit application; non-staining.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that joints are ready to receive work.

B. Verify that backing materials are compatible with sealants.

C. Verify that backer rods are of the correct size.

3.02 PREPARATION

A. Remove loose materials and foreign matter that could impair adhesion of sealant.

B. Clean joints, and prime as necessary, in accordance with manufacturer's instructions.

C. Perform preparation in accordance with manufacturer's instructions and ASTM C1193.

D. Mask elements and surfaces adjacent to joints from damage and disfigurement due to sealant work; be aware that sealant drips and smears may not be completely removable.

E. Concrete Floor Joints That Will Be Exposed in Completed Work: Test joint filler in inconspicuous area to verify that it does not stain or discolor slab.

3.03 INSTALLATION

A. Perform work in accordance with sealant manufacturer's requirements for preparation of surfaces and material installation instructions.

B. Perform installation in accordance with ASTM C1193.

C. Install bond breaker backing tape where backer rod cannot be used.

D. Install sealant free of air pockets, foreign embedded matter, ridges, and sags, and without getting sealant on adjacent surfaces.

E. Do not install sealant when ambient temperature is outside manufacturer's recommended temperature range, or will be outside that range during the entire curing period, unless manufacturer's approval is obtained and instructions are followed.

F. Nonsag Sealants: Tool surface concave, unless otherwise indicated; remove masking tape immediately after tooling sealant surface.

G. Sanding Joint Sealants; At concrete surfaces and masonry surfaces, sand sealant joints full height of wall as follows:
   1. Dry tool the sealant assuring a minimum selant thickness of 1/4 inch in the middle of the joint.
   2. Before the sealant has skinned, deposit the selecte dry sand particles to the tacky sealant surface usingwhatever method is site appropriate (casting, tossing, air-blowing). Catch the excess particles, if possible, for reuse. Start at the lower levels and work up to minimize substrate contamination below.
   3. Compress the particles into the surface of the un-skinned sealant to a depth of not greater than 1/16 inch using a dry tool or other technique.
   4. Allow the joint sealant to cure a minimum of seven days before testing the adhesion of the particles to the sealant or the sealant to the substrate.

3.04 FIELD QUALITY CONTROL

A. Owner will employ an independent testing agency to perform field quality control inspection and testing as specified in PART 1 under QUALITY ASSURANCE article.

B. Destructive Adhesion Testing: If there are any failures in first 1000 linear feet, notify Architect immediately.

C. Remove and replace failed portions of sealants using same materials and procedures as indicated for original installation.

D. Repair destructive test location damage immediately after evaluation and recording of results.

END OF SECTION

SECTION 081416
FLUSH WOOD DOORS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Flush wood doors; flush and flush glazed configuration; non-rated.

1.02 RELATED REQUIREMENTS

A. Section 087100 - Door Hardware.

B. Section 088000 - Glazing.

1.03 REFERENCE STANDARDS

A. ANSI A208.1 - American National Standard for Particleboard; 2016.

B. AWI/AWMAC/WI (AWS) - Architectural Woodwork Standards, 2nd Edition; 2014, with Errata (2016).

C. AWMAC/WI (NAAWS) - North American Architectural Woodwork Standards, U.S. Version 4.0; 2021.

D. NFPA 80 - Standard for Fire Doors and Other Opening Protectives; 2019.

E. NFPA 105 - Standard for Smoke Door Assemblies and Other Opening Protectives; 2019.

F. WDMA I.S. 1A - Interior Architectural Wood Flush Doors; 2013.

1.04 SUBMITTALS

A. Shop Drawings: Show doors and frames, elevations, sizes, types, swings, undercuts, beveling, blocking for hardware, factory machining, factory finishing, cutouts for glazing and other details.

B. Samples: Submit two samples of door construction, 4x4 inch in size cut from top corner of door.

C. Warranty, executed in Owner's name.

1.05 QUALITY ASSURANCE

A. Manufacturer Qualifications: Company specializing in manufacturing the products specified in this section, with not less than five years of documented experience.
   1. Company with at least one project within past five years with value of woodwork within at least 20 percent of cost of woodwork for this project.

B. Installer Qualifications: Company specializing in performing work of the type specified in this section, with not less than five years of documented experience.

1.06 DELIVERY, STORAGE, AND HANDLING

A. Package, deliver and store doors in accordance with specified quality standard.

B. Accept doors on site in manufacturer's packaging, and inspect for damage.

C. Protect doors with resilient packaging sealed with heat shrunk plastic; do not store in damp or wet areas or areas where sunlight might bleach veneer; seal top and bottom edges with tinted sealer if stored more than one week, and break seal on site to permit ventilation.

1.07 WARRANTY

A. Interior Doors: Provide manufacturer's warranty for 2 years.

B. Include coverage for delamination of veneer, warping beyond specified installation tolerances, defective materials, and telegraphing core construction.
   1. Warrnty shall also include installation and finishing that may be required due to repair or replacement of defective doors.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Wood Veneer Faced Doors:
   1. Eggers Industries: www.eggersindustries.com/#sle.
   2. Algoma Hardwoods; www.algomahardwoods.com
   3. Marshfield Door Systems, Inc: www.marshfielddoors.com.
   4. Oregon Door; Architectural Series: www.oregondoor.com.
   5. Lynden Door.
   6. Oshkosh Door Company; www.oshcoshdoor.com
   7. Vancouver Door Company; www.vancouverdoorco.com
   8. VT Industries, Inc; www.vtindustries.com
   9. Substitutions: See General Conditions.

2.02 DOORS AND PANELS

A. Doors: See drawings for locations and additional requirements.
   1. Quality Standard: Custom Grade, Extra Heavy Duty performance, in accordance with WDMA I.S. 1A.
   2. Wood Veneer Faced Doors: 5-ply unless otherwise indicated.Stiles and rails are bonded to core, then entire unit abrasive planed before veneering. Faces are bonded to core using a hot press.

B. Interior Doors: 1-3/4 inches thick unless otherwise indicated; flush construction.
   1. Provide solid core doors at all locations.
   2. Wood veneer facing for field transparent finish to match existing doors.

2.03 DOOR AND PANEL CORES

A. Non-Rated Solid Core: Type particleboard core (PC), plies and faces as indicated.

B. Non-Rated and 20 Minute Rated Doors: ANSI A208.1 Grade LD-2, plies and faces as indicated, made with binder containing no added ureaformaldeyde resin or provide certification for low chemical emissions complying with CA 0135.
   1. Provide structural composite lumber core for full glazed doors.

2.04 DOOR FACINGS

A. Veneer Facing for Transparent Finish: Oak or Birch, veneer grade in accordance with quality standard indicated, flat cut, with book match between leaves of veneer, running match of spliced veneer leaves assembled on door or panel face.
   1. Vertical Edges: Any option allowed by quality standard for grade.
   2. "Running Match" each pair of doors and doors in close proximity to each other.
   3. "Pair Match" each pair of doors; "Set Match" pairs of doors within 10 feet of each other when doors are closed.

B. Veneer Facing for Opaque Finish: Medium density overlay (MDO), in compliance with indicated quality standard. Refer to finish schedule for doors noted to be painted.

C. Facing Adhesive: Type I - waterproof.

2.05 DOOR CONSTRUCTION

A. Fabricate doors in accordance with door quality standard specified.

B. Cores Constructed with stiles and rails:
   1. Provide solid blocks at lock edge for hardware reinforcement.
   2. Provide solid blocking for other throughbolted hardware.

C. Factory machine doors for hardware other than surface-mounted hardware, in accordance with hardware requirements and dimensions.

D. Factory fit doors for frame opening dimensions identified on shop drawings, with edge clearances in accordance with specified quality standard.
   1. Exception: Doors to be field finished.

E. Provide edge clearances in accordance with the quality standard specified.

2.06 FINISHING - WOOD VENEER DOORS

A. Finish work in accordance with AWI/AWMAC/WI (AWS) or AWMAC/WI (NAAWS), Section 5 - Finishing for grade specified and as follows:
   1. Transparent:
      a. System - 9, UV Curable, Acrylated Epoxy, Polyester or Urethane.
      b. Stain: As selected by Architect. Birch Uniform Light.
      c. Sheen: Satin.

B. Seal door top edge with color sealer to match door facing.

C. Refer to finish schedule for doors to be field finished with paint.

2.07 ACCESSORIES

A. Wood Door Frames: See Section 062000.

B. Glazing Stops: Rolled steel channel shape, mitered corners; prepared for countersink style tamper proof screws.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify existing conditions before starting work.

B. Verify that opening sizes and tolerances are acceptable.

C. Do not install doors in frame openings that are not plumb or are out-of-tolerance for size or alignment.

3.02 INSTALLATION

A. Install doors in accordance with manufacturer's instructions and specified quality standard.
   1. Install fire-rated doors in accordance with NFPA 80 requirements.
   2. Install smoke and draft control doors in accordance with NFPA 105 requirements.

B. Field-Finished Doors: Trimming to fit is acceptable.
   1. Adjust width of non-rated doors by cutting equally on both jamb edges.
   2. Trim maximum of 3/4 inch off bottom edges.

C. Use machine tools to cut or drill for hardware.

D. Coordinate installation of doors with installation of frames and hardware.

E. Coordinate installation of glazing.

F. Install door louvers plumb and level.

3.03 TOLERANCES

A. Comply with specified quality standard for fit and clearance tolerances.

B. Comply with specified quality standard for telegraphing, warp, and squareness.

3.04 ADJUSTING

A. Adjust doors for smooth and balanced door movement.

B. Adjust closers for full closure.

3.05 SCHEDULE

A. Refer to Door and Frame Schedule on Drawings.

END OF SECTION

SECTION 083100
ACCESS DOORS AND PANELS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Wall mounted access units.

B. Ceiling mounted access units.

1.02 RELATED REQUIREMENTS

A. Section 099123 - INTERIOR PAINTING: Field paint finish.

1.03 SUBMITTALS

A. Product Data: Provide sizes, types, finishes, hardware, scheduled locations, and details of adjoining work.

B. Shop Drawings: Indicate exact position of each access door and/or panel unit.

C. Manufacturer's Installation Instructions: Indicate installation requirements.

D. Project Record Documents: Record actual locations of each access unit.

1.04 QUALITY ASSURANCE

A. Manufacturer Qualifications: Company specializing in manufacturing the products specified in this section with minimum five years documented experience.

B. Installer Qualifications: Company specializing in performing work of the type specified and with at least five years documented experience.

PART 2 PRODUCTS

2.01 ACCESS DOORS AND PANELS ASSEMBLIES

A. Wall-Mounted Units:
   1. Panel Material: Stainless steel. Type304.
   2. Size: 12 by 12 inches.
   3. Door/Panel: Hinged, standard duty, with tool-operated spring or cam lock and no handle.
   4. Gypsum Board Mounting Criteria: Provide drywall bead frame with door surface flush with wall surface.

B. Wall-Mounted Units in Wet Areas:
   1. Panel Material: Stainless steel, Type 304.
   2. Size: 12 by 12 inches.
   3. Door/Panel: Hinged, standard duty, with tool-operated spring or cam lock and no handle.
   4. Gypsum Board Mounting Criteria: Provide drywall bead frame with door surface flush with wall surface.

C. Ceiling-Mounted Units:
   1. Location: As indicated on drawings.
   2. Panel Material: Stainless steel, Type 304.
   3. Size - Lay-In Grid Ceilings: To match module of ceiling grid.
   4. Size - Other Ceilings: 3'-0" by 3'-0" inches.
   5. Door/Panel: Hinged, standard duty, with tool-operated spring or cam lock and no handle.

2.02 WALL AND CEILING MOUNTED ACCESS UNITS

A. Manufacturers:
   1. Milcor, Inc: www.milcorinc.com.
   2. Nystrom, Inc: www.nystrom.com/sle.
   3. Substitutions: Refer to Owner's Front End Specifications.

B. Wall and Ceiling Mounted Units: Factory fabricated door and frame, fully assembled units with corner joints welded, filled and ground flush; square and without rack or warp; coordinate requirements with type of installation assembly being used for each unit.
   1. Style: Exposed frame with door surface flush with frame surface.
      a. Gypsum Board Mounting Criteria: Use drywall bead type frame.
   2. Door Style: Single thickness with rolled or turned in edges.
   3. Frames: 16 gauge, 0.0598 inch, minimum thickness.
   4. Single Steel Sheet Door Panels: 1/16 inch, minimum thickness.
   5. Steel Finish: Primed.
   6. Stainless Steel Finish: No. 4 brushed finish.
   7. Hardware:
      a. Hinges for Non-Fire-Rated Units: Concealed, constant force closure spring type.
      b. Latch/Lock: Screw driver slot for quarter turn cam latch.
      c. Gasketing: Extruded neoprene, around perimeter of door panel.

2.03 WALL MOUNTED ACCESS UNITS

A. Gypsum Board Inlay Access Panels: Provide rectangular and square access panel with recessed and gasketed aluminum perimeter frame that acts as finishing edge and having concealed mechanical touch-latch with safety cable and free-pivoting hinge.
   1. Rectangular Panel Frame Size: 24 by 36 inches set within 1/2 inch thick gypsum board.
   2. Square Panel Frame Size: 24 by 24 inches set within 1/2 inch thick gypsum board.
   3. Panel Frame: 1 inch margin with concealed countersunk screw mounting.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that rough openings are correctly sized and located.

B. Begin installation only after substrates have been properly prepared, and if the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.

3.02 PREPARATION

A. Clean surfaces thoroughly prior to proceeding with this work.

B. Prepare surfaces using methods recommended by manufacturer for applicable substrates in accordance with project conditions.

3.03 INSTALLATION

A. Install units in accordance with manufacturer's instructions.

B. Install frames plumb and level in openings, and secure units rigidly in place.

C. Position units to provide convenient access to concealed equipment when necessary.

END OF SECTION

SECTION 090561
COMMON WORK RESULTS FOR FLOORING PREPARATION

PART 1 GENERAL

1.01 SECTION INCLUDES

A. This section applies to floors identified in Contract Documents that are receiving the following types of floor coverings:
   1. Resilient tile and sheet.
   2. Vinyl flooring (Tile or sheet)

B. Removal of existing floor coverings.

C. Preparation of new and existing concrete floor slabs for installation of floor coverings.

D. Testing of concrete floor slabs for moisture.

E. Remediation of concrete floor slabs due to unsatisfactory moisture conditions.
   1. Contractor shall perform all specified remediation of concrete floor slabs. If such remediation is indicated by testing agency's report and is due to a condition not under Contractor's control or could not have been predicted by examination prior to entering into the contract, a contract modification will be issued.

F. Patching compound.

G. Remedial floor coatings.

1.02 RELATED REQUIREMENTS

A. Section 033000 - Cast-in-Place Concrete: Moisture emission reducing curing and sealing compound for slabs to receive adhered flooring, to prevent moisture content-related flooring failures; to remain in place, not to be removed.

1.03 REFERENCE STANDARDS

A. ASTM C109/C109M - Standard Test Method for Compressive Strength of Hydraulic Cement Mortars (Using 2-in. or [50 mm] Cube Specimens); 2021.

B. ASTM C472 - Standard Test Methods for Physical Testing of Gypsum, Gypsum Plasters and Gypsum Concrete; 2020.

C. ASTM F1869 - Standard Test Method for Measuring Moisture Vapor Emission Rate of Concrete Subfloor Using Anhydrous Calcium Chloride; 2016a.

D. ASTM F2170 - Standard Test Method for Determining Relative Humidity in Concrete Floor Slabs Using in situ Probes; 2019a.

1.04 SUBMITTALS

A. Visual Observation Report: For existing floor coverings to be removed.

B. Floor Covering and Adhesive Manufacturers' Product Literature: For each specific combination of substrate, floor covering, and adhesive to be used; showing:
   1. Moisture and alkalinity (pH) limits and test methods.
   2. Manufacturer's required bond/compatibility test procedure.

C. Remedial Materials Product Data: Manufacturer's published data on each product to be used for remediation.
   1. Manufacturer's qualification statement.
   2. Manufacturer's statement of compatibility with types of flooring applied over remedial product.
   3. Test reports indicating compliance with specified performance requirements, performed by nationally recognized independent testing agency.
   4. Manufacturer's installation instructions.

5. Specimen Warranty: Copy of warranty to be issued by coating manufacturer and certificate of underwriter's coverage of warranty.

D. Testing Agency's Report:
1. Description of areas tested; include floor plans and photographs if helpful.
2. Summary of conditions encountered.
3. Moisture and alkalinity (pH) test reports.
4. Copies of specified test methods.
5. Recommendations for remediation of unsatisfactory surfaces.
6. Submit report to Architect.
7. Submit report not more than two business days after conclusion of testing.

E. Adhesive Bond and Compatibility Test Report.

1.05 QUALITY ASSURANCE

A. Moisture and alkalinity (pH) testing shall be performed by an independent testing agency employed and paid by Contractor.

B. Contractor may perform adhesive and bond test with Contractor's own personnel or hire a testing agency.

C. Testing Agency Qualifications: Independent testing agency experienced in the types of testing specified.
1. Submit evidence of experience consisting of at least 3 test reports of the type required, with project Owner's project contact information.

D. Contractor's Responsibility Relating to Independent Agency Testing:
1. Provide access for and cooperate with testing agency.
2. Confirm date of start of testing at least 10 days prior to actual start.
3. Allow at least 4 business days on site for testing agency activities.
4. Achieve and maintain specified ambient conditions.
5. Notify Architect when specified ambient conditions have been achieved and when testing will start.

1.06 DELIVERY, STORAGE, AND HANDLING

A. Deliver, store, handle, and protect products in accordance with manufacturer’s instructions and recommendations.

B. Deliver materials in manufacturer’s packaging; include installation instructions.

C. Keep materials from freezing.

1.07 FIELD CONDITIONS

A. Maintain ambient temperature in spaces where concrete testing is being performed, and for at least 48 hours prior to testing, at not less than 65 degrees F or more than 85 degrees F.

B. Maintain relative humidity in spaces where concrete testing is being performed, and for at least 48 hours prior to testing, at not less than 40 percent and not more than 60 percent.

PART 2 PRODUCTS

2.01 MATERIALS

A. Patching Compound: Floor covering manufacturer's recommended product, suitable for conditions, and compatible with adhesive and floor covering. In the absence of any recommendation from flooring manufacturer, provide a product with the following characteristics:
1. Cementitious moisture-, mildew-, and alkali-resistant compound, compatible with floor, floor covering, and floor covering adhesive, and capable of being feathered to nothing at edges.

2. Compressive Strength: 3000 psi, minimum, after 28 days, when tested in accordance with ASTM C109/C109M or ASTM C472, whichever is appropriate.

B. Alternate Flooring Adhesive: Floor covering manufacturer's recommended product, suitable for the moisture and pH conditions present; low-VOC. In the absence of any recommendation from flooring manufacturer, provide a product recommended by adhesive manufacturer as suitable for substrate and floor covering and for conditions present.

C. Remedial Floor Coating: Single- or multi-layer coating or coating/overlay combination intended by its manufacturer to resist water vapor transmission to degree sufficient to meet flooring manufacturer's emission limits, resistant to the level of alkalinity (pH) found, and suitable for adhesion of flooring without further treatment.
1. Thickness: As required for application and in accordance with manufacturer's installation instructions.
2. Products:
   a. ARDEX Engineered Cements; ARDEX MC RAPID: www.ardexamericas.com.
   b. Substitutions: Refer to Owner's Front End Specifications.

PART 3 EXECUTION

3.01 CONCRETE SLAB PREPARATION

A. Perform following operations in the order indicated:
1. Existing concrete slabs (on-grade and elevated) with existing floor coverings:
   a. Visual observation of existing floor covering, for adhesion, water damage, alkaline deposits, and other defects.
   b. Removal of existing floor covering.
2. Existing concrete slabs with coatings or penetrating sealers/hardeners/dustproofers:
3. Preliminary cleaning.
4. Moisture vapor emission tests; 3 tests in the first 1000 square feet and one test in each additional 1000 square feet, unless otherwise indicated or required by flooring manufacturer.
5. Internal relative humidity tests; in same locations as moisture vapor emission tests, unless otherwise indicated.
6. Alkalinity (pH) tests; in same locations as moisture vapor emission tests, unless otherwise indicated.
7. Specified remediation, if required.
8. Patching, smoothing, and leveling, as required.
9. Other preparation specified.
10. Adhesive bond and compatibility test.
11. Protection.

B. Remediations:
1. Active Water Leaks or Continuing Moisture Migration to Surface of Slab: Correct this condition before doing any other remediation; re-test after correction.
2. Excessive Moisture Emission or Relative Humidity: If an adhesive that is resistant to the level of moisture present is available and acceptable to flooring manufacturer, use that adhesive for installation of the flooring; if not, apply remedial floor coating or remedial sheet membrane over entire suspect floor area.
3. Excessive Alkalinity (pH): If remedial floor coating is necessary to address excessive moisture, no additional remediation is required; if not, if an adhesive that is resistant to the level present is available and acceptable to the flooring manufacturer, use that adhesive for installation of the flooring; otherwise, apply a skim coat of specified patching compound over entire suspect floor area.

3.02 REMOVAL OF EXISTING FLOOR COVERINGS

A. Comply with local, State, and federal regulations and recommendations of RFCI Recommended Work Practices for Removal of Resilient Floor Coverings, as applicable to floor covering being removed.

B. Dispose of removed materials in accordance with local, State, and federal regulations and as specified.

3.03 PRELIMINARY CLEANING

A. Clean floors of dust, solvents, paint, wax, oil, grease, asphalt, residual adhesive, adhesive removers, film-forming curing compounds, sealing compounds, alkaline salts, excessive laitance, mold, mildew, and other materials that might prevent adhesive bond.

B. Do not use solvents or other chemicals for cleaning.

3.04 MOISTURE VAPOR EMISSION TESTING

A. Where the floor covering manufacturer's requirements conflict with either the referenced test method or this specification, comply with the manufacturer's requirements.

B. Where this specification conflicts with the referenced test method, comply with the requirements of this section.

C. Test in accordance with ASTM F1869 and as follows.

D. Plastic sheet test and mat bond test may not be substituted for the specified ASTM test method, as those methods do not quantify the moisture content sufficiently.

E. In the event that test values exceed floor covering manufacturer's limits, perform remediation as indicated. In the absence of manufacturer limits, perform remediation if test values exceed 3 pounds per 1000 square feet per 24 hours.

F. Report: Report the information required by the test method.

3.05 INTERNAL RELATIVE HUMIDITY TESTING

A. Where the floor covering manufacturer's requirements conflict with either the referenced test method or this specification, comply with the manufacturer's requirements.

B. Where this specification conflicts with the referenced test method, comply with the requirements of this section.

C. Test in accordance with ASTM F2170 Procedure A and as follows.

D. Testing with electrical impedance or resistance apparatus may not be substituted for the specified ASTM test method, as the values determined are not comparable to the ASTM test values and do not quantify the moisture content sufficiently.

E. In the event that test values exceed floor covering manufacturer's limits, perform remediation as indicated. In the absence of manufacturer limits, perform remediation if any test value exceeds 75 percent relative humidity.

F. Report: Report the information required by the test method.

3.06 ALKALINITY TESTING

A. Where the floor covering manufacturer's requirements conflict with either the referenced test method or this specification, comply with the manufacturer's requirements.

B. In the event that test values exceed floor covering manufacturer's limits, perform remediation as indicated. In the absence of manufacturer limits, perform remediation if alkalinity (pH) test value is over 10.

3.07 PREPARATION

A. See individual floor covering section(s) for additional requirements.

B. Comply with requirements and recommendations of floor covering manufacturer.

C. Fill and smooth surface cracks, grooves, depressions, control joints and other non-moving joints, and other irregularities with patching compound.

D. Do not fill expansion joints, isolation joints, or other moving joints.

3.08 ADHESIVE BOND AND COMPATIBILITY TESTING

A. Comply with requirements and recommendations of floor covering manufacturer.

3.09 APPLICATION OF REMEDIAL FLOOR COATING

A. Comply with requirements and recommendations of coating manufacturer.

3.10 INSTALLATION OF REMEDIAL FLOOR SHEET MEMBRANE

A. Install in accordance with sheet membrane manufacturer's instructions.

3.11 PROTECTION

A. Cover prepared floors with building paper or other durable covering.

END OF SECTION

SECTION 092116
GYPSUM BOARD ASSEMBLIES

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Gypsum wallboard.

B. Joint treatment and accessories.

1.02 RELATED REQUIREMENTS

A. Section 061000 - Rough Carpentry: Building framing and sheathing.

B. Section 079200 - Joint Sealants: Sealing acoustical gaps in construction other than gypsum board or plaster work.

1.03 REFERENCE STANDARDS

A. ANSI A108.11 - American National Standard Specifications for Interior Installation of Cementitious Backer Units; 2018.

B. ASTM C475/C475M - Standard Specification for Joint Compound and Joint Tape for Finishing Gypsum Board; 2017.

C. ASTM C514 - Standard Specification for Nails for the Application of Gypsum Board; 2004 (Reapproved 2020).

D. ASTM C840 - Standard Specification for Application and Finishing of Gypsum Board; 2020.

E. ASTM C1047 - Standard Specification for Accessories For Gypsum Wallboard and Gypsum Veneer Base; 2019.

F. ASTM C1396/C1396M - Standard Specification for Gypsum Board; 2017.

G. ASTM D3273 - Standard Test Method for Resistance to Growth of Mold on the Surface of Interior Coatings in an Environmental Chamber; 2021.

H. GA-216 - Application and Finishing of Gypsum Panel Products; 2018.

1.04 SUBMITTALS

A. Product Data: Provide data on gypsum board, accessories, and joint finishing system.

B. Product Data: Provide manufacturer's data on partition head to structure connectors, showing compliance with requirements.

PART 2 PRODUCTS

2.01 BOARD MATERIALS

A. Manufacturers - Gypsum-Based Board:
   1. American Gypsum Company: www.americangypsum.com.
   2. CertainTeed Corporation: www.certainteed.com.
   3. Georgia-Pacific Gypsum: www.gpgypsum.com/#sle.
   4. USG Corporation: www.usg.com.
   5. Substitutions: refer to Owner's Front End Specifications.

B. Gypsum Wallboard: Paper-faced gypsum panels as defined in ASTM C1396/C1396M; sizes to minimize joints in place; ends square cut.
   1. Application: Use for vertical surfaces and ceilings, unless otherwise indicated.
   2. Mold Resistance: Score of 10, when tested in accordance with ASTM D3273.
      a. Mold-resistant board is required whenever board is being installed before the building is enclosed and conditioned.
      b. Mold resistant board is required at walls and ceilings in kitchen areas, toilet rooms where not indicated to recieve tile, custodial rooms, laundry rooms, adjacent to drink fountains, HVAC shafts, elevator shafts and elsewhere as indicated..

3. At Assemblies Indicated with Fire-Resistance Rating: Use type required by indicated tested assembly; if no tested assembly is indicated, use Type X board, UL or WH listed.
4. Thickness:
   a. Vertical Surfaces: 5/8 inch.
   b. Ceilings: 5/8 inch.
   c. Multi-Layer Assemblies: 5/8 inch, unless indicated otherwise on drawings.
   d. Edges: Tapered
5. Paper-Faced Products:
   a. Georgia-Pacific Gypsum; ToughRock: www.gpgypsum.com/#sle.
   b. Georgia-Pacific Gypsum; ToughRock Fireguard X: www.gpgypsum.com/#sle.
   c. Substitutions: Refer to Owner's Front End Specifications.
6. Mold Resistant Paper Faced Products:
   a. American Gypsum Company; M-Bloc: www.americangypsum.com/#sle.
   b. Georgia-Pacific Gypsum; ToughRock Mold-Guard: www.gpgypsum.com/#sle.
   c. Georgia-Pacific Gypsum; ToughRock Fireguard X Mold-Guard: www.gpgypsum.com/#sle.
   d. National Gypsum Company; Gold Bond XP Gypsum Board: www.nationalgypsum.com/#sle.
   e. Substitutions: Refer to Owner's Front End Specifications.

C. Ceiling Board: Special sag resistant gypsum ceiling board as defined in ASTM C1396/C1396M; sizes to minimize joints in place; ends square cut.
1. Application: Ceilings, unless otherwise indicated.
2. Thickness: 5/8 inch.
3. Edges: Tapered.
4. Products:
   a. Georgia-Pacific Gypsum; ToughRock Span 24 Ceiling Board: www.gpgypsum.com/#sle.
   b. Substitutions: Refer to Owner's Front End Specifications.

2.02 GYPSUM WALLBOARD ACCESSORIES

A. Beads, Joint Accessories, and Other Trim: ASTM C1047, galvanized steel, unless noted otherwise.
1. Rigid Corner Beads: Low profile, for 90 degree outside corners.
   a. Products:
      1) Trim-Tex, Inc.: www.trim-tex.com.
      2) Substitutions: Refer to Owner's Front End Specifications.
2. Expansion Joints:
   a. Type: V-shaped PVC with tear away fins.
   b. Products:
      1) Phillips Manufacturing Co; 093 Expansion Control Joint: www.phillipsmfg.com/#sle.
      2) Trim-Tex, Inc; Hideaway Expansion Bead: www.trim-tex.com/#sle.
      3) Substitutions: Refer to Owner's Front End Specifications.

B. Joint Materials: ASTM C475/C475M and as recommended by gypsum board manufacturer for project conditions.
1. Fiberglass Tape: 2 inch wide, coated glass fiber tape for joints and corners, except as otherwise indicated.
2. Joint Compound: Setting type, field-mixed.

C. Basecoat/Surfacer: Flat latex basecoat for use on surfaces indicated to receive Level 4 finish. Basecoat is in addition to primer specified in Section 099123 - Interior Painting.
   1. Products:
      a. PrepRite High Building Interior Latex Primer/Surfacer, B28W601, Sherwin Williams.
      b. SHEETROCK Brand Primer-Surfacer, Tuff-Hide, USG Corporation

D. Nails for Attachment to Wood Members: ASTM C514.

E. Anchorage to Substrate: Tie wire, nails, screws, and other metal supports, of type and size to suit application; to rigidly secure materials in place.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that project conditions are appropriate for work of this section to commence.

3.02 FRAMING INSTALLATION

A. Suspended Ceilings and Soffits: Space framing and furring members as permitted by standard.
   1. Level ceiling system to a tolerance of 1/1200.
   2. Laterally brace entire suspension system.
   3. Install bracing as required at exterior locations to resist wind uplift.

B. Openings: Reinforce openings as required for weight of doors or operable panels, using not less than double studs at jambs.

C. Acoustic Furring: Install resilient channels at maximum 24 inches on center. Locate joints over framing members.

D. Blocking: Install wood blocking for support of:
   1. Framed openings.
   2. Wall-mounted cabinets.
   3. Plumbing fixtures.
   4. Toilet partitions.
   5. Toilet accessories.
   6. Wall-mounted door hardware.

3.03 BOARD INSTALLATION

A. Comply with ASTM C840, GA-216, and manufacturer's instructions. Install to minimize butt end joints, especially in highly visible locations.

B. Single-Layer Nonrated: Install gypsum board in most economical direction, with ends and edges occurring over firm bearing.
   1. Exception: Tapered edges to receive joint treatment at right angles to framing.

C. Exposed Gypsum Board in Interior Wet Areas: Seal joints, cut edges, and holes with water-resistant sealant.

D. Cementitious Backing Board: Install over wood framing members and plywood substrate where indicated, in accordance with ANSI A108.11 and manufacturer's instructions.

E. Installation on Wood Framing: For rated assemblies, comply with requirements of listing authority. For nonrated assemblies, install as follows:
   1. Single-Layer Applications: Screw attachment.
   2. Double-Layer Application: Install base layer using screws or nails. Install face layer using screws or nails.

3.04 INSTALLATION OF TRIM AND ACCESSORIES

A. Control Joints: Place control joints consistent with lines of building spaces and as indicated.
   1. Not more than 30 feet apart on walls and ceilings over 50 feet long. Refer to drawings for more specific locations.
   2. At exterior soffits, not more than 30 feet apart in both directions.
   3. Fire Rated Joints: Comply with GA-234 for control joints in fire rated assemblies.

B. Corner Beads: Install at external corners, using longest practical lengths.

C. Edge Trim: Install at locations where gypsum board abuts dissimilar materials and as indicated.

3.05 JOINT TREATMENT

A. Finish gypsum board in accordance with levels defined in ASTM C840, as follows:
   1. Level 4:
      a. Locations of Use:
         1) Walls and ceilings at all public areas.
         2) Surfaces scheduled to receive wall coverings.
         3) Exterior Soffits.
      b. APPLY ONE COAT OF SPECIFIED BASECOAT/SURFACER TO ENTIRE SURFACE AT MANUFACTURER'S RECOMMENDED COVERAGE RATE OF MIL THICKNESS.
   2. Level 2: In utility areas such as Janitors Closets, Electrical Closets and Storage Rooms, behind cabinetry, and on backing board to receive tile finish.
   3. Level 1: Wall areas above finished ceilings, whether or not accessible in the completed construction, except provide a high level of finish as requred to comply with fire resistance ratings and acoustical ratings.

B. Tape, fill, and sand exposed joints, edges, and corners to produce smooth surface ready to receive finishes.
   1. Feather coats of joint compound so that camber is maximum 1/32 inch.

C. Fill and finish joints and corners of cementitious backing board as recommended by manufacturer.

3.06 TEXTURE FINISH

A. Apply finish texture coating by means of spraying apparatus in accordance with manufacturer's instructions.

B. Texture Required: Medium texture orange peel.

C. Installation of texture to be after initial coat of primer is applied to wall. After texture apply normal primer and paint as specified in Interior Painting Section 099123.

3.07 TOLERANCES

A. Maximum Variation of Finished Gypsum Board Surface from True Flatness: 1/8 inch in 10 feet in any direction.

END OF SECTION

SECTION 092400
CEMENT PLASTERING

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Cement plastering.

1.02 RELATED REQUIREMENTS

A. Section 061000 - Rough Carpentry: Wood stud framing for plaster.

1.03 REFERENCE STANDARDS

A. ASTM A641/A641M - Standard Specification for Zinc-Coated (Galvanized) Carbon Steel Wire; 2019.

B. ASTM C150/C150M - Standard Specification for Portland Cement; 2022.

C. ASTM C897 - Standard Specification for Aggregate for Job-Mixed Portland Cement-Based Plasters; 2015 (Reapproved 2020).

D. ASTM C926 - Standard Specification for Application of Portland Cement-Based Plaster; 2023a.

E. ASTM C932 - Standard Specification for Surface-Applied Bonding Compounds for Exterior Plastering; 2006 (Reapproved 2019).

F. ASTM C1063 - Standard Specification for Installation of Lathing and Furring to Receive Interior and Exterior Portland Cement-Based Plaster; 2023.

G. ASTM C933 - Standard Specification for Welded Wire Lath; 2023.

H. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials; 2021a.

1.04 SUBMITTALS

A. Product Data: Provide data on plaster materials and trim accessories.

1.05 QUALITY ASSURANCE

A. Installer Qualifications: Company specializing in performing the work of this section with minimum three years documented experience.

1.06 FIELD CONDITIONS

A. Exterior Plaster Work: Do not apply plaster when substrate or ambient air temperature is 40 degrees F or lower, or when temperature is expected to drop below 40 degrees F within 48 hours of application.

PART 2 PRODUCTS

2.01 CEMENT PLASTER APPLICATIONS

A. Lath Plaster Base: Metal lath.
   1. Plaster Type: Factory prepared plaster mix.
   2. Number of Coats: Three.
   3. First Coat: Apply to a nominal thickness of 3/8 inch.
   4. Second Coat: Apply to a nominal thickness of 3/8 inch.
   5. Finish Coat: Apply to a nominal thickness of 1/8 inch.

2.02 FACTORY PREPARED CEMENT PLASTER

A. Exterior Portland cement plaster system made of scratch and brown base coat, leveling coat with reinforcing mesh, and acrylic finish coat; install in accordance with ASTM C926.
   1. Provide weather resistive barrier as part of the system, by the same manufacturer.

B. Premixed Base Coats: Mixture of cement, aggregate, fibers, and proprietary admixtures for scratch and brown coats; install in accordance with ASTM C926.

C. Premixed Leveling Coat: Acrylic polymer-based blend approved for use with plaster manufacturer's base coat and finish materials.

D. Premixed Finish Coating: Same product as base coat.

2.03 JOBSITE MIXED CEMENT PLASTER

A. Materials:
   1. Portland Cement: ASTM C150/C150M, Type I.
   2. Sand: Clean, well graded, and complying with ASTM C897.
   3. Water: Clean, fresh, potable, and free of mineral or organic matter that could adversely affect plaster.

B. Plaster Mixes: Proportioned in accordance with ASTM C926; parts by volume.
   1. First Coat Over Lath:
      a. Minimum 2-1/2 parts and maximum 4 parts sand, per total volume of cementitious materials.
   2. Second Coat: Same mixture as first coat, without fiber reinforcement, except minimum 3 parts and maximum 5 parts sand.
   3. Finish Coat:
      a. Minimum 1-1/2 parts and maximum 3 parts sand, per total volume of cementitious materials.

2.04 ACCESSORIES

A. Lath:
   1. Wire Size: 17 gauge, 0.453 inch.
   2. Galvanized: ASTM A641/A641M.
   3. Opening Size: 1-1/2 by 1-1/2 inches.
   4. Comply with ASTM C933.

B. Finishing Accessories: ASTM C1063; extruded aluminum alloy (6063 T5), galvanizd steel sheet ASTM A924/A924M G90, rolled zinc, or rigid plastic, unless noted otherwise.
   1. Types: As detailed or required for finished appearance.

C. Bonding Compound: Provide type recommended for bonding plaster to solid surfaces, complying with ASTM C932.

D. Rainscreen Drainage Material:
   1. Drainable Housewrap: Combination drainage layer/water-resistive sheet.
      a. Surface Burning Characteristics: Flame spread index of 25 or less, smoke developed index of 450 or less (Class A), when tested in accordance with ASTM E84.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify existing conditions are acceptable prior to starting this work.

B. Verify lath is flat, secured to substrate, and joint and surface perimeter accessories are properly in place.

3.02 PREPARATION

A. Roughen smooth concrete surfaces and apply bonding compound in accordance with manufacturer's written installation instructions.

3.03 INSTALLATION - RAINSCREEN DRAINAGE MATERIAL

A. Install rainscreen drainage material and metal lath with accessories over sheathing material and water-resistive barrier with fastening system in accordance with ASTM C1063 into wood or metal studs. Install drainage material with filter fabric mortar screen to exterior.

3.04 MIXING

A. Mix only as much plaster as can be used prior to initial set.

B. Mix materials dry, to uniform color and consistency, before adding water.

C. Protect mixtures from frost or freezing temperatures, contamination, and excessive evaporation.

3.05 APPLICATION

A. Apply plaster in accordance with manufacturer's written instructions and comply with ASTM C926.

B. Base Coats:
   1. Apply base coat(s) to fully embed lath and to specified thickness.
   2. Follow guidelines in ASTM C926 and manufacturer's written installation instructions for moist curing base coats and application of subsequent coats.

C. Leveling Coat:
   1. Apply leveling coat to specified thickness.

D. Finish Coats:
   1. Cement Plaster:
      a. Apply with sufficient material and pressure to ensure complete coverage of base to specified thickness.
      b. Apply desired surface texture while mix is still workable.

3.06 TOLERANCES

A. Maximum Variation from True Flatness: 1/4 inch in 10 feet.

3.07 REPAIR

A. Patching: Remove loose, damaged or defective plaster and replace with plaster of same composition; finish to match surrounding area.

END OF SECTION

SECTION 096500
RESILIENT FLOORING

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Resilient sheet flooring.

B. Luxury vinyl tile flooring.

C. Resilient base.

D. Installation accessories.

1.02 RELATED REQUIREMENTS

A. Section 033000 - Cast-in-Place Concrete: Restrictions on curing compounds for concrete slabs and floors to receive adhesive-applied resilient flooring.

B. Section 090561 - Common Work Results for Flooring Preparation: Removal of existing floor coverings, cleaning, and preparation.

1.03 REFERENCE STANDARDS

A. ASTM E648 - Standard Test Method for Critical Radiant Flux of Floor-Covering Systems Using a Radiant Heat Energy Source; 2019a, with Editorial Revision (2020).

B. ASTM F710 - Standard Practice for Preparing Concrete Floors to Receive Resilient Flooring; 2021.

C. ASTM F970 - Standard Test Method for Measuring Recovery Properties of Floor Coverings after Static Loading; 2017.

D. ASTM F1861 - Standard Specification for Resilient Wall Base; 2021.

E. ASTM F1869 - Standard Test Method for Measuring Moisture Vapor Emission Rate of Concrete Subfloor Using Anhydrous Calcium Chloride; 2016a.

F. ASTM F1913 - Standard Specification for Vinyl Sheet Floor Covering Without Backing; 2019.

G. ASTM F2170 - Standard Test Method for Determining Relative Humidity in Concrete Floor Slabs Using in situ Probes; 2019a.

H. NFPA 253 - Standard Method of Test for Critical Radiant Flux of Floor Covering Systems Using a Radiant Heat Energy Source; 2019.

1.04 SUBMITTALS

A. Product Data: Provide data on specified products, describing physical and performance characteristics; including sizes, patterns and colors available; and installation instructions.

B. Shop Drawings: Indicate seaming plans and floor patterns.

C. Selection Samples: Submit manufacturer's complete set of color samples for Architect's initial selection.

D. Verification Samples: Submit two samples, 12 by 12 inch in size illustrating color and pattern for each resilient flooring product specified.

E. Concrete Subfloor Test Report: Submit a copy of the moisture and alkalinity (pH) test reports.

F. Maintenance Data: Include maintenance procedures, recommended maintenance materials, and suggested schedule for cleaning, stripping, and re-waxing.

G. Maintenance Materials: Furnish the following for Owner's use in maintenance of project.
   1. Extra Flooring Material: 30 square feet of each type and color.
   2. Extra Wall Base: 30 linear feet of each type and color.

1.05 QUALITY ASSURANCE

A. Manufacturer Qualifications: Company specializing in manufacturing specified flooring with minimum five years documented experience.

B. Installer Qualifications: Company specializing in installing specified flooring with minimum five years documented experience.

1.06 DELIVERY, STORAGE, AND HANDLING

A. Upon receipt, immediately remove any shrink-wrap and check materials for damage and the correct style, color, quantity and run numbers.

B. Maintain temperature in storage area between 55 degrees F and 90 degrees F.

C. Protect roll materials from damage by storing on end.

D. Do not double stack pallets.

1.07 FIELD CONDITIONS

A. Store materials for not less than 48 hours prior to installation in area of installation at a temperature of 70 degrees F to achieve temperature stability. Thereafter, maintain conditions above 55 degrees F.

PART 2 PRODUCTS

2.01 SHEET FLOORING

A. Vinyl Sheet Flooring: Homogeneous without backing, with color and pattern throughout full thickness.
   1. Product manufacturer and color selection: Refer to Drawings.
   2. Minimum Requirements: Comply with ASTM F1913.
   3. Critical Radiant Flux (CRF): Minimum 0.45 watt per square centimeter, when tested in accordance with ASTM E 648, NFPA 253, ASTM E 648, or NFPA 253.
   4. VOC Content: Certified as Low Emission by one of the following:
      a. GreenGuard Certification or SCS Floorscore
   5. Total Thickness: 0.080 inch nominal.
   6. Sheet Width: 72 inch minimum.
   7. Static Load Resistance: 175 psi minimum, when tested as specified in ASTM F970.
   8. Seams: Heat welded.
   9. Integral coved base with cap strip. 6" base - sealed seams and corner joints.

B. Welding Rod: Solid bead in material compatible with flooring, produced by flooring manufacturer for heat welding seams, and in color matching field color.

2.02 TILE FLOORING

A. Luxury Vinyl Tile:
   1. Manufacturer and Color Selection: Refer to the Drawings.
   2. Minimum requirements: Meets ASTM F 1700 Class III Type B
   3. Size: 6 inches by 36 inches
   4. Total Thickness: .120 inches
   5. Wear Layer: 20 mil
   6. Installation: In accordance with manufacturers instructions
   7. Pattern: Running bond

2.03 RESILIENT BASE

A. Resilient Base: ASTM F1861, Type TS rubber, vulcanized thermoset; top set Style B, Cove.
   1. Critical Radiant Flux (CRF): Minimum 0.45 watt per square centimeter, when tested in accordance with ASTM E 648, NFPA 253, ASTM E 648, or NFPA 253.
   2. Height: 4 inch. or 6 inch at remodel areas with existing base to be replaced.

3. Thickness: 0.125 inch.
4. Finish: Satin.
5. Length: Roll.
6. Color: To be selected by Architect from manufacturer's full range.
7. Manufacturers:
   a. Johnsonite, a Tarkett Company: www.johnsonite.com.
   b. FlexCo; www.flexco.com.
   c. Burke Flooring; www.burkeflooring.com
   d. Roppe Corpo; www.roppe.com
   e. Substitutions: Refer to Owner's Front End Specifications.

2.04 ACCESSORIES

A. Subfloor Filler: White premix latex; type recommended by adhesive material manufacturer.

B. Primers, Adhesives, and Seam Sealer: Waterproof; types recommended by flooring manufacturer.

C. Moldings, Transition and Edge Strips: Same material as flooring.

D. Filler for Coved Base: Plastic.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that surfaces are flat to tolerances acceptable to flooring manufacturer, free of cracks that might telegraph through flooring, clean, dry, and free of curing compounds, surface hardeners, and other chemicals that might interfere with bonding of flooring to substrate.

B. Verify that wall surfaces are smooth and flat within the tolerances specified for that type of work, are dust-free, and are ready to receive resilient base.

C. Cementitious Subfloor Surfaces: Verify that substrates are ready for resilient flooring installation by testing for moisture and alkalinity (pH).
   1. Test in accordance with Section 090561.
   2. Test as Follows:
      a. Alkalinity (pH): ASTM F710.
      b. Internal Relative Humidity: ASTM F2170.
      c. Moisture Vapor Emission: ASTM F1869.
   3. Obtain instructions if test results are not within limits recommended by resilient flooring manufacturer and adhesive materials manufacturer.

D. Concrete Substrates: Verify that concrete slabs comply with ASTM F710 and the following:
   1. Slab substrates are dry and free of curing compounds, sealers, hardeners, and other materials that may interfere with adhesive bond.
      a. At areas where existing flooring was removed as Work of asbestos abatement, field test adhesion of floor covers and, if necessary, take remdedial action as required for poper adhesion.
   2. Alkalinity and Adhesion Testing; Perform tests recommended by manufacturer. Proceed with installation only after substrates pass testing.
   3. Moisture Testing; Perform the following tests; Proceed with installation only after substrates pass testing.
      a. Engage an independednt testing agency to perform anhydrous calcium chloride test, ASTM F1869. Proceed with installation only after substrates have maximum moisture vapor emission rate of 3lb of water/1000 sq. ft in 24 hours.
      b. Flooring installer shall perform additional tests recommended by manufacturer. Proceed with installation only after substrates pass testing.
   4. Concrete subfloor shall comply with Floor Flatness and Floor Level requirements per Division 03.

3.02 PREPARATION

A. Prepare floor substrates for installation of flooring in accordance with Section 090561.

3.03 INSTALLATION - GENERAL

A. Starting installation constitutes acceptance of subfloor conditions.

B. Install in accordance with manufacturer's written instructions.

C. Adhesive-Applied Installation:
   1. Spread only enough adhesive to permit installation of materials before initial set.
   2. Fit joints and butt seams tightly.
   3. Set flooring in place, press with heavy roller to attain full adhesion.

D. Where type of floor finish, pattern, or color are different on opposite sides of door, terminate flooring under centerline of door.

E. Install edge strips at unprotected or exposed edges, where flooring terminates, and where indicated.
   1. Resilient Strips: Attach to substrate using adhesive.

F. Scribe flooring to walls, columns, cabinets, floor outlets, and other appurtenances to produce tight joints.

G. At movable partitions, install flooring under partitions without interrupting floor pattern.

3.04 INSTALLATION - SHEET FLOORING

A. Lay flooring with joints and seams parallel to longer room dimensions, to produce minimum number of seams. Lay out seams to avoid widths less than 1/3 of roll width; match patterns at seams.

B. Seal seams by heat welding where indicated.

C. Coved Base: Install as detailed on drawings, using coved base filler as backing at floor to wall junction. Extend sheet flooring vertically to height indicated, and cover top edge with metal cap strip.

3.05 INSTALLATION - TILE FLOORING

A. Mix tile from container to ensure shade variations are consistent when tile is placed, unless otherwise indicated in manufacturer's installation instructions.

B. Install tile to pattern as indicated above. Allow minimum 1/2 full size tile width at room or area perimeter. where no pattern is shown, install as ashlar.

3.06 INSTALLATION - RESILIENT BASE

A. Fit joints tightly and make vertical. Maintain minimum dimension of 18 inches between joints.

B. Miter internal corners. At external corners, 'V' cut back of base strip to 2/3 of its thickness and fold. At exposed ends, use premolded units.

C. Install base on solid backing. Bond tightly to wall and floor surfaces.

D. Scribe and fit to door frames and other interruptions.

3.07 CLEANING

A. Remove excess adhesive from floor, base, and wall surfaces without damage.

B. Clean in accordance with manufacturer's written instructions.

3.08 PROTECTION

A. Prohibit traffic on resilient flooring for 48 hours after installation.

END OF SECTION

SECTION 099113
EXTERIOR PAINTING

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Surface preparation.

B. Field application of paints.

C. Materials for backpriming woodwork.

D. Scope: Finish exterior surfaces exposed to view, unless fully factory-finished and unless otherwise indicated, including the following:
   1. Both sides and edges of plywood backboards for electrical and telecom equipment before installing equipment.
   2. Exposed surfaces of steel lintels and ledge angles.
   3. Mechanical and Electrical:
      a. On the roof and outdoors, paint equipment exposed to weather or to view, including factory-finished materials.

E. Do Not Paint or Finish the Following Items:
   1. Items factory-finished unless otherwise indicated; materials and products having factory-applied primers are not considered factory finished.
   2. Items indicated to receive other finishes.
   3. Items indicated to remain unfinished.
   4. Fire rating labels, equipment serial number and capacity labels, and operating parts of equipment.
   5. Non-metallic roofing and flashing.
   6. Stainless steel, anodized aluminum, bronze, terne-coated stainless steel, zinc, and lead.
   7. Marble, granite, slate, and other natural stones.
   8. Floors, unless specifically indicated.
   9. Ceramic and other types of tiles.
   10. Brick, glass unit masonry, architectural concrete, cast stone, integrally colored plaster and stucco.
   11. Glass.
   12. Concealed pipes, ducts, and conduits.

1.02 RELATED REQUIREMENTS

A. Section 099123 - INTERIOR PAINTING.

1.03 REFERENCE STANDARDS

A. ASTM D4442 - Standard Test Methods for Direct Moisture Content Measurement of Wood and Wood-Based Materials; 2020.

B. MPI (APSM) - Master Painters Institute Architectural Painting Specification Manual; Current Edition.

1.04 SUBMITTALS

A. Product Data: Provide complete list of products to be used, with the following information for each:
   1. Manufacturer's name, product name and/or catalog number, and general product category (e.g. "alkyd enamel").
   2. MPI product number (e.g. MPI #47).
   3. Cross-reference to specified paint system(s) product is to be used in; include description of each system.
   4. Manufacturer's installation instructions.

B. Samples: Submit three paper "draw down" samples, 8-1/2 by 11 inches in size, illustrating range of colors available for each finishing product specified.
   1. Where sheen is specified, submit samples in only that sheen.
   2. Allow 30 days for approval process, after receipt of complete samples by Architect.
   3. Paint color submittals will not be considered until color submittals for major materials not to be painted, such as masonry, have been approved.

C. Manufacturer's Instructions: Indicate special surface preparation procedures.

D. Maintenance Data: Submit data including finish schedule showing where each product/color/finish was used, product technical data sheets, material safety data sheets (MSDS), care and cleaning instructions, touch-up procedures, repair of painted and finished surfaces, and color samples of each color and finish used.

E. Maintenance Materials: Furnish the following for Owner's use in maintenance of project.
   1. Extra Paint and Finish Materials: 1 gallon of each color; from the same product run, store where directed.
   2. Label each container with color in addition to the manufacturer's label.

1.05 QUALITY ASSURANCE

A. Manufacturer Qualifications: Company specializing in manufacturing the products specified, with minimum three years documented experience.

B. Applicator Qualifications: Company specializing in performing the type of work specified with minimum three years experience and approved by manufacturer.

1.06 DELIVERY, STORAGE, AND HANDLING

A. Deliver products to site in sealed and labeled containers; inspect to verify acceptability.

B. Container Label: Include manufacturer's name, type of paint, brand name, lot number, brand code, coverage, surface preparation, drying time, cleanup requirements, color designation, and instructions for mixing and reducing.

C. Paint Materials: Store at minimum ambient temperature of 45 degrees F and a maximum of 90 degrees F, in ventilated area, and as required by manufacturer's instructions.

1.07 FIELD CONDITIONS

A. Do not apply materials when surface and ambient temperatures are outside the paint product manufacturer's temperature ranges.

B. Follow manufacturer's recommended procedures for producing best results, including testing of substrates, moisture in substrates, and humidity and temperature limitations.

C. Do not apply exterior paint and finishes during rain or snow, or when relative humidity is outside the humidity ranges required by the paint product manufacturer.

D. Minimum Application Temperatures for Latex Paints: 50 degrees F for exterior; unless required otherwise by manufacturer's instructions.

E. Provide lighting level of 80 ft candles measured mid-height at substrate surface.

PART 2 PRODUCTS

2.01 PAINTS AND FINISHES - GENERAL

A. Paints and Finishes: Ready-mixed, unless required to be a field-catalyzed paint.
   1. Provide paints and finishes of a soft paste consistency, capable of being readily and uniformly dispersed to a homogeneous coating, with good flow and brushing properties, and capable of drying or curing free of streaks or sags.
   2. Supply each paint material in quantity required to complete entire project's work from a single production run.

3. Do not reduce, thin, or dilute paint or finishes or add materials unless such procedure is described explicitly in manufacturer's product instructions.

2.02 PAINT SYSTEMS - EXTERIOR

A. Paint E-OP - Exterior Surfaces to be Painted, Unless Otherwise Indicated: Including fiber cement siding and primed wood.
   1. Two top coats and one coat primer.
   2. Top Coat(s): Exterior Acrylic Latex. OFCI.
   3. Top Coat Sheen:
      a. Eggshell: MPI gloss level 3; use this sheen at all locations.
   4. Primer: As recommended by top coat manufacturer for specific substrate.

2.03 ACCESSORY MATERIALS

A. Accessory Materials: Provide primers, sealers, cleaning agents, cleaning cloths, sanding materials, and clean-up materials as required for final completion of painted surfaces.

B. Patching Material: Latex filler.

C. Fastener Head Cover Material: Latex filler.

PART 3 EXECUTION

3.01 EXAMINATION

A. Do not begin application of paints and finishes until substrates have been properly prepared.

B. Verify that surfaces are ready to receive work as instructed by the product manufacturer.

C. Examine surfaces scheduled to be finished prior to commencement of work. Report any condition that may potentially effect proper application.

D. If substrate preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.

E. Test shop-applied primer for compatibility with subsequent cover materials.

F. Measure moisture content of surfaces using an electronic moisture meter. Do not apply finishes unless moisture content of surfaces are below the following maximums:
   1. Cement Plaster Siding: 12 percent.
   2. Exterior Wood: 15 percent, measured in accordance with ASTM D4442.

3.02 PREPARATION

A. Clean surfaces thoroughly and correct defects prior to application.

B. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.

C. Remove or mask surface appurtenances, including electrical plates, hardware, light fixture trim, escutcheons, and fittings, prior to preparing surfaces for finishing.

D. Seal surfaces that might cause bleed through or staining of topcoat.

E. Remove mildew from impervious surfaces by scrubbing with solution of tetra-sodium phosphate and bleach. Rinse with clean water and allow surface to dry.

F. Cement Plaster Siding: Remove dirt, dust and other foreign matter with a stiff fiber brush. Do not coat surfaces if moisture content or alkalinity of surfaces to be coated exceeds that permitted in manufacturer's written instructions.

G. Exterior Wood Surfaces to Receive Opaque Finish: Remove dust, grit, and foreign matter. Seal knots, pitch streaks, and sappy sections. Fill nail holes with tinted exterior calking compound after prime coat has been applied. Back prime concealed surfaces before installation.

H. Metal Doors to be Painted: Prime metal door top and bottom edge surfaces.

3.03 APPLICATION

A. Remove unfinished louvers, grilles, covers, and access panels on mechanical and electrical components and paint separately.

B. Exterior Wood to Receive Opaque Finish: If final painting must be delayed more than 2 weeks after installation of woodwork, apply primer within 2 weeks and final coating within 4 weeks.

C. Apply products in accordance with manufacturer's written instructions and recommendations in "MPI Architectural Painting Specification Manual".

D. Do not apply finishes to surfaces that are not dry. Allow applied coats to dry before next coat is applied.

E. Apply each coat to uniform appearance.

F. Sand wood and metal surfaces lightly between coats to achieve required finish.

G. Vacuum clean surfaces of loose particles. Use tack cloth to remove dust and particles just prior to applying next coat.

H. Reinstall electrical cover plates, hardware, light fixture trim, escutcheons, and fittings removed prior to finishing.

3.04 CLEANING

A. Collect waste material that could constitute a fire hazard, place in closed metal containers, and remove daily from site.

3.05 PROTECTION

A. Protect finishes until completion of project.

B. Touch-up damaged finishes after Substantial Completion.

END OF SECTION

SECTION 099123
INTERIOR PAINTING

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Surface preparation.

B. Field application of paints.

C. Scope: Finish interior surfaces exposed to view, unless fully factory-finished and unless otherwise indicated.
   1. Both sides and edges of plywood backboards for electrical and telecom equipment before installing equipment.
   2. Mechanical and Electrical:
      a. In finished areas, paint insulated and exposed pipes, conduit, boxes, insulated and exposed ducts, hangers, brackets, collars and supports, mechanical equipment, and electrical equipment, unless otherwise indicated.
      b. In finished areas, paint shop-primed items.

D. Do Not Paint or Finish the Following Items:
   1. Items factory-finished unless otherwise indicated; materials and products having factory-applied primers are not considered factory finished.
   2. Items indicated to receive other finishes.
   3. Items indicated to remain unfinished.
   4. Fire rating labels, equipment serial number and capacity labels, bar code labels, and operating parts of equipment.
   5. Stainless steel, anodized aluminum, bronze, terne coated stainless steel, and lead items.
   6. Floors, unless specifically indicated.
   7. Ceramic and other tiles.
   8. Architectural concrete.
   9. Glass.
   10. Concealed pipes, ducts, and conduits.

1.02 REFERENCE STANDARDS

A. 40 CFR 59, Subpart D - National Volatile Organic Compound Emission Standards for Architectural Coatings; U.S. Environmental Protection Agency; current edition.

B. ASTM D4442 - Standard Test Methods for Direct Moisture Content Measurement of Wood and Wood-Based Materials; 2020.

C. MPI (APL) - Master Painters Institute Approved Products List; Master Painters and Decorators Association; Current Edition.

D. MPI (APSM) - Master Painters Institute Architectural Painting Specification Manual; Current Edition.

E. SSPC-SP 1 - Solvent Cleaning; 2015, with Editorial Revision (2016).

F. SSPC-SP 6 - Commercial Blast Cleaning; 2007.

G. SSPC-SP 13 - Surface Preparation of Concrete; 1997 (Reaffirmed 2003).

1.03 SUBMITTALS

A. Product Data: Provide complete list of products to be used, with the following information for each:
   1. Manufacturer's name, product name and/or catalog number, and general product category (e.g. "alkyd enamel").
   2. MPI product number (e.g. MPI #47).

3. Cross-reference to specified paint system(s) product is to be used in; include description of each system.
4. Manufacturer's installation instructions.

B. Samples: Submit three paper "draw down" samples, 8-1/2 by 11 inches in size, illustrating range of colors available for each finishing product specified.
1. Where sheen is specified, submit samples in only that sheen.
2. Where sheen is not specified, discuss sheen options with Architect before preparing samples, to eliminate sheens definitely not required.
3. Allow 30 days for approval process, after receipt of complete samples by Architect.
4. Paint color submittals will not be considered until color submittals for major materials not to be painted, such as masonry, have been approved.

C. Manufacturer's Instructions: Indicate special surface preparation procedures.

D. Maintenance Data: Submit data including product technical data sheets, care and cleaning instructions, and touch-up procedures.

E. Maintenance Materials: Furnish the following for Owner's use in maintenance of project.
1. Extra Paint and Finish Materials: 5 gallons of each color; from the same product run, store where directed.
2. Label each container with color in addition to the manufacturer's label.

1.04 QUALITY ASSURANCE

A. Manufacturer Qualifications: Company specializing in manufacturing the products specified, with minimum five years documented experience.

B. Applicator Qualifications: Company specializing in performing the type of work specified with minimum 10 years experience and approved by manufacturer.

1.05 DELIVERY, STORAGE, AND HANDLING

A. Deliver products to site in sealed and labeled containers; inspect to verify acceptability.

B. Container Label: Include manufacturer's name, type of paint, brand name, lot number, brand code, coverage, surface preparation, drying time, cleanup requirements, color designation, and instructions for mixing and reducing.

C. Paint Materials: Store at minimum ambient temperature of 45 degrees F and a maximum of 90 degrees F, in ventilated area, and as required by manufacturer's instructions.

1.06 FIELD CONDITIONS

A. Do not apply materials when surface and ambient temperatures are outside the temperature ranges required by the paint product manufacturer.

B. Follow manufacturer's recommended procedures for producing best results, including testing of substrates, moisture in substrates, and humidity and temperature limitations.

C. Do not apply materials when relative humidity exceeds 85 percent; at temperatures less than 5 degrees F above the dew point; or to damp or wet surfaces.

D. Minimum Application Temperatures for Paints: 50 degrees F for interiors unless required otherwise by manufacturer's instructions.

E. Provide lighting level of 80 ft candles measured mid-height at substrate surface.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Provide paints and finishes used in any individual system from the same manufacturer; no exceptions.

B. Paints:
1. Rodda Paint Co: www.roddapaint.com/#sle.

2. Sherwin-Williams Company: www.sherwin-williams.com/#sle.
3. Benjamin Moore; www.benjaminmoore.com.

2.02 PAINTS AND FINISHES - GENERAL

A. Paints and Finishes: Ready mixed, unless intended to be a field-catalyzed paint.
   1. Where MPI paint numbers are specified, provide products listed in Master Painters Institute Approved Product List, current edition available at www.paintinfo.com, for specified MPI categories, except as otherwise indicated.
   2. Provide paints and finishes of a soft paste consistency, capable of being readily and uniformly dispersed to a homogeneous coating, with good flow and brushing properties, and capable of drying or curing free of streaks or sags.
   3. Provide materials that are compatible with one another and the substrates indicated under conditions of service and application, as demonstrated by manufacturer based on testing and field experience.
   4. Supply each paint material in quantity required to complete entire project's work from a single production run.
   5. Do not reduce, thin, or dilute paint or finishes or add materials unless such procedure is specifically described in manufacturer's product instructions.

B. Volatile Organic Compound (VOC) Content:
   1. Provide paints and finishes that comply with the most stringent requirements specified in the following:
      a. 40 CFR 59, Subpart D--National Volatile Organic Compound Emission Standards for Architectural Coatings.
      b. Architectural coatings VOC limits of the State in which the Project is located.
   2. Determination of VOC Content: Testing and calculation in accordance with 40 CFR 59, Subpart D (EPA Method 24), exclusive of colorants added to a tint base and water added at project site; or other method acceptable to authorities having jurisdiction.

C. Flammability: Comply with applicable code for surface burning characteristics.

D. Sheens: Provide the sheens specified; where sheen is not specified, sheen will be selected later by Architect from the manufacturer's full line.

E. Colors: To be selected from manufacturer's full range of available colors.
   1. Selection to be made by Architect after award of contract.
   2. Allow for minimum of three colors for each system, unless otherwise indicated, without additional cost to Owner.
   3. Extend colors to surface edges; colors may change at any edge as directed by Architect.
   4. In finished areas, finish pipes, ducts, conduit, and equipment the same color as the wall/ceiling they are mounted on/under.
   5. In utility areas, finish equipment, piping, conduit, and exposed duct work in colors according to the color coding scheme indicated.

2.03 PAINT SYSTEMS - INTERIOR

A. Paint I-OP - Interior Surfaces to be Painted, Unless Otherwise Indicated: Including gypsum board, wood, and galvanized steel.
   1. Two top coats and one coat primer.
   2. Top Coat(s): High Performance Architectural Interior Acrylic Latex. Only at locations noted in finish schedule as "Epoxy Paint"
      a. Products:
         1) Sherwin-Williams Pro Industrial Acrylic.
         2) Rodda Super II HP.
         3) Miller Evolution.
         4) Behr Dynasty.
         5) Substitutions: Section 016000 - Product Requirements.

3. Top Coat Sheen:
   a. Eggshell: MPI gloss level 3; use this sheen at all locations.
4. Primer: As recommended by top coat manufacturer for specific substrate.

B. Paint MI-OP-2L - Ferrous Metals, Primed, Latex, 2 Coat:
1. Touch-up with latex primer.
2. Semi-gloss: Two coats of latex enamel.

C. Paint MgI-OP-3L - Galvanized Metals, Latex, 3 Coat:
1. One coat galvanize primer.
2. Semi-gloss: Two coats of latex enamel.

2.04 PRIMERS

A. Primers: Provide the following unless other primer is required or recommended by manufacturer of top coats.
1. Alkali Resistant Water Based Primer; MPI #3.
   a. Products:
      1) Behr Premium Plus Interior/Exterior Multi-Surface Primer and Sealer [No. 436]. (MPI #3)
      2) Substitutions: Refer to Owner's Front End Specifications.
2. Interior Latex Primer Sealer; MPI #50.
   a. Products:
      1) Rodda Roseal II, 502701. (MPI #50)
      2) Substitutions: Refer to Owner's Front End Specifications.

2.05 ACCESSORY MATERIALS

A. Accessory Materials: Provide primers, sealers, cleaning agents, cleaning cloths, sanding materials, and clean-up materials as required for final completion of painted surfaces.

B. Patching Material: Latex filler.

C. Fastener Head Cover Material: Latex filler.

PART 3 EXECUTION

3.01 EXAMINATION

A. Do not begin application of paints and finishes until substrates have been properly prepared.

B. Verify that surfaces are ready to receive work as instructed by the product manufacturer.

C. Examine surfaces scheduled to be finished prior to commencement of work. Report any condition that may potentially effect proper application.

D. If substrate preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.

E. Test shop-applied primer for compatibility with subsequent cover materials.

F. Measure moisture content of surfaces using an electronic moisture meter. Do not apply finishes unless moisture content of surfaces are below the following maximums:
1. Gypsum Wallboard: 12 percent.
2. Plaster and Stucco: 12 percent.
3. Interior Wood: 15 percent, measured in accordance with ASTM D4442.
4. Concrete Floors and Traffic Surfaces: 8 percent.

3.02 PREPARATION

A. Clean surfaces thoroughly and correct defects prior to application.

B. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.

C. Remove or mask surface appurtenances, including electrical plates, hardware, light fixture trim, escutcheons, and fittings, prior to preparing surfaces or finishing.

D. Seal surfaces that might cause bleed through or staining of topcoat.

E. Concrete:
   1. Remove release agents, curing compounds, efflorescence, and chalk. Do not coat surfaces if moisture content or alkalinity of surfaces to be coated exceeds that permitted in manufacturer's written instructions.
   2. Clean surfaces with pressurized water. Use pressure range of 1,500 to 4,000 psi at 6 to 12 inches. Allow to dry.
   3. Prepare surface as recommended by top coat manufacturer and according to SSPC-SP 13.

F. Concrete Floors and Traffic Surfaces: Remove contamination, acid etch, and rinse floors with clear water. Verify required acid-alkali balance is achieved. Allow to dry.

G. Gypsum Board: Fill minor defects with filler compound. Spot prime defects after repair.

H. Aluminum: Remove surface contamination and oils and wash with solvent according to SSPC-SP 1.

I. Galvanized Surfaces:
   1. Remove surface contamination and oils and wash with solvent according to SSPC-SP 1.

J. Wood Surfaces to Receive Opaque Finish: Wipe off dust and grit prior to priming. Seal knots, pitch streaks, and sappy sections with sealer. Fill nail holes and cracks after primer has dried; sand between coats. Back prime concealed surfaces before installation.

K. Wood Doors to be Field-Finished: Seal wood door top and bottom edge surfaces with clear sealer.

L. Metal Doors to be Painted: Prime metal door top and bottom edge surfaces.

3.03 APPLICATION

A. Remove unfinished louvers, grilles, covers, and access panels on mechanical and electrical components and paint separately.

B. Apply products in accordance with manufacturer's written instructions and recommendations in "MPI Architectural Painting Specification Manual".

C. Do not apply finishes to surfaces that are not dry. Allow applied coats to dry before next coat is applied.

D. Apply each coat to uniform appearance in thicknesses specified by manufacturer.

E. Textured walls to recieve one coat of primer prior to texture installation. After texture has dried, apply specified number of primer and top coats.

F. Dark Colors and Deep Clear Colors: Regardless of number of coats specified, apply as many coats as necessary for complete hide.

G. Sand wood and metal surfaces lightly between coats to achieve required finish.

H. Vacuum clean surfaces of loose particles. Use tack cloth to remove dust and particles just prior to applying next coat.

I. Reinstall electrical cover plates, hardware, light fixture trim, escutcheons, and fittings removed prior to finishing.

3.04 CLEANING

A. Collect waste material that could constitute a fire hazard, place in closed metal containers, and remove daily from site.

3.05 PROTECTION

A. Protect finishes until completion of project.

B. Touch-up damaged finishes after Substantial Completion.

END OF SECTION

SECTION 102601
WALL AND CORNER GUARDS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Corner guards.

1.02 RELATED REQUIREMENTS

A. Section 061000 - Rough Carpentry: Blocking for wall and corner guard anchors.

1.03 SUBMITTALS

A. Product Data: Indicate physical dimensions.

B. Samples: Submit two sections of corner guard, 6 inch long, illustrating component design, configuration, color and finish.

PART 2 PRODUCTS

2.01 COMPONENTS

A. Corner Guard - Surface Mounted
   1. Material: Type 304 stainless steel, No. 4 finish, 16 guage, 0.06 inch thick.
   2. Width of Wings: 2 inches
   3. Height: 4 feet.
   4. Corner: Square or rounded. Provide end protectors where indicated.
   5. Length: One piece.
   6. Available Products:
      a. Babcock Davis; CG-SS304; www.babcockdavis.com
      b. Korogard Wall Protectoin Systems; GS20; www.korogard.com
      c. Approved Equal

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that rough openings, concealed blocking, and anchors are correctly sized and located.

3.02 INSTALLATION

A. Install components in accordance with manufacturer's instructions, level and plumb, secured rigidly in position to wall framing members only.

B. Fully adhere surface mounted corner guards to wall surface using manufacturer's recommended VOC compliant adhesive.

3.03 TOLERANCES

A. Maximum Variation From Required Height: 1/4 inch.

B. Maximum Variation From Level or Plane For Visible Length: 1/4 inch.

END OF SECTION

SECTION 102800
TOILET, BATH, AND LAUNDRY ACCESSORIES - ASI

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Commercial Toilet Accessories.
B. Under-Lavatory pipe supply covers.
C. Accessories for toilet rooms.
D. Grab bars.
E. Mirrors.
F. Paper towel dispensers.
G. Shower and tub accessories.
H. Soap and hand sanitizer dispensers.
I. Toilet tissue dispensers.

1.02 REFERENCE STANDARDS

A. ADA Standards - Americans with Disabilities Act (ADA) Standards for Accessible Design; 2010.
B. ASTM A269/A269M - Standard Specification for Seamless and Welded Austenitic Stainless Steel Tubing for General Service; 2015a (Reapproved 2019).
C. ASTM A666 - Standard Specification for Annealed or Cold-Worked Austenitic Stainless Steel Sheet, Strip, Plate, and Flat Bar; 2015.
D. ASTM C1036 - Standard Specification for Flat Glass; 2021.
E. ASTM C1503 - Standard Specification for Silvered Flat Glass Mirror; 2018.

1.03 SUBMITTALS

A. Product Data: Submit data on accessories describing size, finish, details of function, and attachment methods.
B. Manufacturer's Installation Instructions: Indicate special procedures and conditions requiring special attention.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Commercial Toilet and Bath Accessories:
    1. AJW Architectural Products: www.ajw.com/#sle.
    2. American Specialties, Inc.: www.americanspecialties.com/#sle.
    3. Bradley Corporation: www.bradleycorp.com/#sle.

2.02 GRAB BARS

A. Grab Bars: Type 304 stainless steel.
    1. Standard Duty Grab Bars:
        a. Push/Pull Point Load: 1,000 lbf, minimum.
        b. OD: 1 1/4 inch.
        c. Tubing Thickness: 18 gauge, 0.05 inch.
        d. Flange Mounting: Exposed..
        e. Clearance: 1-1/2 inch clearance between wall and inside of grab bar.
        f. Length and Configuration: As indicated on drawings.
        g. Products:
            1) Bobrick B-6806.

2) Bobrick B-5897.

2.03 MIRRORS

A. Mirrors: Stainless steel framed, 1/4 inch thick annealed float glass, ASTM C1036.
   1. Size: 24 inches wide by 36 high..
   2. Angle Frame: 0.05 inch angle shapes, with mitered and welded and ground corners, and tamperproof hanging system; satin finish.
   3. Backing: Full-mirror sized, minimum 0.03 inch galvanized steel sheet and nonabsorptive filler material.
   4. Products:
      a. Bobrick B-2908 Series.

2.04 PAPER TOWEL DISPENSERS

A. Reinstall existing in new locations as shown on drawings.

2.05 SHOWER AND TUB ACCESSORIES

A. Shower Curtain Rod: Stainless steel tube, 1 inch OD, 0.04 inch wall thickness, satin-finished, with 3 inch OD, minimum 0.04 inch thick satin-finished stainless steel flanges, for installation with exposed fasteners.
   1. Products:
      a. Model 1204-2 - Shower Curtain Rod - 1-1/4 inch OD Bar - Stainless Steel.

B. Shower Curtain:
   1. Material: Opaque vinyl, 0.008 inch thick, matte finish, with antibacterial treatment, flameproof and stain resistant.
   2. Size: 36 by 72 inches, hemmed edges.
   3. Grommets: Stainless steel; pierced through top hem on 6 inch centers.
   4. Color: White.
   5. Products:
      a. Model 1200-V - Shower Curtain - 8 gauge (0.008 inch) White Vinyl.

C. Shower Seat: Wall-mounted; welded tubular seat frame, structural support members, swing-down legs, hinges, and mechanical fasteners of Type 304 stainless steel, rectangular seat.
   1. Size: ADA Standards compliant.

D. Robe Hook: Heavy-duty stainless steel, double-prong, rectangular-shaped bracket and backplate for concealed attachment, satin finish.

2.06 SOAP AND HAND SANITIZER DISPENSERS

A. Reinstall existing in new locations as shown on drawings.

2.07 TOILET TISSUE DISPENSERS

A. Reinstall existing in new location as shown on drawings.

2.08 UNDER-LAVATORY PIPE AND SUPPLY COVERS

A. Under Lavatory Pipe and Supply Covers.
   1. Insulate exposed drainage piping including hot, cold, and temered water supplies under lavatories or sinks to comply with ADA Standards.
   2. Exterior Surfaces: Smooth non-absobant, non-abrasive surfaces.

3. Construction:
   a. Surface Burning Characteristics: Flame Spread Index of 25 or LEss and Smoke Development Index of450 or Less, when tested in accordance with ASTM E84.
   b. Comply with ICC A117.1.
4. Color: White.

2.09 MATERIALS

A. Accessories - General: Shop assembled, free of dents and scratches and packaged complete with anchors and fittings, steel anchor plates, adapters, and anchor components for installation.

B. Stainless Steel Sheet: ASTM A666, Type 304.

C. Stainless Steel Tubing: ASTM A269/A269M, Grade TP304 or TP316.

D. Mirror Glass: Annealed float glass, ASTM C1036 Type I, Class 1, Quality Q2, with silvering, protective and physical characteristics complying with ASTM C1503.

E. Adhesive: Two component epoxy type, waterproof.

F. Fasteners, Screws, and Bolts: Hot dip galvanized; tamperproof; security type.

2.10 FINISHES

A. Stainless Steel: Satin finish, unless otherwise noted.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify existing conditions before starting work.

B. Verify exact location of accessories for installation.

C. Verify that field measurements are as indicated on drawings.

D. See Section 061000 for installation of blocking, reinforcing plates, and concealed anchors in walls and ceilings.

3.02 PREPARATION

3.03 INSTALLATION

A. Install accessories in accordance with manufacturers' instructions in locations indicated on drawings.

B. Install plumb and level, securely and rigidly anchored to substrate.

C. Mounting Heights: As required by accessibility regulations, unless otherwise indicated.
   1. Grab Bars: As indicated on drawings.
   2. Other Accessories: As indicated on drawings.

3.04 PROTECTION

A. Protect installed accessories from damage due to subsequent construction operations.

END OF SECTION

SECTION 122113
HORIZONTAL LOUVER BLINDS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Horizontal slat louver blinds.

B. Operating hardware.

1.02 RELATED REQUIREMENTS

A. Section 061000 - Rough Carpentry: Concealed wood blocking for attachment of headrail brackets.

1.03 SUBMITTALS

A. Product Data: Provide data indicating physical and dimensional characteristics.

B. Shop Drawings: Indicate opening sizes, tolerances required, method of attachment, clearances, and operation.

C. Maintenance Materials: Furnish the following for Owner's use in maintenance of project.
   1. Extra Slats: 20 of each type and size.
   2. Extra Wands: Three of each type.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Horizontal Louver Blinds Without Side Guides:
   1. Graber: www.graberblinds.comn.
   2. Substitutions: See General Conditions.

2.02 BLINDS WITHOUT SIDE GUIDES

A. Description: Horizontal slat louvers hung from full-width headrail with full-width bottom rail.

B. Manual Operation: Cordless Control of raising and lowering with full range locking; blade angle adjustable by control wand.

C. Plastic Slats: PVC / Vinyl, square slat corners.
   1. Width: 2 inch.
   2. Color: Selected from manufacturer's standard colors..
   3. Texture: Simulated wood-grain.

D. Slat Support: Woven polypropylene cord, ladder configuration.

E. Head Rail: Pre-finished, formed aluminum box, with end caps; internally fitted with hardware, pulleys, and bearings for operation; same depth as width of slats.

F. Headrail Attachment: Wall brackets.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that openings are ready to receive the work.

B. Ensure structural blocking and supports are correctly placed. See Section 061000.

3.02 INSTALLATION

A. Install blinds in accordance with manufacturer's instructions.

B. Secure in place with flush countersunk fasteners.

3.03 TOLERANCES

A. Maximum Variation of Gap at Window Opening Perimeter: 1/4 inch.

B. Maximum Offset From Level: 1/8 inch.

3.04 ADJUSTING

A. Adjust blinds for smooth operation.

3.05 CLEANING

A. Clean blind surfaces just prior to occupancy.

END OF SECTION

SECTION 123600
COUNTERTOPS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Countertops for manufactured casework.

1.02 RELATED REQUIREMENTS

A. Section 064100 - Architectural Wood Casework.

1.03 REFERENCE STANDARDS

A. ASTM A666 - Standard Specification for Annealed or Cold-Worked Austenitic Stainless Steel Sheet, Strip, Plate, and Flat Bar; 2015.

B. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials; 2021a.

C. AWI/AWMAC/WI (AWS) - Architectural Woodwork Standards, 2nd Edition; 2014, with Errata (2016).

D. ISFA 3-01 - Classification and Standards for Quartz Surfacing Material; 2013.

E. NEMA LD 3 - High-Pressure Decorative Laminates; 2005.

F. NSI (DSDM) - Dimensional Stone Design Manual, Version VIII; 2016.

G. PS 1 - Structural Plywood; 2009 (Revised 2019).

1.04 SUBMITTALS

A. Product Data: Manufacturer's data sheets on each product to be used, including:
   1. Preparation instructions and recommendations.
   2. Storage and handling requirements and recommendations.
   3. Specimen warranty.

B. Shop Drawings: Complete details of materials and installation ; combine with shop drawings of cabinets and casework specified in other sections.

C. Verification Samples: For each finish product specified, minimum size 6 inches square, representing actual product, color, and patterns.

D. Test Reports: Chemical resistance testing, showing compliance with specified requirements.

E. Installation Instructions: Manufacturer's installation instructions and recommendations.

F. Maintenance Data: Manufacturer's instructions and recommendations for maintenance and repair of countertop surfaces.

1.05 QUALITY ASSURANCE

A. Installer Qualifications: Company specializing in performing work of the type specified in this section, with not less than five years of documented experience.

1.06 DELIVERY, STORAGE, AND HANDLING

A. Store products in manufacturer's unopened packaging until ready for installation.

B. Store and dispose of solvent-based materials, and materials used with solvent-based materials, in accordance with requirements of local authorities having jurisdiction.

1.07 FIELD CONDITIONS

A. Maintain environmental conditions (temperature, humidity, and ventilation) within limits recommended by manufacturer for optimum results. Do not install products under environmental conditions outside manufacturer's absolute limits.

PART 2 PRODUCTS

2.01 COUNTERTOPS

A. Quality Standard: Premium Grade, in accordance with AWI/AWMAC/WI (AWS).

B. Stainless Steel Countertops: , Type 304, stainless steel sheet; 16 gauge, 0.0625 inch nominal sheet thickness.
   1. Finish: 4B satin brushed finish.
   2. Exposed Edge Shape: Straight turndown with return; 1-1/2 inch high face, 1/2 inch return to face of case.
   3. Back and End Splashes: Same material; welded 1/4 inch radius coved joint to countertop; square top edge with 1 inch wide top surface and minimum 1/2 inch turndown.
   4. Splash Dimensions: 4 inch high by 1 inch thick, unless otherwise indicated.

C. Natural Quartz and Resin Composite Countertops: Sheet or slab of natural quartz and plastic resin over continuous substrate.
   1. Flat Sheet Thickness: 1-1/4 inch, minimum.
   2. Natural Quartz and Resin Composite Sheets, Slabs and Castings: Complying with ISFA 3-01 and NEMA LD 3; orthophthalic polyester resin, mineral filler, and pigments; homogenous, non-porous and capable of being worked and repaired using standard stone fabrication tools; no surface coating; color and pattern consistent throughout thickness.
      a. Manufacturers:
         1) Dupont Zodiaq.
         2) Substitutions: See Section 016000 - Product Requirements.
      b. Factory fabricate components to the greatest extent practical in sizes and shapes indicated; comply with NSI (DSDM).
      c. Surface Burning Characteristics: Flame spread index of 25, maximum; smoke developed index of 450, maximum; when tested in accordance with ASTM E84.
      d. Sinks: Separate units for undercounter mounting; minimum 3/4 inch wall thickness.
      e. Finish on Exposed Surfaces: Polished.
      f. Color and Pattern: As selected by Architect from manufacturer's full line.
   3. Other Components Thickness: 3/4 inch, minimum.
   4. Exposed Edge Treatment: Built up to minimum 1-1/4 inch thick; square edge; use marine edge at sinks.
   5. Back and End Splashes: Same sheet material, square top; minimum 4 inches high.

2.02 MATERIALS

A. Wood-Based Components:
   1. Wood fabricated from old growth timber is not permitted.

B. Plywood for Supporting Substrate: PS 1 Exterior Grade, A-C veneer grade, minimum 5-ply; minimum 3/4 inch thick; join lengths using metal splines.

C. Adhesives: Chemical resistant waterproof adhesive as recommended by manufacturer of materials being joined.

D. Joint Sealant: Mildew-resistant silicone sealant, white.

2.03 FABRICATION

A. Fabricate tops and splashes in the largest sections practicable, with top surface of joints flush.
   1. Join lengths of tops using best method recommended by manufacturer.
   2. Fabricate to overhang fronts and ends of cabinets 1 inch except where top butts against cabinet or wall.
   3. Prepare all cutouts accurately to size; replace tops having improperly dimensioned or unnecessary cutouts or fixture holes.

B. Provide back/end splash wherever counter edge abuts vertical surface unless otherwise indicated.
   1. Secure to countertop with concealed fasteners and with contact surfaces set in waterproof glue.
   2. Height: 4 inches, unless otherwise indicated.

C. Stainless Steel: Fabricate tops up to 144 inches long in one piece including nosings and back and end splashes; accurately fitted mechanical field joints in lengths over that dimension are permitted.
   1. Weld joints; grind smooth and polish to match.
   2. Provide stainless steel hat channel stiffeners, welded or soldered to underside, where indicated on drawings.
   3. Provide wall clips for support of back/end splash turndowns.
   4. Sound Deadening: Apply water resistant, fire resistant sound deadening mastic to entire bottom surface.

D. Wall-Mounted Counters: Provide skirts, aprons, brackets, and braces as indicated on drawings, finished to match.

PART 3 EXECUTION

3.01 EXAMINATION

A. Do not begin installation until substrates have been properly prepared.

B. If substrate preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.

C. Verify that wall surfaces have been finished and mechanical and electrical services and outlets are installed in proper locations.

3.02 PREPARATION

A. Clean surfaces thoroughly prior to installation.

B. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.

3.03 INSTALLATION

A. Securely attach countertops to cabinets using concealed fasteners. Make flat surfaces level; shim where required.

B. Attach stainless steel countertops using stainless steel fasteners and clips.

C. Seal joint between back/end splashes and vertical surfaces.

3.04 TOLERANCES

A. Variation From Horizontal: 1/8 inch in 10 feet, maximum.

B. Offset From Wall, Countertops: 1/8 inch maximum; 1/16 inch minimum.

C. Field Joints: 1/8 inch wide, maximum.

3.05 CLEANING

A. Clean countertops surfaces thoroughly.

3.06 PROTECTION

A. Protect installed products until completion of project.

B. Touch-up, repair or replace damaged products before Date of Substantial Completion.

END OF SECTION

SECTION 26 00 00
GENERAL ELECTRICAL REQUIREMENTS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Section Includes
   1. General electrical requirements.

1.02 PERMITS, FEES AND SERVICE CHARGES

A. The CONTRACTOR shall obtain all electrical permits required to complete the work and pay all associated fees.
B. The CONTRACTOR shall coordinate and provide for the installation and operation of franchise utility service (including any telephone and/or leased lines specified) as required during construction, startup, testing, and operation of the work until substantial completion.

1.03 CONTRACTOR'S RESPONSIBILITY FOR FIELD VERIFICATION OF EXISTING CONDITIONS

A. The CONTRACTOR shall obtain all electrical permits required to complete the work and pay all associated fees.
B. The CONTRACTOR shall coordinate and provide for the installation and operation of franchise utility service (including any telephone and/or leased lines specified) as required during construction, startup, testing, and operation of the work until substantial completion.

1.04 DESIGN BUILD REQUIREMENTS

A. The CONTRACTOR shall complete the Design Development set of electrical drawings, which shall include the following. The plans shall be signed and stamped by a licensed Supervising Electrician or Electrical Engineer registered in the State of Oregon.
   1. Scaled floorplans, showing all wiring devices, luminaires, equipment, panelboards, and branch circuits.
   2. One line diagram, showing final service and panelboard sizes, feeder sizes, available fault current.
   3. Completed panelboard and lighting control schedules.
   4. Wiring diagrams.

B. The electrical service shall be replaced and upgraded as shown on the drawings. Contractor shall submit a new utility company work order and coordinate the installation of the new service, including shutdowns. Verify the exact location of the new utility transformer. Provide all conduits, transformer lids, pull ropes, and all other equipment and devices for a complete installation. Verify the available fault current with the utility and provide new power distribution equipment that exceeds the rating of the available fault current.
C. The CONTRACTOR shall provide final calculations and forms:
   1. Short circuit calculations.
   2. Electrical load calculations.
   3. Energy Code Compliance calculations.
   4. Wind load calculations.
   5. Seismic bracing calculations.
   6. Photometric calculations for alternate luminaires.

D. The CONTRACTOR shall determine the final sizes and ratings of the power distribution equipment, including the short circuit rating of the equipment.
   1. All branch circuit panelboards shall be sized with a minimum of 25% spare load (kW) and circuit breaker capacity.

E. The luminaires shown on the Drawings shall be the basis of the design. The CONTRACTOR may submit alternate luminaires for both interior and exterior lighting. The CONTRACTOR shall provide the Owner with the proposed alternates, photometric calculations, and a cost impact. The lighting system shall comply with the following:
   1. IES Standard recommended illumination levels
   2. LED luminaires only. Alternate lamp sources shall not be acceptable.
   3. The illumination levels for the basis of design are as follows:
      a. Corridors - 10 fc average minimum.
      b. Offices - 30 fc average minimum.

F. Corridor lighting and exterior lighting shall be controlled via a low voltage relay control panel. The CONTRACTOR shall coordinate with the OWNER the hours of operation of the interior and exterior luminaires. The CONTRACTOR shall provide programming per the OWNER's requirements.

G. The CONTRACTOR shall provide electrical connections to all HVAC and Plumbing equipment shown on the Division 22 & 23 Contract Documents. The CONTRACTOR shall provide local disconnect switches, combination starters, branch circuits, terminations, and overcurrent protection as specified on the Division 22 & 23 Contract Documents. The electrical connections to mechanical equipment has NOT been shown on the Division 26 Contract Documents.

H. Branch circuiting conduit and/or cable type and routing shall be CONTRACTOR's choice, so long as it is in compliance with these Specifications. The following are prohibited methods of branch circuit installation:
   1. Branch circuits for receptacles inside of the building shall not be installed underground. Overhead conduit or MC Cable shall be the only permitted method.

I. The CONTRACTOR shall verify the finishes of all wiring devices, cover plates, and luminaires with the ARCHITECT prior to ordering.

J. The CONTRACTOR shall coordinate the final location of all wiring devices, luminaires, panelboards, and electrical equipment. The floor plans shall be modified to show the final locations.

K. The CONTRACTOR shall provide final as-built drawings to the Owner.

1.05 INTENT OF DRAWINGS AND SPECIFICATIONS

A. Riser and other diagrams are schematic and are intended to show the approximate location of equipment, and the general alignment of conduits and piping, and shall not be used for obtaining quantities. Dimensions given on the plans shall take precedence over scaled dimensions and all dimensions whether in figures or scaled, shall be verified in the field.

B. The electrical drawings do not show complete details of the site conditions. The CONTRACTOR shall check actual conditions.

C. The exact location of apparatus, fixtures, equipment, conduit, and piping shall be ascertained by the CONTRACTOR in the field, and the work shall be laid out accordingly. Should the CONTRACTOR fail to ascertain such locations or coordinate with work performed by other

trades, the work shall be changed at no additional cost to the OWNER when so ordered by the ENGINEER. The ENGINEER reserves the right to make minor changes in the location of conduit, piping and equipment up to the time of installation without additional cost to OWNER.

D. CONTRACTOR shall provide all labor, materials, equipment, machinery, and tools necessary to provide all electrical equipment specified and shown on the Drawings. All items not specified in detail or shown on the Drawings but necessary for complete installation shall be provided by the CONTRACTOR.

1.06 SUBSTITUTION REQUESTS FOR MECHANICAL, HVAC, PROCESS, OR OTHER EQUIPMENT IMPACTING THE ELECTRICAL DESIGN

A. The CONTRACTOR shall be responsible for including the cost impact to the electrical systems for substitution requests and/or value engineering for mechanical, HVAC, process, or other equipment made by other trades. The costs to the overall substitution request or value engineering solution must be included in the total number provided to the OWNER. The CONTRACTOR is responsible for coordinating the substitution requests or value engineering proposals made by other trades.

B. Any substitution request and/or value engineering solution which impacts the electrical design but does not include the costs shall be unacceptable.

C. Failure of other subcontractors to include the electrical cost impact shall not be the basis for a change order. The CONTRACTOR shall be responsible for coordinating the total costs of all substitution requests and/or value engineering solutions prior to presenting them to the ENGINEER or OWNER. When these requests are received by the ENGINEER or OWNER to review and approve, the ENGINEER and OWNER shall assume the cost impact to electrical has been included.

1.07 SUBMITTALS

A. Contractor shall submit all the product data in Division 26 at the same time. Piecemeal submittals will be rejected as incomplete.
   1. The product data shall be submitted in PDF format. Each PDF shall only contain products from a single specification section, products in a different specification section shall be in a separate PDF.
   2. A submittal is required for each product specified. Each individual product submittal shall have the corresponding Reference Keynote Number (example - 260519.C01) typewritten in the upper right-hand corner of the submittal. The submittals within each PDF shall be in the same sequential order as they are listed in the specification Section. Submittals not containing the Reference Keynote Number will be rejected as incomplete.
   3. No typical submittals will be accepted. Each submittal shall be project specific and clearly identify specifically which components or parts are being submitted for approval. Any product submittals, such as a catalog sheet, which do not clearly identify which components or parts are being submitted for approval, will be rejected as incomplete.

B. Submittals shall be in accordance with the requirements of these Contract Documents and shall include the following:
   1. Submittals shall include information and literature as required for all equipment and materials provided under this and related sections.
   2. Shop Drawings: Shop drawings shall include the following along with any special requirements listed in the individual Specification Sections:
      a. Installation instructions and drawings.
      b. Wiring schematics with termination point identification.

c. Motor information.
d. Materials of construction.
e. Manufacturer's name and model.
f. Manufacturer's catalog data.
g. Supplementary structural framing for electrical equipment including design loads, member size and location. When supplementary framing is indicated, verify that dimensions are suitable for the equipment furnished. Provide additional strength when equipment furnished is heavier than that specified.

3. Manufacturers' Literature: Literature indicating the compliance of the products with the Specifications shall be included with all submittals. This shall include catalogs and other descriptive bulletins. Relevant portions of the literature shall be clearly identified by highlighting or underlining.
4. Test Logs: The CONTRACTOR shall submit test logs as outlined below and as specified in subsequent electrical sections and drawings.
   a. A log of the complete results of tests for shorts and grounds for each circuit. All circuits and tests shall be clearly identified.
   b. A log of complete results of insulation resistance measurements of each circuit. All circuits and tests shall be clearly identified.
5. Operation and maintenance information for all equipment furnished and/or installed.
6. Programming instructions for any controllers or other programmable equipment. Copies of the any required software, including registration cards, shall be provided with the O&M manuals.

C. Deferred Submittals
   1. Submittals for seismic bracing/anchoring and wind loads shall be a deferred submittal. Engineering of the seismic bracing and anchoring system shall be provided by a licensed Engineer in the State of Oregon. Submittals shall include calculations and drawings, including connection types/materials/sizes, load, maximum load, dimensions, etc.

D. The CONTRACTOR shall indicate on the submittals all variances from the Specifications.
E. Record Drawings. After the completion of construction, the CONTRACTOR shall provide one set of "as-built" drawings to the ENGINEER as specified herein showing the location of buried conduits and all changes or deviations from the original drawings.
F. Final inspection certificates shall be submitted prior to final payment.

1.08 COORDINATION OF WORK

A. The CONTRACTOR shall plan his work in coordination with the other trades and with the power and telephone utility authorities.
B. The CONTRACTOR shall field verify all dimensions of equipment to be installed or provided by others so that correct clearances and connections may be made between the work installed by the CONTRACTOR and equipment installed or provided by others.
C. The CONTRACTOR shall arrange all conduit runs so that they do not interfere with piping, structural members, etc.
D. All working measurements shall be taken from the sites, checked with those shown on the drawings, and if they conflict, reported to the ENGINEER at once, and before proceeding with the work. Should the CONTRACTOR fail to comply with this procedure, he shall alter his work at his own expense as directed by the ENGINEER.

E. No additional payments will be allowed where obstructions in the work of other trades, or work under this contract requires offsets to conduit runs.
F. The CONTRACTOR is responsible for all alterations in the work to accommodate equipment differing in dimensions or other characteristics from that shown or specified.
G. The CONTRACTOR shall provide all temporary power necessary for existing site equipment and for all construction needs.

1.09 SUPERVISION

A. The CONTRACTOR shall maintain adequate supervision of the work and shall have a responsible person in charge at the site during all times that work under this contract is in progress, or when necessary for coordination with other work.

1.10 CODES

A. Work shall conform to the National Electrical Code (NEC), and State Codes and other applicable codes, even though not specifically mentioned for each item. These shall be regarded as the minimum standard of quality for materials and workmanship.

1.11 CONTRACTOR'S RECORD DRAWINGS & AS-BUILTS

A. The CONTRACTOR shall maintain a neatly marked set of record drawings showing the locations of all buried conduits and other utilities encountered or installed during construction. The final locations of panels, field mounted instruments and panels, terminal boxes, junction boxes, receptacles, light switches and other materials included in the work shall be shown, as well as conduit routing between them to the extent it differs from the design drawings. Record drawings shall be kept current with the work as it progresses and shall be subject to inspection by the OWNER's Representative at any time. Failure to keep field record drawings current may result in the issuance of a stop work order or delay in the processing of pay requests until the record drawings are made current.
B. The CONTRACTOR shall provide one complete set of as-built electrical schematics for all panels and equipment provided, including PLC I/O schematics as applicable, panel elementary diagrams, interconnecting wiring diagrams, wire numbers, termination strip locations and numbers. These shall be in the same format and style as those in the Contract Documents and submittal requirements.
C. All information shown on the CONTRACTOR's field record drawings and as-built schematics shall be subject to verification by the OWNER's Representative. If significant errors or deviations are noted by the OWNER's Representative, new as-builts shall be completed at the CONTRACTOR's expense.

PART 2 PRODUCTS

2.01 PORTABLE OR DETACHABLE PARTS

A. The CONTRACTOR shall retain in his possession and shall be responsible for all portable and detachable parts or portions of installations such as fuses, key locks, adapters, blocking chips and inserts until completion of his work.

B. These parts shall be delivered to the ENGINEER and an itemized receipt obtained. This receipt, together with 2 copies of the final inspection certificate, shall be attached to the CONTRACTOR's request for final payment.
C. All equipment shall be demonstrated to operate in accordance with the requirements of this specification and the manufacturer's recommendations.

2.02 NEW PRODUCTS

A. All products shall be new without defects and covered by Manufacturer's warranty. Products shall be re-used only where indicated on the Drawings.
B. All products shall be listed, labeled, and certified by a testing agency approved by the state of Oregon.
C. All equipment of the same type and capacity shall be by the same manufacturer.

PART 3 EXECUTION

3.01 IDENTIFICATION

A. All identification labeling shall be in compliance with Section 260553 Electrical and Control Identification.

3.02 WORKMANSHIP & COORDINATION

A. All work shall be performed by personnel skilled in the particular trade in a workmanlike manner. Workmanship shall conform to the standards of the NEC and the National Electrical Installation Standards (NEIS).
B. The ENGINEER shall be the sole judge as to whether or not the finished work is satisfactory; and if in his judgment any material or equipment has not been properly installed or finished, the CONTRACTOR shall replace the material or equipment whenever required, and reinstall it in a manner entirely satisfactory to the ENGINEER without any increase in cost to the OWNER.
C. The CONTRACTOR shall coordinate and verify the installation of all equipment furnished by him to other trades, or equipment provided and installed by other trades that is connected to the electrical or control systems. Work shall include the furnishing of all labor, materials, and equipment required for the installation of a complete and operable system as hereinafter specified and as indicated on the drawings. The Contract Documents are complementary and what is called for by anyone shall be as binding as if called for by all. Unless otherwise specifically stipulated, the term "furnished and installed complete" shall be considered a part of this section.
D. Controls and systems shall be complete with transformers, switches, relays, contactors, control valves, control devices, instrument piping, fittings, valves, control wiring, thermometers, pressure gauges, thermostats, damper operators, miscellaneous control cabinets to fill the intent of the Specifications and shall provide control for the various units and systems. All control valves and motorized dampers shall be provided with position indicators.
E. Unless otherwise specified or shown on the drawings, switches or relays shall be installed in, or adjacent to the motor starter or other electrical device to which they are to be connected.

Control and interlock wiring shall be included as necessary from breakers specified herein or shown on the drawings.

F. Each control schematic intended to control a series of motor operated louvers, fans, and thermostats shall contain a switch for maintenance to meet the NEC requirements regarding disconnect switches for motors. This switch shall be local if any unit controlled is out of sight of the switch. This switch shall disconnect all power to all motor operated devices within the circuit.

3.03 TEMPORARY HEATING, LIGHTING AND POWER

A. The CONTRACTOR shall provide all heat, lighting and power required to construct and protect the work until the work is placed in service by the OWNER for beneficial use of the OWNER. Temporary heaters shall be provided as required to keep the work area and all new electrical components dry.
B. The source for temporary power shall be from the electric utility or OWNER approved CONTRACTOR supplied auxiliary power units. The installation for electric power shall meet the requirements of local authorities and of OSHA.
C. The CONTRACTOR shall obtain all permits and pay all costs for connecting temporary power service at no expense to the OWNER.

3.04 SUPPORT BACKING

A. Provide any necessary backing required to properly support all fixtures and equipment installed under this contract.

3.05 CUTTING, PATCHING AND FRAMING

A. The CONTRACTOR shall determine in advance the locations and sizes of all sleeves, chases, and openings necessary for the proper installation of his work.
B. Whenever practical, inserts or sleeves shall be installed prior to covering work. Cutting and patching shall be held to a minimum. All required holes in concrete construction shall be made with a core drill and patched with non-metallic non-shrink grout.
C. Cutting, fitting repairing and finishing of carpentry work, metal work, or concrete work, and the like, which may be required for this work shall be done by craftsmen skilled in their respective trades. When cutting is required, it shall be done in such a manner as not to weaken walls, partitions, or floors; and holes required to be cut in floors must be drilled without breaking out around the holes.

3.06 ACCESS PANELS

A. The CONTRACTOR shall provide all access panels in hard ceilings to allow NEC-required access to junction boxes, pull boxes, and light fixtures. The CONTRACTOR shall submit to the ENGINEER for approval floor plans (1/8" = 1'-0" scale minimum) which clearly indicate proposed access panel locations.

3.07 COMMISSIONING

A. Commissioning of the facility shall be completed prior to substantial completion.

B. CONTRACTOR shall provide for realistic durations in the progress schedule for the commissioning activities.
C. Provide the labor, medium, chemicals, tools, equipment, instruments and services required for, and incidental to, completing commissioning.
D. Demonstrate satisfactory operation within the facility of the equipment and systems in actual operation as a functional unit.
E. Conduct commissioning for a period of fourteen (14) continuous days without significant interruption.
F. The commissioning verification period shall restart with the correction of each significant interruption.
G. Correct defects in material and workmanship immediately following their discovery.
H. Provide for maintenance until substantial completion. This includes the required maintenance activities during the commissioning verification period.
I. Perform maintenance pursuant to the operation and maintenance data requirements for the new facility during and following the commissioning verification period and prior to issuance of a certificate of substantial completion.
J. As of the date of substantial completion, OWNER’s staff shall be responsible for operation and maintenance of the new facilities. This excludes any issues identified as warranty matters.

3.08 TESTS

A. The CONTRACTOR shall furnish all labor, material, instruments and tools to make all connections for testing of the electrical and instrumentation installation. All equipment shall be demonstrated as operating properly prior to the acceptance of the work. All protective devices shall be operative during testing of equipment. The tests shall be made under the supervision of the ENGINEER. All deficiencies or unsatisfactory conditions as determined by the ENGINEER or inspecting authorities shall be corrected by the CONTRACTOR in a satisfactory manner at his own expense.
B. After visual inspection of joints and connections and the application of tape and other insulating materials, all sections of the entire wiring system shall be thoroughly tested for shorts and grounds. A log of results for each circuit shall be kept by the CONTRACTOR and presented to the ENGINEER.
C. A phase rotation check shall be made to demonstrate that all power receptacles, service feeders, main power feeders and auxiliary power generators have the same A - B - C phase rotation and ground relationships.
D. Equipment shall be tested by operating all electric motors, relays, controls, switches, heaters, etc., sufficiently to demonstrate proper installation and electrical connections. Control and emergency conditions shall be artificially simulated where necessary for complete system or subsystem.

3.09 CLEANING AND TOUCH-UP PAINT

A. Upon completion of work, all electrical equipment shall be cleaned.
   1. Vacuum all dirt, metal shavings, and foreign materials from all enclosures. The use of compressed air shall not be acceptable.
   2. All stains, dirt, and fingerprints shall be removed from switchboards, motor control centers, panelboards, light fixtures, enclosures, and all other electrical equipment covers.

B. Provide touch-up paint on equipment that has been scraped, scratched, or chipped during construction. Paint color shall match color of equipment.

3.10 COORDINATION OF STARTUP AND ADJUSTING, COMMISSIONING, DEMONSTRATION AND TRAINING, AND OPERATION AND MAINTENANCE DATA.

A. Reference Section, 260110 - Operation and Maintenance Data for detailed requirements.

END OF SECTION

SECTION 26 01 10
OPERATION AND MAINTENANCE DATA

PART 1 GENERAL

1.01 SUMMARY

A. Section Includes:
   1. Definitions.
   2. General requirements.
   3. Submittal procedures.
   4. Content requirements for manuals.
   5. Supplements.

1.02 DEFINITIONS

A. Maintenance Operation.
   1. Routine operation required to ensure satisfactory performance and longevity of the equipment. Examples of typical maintenance operations are lubrication, belt tensioning, adjustment of pump packing glands and other routine adjustments.

1.03 GENERAL REQUIREMENTS

A. Provide operation and maintenance data for items listed in Supplement 260110 – A, “Schedule of Equipment Requiring Operation and Maintenance Data”.
B. In addition to the composite of manuals for individual equipment items or systems, provide a consolidated summary of required routine scheduled maintenance and scheduled preventative and predictive maintenance for the project, with reference to where detailed information may be found. Include safety information and emergency plans and procedures. The summary shall be in a separate binder from the other equipment and system binders.
C. Comply with the following format relating to the Operation and Maintenance Manual:
   1. All binders shall be “D” ring type with one-touch ring locking mechanism.
   2. Overlay material shall be crystal clear poly.
   3. Binders shall be black poly.
   4. Binders shall be nominally sized for 75 percent fill per volume with a maximum binder depth of four (4) inches and a minimum depth of one (1) inch.
   5. Submit example binder cover sheet for approval by ENGINEER.
   6. Submit example spine insert for approval by ENGINEER.
   7. Paper: twenty (20) pound minimum, white for typed pages, 8.5 x 11 inches.
   8. Text: Manufacturer’s printed data, or neatly typewritten. Facsimiles transmitted via fax machine shall be unacceptable.
   9. Three-hole punch data for binding and composition; arrange printing so that punched holes do not obliterate data.
   10. Provide fly-leaf for each separate product, or each piece of operating equipment, with typed description of product and major component parts of equipment. Provide with heavy section dividers with numbered plastic index tabs.
   11. Provide each manual with a title page, typed table of contents with consecutive page numbers. Plan contents of entire set, identified by volume number, in each binder.
   12. Material shall be suitable for reproduction with quality equal to the original. Photocopying of material will be acceptable except for material containing photographs.
   13. Table of contents shall be neatly typewritten, arranged in a systematic order, containing as a minimum the following data:

a. CONTRACTOR, name of responsible principle, address and telephone number.
b. List of each product required to be included and indexed to content of each volume.
c. List of each product, name, address and telephone number of subcontractor, supplier, installer and maintenance contractor as appropriate.
d. Provide local source and phone number of supply for parts and replacement.
e. Identify each product by product name, model number and other identifying numbers or symbols as set forth in the Contract Documents.

14. Product data:
    a. Include only those sheets that are pertinent to the specific product provided.
    b. Clearly annotate each sheet to identify specific product or part installed, data applicable to the installation and delete references to inapplicable information.
15. Drawings; supplement product data with drawings as necessary to clearly illustrate the following:
    a. Relationship of component parts of equipment and systems.
    b. Control and flow diagrams.
    c. Coordinate drawings with project record documents to assure correct illustration of completed installations.
    d. CONTRACTOR shall not use project record documents as maintenance manual drawings.
    e. Provide reinforced punched binder tabs.
    f. Reduced 11 x 17 inch drawings shall be folded to 8.5 x 11 inch format.
    g. Where reduction to 11 x 17 inch is impractical, fold and place the 8.5 x 11 inch envelopes that are bound in the binder.
    h. Identify specification Section and product on drawings and envelopes.

1.04 SUBMITTAL PROCEDURE

A. Compile the required data, arrange as specified herein and insert data in the number of volumes necessary. The volumes shall be submitted as a complete set. Partial or incomplete manuals shall be rejected by the ENGINEER.

B. Preliminary Manuals:
    1. Submit three copies to ENGINEER for review and approval well before the starting and adjusting activities commence.
    2. If accepted:
        a. One copy will be returned to the CONTRACTOR.
        b. One copy will be forwarded to the OWNER.
        c. One copy will be retained in the ENGINEER’s file.
    3. If rejected:
        a. Two copies will be returned to the CONTRACTOR with ENGINEER’s comments for revision.
        b. One copy will be retained in the ENGINEER’s file.
        c. CONTRACTOR shall be required to resubmit three revised preliminary manuals for ENGINEER’s review.

C. Final Manuals:
    1. Submit two copies to ENGINEER for review and approval before final completion.
    2. If accepted:
        a. CONTRACTOR will be so notified.
        b. CONTRACTOR shall provide a complete set of the final manual on CD-ROM. Data written specifically for the manual will be presented in MS Word format. Manufacturer data (per-printed data) will be presented in Adobe PDF format.
    3. If rejected:

a. At the ENGINEER's discretion either all but one copy of the manuals will be returned to the CONTRACTOR for revisions or all copies will be retained by the ENGINEER and the necessary revision data will be requested from the CONTRACTOR.

1.05 CONTENT REQUIREMENTS FOR MANUALS

A. The Operation and Maintenance Manuals shall normally consist of no less than four volumes outline below.
B. Volume 1 – Facility Overview.
   1. All sheets in volume 1 shall have sheet protectors.
   2. All materials in volume 1 shall be copied onto a CD and provided to the ENGINEER.
   3. Include instructions and procedures for handling, storage, maintenance during storage, assembly, erection, installation, adjusting, testing, operating, shut down in emergency, troubleshooting, maintenance, interface with other equipment and as may otherwise be required.
   4. Organize in a consistent format under separate heading for each different procedure.
   5. Provide a logical sequence of instructions for each procedure.
   6. Provide an information sheet for the OWNER's personnel which include the proper procedures in the event of a failure and instances that might affect the validity of warranties or bonds.
   7. Content for each unit (or common units) and system:
      a. Description of unit and component parts including controls, accessories and appurtenances. Detail their function, normal operating characteristics and limiting conditions. Provide performance curves, engineering data, nameplates data and test forms. Provide a complete commercial number and nomenclature for replaceable parts.
   8. Operating Procedures:
      a. Start-up and break-in routine and normal operating instructions.
      b. Test procedures and results of factory tests where required.
      c. Regulation, control, stopping and emergency instructions.
      d. Description of operation sequence by control manufacturer.
      e. Shutdown instructions for both short and extended durations.
      f. Summer and winter operating instructions as applicable.
   9. Maintenance and Overhaul Procedures:
      a. Routine operations
      b. Guide to troubleshooting.
      c. Disassembly, removal, repair, reinstallation and reassembly.
   10. Installation Instructions including alignment, adjusting, calibrating and checking.
   11. Original manufacturer's parts list, illustrations, detailed assembly drawings showing each part with part numbers and sequentially numbered parts list and diagrams required for maintenance.
   12. Parts list by generic title and manufacturer's part number.
   13. Name, location and telephone number of nearest supplier and spare parts warehouse.
   14. Where applicable identify installed spares and other provisions for future work (e.g. reserved panel space, unused components, wiring and terminals).
   15. Manufacturer's printed operating and maintenance instructions.
   16. Charts of valve tag numbers along with the location and function of each valve.
   17. Manufacturer's certifications including calibration data sheets and specified calibration procedures or methods for installed equipment.
   18. Warranty forms and information for all installed equipment provided by the CONTRACTOR.
   19. Circuit directories for all panels including electrical, control and communication.
   20. List of adjustable electrical relay settings, control and alarm settings.

C. Volume 2 – Equipment Manuals.
   1. Table of contents shall have a sheet protector.
   2. Table of contents and index sheets shall be of colored card stock.
   3. Manuals for individual equipment shall not be divided between separate binders.
   4. List function, normal operation, characteristics and limiting conditions.
   5. Complete commercial part number and nomenclature of replaceable parts.
   6. Maintenance procedures including routine operations, guide to troubleshooting and adjustments.
   7. Manufacturer's printed operation and maintenance instructions.
   8. List of manufacturer's spare parts and recommended quantities to be maintained in storage.
   9. Contents for Maintenance Summary Manual:
      a. Compile individual maintenance summaries for each applicable equipment item, respective unit or system and for components or subunits.
      b. Format shall include use of the Supplement 260110 – B "Maintenance Summary" provided. Each Maintenance Summary may take as many pages as required. Supplement shall be typewritten and shall include detailed lubrication instructions and diagrams showing points to be greased or oiled, recommended type, grade and temperature range of lubricants and frequency of lubrication.
      c. Include a list and quantity of manufacturer's recommended consumable and spare parts that should be stored on site.

D. Volume 3 – Drawings
   1. As-built drawings associated with the project shall be provided. This includes, but is not limited to, manufacturers supplied drawings. All drawings shall be provided on 11 x 17 inch sheets folded to 8.5 x 11 inch size and bound in this volume. A complete and detailed index shall be provided that includes a list of all drawings in the volume and the drawings shall be tabbed in a fashion that provides clear and concise identification.

PART 2 PRODUCTS – NOT USED
PART 3 EXECUTION

3.01 SUPPLEMENTS

A. Supplement 260110 – A, "Schedule of Equipment Requiring Operation and Maintenance Data".
B. Supplement 260110 – B, "Maintenance Summary Form".

END OF SECTION 26 01 10

Supplement 26 01 10 – A
Schedule of Equipment Requiring Operation and Maintenance Data

Item No.	Section	Manual (M) Data Sheet (D)	Description
1.	260548	M	Seismic Calculations
2.	260573	M	Power Systems Study
3.	260913	D	Electrical Power Metering
4.	260923	D	Lighting Control Devices
5.	262416	D	Panelboards
6.	263200	M	Packaged Diesel Generator
7.	263623	M	Automatic Transfer Switch
8.	265100	D	Interior Luminaires
9.	265600	D	Exterior Luminaires

END OF SUPPLEMENT

Supplement 26 01 10 – B
Maintenance Summary Form

ProjectName_____
ProjectNumber_____
Equipment_____
Equipment ID Number_____
Manufacturer_____
Name Plate Data_____
Manufacture's Local Supplier Name_____
Phone_____
Address_____

Maintenance Requirements

Maintenance Requirements	Frequency Required	Lubricant if Required

END OF SUPPLEMENT

SECTION 26 05 02
MINOR ELECTRICAL DEMOLITION

PART 1 GENERAL

1.01 SUMMARY

A. Section Includes.
   1. Removal of existing electrical equipment, wiring and conduit in areas to be remodeled. Removal of designated construction, dismantling, cutting and alterations for completion of the Work.
   2. Disposal of materials.
   3. Storage of removed materials.
   4. Identification of utilities.
   5. Salvaged items.
   6. Protection of items to remain as identified in the schedules at the end of this Section.
   7. Relocate existing equipment.
   8. Removal of temporary electrical equipment prior to completion of the Work.

1.02 SUBMITTALS

A. Contractor shall submit all the product data in Division 26 at the same time. Piecemeal submittals will be rejected as incomplete.
   1. The product data shall be submitted in PDF format. Each PDF shall only contain products from a single specification section, products in a different specification section shall be in a separate PDF.
   2. A submittal is required for each product specified. Each individual product submittal shall have the corresponding Reference Keynote Number (example - 260502.C01) typewritten in the upper right-hand corner of the submittal. The submittals within each PDF shall be in the same sequential order as they are listed in the specification Section. Submittals not containing the Reference Keynote Number will be rejected as incomplete.
   3. No typical submittals will be accepted. Each submittal shall be project specific and clearly identify specifically which components or parts are being submitted for approval. Any product submittals, such as a catalog sheet, which do not clearly identify which components or parts are being submitted for approval, will be rejected as incomplete.

B. Product Data.
   1. Pursuant to Section 013300 Submittal Procedures.
   2. Manufacturer’s data including materials of construction, methods of installation and related information for each item specified.

C. Shop Drawings.
   1. Provide shop drawings indicating the location and construction of temporary work. Describe demolition procedures related to items listed in the schedules at the end of this Section.

1.03 CLOSEOUT SUBMITTALS

A. Refer to the Contract Documents for general closeout submittal requirements.
B. Project Record Drawings shall be provided that record actual locations of capped conduits and equipment abandoned in place.

1.04 SEQUENCING

A. Sequencing of the Work shall be as noted in the Contract Documents.

1.05 SCHEDULING

A. Refer to the Contract Documents.
B. Coordinate the schedule of noisy, malodorous and dusty work with the ENGINEER.

1.06 COORDINATION

A. Refer to Contract Documents.
B. Conduct demolition to minimize interference with adjacent or occupied areas.
C. Coordinate demolition work with other trades.
D. Coordinate and sequence demolition so as not to cause shutdown or interruption of operation of surrounding areas.
E. Arrange timing of shutdowns with the OWNER. Do not shutdown any utility service without prior written approval. Keep shutdown periods to a minimum.
F. Identify salvage items in cooperation with the OWNER.

PART 2 PRODUCTS – NOT USED
PART 3 EXECUTION

3.01 EXAMINATION

A. Verify wiring and equipment scheduled for demolition serve only abandoned process and facilities.
B. Verify termination points for demolished services.

3.02 DEMOLITION

A. Items scheduled for demolition shall be legally disposed of by the CONTRACTOR.
B. Remove exposed abandoned conduit.
C. Disconnect electrical systems in walls, floors and ceilings scheduled for removal.
D. Reconnect equipment being disturbed by renovation work and required for continued service.
E. Disconnect or shut off service to areas where electrical work is to be removed. Remove electrical fixtures, equipment, switches, receptacles, conduit, and conductors which are not part of the completed project.
F. Install temporary wiring and connections necessary to maintain existing systems in service during construction.

G. Remove, relocate and extend existing installations to accommodate new construction.
H. Repair adjacent construction and finishes to original condition that are damaged during demolition and extension work.
I. Remove abandoned grounding and bonding components, fasteners, supports and electrical identification components. Cut embedded support elements flush with wall, floors and ceilings.
J. Provide watertight knockout seals in panels, enclosures, gutters, or junction boxes where conduit is removed.
K. Clean and repair existing equipment scheduled to be reinstalled.
L. Protect and retain power to existing active equipment remaining.
M. Cap abandoned empty conduit at both ends.

3.03 WALL, FLOOR AND CEILING PENETRATIONS

A. Seal concrete penetrations originally occupied by removed conduit with suitable grout material. Paint to match existing concrete.
B. Repair holes in plaster or drywall assemblies. Provide all sheet rock, drywall, joint compound, sanding, etc. to repair the assembly to original condition. Paint to match existing assembly.

3.04 FIRESTOPPING

A. Where existing firestopping sealants, pillows, or other material are removed to facilitate the installation of new cabling, the firestopping shall be restored to a Code-compliant installation. All fire rated penetrations shall be fully sealed upon completion of work, regardless of the state of the existing installation.

3.05 SALVAGE ITEMS

A. Remove and protect items scheduled to be salvaged. Coordinate with OWNER where you are to locate these items

3.06 REUSEABLE ELECTRICAL EQUIPMENT

A. Unless specifically identified for reuse, no used electrical equipment, conduit, conductors, components of any sort scheduled for demolition, disposal or salvage shall be installed for reuse on the project.
B. Electrical equipment identified specifically as being reused on the project shall be cleaned and protected until such time as it is reinstalled.

3.07 SCHEDULES

A. Salvage the following equipment to the OWNER at a location they identify. Coordinate the delivery of the salvaged items to the location identified by the OWNER at a time they have pre-approved.
    1. None.

B. Dispose of the following equipment and its associated components.
   1. All electrical systems identified as demolition.

C. Reuse the following items.
   1. All electrical devices and equipment identified as Remove (RR) and Re-install (RD).

END OF SECTION

SECTION 26 05 19
LOW VOLTAGE ELECTRICAL POWER CONDUCTORS AND CABLES

PART 1 GENERAL

1.01 SUMMARY

A. Section Includes.
   1. The section includes the requirements for conductors and cables used to conduct potentials of 600 volts and less.
   2. All conductors and cables shall be installed in conduit or approved raceways regardless of which Division the conductors or cables are specified.

1.02 REFERENCES

A. The following is a list of Standards which may be referenced in the Section.
   1. American Society for Testing and Materials (ASTM).
      a. B8, Standard Specification for Concentric-Lay-Stranded Copper Conductors, Hard, Medium-Hard or Soft.
   2. National Electrical Contractors Association, Inc. (NECA): National Electrical Installation Standards (NEIS).
   3. National Electrical Manufacturers Association (NEMA).
      a. WC 3, Rubber-Insulated Wire and Cable for the Transmission and Distribution of Electrical Energy.
      b. WC 5, Thermoplastic Insulated Wire and Cable for the Transmission and Distribution of Electrical Energy.
      c. WC 7, Cross Linked-Thermosetting Polyethylene Wire and Cable for the Transmission and Distribution of Electrical Energy.
      d. WC 55, Instrumentation Cables and Thermocouple Wire.
   4. National Fire Protection Association (NFPA). 70, National Electrical Code (NEC).
   5. Underwriters Laboratories, Inc. (UL).
      a. 13, Standard for Power-Limited Circuit Cables.
      b. 44. Standard for Safety Rubber-Insulated Wires and Cables.
      c. 62, Standard for Safety Flexible Cord and Fixture Wire.
      d. 510, Standard for Safety Insulating Tape.
      e. 854, Standard for Safety Service-Entrance Cables.
      f. 910, Standard for Safety Test Method for Fire and Smoke Characteristics of Electrical and Optical Fiber Cables Used in Air Handling Spaces.
      g. 1277, Standard for Safety Electrical Power and Control Tray Cables.
      h. 1581, Standard for Safety References for Electrical Wires, Cables and Flexible Cords.

1.03 SUBMITTALS

A. Contractor shall submit all the product data in Division 26 at the same time. Piecemeal submittals will be rejected as incomplete.

   1. The product data shall be submitted in PDF format. Each PDF shall only contain products from a single specification section, products in a different specification section shall be in a separate PDF.
   2. A submittal is required for each product specified. Each individual product submittal shall have the corresponding Reference Keynote Number (example - 260519.C01) typewritten in the upper right-hand corner of the submittal. The submittals within each PDF shall be

in the same sequential order as they are listed in the specification Section. Submittals not containing the Reference Keynote Number will be rejected as incomplete.

3. No typical submittals will be accepted. Each submittal shall be project specific and clearly identify specifically which components or parts are being submitted for approval. Any product submittals, such as a catalog sheet, which do not clearly identify which components or parts are being submitted for approval, will be rejected as incomplete.

B. Product Data.
   1. Pursuant to Section 013300 Submittal Procedures.
   2. Manufacturer's data including materials of construction, weight, and related information for each item specified in PART 2 PRODUCTS.

PART 2 PRODUCTS

2.01 MATERIALS

A. **Single Conductors (260519.C01).**
   1. Conductors shall be rated for 600 volts and conform to applicable requirements of NEMA.
   2. Conductors shall be stranded copper.
   3. Insulation type shall be THWN-2.
   4. Conductors shall be sized per the Drawings and the NEC, whichever is greater.
   5. Rome Cable Corporation, Southwire Company, Okonite Company, or approved equal.

B. **Flexible Cords (260519.C05).**
   1. Conductors shall be rated for 600 volts and conform to applicable requirements of NEMA.
   2. Conductors shall be stranded copper.
   3. Flexible cord sheath shall be type SOOW, rated for 90 degree C and high-visibility yellow.
   4. Southwire Company, General Cable, Electri-Cord Manufacturing Company, or approved equal.

C. **MC (Metal Clad) Cables (260519.C25).**
   1. Shall be rated 600 volts and conform to applicable requirements of NEMA.
   2. Conductors shall be solid copper.
   3. Insulation type shall be THHN/THWN.
   4. Armor material shall be aluminum.
   5. Southwire, or approved equal.

2.02 ACCESSORIES

A. **Colored Tape (260519.T01).**
   1. Colored tape shall be used to identify individual conductors larger than # 6 AWG.
   2. 3M colored tape, or approved equal.

B. **Cable Ties (260519.T05).**
   1. Cable ties shall be nylon, adjustable, self-locking, and properly sized for the bundle and force implied.
   2. Thomas and Betts, Panduit, or approved equal.

C. **Pulling Compound (260519.P01).**
   1. Pulling compound shall be non-corrosive, noncombustible, nonflammable waxed based lubricant listed for this use.
   2. Ideal Company, Polywater, Inc., or approved equal.

PART 3 EXECUTION

3.01 INSTALLATION

A. General.
1. All identification labeling shall be in compliance with Section 260553 Electrical and Control Identification.
2. Conductor and cable installations shall meet or exceed the NECA National Electrical Installation Standards.
3. CONTRACTOR shall not exceed the manufacturer's recommendations for maximum pulling tensions or minimum bending radii for respective conductors or cables.
4. Pulling compound is recommended for all conductor or cable installations and shall be used on all installations requiring a mechanical pulling device.
5. CONTRACTOR shall not exceed the manufacturer's recommended pulling tensions on all conductor or cable installations requiring the use of a mechanical pulling device. Should the pulling tensions be exceeded, and the conductor or cable becomes damaged, the conductor or cable shall be removed from the raceway and discarded. It shall not be reused under any circumstance on the project. The CONTRACTOR shall be responsible to make the alterations necessary before attempting to re-pull new conductors or cables.
6. Immediately after pulling in conductors or cables, the pulling compound shall be completely removed from the conductors or cables, from boxes, enclosures, floors, walls, etc.
7. Conductor and cable installations shall be continuous without splices or intermediate terminations unless specifically identified on the Drawings or prior written approval from the ENGINEER.
8. Where conductors or cables are routed in boxes enclosures or cable tray they shall be neatly bundled with cable ties at intervals not to exceed 12 inches on center. The tension for the cable ties shall be set with a tool specifically manufactured for that purpose and of the same manufacturer as the cable tie. Side cutters, linemen pliers and similar tools shall not be used to cut the tail end of the cable tie. The CONTRACTOR shall only use the tool specifically manufactured for this purpose and of the same manufacturer as the cable tie.
9. Conductors and cables shall not be installed until the raceway, boxes, enclosures, conduit bushings, etc. have all been installed. Where conductors or cables have been installed prior to meeting this requirement, the ENGINEER shall at their discretion elect to have the conductors or cables removed, disposed of and replaced with new product.
10. Should the outer jacket of any conductor or cable be damaged in any way, they shall be removed, disposed of and replaced with new product.
11. An equipment grounding conductor shall be installed in all raceways. Size shall be as identified on the Drawings or the NEC, whichever is greater, but in no case shall it be less than # 16 AWG for under 50 volts and no less than # 14 for 50 volts or above.

END OF SECTION

SECTION 26 05 26
GROUNDING AND BONDING FOR ELECTRICAL SYSTEMS

PART 1 GENERAL

1.01 SUMMARY

A. Section Includes.
   1. The section includes requirements for grounding electrodes, equipment grounding and electrical bonding.

1.02 SUBMITTALS

A. Contractor shall submit all the product data in Division 26 at the same time. Piecemeal submittals will be rejected as incomplete.
   1. The product data shall be submitted in PDF format. Each PDF shall only contain products from a single specification section, products in a different specification section shall be in a separate PDF.
   2. A submittal is required for each product specified. Each individual product submittal shall have the corresponding Reference Keynote Number (example - 260526.C01) typewritten in the upper right-hand corner of the submittal. The submittals within each PDF shall be in the same sequential order as they are listed in the specification Section. Submittals not containing the Reference Keynote Number will be rejected as incomplete.
   3. No typical submittals will be accepted. Each submittal shall be project specific and clearly identify specifically which components or parts are being submitted for approval. Any product submittals, such as a catalog sheet, which do not clearly identify which components or parts are being submitted for approval, will be rejected as incomplete.

B. Product Data
   1. Pursuant to Section 013300 Submittal Procedures.
   2. Manufacturer’s data including materials of construction, methods of installation and related information for each item specified in PART 2 PRODUCTS.

PART 2 PRODUCTS

2.01 MATERIALS

A. **Ground Rods (260526.G01).**
   1. Ground rods shall be provided as shown on the drawings.
   2. Ground rods shall be copper clad.
   3. Ground rods shall be a minimum of 5/8 inch diameter.
   4. Ground rods shall be a minimum of 10 feet long.

B. **Compression Connectors (260526.C20).**
   1. Compression connections shall be provided as shown on the drawings and as required for bonding end-use equipment.
   2. Compression connections shall be compress-deforming type, extruded copper material.
   3. Compression connections shall be tin electroplated for corrosion resistance.
   4. Compression connections shall be ring-type connectors. Forked connectors shall not be used on grounding conductors.
   5. Provide Burndy products, or approved equal.

C. **Mechanical Connectors (260526.C21).**

1. Mechanical connectors shall be provided as shown on the drawings and as required for bonding to pipes.
2. Mechanical connectors shall be UL 467 Listed, copper material.
3. Mechanical connectors shall be sized to match the pipe being bonded.
4. Mechanical connector clamps shall permit parallel or 90° cable connection.
5. Mechanical connectors installed below-grade shall include silicon bronze hardware.
6. Provide Burndy GAR3902 series for above-ground installations, or approved equal.
7. Provide Burndy GAR-BU series for below-grade installations, or approved equal.

PART 3 EXECUTION

3.01 INSTALLATION

A. General.
1. All identification labeling shall be in compliance with Section 260553 Electrical and Control Identification.
2. Bond separately derived systems, including generators, to the grounding electrode system.
3. Maintain equipment ground continuity throughout the facility by means of a grounding conductor routed in all raceways.
4. Provide grounding conductors pursuant to Section 260519. Conductors shall be copper and shall be sized per the Drawings or the NEC, whichever is greater.
5. Provide ground bushings for all conduits that do not terminate in a hub type fitting and install at the source of power with a bonding conductor fastened to the ground bushing.
6. Provide ground bar kits as shown on the Drawings and where two (2) or more grounding conductors are terminated in a box or enclosure.
7. Install ground rods at the locations and in the number shown on the Drawings or per the NEC, whichever is greater.
8. Bond the grounding electrode system to all metallic water and wastewater piping.

B. Grounding Conductors.
1. Brush grounding conductors clean of debris before connections are made.
2. Strip insulated conductor insulation in a neat, workman like manner where insulated conductors are used.
3. Fasten all conductors securely.

C. Connections.
1. Install connectors according to the manufacturer’s directions, using the proper dies, tools, etc. designed specifically for this purpose.
2. Provide compression connector type connections to ground rods, re-bar, building steel, end use equipment and bolt to the equipment using washers and split lock washers for secure fastening. Bolts shall be grade 5 for grounding connections and shall be tightened to the manufacturer’s recommend torque.

END OF SECTION

SECTION 26 05 29
HANGERS AND SUPPORTS FOR ELECTRICAL SYSTEMS

PART 1 GENERAL

1.01 SUMMARY

A. Section Includes:
   1. This section includes requirements pertaining to electrical equipment anchoring and electrical equipment hanging and support.

1.02 SUBMITTALS

A. Contractor shall submit all the product data in Division 26 at the same time. Piecemeal submittals will be rejected as incomplete.
   1. The product data shall be submitted in PDF format. Each PDF shall only contain products from a single specification section, products in a different specification section shall be in a separate PDF.
   2. A submittal is required for each product specified. Each individual product submittal shall have the corresponding Reference Keynote Number (example - 260529.C01) typewritten in the upper right-hand corner of the submittal. The submittals within each PDF shall be in the same sequential order as they are listed in the specification Section. Submittals not containing the Reference Keynote Number will be rejected as incomplete.
   3. No typical submittals will be accepted. Each submittal shall be project specific and clearly identify specifically which components or parts are being submitted for approval. Any product submittals, such as a catalog sheet, which do not clearly identify which components or parts are being submitted for approval, will be rejected as incomplete.

B. Product Data.
   1. Pursuant to Section 013300 Submittal Procedures.
   2. Manufacturer’s data including materials of construction, equipment weight and related information for each item specified in PART 2 PRODUCTS.
   3. Seismic calculations and drawings.

PART 2 PRODUCTS

2.01 MATERIALS

A. **Hot Dipped Galvanized Hardware (260529.H11).**
   1. Bolts shall be hot dipped galvanized steel and sized for the load served and have a hex head unless specifically specified otherwise elsewhere.
   2. Nuts shall be hot dipped galvanized steel hex nut.
   3. Washers shall be hot dipped galvanized steel, USS pattern flat washers.
   4. Split lock washers shall be hot dipped galvanized steel.
   5. Threaded rods and couplings shall be hot dipped galvanized steel.
   6. Eye-bolts, u-bolts, bent-bolts and similar connecting hardware shall be hot dipped galvanized steel.

B. **Galvanized Hardware (260529.H12).**
   1. Shall be similar to 260529.H11, except finish shall be regular galvanized in lieu of hot dipped galvanized.

C. **Hot Dipped Galvanized Anchors (26 0529.A11).**

1. Wedge or stud anchors installed in concrete or masonry shall be hot dipped galvanized steel and sized for the load served.
2. Toggle type fasteners shall only be used in hollow sheetrock wall. The wing part of the fastener may be mild steel, but the bolt shall be hot dipped galvanized steel.

D. **Galvanized Anchors (260529.A12).**
1. Shall be similar to 260529.A11, except finish shall be regular galvanized in lieu of hot dipped galvanized.

E. **Hot Dipped Galvanized Beam Clamps (260529.B11).**
1. Beam clamps shall be hot dipped galvanized steel and sized for the load served.

F. **Galvanized Beam Clamps (260529.B12).**
1. Shall be similar to 260529.B11, except finish shall be regular galvanized in lieu of hot dipped galvanized.

G. **Hot Dipped Galvanized Strut Channel (260529.S11).**
1. Strut channel shall be hot dipped galvanized after fabrication and shall be a minimum of 12 gauge.
2. Strut channel shall have factory pre-drilled holes.

H. **Galvanized Strut Channel (260529.S12).**
1. Shall be similar to 260529.S11, except finish shall be regular galvanized in lieu of hot dipped galvanized.

2.02 SEISMIC BRACING

A. **Seismic Anchoring and Bracing Products (260529.S90).**
1. Provide seismic bracing for the vertical and lateral restraint of all conduits, conduit racks, raceways, cable trays, required by the International Building Code and Oregon Structural Specialty Code.

PART 3 EXECUTION

3.01 INSTALLATION

A. General.
1. Hardware shall be set to a torque as recommended by the manufacturer.
2. Washers and split lock washers shall be installed on all bolts, threaded rods and anchors.
3. Lead or plastic type anchors are prohibited from use on the project.
4. When threaded rods are installed in drop-in type anchors, a washer, split lock washer and a jamb nut shall be installed at the anchor to ensure stability.
5. When channel (strut) is installed as a hanger or support from threaded rod, washers, split lock washers and jamb nuts shall be installed on both sides of the strut to lock it in place.
6. Cut ends of channel, strut, threaded rods or other cut fittings shall be filed smooth before installation.
7. Cut ends of hot dipped galvanized channel and strut shall be coated with three coats of cold galvanizing compound after the channel has been filed to prohibit rust.
8. Concrete anchors shall be installed as per the manufacturer’s directions and set using the manufacturer’s supplied tool.
9. Threaded rod shall not extend more than one (1) inch beyond the channel, strut or other material it is supporting.
10. Hangers and supports shall be installed level and plumb.

11. Hangers and supports shall be installed per the National Electrical Code, Building Code and Structural Code and shall be designed to safely support the load. The ENGINEER may request the CONTRACTOR provide a copy of their design calculations for the seismic requirements and the load served.

B. Indoor and Outdoor Installation
   1. Hot dipped galvanized products shall be used in all outdoor locations.
   2. Regular galvanized products shall be used in all indoor locations.

C. Seismic Anchoring and Bracing
   1. The design of the seismic anchoring and bracing system shall be by a licensed Structural Engineer in the State of Oregon. The CONTRACTOR shall arrange and pay for the services of the licensed Engineer.
   2. Wet stamped and signed calculations and drawing of the seismic anchoring and bracing system shall be submitted to the Architect and Engineer for review and approval.

END OF SECTION

SECTION 26 05 33
RACEWAYS AND BOXES FOR ELECTRICAL SYSTEMS

PART 1 GENERAL

1.01 SUMMARY

A. Section Includes
   1. The Section includes the requirements pertaining to conduits and fittings used to contain electrical conductors and cables.
   2. All conductors and cables shall be installed in conduit or approved raceways regardless of which Division the conductors or cables are specified.

1.02 REFERENCES

A. The following is a list of standards which may be referenced in this Section.
   1. American National Standards Institute (ANSI).
      a. C80.1, Rigid Steel Conduit-Zinc Coated.
   2. American Society for Testing Materials (ASTM).
      a. A123 E1, Standard Specification for Zinc-Coated (Galvanized) Coatings on Iron and Steel Products.
   3. National Electrical Contractors Association (NECA).
      a. National Electrical Installation Standards (NEIS).
   4. National Electrical Manufacturers Association (NEMA).
      a. TC 3, PVC Fittings for use with Rigid PVC Conduit and Tubing.
      b. TC 6, PVC and ABS plastic Utilities Duct for Underground Installation.
   5. Nation Fire Protection Association (NFPA).
      a. 70, National Electrical Code (NEC).
   6. Underwriters Laboratories, Inc. (UL).
      a. 6, Standard for Safety Rigid Metal Conduit.
      b. 514B, Standards for Safety Fittings for Conduit and Outlet Boxes.
      c. 651, Standard for Safety Schedule 40 and 80 PVC Conduit.
      d. 651A, Standard for Safety Type EB and Rigid PVC Conduit and HDPE Conduit.
      e. 1660, Standard for Safety Liquid-Tight Flexible Nonmetallic Conduit.
      f. 360, Standard for Safety Liquid-Tight Flexible Metallic Conduit.
      g. 797, Standard for Safety Electrical Metallic Conduit.

1.03 SUBMITTALS

A. Contractor shall submit all the product data in Division 26 at the same time. Piecemeal submittals will be rejected as incomplete.
   1. The product data shall be submitted in PDF format. Each PDF shall only contain products from a single specification section, products in a different specification section shall be in a separate PDF.
   2. A submittal is required for each product specified. Each individual product submittal shall have the corresponding Reference Keynote Number (example - 260533.C01) typewritten in the upper right-hand corner of the submittal. The submittals within each PDF shall be in the same sequential order as they are listed in the specification Section. Submittals not containing the Reference Keynote Number will be rejected as incomplete.
   3. No typical submittals will be accepted. Each submittal shall be project specific and clearly identify specifically which components or parts are being submitted for approval. Any product submittals, such as a catalog sheet, which do not clearly identify which components or parts are being submitted for approval, will be rejected as incomplete.

B. Product Data.
   1. Pursuant to Section 013300 Submittal Procedures.
   2. Manufacturer's data including materials of construction, equipment weight and related information for each item specified in PART 2 PRODUCTS.

PART 2 PRODUCTS

2.01 MATERIALS

A. **Liquid-Tight Flexible Metal Conduit (LFMC) (260533.C25).**
   1. Shall be constructed of a flexible steel core with a sunlight resistant thermoplastic outer jacket.
   2. Provide galvanized conduit fittings.
   3. No couplings shall be installed.
   4. Sealing rings shall be installed where conduit terminates at an enclosure.
   5. Conduit shall be Anaconda, Electriflex, T & B, or approved equal.

B. **Rigid Non-metallic Conduit (PVC) (260533.C30).**
   1. Shall be schedule 40 PVC unless specifically called out otherwise on the Drawings.
   2. Shall be sunlight resistant.
   3. Shall be manufactured in accordance with UL-651 Standard.
   4. Conduit and fittings shall be securely glued.
   5. Provide conduit bell ends at vaults unless specifically called out otherwise on the Drawings.
   6. Provide PW Pipe, Carlon, or approved equal.

C. **EMT Conduit (260533.C50).**
   1. EMT conduit may be used in all indoor and outdoor locations. In outdoor locations the fittings shall be watertight compression fittings. Set screw fittings shall be acceptable in indoor locations.
   2. Exposed surface mounted EMT conduit shall be powder coated.
   3. Conduit connectors shall have insulated throats, plastic bushings or ground bushing installed.

D. **Galvanized Sheet Metal Boxes (260533.B15).**
   1. Shall comply with NEMA specifications for sheet metal boxes.
   2. All boxes shall be deep. No shallow boxes shall be permitted.
   3. Provide mud rings or industrial covers for the devices installed and a depth to match the sheetrock where applicable.

E. **Wireway (260533.W99).**
   1. Shall be sized as shown on the Drawings.
   2. Code gauge galvanized steel, NEMA 1.
   3. ANSI 61 gray finish.
   4. Screw-type cover.
   5. Shall be furnished with all accessories, including flanges, endcaps, crosses, tees, reducers, hangers, and hardware for a complete system.
   6. Cooper Lay-In Wireway, or approved equal.

F. **Cast Aluminum Boxes (260533.B55).**
   1. Shall be cast aluminum boxes, have tapered threaded hubs and be the deep FD type in all cases.
   2. Boxes shall have internal grounding screw.
   3. Shall have external mounting tabs.

4. Whichever manufacturer is submitted and approved, all like boxes on Project shall be of the same manufacturer.
5. Provide OZ Gedney, Crouse-Hinds, or approved equal.

G. **General Enclosures (260533.E01).**
1. Shall be NEMA 1.
2. Back panel shall be aluminum and painted white.
3. Door shall be hinged and gasketed.
4. A grounding kit shall be provided.
5. Shall be provided with necessary accessories as shown on the Drawings.
6. Whichever manufacturer is submitted and approved, all like boxes on Project shall be of the same manufacturer.

H. **HDPE Medium In-Ground Pull Box (260533.M50).**
1. Shall be HDPE in ground box with flush HDPE cover.
2. Dimensions shall be 13” x 24” x 12” deep.
3. Lid shall be ASTM Pedestrian rated.
4. Bolts shall be provided with penta-head bolts for cover.
5. Cover shall have verbiage molded into the top identifying the type of service served such as electric, fiber optic, communications, etc.
6. Shall be Old Castle 1324, or approved equal.

2.02 ACCESSORIES

A. **Identification Tape (260533.T01).**
1. Shall be manufactured for the purpose of installing in below grade in trenches.
2. Shall be red, six (6) inches wide and read “Danger Electric Buried Below” for all power conduits or common trenches with power and other types of conduits buried together. Should the trench contain telephone, fiber optic and no power, the identification tape color shall match the industry standard color and verbiage.
3. Provide T & B, Brady, or approved equal.

B. **Glue (260533.G01).**
1. Glue shall be the wet/dry rated cement commonly referred to as “Blue Glue”.

C. **Firestopping (260533.F90).**
1. Shall be as specified in Division 07 Specifications.
2. Shall be Listed for the conduit, raceway or box being installed.
3. Install per the Manufacturer’s instructions.

D. **Cord Grip (CGB) (260533.C89).**
1. Provide galvanized steel bodied cord grips with NPT mounted in conduit couplings as identified on the Drawings.
2. Provide Hubbell, Kellems, or approved equal.

E. **Cord Connector (260533.C90).**
1. Provide galvanized steel cord grip with integrated galvanized steel mesh.
2. Provide Hubbell, or approved equal.
3. Provide cord grip with galvanized steel integrated mesh for any unsupported cord longer than 59 inches to provide adequate support of the cord.

F. **Bushing Plug (260533.P90).**
1. Provide OZ Gedney type PPC bushing plug, or approved equal.

G. **Tracer Wire (260533.T02).**
1. Shall be red unless specifically called out differently on the Drawings.
2. Shall be attached along each underground conduit with cable ties at a frequency not to exceed 60 inches. Only one conduit per duct bank routed to each location is required to have a tracer wire attached.
3. Shall be routed to each pull box, vault, etc.
4. Reference Section 26 0519 for THWN-2 type conductor specifications.

H. **Soundproof Putty Pads (260533.X01).**
1. Shall be self-adhearing.
2. Shall be 1/4" thick, minimum.
3. Shall be rated STC 59 minimum.
4. Shall be UL Listed.
5. Provide SpecSeal SSP Putty Pads, or approved equal

PART 3 EXECUTION

3.01 INSTALLATION

A. General Requirements
1. Install conduit runs in accordance with the schematic representation shown on the Drawings.
2. Minimum conduit size shall be .75 inch unless specifically called out otherwise on the drawings.
3. Galvanized Rigid Conduit (GRC) shall be used for all conduits subject to damage up to a height of eight (8) feet above finished floor or finished grade.
4. Where raceways are indicated, but the routing is not identified, the routing shall be the CONTRACTOR'S choice and in accordance with the rest of the Contract Documents and the National Electrical Code (NEC).
5. Raceways shall be electrically and mechanically complete before the conductors are installed.
6. Routing of conduits may be adjusted to avoid obstructions. Coordinate with other trades prior to installation of raceways. Lack of such coordination shall not be justification for extra compensation and removal and reinstallation to resolve conflicts shall be at the CONTRACTOR's expense.
7. Conduit joints shall be wrench tight, thoroughly grounded, secure and free of obstructions.
8. Conduits shall be reamed.
9. Exposed conduits shall be installed parallel or perpendicular to the structural members and surfaces and shall be level and or plumb.
10. When two or more conduits are routed in the same general direction their routing shall be parallel with symmetrical bends.
11. Conduits shall be bent with equipment specifically designed for this purpose and for the specific size and type of conduit.
12. Conduits that are creased or crushed shall be replaced.
13. Install conduits such that they do not interfere with the proper and safe operation of equipment and do not block or otherwise interfere with the ingress and egress and installation of removable hatches and covers.
14. Install expansion joints as needed across expansion joints in the structure and at other locations where necessary to compensate for thermal or mechanical expansion or contraction.
15. Conduits shall be routed at least six (6) inches from high temperature piping, ducts and flues.

16. Final connections to dry type transformers, motors, instruments and other equipment requiring a flexible connection shall be made with LFMC conduit. Lengths shall not exceed three (3) feet.
17. All conduits shall be capped throughout construction to prevent entrance of dirt, trash, water, etc.
18. All power conduits routed to or from an adjustable frequency drive or a variable frequency drive shall be metallic conduit. Conduits installed underground shall meet the requirements listed below under part B; underground and concrete encased conduit installation.
19. Spare conduits shall be provided with a coupling and threaded male plug that matches the makeup of the conduit for the area they are installed in. The conduit shall terminate at an enclosure when one is called out and exists as part of the Work. Where the spare conduit is stubbed up in a concrete slab for future equipment, it shall be installed flush with the finished floor. Where spare conduits are routed to other areas such as outside a building envelope, in an attic, to a vault, etc., the conduit shall have a female conduit cap installed.

B. Electrical Metallic Raceway (EMT) Installation
   1. Electrical Metallic raceways (EMT) shall be used throughout this project as follows:
      a. EMT shall serve as the "homerun" between the panelboard and the first device for receptacle and lighting branch circuits routed above grade. The use of MC type cable shall be permitted to "spider" out of the first device box to the wiring devices within the respective branch circuit. No individual MC run shall exceed 75 feet.
   2. All exposed surface mounted EMT conduit shall be powder coated.

C. Underground Conduit Installation.
   1. Underground conduits shall be PVC except as specifically noted differently elsewhere.
   2. Conduits routed under a concrete slab shall be routed under the vapor barrier. The conduits shall be routed deep enough so the radius of the conduit stubbed up through the slab is completely below grade. The vapor barrier shall be sealed at every point a conduit penetrates the barrier as per the requirements specified for the vapor barrier.
   3. All power conduits routed to or from an adjustable frequency drive or a variable frequency drive shall be metallic conduit.
   4. Underground conduits shall be routed as shown on the Drawings.
   5. Power conduits shall be separated from all other conduits by a minimum of 12 inches and when required to cross other conduits it shall be done at a 90 degree angles.
   6. Conduits routed in structural concrete shall be routed in such a manner as to not interfere with the structural integrity of the concrete. The ENGINEER shall approve CONTRACTOR’s proposed conduit routing before installation. It is the CONTRACTOR’s responsibility to coordinate conduit routing with the ENGINEER well before it is scheduled to be installed. Conduits shall be stubbed up directly under the enclosure or device their will serve. The CONTRACTOR is responsible to coordinate with the other trades prior to installation of raceways. Lack of coordination shall not be justification for extra compensation and removal and re-installation of conduits to resolve conflicts shall be done at the CONTRACTOR’s expense.
   7. Underground conduit shall have a minimum of 24 inches of cover unless specifically called out differently on the Drawings.
   8. Identification tape shall be centered and laid neatly above all underground conduits that extend beyond the envelope of a building or structure. The tape shall be 12 inches below finished grade.

D. Boxes
   1. Install boxes and enclosures in accordance with the schematic representation as indicated on the Drawings.

2. Install vaults and in-ground box tops (lids) such that they are ½ inch above finished grade to prevent water ingress.
3. Boxes and enclosures shall be mounted level and plumb.
4. Boxes and enclosures shall not be altered, holes drilled, etc. in any way that may compromise the NEMA rating of the enclosure or box.
5. Boxes and enclosures shall be bonded the equipment grounding conductor.
6. Provide a divider whenever a box contains conductors of different potentials that the code requires separation.
7. Surface mounted enclosures and boxes shall be spaced off the surface at least 1/4 inch in damp or wet locations.
8. Enclosures shall be provided whenever a junction or pull box larger than 4 inches square is required.
9. Sheet metal boxes are permitted only in locations where EMT conduit is approved.
10. Enclosures shall be labeled with a nameplate as specified in Section 26 05 53 – Identification for Electrical Systems. The nameplate shall match the callout on the Drawings. If no callout exists, the CONTRACTOR is responsible to meet with the ENGINEER and develop a list of pull box, junction box and termination box nomenclature and their as-built Drawings shall reflect these callouts.

E. Sound Proof Putty Pads
   1. Install sound proof putty pads on all Division 26, 27, and 28 electrical boxes in all sound partition walls shown on the Architectural Drawings.

F. Miscellaneous
   1. Provide cord grip for any unsupported cord.

END OF SECTION

SECTION 26 05 53
ELECTRICAL AND CONTROL IDENTIFICATION

PART 1 GENERAL

1.01 SUMMARY

A. Section Includes
   1. Requirements for identification of electrical, safety, measurement, data, fire alarm, security, monitoring, control and related components and equipment.

1.02 SUBMITTALS

A. Contractor shall submit all the product data in Division 26 at the same time. Piecemeal submittals will be rejected as incomplete.
   1. The product data shall be submitted in PDF format. Each PDF shall only contain products from a single specification section, products in a different specification section shall be in a separate PDF.
   2. A submittal is required for each product specified. Each individual product submittal shall have the corresponding Reference Keynote Number (example - 260553.C01) typewritten in the upper right-hand corner of the submittal. The submittals within each PDF shall be in the same sequential order as they are listed in the specification Section. Submittals not containing the Reference Keynote Number will be rejected as incomplete.
   3. No typical submittals will be accepted. Each submittal shall be project specific and clearly identify specifically which components or parts are being submitted for approval. Any product submittals, such as a catalog sheet, which do not clearly identify which components or parts are being submitted for approval, will be rejected as incomplete.

B. Product Data
   1. Pursuant to Section 013300 – Submittal Procedures.
   2. The initial submittal shall contain all the products, samples and data base specified. An initial submittal that does not contain all the specified data shall be returned as incomplete.

C. Samples
   1. Provide a sample of each type and size of nameplate, label, tag and means of attachment specified for approval by the OWNER.

D. Quality Assurance / Quality Control Submittals
   1. The CONTRACTOR shall be responsible for submitting a data base of all identification nameplates, labels, panel schedules and tags required for the Work. The data base shall be developed in the most current edition of Microsoft Excel for the OWNER’s future use.

E. Closeout Submittals
   1. Pursuant to Section 017800 – Closeout Submittals.

PART 2 PRODUCTS

2.01 MATERIALS

A. **Circuit Breaker Panel Schedules (260553.S21).**
   1. Shall be created in Microsoft Excel software. One copy of each schedule shall be included in the closeout submittals.
   2. Shall be printed on 60 - 70 lb. white card stock.

B. **Plastic Nameplates (260553.P05).**
   1. Shall have a black background with white engraved letters. Nameplates for emergency functions shall be red background with white engraved letters. The nameplates shall have self-adhesive rated for the environment which they are installed. The font type shall be consistent on all nameplates and centered on the tag. The hole shall be large enough that the chain will not bind in the hole.
   2. Provide products supplied by E.R. Perry Signs & Engraving, or approved equal.

C. **Heat Sealing Lamination Products (260553.L11).**
   1. Provide documents in laminate when specified. Laminate shall be clear, non- yellowing and sized for various sized documents.
   2. Shall be 5 mil in thickness.

D. **Device & Faceplate Identification Labels (260553.F01).**
   1. Shall be BLACK letters on clear background.
   2. 3/8” high block lettering.
   3. Adhesive label.
   4. Brother P-Touch or approved equal.

E. **Conductor and Cable Identification Sleeves (260553.T31).**
   1. The identification sleeves shall be properly sized for the cable or conductor.
   2. Shall be adhesive style.
   3. Sleeves shall be white with black machine generated characters.
   4. Provide Brady wire and cable sleeves, or approved equal.

F. **Conduit Trench Marker Tape (260553.T21).**
   1. Shall be a minimum of six (6) inches wide, polyethylene tape manufactured for this purpose.
   2. Color code for tape shall be as listed below and the verbiage on the tape shall identify the type of system i.e. “Caution Buried Electric Line Below”.
      a. Electric Power – RED
      b. Fiber Optic – ORANGE
      c. Data/Phone – ORANGE
      d. Control – ORANGE
   3. Provide products manufactured by Seaton Identification Products, Harris Industries, or approved equal.

G. **Flexible Identification Tape (260553.T56).**
   1. Shall be white, red, yellow, clear or as otherwise specified tape with black characters.
   2. Standard tape size shall be 0.5 inch high unless specified otherwise and shall have extra strength adhesive rated for indoor and outdoor use.
   3. Provide products manufactured by Brother, or approved equal.

H. **Arc Flash Labels (260553.A11).**
   1. Reference Section 16057 – Electrical Systems Analysis for additional details.
   2. Shall be self adhesive and manufactured specifically for this purpose.
   3. Shall be four (4) inches high by six (6) inches wide minimum.
   4. Shall be based on the latest edition requirements of the National Fire Protection Association (NFPA) 70E – Standard for Electrical Safety.
   5. At a minimum the label shall contain the following information.
      a. Date calculation was performed and who did the calculation.
      b. Danger or Warning level based on the incident energy. When above 40 cal/cm sq. the label shall read “Danger”.
      c. Shall identify the hazard as being both arc flash and shock hazard.

d. Shall clearly state the incident energy and the level of personal protective equipment (PPE) required.
e. Provide labels manufactured by Dura Label, SKM System Analysis, Inc., or approved equal.

PART 3 EXECUTION

3.01 INSTALLATION

A. Conductor Color Coding
1. Conductors shall be colored as specified in the table below. The technical specification requirements for the conductors are specified elsewhere.

System	Conductor	Color
All Systems	Equipment Grounding	Green
IT / Data	Data Cable Sheath (outer cover)	Reference Division 27
24 Volt DC	Positive	Blue
	Negative	White w/Blue Stripe
	Discrete Input Line (hot leg) Side	Blue
	Discrete Input Switch Leg	Blue w/White Stripe
	Discrete Output Line (hot leg) Side	Blue
	Discrete Output Switch Leg	Blue w/Orange Stripe
24 Volt AC	Hot Leg	Red
	Neutral	White
	Discrete Input Line (hot leg) Side	Red
	Discrete Input Switch Leg	Red w/Blue Stripe
120 Volt AC Control	Hot Leg	Red
	Neutral	White
	Discrete Input Line (hot leg) Side	Red
	Discrete Input Switch Leg	Red w/White Stripe
	Discrete Output Line (hot leg) Side	Red
	Discrete Output Switch Leg	Red w/Orange Stripe
120/240 Volt Single Phase	Hot Leg # 1	Black
	Hot Leg # 2	Red
	Neutral	White
120/208 Volt Three Phase	Phase A	Black
	Phase B	Red
	Phase C	Blue
	Neutral	White
120, 208, 277 Volt	Switch Legs	Pink
480 Volt Three Phase	Phase A	Brown
Wye or Delta Corner Tap	Phase B	Orange
	Phase C	Yellow
	Neutral	Gray
120/240 Delta Three Phase	Phase A	Brown
	Phase B	Orange
	Phase C	Yellow
	Neutral	Gray

B. Circuit Breaker Panel Schedules
1. CONTRACTOR shall create a panel schedule for all new panels and all existing panels where circuits are added and/or removed. CONTRACTOR shall update the panel

schedules to reflect as-built conditions. Print schedules on 60 - 70 lb. white card stock with black ink.
2. Schedules shall be neatly trimmed with 1/8" white space borders.
3. The finished schedules shall be laminated and neatly trimmed with 1/8" of laminate border.
4. A sample layout shall be submitted to OWNER for approval prior to installation.

C. Plastic Nameplates
1. Provide plastic nameplates for panelboards, motor control centers, motor starters, disconnects, variable frequency drives, control panels and similar equipment. The verbiage on the nameplate shall be as identified on the Contract Drawings. The CONTRACTOR shall request the required verbiage from the ENGINEER should it not be available on the Contract Drawings.
2. In addition to the nameplate identifying the equipment, a second nameplate shall be provided that identifies the source of power for the equipment i.e. “Fed From PNL208-1”.
3. Typically the nameplates shall be centered and installed near the top of the equipment.
4. Nameplates shall be black with white characters unless specified otherwise.
5. Nameplates on emergency panels shall be red with white characters.

D. Conductor and Cable Identification Sleeves
1. Provide adhesive, machine generated, white labels with black characters for all cables and conductors. Explanation is provided below on how various systems shall be identified. In many cases the information necessary to develop the unique identification labels will be provided on the Contract Drawings. The verbiage required for the identification shall be as identified on the Contract Drawings. The CONTRACTOR shall request the required verbiage from the ENGINEER should it not be available or clear based on the information provided on the Contract Drawings.
2. The labels shall be installed between 6 to 8 inches from the end. Conductors shall be labeled at all splices and points of termination.
3. Power conductors and cables, including the neutral and the ground conductors shall all be identified individually. The identification label will be developed as follows: The first set of characters will be the equipment code identifying the source of power “PNL208” followed by the circuit number “CKT 12”. For example, the label would read “PNL208-CKT 12”.

E. Conduit Trench Marker Tape
1. Provide conduit trench marker tape for single or multiple buried conduits. The color and verbiage shall match the type of system installed. If the trench contains several systems, one of which is electric power, the tape shall be for electric power.
2. The tape shall be installed 12 inches below finished grade and shall be laid flat and parallel to the conduits.
3. Provide # 14 AWG, red, THWN-2 tracer wire fastened to one of the conduits. Tracer wire shall be fastened to the conduit with nylon cable ties at five (5) foot spacing or less. The tracer wire shall be brought up with the conduit to points where it terminates or enters in-ground boxes and vaults. The tracer wire shall be fastened above ground with stainless steel cable ties. Label the wire “tracer wire” and seal the end so water cannot penetrate with a heat shrink tubing type cap.

F. Device and Faceplate Identification Labels
1. Devices, faceplates, small electrical boxes 4 inches or less located indoors and similar equipment shall be identified utilizing flexible identification tape. Typically, the CONTRACTOR shall provide machine generated, white labels with black characters except as specified otherwise. Explanation is provided below on how various systems shall be identified. In many cases the information necessary to develop the unique identification labels will be provide on the Contract Drawings. The verbiage required for

the identification shall be as identified on the Contract Drawings. The CONTRACTOR shall request the required verbiage from the ENGINEER should it not be available or clear based on the information provided on the Contract Drawings.

2. Power receptacles faceplates (cover plates) shall state the panel and circuit number. A typical label might read “PNL208-1-CKT 15”.
3. Light switches faceplate shall state the panel and circuit number(s). A typical label might read “PNL208-2-CKT 15&17”.
4. Interior emergency light fixtures shall have a unique 0.5 inch adhesive dot applied to facilitate tracking routine maintenance required for emergency lighting. The dots shall be red when they have an integral battery back-up.
5. Fire alarm notification devices will be labeled with the NAC power supply source, circuit, and a unique device ID number. Fire alarm SLC devices will be labeled with the device’s unique SLC loop and unique device ID number.

G. Arc Flash Labels
1. The CONTRACTOR shall install arc flash labels on all electrical equipment as required by the NEC and National Fire Protection Association (NFPA) 70E – Standard for Electrical Safety. The minimum requirements for the labels are itemized in PART 2 Products.
2. The CONTRACTOR shall be responsible for providing the coordination study and arc flash analysis necessary to calculate the incident energy and personal protective equipment (PPE) data required on each label.
3. An as-built coordination study and arc flash analysis shall be prepared at the Contractor’s expense and be performed by a Professional Engineering licensed in the State of Oregon. The calculations shall utilize SKM Power Tools software and an electronic and hard copy shall be submitted to the Owner for approval. Arc Flash Labels with all data specified by the current edition of the NFPA 70E (Standard for Electrical Safety) and Occupational Safety & Health Administration (OSHA) shall be provided by the Contractor.
4. The CONTRACTOR is responsible to make the adjustments to the protective devices and circuit breakers as specified in the coordination study.

END OF SECTION

SECTION 26 05 73
OVERCURRENT PROTECTIVE DEVICE COORDINATION STUDY

PART 1 GENERAL

1.01 SUMMARY

A. Section Includes:

1. The section includes the requirements for a Short-Circuit Study, Protective Device Coordination Study, Arc Flash Study, and Arc Flash Warning Labels.

1.02 REFERENCES

A. Referenced Standards:

1. American National Standards Institute (ANSI).
2. Institute of Electrical and Electronics Engineers (IEEE):
   a. 242, Recommended Practice for Protection and Coordination of Industrial and Commercial Power Systems.
   b. 399, Recommended Practice for Industrial and Commercial Power System Analysis.
   c. 1584, Guide for Performing Arc Flash Hazard Calculations.
3. National Electrical Manufacturers Association (NEMA): Z535.4, Product Safety Signs and Labels.
4. National Fire Protection Association (NFPA):
   a. 70, National Electrical Code (NEC).
   b. 70E, Standard for Electrical Safety in the Workplace.
   c. 99, Health Care Facilities Code
5. Occupational Safety and Health Standards (OSHA): 29 CFR, Part 1910, Subpart S, Electrical.
6. Oregon Electrical Specialty Code.

1.03 SUBMITTALS

A. Contractor shall submit all the product data in Division 26 at the same time. Piecemeal submittals will be rejected as incomplete.

1. The product data shall be bound in a three ring binder with tabs for each Section. The tabs shall be numbered to match the specification Section numbers. Submittals not bound and labeled as specified will be rejected as incomplete.
2. A submittal is required for each product specified. Each individual product submittal shall have the corresponding Reference Keynote Number (example - 260573.S21) typewritten in the upper right hand corner of the submittal. The submittals within each Section tab shall be in the same sequential order as they are listed in the specification Section. Submittals not containing the Reference Keynote Number will be rejected as incomplete.
3. No typical submittals will be accepted. Each submittal shall be project specific and clearly identify specifically which components or parts are being submitted for approval. Any product submittals, such as a catalog sheet, which do not clearly identify which components or parts are being submitted for approval, will be rejected as incomplete.

B. Product Data.

1. Pursuant to 013300 Submittal Procedures.
2. Arc Flash Warning Label templates.

1.04 QUALITY ASSURANCE

A. Short circuit, protective device coordination, and arc flash studies shall be provided by a corporately and financially independent, unbiased, testing authority. The testing authority shall be independent of manufacturers, suppliers, and installers of equipment being tested. The testing authority shall have a minimum of five (5) years experience testing similar projects.

1.05 SEQUENCING AND SCHEDULING

A. Initial complete protective device coordination and arc flash studies shall be submitted at the same time as the submittal for all of the electrical distribution equipment. Approval of the study and the electrical distribution equipment shall be co-dependent, and will only be reviewed and approved simultaneously.
B. Revised short circuit, protective device studies, arc flash studies, and arc flash labels shall be submitted 10 days before energizing electrical equipment.
C. Final short circuit, protective device studies, and arc flash studies shall be completed prior to project completion. Final version of study shall include as-built equipment, materials, and parameter data or settings entered into equipment based on study.
D. Submit final arc flash labels described herein and in compliance with NFPA 70E and NEMA Z535.4 prior to project completion.

1.06 GENERAL STUDY REQUIREMENTS

A. The Study shall include the service and all of the following downstream power distribution equipment and associated Emergency / standby power systems at the following locations:

    1. Entire Power Distribution System.

B. The Study shall demonstrate selective coordination of the NEC Article 700 Emergency Branch per the Oregon Electrical Specialty Code.
C. The Study shall be signed and stamped by a licensed Professional Electrical Engineer in the State of Oregon.
D. Equipment and component titles used in the studies shall be identical to equipment and component titles shown on the Drawings.
E. Perform studies using one of the following electrical engineering software packages:

    1. SKM Power Tools for Windows
    2. ETAP
    3. EDSA
    4. Easy Power

F. Perform complete fault calculations for all new and future loads indicated on the Drawings.
G. Provide individual protective device time-current characteristics for the low voltage distribution system.
H. Time current curves for the Emergency System shall be provided.
I. The ENGINEER shall review the settings of all electronic trip circuit breakers and arc flash hazard levels. The settings shall not be set, nor the labels installed prior to approval by the ENGINEER.

PART 2 STUDIES AND PRODUCTS

2.01 SHORT CIRCUIT STUDY

A. General

    1. Prepare a Short Circuit Study in accordance with IEEE 39.
    2. Cable impedances shall be based on copper conductors.

3. Bus impedances shall be based on copper buses.
4. Cable and bus resistances shall be calculated at 25 degrees Celsius.
5. Medium voltage cable reactance shall be based on typical dimensions for standard cables with 133% insulation levels.
6. 600-volt cable reactance shall be based on the typical dimensions of THWN-2 conductors.
7. Transformer impedances shall be 92.5% of nominal impedance based on tolerances specified in IEEE C57.12.00.

B. The Short Circuit Study final report shall include the following:

1. Basic description, purpose, and scope of the study.
2. Descriptions of the scenarios evaluated and identification of the scenario used to evaluate short circuit ratings.
3. Explanation of bus and branch numbering system.
4. Prevailing conditions.
5. Selected base per unit quantities.
6. Source impedance data, including electric utility system, generator, and motor fault contribution characteristics.
7. Impedance diagrams.
8. Zero-sequence impedance diagrams.
9. One line diagrams and associated tabulations of data used to model the system components.
10. Calculation methods and assumptions.
11. Typical calculations.
12. Tabulation of calculation quantities.
13. Results, conclusions, and recommendations.

C. The short circuit interrupting and momentary (when applicable) duties for an assumed three-phase bolted fault shall be calculated at each:

1. Utility Service point.
2. Medium Voltage Switchgear.
3. Low Voltage Switchgear.
4. Switchboard.
5. Motor Control Center.
6. Automatic Transfer Switch.
7. Distribution Panel.
8. Branch Circuit Panelboard.
9. Future load contributions as shown on the One-Line Diagram.
10. Any additional point within the power distribution system as specified by the Engineer.

D. The Short Circuit Study shall be used to verify the following:

1. Equipment and protective devices are applied within their ratings.
2. Adequacy of distribution equipment bus bars to withstand short circuit stresses.
3. Cable and bus way sizes for ability to withstand short circuit heating, in addition to normal current loads.

E. Provide a tabulation of equipment short circuit versus available fault duties. The tabulation shall identify percentage of rated short circuit current and clearly identify equipment with insufficient ratings.

1. General Data
   a. Short circuit reactance of rotating machines.
   b. Cable and conduit material data.
   c. Bus data.
   d. Transformer data.
   e. Circuit resistance and reactance values.

2. Short Circuit Data
   a. Fault impedances.
   b. X/R ratios.
   c. Asymmetry factors.
   d. Motor contributions.
   e. Short circuit kVA.
   f. Symmetrical and asymmetrical fault currents.

3. Equipment Evaluation
   a. Equipment bus bracing, equipment short circuit rating, transformer, cable, busway.
   b. Maximum fault current available.

F. Provide a written summary at the end of the Short Circuit Study, which shall include the following:

1. Selected equipment deficiencies.
2. Results of short circuit study.
3. Conclusions and recommendations.

G. The Contractor shall be notified in writing of existing circuit protective devices improperly rated for new fault conditions.

H. The Short Circuit Study data shall be revised for as-built conditions.

2.02 ARC FLASH STUDY

A. Perform an Arc Flash Hazard Study after short circuit and protective device setting recommendations have been completed, reviewed, and accepted by the Engineer. Perform the analysis under worst-case arc flash conditions for all modes of operation. Provide an analysis of all operating scenarios which will be or have been influenced by the proposed or completed additions to the subject system.

B. The Arc Flash Hazard Study shall be performed in accordance with NFPA 70E, OSHA 29 CFR, Part 1910 Subpart S, and IEEE 1584.

C. The Arc Flash Hazard Study shall include the following:

1. Basic description, purpose, and scope of the study.
2. One Line Diagram.
3. Short Circuit Study.
4. Protective Device Settings Study.

5. Calculation methods and assumptions.
6. Typical calculation.
7. Evaluation summary spreadsheet.
8. Conclusions and recommendations.

D. Base Calculation: For each major part of the power distribution system, the following shall be determined:

1. Flash hazard protection boundary.
2. Limited approach boundary.
3. Restricted approach boundary.
4. Prohibited approach boundary.
5. Incident energy level.
6. Personal protection equipment (PPE) hazard/risk category.
7. Type of PPE required.

E. Produce arc flash warning labels that list items in Part C above and provide the following additional items:

1. Bus name.
2. Bus voltage.

F. Produce detail sheets that list items in Part C above and the following items:

1. Bus name.
2. Upstream protective device name, type, and settings.
3. Bus-to-line voltage.

G. Produce arc flash evaluation summary sheet listing the following additional items:

1. Bus name.
2. Upstream protective device name, type, and settings.
3. Bus-to-line voltage.
4. Protective device bolted fault current.
5. Arcing fault current.
6. Protective device trip/delay setting.
7. Breaker opening time.
8. Solidly grounded column.
9. Equipment type.
10. Gap.
11. Arc flash boundary.
12. Working distance.
13. Incident energy.
14. Required protective fire rated clothing type and class.

H. Analyze short circuit, protective device coordination, and arc flash calculations and highlight equipment that is determined to be underrated or causes incident energy values greater than 40 cal/cm2. Provide proposals to reduce energy levels.
I. Provide a written summary at the end of the Arc Flash Hazard Study, which shall include the following.

1. Equipment manufacturer's information used to prepare study.
2. Assumptions made during study.
3. Copy of one line diagram.
4. Arc flash evaluations summary spreadsheet.
5. Bus detail sheets.
6. Arc flash warning labels printed in color on adhesive backed labels.

2.03 ARC FLASH WARNING LABELS

A. Provide arc flash warning labels per NEC 110.16 and NFPA 70E.
B. All identification labeling shall be in compliance with Section 260553 Electrical and Control Identification.

PART 3 EXECUTION

3.01 GENERAL

A. Adjust relay and protective device settings according to reduce arc flash while maintaining coordination between downstream circuit breakers and the upstream main circuit breaker.
B. Perform minor modifications to equipment as required to accomplish conformance with short circuit study.
C. Notify Contractor in writing of required major equipment modifications.
D. Provide laminated one-line diagrams (minimum size 11" x 17") to post on interior of electrical room doors.
E. Provide arc flash warning labels on equipment as specified on this Section.

END OF SECTION

SECTION 26 05 83
WIRING CONNECTIONS

PART 1 GENERAL

1.01 SUMMARY

A. Section Includes.
   1. This Section includes requirements for conductor termination methods.

1.02 SUBMITTALS

A. Contractor shall submit all the product data in Division 26 at the same time. Piecemeal submittals will be rejected as incomplete.
   1. The product data shall be submitted in PDF format. Each PDF shall only contain products from a single specification section, products in a different specification section shall be in a separate PDF.
   2. A submittal is required for each product specified. Each individual product submittal shall have the corresponding Reference Keynote Number (example - 260583.C01) typewritten in the upper right-hand corner of the submittal. The submittals within each PDF shall be in the same sequential order as they are listed in the specification Section. Submittals not containing the Reference Keynote Number will be rejected as incomplete.
   3. No typical submittals will be accepted. Each submittal shall be project specific and clearly identify specifically which components or parts are being submitted for approval. Any product submittals, such as a catalog sheet, which do not clearly identify which components or parts are being submitted for approval, will be rejected as incomplete.

B. Product Data.
   1. Pursuant to Section 013300 - Submittal Procedures.
   2. Manufacturer’s data including materials of construction, applications and related information for each item specified in PART 2 PRODUCTS.

PART 2 PRODUCTS

2.01 MATERIALS

A. **Small Compression Connectors (260583.C01).**
   1. Insulated fork, ring or splicing (butt) connectors shall be provided for # 10 AWG or smaller conductors that splice together or terminate with a screw other than in a terminal block.
   2. Connectors shall be properly sized for the conductor and for the stud used.
   3. Burndy, Panduit, Thomas and Betts, or approved equal.

B. **Medium and Large Compression Connectors (260583.C10).**
   1. Non-insulated copper compression connectors shall be provided for # 8 AWG and larger conductors.
   2. The connector shall have a voltage and current rating equal to or exceeding the conductor.
   3. The barrel shall be long enough to accommodate a minimum of two (2) circumferential crimps.
   4. The connectors shall be properly sized for the conductor.
   5. Burndy, Panduit, Thomas and Betts, or approved equal.

C. **Electrical Spring Connectors (Wire Nuts) (260583.W01).**

1. Provide properly sized spring connectors for the size and number of conductors spliced.
2. Ideal, 3M, Thomas and Betts, or approved equal.

D. **Insulated Mechanical Multi-Tap Connectors (260583.M01).**
1. Provide properly sized, insulated, mechanical, multi-tapped connectors for splices.
2. Burndy, Panduit, Thomas and Betts, or approved equal.

2.02 ACCESSORIES

A. **Thin Wall Heat Shrink Tubing (260583.T01).**
1. Thin walled heat shrink tubing shall be flame retardant and made of cross-linked polyolefin.
2. The tubing shall have a minimum operating temperature of – 55 to + 135 degrees Celsius.
3. Burndy, Panduit, or approved equal.

B. **Heavy Wall Heat Shrink Tubing (260583.T10).**
1. Thin walled heat shrink tubing shall be flame retardant and made of cross-linked polyolefin.
2. The inside diameter shall be coated with an adhesive sealant to protect against moisture and corrosion.
3. The tubing shall have a minimum operating temperature of – 55 to + 135 degrees Celsius.
4. Burndy, Panduit, or approved equal.

C. **Heavy Wall Heat Shrinkable End Caps (260583.T20).**
1. Heavy walled heat shrink tubing shall be flame retardant and made of cross-linked polyolefin.
2. The inside diameter shall be coated with an adhesive sealant to protect against moisture and corrosion.
3. The tubing shall have a minimum operating temperature of – 55 to + 135 degrees Celsius.
4. Burndy, Panduit, or approved equal.

D. **Electrical Tape (260583.T40).**
1. General electrical tape shall be premium grade, all weather vinyl electrical insulating tape.
2. 3M – Scotch 33+, or approved equal.

PART 3 EXECUTION

3.01 INSTALLATION

A. General
1. All identification labeling shall be in compliance with Section 260553 Electrical and Control Identification.
2. Care shall be taken when terminating conductors to avoid kinking, cutting or puncturing the jacket or allowing contamination by grease, oil or water.
3. Care shall be taken when terminating conductors to properly support the conductors and to avoid undue pressure on the connector or utilization equipment.
4. Conductors shall be terminated by use of lugs, pressure type connectors wire nuts or terminal blocks. Wrapping conductors around a screw type terminal is not acceptable.
5. Compression connectors shall be installed using the tool and die provided by the same manufacturer as the connectors and as per their directions.

6. Compressions on connectors used for # 8 AWG conductors and larger shall have a minimum of two (2) circumferential crimps.
7. Indenter type crimps on compression connectors shall not be used on conductors larger than # 10 AWG.
8. Connectors shall be installed as per the manufacturer's directions.
9. Insulated wire ferrules shall be provided for conductors terminated on terminal blocks utilizing a crimping tool provided by the ferrule manufacture specifically for this purpose.
10. Where wire ducts in enclosures exist, conductors shall be grouped together and routed in the wire ducts and shall be fanned out to the terminals.
11. Wire nuts shall be used on conductors # 10 AWG or less and only for splicing conductors at light fixtures, at receptacles and motors. No other splicing of conductors with wire nuts are permitted unless specifically identified on the Drawings.
12. All spare conductors shall be identified individually, neatly coiled and fastened with cable ties. The coil shall be labeled to describe its origin. Spare conductors shall be left long enough to be neatly routed and terminate anywhere within the enclosure.
13. Conductors installed outdoors which are not terminated the same day, shall have heavy wall heat shrinkable end caps installed the same day they are pulled in. The end caps shall remain in place until the day they are terminated.
14. Heavy wall heat shrink tubing shall be installed over splices or over the barrel of connectors installed outdoors.
15. Thin wall heat shrink tubing shall be installed over splices or over the barrel of connectors installed indoors.
16. As connections are set with a torque wrench, a black felt marker shall be used to mark across the bolt, nut or screw indicating the torque has been set.
17. Insulated Mechanical Multi-Tap Connectors shall be utilized for splices located at in-ground lighting and power boxes. It may also be used for motor terminations.

B. Terminations for Motors.
1. Conductors sized # 10 AWG or less for phase conductors shall be connected with wire nuts set tight. The wire nuts shall be wrapped with premium grade electrical tape with a 50 percent overlap, installed in a clockwise rotation to hold the connector in place and to keep debris out of the connector.
2. The equipment grounding conductor shall be terminated on a lug identified for this use. If the motor is not supplied with a lug, a ring or compression type lug shall be used.
3. Conductors sized larger than # 10 AWG shall be terminated with compression connectors properly sized. The connectors shall be bolted together in a pigtail type fashion using stainless steel bolts, flat washers, lock washers and nuts. They shall have a torque as recommended by the bolt manufacturer for the bolt size used.
4. The bolt shall not be longer than the minimum necessary for the connection. The connectors shall be wrapped with varnished cambric tape with a 50 percent overlap covering the end of the connectors and extending one inch beyond the connector barrel. The varnished cambric tape shall be held in place by two layers of premium quality electrical tape, each layer with a 50 percent overlap.
5. Insulated Mechanical Multi-Tap Connectors may be used for motor terminations in lieu of the compression connectors and varnished cambric tape method.
6. Conductors shall be left as long as practical for termination in the motor terminal box.

END OF SECTION

SECTION 26 09 23
LIGHTING CONTROL DEVICES

PART 1 GENERAL

1.01 SUMMARY

A. Section Includes.
   1. This Section includes the requirements for interior and exterior lighting control panels and systems.

1.02 SUBMITTAL

A. Contractor shall submit all the product data in Division 26 at the same time. Piecemeal submittals will be rejected as incomplete.
   1. The product data shall be submitted in PDF format. Each PDF shall only contain products from a single specification section, products in a different specification section shall be in a separate PDF.
   2. A submittal is required for each product specified. Each individual product submittal shall have the corresponding Reference Keynote Number (example - 260923.C01) typewritten in the upper right-hand corner of the submittal. The submittals within each PDF shall be in the same sequential order as they are listed in the specification Section. Submittals not containing the Reference Keynote Number will be rejected as incomplete.
   3. No typical submittals will be accepted. Each submittal shall be project specific and clearly identify specifically which components or parts are being submitted for approval. Any product submittals, such as a catalog sheet, which do not clearly identify which components or parts are being submitted for approval, will be rejected as incomplete.

B. Product Data.
   1. Pursuant to Section 013300 Submittal Procedures.
   2. Manufacturer's data including materials of construction, fixture dimensions, options provided and related information for each item specified in PART 2 PRODUCTS.
   3. Wind load calculations and certification.

1.03 SYSTEM DESCRIPTION

A. Wireless Lighting Control System
   1. All new lighting shall be controlled via a wireless lighting control. All luminaries in all spaces shall be a part of the wireless lighting control system. Wireless low voltage switch stations shall permit dimming and zone control of the luminaires as shown on the Drawings.
   2. All luminaires that are part of the wireless lighting control system shall have embedded controls, occupancy sensors, photocells, and wireless receivers that shall communicate wirelessly with the wireless low voltage switch stations.
   3. All luminaires in the wireless lighting control system shall be programmable via the wireless lighting system mobile app.

1.04 ALTERNATE MANUFACTURERS

A. The intent of these Specifications is to provide the performance requirements for the wireless low voltage lighting control system. The basis of design is Cooper WaveLinx LITE.
B. The ENGINEER shall determine whether the alternate systems meet the requirements of these Specifications.

1.05 DESIGN BUILD RESPONSIBILITIES

A. The CONTRACTOR shall submit lighting control drawings based on the approved lighting control system Manufacturer. The control drawings shall be part of the required submittals. The lighting control drawings shall include the following:
   1. All devices shown on a floorplan (1/8" = 1'-0" scale minimum). Floorplans shall be on same sheet size as contract drawings.
   2. Lighting relay control panel installation drawings, including the following:
      a. Back panel elevation
      b. All hardware and bill of materials
   3. All low voltage wiring, including voltage drop compensation calculations, if required.
   4. Typical device installation and wiring requirements.
   5. Product data sheets for all major system components.
   6. Wall switch details including color, gangs, buttons, plate style, plate colors and engraving.

PART 2 PRODUCTS

2.01 LIGHTING CONTROL SYSTEM

A. **Low Voltage Switches (260923.W01).**
   1. Shall be provided with number of buttons as shown on the Drawings.
   2. Shall be provided with raise/lower dimming control where shown on the Drawings.
   3. Shall be wired to the digital daylighting & dimming lighting control system.
   4. Buttons shall control individual channels as shown on the drawings.
      a. Individual buttons shall allow a user to control individual zones.
      b. The raise/lower buttons shall control only the zones which are turned ON. Raise/lower buttons which control all lighting zones, regardless of whether the zones have been turned ON, shall not be acceptable.
   5. Finish shall be White.
   6. Shall be battery operated.
   7. Cooper WaveLinx LITE WWBL Series.

PART 3 EXECUTION

3.01 INSTALLATION

A. General.
   1. All identification labeling shall be in compliance with Section 260553 Electrical and Control Identification.
   2. Coordinate the installation of ceiling mounted devices and equipment with the Mechanical Contractor. Install occupancy sensors at least 3 feet from diffusers.
   3. All sensors shall be set for occupancy mode.

B. Commissioning
   1. An authorized representative of the Manufacturer shall provide all start-up and testing. The correct operation of the lighting control system shall be verified by the representative.
      a. Correct operation of all switches, dimmers, and control devices
   2. The CONTRACTOR shall test all lighting control systems prior to commissioning to ensure proper operation.
      a. Correct all deficiencies prior to commissioning.
   3. Coordinate the final time of day operating hours with the OWNER.
   4. Demonstrate to the ENGINEER and OWNER the correct operation of the lighting control system. Provide written verification of the following:
      a. Correct operation of all low voltage switches.
      b. Simulate loss of normal power and demonstrate correct operation of UL 924 relays.

END OF SECTION

SECTION 26 24 16
PANELBOARDS

PART 1 GENERAL

1.01 SUMMARY

A. Section Includes.
1. This Section includes the requirements for panelboards, mini-power centers, utility meter sockets and current transformer (CT) can.

1.02 REFERENCES

A. The following is a list of Standards which may be referenced in this Section.
1. National Fire Protection Association (NFPA).
a. 70 – National Electrical Code (NEC).
2. National Electrical Contractors Association (NECA).
a. 5055 - National Electrical Installation Standards (NEIS).
3. National Electrical Manufacturers Association (NEMA).
a. AB 1 – Molded Case Circuit Breakers.
b. KS 1 – Enclosed and Miscellaneous Distribution Equipment Switches (600 volts maximum).
c. PB 1 – Panelboards
d. PB 1.1 – Instructions for Safe Installation, Operation and Maintenance of Panelboards Rated 600 Volts or Less.
4. International Electrical Testing Association (NETA).
a. Acceptance Testing Specifications.
5. Underwriters Laboratory, Inc. (UL).
a. 50 – Enclosures for Electrical Equipment.
b. 67 – Panelboards.
c. 489 – Molded Case Circuit Breakers and Circuit Breaker Enclosures.

1.03 SUBMITTALS

A. Contractor shall submit all the product data in Division 26 at the same time. Piecemeal submittals will be rejected as incomplete.
1. The product data shall be submitted in PDF format. Each PDF shall only contain products from a single specification section, products in a different specification section shall be in a separate PDF.
2. A submittal is required for each product specified. Each individual product submittal shall have the corresponding Reference Keynote Number (example - 262416.C01) typewritten in the upper right-hand corner of the submittal. The submittals within each PDF shall be in the same sequential order as they are listed in the specification Section. Submittals not containing the Reference Keynote Number will be rejected as incomplete.
3. No typical submittals will be accepted. Each submittal shall be project specific and clearly identify specifically which components or parts are being submitted for approval. Any product submittals, such as a catalog sheet, which do not clearly identify which components or parts are being submitted for approval, will be rejected as incomplete.

B. Product Data.
1. Pursuant to Section 013300 Submittal Procedures.
2. Manufacturer’s data including materials of construction, equipment dimensions, weight and related information for each item specified in PART 2 PRODUCTS.

1.04 QUALITY ASSURANCE

A. Panelboards shall be manufactured in accordance with the Standards listed under 1.2 REFERENCES.

1.05 DELIVERY, STORAGE AND HANDLING

A. Equipment shall be stored and installed in clean, dry and heated environment.

PART 2 PRODUCTS

2.01 MANUFACTURED UNITS

A. **Branch Panelboards (262416.P01).**
1. Shall be rated as shown on the Drawings.
2. Shall have a NEMA 1 enclosure, painted gray and recessed mounted unless shown otherwise on the Drawings. Enclosure shall not have pre-punched conduit knockouts.
3. Front cover shall be provided with a door within a door configuration with continuous hinged doors that are lockable for both the inner access and the front door providing access to the circuit breakers. The dead front shall be attached to the access door such then when opened the dead front swings open with the door.
4. Main breaker shall have an available in-rush current (AIC) rating as shown on the Drawings. Branch circuit breakers shall have the same rating unless specifically shown otherwise on the Drawings.
5. Main breaker shall have an ampere rating as shown on the Drawings.
6. Branch circuit breaker capacity shall be as shown on the Drawings. Provide branch circuit breakers as shown on the Drawings.
7. Bus material shall be 100% tin plated aluminum rated for the voltage and ampere rating shown on the Drawings as a minimum.
8. Grounded conductor connection means shall be isolated, copper.
9. Grounding conductor connection means shall be copper.
10. Breakers shall be bolt-on type. No half-sized breakers shall be permitted.
11. Provide two (2) 2-pole and two (2) single-pole locks for the branch circuit breakers.
12. See the panel schedule in the Drawings for additional data.
13. Provide arc flash labels compliant with the NEC, OESC and OSHA.
14. Where shown on the Drawings, provide integral, factory installed TVSS, IEEE C62.41 certified, 50kA per phase surge rating or higher. Coordinate voltage to match panel. Provide Eaton type SPD, or approved equal.
15. Provide Eaton Series Pow-R-Line 1a and Pow-R-Line 2a, Siemens, Square D, or approved equal.

PART 3 EXECUTION

3.01 INSTALLATION

A. General
1. All identification labeling shall be in compliance with Section 260553 Electrical and Control Identification.
2. Panels shall be grounded and bonded as shown on the Drawings and per the NEC whichever is more stringent.
3. Conductors shall be neatly grouped and routed within the enclosures.
4. Used and spare conductors shall be clearly identified as specified in Section 260519.
5. Due to the number of conduits entering the panelboards it will be imperative that the CONTRACTOR plan the layout carefully, so all the conduits fit in the bottom of the panelboards. Should a gutter be necessary, it shall be no deeper than the panelboards and only as wide as necessary to accommodate the conduits.
6. Provide typed circuit directory for each panelboard.
7. Install nameplates as shown on the Drawings and specified in Section 260553.

END OF SECTION

SECTION 26 27 26
WIRING DEVICES

1.01 SUMMARY

A. Section Includes.
   1. This Section includes the requirements for wiring devices such as receptacles, toggle switches and devices plates.

1.02 REFERENCES

A. The following is a list of Standards which may be references in the Section.
   1. National Electrical Contractors Association (NECA): National Electrical Installation Standards (NEIS).
   2. National Electrical Manufacturers Association (NEMA).
      a. WD1 – General Requirements for Wiring Devices.
      b. WD6 – Wiring Device Dimensional Requirements.
   3. National Fire Protection Association (NFPA): 70.
   4. Underwriters Laboratories, Inc. (UL): 1070.

1.03 SUBMITTALS

A. Contractor shall submit all the product data in Division 26 at the same time. Piecemeal submittals will be rejected as incomplete.
   1. The product data shall be submitted in PDF format. Each PDF shall only contain products from a single specification section, products in a different specification section shall be in a separate PDF.
   2. A submittal is required for each product specified. Each individual product submittal shall have the corresponding Reference Keynote Number (example - 262726.C01) typewritten in the upper right-hand corner of the submittal. The submittals within each PDF shall be in the same sequential order as they are listed in the specification Section. Submittals not containing the Reference Keynote Number will be rejected as incomplete.
   3. No typical submittals will be accepted. Each submittal shall be project specific and clearly identify specifically which components or parts are being submitted for approval. Any product submittals, such as a catalog sheet, which do not clearly identify which components or parts are being submitted for approval, will be rejected as incomplete.

B. Product Data.
   1. Pursuant to Section 013300 Submittal Procedures.
   2. Manufacturer’s data including materials of construction, equipment weight, and related information for each item specified in PART 2 PRODUCTS.

PART 2 PRODUCTS

2.01 MATERIALS

A. **Ground Fault Circuit Interrupter Receptacles (262726.R10).**
   1. Shall be heavy duty hospital grade, tamper-resistant, weather-resistant two-pole, three wire grounding type with screw type terminals suitable for number 10 American Wire Gauge (AWG).
   2. Shall be NEMA 5-20R, rated for 20 amperes, 125 volt configuration.
   3. Provide duplex or single receptacles as shown on the Drawings.
   4. Finish shall be White unless fed from an emergency circuit and in which case the receptacle shall be red in color.
   5. Provide Hubbell GFR8300S or approved equal. Red receptacles shall be sample model number except for color designation.

B. **Motor Rated Toggle Switches (262726.M01).**

1. Shall be extra heavy duty AC Manual Motor Controllers series with grounding screw, 30 or 60 amperes, 600 volt rated.
2. Single throw, double pole, three pole toggle switches shall be used as a local disconnect for HVAC equipment.
3. Finish shall be Black.
4. Provide Hubbell, or approved equal

C. **Device Plates (262726.P01).**
1. Shall be white thermoplastic
2. Provide Hubbell, or approved equal.

D. **Weatherproof Receptacle Device Plates (262726.P11).**
1. Weatherproof receptacle device plates shall be provided as shown on the drawings and in all locations that may be subjected to damp or wet conditions.
2. Weatherproof receptacle device plates shall be in-use type weatherproof receptacle device plates that allow for weatherproof protection even when a cord is plugged into the device.
3. Weatherproof receptacle device plates shall be metallic.
4. Weatherproof receptacle device plates shall be gasketed.
5. Weatherproof receptacle device plates shall be lockable.
6. Weatherproof receptacle device plates shall be UL Listed.
7. The device plate shall be PVC-coated and of a similar design when installed on PVC-coated boxes.
8. Provide Red Dot model CKMUV, or approved equal.

PART 3 EXECUTION

3.01 INSTALLATION

A. General.
1. All identification labeling shall be in compliance with Section 260553 Electrical and Control Identification.
2. Devices shall be bonded to their enclosure and the equipment grounding conductor with a separate grounding conductor attached to the device which will allow the device to be detached from the enclosure without disconnecting the equipment grounding conductor from the enclosure.
3. The use of the mounting yoke as the only method for bonding is unacceptable.
4. Devices that are not installed at the end of the line (circuit) shall be pig-tailed out and the pig-tails shall be connected to the line and load conductors.
5. After the pigtailed conductors are terminated on the device and before it is installed in the enclosure the exposed energized parts shall be wrapped with electrical insulating tape with a minimum of three wraps.
6. As the device is installed in the enclosure, care shall be taken to neatly fold the conductors inside the enclosure so as to not kink, bind or otherwise damage the sheath of the conductors.
7. Terminations on all devices shall be via pressure or compression type connectors. Wrapping conductors around a termination screw and tightening is unacceptable.
8. Mounting heights for receptacles shall be 18 inches to center from finished floor unless called out otherwise on the Drawings or specified at different height to meet minimum code requirements. Where countertops are present, receptacles shall be mounted horizontally and mounted 4 inches to center above the back-splash. The CONTRACTOR is responsible to coordinate with the approved casework submittals. Failure to do so will require the CONTRACTOR to relocate devices at their expense.
9. Mounting height for switches shall be 42 inches to center above finished grade unless called out otherwise on the Drawings or specified at different height to meet minimum code requirements. Where countertops are present, switches shall be mounted 5 inches to center above the back-splash. The CONTRACTOR is responsible to coordinate with

the approved casework submittals. Failure to do so will require the CONTRACTOR to relocate devices at their expense.

10. Coordination is the responsibility of the CONTRACTOR. If a conflict exists for the mounting location of devices, the CONTRACTOR shall bring it to the ENGINEER's attention during the rough-in phase and the ENGINEER shall provide direction. Failure to coordinate conflicts during the rough-in phase will result in relocation of devices at the CONTRACTOR's expense.
11. All receptacles fed from emergency panels shall be red in color.
12. Devices shall be installed level and plumb. Devices shall be brought out plumb with the wall surface via UL listed spacers approved for this purpose if necessary.
13. Devices shall be tested for voltage, polarity, ground integrity and in the case of GFCI receptacles, that they operate as intended.
14. The position of devices, as shown on the Drawings, are general locations only unless dimensioned. The CONTRACTOR is responsible to coordinate with various trades to ensure no conflict exists.

END OF SECTION

SECTION 26 28 23
ENCLOSED SWITCHES AND CIRCUIT BREAKERS

PART 1 GENERAL

1.01 SUMMARY

A. Section includes the following enclosed low voltage components rated at 600 VAC or less:

1. Heavy duty single throw, fused, safety switch.

1.02 REFERENCES

A. National Fire and Protection Association (NFPA)

1. 70 - National Electrical Code (NEC)

B. National Electrical Manufacturers Association (NEMA).

1. B 3-2001 - Molded Case Circuit Breakers and Their Application.
2. AB 4-2001 - Guidelines for Inspection and Preventive Maintenance of Molded Case Circuit Breakers Used in Commercial and Industrial Applications.
3. KS 1-2001 - Enclosed and Miscellaneous distribution Equipment Switches (600 Volts Maximum).

1.03 SUBMITTALS

A. Contractor shall submit all the product data in Division 26 at the same time. Piecemeal submittals will be rejected as incomplete.

1. The product data shall be bound in a three ring binder with tabs for each Section. The tabs shall be numbered to match the specification Section numbers. Submittals not bound and labeled as specified will be rejected as incomplete.
2. A submittal is required for each product specified. Each individual product submittal shall have the corresponding Reference Keynote Number (example - 262813.S21) typewritten in the upper right hand corner of the submittal. The submittals within each Section tab shall be in the same sequential order as they are listed in the specification Section. Submittals not containing the Reference Keynote Number will be rejected as incomplete.
3. No typical submittals will be accepted. Each submittal shall be project specific and clearly identify specifically which components or parts are being submitted for approval. Any product submittals, such as a catalog sheet, which do not clearly identify which components or parts are being submitted for approval, will be rejected as incomplete.

B. Product Data

1. Pursuant to Section 013000 - Submittals.
2. Manufacturer's data including materials of construction, equipment weight, and related information for each item specified in PART 2 PRODUCTS.

C. Shop Drawings

1. Back panel and enclosure layouts including interior and exterior front and side exterior view details showing maximum overall dimensions.
2. For enclosure weighing 150 pounds and over, provide physical properties, handling and mounting data including total weight, lifting instructions, height, and floor space required. Mounting requirements for seismic zone 4.
3. All drawings shall list the equipment number.

4. Component designations shall match those shown on the Drawings.

D. Quality Assurance/Control Submittals

1. Manufacturer's Instructions
   a. List special requirements or restrictions of the motor/load combination.
   b. Submit copy of the manufacturer's operating and maintenance manuals and, installation instructions.

1.04 QUALITY ASSURANCE

A. Regulatory Requirements

1. Products shall be UL listed.

1.05 DELIVERY, STORAGE, AND HANDLING

A. Storage and Protection

1. Products shall be stored and installed in a dry environment maintained at 65 degrees F or above.

PART 2 PRODUCTS

2.01 MANUFACTURED UNITS

A. **Enclosed Circuit Breakers (262823.S23).**

1. Shall be rated as shown on the Drawings.
2. Shall be service entrance rated.
3. Shall be thermal magnetic type.
4. Shall be rated 35,000 AIC.
5. Shall be surface mounted, NEMA 1. 3R
6. Provide Eaton, or approved equal.

PART 3 EXECUTION

3.01 INSTALLATION

A. All identification labeling shall be in compliance with Section 260553 Electrical and Control Identification.
B. Install switches and circuit breakers as indicated on the Drawings.
C. Install equipment level and plumb.
D. Provide nameplates as indicated on the Drawings.

3.02 ADJUSTING

A. Adjustable features such as the trip setting for a circuit breaker shall be adjusted pursuant to the manufacturer's instructions.

END OF SECTION

SECTION 26 32 00
PACKAGED DIESEL GENERATOR

PART 1 GENERAL

1.01 SUMMARY

A. Section Includes.

1. Requirements for a complete factory assembled generator set with digital electronic generator controls, and digital voltage regulator.
2. The generator and transfer switch shall be of the same manufacturer.
3. Requirements for an outdoor weather-protective enclosure.

1.02 REFERENCES

A. The following is a list of Codes and Standards that the emergency generator shall conform to. The generator set shall include necessary features to meet the requirements of these standards.

1. IEEE 446 – Recommended Practice for Emergency and Standby Power Systems for Commercial and Industrial Applications.
2. NFPA 70 – National Electrical Code
3. NFPA 110 – Emergency and Standby Power Systems, if applicable to this project.
4. NEMA MG1. Alternator shall comply with the requirements of the current edition of this Standard as they apply to AC alternators.
5. UL 1236 – Battery Chargers.
6. UL 2200 – The generator set shall be list to UL2200.

B. The generator control system shall comply with the following Codes and Standards.

1. EN 50082-2, Electromagnetic Compatibility, Generic Immunity Requirements, Part 2.
2. EN 55011, Limits and Methods of Measurement of Radio Interference Characteristics.
3. FCC Part 15, Subpart B.
4. IEC 8528 Part 4. Control Systems for Generator Sets.
5. IEC Std. 801.2, 801.3 and 801.5 for susceptibility, conducted and radiated electromagnetic emissions.
6. UL 508. The entire control system of the generator set shall be UL 508 listed and labeled.

C. The generator set manufacturer shall be certified to ISO 9001 International Quality Standard and shall have third party certification verifying assurance in design/development, production, installation, and service in accordance with ISO 9001.

1.03 SUBMITTALS

A. Contractor shall submit all the product data in Division 26 at the same time. Piecemeal submittals will be rejected as incomplete.

A. Submittal Format:

1. The product data shall be provided as individual PDFs for each Section, unless otherwise noted for specific items. Each PDF shall be numbered to match the specification Section numbers. Submittals not itemized and labeled as specified will be rejected as incomplete.

2. A submittal is required for each product specified. Each individual product submittal shall have the corresponding Reference Keynote Number (example - 263200.A01) typewritten in the upper right-hand corner of the submittal. The submittals within each Section tab shall be in the same sequential order as they are listed in the specification Section. Submittals not containing the Reference Keynote Number will be rejected as incomplete.
3. No typical submittals will be accepted. Each submittal shall be project specific and clearly identify specifically which components or parts are being submitted for approval. Any product submittals, such as a catalog sheet, which do not clearly identify which components or parts are being submitted for approval, will be rejected as incomplete.
4. Submittals in PDF shall include an index, table of contents, or bookmarks with hyperlinks to the associated page of all submitted items. Index shall include each product specified with their corresponding Reference Keynote Number. Electronic submittals not containing a linked index, table of contents, or bookmarks will be rejected as incomplete.

B. Product Data.

1. Pursuant to Section 013000 – Submittal Procedures.
2. Manufacturer’s data including materials of construction, methods of installation and related information for each item specified in PART 2 PRODUCTS.
3. Provide a complete bill of materials. Any differences between products specified and proposed shall be clearly identified.
4. Manufacturer’s product literature, model specifications and performance data sufficient to verify compliance with items specified in 1.2 References of this Section.
5. Complete model number and trip characteristics for the main circuit breaker to be provided.
6. Warranty information complying with the requirements of this Section.
7. Seismic certification for area installed provided by the manufacturer.
8. Seismic calculations for the concrete slab and anchor bolts required. Calculations shall be wet stamped by a Professional Engineer licensed in the State of Oregon.
9. Project specific power and control schematic. The schematic shall clearly identify all field wiring termination points using the same identification shown in the Contract Documents.
10. The generator, fuel tank and battery charger shall, at a minimum have the following I/O points identified on the schematic.
    a. Generator H-O-A in hand.
    b. Generator H-O-A in auto.
    c. Generator running.
    d. Generator warning.
    e. Generator failed.
    f. Generator low fuel.
    g. Battery charger failed.
11. Submittal shall include a line by line compliance statement based on this specification.
12. Manufacturer’s document of EPA certification for proposed model generator.
13. Outline drawing showing overall dimensions of generator, tank, enclosure and accessories.

1.04 QUALITY ASSURANCE

A. Qualifications.

1. The manufacturer of this equipment shall have produced similar equipment for a minimum period of ten years. When requested by the ENGINEER, an acceptable list of installations with similar equipment shall be provided demonstrating compliance with this requirement.
2. The generator shall be of the same manufacturer as the transfer switch to provide a single source of warranty responsibility for all the products provided.
3. Generator set manufacturer shall be certified to ISO 9001 International Quality Standard and shall have third party certification verifying quality assurance in design/development, production, installation and service in accordance with ISO 9001.

B. Factory Testing.

1. The generator set manufacturer shall perform a complete operational test on the generator set prior to shipping from the factory. A certified test report shall be shipped with the generator set.
2. Generator set factory tests on the equipment shall be performed at rated load and rated power factor. Generator sets that have not been factory tested at rated power factor will not be acceptable. Tests shall include; run at full load, maximum power, voltage regulation, transient and steady-state governing, single step load pickup and function of safety shutdowns.
3. Factory testing may be witnessed by the OWNER and/or ENGINEER. Costs for travel expenses will be the responsibility of the OWNER and/or ENGINEER. Manufacturer is responsible to provide a minimum of two weeks' notice for factory testing.

1.05 WARRANTY

A. Generator set, fuel system, enclosure and accessories specified within this Section shall be warranted for a minimum period of 5 years from the date of substantial completion against all defects in materials and workmanship. The warranty shall be comprehensive including all parts, labor and travel.

PART 2 PRODUCTS

2.01 GENERATOR SET

A. Generator shall be furnished by the general contractor, installed by the electrical contractor.
B. Manufacturer

1. Manufacturer shall be Cummins or approved equal. All accessories within this specification are based on Cummins.

C. Selective Coordination

1. The manufacturer of the generator and overcurrent relay protection device has been designed to comply with the Selective Coordination requirements of the current edition Oregon Electrical Specialty Code. Alternate manufacturers shall be considered only under the following conditions:
   a. The Contractor shall provide a design of the entire Article 700 Emergency and Article 701 Legally Required Standby distribution system as defined by the NEC to demonstrate compliance with the Selective Coordination requirements of the current edition of the Oregon Electrical Specialty Code.
   b. The Contractor shall provide a scaled floorplans demonstrating that the size of the alternate electrical equipment does not exceed the space requirements of the basis of design.
   c. The Contractor shall provide a written document stating that the alternate design complies with the Selective Coordination requirements of the current edition of the Oregon Electrical Specialty Code. The document shall be signed and stamped by a

licensed Professional Electrical Engineer or Supervising Electrician in the State of Oregon.

d. Acceptance of the alternate shall require written approval by the Engineer.

D. Ratings.

1. The generator set shall operate at a voltage as shown on the Drawings.
2. The generator set shall be rated as shown on the Drawings. Standby rating, based on site conditions of an altitude of 500 feet above sea level and ambient temperatures up to 104 degrees F.
3. Basis of design is CAT. Alternate manufacturers may be submitted for written acceptance by the Engineer provided that they meet these performance specifications.

E. Performance.

1. Voltage regulation shall be plus or minus 0.5 % for any constant load between no load and rated load. Random voltage variation with any steady load from no load to full load shall not exceed plus or minus 0.5 %.
2. Frequency regulation shall be isochronous from steady state no load to steady state rated load. Random frequency variation with steady state no load to steady state rated load shall not exceed plus or minus 0.5%.
3. The diesel engine generator set shall accept a single step load of 100 % nameplate kW and power factor, less applicable de-rating factors, with the engine generator set at operating temperature.
4. Motor starting capability shall be a minimum of 3,657 kVA. The generator set shall be capable of recovering to a minimum of 90 % of rated no load voltage following the application of the specified kVA load at near zero power factor applied to the generator set. Maximum voltage dip on application of this load, considering both alternator performance and engine speed changes shall not exceed 25 %.
5. The alternator shall produce a clean AC voltage waveform, with no more than 5 % total harmonic distortion at full linear load when measured from line to neutral, and no more than 3% in any single harmonic and no third order harmonics or their multiples. Telephone influence factor shall be less than 40.
6. The generator set shall be certified by the engine manufacturer to be suitable for use at the installed location and rating and shall meet all applicable exhaust emission requirements at the time of commissioning.

F. Construction.

1. The engine generator set shall be mounted on a heavy-duty steel base to maintain alignment between components. Provide vibration isolators between the engine generator assembly and the structural base. The base shall incorporate a battery tray with hold down clamps within the rails.

2.02 ENGINE AND ENGINE EQUIPMENT

A. The engine shall be diesel, 4 cycle, radiator and liquid cooled, producing 1.5 HP per kW to operate at 1800 rpm for full electrical output rating. The horsepower rating of the engine at its minimum tolerance level shall be sufficient to drive the alternator and all connected accessories.

B. An electronic governor system shall provide automatic isochronous frequency regulation. The governing system dynamic capabilities shall be controlled as a function of the engine coolant temperature to provide fast stable operation at varying engine operating temperature conditions. The control system shall actively control the fuel rate and excitation as appropriate

to the state of the generator set. Fuel rate shall be regulated as a function of starting, accelerating to start disconnect speed and accelerating to rated speed.

C. Skid mounted radiator and cooling system rated for the full load operation in 122 degrees F ambient as measured at the alternator air inlet. Radiator shall be prototype tested to verify cooling performance of the engine, radiator and fan operation in a controlled environment. Radiator shall be provided with a duct adapter flange if generator is to be installed indoors. The equipment manufacturer shall fill the cooling system with a 50/50 ethylene glycol / water mixture prior to shipping. Rotating parts shall be guarded against accidental contact.
D. Electric starter(s) capable of three complete cranking cycles without overheating.
E. Provide with full flow lubrication oil filters with replaceable spin on canister elements.
F. An engine driven, mechanical, positive displacement fuel pump. Provide fuel filter with replaceable spin on canister element. Fuel cooler if required for operation due to the design of the engine and the installation.
G. Provide replaceable dry element air cleaner with restriction indicator.
H. Engine battery charging alternator, 40 ampere minimum and solid state voltage regulator.
I. Flexible supply and return fuel lines.

2.03 AC ALTERNATOR

A. The AC generator shall be synchronous, four pole, 2/3 pitch, revolving field, drip proof construction, single pre-lubricated sealed bearing, air cooled by a direct drive centrifugal blower fan and directly connected to the engine with flexible drive disc. All insulation system components shall meet NEMA MG1 temperature limits for Class H insulation system and shall be UL 1446 listed. Actual temperature rise measured by resistance method at full load shall not exceed 105 degrees C.
B. A permanent magnet generator (PMG) shall be included to provide a reliable source of excitation power for optimum motor starting and short circuit performance. The PMG and controls shall be capable of providing sufficient excitation for the alternator to supply approximately 300 % of rated current for up to 10 seconds.

2.04 GENERATOR SET CONTROL

A. The generator set shall be provided with a microprocessor-based control system that is designed to provide automatic starting, monitoring, protection and control functions for the generator set. The control system shall also be designed to allow local monitoring and control of the generator set and remote monitoring and control as described in the specification.
B. The control shall be mounted on the generator set. The control shall be vibration isolated and prototype tested to verify the durability of all the components in the system under the vibration conditions encountered. All switches, lamps and meters in the control system shall be oil-tight and dust-tight. All active control components shall be installed within a UL/NEMA 3R enclosure. There shall be no exposed points in the control, with the door open, that operate in excess of 50 volts.
C. The generator control enclosure which contains all operator interface switches, lamps, emergency stop switch and accessories listed below, shall be mounted no more that seventy-five (75) inches to the top, above finished floor after the generator set has been installed on a belly tank, isolation springs or other devices specified herein and/or shown on the Drawings.
D. Requirements for control switches are listed below.

1. Mode select switch. The mode select switch shall initiate the following control modes. When in the run or manual position the generator set shall start and accelerate to rated speed and voltage as directed by the operator. A separate pushbutton to initiate starting is acceptable. In the off position the generator set shall immediately stop bypassing all time delays. In the auto position the generator set shall be ready to accept a signal from a remote device to start and accelerate to rated speed and voltage.

2. Emergency stop switch. Switch shall be red mushroom-head pushbutton. Depressing the emergency stop switch shall cause the generator set to immediately shut down and be locked out from automatic restarting.
3. Reset switch. The reset switch shall be used to clear a fault and allow restarting the generator set after it has shut down for any fault condition.
4. Panel lamp switch. Depressing the panel lamp switch shall cause the entire panel to be lighted with DC control power. The panel lamps shall automatically be switched off 10 minutes after the switch is depressed or after the switch is depressed a second time.
5. Voltage and frequency adjustment. The generator set control shall include digital raise / lower switches for adjustment of voltage and frequency.

E. Generator Set AC Output Metering.

1. The generator set shall be provided with a metering set including the following features and functions.
   a. Digital metering set, 1 % accuracy to indicate generator RMS voltage and current, frequency and total load on the generator set.
   b. Generator set alarm and status display.

F. Generator Set Alarm Status Display.

1. The generator set control shall include LED alarm and status indication lamps. The lamps shall be high intensity LED type. The lamp condition shall be clearly apparent under bright room lighting conditions. At a minimum, the control shall have separate indication lamps to indicate the following.
   a. Not in Auto.
   b. Shutdown.
   c. Warning.
   d. Remote Start.
   e. Auto mode.
   f. Manual run.

2. The generator set control shall indicate the existence of warning and shutdown conditions on the generator set control panel for all the following conditions.
   a. Low oil pressure (warning and shutdown).
   b. High coolant temperature (warning and shutdown).
   c. Over current (warning and shutdown).
   d. Oil pressure sender failure (warning).
   e. Low coolant temperature (warning).
   f. Low and high battery voltage (warning).
   g. Weak battery (warning).
   h. Low fuel level (warning).
   i. Engine temperature sender failure (warning).
   j. Low coolant level (shutdown).
   k. Fail to crank (shutdown).
   l. Fail to start/over-crank (shutdown).
   m. Over-speed (shutdown).
   n. Low and high AC voltage (shutdown).
   o. Over and under frequency (shutdown).
   p. Field overload (shutdown).
   q. Loss of sensing voltage (shutdown).
   r. Emergency stop (shutdown).

3. The control system shall incorporate data logging of alarm conditions.

4. Provisions shall be made for indication of customer specified alarm conditions as identified in 1.3 Submittals in this specification, but in no case shall there be less than a minimum of four (4) customer specified alarm or shutdown conditions.

G. Engine Status Monitoring.

1. The following information shall be available from the alphanumeric display panel on the generator set control.
   a. Engine oil pressure.
   b. Engine coolant temperature.
   c. Engine speed (rpm).
   d. Number of hours of operation.
   e. Number of start attempts.
   f. Battery voltage.

H. Engine Control Functions.

1. The control system shall include a cycle cranking system which allows for user selected crank time, rest time and number of cycles. Initial settings shall be for three cranking periods of fifteen seconds each with fifteen second rest period between cranking periods.
2. The control system shall include the engine governor control which functions to provide steady state frequency regulation as noted elsewhere in this specification.
3. The control system shall include sender failure monitoring logic which is capable of discriminating between failed sender or wiring components and an actual failure condition.
4. The control system shall include time delay start (adjustable from 0 to 300 seconds) and time delay stop (adjustable from 0 to 600 seconds) functions.

I. Alternator Control Functions.

1. The generator set shall include a full wave rectified automatic digital voltage regulation system that is matched, and prototype tested by the engine manufacturer with the governing system provided. It shall be immune from mis-operation due to load induced voltage waveform distortion and provide pulse width modulated output to the alternator exciter. The voltage regulation system shall control buildup of AC generator voltage to provide linear rise and limit overshoot. The system shall include a torque matching characteristic which shall reduce output voltage in proportion to frequency below adjustable frequency threshold. Torque matching characteristic shall be adjustable for roll off frequency and rate and be capable of being curve matched to the engine torque curve with adjustments in the field. The voltage regulator shall include adjustments for gain, damping and frequency roll off. Adjustments shall be made via digital raise/lower switches with an alphanumeric LED readout to indicate setting level.
2. A microprocessor-based protection device shall be provided to monitor the output current of the generator set and initiate an alarm (over current warning) when load exceeds 110 % of the rated current of the generator set for more than sixty seconds. The device shall shutdown and lock out the generator set when output current approaches the thermal damage point of the alternator (over current shutdown). The protective functions provided shall be in compliance with the requirements of NFPA 70 (NEC) Article 445.
3. The control shall provide alternator protection from the following conditions.
   a. High or low voltage.
   b. Over or under frequency.
   c. Over current warning or shutdown.
   d. Loss of voltage sensing.
   e. Field overload shutdown.

4. A microprocessor-based AC over / under voltage monitoring system that responds only to true RMSD voltage conditions shall be provided. The system shall initiate shutdown of the generator set when alternator output voltage exceeds 110 % of the operator set point voltage level for more than ten seconds or with no intentional delay when voltage exceeds 130 %. Under voltage shutdown shall occur when the output voltage of the alternator is less than 85 % for more than ten seconds.

J. Control Interfaces for Remote Monitoring.

1. The control system shall include a configurable digital input/output module for expanded monitoring of generator set functions and alarms. The I/O module shall include eight form C relay output sets and four discrete contact inputs. Provide the following discrete output alarms from the generator set.
   a. Generator H-O-A in hand.
   b. Generator H-O-A in auto.
   c. Generator running.
   d. Generator warning.
   e. Generator failed.
   f. Generator low fuel.
   g. Battery charger failed.

2.05 OTHER EQUIPMENT TO BE PROVIDED WITH THE GENERATOR SET.

A. The generator set shall be provided with molded case electronic trip circuit breakers as shown on the Drawing.

1. Circuit breakers shall be molded case with inverse time and instantaneous tripping characteristics. Main and feeder breakers shall be provided with electronic trip units and shall be rated as shown on the Drawings.
2. Circuit breakers shall be operated by a toggle-type handle and shall have a quick-make, quick-break over-center switching mechanism that is mechanically trip-free. Automatic tripping of the breaker shall be clearly indicated by the handle position. Contacts shall be non welding silver alloy and arc extinction shall be accomplished by means of DE-ION arc chutes. A push-to-trip button on the front of the circuit breaker shall provide a local manual means to exercise the trip mechanism.
3. Circuit breakers shall be bolt-on type.
4. Circuit shall have a minimum symmetrical interrupting capacity as indicated on the drawings.
5. Electronic trip units:
   a. Each molded case circuit breaker microprocessor-based tripping system shall consist of three (3) current sensors, a trip unit and a flux-transfer shunt trip. The trip unit shall use microprocessor-based technology to provide the adjustable time-current protection functions. True rms sensing circuit protection shall be achieved by analyzing the secondary current signals received from the circuit breaker current sensors, and initiating trip signals to the circuit breaker trip actuators when predetermined trip levels and time-delay settings are reached.
   b. An adjustable trip setting dial mounted on the front of the trip unit shall establish the continuous trip ratings of each circuit breaker. Rating plugs shall be adjustable and settings shall be adjusted by the CONTRACTOR as indicated on the Drawings. Rating plugs shall be interlocked so they are not interchangeable between frames, and interlocked such that a breaker cannot be closed and latched with the rating plug removed.
   c. System coordination shall be provided by the following microprocessor-based time-current curve shaping adjustments:

1) Adjustable long-time setting (set by adjusting the trip setting dial).
2) Adjustable short-time setting and delay with selective curve shaping.
3) Adjustable instantaneous setting.
4) Adjustable ground fault setting and delay (where shown on the Drawings).

d. The microprocessor-based trip unit shall have both powered and unpowered thermal memory to provide protection against cumulative overheating should a number of overload conditions occur in quick succession.
e. When the adjustable instantaneous setting is omitted, the trip unit shall be provided with an instantaneous override.
f. Where internal ground fault protection is specified, adjustable settings shall not exceed 1200 amperes. Provide neutral ground fault sensor for four-wire loads.
g. Breakers shall have built-in test points for testing the long-time delay, instantaneous by means of a test set.
h. Schneider Mission Critical with Micrologic Trip Units.

B. Outdoor Weather Protective Enclosure.

1. The generator set shall be provided with an outdoor enclosure (housing) with the entire package listed under UL 2200. Housing shall provide ample airflow for generator set operation at rated load in an ambient temperature of 100 degrees F. The housing shall have lockable hinged access doors as required to maintain easy access for all operating and service functions. Enclosure roof shall be cambered to prevent rainwater accumulation. Openings shall be screened to limit access of rodents into the enclosure.
2. The outdoor weather protective enclosure shall be made of steel.
   a. Shall be CAT Weather Protective enclosure or approved equal.
3. All sheet metal shall be primed for corrosion protection and finish painted with the manufacturer’s standard color using a two-step electro-coating paint process. Listed below is the minimum level of performance for the painting process.
   a. Primer thickness, 0.5 – 2.0 mils. Topcoat thickness, 0.8 -1.2 mils.
   b. Gloss, per ASTM D523-89, 80 % plus or minus 5 %. Gloss retention after one year shall exceed 50 %.
   c. Cross hatch adhesion, per ASTM D3359-93, 4B-5B.
   d. Impact resistance, per ASTM D2794-93, 120-160 inch pounds.
   e. Salt spray, per ASTM B1117-90, 1000+ hours.
   f. Humidity, per ASTM D2247-92, 1000+ hours.
   g. Water soak, per ASTM D2247-92, 1000+ hours.
4. All external enclosure hardware shall be corrosion resistant, and hinges shall be stainless steel.
5. A factory mounted exhaust silencer shall be mounted inside the enclosure. The exhaust shall exit the enclosure though a rain collar and terminate with a rain cap. Exhaust connections to the generator set shall be through seamless flexible connections.
6. The enclosure shall include a flexible oil drain line that extends to the exterior of the enclosure. The enclosure shall include an external radiator fill provision.

C. Provide a dual wall sub-base fuel storage tank sized to allow for full load operation of the generator set for a minimum of thirty-six (36) hours at full load. The tank shall be constructed of corrosion resistant steel and shall be UL listed. The equipment, as installed by the CONTRACTOR shall meet all local and regional requirements for the application. The tank shall include all the features listed below.

1. Emergency tank and basin vents, mechanical level gauge and basin drain.

2. Fuel supply and return lines connected to generator set with flexible lines as recommended by the engine manufacturer and in compliance with UL 2200 and NFPA 37 requirements.
3. Leak detection provision and high and low fuel level float switches wired to the generator set control for local and remote alarm indication.

D. Provide a fully automatic battery charger, sized as appropriate for the engine and batteries, as recommended by the engine manufacturer. The charger shall be UL labeled for use in emergency applications and shall include all features necessary to meet NFPA 110 requirements. The charger shall be provided with remote indication of battery charger fail alarm.

E. Thermostatically controlled UL 499 listed coolant heater sized as recommended by the engine manufacturer to warm the engine to a minimum of 104 degrees F in an ambient temperature of 40 degrees F and in compliance with NFPA 110. Voltage shall be as identified in the Drawings. Coolant heater shall have provisions to isolate the heater for replacement of the heater element without draining the coolant from the generator set.

F. Provide engine starting batteries. Starting batteries shall be lead-acid, 12-volt DC, sized as recommended by the engine manufacturer, complete with battery cables and connectors. The batteries shall be capable of three complete fifteen second cranking cycles at 40 degrees F ambient temperature when fully charged.

G. Provide a thermostatically controlled anti-condensation winding heater on the alternator, sized as recommended by the engine manufacturer. The heater shall be provided with a cord and plug end and a minimum of six feet in length which can be plugged into a receptacle provided by the CONTRACTOR.

H. Generator Remote Annunciator.

1. Shall comply with NFPA 110.
2. Shall provide up to 20 separate alarm or status conditions.
3. Status and alarm LEDs shall be configurable (red, yellow, green). Audible horn alarm shall be configurable.
4. Suitable for flush or surface mount applications.
5. UL listed.

I. Generator E-Stop & Battery Charger Lockout.

1. Provide an emergency push-button switch with red mushroom head. Switch shall be provided with a set of Form C contacts.
2. Device plate shall be labeled 'GENERATOR REMOTE E-STOP'.
3. Provide a factory supplied lockout mechanism for the battery charger cable.

J. Diesel Fuel.

1. The contractor shall fill the diesel tank completely for initial testing.
2. The contractor shall re-fill the tank completely after testing. The tank shall be 100% full when turned over to the Owner.

2.06 SEISMIC BRACING

A. Provide seismic bracing for the generator set required by the International Building Code and Oregon Structural Specialty Code.

B. The design of the seismic anchoring and bracing system shall be by a licensed Structural Engineer in the State of Oregon. The CONTRACTOR shall arrange and pay for the services of the licensed Engineer.
C. Wet stamped and signed calculations and drawing of the seismic anchoring and bracing system shall be submitted to the Engineer for review and approval.
D. Include Manufacturer's seismic certificate.

PART 3 EXECUTION

3.01 INSTALLATION

A. General.

1. All identification labeling shall be in compliance with 26 05 53 Electrical and Control Identification.
2. Equipment shall be installed by the CONTRACTOR in accordance with the final approved submittals, manufacturer’s instructions and Contract Documents.
3. Installation of equipment shall include furnishing and installing all interconnecting conduits and wiring between all equipment provided for the on-site power system.
4. Equipment shall be installed be permanently fastened to the concrete pad in accordance with the manufacturer’s instructions which are specified to meet the seismic requirements for the environment and location installed.

B. Field Quality Control.

1. The local authority having jurisdiction shall approve the installation of the generator set and transfer switch before they are energized.

C. Start-up and Testing

1. Provide acceptance testing compliant with the current edition of NFPA 110.
2. An authorized employee of the manufacturer’s service division shall perform the start-up and testing services. The start-up and testing period shall last a minimum of 8 hours on site.
3. The start-up and testing period shall be a separate day from the demonstration and training period.
4. The CONTRACTOR shall notify the ENGINEER a minimum of two weeks in advance of the start-up and testing schedule to allow for witnessing of the tests.
5. Provide a signed certificate stating the installation meets or exceed the manufacturer’s installation standards and instructions.
6. Start-up shall include a “cold start” test.
7. Start-up shall verify all local and remote warnings, shutdowns and alarming events are operating as specified.
8. Perform a power failure test on the entire installed system. The test shall be conducted by opening the power supply from the utility service and observing proper operation of the system for at least thirty minutes.
9. Reference the Start-up and Testing specification Section in the Contract Documents for a detailed check list for all processes on the project. The Contractor shall go through the check list to verify compliance and that ask the ENGINEER to witness the tests as the CONTRACTOR goes through them a second time.
10. Coordinate start-up and testing with the transfer switch start-up.

11. Startup shall include operating the generator set with a load bank connected and operating at full load for a minimum of four continuous hours.
12. The CONTRACTOR is responsible to provide diesel fuel for the start-up and testing activities. After start-up and testing is completed and accepted and before substantial completion, the CONTRACTOR shall completely fill the diesel fuel tank.
13. Verification that the generator set and associated specified components are operating as specified.
14. Provide a printout of all as-commissioned adjustable set points for future reference.

D. Weekly Automatic Testing

1. The generator and automatic transfer switches shall be programmed to perform automatic testing as directed by OWNER.
2. Configure the testing program for automatic daylight savings compensation.

E. Seismic Anchoring and Bracing

1. The design of the seismic anchoring and bracing system shall be by a licensed Structural Engineer in the State of Oregon. The CONTRACTOR shall arrange and pay for the services of the licensed Engineer.
2. Wet stamped and signed calculations and drawing of the seismic anchoring and bracing system shall be submitted to the Architect and Engineer for review and approval.

F. Demonstration and Training.

1. An authorized employee of the manufacturer’s service division shall perform the demonstration and training services. The demonstration and training period shall last a minimum of 8 hours and shall be provided on site.
2. The OWNER reserves the right to video tape the demonstration and training presentation for future in-house use.
3. Provide training handouts for 10 persons.

END OF SECTION

SECTION 26 28 23
ENCLOSED SWITCHES AND CIRCUIT BREAKERS

PART 1 GENERAL

1.01 SUMMARY

A. Section Includes.

1. Provide a complete factory assembled automatic transfer switch with field programmable digital electronic controls designed for fully automatic operation. Controls shall include surge voltage isolation, voltage sensors on all phases of both sources, AC powered operator, positive mechanical and electrical interlocking and mechanically held contacts for both sources.
2. The transfer switch and generator set shall be of the same manufacturer to provide a single source of responsibility for all the products provided. Technicians shall be specifically trained, tested and certified to support the products. Technicians shall be employed by the generator set supplier.

1.02 REFERENCES

A. The following is a list of Codes and Standards that the transfer switch shall conform to.

1. UL1008 – Transfer switch. Transfer switches and enclosures shall be UL-1008 listed as a package and labeled to be suitable for use in either optional standby or legally required emergency applications.
2. IBC2006 – Transfer switch shall be prototype tested and third party certified to comply with the requirements of the IBC group III or IV, category D/F. The equipment shall be provided with installation instructions necessary to attain installation compliance.
3. CSA 282, Emergency Electrical Power Supply for Buildings.
4. NFPA 70, National Electrical Code.
5. NFPA 99, Essential Electrical Systems for Health Care Facilities.
6. NFPA 110, Emergency and Standby Power Systems. The transfer switch shall meet all requirements for Level 1 systems.
7. IEEE 446, Recommended Practice for Emergency and Standby Power Systems for Commercial and Industrial Applications.
8. NEMA ICS 10-1993, AC Automatic Transfer Switches.

B. The transfer switch shall be certified to ISO 9001 International Quality Standard and shall have third party certification verifying quality assurance in design/development, production, installation and service in accordance with ISO9001.

1.03 SUBMITTALS

A. Contractor shall submit all the product data in Division 26 at the same time. Piecemeal submittals will be rejected as incomplete.

1. The product data shall be bound in a three ring binder with tabs for each Section. The tabs shall be numbered to match the specification Section numbers. Submittals not bound and labeled as specified will be rejected as incomplete.
2. A submittal is required for each product specified. Each individual product submittal shall have the corresponding Reference Keynote Number (example - 16416.A21) typewritten in the upper right hand corner of the submittal. The submittals within each Section tab shall be in the same sequential order as they are listed in the specification Section. Submittals not containing the Reference Keynote Number will be rejected as incomplete.

3. No typical submittals will be accepted. Each submittal shall be project specific and clearly identify specifically which components or parts are being submitted for approval. Any product submittals, such as a catalog sheet, which do not clearly identify which components or parts are being submitted for approval, will be rejected as incomplete.

B. Product Data.

1. Pursuant to Section 013000 Submittal Procedures.
2. Seismic certification for area installed provided by the manufacturer.
3. Seismic calculations for the concrete slab and anchor bolts required. Calculations shall be wet stamped by a Professional Engineer licensed in the State of Oregon.
4. Manufacturer's data including materials of construction, equipment weight, and related information for each item specified.
5. Provide a complete bill of materials. Any differences between products specified and proposed shall be clearly identified.
6. Manufacturer's product literature, model specifications and performance data sufficient to verify compliance with items specified in 1.2 References of this Section.
7. Warranty information complying with the requirements of this Section.
8. Project specific power and control schematic. The schematic shall clearly identify all field wiring termination points using the same identification shown in the Contract Documents.
9. The automatic transfer switch shall, at a minimum have the following I/O points identified on the schematic.
   a. Generator start output.
   b. Utility power loss (source 1).
   c. ATS on utility power (source 1).
   d. ATS on Generator power (source 2).
10. Submittal shall include a line-by-line compliance statement based on this specification.

1.04 QUALITY ASSURANCE

A. Qualifications

1. The manufacturer of this equipment shall have produced similar equipment for a minimum period of ten years. When requested by the ENGINEER, an acceptable list of installations with similar equipment shall be provided demonstrating compliance with this requirement.
2. The automatic transfer switch shall be of the same manufacturer as the generator to provide a single source of warranty responsibility for all the products provided.
3. Transfer switch manufacturer shall be certified to ISO 9001 International Quality Standard and shall have third party certification verifying quality assurance in design/development, production, installation and service in accordance with ISO 9001.

B. Factory Testing.

1. The transfer switch manufacturer shall perform a complete operational test on the transfer switch prior to shipping from the factory. A certified test report shall be shipped with the transfer switch.

1.05 WARRANTY

A. Transfer switch shall be warranted for a minimum period of 5 years from the date of substantial completion against all defects in materials and workmanship. The warranty shall be comprehensive including all parts, labor and travel.

PART 2 PRODUCTS

2.01 AUTOMATIC TRANSFER SWITCH

A. Ratings

1. Rated as shown on the Drawings
2. The withstand rating shall sized based on the available in-rush current of the normal power source and the generator, whichever is greater in RMS symmetrical amperes.
3. Enclosure shall be NEMA 1.
4. Main contacts shall be rated for 600 volts AC minimum.
5. Transfer switch shall be rated to carry 100 percent of the rated current continuously in the enclosure specified, ambient temperatures of – 40 to + 60 degrees C and relative humidity up to 95 percent and altitudes up to 10,000 feet above sea level.

2.02 TRANSFER SWITCH CONTROL

A. Operator Panel.

1. Each transfer switch shall be provided with a control panel to allow the operator to view the status and control operation of the transfer switch. The operator panel shall be a sealed membrane panel that is permanently labeled for switch and control functions. The operator shall be provided with the following features and capabilities.
   a. High intensity LED lamps to indicate source 1 and source 2 available and which of the two sources the load is connected to. Source available LED indicators shall operate from the control microprocessor to indicate the true condition of the sources as sensed by the control.
   b. High intensity LED lamp to indicate that the control system is testing or exercising the generator set.
   c. A “TEST” pushbutton to initiate a preprogrammed test sequence for the generator set and transfer switch. The transfer switch shall be programmable for a test with or without a load.
   d. A “RESET/LAMP TEST” pushbutton that will clear any faults present in the control, or simultaneously test all lamps on the panel by lighting them.
   e. The control system shall continuously log information on the number of hours each source has been connected to the load, the number of times transferred and the total number of times each source has failed. This information shall be available via a PC-based service tool and the integral operator display panel.
   f. Display real time clock data including date and time in hours, minutes and seconds. The real time clock shall incorporate provisions for automatic daylight savings time and leap year adjustments. The control shall also log total operating hours for the control system.
   g. Display service history for the transfer switch. Display source connected hours to indicate the total number of hours connected to each source. Display number of times transferred and total number of times each source has failed.
   h. Display fault history on the transfer switch including condition, date and time of fault. Faults to include controller check sum error, low controller DC voltage, ATS fail to close on transfer, ATS fail to close on retransfer, battery charger malfunction, network battery voltage low, and network communications error.
   i. Vacuum fluorescent alphanumeric display with pushbutton navigation switches. The display shall be clearly visible in both bright and no light conditions. It shall be visible over an angle of not less than 120 degrees.
   j. The alphanumeric display shall display source condition information including AC voltage for each phase of normal and emergency source and frequency of each source. Voltage for all three phases shall be displayed on a single screen for easy

viewing of voltage balance. Line to neutral voltages shall be displayed for 4-wire systems.

k. The alphanumeric display shall display the source status to indicate source is connected or not connected.

l. The alphanumeric display shall display load data including three phase AC voltage, three phase AC current frequency, KW, KVA and power factor. Voltage and current data for all phases shall be displayed on a single screen.

m. The alphanumeric display panel shall allow the operator to view and make adjustments in the control system after entering an access code. The adjustments shall include adjusting voltage and frequency operation set points, set up time clock functions, set up load sequence functions, enable or disable control functions and set up exercise and load test operation conditions as well as normal system time delays for transfer time, time delay start, stop, transfer and retransfer.

B. Internal Controls.

1. The transfer switch control system shall be configurable in the field for any operating voltage level up to 600 volts AC. Provide RMS voltage sensing and metering that is accurate to within plus or minus 1 % of nominal voltage level. Frequency sensing shall be accurate to within plus or minus 0.2%. Voltage sensing shall be monitored based on the normal voltage at the site. Systems that utilize voltage monitoring based on standard voltage conditions that are not field configurable are not acceptable.
2. Transfer switch voltage sensors shall be close differential type providing source availability information to the control system based on the following functions.
   a. Monitoring all phases of the normal service (source 1) for under voltage conditions (adjustable for pickup in a range of 85 to 98 % of the normal voltage level and dropout in a range of 75 to 98 % of normal voltage level).
   b. Monitoring all phases of the emergency service (source 2) for under voltage conditions (adjustable for pickup in a range of 85 to 98 % of the normal voltage level and dropout in a range of 75 to 98 % of normal voltage level).
   c. Monitoring all phases of the normal service (source 1) and emergency service (source 2) for loss of a single phase.
   d. Monitoring all phases of the normal service (source 1) and emergency service (source 2) for overvoltage conditions (adjustable for dropout over a range of 105 to 135 % of the normal voltage and pickup at 95 to 99% of dropout voltage level).
   e. Monitoring all phases of the normal service (source 1) and emergency service (source 2) for over or under frequency conditions.
3. All transfer switch sensing shall be configurable from a windows XP or later PC-based service tool to allow setting of levels and enabling or disabling of features and functions. Selected functions including voltage sensing levels and time delays shall be configurable using the operator panel. Designs utilizing DIP switches or other electromechanical devices are not acceptable. The transfer control shall incorporate a series of diagnostic LED lamps.
4. The transfer switch shall be configurable to control the operation time from source to source (program transition operation). The control system shall be capable of enabling or disabling this feature. A phase band monitor or similar device is not an acceptable alternate for this feature.
5. He transfer switch shall incorporate adjustable time delays for generator set start (adjustable in a range from 0 to 15 seconds), transfer (adjustable in a range from 0 to 120 seconds), retransfer (adjustable in a range from 0 to 30 minutes), and generator stop (cool down) (adjustable in a range from 0 to 30 minutes).

6. The transfer switch shall be configurable to accept a relay contact signal and a network signal from an external device to prevent transfer to the generator service
7. The control shall have optically isolated inputs, high isolation transformers for AC inputs and relays on all outputs to provide optimum protection from line voltage surges, RFI and EMI.
8. The control system shall be designed and prototype tested for operation in ambient temperatures from -30 to + 60 degrees C and up to 95 % humidity. It shall be designed and tested to comply with the requirements of the noted voltage and RFI /EMI standards.

C. Control Interface.

1. The transfer switch shall provide an isolated relay contact for starting of a generator set. The relay shall be normally held open and close to start the generator set. Output contacts shall be form C for compatibility with any generator set.
2. Provide one set of form C auxiliary contacts on both sides, operated by transfer switch position, rated 10 amps at 250 volts AC.
3. The transfer switch shall provide relay contacts to indicate the following conditions; source 1 (normal service) available, source 2 (emergency service) available, load connected to source 1 (normal service) and load connected to source 2 (emergency service).
4. The transfer switch shall provide a relay contact signal prior to transfer or retransfer. The time period before and after transfer shall be adjustable in a range of 0 to 50 seconds.

2.03 ENCLOSURE

A. The enclosure shall be NEMA 1 and shall be third party certified for compliance with the required NEMA standard.
B. The enclosure shall provide wire bending space in compliance with the latest edition of the NEC. The cabinet door shall include a permanently mounted key type latch(es). Bolted covers or doors are not acceptable.
C. Manual operating handles shall be accessible to authorized personnel only by opening the key locking cabinet door. Transfer switches with manual operating handles and /or non-key operated switches located on the outside of the cabinet do meet this specification requirement and are not acceptable.

PART 3 EXECUTION

3.01 INSTALLATION

A. General.

1. All identification labeling shall be in compliance with Section 260553 Electrical and Control Identification.
2. The transfer switch shall be installed per the manufacturer’s instructions.
3. The transfer switch shall be installed as per the Drawings.
4. The transfer switch shall be installed per the NEC.
5. The mounting of the transfer switch shall meet or exceed the seismic requirements for the jurisdiction installed.

B. Field Quality Control

1. The local authority having jurisdiction shall approve the installation of the transfer switch and generator set before they are energized.

C. Open Transition Sequence of Operation

1. Transfer switch normally connects an energized utility power source (source 1) to loads and a generator set (source 2) to loads when the normal source fails. The normal position of the transfer switch is source 1 (connected to utility) and no start signal is supplied to the generator.
2. Generator set exercise test with load mode. The control system shall be configurable to test the generator set under load. In this mode the transfer switch shall control the generator set in the following sequence.
    a. Transfer switch shall initiate the exercise sequence at a time indicated in the exercise timer program or when manually initiated by the operator.
    b. When the control system senses the generator set at rated voltage and frequency it shall operate to connect the loads to the generator set by opening the normal source contacts and closing the emergency source contacts at a predetermined time later. The timing sequence for the contact operation shall be programmable in the controller.
    c. The generator set shall operate connected to the load for the duration of the exercise period. If the generator set fails during this period the transfer switch shall automatically reconnect to the normal service.
    d. On completion of the exercise period the transfer switch shall operate to connect the loads to the normal source by opening the emergency source contacts and closing the normal source contacts a predetermined time later. The timing sequence for the contact operation shall be programmable in the controller.
    e. The transfer switch shall operate the generator set unloaded for a cool down period and then remove the start signal from the generator set. If the normal power fails at any time when the generator is running, the transfer switch shall immediately connect the system loads to the emergency source.
3. Generator set exercise test without load mode. The control system shall be configurable to test the generator set without transfer switch load connected. In this mode the transfer switch shall control the generator set in the following sequence.
    a. Transfer switch shall initiate the exercise sequence at a time indicated in the exercise timer program or when manually initiated by the operator.
    b. The control system shall operate the generator set unloaded for the duration of the exercise period.
    c. At the completion of the exercise period the transfer switch shall remove the start signal from the generator set. If the normal power fails at any time when the generator is running, the transfer switch shall immediately connect the system loads to the emergency source.

D. Start-up and Testing

1. An authorized employee of the manufacturer’s service division shall perform the start-up and testing services.
2. Provide a signed certificate stating the installation meets or exceed the manufacturer’s installation standards and instructions.
3. Verification that the transfer switch is operating as specified.
4. Provide a printout of all as-commissioned adjustable set points for future reference.

E. Demonstration and Training.

1. An authorized employee of the manufacturer’s service division shall perform the demonstration and training services. The demonstration and training period shall last a minimum of 4 hours and shall be provided on site.
2. The OWNER reserves the right to video tape the demonstration and training presentation for future in-house use.

3. Provide training handouts for 10 persons.

F. Seismic Anchoring and Bracing

1. The design of the seismic anchoring and bracing system shall be by a licensed Structural Engineer in the State of Oregon. The CONTRACTOR shall arrange and pay for the services of the licensed Engineer.
2. Wet stamped and signed calculations and drawing of the seismic anchoring and bracing system shall be submitted to the Architect and Engineer for review and approval.

END OF SECTION

SECTION 26 51 00
INTERIOR LIGHTING

PART 1 GENERAL

1.01 SUMMARY

A. Section Includes.
   1. This Section includes the requirements for the interior illumination fixtures and controls.

1.02 SUBMITTALS

A. Contractor shall submit all the product data in Division 26 at the same time. Piecemeal submittals will be rejected as incomplete.
   1. The product data shall be submitted in PDF format. Each PDF shall only contain products from a single specification section, products in a different specification section shall be in a separate PDF.
   2. A submittal is required for each product specified. Each individual product submittal shall have the corresponding Reference Keynote Number (example - 265100.C01) typewritten in the upper right-hand corner of the submittal. The submittals within each PDF shall be in the same sequential order as they are listed in the specification Section. Submittals not containing the Reference Keynote Number will be rejected as incomplete.
   3. No typical submittals will be accepted. Each submittal shall be project specific and clearly identify specifically which components or parts are being submitted for approval. Any product submittals, such as a catalog sheet, which do not clearly identify which components or parts are being submitted for approval, will be rejected as incomplete.

B. Product Data.
   1. Pursuant to Section 013300 Submittal Procedures.
   2. Manufacturer’s data including materials of construction, fixture dimensions, options provided and related information for each item specified in PART 2 PRODUCTS.

1.03 QUALITY ASSURANCE

A. Regulatory Requirements.
   1. All products shall be UL listed for the environment they are installed in.

PART 2 PRODUCTS

2.01 FIXTURES

A. Reference the Luminaire Schedule for all Interior Luminaires.

PART 3 EXECUTION

3.01 INSTALLATION

A. General.
   1. All identification labeling shall be in compliance with Section 260553 Electrical and Control Identification.
   2. CONTRACTOR shall provide all mounting hardware required to mount luminaires in lay-in or gypsum board ceilings. Verify ceiling types with the ARCHITECT. Luminaires of a given type may be used in more than one type of ceiling.

3. Luminaires shall be supported by #12 AWG hanger wire connected to the luminaire and the building structure.
4. Positively attach all luminaires to the suspended ceiling system. Attachment devices shall have capacity of 100% of the luminaire weight acting in any direction.
5. Verify luminaire locations with the ARCHITECT'S reflected ceiling plan.
6. Adjustable luminaire heads shall be aimed as directed by the ENGINEER.
7. All luminaires shall be cleaned of all dirt, dust, and finger prints prior to close-out.

END OF SECTION

SECTION 265600
EXTERIOR LIGHTING

PART 1 GENERAL

1.01 SUMMARY

A. Section Includes.
   1. This Section includes the requirements for exterior illumination fixtures and control.

1.02 SUBMITTAL

A. Contractor shall submit all the product data in Division 26 at the same time. Piecemeal submittals will be rejected as incomplete.
   1. The product data shall be bound in a three ring binder with tabs for each Section. The tabs shall be numbered to match the specification Section numbers. Submittals not bound and labeled as specified will be rejected as incomplete.
   2. A submittal is required for each product specified. Each individual product submittal shall have the corresponding Reference Keynote Number (example - 265600.E01) typewritten in the upper right hand corner of the submittal. The submittals within each Section tab shall be in the same sequential order as they are listed in the specification Section. Submittals not containing the Reference Keynote Number will be rejected as incomplete.
   3. No typical submittals will be accepted. Each submittal shall be project specific and clearly identify specifically which components or parts are being submitted for approval. Any product submittals, such as a catalog sheet, which do not clearly identify which components or parts are being submitted for approval, will be rejected as incomplete.

B. Product Data.
   1. Pursuant to Section 01300 Submittal Procedures.
   2. Manufacturer’s data including materials of construction, fixture dimensions, options provided and related information for each item specified in PART 2 PRODUCTS.

1.03 QUALITY ASSURANCE

A. Regulatory requirements.
   1. Products provided shall be UL listed for the environment in which they are installed.

PART 2 PRODUCTS

2.01 LUMINAIRES

A. Shall be as shown on the Luminaire Schedule.

PART 3 EXECUTION

3.01 INSTALLATION

A. General.
   1. All identification labeling shall be in compliance with Section 260553 Electrical and Control Identification.
   2. Fixtures mounted above doors shall be centered unless specifically called out otherwise on the Drawings.

3. Fixtures mounted on the exterior of split face block shall be fed with a conduit entering the back of the fixture routed from the interior of the building. Mounting the fixture on a box is unacceptable.
4. Use stainless steel mounting hardware.
5. Mount at the height shown on the Drawings.
6. Fixtures mounted on the building shall have a photo electric control with a manual toggle switch override unless shown differently on the drawings.

END OF SECTION

ATTACHMENT 2

MARION COUNTY
MEDICAL EXAMINER OFFICE T.I.

3060 CENTER ST NE
SALEM, OR 97301

DESIGN TEAM

OWNER
MARION COUNTY
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ATTN: GEOFF BONNEY
GBonney@co.marion.or.us

ARCHITECT
AC + CO ARCHITECTURE | COMMUNITY
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FAX 503-881-3655
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MECHANICAL AND PLUMBING ENGINEER
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ELECTRICAL ENGINEER
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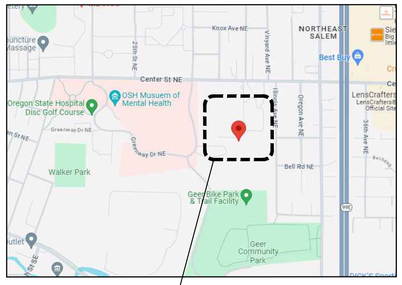
PH: 503.584.1576
CONTACT: DEVON LUTE
devon_lute@landisconsulting.com

SHEET INDEX

VICINITY MAP



ABBREVIATIONS

(REFER TO CONSULTANT DRAWINGS FOR ADDITIONAL ABBREVIATIONS)

NOTES
1. WITH THE EXCEPTION OF "NO." (NUMBER), ABBREVIATIONS ARE TYPICALLY USED WITHOUT THE PERIOD (.). ABBREVIATIONS MAY ALSO APPEAR WITH THE PERIOD. EXAMPLE: "PT" (PRESERVATIVE-TREATED) MAY ALSO APPEAR AS "P.T.".
2. AN "S" MAY BE ADDED TO AN ABBREVIATION TO INDICATE PLURAL, OR MULTIPLE OCCURRENCES.

AB	ANCHOR BOLT
ABV	ABOVE
A/C	AIR CONDITIONING
AC	ASPHALTIC CONCRETE
ACOUST	ACOUSTIC
AD	AREA DRAIN
ADA	AMERICANS W/ DISABILITIES ACT
ADD	ADDITIONAL
ADJ	ADJUST (ABLE)
A/E	ARCHITECT / ENGINEER
AFF	ABOVE FINISHED FLOOR
AFG	ABOVE FINISH GRADE
AGG	AGGREGATE
ALT	ALTERNATE
ALUM	ALUMINUM
ANCH	ANCHOR
ANOD	ANODIZED
APPROX	APPROXIMATELY
ARCH	ARCHITECT(URAL)
ASB	ASBESTOS
ASPH	ASPHALT
ASST	ASSISTANT
ASSY	ASSEMBLY
ASTM	AMERICAN SOCIETY FOR TESTING & MATERIALS
AUTO	AUTOMATIC
AVG	AVERAGE
BD	BOARD
BFF	BELOW FINISH FLOOR
BFG	BELOW FINISH GRADE
BIT	BITUMINOUS
BLW	BELOW
BLDG	BUILDING
BLKG	BLOCKING
BM	BENCH MARK, BEAM
B/O	BOTTOM OF
BOS	BOTTOM OF STEEL
BOT	BOTTOM
BRKT	BRACKET
BSMT	BASEMENT
B/U	BUILT-UP
BUR	BUILT-UP ROOFING
CAB	CABINET
CANTIL	CANTILEVER
CB	CATCH BASIN
CEM	CEMENT
CER	CERAMIC
CF/CI	CONTRACTOR FURNISHED, CONTRACTOR INSTALLED
CG	CORNER GAURD
CHKBD	CHALKBOARD
CI	CAST IRON
CJ	CONTROL JOINT
℄	CENTER LINE
CLG	CEILING
CLR	CLEAR, CLEARANCE
CMU	CONCRETE MASONRY UNIT
CNTR	COUNTER
CO	CLEANOUT
COL	COLUMN
CONC	CONCRETE
COND	CONDITION
CONN	CONNECT, CONNECTION
CONST	CONSTRUCTION
CONT	CONTINUOUS, CONTINUE
CONTR	CONTRACTOR
COR	CORNER
CORR	CORRIDOR
CSI	CONSTRUCTION SPECIFICATIONS INSTITUTE
CTR	CENTER
CTSK	COUNTERSINK, COUNTERSUNK
CW	COLD WATER
CY	CUBIC YARD
DBL	DOUBLE
DEG	DEGREES
DEMO	DEMOLITION
DET	DETAIL
DF	DRINKING FOUNTAIN
D FIR	DOUGLAS FIR
DH	DOUBLE HUNG
DIAG	DIAGONAL
DIA	DIAMETER
DIM	DIMENSION
DISP	DISPENSER
DIV	DIVIDE, DIVIDED, DIVISION
DN	DOWN
DOO	DOOR OPENING DIMENSION
DR	DOOR
DS	DOWNSPOUT
DSP	DRY STANDPIPE
DTL	DETAIL
DW	DISHWASHER
DWG	DRAWING
DWR	DRAWER
E	EAST
(E)	EXISTING
EA	EACH
EC	EDGE OF CURB
EG	EDGE GUARD
EJ	EXPANSION JOINT
EL	ELEVATION
ELEC	ELECTRIC, ELECTRICAL
ELEV	ELEVATOR
EMERG	EMERGENCY
ENGR	ENGINEER
ENCL	ENCLOSURE
ENTR	ENTRANCE
EP	ELECTRICAL PANEL
EQ	EQUAL
EQUIP	EQUIPMENT
EW	EACH WAY
EWC	ELECTRIC WATER COOLER
EXIST	EXISTING
EXP B	EXPANSION BOLT
EXP JT	EXPANSION JOINT
EXT	EXTERIOR
FA	FIRE ALARM
FB	FLAT BAR
FD	FLOOR DRAIN
FDN	FOUNDATION
FE	FIRE EXTINGUISHER
FEC	FIRE EXTINGUISHER CABINET
FF	FINISH FACE
FH	FIRE HYDRANT
FHC	FIRE HOSE CABINET
FIN	FINISH, FINISHED
FIN FL	FINISHED FLOOR
FL	FLOOR
FLAM	FLAMMABLE
FLUOR	FLUORESCENT
FDN	FOUNDATION
FOB	FACE OF BRICK
FOC	FACE OF CONCRETE
FOF	FACE OF FINISH
FOS	FACE OF STUD
FOW	FACE OF WALL
FP	FIREPROOF
FRMG	FRAMING
FRP	FIBERGLAS-REINFORCED PANEL
FS	FLOOR SINK
FT	FOOT, FEET
FTG	FOOTING
FURR	FURRING
FUT	FUTURE
GA	GAGE, GAUGE
GALV	GALVANIZED
GC	GENERAL CONTRACTOR
GEN	GENERAL
GFCI	GROUND-FAULT CIRCUIT INTERRUPTER
GI	GALVANIZED IRON
GL	GLASS, GLAZING
GLB	GLU-LAM BEAM
GRD	GRADE
GRND	GROUND
GWB	GYPSUM WALL BOARD
GYP	GYPSUM
HB	HOSE BIBB
HC	HOLLOW CORE
HD	HEAD
HDW	HARDWARE
HDR	HEADER
HGT	HEIGHT
HLDN	HOLD DOWN
HM	HOLLOW METAL
HO	HOLD-OPEN
HORIZ	HORIZONTAL
HR	HOUR
HTG	HEATING
HVAC	HEATING-VENTILATING-AIR CONDITIONING
HW	HOT WATER
HWH	HOT WATER HEATER
IBC	INTERNATIONAL BUILDING CODE
ID	INSIDE DIAMETER
IN	INCH
INCL	INCLUDE (D), INCLUDING
INFO	INFORMATION
INSTR	INSTRUCTION (S)
INSUL	INSULATE (D), INSULATION
INT	INTERIOR
INV	INVERT
JAN	JANITOR
J-BOX	JUNCTION BOX
JST	JOIST
JT	JOINT
KD	KILN-DRIED
KIT	KITCHEN
KP	KICK PLATE
KO	KNOCK OUT
L	LENGTH
LAB	LABORATORY
LAM	LAMINATE(D)
LAV	LAVATORY
LB	POUND
LBR	LUMBER
LF	LINEAL FEET
LH	LEFT HAND
LIQ	LIQUID
LKR	LOCKER
LNDSCP	LANDSCAPE
LT	LIGHT, LEFT
LVL	LAMINATED-VENEER LUMBER
LVR	LOUVER
MACH	MACHINE
MAN	MANUAL
MAINT	MAINTENANCE
MAS	MASONRY
MATL	MATERIAL
MAX	MAXIMUM
MB	MACHINE BOLT
MBR	MEMBER
MC	MEDICINE CABINET
MED	MEDIUM
MEMB	MEMBRANE
MECH	MECHANICAL
MFGD	MANUFACTURED
MFR	MANUFACTURER
MH	MANHOLE
MIRR	MIRROR
MIN	MINIMUM
MISC	MISCELLANEOUS
MLP	METAL LATH & PLASTER
MO	MASONRY OPENING
MOD	MODULE
MOIST	MOISTURE
MS	METAL SCREEN
MTD	MOUNTED
MTL	METAL
MUL	MULLION
N	NORTH
NA	NOT APPLICABLE
NAT	NATURAL
NE	NORTHEAST
NIC, (NIC)	NOT IN CONTRACT
NO.	NUMBER
NOM	NOMINAL
NRC	NOISE REDUCTION COEFFICIENT
NTS	NOT TO SCALE
NW	NORTHWEST
O&M	OPERATION & MAINTENANCE
OBS	OBSCURE
OC	ON CENTER
OCC	OCCUPANT, OCCUPANCY
OD	OUTSIDE DIAMETER, OVERFLOW DRAIN
OF	OUTSIDE FACE
OFCI	OWNER FURNISHED - CONTRACTOR INSTALLED
OFF	OFFICE
OH	OVERHEAD
OHG	OVERHANG
OPG	OPENING
OPP	OPPOSITE
OPT	OPTIONAL
ORIG	ORIGINAL
OSB	ORIENTED-STRAND BOARD
PA	PUBLIC ADDRESS
PARTN	PARTITION
PASS	PASSENGER
PAV	PAVING
PC	PIECE, PRECAST
PCF	POUNDS PER CUBIC FOOT
PERF	PERFORATED
PH	PHASE
PJ	PANEL JOINT
P/L	PROPERTY LINE
PL	PLATE
PLAM	PLASTIC LAMINATE
PLAS	PLASTIC
PLAT	PLATFORM
PLBG	PLUMBING
PLF	POUNDS PER LINEAL FOOT
PLSTR	PLASTER
PLYWD	PLYWOOD
POLYISO	POLYISOCYANURATE
PORT	PORTABLE
PNL	PANEL
PNTD	PAINTED
PR	PAIR
PREFAB	PREFABRICATED
PRKG	PARKING
PROJ	PROJECT; PROJECTOR, PROJECTION
PSF	POUNDS PER SQUARE FOOT
PSI	POUNDS PER SQUARE INCH
PT	PRESERVATIVE-TREATED
PTD	PAPER TOWEL DISPENSER
PTD/R	PAPER TOWEL DISP & RECEPT
PTN	PARTITION
PTR	PAPER TOWEL RECEPTACLE
PUB	PUBLIC
PVMT	PAVEMENT
PVC	POLYVINYL CHLORIDE
PWD	PLYWOOD
PWR	POWER
QT	QUARRY TILE
R	RADIUS, RISER
RA	RETURN AIR
RD	ROOF DRAIN
RECEP	RECEPTION, RECEPTACLE
REF	REFERENCE
REFL	REFLECTED
REFR	REFRIGERATOR
REINF	REINFORCE, REINFORCEMENT
REM	REMOVE, REMOVABLE
REPL	REPLACE (D) (MENT)
REQD	REQUIRED
RES	RESERVE (D)
RESIL	RESILIENT
REV	REVERSE, REVISE (D), REVISION
RD	ROOF DRAIN
RM	ROOM
RO	ROUGH OPENING
ROW	RIGHT OF WAY
RR	REMOVE AND RELOCATE
RT	RIGHT
RV	ROOF VENT
RWD	REDWOOD
RWL	RAIN WATER LEADER
S	SOUTH
S4S	SURFACED 4 SIDES
SA	SUPPLY AIR
SAF	SELF-ADHERING FLASHING
SALV	SALVAGE
SAN	SANITARY
SC	SOLID CORE
SCD	SEAT COVER DISPENSER
SCH	SCHEDULE
SCR	SCREW
SD	SOAP DISPENSER
SE	SOUTHEAST
SEC	SECRETARY
SECT	SECTION
SEP	SEPARATE, SEPARATION
SERV	SERVICE
SF	SQUARE FOOT
SH	SINGLE-HUNG, SHELF, SHELVES
SHR	SHOWER
SHT	SHEET
SHTG	SHEATHING
SIM	SIMILAR
SM	SHEET METAL
SK	SINK
SND	SANITARY NAPKIN DISPENSER
SNR	SANITARY NAPKIN RECEPTACLE
SOH	SAME AT OPPOSITE HAND
SPEC	SPECIFICATION, SPECIFIED
SPKR	SPEAKER
SPL	SPECIAL
SQ	SQUARE
SS	STAINLESS STEEL
STA	STATION
ST	STREET
STD	STANDARD
STL	STEEL
STOR	STORAGE
STRUCT	STRUCTURE, STRUCTURAL
SUPV	SUPERVISION
SUSP	SUSPENDED
SW	SOUTHWEST
SYM	SYMMETRICAL
SYS	SYSTEM
T	TREAD
TB	TACKBOARD
T&G	TONGUE & GROOVE
TBD	TO BE DETERMINED
TD	TRENCH DRAIN
TEL	TELEPHONE
TEMP	TEMPERED, TEMPERATURE
TERM	TERMINAL
TERR	TERRAZZO
THK	THICK (NESS) (ENED)
THRM	THERMAL
THRU	THROUGH
TJ	TOOLED JOINT
TLT	TOILET
TPD	TOILET PAPER DISPENSER
T/O	TOP OF
TOB	TOP OF BEAM
TOC	TOP OF CONCRETE,
TOC	TOP OF CURB
TOJ	TOP OF JOIST
TOL	TOLERANCE
TOM	TOP OF MASONRY
TOP	TOP OF PAVING
TOS	TOP OF STEEL
TOW	TOP OF WALL
TPD	TOILET PAPAER DISPENSER
TRANS	TRANSFORMER
TREAT	TREATMENT
TS	TUBE STEEL
TV	TELEVISION
TYP	TYPICAL
UG	UNDERGROUND
UL	UNDERWRITERS LABORATORY
UNFIN	UNFINISHED
UON	UNLESS OTHERWISE NOTED
UR	URINAL
UTIL	UTILITY
VAR	VARNISH
VB	VAPOR BARRIER
VCT	VINYL COMPOSITION TILE
VIF	VERIFY IN FIELD
VERT	VERTICAL
VEST	VESTIBULE
VG	VERTICAL GRAIN
VIN	VINYL SHEET
VNR	VENEER
VOL	VOLUME
VT	VINYL TILE
VTR	VENT THROUGH ROOF
W	WEST, WIDE, WIDTH
WC	WATER CLOSET
WD	WOOD
WDW	WINDOW
WH	WATER HEATER
(WO)	WHERE OCCURS
W/O	WITHOUT
WP	WATERPROOF(ING)
WR	WEATHER RESISTANT
WRB	WEATHER RESISTANT BARRIER
WS	WEATHERSTRIPPING
WSCT	WAINSCOT
WT	WEIGHT
WWF	WELDED WIRE FABRIC

CODE ANALYSIS

GENERAL

MARION COUNTY MEDICAL EXAMINERS OFFICE T.I.
PROJECT NUMBER: 2023.0080
STATE OF OREGON 2022 STRUCTURAL SPECIALTY CODE, AMENDMENTS BASED ON 2018 IBC

PRINCIPAL ARCHITECT: RICHARD ROTHWEILER, AIA
PROJECT DESCRIPTION: RENOVATION TO EXISTING MEDICAL EXAMINERS OFFICE; NO EGRESS REVISIONS ARE REQUIRED

USE AND OCCUPANCY CLASSIFICATION (CHAPTER 3)

B OCCUPANCY	OFFICE	SECT. 304

GENERAL BUILDING HEIGHTS AND AREAS (CHAPTER 5)

CONSTRUCTION TYPE:	VB, NON-SPRINKLED	TABLE 601
ALLOWABLE BUILDING HEIGHT:	40'-0"	TABLE 504.3
EXISTING:	~14'-0", COMPLIES	
ALLOWABLE STORIES ABOVE GRADE:	2 STORIES	TABLE 504.4
EXISTING:	1 STORY, COMPLIES	
ALLOWABLE BUILDING AREA:	9,000 SF	TABLE 506.2
EXISTING:	3,665 SF, COMPLIES	

TYPES OF CONSTRUCTION (CHAPTER 6)

CONSTRUCTION TYPE	VB, NON-SPRINKLED	SECT. 602.5
BUILDING ELEMENTS:		TABLE 601
STRUCTURAL FRAME:	NON-RATED	
EXTERIOR BEARING WALL:	NON-RATED	
INTERIOR BEARING WALL:	NON-RATED	
EXTERIOR NON-BEARING WALL:		TABLE 602
X < 5'-0"	1-HR	
5'-0" < X < 10'-0"	1-HR	
10'-0" < X < 30'-0"	NON-RATED	
X > 30'-0"	NON-RATED	
INTERIOR NON-BEARING WALL:	NON-RATED	
FLOOR:	NON-RATED	
ROOF, INCLUDING BEAMS:	NON-RATED	

MEANS OF EGRESS (CHAPTER 10)

OCCUPANT LOAD:	68 OCC	SECT. 1005.3
EGRESS WIDTH:		
DOORS:		
REQUIRED:	68 OCCUPANTS x 0.15 = 10.2"	
PROVIDED:	(2) AT 36"= 72", COMPLIES	
NUMBER OF EXITS REQUIRED:	2 REQUIRED, 2 EXISTING, COMPLIES	SECT. 1006.2.1
PANIC HARDWARE:	REQUIRED IF OVER 50 OCCUPANTS	SECT. 1008.1.10
EXIT ILLUMINATION:	REQUIRED	SECT. 1013.3
EXIT ACCESS DISTANCE:		
GROUP B, NON-SPRINKLED:	200 FT	TABLE 1017.2

ARCHITECTURAL BARRIER LIST / PLAN

COST OF IMPROVEMENT:	$ 366,600
A. KITCHENS:	$ 49,500
B. RESTROOMS:	$ 43,750
C. BREAK ROOMS:	$ 3,000
	$ 96,250
ACCESSIBLE UPGRADES REQUIRED:	$ 91,650 (25% OF IMPROVEMENTS)
ACCESSIBLE UPGRADES PROVIDED:	$ 96,250

1. PARKING SPACE - EXISTING TO REMAIN AND COMPLIANT, NO WORK PROPOSED
2. ACCESSIBLE ENTRANCE - EXISTING TO REMAIN AND COMPLIANT, NO WORK PROPOSED
3. ACCESSIBLE ROUTE TO ALTERED AREA - EXISTING TO REMAIN AND COMPLIANT, NO WORK PROPOSED
4. ACCESSIBLE RESTROOM - $ 43,750
5. ACCESSIBLE TELEPHONE - N/A
6. ACCESSIBLE DRINKING FOUNTAIN - N/A

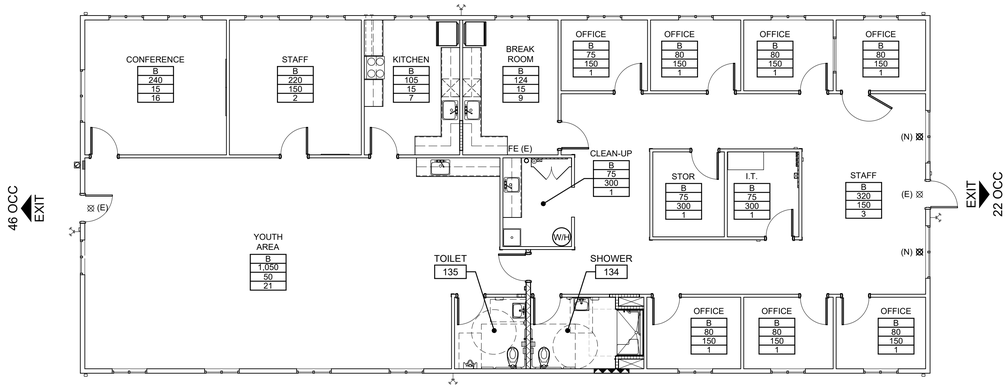
SYMBOL LEGEND

ROOM
B
0
10
1
- OCCUPANCY CLASSIFICATION
- FLOOR AREA OF SPACE
- OCCUPANT LOAD FACTOR
- OCCUPANTS

⊠ EXIT EGRESS SIGN AND EMERGENCY LIGHTING WITH BATTERY BACKUP

FE FIRE EXTINGUISHER

EXIT REQUIRED EXIT



REGISTERED ARCHITECT
3416
RICHARD S. ROTHWEILER
SALEM, OREGON
STATE OF OREGON

In the event conflicts are discovered between the original signed and sealed documents prepared by the Architects and/or their Consultants, and any copy of the documents transmitted by mail, fax, electronically or otherwise, the original signed and sealed documents shall govern.

JOB NO. 2023.0080

DATE SEPT 13, 2024

DRAWN CJA

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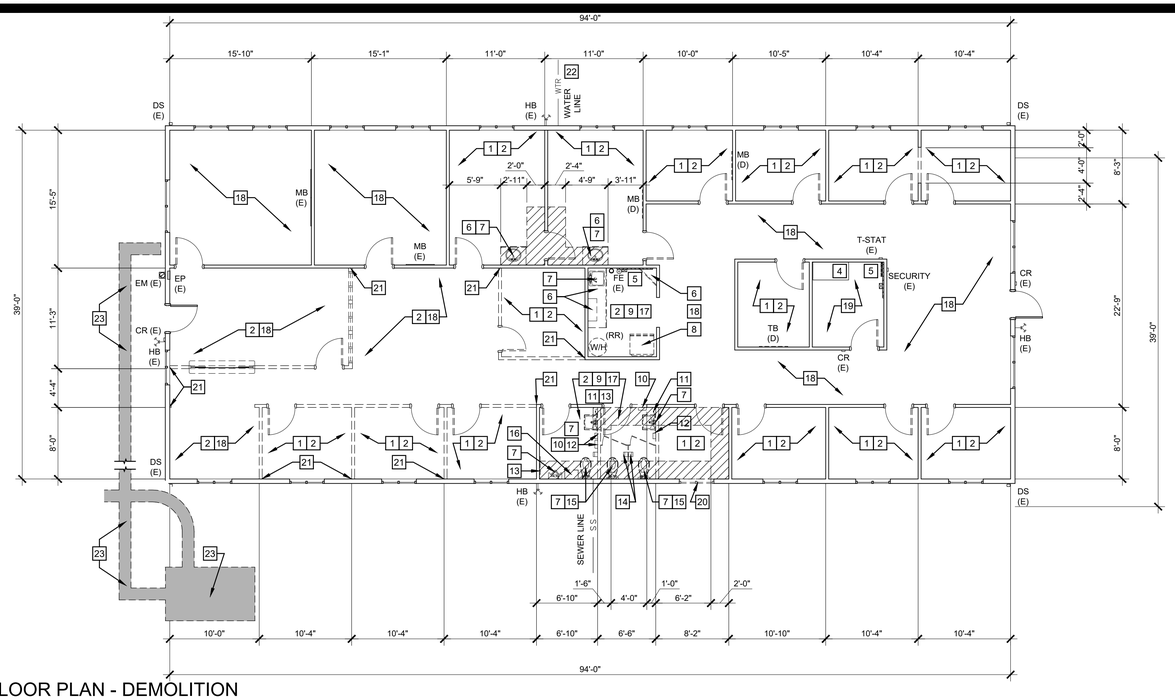
MARION COUNTY
MEDICAL
EXAMINER

3060 CENTER ST NE
SALEM, OR 97301

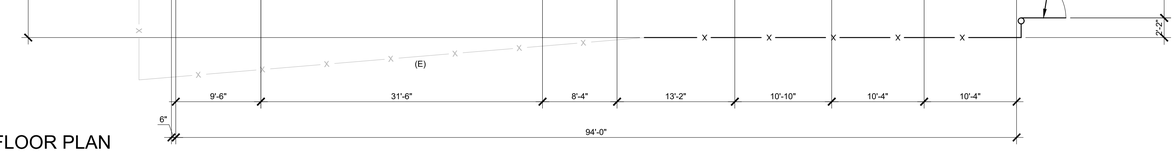
SHEET

A0.0



1 FLOOR PLAN - DEMOLITION

SCALE: 1/8" = 1'-0"



2 FLOOR PLAN

SCALE: 1/8" = 1'-0"

REFERENCE NOTES - DEMOLITION:

1. EXISTING CARPET TO BE REMOVED, PREP FLOOR FOR NEW FINISH
2. EXISTING BASE TO BE REMOVED, PREP WALL FOR NEW BASE
3. NOT USED
4. EXISTING I.T. RACK TO REMAIN
5. EXISTING LOW VOLTAGE BACKBOARD TO REMAIN
6. EXISTING CASEWORK TO BE REMOVED
7. EXISTING PLUMBING FIXTURE TO BE REMOVED, CAP PIPING IN WALL OR CEILING FOR NEW CONNECTION
8. EXISTING REFRIGERATOR TO BE REMOVED AND RETURNED TO OWNER AS SALVAGE
9. EXISTING SHEET VINYL FLOORING TO BE REMOVED, PREP FLOOR FOR NEW FINISH
10. EXISTING PAPER TOWEL DISPENSER TO BE REMOVED AND REINSTALLED, REFER TO SHEET A4.1 FOR NEW LOCATION
11. EXISTING SOAP DISPENSER TO BE REMOVED AND REINSTALLED, REFER TO SHEET A4.1 FOR NEW LOCATION
12. EXISTING FEMININE HYGIENE PRODUCT DISPENSER TO BE REMOVED AND REINSTALLED, REFER TO SHEET A4.1 FOR NEW LOCATION
13. EXISTING MIRROR TO BE REMOVED
14. EXISTING TOILET PAPER DISPENSER TO BE REMOVED AND REINSTALLED, REFER TO SHEET A4.1 FOR NEW LOCATION
15. EXISTING TOILET SEAT COVER DISPENSER TO BE REMOVED, REFER TO SHEET A4.1 FOR NEW LOCATION
16. EXISTING SHELF TO BE REMOVED
17. REMOVE INTERIOR GYPSUM WALLBOARD TO FACILITATE PLUMBING SCOPE OF WORK
18. EXISTING LUXURY VINYL PLANK FLOORING, REMOVE PAINT AND THOROUGHLY CLEAN
19. EXISTING FLOORING AND WALL BASE TO REMAIN
20. EXISTING WINDOW TO BE REMOVED
21. PATCH AND REPAIR WALL TO BE FLUSH WITH THE EXISTING TO REMAIN, PREP FOR NEW WALL FINISH
22. EXISTING WATERLINE SHUT-OFF VALVE TO REMAIN
23. AREA OF EXISTING SITE TO BE SELECTIVELY REMOVED TO ALLOW FOR NEW WORK, REFER TO ELECTRICAL DRAWINGS

REFERENCE NOTES:

1. NEW CARPET TILE, REFER TO SPECIFICATIONS
2. NEW RUBBER BASE, REFER TO SPECIFICATIONS
3. NOT USED
4. EXISTING I.T.RACK TO REMAIN
5. EXISTING LOW VOLTAGE BACKBOARD TO REMAIN
6. NEW SHEET VINYL FLOORING, REFER TO SPECIFICATIONS
7. NEW SHEET VINYL COVED BASE, REFER TO SPECIFICATIONS
8. EXISTING LUXURY VINYL PLANK FLOORING TO REMAIN
9. EXISTING RUBBER BASE TO REMAIN
10. EXISTING FLOORING TO REMAIN
11. NEW MOP SINK, REFER TO SPECIFICATIONS
12. NEW LUXURY VINYL PLANK FLOORING TO MATCH EXISTING, REFER TO FINISH SCHEDULE
13. EXISTING WATER SHUT-OFF VALVE TO REMAIN
14. NEW GENERATOR ON CONCRETE PAD, REFER TO ELECTRICAL DESIGN/BUILD DRAWINGS (5 / A8.1)
15. NEW CHAIN LINK FENCE GATE, PROVIDE HARDWARE FOR SECURING WITH PADLOCK, COORDINATE LOCATION WITH UTILITIES, AT SIM CONDITION, COORDINATE LOCATION WITH EXISTING POSTS
16. NEW BACKING FOR FUTURE WALL MOUNTED TV. CENTER ON WALL. TOP OF BACKING AT BOTTOM OF TV WALL OUTLET
17. NEW ONE-WAY VISION FILM ON INSIDE FACE OF EXISTING WINDOW
18. AREA OF NEW CONCRETE SIDEWALK TO MATCH EXISTING
19. AREA OF NEW LANDSCAPING TO MATCH EXISTING

GENERAL NOTES:

1. GENERAL NOTES APPLY TO ALL DRAWINGS.
2. DIMENSIONS ARE TO EXISTING FACE OF WALL, FACE OF NEW FRAMING, AND FACE OF EXISTING CONCRETE UNLESS NOTED OTHERWISE.
3. DIMENSIONS OF EXISTING CONDITIONS ARE APPROXIMATE AND INTENDED FOR ESTIMATING PURPOSES ONLY. CONTRACTOR SHALL BE RESPONSIBLE TO FIELD VERIFY ALL DIMENSIONS PRIOR TO ACTUAL CONSTRUCTION. NOTIFY ARCHITECT IMMEDIATELY OF ANY DISCREPANCIES OR QUESTIONABLE DIMENSIONS PRIOR TO PROCEEDING WITH AREA OF WORK IN QUESTION.
4. DRAWINGS ARE DIAGRAMMATIC ONLY AND SHOULD NOT BE SCALED.
5. IN CASE OF ANY CONFLICTS IN THE REQUIREMENTS OF THE CONTRACT DOCUMENTS, THE CONTRACTOR IS REQUIRED TO INCLUDE THE BETTER QUALITY AND LARGER QUANTITY OF THE WORK.
6. CONTRACTOR AND BIDDERS SHALL USE COMPLETE SETS OF CONTRACT DOCUMENTS; NEITHER THE OWNER NOR ARCHITECT ASSUMES RESPONSIBILITY FOR ERRORS OR MISINTERPRETATIONS RESULTING FROM THE USE OF INCOMPLETE SETS OF CONTRACT DOCUMENTS.

SYMBOL LEGEND:

- EXISTING CONCRETE FLOOR SLAB TO BE SAWCUT AND REMOVED FOR NEW PLUMBING LINES. PROVIDE NEW CONCRETE FLOOR AND VAPOR BARRIER TO MATCH EXISTING. PROVIDE NO. 4 REBAR DOWELS AT 24" o.c. WITH EPOXY SET 6" EMBEDMENT EACH SIDE
- NEW 2x6 WOOD STUDS AT 16" o.c. WITH ACOUSTICAL INSULATION AND ⅝" GYPSUM WALLBOARD ONE SIDE, PLYWOOD SHEATHING/VAPOR BARRIER/PLASTER TO MATCH EXISTING
- NEW 2x6 WOOD STUDS AT 16" o.c. WITH ACOUSTICAL INSULATION AND ⅝" GYPSUM WALLBOARD EACH SIDE
- NEW 2x4 WOOD STUDS AT 16" o.c. WITH ACOUSTICAL INSULATION AND ⅝" GYPSUM WALLBOARD EACH SIDE
- EXISTING WALL TO REMAIN
- EXISTING WALL TO BE REMOVED
- 000 — NEW DOOR, FRAME AND HARDWARE REFER TO DOOR SCHEDULE, UNLESS NOTED OTHERWISE
- EXISTING DOOR, FRAME AND HARDWARE TO REMAIN
- EXISTING DOOR, FRAME AND HARDWARE TO BE REMOVED
- CG — NEW CORNER GUARD, REFER TO SPECIFICATIONS
- NEW 6'-0" TALL GALVANIZED CHAN LINK FENCE, (E) DENOTES EXISTING FENCE TO REMAIN

  NOTES:
  1. 2" MESH, 9 GA. WIRE
  2. 1⅝" DIA. TOP RAIL
  3. 2⅜" DIA. LINE POSTS AT 10' OC MAX WITH 24"x9" DIA. CONCRETE FOOTINGS
  4. 4" DIA. GATE POST WITH 36"x12" DIA. CONCRETE FOOTINGS
- A — NEW WINDOW, REFER TO 1/A8.1
- G — NEW GAS LINE TIED TO EXISTING LINE AT 3050 CENTER ST NE, SIZE AS NEEDED FOR GENERATOR, INCLUDE PIETRO FLORENTINI REGULATOR AT GENERATOR
- CR — NEW CARD READER BY OWNER

NOTE: SEE SHEET A5.1 FOR PLUMBING NOTES AND SPECIFICATIONS

REGISTERED ARCHITECT
3416
RICHARD S. ROTHWELL
SALEM, OREGON
STATE OF OREGON

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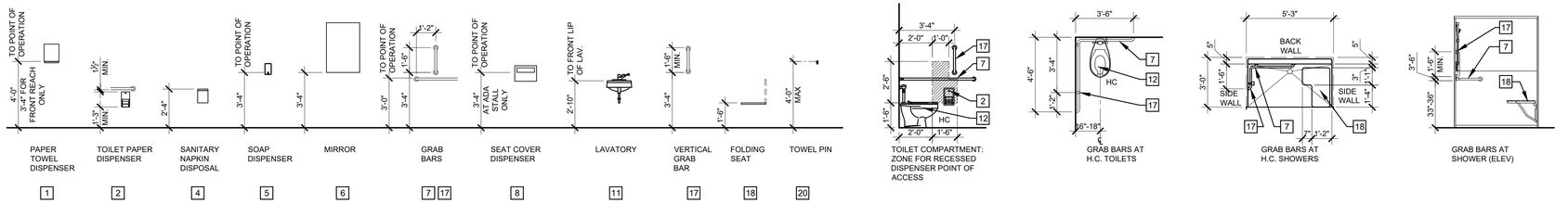
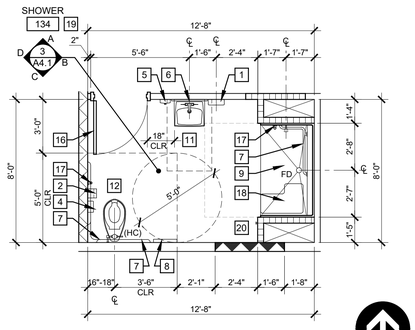
A2.1



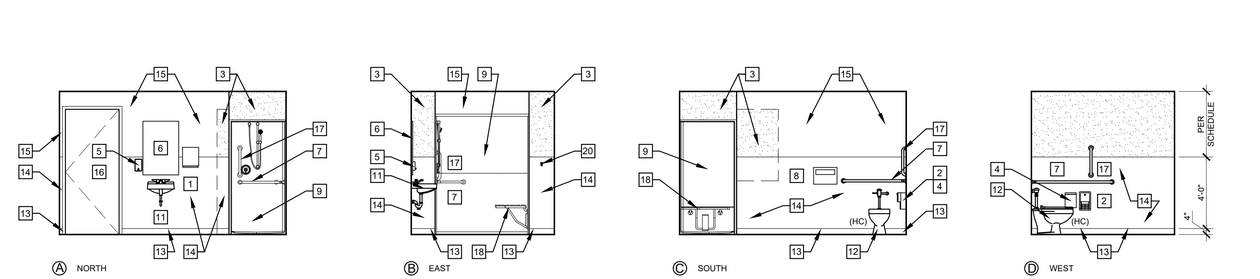
1 TYPICAL HEIGHT & DIMENSIONS FOR TOILET ACCESSORIES & FIXTURES

SCALE: 1/4" = 1'-0"



2 ENLARGED SHOWER PLAN

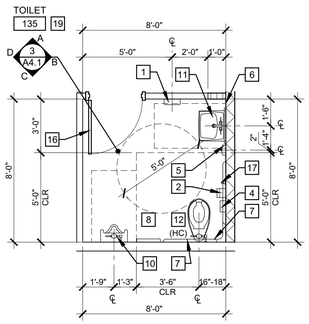
SCALE: 1/4" = 1'-0"



3 SHOWER ELEVATIONS

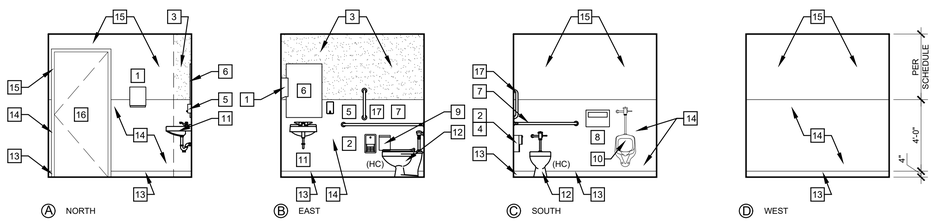
SCALE: 1/4" = 1'-0"

134



4 ENLARGED RESTROOM PLAN

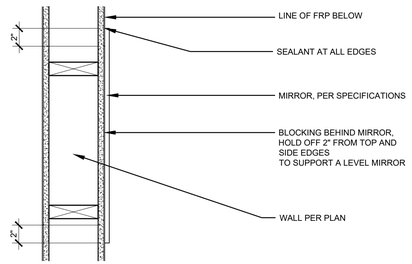
SCALE: 1/4" = 1'-0"



5 RESTROOM ELEVATIONS

SCALE: 1/4" = 1'-0"

135



6 SECTION MIRROR DETAIL

SCALE: 1 1/2" = 1'-0"

23080-A4.1-06

GENERAL NOTES:

1. GENERAL NOTES APPLY TO ALL DRAWINGS.
2. DIMENSIONS ARE TO EXISTING FACE OF WALL, FACE OF NEW FRAMING, AND FACE OF EXISTING CONCRETE UNLESS NOTED OTHERWISE.
3. DIMENSIONS OF EXISTING CONDITIONS ARE APPROXIMATE AND INTENDED FOR ESTIMATING PURPOSES ONLY. CONTRACTOR SHALL BE RESPONSIBLE TO FIELD VERIFY ALL DIMENSIONS PRIOR TO ACTUAL CONSTRUCTION. NOTIFY ARCHITECT IMMEDIATELY OF ANY DISCREPANCIES OR QUESTIONABLE DIMENSIONS PRIOR TO PROCEEDING WITH AREA OF WORK IN QUESTION.
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5. IN CASE OF ANY CONFLICTS IN THE REQUIREMENTS OF THE CONTRACT DOCUMENTS, THE CONTRACTOR IS REQUIRED TO INCLUDE THE BETTER QUALITY AND LARGER QUANTITY OF THE WORK.
6. CONTRACTOR AND BIDDERS SHALL USE COMPLETE SETS OF CONTRACT DOCUMENTS; NEITHER THE OWNER NOR ARCHITECT ASSUMES RESPONSIBILITY FOR ERRORS OR MISINTERPRETATIONS RESULTING FROM THE USE OF INCOMPLETE SETS OF CONTRACT DOCUMENTS.
7. COORDINATE AND PROVIDE WOOD BACKING FOR ALL OFCI AND RELOCATED ITEMS
8. CONTRACTOR SHALL PROVIDE A COMPLETE WEATHER-TIGHT PROJECT WITH ALL MATERIALS, PRODUCTS, EQUIPMENT AND SYSTEMS FULLY AND ACCURATELY INSTALLED AS REQUIRED BY THESE DOCUMENTS AND IN ACCORDANCE WITH BEST INDUSTRY PRACTICES AND MANUFACTURERS STATED RECOMMENDATIONS AND INSTRUCTIONS.

RESTROOM PLAN NOTES:

1. PAPER TOWEL DISPENSER TO BE REINSTALLED IN NEW LOCATION
2. TOILET PAPER HOLDER TO BE REINSTALLED IN NEW LOCATION
3. NEW GYPSUM WALLBOARD WALL TO BE PAINTED, REFER TO FINISH SCHEDULE
4. SANITARY NAPKIN DISPOSAL TO BE REINSTALLED IN NEW LOCATION
5. EXISTING SOAP DISPENSER TO BE REINSTALLED
6. NEW 24x36 BEVELED EDGE MIRROR, REFER TO 6/A4.1
7. NEW ONE PIECE GRAB BAR, REFER TO SPECIFICATIONS
8. TOILET SEAT COVER DISPENSER TO BE REINSTALLED IN NEW LOCATION
9. NEW SHOWER, CONNECT TO EXISTING PIPING AND EXTEND TO FIXTURE
10. NEW URINAL, CONNECT TO EXISTING PIPING AND EXTEND TO FIXTURE
11. NEW LAVATORY WITH HOT WATER PIPE PROTECTION, CONNECT TO EXISTING PIPING ABOVE CEILING, DROP PIPING IN WALL, CONNECT TO LAVATORY, FAUCET TO BE SLOAN EAF-200-PLG-ISM-CP-0.5GPM-AER-IQ-FCT
12. NEW WATER CLOSET, HANDICAP ACCESSIBLE AS INDICATED (HC), CONNECT TO EXISTING PIPING AND EXTEND TO FIXTURE
13. NEW BASE, REFER TO FINISH SCHEDULE
14. NEW WALL PROTECTION, REFER TO FINISH SCHEDULE
15. EXISTING GYPSUM WALLBOARD WALL TO BE PAINTED, REFER TO FINISH SCHEDULE
16. NEW DOOR PER PLAN
17. NEW VERTICAL GRAB BAR, REFER TO SPECIFICATIONS
18. NEW FOLDING SHOWER SEAT, REFER TO SPECIFICATIONS
19. EXTEND ALL WASTE LINES TO FIXTURES IN CRAWL SPACE BELOW, CONNECT TO EXISTING PIPING
20. NEW TOWEL PIN

NOTE: SEE SHEET A5.1 FOR PLUMBING NOTES AND SPECIFICATIONS

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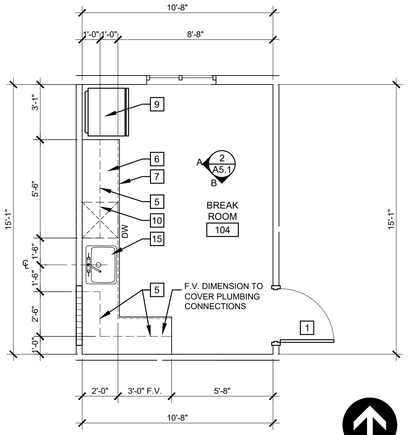
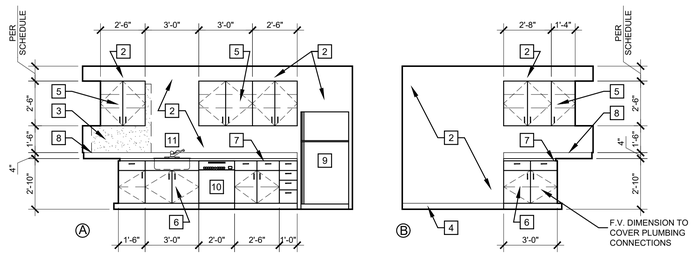


1 ENLARGED BREAK ROOM PLAN

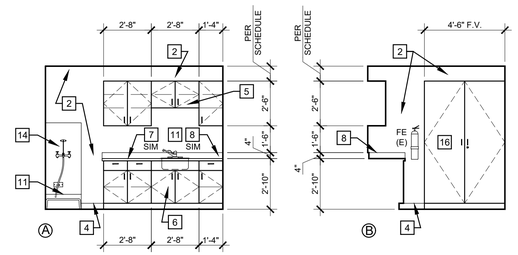
SCALE: 1/4" = 1'-0"



2 BREAK ROOM ELEVATION

SCALE: 1/4" = 1'-0"

104



3 CLEAN-UP ELEVATIONS

SCALE: 1/4" = 1'-0"

124

GENERAL NOTES:

1. GENERAL NOTES APPLY TO ALL DRAWINGS.
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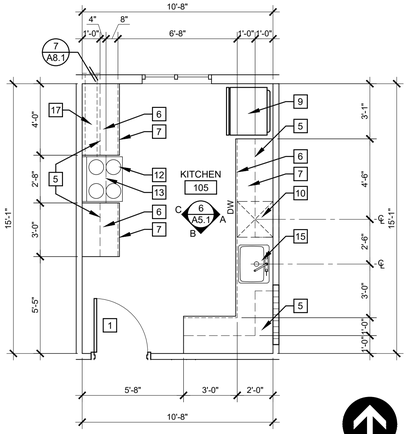
3. DIMENSIONS OF EXISTING CONDITIONS ARE APPROXIMATE AND INTENDED FOR ESTIMATING PURPOSES ONLY. CONTRACTOR SHALL BE RESPONSIBLE TO FIELD VERIFY ALL DIMENSIONS PRIOR TO ACTUAL CONSTRUCTION. NOTIFY ARCHITECT IMMEDIATELY OF ANY DISCREPANCIES OR QUESTIONABLE DIMENSIONS PRIOR TO PROCEEDING WITH AREA OF WORK IN QUESTION.
4. DRAWINGS ARE DIAGRAMMATIC ONLY AND SHOULD NOT BE SCALED.
5. IN CASE OF ANY CONFLICTS IN THE REQUIREMENTS OF THE CONTRACT DOCUMENTS, THE CONTRACTOR IS REQUIRED TO INCLUDE THE BETTER QUALITY AND LARGER QUANTITY OF THE WORK.
6. CONTRACTOR AND BIDDERS SHALL USE COMPLETE SETS OF CONTRACT DOCUMENTS; NEITHER THE OWNER NOR ARCHITECT ASSUMES RESPONSIBILITY FOR ERRORS OR MISINTERPRETATIONS RESULTING FROM THE USE OF INCOMPLETE SETS OF CONTRACT DOCUMENTS.

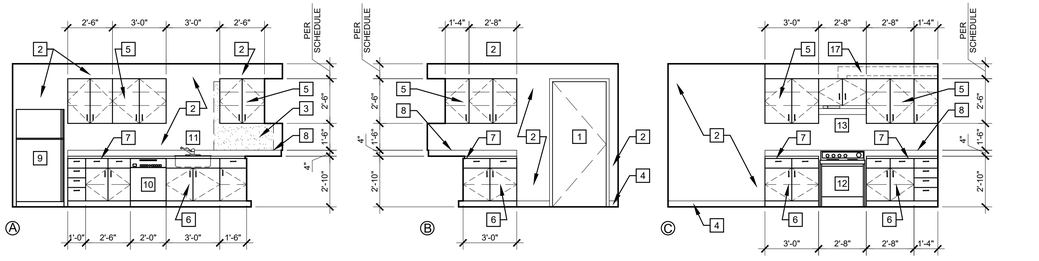
REFERENCE NOTES:

1. DOOR PER PLAN
2. EXISTING GYPSUM WALLBOARD WALL TO BE PAINTED, REFER TO FINISH SCHEDULE
3. NEW GYPSUM WALLBOARD WALL TO BE PAINTED, REFER TO FINISH SCHEDULE
4. NEW BASE, REFER TO FINISH SCHEDULE
5. NEW 12" DEEP UPPER CABINET (U.O.N), DOORS AND ADJUSTABLE SHELVES AS SHOWN, PLASTIC LAMINATE AT ALL EXPOSED TO VIEW SURFACES
6. NEW 24" DEEP BASE CABINET, DOORS, DRAWERS AND ADJUSTABLE SHELVES AS SHOWN, PLASTIC LAMINATE AT ALL EXPOSED TO VIEW SURFACES
7. NEW 25" DEEP COUNTERTOP, U.O.N., SOLID SURFACE AT ALL EXPOSED TO VIEW SURFACES, AT SIM CONDITION, STAINLESS STEEL
8. NEW 4" BACKPLASH AT ALL WALL SURFACES, SOLID SURFACE AT ALL EXPOSED TO VIEW SURFACES, AT SIM CONDITION, STAINLESS STEEL
9. NEW REFRIGERATOR, REFER TO ELECTRICAL AND PLUMBING DESIGN/BUILD DRAWINGS
10. NEW DISHWASHER TO BE GE GDT225SSLSS, REFER TO ELECTRICAL AND PLUMBING DESIGN/BUILD DRAWINGS
11. NEW SINK, CONNECT TO EXISTING PIPING AT REMOVED SINK AT SOUTH WALL. HOLD PIPING TIGHT TO BACK OF CABINET. NEW FAUCET TO BE CHICAGO NO. 786-E36VPABCP
12. NEW DROP-IN RANGE TO BE WHIRLPOOL WEE515SAL STAINLESS STEEL, REFER TO ELECTRICAL DESIGN/BUILD DRAWINGS
13. NEW RANGE HOOD TO BE WHIRLPOOL EXT5230BD, REFER TO ELECTRICAL AND MECHANICAL DESIGN/BUILD DRAWINGS
14. NEW WALL PROTECTION, REFER TO FINISH SCHEDULE
15. CONNECT TO EXISTING PLUMBING AT REMOVED SINK ON SOUTH WALL, HOLD PIPING TIGHT TO BACK OF CABINET
16. NEW 12" DEEP FULL HEIGHT CABINET EXISTING OVER LOW VOLTAGE BACKBOARD, DOORS AND ADJUSTABLE SHELVES AS SHOWN, PLASTIC LAMINATE AT ALL EXPOSED TO VIEW SURFACES .
17. NEW EXHAUST DUCT BEHIND CLOSURE PANEL



4 ENLARGED KITCHEN PLAN

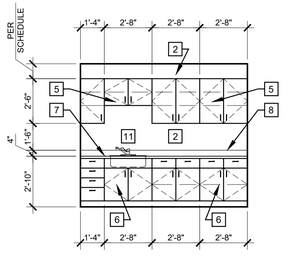
SCALE: 1/4" = 1'-0"



5 KITCHEN ELEVATIONS

SCALE: 1/4" = 1'-0"

105



6 YOUTH AREA ELEVATION

SCALE: 1/4" = 1'-0"

119

GENERAL NOTES (PLUMBING):

1. THIS PROJECT IS A REMODEL. THE PLANS AND SPECIFICATIONS INDICATE THE GENERAL EXTENT OF THE WORK BASED ON OWNER PROVIDED RECORD DRAWINGS AND LIMITED FIELD VERIFICATION. CONTRACTOR SHALL VISIT SITE, VERIFY EXISTING CONDITIONS, AND REPORT ANY DISCREPANCIES NOTED TO THE ARCHITECT PRIOR TO SUBMITTING A BID. CONTRACTOR SHALL BE RESPONSIBLE FOR THE DISCONNECTION AND RECONNECTION OF MECHANICAL, PLUMBING, AND ELECTRICAL SYSTEMS NECESSARY TO ACCOMPLISH THE WORK WHETHER OR NOT SPECIFIED AND/OR INDICATED.
2. PLUMBING CONTRACTOR SHALL NOTIFY GENERAL CONTRACTOR TO REPAIR WALL, FLOOR, AND CEILING SURFACES AS REQUIRED DUE TO DEMOLITION OR INSTALLATION WORK.
3. REMOVE ALL ABANDONED PIPING, EQUIPMENT, AND FIXTURES INTERFERING WITH NEW WORK WHETHER NEW WORK IS ARCHITECTURAL, STRUCTURAL, MECHANICAL, OR ELECTRICAL.
4. ABANDON IN PLACE ALL PIPING NOT INTERFERING WITH NEW WORK UNLESS REQUIRED FOR CONTINUED SERVICE.
5. CONTRACTOR SHALL SAW-CUT SLAB AS REQUIRED FOR INSTALLATION OF WASTE AND VENT PIPING BELOW FLOOR.
6. CUTTING OR CORING OF STRUCTURAL MEMBERS OR FOOTINGS IS PROHIBITED WITHOUT THE PRIOR WRITTEN CONSENT OF THE STRUCTURAL ENGINEER AND THE ARCHITECT.
7. FLASHING AND WEATHERPROOFING AT EXTERIOR PENETRATIONS ARE SHOWN ON THE ARCHITECTURAL DRAWINGS.
8. COORDINATE WITH OWNER ON SPACE REQUIRED AND TIME SCHEDULE FOR DELIVERY OF ALL ITEMS WHICH ARE TO BE GIVEN TO THE OWNER FOR HIS DISPOSITION.
9. PRIME AND PAINT ALL EXPOSED PIPING PER ARCHITECTURAL SPECIFICATIONS. PAINT SHALL NOT EXCEED THE FOLLOWING VOLATILE ORGANIC COMPOUND CONTENT LIMITS: FLATS < 50 GRAMS PER LITER, NON-FLATS < 100 GRAMS PER LITER.
10. COORDINATE WITH ELECTRICAL ON REQUIRED POWER OUTLETS AND LIGHT SWITCHES NEAR PLUMBING EQUIPMENT.
11. BRACE ALL PIPING 2 1/2" NOMINAL OR LARGER. PIPING SUSPENDED BY INDIVIDUAL HANGERS 12" OR LESS IN LENGTH, AS MEASURED FROM THE TOP OF THE PIPE TO THE BOTTOM OF THE SUPPORT WHERE THE HANGER IS ATTACHED, NEED NOT BE BRACED.
12. ALL PIPING, VALVES, EQUIPMENT, ETC. SHOWN IS NEW UNLESS OTHERWISE NOTED.

PLUMBING DESIGN NARRATIVE:

DOMESTIC WATER SUPPLY AND DISTRIBUTION SHALL BE SIZED AND INSTALLED PER OREGON PLUMBING SPECIALTY CODE CHAPTER 6.

DOMESTIC WASTE SHALL BE SIZED AND INSTALLED PER OREGON PLUMBING SPECIALTY CODE CHAPTER 7.

DOMESTIC VENTS SHALL BE SIZED AND INSTALLED PER OREGON PLUMBING SPECIALTY CODE CHAPTER 9.

PLUMBING SPECIFICATIONS:

1.1 PLUMBING
- A. FURNISH A COMPLETE PLUMBING SYSTEM INCLUDING ALL WASTE, VENT, AND WATER PIPING. INCLUDE ALL VALVES, FLOOR DRAINS, TRAP PRIMERS, WATER HAMMER ARRESTORS, AND ANY OTHER COMPONENTS REQUIRED FOR A COMPLETE PLUMBING SYSTEM.
- B. THE DRAWINGS AND SPECIFICATIONS DO NOT ATTEMPT TO LIST EVERY ITEM THAT MUST BE INSTALLED. WHEN AN ITEM IS NECESSARY FOR THE SATISFACTORY OPERATION OF EQUIPMENT, IS REQUIRED BY THE EQUIPMENT MANUFACTURER, OR ACCEPTED AS GOOD PRACTICE, FURNISH WITHOUT CHANGE IN CONTRACT COST.
- C. PIPING:

1. HOT AND COLD WATER PIPING:
- A. PIPING SHALL BE HARD COPPER WATER TUBE, CONFORMING TO ASTM B88 (TYPE "K" UNDERGROUND, TYPE "L" ABOVE GROUND) WITH WROUGHT COPPER FITTINGS.
- B. HOT WATER PIPING SHALL HAVE 1" THICK OWENS-CORNING ASJ/SSLII (ALL SERVICE JACKET WITH PRESSURE SENSITIVE TAPE CLOSURE SYSTEM), AVERAGE THERMAL CONDUCTIVITY AT 70°F MEAN TEMPERATURE, 0.23 PER INCH OF THICKNESS. SEAL LONGITUDINAL JOINTS WITH SSLII CLOSURE SYSTEM AND SEAL BUTT JOINTS WITH 3" TAB. FITTINGS TO BE PRE-FORMED, FACTORY FABRICATED OF SAME MATERIALS AND COVERING AS INSULATION, SEAL BUTT JOINTS WITH 3" TABS.
- C. ALL VALVES SHALL BE THE PRODUCT OF A SINGLE MANUFACTURER, 300 PSI AIR AND WATER RATED. ALL VALVES SHALL BE LOW LEAD TYPE PER NSF/ANSI STANDARD 61.

2. SANITARY SEWER, WASTE, AND VENT PIPING:
- A. ABOVE GRADE SHALL BE SERVICE WEIGHT NO-HUB CAST IRON PER CISPI 301-09. WITH NEOPRENE SLEEVE AND STAINLESS STEEL CLAMPS WITH A STAINLESS STEEL SHIELD WHICH SHALL COMPLETELY COVER THE NEOPRENE PER CISPI 310-04. PIPE AND FITTINGS SHALL BE MARKED WITH THE COLLECTIVE TRADEMARK OF THE CAST IRON SOIL PIPE INSTITUTE AND PIPE, FITTINGS AND COUPLINGS SHALL BE LISTED BY NSF INTERNATIONAL.
- B. BELOW GRADE SHALL BE ABS DWV (SDR 35) PER ASTM 2751 AND SHALL BE IAPMO APPROVED WITH SOLVENT WELD SOCKET FITTINGS.
- D. PLUMBING FIXTURES:

1. FURNISH COMPLETE WITH FITTINGS, SUPPORTS, FASTENING DEVICES, FAUCETS, VALVES, TRAPS, CAULKING, AND APPURTENANCES AS REQUIRED. FIXTURE LOCATIONS AS SHOWN ON ARCHITECTURAL DRAWINGS.

2. WATER CLOSET:
- A. FIXTURE: AMERICAN STANDARD 3043.001.
- B. SEAT: BEMIS 1955SSCT.
- C. FLUSH VALVE: SLOAN ROYAL MODEL 111-1.28.

3. URINAL:
- A. FIXTURE: AMERICAN STANDARD 6590.001.
- B. CARRIER: ZURN Z1221.
- C. FLUSH VALVE: SLOAN ROYAL MODEL 186-0.125

4. LAVATORY:
- A. FIXTURE: AMERICAN STANDARD 0355.012.
- B. CARRIER: ZURN Z1231.
- C. FAUCET: SLOAN EAF-200-PLG-ISM-CP-0.5GPM-AER-IQ-FCT.
- D. TRAP: TRAPS SHALL BE CHROMIUM PLATED 17 GAUGE CAST BRASS.
- E. ADA UNDER SINK COVERS: TRUEBRO LAVGUARD.

5. COUNTER MOUNTED SINK (ROOMS 104 AND 124):
- A. FIXTURE: JUST SLADA1921A65-J.
- B. FAUCET: CHICAGO FAUCETS 786-E36VPABCP.
- C. TRAP: TRAPS SHALL BE CHROMIUM PLATED 17 GAUGE CAST BRASS.

6. MOP SINK:
- A. FIXTURE: AMERICAN STANDARD 7741.000.
- B. FAUCET: AMERICAN STANDARD 8344.212.

7. SHOWER (HEAD AND CONTROLS):
- A. FIXTURE: SYMMONS S-9603-PLR.

8. FLOOR DRAIN:
- B. MFIXTURE: JAY R. SMITH FIG. 2005Y WITH 5" DIAMETER STRAINER, 1/2" TRAP PRIMER CONNECTION AND NICKEL BRONZE STRAINER.

9. KITCHEN SINK (ROOM 105):
- A. FIXTURE: JUST DLADA1933A65-J.
- B. FAUCET: CHICAGO FAUCETS 786-E36VPABCP.
- C. TRAPS: TRAPS SHALL BE CHROMIUM PLATED 17 GAUGE CAST BRASS.
- D. GARBAGE DISPOSAL: INSINKERATOR BADGER 5XP WITH AIR SWITCH.
- E. SHOCK ABSORBERS:

1. PROVIDE ON HOT AND COLD WATER LINES AT QUICK CLOSING VALVES SUCH AS FLUSH VALVES, SOLENOID VALVES, ETC.
2. SIZED AND LOCATED IN ACCORDANCE WITH PLUMBING AND DRAINAGE INSTITUTE MANUAL WH 201.
3. PROVIDE ACCESS PANELS AT LOCATIONS WHERE SHOCK ABSORBERS ARE NOT ACCESSIBLE. TYPES AND LOCATIONS TO BE APPROVED BY THE ARCHITECT.
- F. PRODUCT DATA: INCLUDE CONSTRUCTION DETAILS, MATERIAL DESCRIPTIONS, DIMENSIONS OF INDIVIDUAL COMPONENTS AND PROFILES, AND FINISHES FOR EACH TYPE OF THE FOLLOWING PREFABRICATED BUILDING SYSTEM COMPONENTS:

1. PLUMBING EQUIPMENT, FIXTURES, VALVES, PIPING, TRIM, AND SIZING CALCULATIONS.
- G. SHOP DRAWINGS:

1. PLUMBING DRAWINGS:
- A. FLOOR PLANS SHOWING PLUMBING FIXTURE LOCATIONS, WATER HEATER LOCATIONS, PIPE ROUTING, PIPE SIZES, TRAP PRIMERS, WATER HAMMER ARRESTORS, VALVES, ACCESS PANELS, AND ALL OTHER COMPONENTS OF THE PLUMBING SYSTEM.
- H. DETAILS SHOWING FIXTURE MOUNTING, PIPE SUPPORTS/HANGERS, AND ANY REQUIRED SEISMIC BRACING
- I. ALL PIPING AND EQUIPMENT SHALL BE SECURELY ANCHORED TO BUILDING STRUCTURE AS REQUIRED BY SMACNA'S "GUIDELINES FOR SEISMIC RESTRAINTS OF MECHANICAL SYSTEMS", STATE, AND LOCAL CODES.

1.2 CLEANING
- A. CLEAN AND DISINFECT WATER-DISTRIBUTION PIPING AS FOLLOWS:

1. PURGE NEW WATER-DISTRIBUTION PIPING SYSTEMS AND PARTS OF EXISTING SYSTEMS THAT HAVE BEEN ALTERED, EXTENDED, OR REPAIRED BEFORE USE.
2. USE PURGING AND DISINFECTING PROCEDURE PRESCRIBED BY AUTHORITIES HAVING JURISDICTION, OR IF METHOD IS NOT PRESCRIBED BY AUTHORITIES HAVING JURISDICTION, USE PROCEDURE DESCRIBED IN AWWA C651.

REGISTERED ARCHITECT
3416
RICHARD S. RUTHERFORD
SALEM, OREGON
STATE OF OREGON

JOB NO. 2023.0080

DATE SEPT 13, 2024

DRAWN CJA

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MARION COUNTY MEDICAL EXAMINER

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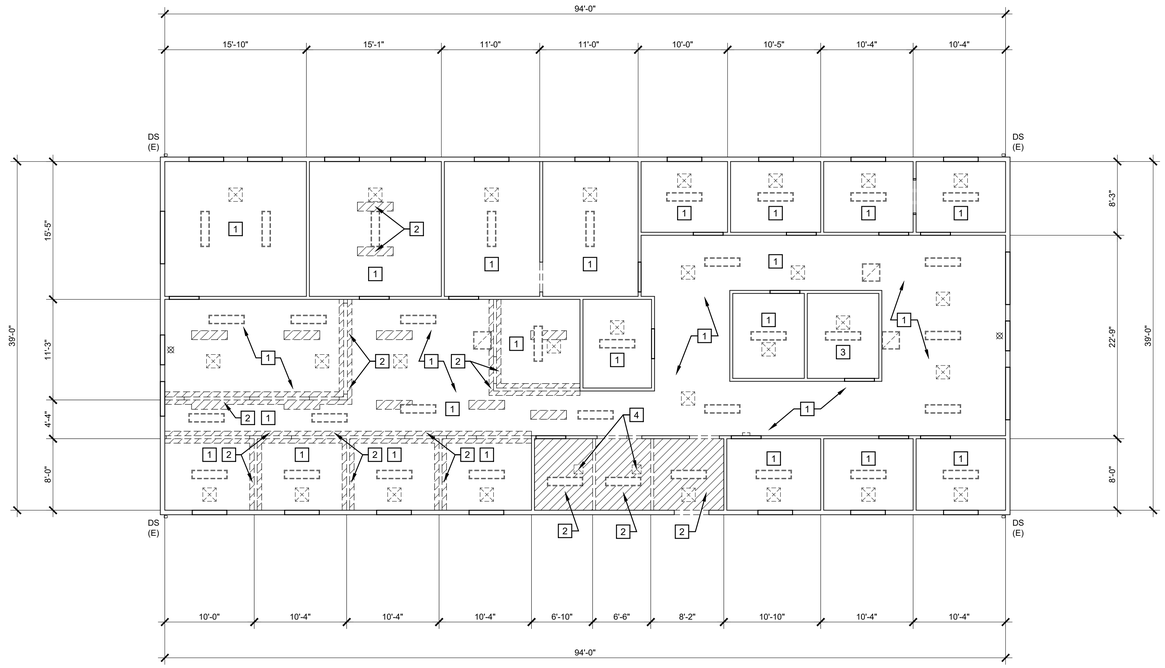
SALEM, OR 97301

SHEET

A5.1



1 REFLECTED CEILING PLAN - DEMOLITION

SCALE: 1/8" = 1'-0"

REFERENCE NOTES - DEMOLITION:

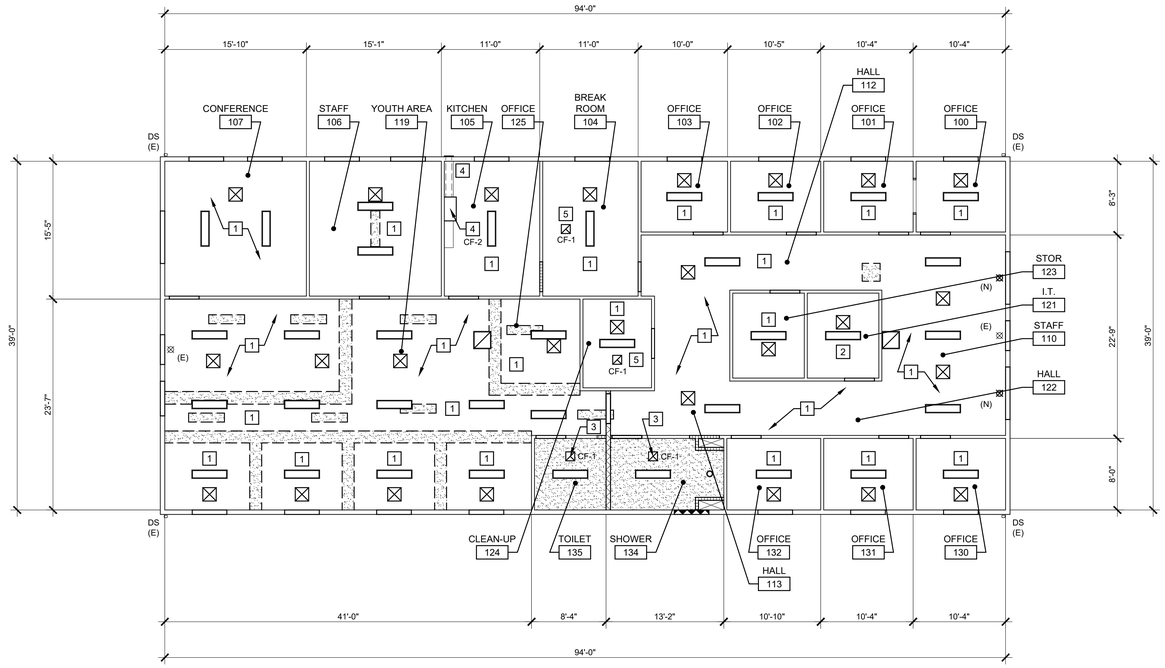
1. EXISTING GYPSUM WALLBOARD CEILING TO REMAIN, PREP FOR NEW FINISH
2. EXISTING GYPSUM WALLBOARD CEILING TO BE REMOVED
3. EXISTING GYPSUM WALLBOARD CEILING TO REMAIN
4. EXISTING HVAC GRILLE AND EXHAUST FAN TO BE REMOVED, EXISTING DUCTWORK TO REMAIN

GENERAL NOTES:

1. GENERAL NOTES APPLY TO ALL DRAWINGS.
2. DIMENSIONS ARE TO EXISTING FACE OF WALL, FACE OF NEW FRAMING, AND FACE OF EXISTING CONCRETE UNLESS NOTED OTHERWISE.
3. DIMENSIONS OF EXISTING CONDITIONS ARE APPROXIMATE AND INTENDED FOR ESTIMATING PURPOSES ONLY. CONTRACTOR SHALL BE RESPONSIBLE TO FIELD VERIFY ALL DIMENSIONS PRIOR TO ACTUAL CONSTRUCTION. NOTIFY ARCHITECT IMMEDIATELY OF ANY DISCREPANCIES OR QUESTIONABLE DIMENSIONS PRIOR TO PROCEEDING WITH AREA OF WORK IN QUESTION.
4. DRAWINGS ARE DIAGRAMMATIC ONLY AND SHOULD NOT BE SCALED.
5. IN CASE OF ANY CONFLICTS IN THE REQUIREMENTS OF THE CONTRACT DOCUMENTS, THE CONTRACTOR IS REQUIRED TO INCLUDE THE BETTER QUALITY AND LARGER QUANTITY OF THE WORK.
6. CONTRACTOR AND BIDDERS SHALL USE COMPLETE SETS OF CONTRACT DOCUMENTS; NEITHER THE OWNER NOR ARCHITECT ASSUMES RESPONSIBILITY FOR ERRORS OR MISINTERPRETATIONS RESULTING FROM THE USE OF INCOMPLETE SETS OF CONTRACT DOCUMENTS.

RCP SYMBOL LEGEND:

- NEW 5/8" TYPE 'X' GYPSUM WALLBOARD FRAMED CEILING SYSTEM, PAINT
- EXISTING LIGHT FIXTURES TO BE REMOVED. REFER TO ELECTRICAL DESIGN/BUILD DRAWINGS
- NEW LED LIGHT FIXTURES. REFER TO ELECTRICAL DESIGN/BUILD DRAWINGS
- (E) EXISTING EXIT LIGHT FIXTURES WITH BATTERY BACKUP TO REMAIN. REFER TO ELECTRICAL DESIGN/BUILD DRAWINGS
- EXISTING HVAC (EXHAUST, DIFFUSER OR RETURN AIR GRILLE) TO BE REMOVED
- NEW HVAC (EXHAUST, DIFFUSER OR RETURN AIR FILTER GRILLE) PRICE INDUSTRIES, MODEL SMD TYPICAL, FIELD VERIFY SIZE TO MATCH EXISTING. EXHAUST FAN GRILLE BY FAN MANUFACTURER. RETURN AIR GRILLE WITH FILTER PRICE INDUSTRIES MODEL 10 PERFORATED WITH FILTER OPTION



2 REFLECTED CEILING PLAN

SCALE: 1/8" = 1'-0"

REFERENCE NOTES:

1. EXISTING GYPSUM WALLBOARD CEILING TO REMAIN, PAINT
2. EXISTING GYPSUM WALLBOARD CEILING TO REMAIN
3. NEW ABOVE CEILING MOUNTED EXHAUST FAN, CONNECT TO EXISTING DUCT IN ATTIC AND OUT THRU ROOF
4. NEW EXHAUST HOOD TIED TO 7" DIA. DUCT THRU WALL PER MANUFACTURER REQUIREMENTS
5. NEW EXHAUST FAN AND DUCT THROUGH ROOF TO MATCH EXISTING ROOF PENETRATION

HVAC SCHEDULE - PROJECT NO. 2023.0080

MARK	SERVING	CFM	ESP	SONES	MOTOR		FAN RPM	WT LBS	MAKE & MODEL	NOTES
					V/PH	WATTS				
CF-1	MULTI	110	-	3	120/1	47.3	-	10	BROAN NUTONE - A110	1
CF-2	KITCHEN	-	-	-	-	-	-	-		-

NOTES:
1. CONNECT TO LIGHT CIRCUIT, REFER TO ELECTRICAL DRAWINGS

REGISTERED ARCHITECT
3416
RICHARD S. ROTHMEIER
SALEM, OREGON
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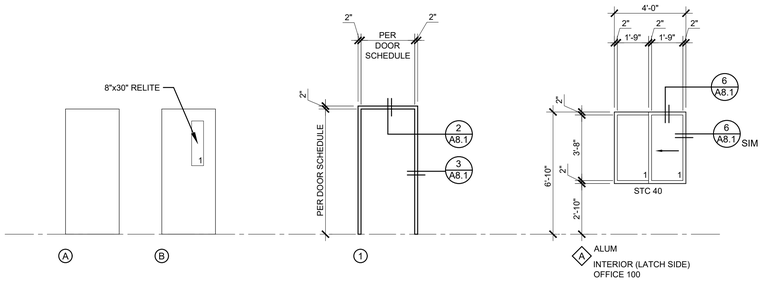
A6.1

GLASS TYPES:
TYPE 1: SINGLE PANE, TEMPERED



1 DOOR, FRAME, AND WINDOW TYPES

SCALE: 1/4" = 1'-0"

ALL DOORS 1-3/4" THICK UNLESS OTHERWISE NOTED

DOOR SCHEDULE - PROJECT NO. 2023.0080

	DOOR				FRAME			DETAILS (ALL DETAILS ON SHEET A8.1 UNLESS OTHERWISE NOTED)					
NO.	NOMINAL SIZE	TYPE	MAT'L	GLASS	TYPE	MAT'L	GLASS	H	J	S	HDWR GROUP	LABEL	REMARKS
100	3'-0"x 6'-8"	B	SC	TEMP	1	WD	-	2	3	-	1		NOTE 1, 4
101	3'-0"x 6'-8"	B	SC	TEMP	1	WD	-	2	3	-	1		NOTE 1, 4
102	3'-0"x 6'-8"	B	SC	TEMP	1	WD	-	2	3	-	1		NOTE 1, 4
103	3'-0"x 6'-8"	B	SC	TEMP	1	WD	-	2	3	-	1		NOTE 1, 4
104	3'-0"x 6'-8"	B	SC	TEMP	1	WD	-	2	3	-	1		NOTE 1, 4
105	3'-0"x 6'-8"	B	SC	TEMP	1	WD	-	2	3	-	2		NOTE 1, 4
106	3'-0"x 6'-8"	B	SC	TEMP	1	WD	-	2	3	-	2		NOTE 1, 4
107	3'-0"x 6'-8"	B	SC	TEMP	1	WD	-	2	3	-	2		NOTE 1, 4
110	3'-0"x 6'-8"	EXST	EXST	-	EXST	EXST	-	EXST	EXST	-	EXST		NOTE 2
119	3'-0"x 6'-8"	EXST	EXST	-	EXST	EXST	-	EXST	EXST	-	EXST		NOTE 2
121	3'-0"x 6'-8"	A	SC	-	1	WD	-	2	3	-	1		NOTE 3, 4
122	3'-0"x 6'-8"	A	SC	-	1	WD	-	2	3	-	4		NOTE 1, 4
123	3'-0"x 6'-8"	A	SC	-	1	WD	-	2	3	-	1		NOTE 1, 4
130	3'-0"x 6'-8"	B	SC	TEMP	1	WD	-	2	3	-	1		NOTE 1, 4
131	3'-0"x 6'-8"	B	SC	TEMP	1	WD		2	3	-	1		NOTE 1, 4
132	3'-0"x 6'-8"	B	SC	TEMP	1	WD	-	2	3	-	1		NOTE 1, 4
134	3'-0"x 6'-8"	A	SC	-	1	WD	-	2	3	-	3		NOTE 1, 4
135	3'-0"x 6'-8"	A	SC	-	1	WD	-	2	3	-	3		NOTE 1, 4

DOOR HARDWARE TO BE DESIGN/BUILD
CYLINDER TO BE OFCI (LOCKSET TO BE CFCI):

1.	SCHLAGE	ND10RHO626
2.	SCHLAGE	ND92RHO626
3.	SCHLAGE	ND40RHO626
4.	SCHLAGE	ND80PDEURHO626RX

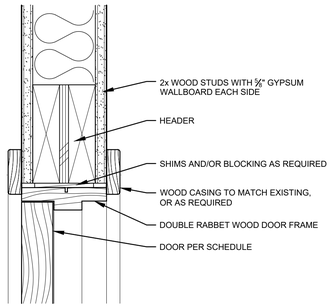
NOTES:
1. ½" UNDERCUT AT NEW DOORS
2. REMOVE EXISTING WEATHERSTRIP AND PROVIDE NEW
3. REINSTALL EXISTING DOOR LOCKSET AND ELECTRIFIED HINGE, ALL OTHER HARDWARE TO BE NEW
4. PAINT DOOR FRAME, COLOR TO MATCH EXISTING EXTERIOR DOOR FRAMES. CLEAR FINISH ON DOOR, COLOR TO MATCH EXISTING INTERIOR DOORS

FINISH KEY - PROJECT NO. 2023.0080

FLOOR		BASE		WALL		CEILING	
1	EXISTING TO REMAIN	A	EXISTING TO REMAIN	1	EXISTING TO REMAIN	A	EXISTING TO REMAIN
2	CARPET TILE: SHAW CONTACT BALANCE 59340 COLOR 40500 STEELING BEAUTY	B	RUBBER BASE	2	EXISTING GYPSUM WALLBOARD, PAINT	B	EXISTING GYPSUM WALLBOARD, PAINT
3	LUXURY VINYL TILE: SHAW CONTRACT NATIVE ORIGINALS COLOR 0116V BARNWOOD	C	VINYL COVED BASE	3	NEW GYPSUM WALLBOARD, PAINT	C	NEW GYPSUM WALLBOARD, PAINT
4	SHEET VINYL: MANNINGTON COMMERCIAL BIOSPEC COLOR FROM MANUFACTURERS STANDARD			4	FRP		

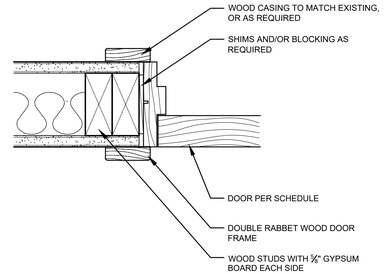
ROOM FINISH SCHEDULE - PROJECT NO. 2023.0080

		FLOOR		WALLS				CEILING		
NO.	ROOM	MAT'L	BASE	N. WALL MAT'L	E. WALL MAT'L	S. WALL MAT'L	W. WALL MAT'L	MAT'L	HEIGHT	REMARKS
100	OFFICE	2	B	2	2	2	2	B	EXST	
101	OFFICE	2	B	2	2	2	2	B	EXST	
102	OFFICE	2	B	2	2	2	2	B	EXST	
103	OFFICE	2	B	2	2	2	2	B	EXST	
104	BREAK ROOM	4	C	2	2	2	2,3	B	EXST	
105	KITCHEN	4	C	2	2,3	2	2	B	EXST	
106	STAFF	1	A	2	2	2	2	B	EXST	
107	CONFERENCE	1	A	2	2	2	2	B	EXST	
110	STAFF	1	A	2	2	2	2	B	EXST	
112	HALL	1	A	2	-	2	2	B,C	EXST	
113	HALL	1	A	-	2	-	2	B	EXST	
119	YOUTH AREA	1,3	A,B	2	2	2	2	B,C	EXST	
122	HALL	1	A	2	-	2,3	3	B	EXST	
124	CLEAN-UP	4	C	2	2	2,4	2,4	B	EXST	
130	OFFICE	2	B	2	2	2	2	B	EXST	
131	OFFICE	2	B	2	2	2	2	B	EXST	
132	OFFICE	2	B	2	2	2	2	B	EXST	
134	SHOWER	4	C	2,3,4	2,3,4	2,3,4	3,4	C	EXST	
135	TOILET	4	C	2,3,4	3,4	2,4	2,4	C	EXST	



2 TYPICAL WOOD FRAME HEAD

SCALE: 3" = 1'-0" 23080-A8.1-02

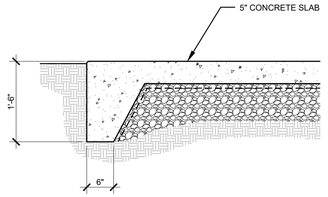


3 TYPICAL WOOD FRAME JAMB

SCALE: 3" = 1'-0" 23080-A8.1-03

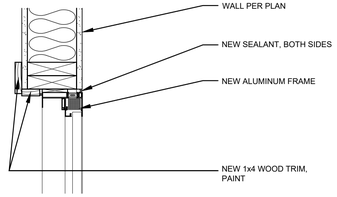
4 NOT USED

SCALE:



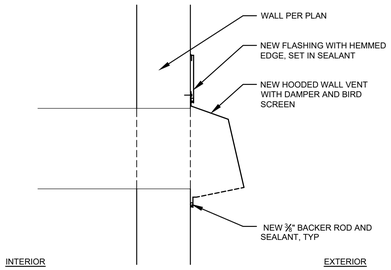
5 PAD FOOTING

SCALE: 3/4" = 1'-0" 23080-A8.1-05



6 ALUM WINDOW HEAD - JAMB SIM

SCALE: 1-1/2" = 1'-0" 23080-A8.1-06



7 DUCT PENETRATION AT WALL

SCALE: 3/4"=1'-0" 23080-A8.1-07

REGISTERED ARCHITECT
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Electrical Abbreviations & Symbol Legend

Abbreviations

A	AMPERE
AC	ALTERNATING CURRENT, AIR CONDITIONING UNIT
AHJ	AUTHORITY HAVING JURISDICTION
AIC	AVAILABLE INTERRUPTING CAPACITY
AF	AMPERE FRAME / AMPERE FUSED
AFC	ABOVE FINISHED CEILING
AFF	ABOVE FINISHED FLOOR
AFG	ABOVE FINISHED GRADE
ANSI	AMERICAN NATIONAL STANDARDS INSTITUTE
ARMS	ARC FLASH REDUCTION MAINTENANCE SYSTEM
AT	AMPERE TRIP
AV	AUDIO / VIDEO
AWG	AMERICAN WIRE GAUGE
BAS	BUILDING AUTOMATION SYSTEM
BFG	BELOW FINISHED GRADE
BLDG	BUILDING
C	CONDUIT
CAT	CATEGORY
CB	CIRCUIT BREAKER
CFCI	CONTRACTOR FURNISHED, CONTRACTOR INSTALLED
CFOI	CONTRACTOR FURNISHED, OWNER INSTALLED
CKT	CIRCUIT
CPT	CONTROL POWER TRANSFORMER
CR	CONTROL RELAY
CU	COPPER
dB	DECIBAL
DC	DIRECT CURRENT
DIM	DIMENSION
DIV	DIVISION
DTL	DETAIL
DWG	DRAWING
EL	ELEVATION
EMT	ELECTRICAL METALLIC TUBING
EOLR	END OF LINE RESISTOR
FACP	FIRE ALARM CONTROL PANEL
FF	FINISH FLOOR
FLA	FULL LOAD AMPERES
FT	FOOT, FEET
FBO	FURNISHED BY OTHERS
G, GND	GROUND
GFCI	GROUND FAULT CIRCUIT INTERRUPTER
HH	HAND HOLE
HP	HORSEPOWER
ID	IDENTIFICATION
IDC	INITIATING DEVICE CIRCUIT
IDF	INTERMEDIATE DISTRIBUTION FRAME
IEEE	INSTITUTE OF ELECTRICAL AND ELECTRONICS ENGINEERS
IG	ISOLATED GROUND
IT	INFORMATION TECHNOLOGY
JB	JUNCTION BOX
KAIC	THOUSAND AMPS INTERRUPTING CURRENT
KCMIL	THOUSAND CIRCULAR MILS
KVA	KILOVOLT-AMPERE
KW	KILOWATT
LAN	LOCAL AREA NETWORK
LED	LIGHT EMITTING DIODE
LS	LIMIT SWITCH
LSI	ELECTRONIC TRIP UNIT ADJUSTABLE LONG TIME DELAY, SHORT TIME DELAY, INSTANTANEOUS TRIP
LSIG	ELECTRONIC TRIP UNIT WITH ADJUSTABLE LONG TIME DELAY, SHORT TIME DELAY, INSTANTANEOUS TRIP, AND GROUND FAULT
LV	LOW VOLTAGE
MCA	MINIMUM CIRCUIT AMPACITY
MCC	MOTOR CONTROL CENTER
MCP	MOTOR CIRCUIT PROTECTOR
MDF	MAIN DISTRIBUTION FRAME
MHz	MEGAHERTZ
MISC	MISCELLANEOUS
MLO	MAIN LUGS ONLY
MOCP	MAXIMUM OVERCURRENT PROTECTION
N	NEUTRAL
NAC	NOTIFICATION APPLIANCE CIRCUIT
N/A	NOT APPLICABLE
NC	NORMALLY CLOSED
NEC	NATIONAL ELECTRICAL CODE
NEMA	NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION
NL	NIGHT LIGHT
NO	NORMALLY OPEN
NTS	NOT TO SCALE
OC	ON CENTER
OFCI	OWNER FURNISHED, CONTRACTOR INSTALLED
OFOI	OWNER FURNISHED, OWNER INSTALLED
Ø	PHASE
PB	PULL BOX, PANIC BUTTON, PUSH BUTTON
PE	PHOTO EYE
PNL	PANEL
POE	POWER OVER ETHERNET
PTZ	PAN, TILT, ZOOM
RF	RADIO FREQUENCY
RFI	REQUEST FOR INFORMATION
SPD	SURGE PROTECTION DEVICE
STD	STANDARD
SW	SWITCH
T/M	THERMAL MAGNETIC CIRCUIT BREAKER
TBD	TO BE DETERMINED
TV	TELEVISION / MONITOR OUTLET
TVSS	TRANSIENT VOLTAGE SURGE SUPPRESSOR
TYP	TYPICAL
UH	UNIT HEATER
UG	UNDERGROUND
UL	UNDERWRITERS LABORATORIES
UPS	UNINTERRUPTIBLE POWER SUPPLY
UON	UNLESS OTHERWISE NOTED
USB	UNIVERSAL SERIAL BUS
V	VOLTS, VOLTAGE
VA	VOLT-AMPERE
VFD	VARIABLE FREQUENCY DRIVE
W	WATT, WIRE
WAN	WIDE AREA NETWORK
WAP	WIRELESS ACCESS POINT
WI-FI	WIRELESS FIDELITY
W/	WITH
W/O	WITHOUT
XFMR	TRANSFORMER
Y	WYE
1P	ONE POLE
2P	TWO POLE
3P	THREE POLE
4P	FOUR POLE

General Electrical Notes

1. ALL LIGHTING BRANCH CIRCUITS SHALL BE 2#10, 1#10G IN 3/4" CONDUIT, UON.
2. ALL 20-AMP RECEPTACLE AND HARDWIRED BRANCH CIRCUITS SHALL BE 2#12, 1#12G IN 3/4" CONDUIT, UON.
3. ALL EXIT SIGNS SHALL BE WIRED TO THE LOCAL LIGHTING BRANCH CIRCUIT AHEAD OF ALL SWITCHING, UON.
4. PROVIDE 0-10V DIMMING CONDUCTORS TO ALL LUMINAIRES WHICH ARE CONTROLLED BY 0-10V DIMMERS SHOWN ON THE DRAWINGS.

Drawing Symbol Variables

3	THREE WAY SWITCH.
4	FOUR WAY SWITCH.
#J	QUANTITY OF JACKS AND HORIZONTAL CABLES. J = CAT6, JA = CAT6A, JE = CAT5E
+XX	MOUNTING UNITS EXPRESSED IN INCHES TO CENTERLINE ABOVE FINISHED FLOOR OR GRADE.
C	MOUNTED HORIZONTALLY AT 4" ABOVE COUNTERTOP / BACKSPLASH.
CL	CLOCK.
DR	DUAL RELAY.
E	RED EMERGENCY SWITCH.
EL	ELEVATOR RECALL.
ETR	EXISTING DEVICE SHALL REMAIN.
G	GLASS BREAK SENSOR.
K	KEYED SWITCH.
LF	LOW FREQUENCY.
LV	LOW VOLTAGE SWITCH.
M	MOTOR RATED TOGGLE SWITCH.
NEX	REPLACE EXISTING WIRING DEVICE AND FACEPLATE WITH NEW. BACK BOX AND CONDUIT SHALL REMAIN.
O	INTEGRAL OCCUPANCY SENSOR.
P	ADA PHONE. VERIFY HEIGHT WITH ARCHITECT / OWNER.
REX	REMOVE EXISTING DEVICE / EQUIPMENT.
TK	MOUNTED IN TOE KICK OF CASEWORK.
TV	MOUNTED ADJACENT TO TV AT 60" AFF, UON.
V	VANDAL RESISTANT.
WG	WIREGUARD.
WP	WEATHERPROOF.

Annotation

(N)	INDICATES NEW EQUIPMENT.
(E)	INDICATES EXISTING EQUIPMENT TO REMAIN.
(D)	INDICATES EXISTING EQUIPMENT TO BE DEMOLISHED.
(RR)/(RD)	INDICATES EXISTING EQUIPMENT OR DEVICE TO BE REMOVED AND REINSTALLED.
PXXX	CONDUIT & CONDUCTOR CALLOUT. REFER TO CONDUIT & CONDUCTOR SCHEDULE.
XX	KEYED NOTE CALLOUT. REFER TO CORRESPONDING SHEET KEYNOTES.
XX	KEYED NOTE CALLOUT. REFER TO CORRESPONDING SHEET KEYNOTES.
XX	KEYED NOTE CALLOUT. REFER TO CORRESPONDING SHEET KEYNOTES.
XX-XX	MECHANICAL EQUIPMENT CALLOUT. REFER TO MECHANICAL EQUIPMENT CONNECTION SCHEDULE.
X / EX.XX	DETAIL CALLOUT. REFER TO DETAIL AND SHEET AS INDICATED ON CALLOUT.
XX'-XX"	FIXTURE MOUNTING CALLOUT. HEIGHT ABOVE FINISHED FLOOR (A.F.F.)
XXXXX	EQUIPMENT CALLOUT. REFER TO NEMA CONNECTION SCHEDULE.
X / EX.XX	SECTION CALLOUT. REFER TO DETAIL AND SHEET AS INDICATED ON CALLOUT.
# / EX.XX / #	ELEVATION CALLOUT. REFER TO DETAIL AND SHEET AS INDICATED ON CALLOUT.

Low Voltage

	ETHERNET OUTLET MOUNTED AT 18" AFF, UON.
	COAXIAL OUTLET MOUNTED AT 18" AFF, UON.
	PHONE OUTLET MOUNTED AT 18" AFF, UON.
	LOW VOLTAGE OUTLET CEILING MOUNTED.
	WIRELESS ACCESS POINT CEILING MOUNTED.
	WIRELESS ACCESS POINT WALL MOUNTED.
	DIGITAL CLOCK.
	FLOORBOX DATA.
	POKETHRU DATA.
	IT RACK.
	VERTICAL WIRE MANAGEMENT.

Power Distribution

	DUPLEX RECEPTACLE, MOUNTED AT 18" AFF, UON.
	SIMPLEX RECEPTACLE, MOUNTED AT 18" AFF, UON.
	QUADPLEX RECEPTACLE, MOUNTED AT 18" AFF, UON.
	GFCI DUPLEX RECEPTACLE, MOUNTED AT 18" AFF, UON.
	GFCI QUADPLEX RECEPTACLE, MOUNTED AT 18" AFF, UON.
	TAMPER RESISTANT DUPLEX RECEPTACLE, MOUNTED AT 18" AFF, UON.
	TAMPER RESISTANT QUADPLEX RECEPTACLE, MOUNTED AT 18" AFF, UON.
	NEMA SPECIAL RECEPTACLE, MOUNTED AT 18" AFF, UON. NEMA CONFIGURATION AS INDICATED.
	SIDE HATCHED RECEPTACLE, TO BE WIRED TO SWITCHED CIRCUIT.
	CENTER HATCHED RECEPTACLE TO BE WIRED TO EMERGENCY CIRCUIT.
	RECEPTACLE MOUNTED ON CEILING.
	RECEPTACLE MOUNTED IN-COUNTER.
	DISCONNECT SWITCH.
	FUSED DISCONNECT SWITCH.
	ENCLOSED CIRCUIT BREAKER.
	COMBINATION STARTER.
	FLOORBOX COMBINATION POWER & DATA.
	FLOORBOX POWER.
	POKETHRU COMBINATION POWER & DATA.
	POKETHRU POWER.
	POWER POLE.
	PANELBOARD SURFACE MOUNT.
	PANELBOARD FLUSH MOUNT.
	MAIN DISTRIBUTION PANEL.
	UTILITY CT METER.
	UTILITY TRANSFORMER.

Lighting

	TROFFER LUMINAIRE, SURFACE, RECESS, OR PENDANT MOUNTED AS INDICATED ON THE DRAWINGS.
	DOWNLIGHT LUMINAIRE, SURFACE, RECESS, OR PENDANT MOUNTED AS INDICATED ON THE DRAWINGS.
	UNDERCABINET LUMINAIRE.
	EMERGENCY BATTERY PACK LUMINAIRE, WALL OR CEILING MOUNTED.
	LINEAR PENDANT MOUNTED LUMINAIRE.
	LINEAR WALL MOUNTED LUMINAIRE.
	BOLLARD LUMINAIRE.
	SITE LUMINAIRE POLE MOUNTED. NUMBER OF HEADS AS SHOWN.
	TRACK LUMINAIRE.
	SPOT LUMINAIRE.
	WALL MOUNTED LUMINAIRE.
	RING PENDANT LUMINAIRE.
	WALL WASH LUMINAIRE POINTED IN DIRECTION AS SHOWN.
	EXIT SIGN, WALL OR CEILING MOUNTED, SINGLE FACE WITH DIRECTIONAL CHEVRONS AS INDICATED ON DRAWINGS.
	EXIT SIGN, WALL OR CEILING MOUNTED, DOUBLE FACE WITH DIRECTIONAL CHEVRONS AS INDICATED ON DRAWINGS.
	HALF HATCHED LUMINAIRE TO BE WIRED TO EMERGENCY CIRCUIT
	FULL HATCHED LUMINAIRE TO BE WIRED TO NIGHTLIGHT CIRCUIT.

Area Rescue Assistance

ARA	COMMAND UNIT.
AR	SPEAKER STROBE.
ARS	AREA OF RESCUE STATION.

Nurse Call System

	DOME LIGHT, MOUNTED AS SHOWN.
	ZONE LIGHT, MOUNTED AS SHOWN.
P	PATIENT AREA CALL STATION.
E	NURSE EMERGENCY CALL STATION WITH PULL CORD.
S	STAFF EMERGENCY ASSISTANCE CALL STATION.
B	CODE BLUE CALL STATION.
D	DUTY STATION.
NCA	NURSE CALL ANNUNCIATOR.
NCCS	NURSE CALL CONTROL STATION.

Fire Alarm

15	FIRE ALARM AUDIO/VISUAL - WALL MOUNTED. CANDELA RATING AS SHOWN ON DRAWING.
15	FIRE ALARM VISUAL - WALL MOUNTED. CANDELA RATING AS SHOWN ON DRAWING.
15	FIRE ALARM AUDIO/VISUAL - CEILING MOUNTED. CANDELA RATING AS SHOWN ON DRAWING.
15	FIRE ALARM VISUAL - CEILING MOUNTED. CANDELA RATING AS SHOWN ON DRAWING.
FB	FIRE ALARM BELL.
S	FIRE ALARM SMOKE DETECTOR - CEILING MOUNTED.
S	FIRE ALARM SMOKE DETECTOR - WALL MOUNTED.
H	FIRE ALARM HEAT DETECTOR - CEILING MOUNTED.
H	FIRE ALARM HEAT DETECTOR - WALL MOUNTED.
S	FIRE ALARM DUCT SMOKE DETECTOR.
S TS	FIRE ALARM DUCT SMOKE DETECTOR WITH REMOTE TEST STATION.
S	FIRE ALARM BEAM SMOKE DETECTOR.
F	FIRE ALARM MANUAL PULL STATION - WALL MOUNTED.
TS	FIRE ALARM MANUAL TAMPER SWITCH.
FS	FIRE ALARM MANUAL FLOW SWITCH.
PS	FIRE ALARM MANUAL PRESSURE SWITCH.
MM	FIRE ALARM MONITOR MODULE.
RI	FIRE ALARM RELAY INPUT.
RO	FIRE ALARM RELAY OUTPUT.
PIV	FIRE ALARM POST INDICATOR VALVE.
SA	FIRE ALARM SURGE ARRESTOR.
IM	FIRE ALARM ISOLATION MODULE.
FAA	FIRE ALARM ANNUNCIATOR.
	FIRE ALARM MAGNETIC DOOR HOLD.

Audio/Visual

	AV OUTLET - WALL MOUNTED AT 18" AFF, UON. SEE AUDIO VISUAL DETAILS FOR CONFIGURATIONS.
	AUDIO VIDEO OUTLET - CEILING MOUNTED.
S	AUDIO SPEAKER - WALL MOUNTED AT 96" AFF, UON.
S	AUDIO SPEAKER - CEILING MOUNTED.
P	PAGING SPEAKER - WALL MOUNTED AT 96" AFF, UON.
P	PAGING SPEAKER - CEILING MOUNTED.
	PAGING HORN - WALL MOUNTED AT 96" AFF, UON.
I	INTERCOM SPEAKER - WALL MOUNTED AT 96" AFF, UON.
I	INTERCOM SPEAKER - CEILING MOUNTED.
I	INTERCOM CALL BUTTON - MOUNTED AT 42", UON.
AE	ADMINISTRATION CONSOLE. PROVIDE ONE (1) CAT6 CABLE.
O	AV PROJECTOR - CEILING MOUNTED.
AE	AUDIO ENHANCEMENT DEVICE.

Access Control & Security

	ACCESS CONTROL - DOOR CONTACT. PROVIDE 3/4" CONDUIT FROM DOOR FRAME TO ACCESSIBLE CEILING OR SECURITY JUNCTION BOX AS SHOWN ON THE DRAWINGS.
	ACCESS CONTROL - CARD READER. PROVIDE 3/4" CONDUIT FROM DOOR FRAME TO ACCESSIBLE CEILING OR SECURITY JUNCTION BOX AS SHOWN ON THE DRAWINGS.
	ACCESS CONTROL - ELECTRIC STRIKE. PROVIDE 3/4" CONDUIT FROM DOOR FRAME TO ACCESSIBLE CEILING OR SECURITY JUNCTION BOX AS SHOWN ON THE DRAWINGS.
K	ACCESS CONTROL - KEY PAD. PROVIDE 3/4" CONDUIT FROM DOOR FRAME TO ACCESSIBLE CEILING OR SECURITY JUNCTION BOX AS SHOWN ON THE DRAWINGS.
	ACCESS CONTROL - MAGNETIC LOCK. PROVIDE 3/4" CONDUIT FROM DOOR FRAME TO ACCESSIBLE CEILING OR SECURITY JUNCTION BOX AS SHOWN ON THE DRAWINGS.
RX	ACCESS CONTROL - REQUEST TO EXIT. PROVIDE 3/4" CONDUIT FROM DOOR FRAME TO ACCESSIBLE CEILING OR SECURITY JUNCTION BOX AS SHOWN ON THE DRAWINGS.
PB	ACCESS CONTROL - ELECTRIFIED PANIC BAR. PROVIDE 3/4" CONDUIT FROM DOOR FRAME TO ACCESSIBLE CEILING OR SECURITY JUNCTION BOX AS SHOWN ON THE DRAWINGS.
S	ACCESS CONTROL - SECURITY JUNCTION BOX. SIZED AS RECOMMENDED BY SECURITY SYSTEM MANUFACTURER.
CI	ACCESS CONTROL - CAMERA / INTERCOM.
	ACCESS CONTROL - PANIC BUTTON.
	SECURITY CAMERA - CEILING MOUNTED. PROVIDE ONE (1) CAT6.
	SECURITY CAMERA - WALL MOUNTED. PROVIDE ONE (1) CAT6.
IS	INTRUSION SENSOR - CEILING MOUNTED.
IS	INTRUSION SENSOR - WALL MOUNTED.
IK	INTRUSION KEYPAD.

Miscellaneous

J J	JUNCTION BOX (ROUND, SQUARE).
T	THERMOSTAT.
R	RELAY.
	CORD REEL.
	MOTOR / EXHAUST FAN.
	CEILING FAN.
	UTILITY POLE.
	WEATHERHEAD.
	GROUND ROD.
	GROUND ROD WITH TEST WELL.
	SURFACE RACEWAY / WIREMOLD.
	FIRE RATED BACKBOARD.
	GROUND BUS BAR.

Raceways

	CONDUIT AND/OR CONDUCTORS INSTALLED ABOVE GRADE, CONCEALED IN WALL OR CEILING SPACE.
	CONDUIT AND/OR CONDUCTORS INSTALLED BELOW GRADE, BELOW SLAB.
	CONDUIT TURNED DOWN.
	CONDUIT TURNED UP.
	CONDUIT STUBBED AND CAPPED.
	CONDUIT DIRECT CONNECTION TO EQUIPMENT.
	FLEXIBLE CONNECTION TO EQUIPMENT.
	CONDUIT / WIRING CONTINUATION.
	HOMERUN TO PANELBOARD.
	CABLE TRAY. SIZE AND TYPE AS INDICATED ON DRAWINGS.

Switches

$	SINGLE POLE SWITCH - MOUNTED AT 42" AFF, UON.
	LOW VOLTAGE 0-10 VOLT DIMMING SWITCH - MOUNTED AT 42" AFF, UON.
M M	OCCUPANCY SENSOR - CEILING OR WALL MOUNTED. SET FOR MAXIMUM DELAY ALLOWED BY ASHRAE 90.1-2022 AND 2021 OEESC CODE REQUIREMENTS.
PP	OCCUPANCY SENSOR POWER PACK.
PC PC	PHOTOCELL - CEILING OR WALL MOUNTED.
	ADA DOOR PUSHPLATE.
	EMERGENCY STOP SWITCH, MUSHROOM HEAD.
	PUSHBUTTON, SINGLE OR DOUBLE.

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MARION COUNTY MEDICAL EXAMINER

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SHEET

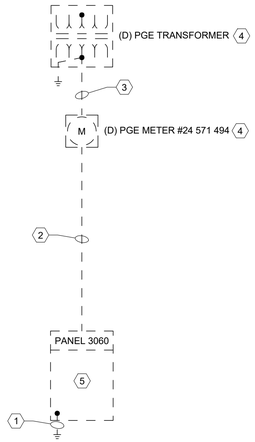
E0.1

GENERAL SHEET NOTES

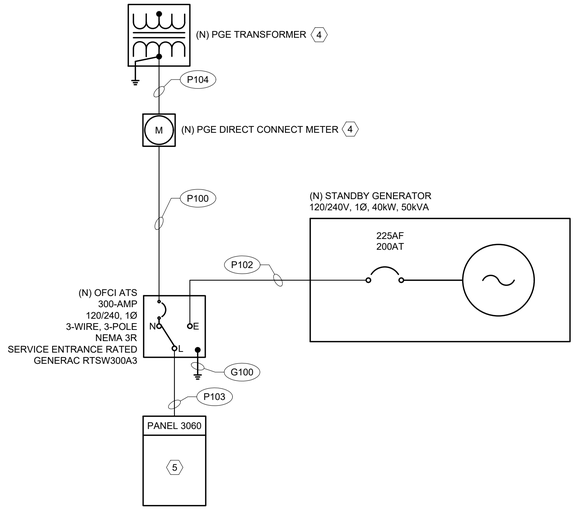
1. NEW SERVICE SHALL BE DESIGN/BUILD AND FINAL DESIGN SHALL BE COORDINATED WITH PGE.

SHEET KEY NOTES

1. DISCONNECT AND REMOVE GROUNDING ELECTRODE CONDUCTOR AND SYSTEM BONDING JUMPER.
2. DEMOLISH EXISTING CONDUCTORS BETWEEN METER AND PANEL.
3. DEMOLISH EXISTING SERVICE CONDUIT AND CONDUCTORS BETWEEN PGE TRANSFORMER AND METER.
4. EXISTING SERVICE TO BE REPLACED WITH NEW 300A, 120/240V SINGLE PHASE SERVICE. COORDINATE SERVICE REPLACEMENT WITH PGE.
5. REPLACE EXISTING PANELBOARD WITH NEW 300A RECESSED PANELBOARD.



1 DEMOLITION ONE-LINE DIAGRAM
SCALE: NTS



2 NEW ONE-LINE DIAGRAM
SCALE: NTS

POWER CONDUIT / CONDUCTOR SCHEDULE

CONDUIT ID NO.	CONDUIT		CONDUCTORS PER CONDUIT					FROM	TO	DESCRIPTION	NOTES
	QUANTITY	SIZE	UNGROUNDED	GROUNDED	GROUNDING	CABLE	SPARE				
P100	2	2.0 INCH	2 - #1/0	1 - #1/0	-	-	-	(N) UTILITY METER	(N) OFCI ATS	-	-
P102	1	2.0 INCH	2 - #3/0	1 - #3/0	1 - #6	-	-	(N) GENERATOR	(N) OFCI ATS	-	-
P103	2	2.0 INCH	2 - #1/0	1 - #1/0	1 - #4	-	-	(N) OFCI ATS	(N) PANEL 3060	-	-
P104	2	3.0 INCH	-	-	-	-	-	(N) PGE TRANSFORMER	(N) PGE DIRECT CONNECT METER	CONDUITS PER PGE REQUIREMENTS. COORDINATE ALL WORK WITH PGE.	-

GROUNDING CONDUIT / CONDUCTOR SCHEDULE

CONDUIT ID NO.	CONDUIT		CONDUCTORS PER CONDUIT					FROM	TO	DESCRIPTION	NOTES
	QUANTITY	SIZE	UNGROUNDED	GROUNDED	GROUNDING	CABLE	SPARE				
G100	1	0.75 INCH	-	-	1 - #2	-	-	(N) OFCI ATS	GROUNDING ELECTRODE SYSTEM	-	-

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SHEET
E0.2

PANEL NAME: 3060 — LOCATION: ENTRY 119

VOLT/PHASE: 120/240V, 1Ø — FED FROM: NEW ATS

NUM. POLES: 60 — BREAKER MOUNTING: BOLTED

AIC RATING: 42,000 — MAIN BREAKER AMPS: 300

NOTES: — BUS RATING AMPS: 400

REF. KEY NOTE #: — SPD: NO

NOTES	LOAD DESCRIPTION	LOAD TYPE	VA L1	VA L2	TRIP RATING AMPS	CIRCUIT NUMBER	CIRCUIT NUMBER	TRIP RATING AMPS	VA L1	VA L2	LOAD TYPE	LOAD DESCRIPTION	NOTES
1	HEAT PUMP 06, ELECTRIC HEAT EAST ROOFTOP	H	4,800		60	1	2	20	720		R	RECEPTACLES RM. 110, 121, 123	1
		H		4,800		3	4	20		360	R	RECEPTACLES RM. 124	1
1	HEAT PUMP 06, EAST ROOFTOP	H	2,880		35	5	6	20	418		L	LIGHTS RM. 116	
		H		2,800		7	8	20		221	L	LIGHTS RM. 130, 131, 132, 134, 135	
1	HEAT PUMP 05, ELECTRIC HEAT WEST ROOFTOP	H	2,000		30	9	10	20	-			SPARE	
		H		2,000		11	12	20		380	L	LIGHTS RM. 100, 101, 102, 103, 104, 105, 106, 107	
1	HEAT PUMP 05, EAST ROOFTOP	H	2,000		30	13	14	20	304		L	LIGHTS RM. 110, 112, 113, 121, 122, 123, 124	
		H		2,000		15	16	20		900	R	RECEPTACLES RM. 100, 101, 102, 103, 104, 110, 112	1
1	RECEPTACLES RM. 119	R	720		20	17	18	20	900		R	RECEPTACLES RM. 130, 131, 132	1
	SPARE			-	20	19	20	30		2,250	H	HOT WATER HEATER RM. 124	1
	ALARM SYSTEM	R	180		20	21	22		2,250		H		
	BRIDGE AMPLIFIER	R		360	20	23	24	20		1,500	E	GENERATOR BLOCK HEATER	
1	RECEPTACLE RM. 106, 107	R	720		20	25	26	20	1,200		E	GENERATOR BATTERY CHARGER	
1	IT RECEPTACLES RM. 121	R		900	20	27	28	20		28	L	EXTERIOR LIGHTS	1
	RANGE RM. 105	A	4,000		40	29	30	20	720		R	RECEPTACLES RM. 104	
		A		4,000		31	32	20		900	R	RECEPTACLES RM. 119, 124	
	RECEPTACLES RM. 105	R	540		20	33	34	20	1,200		A	REFRIGERATOR RM. 104	
	RECEPTACLES RM. 105	R		540	20	35	36	20		540	R	RECEPTACLES RM. 119, 134, 135	
	REFRIGERATOR RM. 105	A	1,200		20	37	38	20	360		R	EXTERIOR RECEPTACLE SOUTH AND WEST SIDE	
	DISHWASHER RM. 105	A		800	20	39	40	20		864	M1	GARBAGE DISPOSAL RM. 105	
	SPACE		-		-	41	42	-	-			SPACE	
	SPARE			-	20	43	44	20		-		SPARE	
	SPARE		-		20	45	46	20	-			SPARE	
	SPARE			-	20	47	48	20		-		SPARE	
	SPARE		-		20	49	50	20	-			SPARE	
	SPARE			-	20	51	52	20		-		SPARE	
	SPARE		-		20	53	54	20	-			SPARE	
	SPARE			-	20	55	56	20		-		SPARE	
	SPARE		-		20	57	58	20	-			SPARE	
	SPARE			-	20	59	60	20		-		SPARE	

TOTAL LOAD:	19,040	18,200	TOTAL LOAD:	8,072	7,943
COMBINED LOAD:	27,112	26,143	CONNECTED LOAD:	53,255	DEMAND LOAD: 53,809
					DEMAND AMPS: 224

Load Type Key		Demand Factor	Connected Load	Demand Load	
R	General Purpose Receptacle	100% First 10kVA, 50% thereafter	9,360	9,360	
L	Lighting	125% Load	1,351	1,689	
M1	Largest Motor	125% Load	864	1,080	
M	Motor	100% Load	0	0	
A	Appliance	100% Load	11,200	11,200	
H	HVAC	100% Load	27,780	27,780	
K	Kitchen	100% Load	0	0	XX - Units of Equipment - See NEC Table 220.56
E	Equipment	100% Load	2,700	2,700	
T	Transformer	100% Load	0	0	
W	Welder	100% Load	0	0	
RV	Recreational Vehicle	100% Load	0	0	XX - RV Sites - See NEC Table 551.71 (A)

NOTES:
[1] EXISTING LOAD ON NEW PANEL. DISCONNECT, PROTECT, AND RE-TERMINATE ON NEW PANEL. VA ASSUMED BASED ON AS-BUILT CONDITIONS.

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SHEET

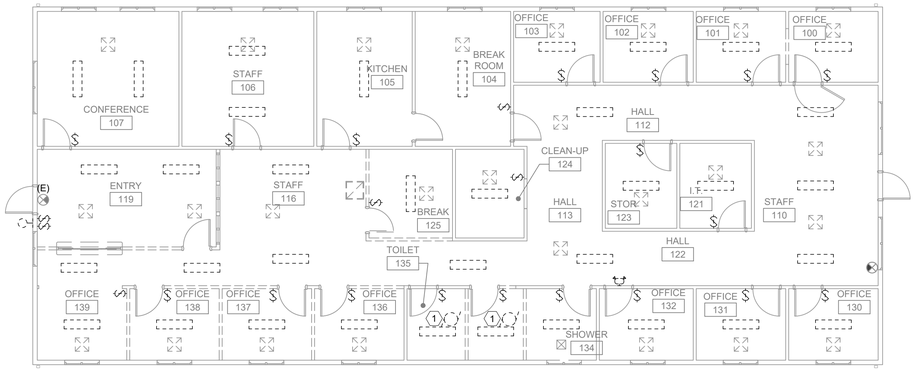
E0.3

GENERAL SHEET NOTES

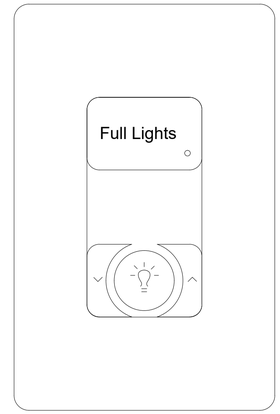
1. WIRE ALL NEW EXIST SIGNS TO THE LOCAL LIGHTING BRANCH CIRCUIT AHEAD OF SWITCHING.

SHEET KEY NOTES

1. DEMOLISH EXISTING CEILING EXHAUST FAN.

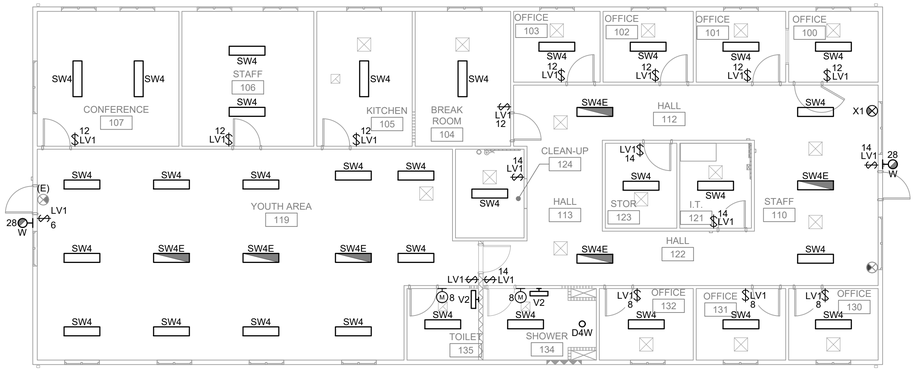


1 DEMOLITION CEILING PLAN
SCALE: 1/8" = 1'-0"



PART: COOPER WAVELINX W1L-RL
STYLE: ON/OFF + RAISE/LOWER
TAG: LV1

3 SINGLE ZONE, DIMMING
SCALE: NTS



2 ELECTRICAL CEILING PLAN
SCALE: 1/8" = 1'-0"

LUMINAIRE SCHEDULE

FIXTURE NO.	DESCRIPTION	LAMP TYPE	LUMENS (MINIMUM)	CRI	COLOR TEMP.	DRIVER	EMERGENCY DRIVER	INTEGRAL MOTION/PHOTO SENSOR	VOLTAGE	LOAD	MFR.	MODEL NUMBER
D4W	RECESSED 4" DIAMETER, 5" HIGH DOWNLIGHT, GALVANIZED STEEL PLASTER FRAME HOUSING, CLEAR SEMI-SPECULAR REFLECTOR, MEDIUM DISTRIBUTION, AND WET LOCATION LISTED.	LED	1,000 LM	90	4000K	STANDARD 0-10V	NO	NO	UNV	11 WATTS	HALO	PR4 SERIES
SW4	SURFACE MOUNTED 48" L x 10" W x 3-1/2" H WRAPAROUND LUMINAIRE WITH COLD ROLLED STEEL HOUSING, SELECTABLE CCT (3500K, 4000K, 5000K), SELECTABLE LUMEN OUTPUT (4000 LM, 5000 LM, 6000 LM, WHITE HIGH-IMPACTIC PLASTIC END CAPS, AND FROSTED RIBBED POLYCARBONATE IK06 RATED LENS. PROVIDE INTEGRAL WAVELINX WIRELESS SENSOR.	LED	5,000 LM	90	4000K	STANDARD 0-10V	NO	YES	UNV	38 WATTS	METALUX	ACHIEVA WRAP SERIES
SW4E	SURFACE MOUNTED 48" L x 10" W x 3-1/2" H WRAPAROUND LUMINAIRE WITH COLD ROLLED STEEL HOUSING, SELECTABLE CCT (3500K, 4000K, 5000K), SELECTABLE LUMEN OUTPUT (4000 LM, 5000 LM, 6000 LM, WHITE HIGH-IMPACTIC PLASTIC END CAPS, AND FROSTED RIBBED POLYCARBONATE IK06 RATED LENS. PROVIDE INTEGRAL WAVELINX WIRELESS SENSOR.	LED	5,000 LM	90	4000K	STANDARD 0-10V	YES (INTEGRAL 14W BATTERY)	YES	UNV	38 WATTS	METALUX	ACHIEVA WRAP SERIES
V2	24" W x 4.5" H x 4.75" D WALL MOUNTED VANITY LUMINAIRE WITH FULL FROST LED LENSE, DIE FORMED COLD ROLLD STEEL HOUSING, STANDARD WHITE FINISH.	LED	900 LM	85	4000K	STANDARD 0-10V	NO	NO	UNV	10 WATTS	METALUX	BCLED SERIES
W	WALL MOUNTED 7.5" W x 8" H x 3-5/8" D LUMINAIRE WITH DIE-CAST ALUMINUM HOUSING, FULL CUT OFF OPTICS, BLACK FINISH, IP66 RATED, AND WET LOCATION LISTED. PROVIDE INTEGRAL PHOTO CELL & INTEGRAL BACKUP BATTERY. MOUNT AT 9'-0" AFG.	LED	1,800 LM	80	3000K	STANDARD 0-10V	YES (INTEGRAL BATTERY)	YES	UNV	14 WATTS	LUMARK	AXCENT SERIES
X1	EXIT SIGN WITH WHITE POLYCARBONATE HOUSING, RED LETTERS AND CHEVRONS, UL 924 LISTED, INTEGRAL NICKEL CADMIUM BATTERY, TEST BUTTON, DUAL LED LAMP HEADS AND DAMP LOCATION LISTED. PROVIDE QUANTITY OF FACES AND CHEVRONS WITH DIRECTIONS AS SHOWN ON THE DRAWINGS.	LED	N/A	N/A	N/A	N/A	N/A	N/A	UNV	1 WATT	SURE-LITES	APC7RG SERIES

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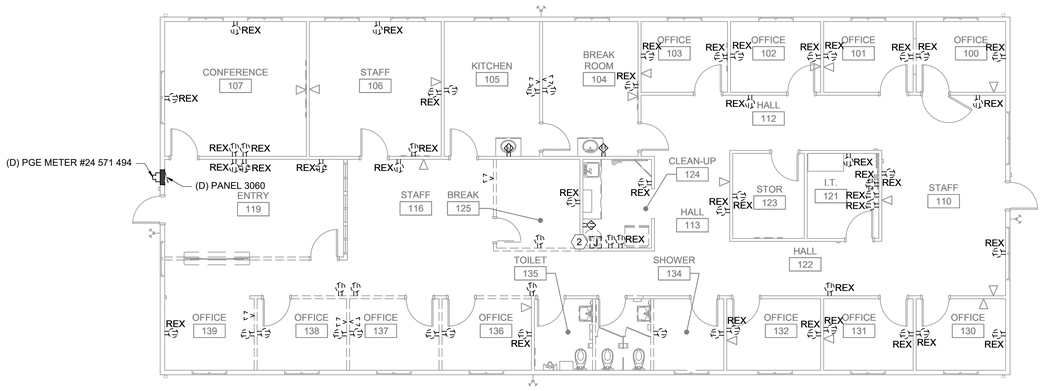


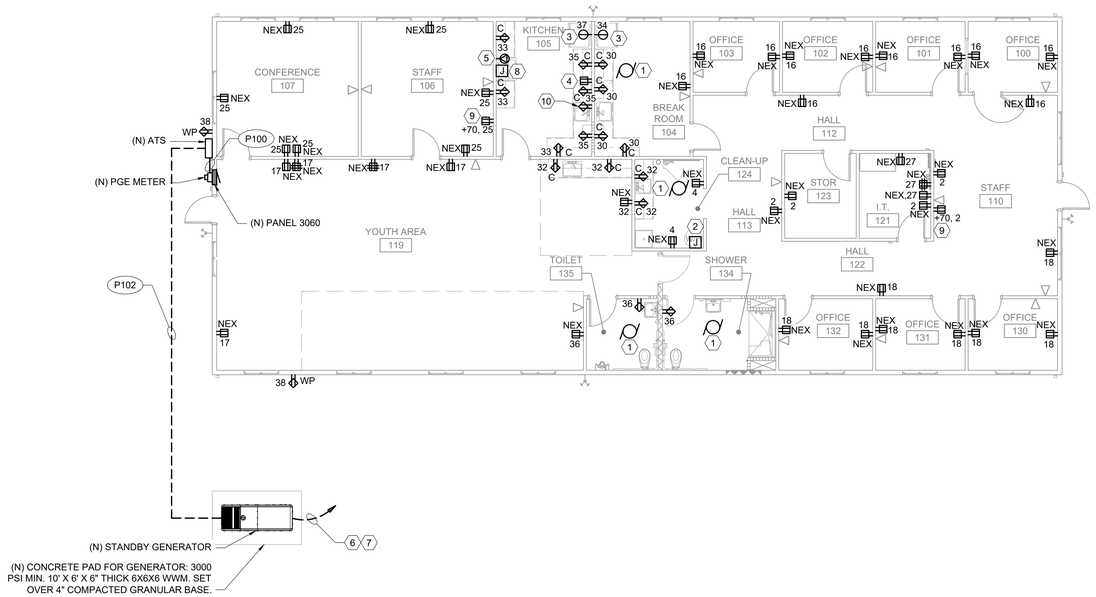
1 DEMOLITION FLOOR PLAN
SCALE: 1/8" = 1'-0"

GENERAL SHEET NOTES

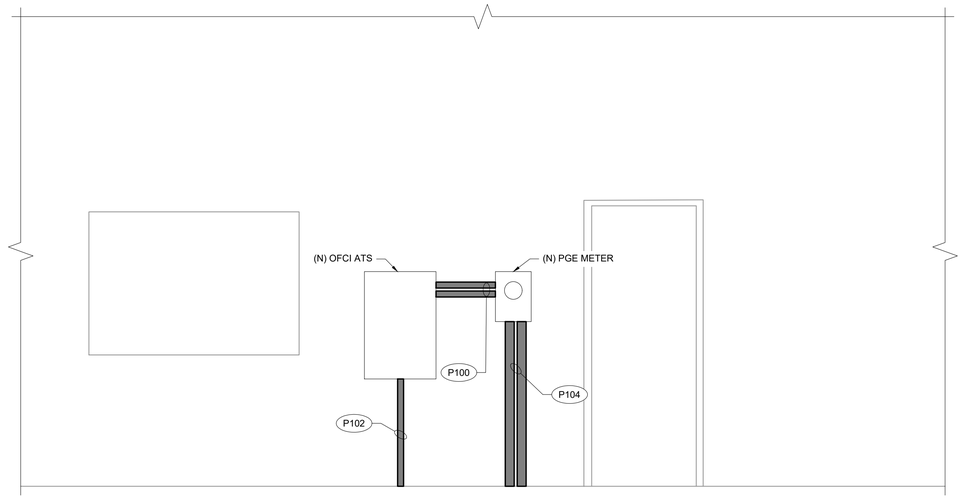
1. CONTRACTOR SHALL ADJUST EXISTING RECEPTACLE CIRCUITS AS SHOWN ON THE DRAWINGS.

SHEET KEY NOTES

1. NEW 120V, 1Ø, 48W CEILING EXHAUST FAN. PROVIDE 2-#12, 1-#12G IN 3/4"C. WIRE TO THE LOCAL LIGHTING BRANCH CIRCUIT. FAN SHALL BE CONTROLLED VIA THE LOCAL LIGHTING SWITCH.
2. EXISTING WATER HEATER SHALL BE RELOCATED. MATCH EXISTING ELECTRICAL CONNECTION IN NEW LOCATION.
3. DEDICATED CIRCUIT FOR REFRIGERATOR.
4. DEDICATED CIRCUIT FOR DISHWASHER. CONFIRM EXACT CONNECTION REQUIREMENTS WITH APPROVED SUBMITTALS. WIRE TO PANEL 3060, CIRCUIT #39.
5. PROVIDE NEMA 14-50R RECEPTACLE. PROVIDE 3-#6, 1-#10G IN 1.0" C. DEDICATED CIRCUIT FOR RANGE. CONFIRM EXACT CONNECTION REQUIREMENTS WITH APPROVED SUBMITTALS. WIRE TO PANEL 3060, CIRCUIT #29,31.
6. PROVIDE 2-#14, 1-#14G IN 1/2" CONDUIT TO ATS FOR "START" COMMAND.
7. PROVIDE 4-#12, 1-#12G IN 3/4: CONDUIT TO PANEL 3060 FOR BATTERY CHARGER AND BLOCK HEATER.
8. NEW 120V, 1Ø, RANGE HOOD. PROVIDE 2-#12, 1-#12G IN 3/4" C. WIRE TO THE LOCAL LIGHTING BRANCH CIRCUIT.
9. COORDINATE RECEPTACLE LOCATION WITH OWNER.
10. RECEPTACLE FOR GARBAGE DISPOSAL. WIRE TO PANEL 3060, CIRCUIT #40.



2 ELECTRICAL FLOOR PLAN
SCALE: 1/8" = 1'-0"



3 ELECTRICAL SERVICE ELEVATION
SCALE: 1/2" = 1'-0"

LANDIS CONSULTING
Salem | Lake Oswego
503-584-1576
www.landisconsulting.com

JOB NO. 2023.0080
DATE MAY 28, 2024
DRAWN EJC
REVISIONS

ARCHITECTURE COMMUNITY
1100 Liberty Street SE
Suite 200
Salem, OR 97302
P: 503.581.4114
www.accoac.com

MARION COUNTY MEDICAL EXAMINER

3060 CENTER ST NE
SALEM, OR 97301

SHEET
E2.1

ATTACHMENT 3

ADDENDUM #1
TO THE
INVITATION TO BID
BS1610-24 - MEDICAL EXAMINER OFFICE RELOCATION & REMODEL
ISSUED ON 10/29/2024 2:00:00 PM

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. Preproposal Conference:
An ***optional*** site walkthrough will be held on November 12. 2024, at 1:00 pm at 3060 Center St NE, Salem, Oregon.

Marion County
OREGON

ADDENDUM #2
TO THE
INVITATION TO BID
BS1610-24 - MEDICAL EXAMINER OFFICE RELOCATION & REMODEL
ISSUED ON 10/29/2024 2:00:00 PM

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. Clarifications:

Bids must be submitted via the Procurement Collaboration Portal prior to the Closing date/time. Emailed or facsimile Bids will not be allowed or accepted. Failure to comply with this requirement will result in rejection of the Bid as non-responsive.

Additional addendum information continues on the following pages.

ac+co
ARCHITECTURE | COMMUNITY
1100 Liberty St. SE, STE 200
Salem, OR 97302
P: 503.581.4114 | architects@accoac.com

Date: November 19, 2024

Project Name: Marion County ME Office Remodel

Project No.: 2023.0080.000

ADDENDUM NO. 02

TO: ALL BIDDERS OF RECORD

This addendum forms a part of the Contract Documents and modifies the Drawings and Specifications Dated September 23, 2024, as noted below. Acknowledge receipt of this addendum in the space provided on the Form of Proposal. Failure to do so may subject Bidder to disqualification.

Clarifications:

1. The scope of work will include the replacement of the blinds on all exterior windows, as per paragraph 122113, 3.06.

Specifications:

2. Omit Section 122113 – Horizontal Louver Blinds, provide attached Section 122113 – Horizontal Louver Blinds.

Drawings:

3. Sheet A5.1: Revise Note 13 to Hood Model No. UXT5230BD.
4. Sheet A8.1, Door Schedule, Hardware: Revise Door Lockset No. 2 to ND70.

Approvals:

5. None.

END OF ADDENDUM

SECTION 122113
HORIZONTAL LOUVER BLINDS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Horizontal slat louver blinds.

B. Operating hardware.

1.02 RELATED REQUIREMENTS

A. Section 061000 - Rough Carpentry: Concealed wood blocking for attachment of headrail brackets.

1.03 SUBMITTALS

A. Product Data: Provide data indicating physical and dimensional characteristics.

B. Shop Drawings: Indicate opening sizes, tolerances required, method of attachment, clearances, and operation.

C. Maintenance Materials: Furnish the following for Owner's use in maintenance of project.
   1. Extra Slats: 20 of each type and size.
   2. Extra Wands: Three of each type.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Horizontal Louver Blinds Without Side Guides:
   1. Graber: www.graberblinds.comn.
   2. Substitutions: See General Conditions.

2.02 BLINDS WITHOUT SIDE GUIDES

A. Description: Horizontal slat louvers hung from full-width headrail with full-width bottom rail.

B. Manual Operation: Cordless Control of raising and lowering with full range locking; blade angle adjustable by control wand.

C. Plastic Slats: PVC / Vinyl, square slat corners.
   1. Width: 2 inch.
   2. Color: Selected from manufacturer's standard colors..
   3. Texture: Simulated wood-grain.

D. Slat Support: Woven polypropylene cord, ladder configuration.

E. Head Rail: Pre-finished, formed aluminum box, with end caps; internally fitted with hardware, pulleys, and bearings for operation; same depth as width of slats.

F. Headrail Attachment: Wall brackets.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that openings are ready to receive the work.

B. Ensure structural blocking and supports are correctly placed. See Section 061000.

3.02 INSTALLATION

A. Install blinds in accordance with manufacturer's instructions.

B. Secure in place with flush countersunk fasteners.

3.03 TOLERANCES

A. Maximum Variation of Gap at Window Opening Perimeter: 1/4 inch.

B. Maximum Offset From Level: 1/8 inch.

3.04 ADJUSTING

A. Adjust blinds for smooth operation.

3.05 CLEANING

A. Clean blind surfaces just prior to occupancy.

3.06 SCHEDULE

A. Scope oif Work includes New Window Blinds on ALL Exterior Windows.

END OF SECTION