

Contract Review Sheet

Public Improvement Agreements

BS-7185-26

Title: Juvenile Fresh Start Market Remodel

Contractor's Name: Kaufman Commercial, LLC

Department: Business Services Department

Contact: Vanessa Keck

Analyst: Chalyce MacDonald

Phone #: (503) 566-3910

Term - Date From: Execution

Expires: December 31, 2026

Original Contract Amount: \$ 220,959.00

Previous Amendments Amount: \$ -

Current Amendment: \$ -

New Contract Total: \$ 220,959.00 Amd% 0%

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

Source Selection Method: 20-0255 Invitation to Bid

ITB# BS1786-26

Description of Services or Grant Award

Remodel to the Juvenile Fresh Start Market to bring the building up to building, electrical, and health codes. Additionally, for better kitchen functionality, upgrades also include a new dishwasher, grease trap, and cooking equipment.

Desired BOC Session Date: 7/15/2026

Contract should be in DocuSign by: 6/24/2026

Agenda Planning Date: 7/2/2026

Printed packets due in Finance: 6/30/2026

Management Update: 6/23/2026

BOC upload / Board Session email: 7/1/2026

BOC Session Presenter(s) Tamra Goettsch

Code: Y

REQUIRED APPROVALS

Chalyce MacDonald 06/17/2026

Finance - Contracts

Date

Vanessa Keck 06/17/2026

Contract Specialist

Date

Scott A. Norris 06/29/2026

Legal Counsel

Date

Jan Fritz 06/29/2026

Chief Administrative Officer

Date



MARION COUNTY BOARD OF COMMISSIONERS

Board Session Agenda Review Form

Meeting date: July 15, 2026

Department: Business Services

Title:

Juvenile Fresh Start Market Remodel

Management Update/Work Session Date: June 23, 2026 Audio/Visual aids ☐

Time Required: 10 min Contact: Tamra Goettsch Phone: x3200

Requested Action:

Consider approval of the Public Improvement Agreement with Kaufman Commercial, LLC for the Juvenile Fresh Start Market Remodel located at 3020 Center St NE, Salem, OR 97301.

Issue, Description
& Background:

Juvenile Fresh Start Market is in need of a remodel to bring the building up to building, electrical, and health codes. Additionally, for better kitchen functionality, upgrades will also include a new dishwasher, grease trap, and cooking equipment.

Financial Impacts:

Total Cost \$220,959.00 CIP 23-022

Impacts to Department
& External Agencies:

No impacts to other departments outside of the Juvenile Detention Center, project coordination to be managed by Business Services.

List of attachments:

Public Improvement Agreement, Attachment 1 Project Manual, Attachment 2 Drawings

Presenter:

Tamra Goettsch

Department Head
Signature:

MARION COUNTY PUBLIC IMPROVEMENT AGREEMENT
for
Juvenile Fresh Start Market Remodel

This Agreement for the Juvenile Fresh Start Market 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 Kaufman Commercial, 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 \$220,959.00 (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: all labor, materials, tools, and equipment necessary to complete the Work as described in Attachment 1 – Project Manual and Attachment 2 - Drawings.

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 Zach Gwyn 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: Contract Execution

SUBSTANTIAL COMPLETION: November 25, 2026

FINAL COMPLETION: December 31, 2026

4. Liquidated Damages.

Failure to complete the project known as Juvenile Fresh Start Market Remodel by the specified time will result in damage to Marion County. Since actual damage will be difficult to determine, it is agreed that the Contractor shall pay to Marion County, not as a penalty but as liquidated damages, \$ 500.00 per calendar day for each day elapsed in excess of the Substantial Completion date stated in Section 3 of this Agreement.

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:	Kaufman Commercial, LLC
CONTRACTOR ADDRESS:	5797 State Street
CONTRACTOR ADDRESS:	Salem, OR 97317
CONTRACTOR'S CCB # & Expiration Date:	224373 Expires 3/5/2027

CONTRACTOR'S SIGNATURE: _____
Date

**MARION COUNTY SIGNATURES
BOARD OF COMMISSIONERS:**

Chair Date

Commissioner Date

Commissioner Date

Authorized Signature:  06/26/2026
Department Director or designee Date

Authorized Signature:	<u>Jan Fritz</u> Jan Fritz (Jun 29, 2026 16:48:34 PDT)	<u>06/29/2026</u>
	Chief Administrative Officer	Date
Reviewed by Signature:	<u>Scott A. Norris</u> Scott A. Norris (Jun 29, 2026 16:40:06 PDT)	<u>06/29/2026</u>
	Marion County Legal Counsel	Date
Reviewed by Signature:	<u>Cheryl McDonald</u>	<u>06/17/2026</u>
	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.

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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 Contractor 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 O & 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



MARION COUNTY FRESH START MARKET REMODEL PROJECT MANUAL

January 23, 2026



Project Address:

3020 Center Street NE
Salem, Oregon 97301

Architect's Project Number:

05625



FACET
ARCHITECTS

Formerly Carlson Veit Junge Architects

.....
3095 River Road N Salem, OR 97303 / 503.390.0281

**PROJECT DIRECTORY
MARION COUNTY
FRESH START MARKET REMODEL**

Owner:

Marion County
555 Court Street NE
Salem, Oregon 97301

Architect:

Facet Architects
3095 River Road N
Salem, Oregon 97303
503-390-0281

Mechanical/Electrical Engineer:

Fluent Engineering
2110 State Street
Salem, OR 97301
503-226-2921

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The following Specifications have been organized under the format of the Construction Specifications Institute (CSI). Section numbers listed are for identification, and may not be consecutive. The Contractor shall check his copy of the Specifications against the Table of Contents to be sure his copy is complete.

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Provided under separate cover by Marion County.		
<u>DIVISION 01 - GENERAL REQUIREMENTS</u>		
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01 23 00	Alternates	1
01 25 00	Substitution Procedures	1
	Substitution Request Form	1
01 31 19	Project Meetings	2
	Request for Information	1
01 33 00	Submittal Procedures	3
01 42 00	References	3
01 45 00	Quality Control	2
01 50 00	Temporary Facilities and Controls	4
01 60 00	Product Requirements	2
01 73 29	Cutting and Patching	2
01 74 19	Recycling and Environmental Requirements	1
01 74 23	Final Cleaning	1
01 77 00	Closeout Procedures	2
01 78 23	Operation and Maintenance Data	3
01 78 36	Warranties and Bonds	1
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<u>DIVISION 02 – EXISTING CONDITIONS</u>		
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<u>DIVISION 03 - CONCRETE</u>		
03 20 00	Concrete Reinforcing	2
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06 41 16	Plastic Laminate-Clad Architectural Cabinets	4
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PROJECT DESCRIPTION

In general, the project comprises a remodel of an existing 2,791 SF café space for the Fresh Start Market.

CONTRACT

In event work described herein is awarded, successful Bidder and Owner shall execute the following Contract:

Marion County standard construction contract.

WORK FURNISHED AND INSTALLED BY OWNER

Concurrently with Work of this Contract:

Telephone equipment

Computer equipment, unless otherwise noted

Systems Furniture

Furniture, unless otherwise noted

Appliances

PRODUCTS FURNISHED BY OWNER AND INSTALLED BY CONTRACTOR, IF ANY

Delivery:

By Owner.

Unloading:

By Owner.

Owner's Duties:

Arrange for and deliver necessary shop drawings.

Deliver product to site in accordance with approved construction schedule.

Inspect deliveries jointly with Contractor.

Submit claims for transportation damage.

Arrange for replacement of damaged, defective, missing, or otherwise unacceptable Items.

Arrange for manufacturer's required warranties, bond, service, and inspections.

Contractor's Duties:

Designate required delivery date for each Owner-furnished product.

Review any shop drawings, samples, and product data, and notify Architect about any anticipated discrepancies or problems.

Promptly inspect delivered products, and report any damage, defective items, or missing items.

Handle at site, including uncrating and storing.

Protect products against damage and discoloration.

Install, connect, adjust, and where scheduled, finish products.

Clean, repair and touch-up, or replace when directed, products including those of other sections which have been soiled, discolored, or damaged by this work.

OWNER'S PROJECT REPRESENTATIVE

The Owner's representative during the project will be:

Wesley Miller, Marion County Construction Project Coordinator

Phone: (503) 576-0595

Allow access by the Project Representative to the project at all times.

Coordinate scheduling, personnel access, and equipment access to the building with the Project Representative.

Owner's Project Representative will provide contract administration services throughout project construction. All communications to the Owner shall be through the Owner's Project Representative.

WORK SEQUENCE

Work sequence shall be the responsibility of the contractor. Coordinate with Owner prior to start of construction.

Shut down of onsite power and water utilities must take place outside of business hours.

Coordinate with Owner's representative, providing a minimum of one week notice.

WORK HOURS

Contractor shall schedule work during regular business hours, 7:00 a.m. to 6:00 p.m., Monday through Friday.

Disruptive work that creates excessive noise, traffic, or odors shall be scheduled after hours or on Saturday or Sunday. Before hours, after hours, or weekend work shall be prearranged and scheduled with the Owner's Project Representative.
Contractor may be asked to cease daytime work and to reschedule if it is found to interfere with the Owner's operations.

CONTRACTOR USE OF PREMISES

See Drawing sheet A-100 for Contractor Staging and Parking areas. Do not use other areas around building without approval from Owner's Project Representative.
Contractor to provide site plan showing staging, storage, trailer locations, contractor parking, etc. for review by Owner's Project Representative.
Except as noted on Drawings, do not use Owner's parking lot, driveways, and walks without prior approval from Owner.

GRADE LINES AND LEVELS

Contractor shall verify all setbacks, grades, and levels; and stay within the limits thereof.

PROTECTION OF PUBLIC

Construction site is to be isolated from the public by temporary chain link fencing. Contractor to adjust fencing as needed throughout construction to keep site secure.
Provide barriers around equipment located on the ground.
Provide warning signs where necessary to alert pedestrians and vehicle operators to potential hazards.

PROTECTION OF PROPERTY

Protect existing building, building contents, trees, shrubs, planting beds, pavement and other exterior areas from damage.
Protect building occupants, pedestrians, building, and building contents from damage due to work of this project.
Replace damaged property, where directed, at no additional cost to Owner.
Owner shall deduct the value of any damage from amount owed Contractor, or at Owner's option, Contractor may pay for repair or replacement directly.

PROTECTING EXISTING UTILITIES

Drawings indicate approximate location of any known, concealed utility lines. Before starting work, Contractor shall determine exact location of any of these lines that could be damaged by contract work. Contractor shall assume that other, unknown utility lines do exist, and Contractor shall proceed with caution when working in areas that could conceal unknown utilities. If such utility lines are encountered, immediately request disposition instructions from Architect.
If utility lines are damaged; remove, repair or replace lines as directed. Additional compensation and/or extensions of time, if any, caused by removing, repairing, or replacing lines will be determined in accordance with the General Conditions.

PROJECT COORDINATION

General Contractor is responsible for overall coordination of trades. Mechanical and electrical contractors are responsible for coordinating with each other and making provisions in their work for the other's trade.

CODES

All work shall be in compliance with current state and local codes. General Contractor shall make available to all Sub-contractors, all reports and requirements issued by the building permit or subsequent inspections by the building officials.

PERMITS AND FEES

The Owner will pay the plan review fee, general building permit fee and systems development charges. The Contractor shall pay all other permit and use fees including, but not limited to: Specialty contractor fees and permit costs; public works fees and permits; plumbing, mechanical, electrical and related permits and fees; business license fees; permits and fees for work in public rights-of-way, temporary work, street closures, and utility taps. The Contractor shall be responsible for violations of law for any cause in connection with the completion of the work. The Contractor shall be responsible for obstruction or damage to streets, sidewalks, utilities and other public or private improvements done in connection with

SUMMARY OF WORK

01 11 00-3

completion of the work. Conform to applicable state, city and local codes and ordinances.

UNACCEPTABLE EXISTING CONDITIONS

Exposed to View:

Repair or replace as part of this work.

No additional payment by Owner will be made.

Concealed:

Repair or replace where necessary.

Upon notification from Contractor, Owner will issue change order authorizing Contractor to perform this work and contract sum will be adjusted accordingly.

END OF SECTION

ALTERNATES

01 23 00-1

SECTION INCLUDES

Submission procedures.

Documentation of changes to contract sum/price and contract time.

REQUIREMENTS

Alternates quoted on Bid Form will be reviewed and accepted or rejected at Owner's option. Accepted alternates will be identified in the Owner-Contractor Agreement. Coordinate related work and modify surrounding work to integrate the work of each alternate.

ALTERNATE BIDS

Alternate No. 1 – Light Fixtures.

Base Bid Item:

Existing lighting to remain.

Alternate Item:

Provide new light fixtures in Food Prep 103, design-build by contractor in accordance with scope outlined on Drawing sheet G-001.

END OF SECTION

PART 1 - GENERAL

SECTION INCLUDES

Contractor's requirements in the selection of products, manufacturers and procedures for consideration of proposal substitutions.

RELATED DOCUMENTS

"Marion County General Conditions for Public Improvement Contracts"

QUALIFICATIONS

Only approved substitutions may be used on contract work.

Each request for substitution approval shall include:

Identity of product for which substitution is requested; include Specification page number.

Identity of substitution; include product description, drawings, photographs, performance and test data, and any other information necessary for evaluation.

Quality comparison of proposed substitution with specified product.

Changes required in other work because of substitution.

Effect on construction Progress Schedule.

Cost comparison of proposed substitution with specified product.

Any required license fees or royalties.

Availability of maintenance service.

Source of replacement materials.

SUBSTITUTIONS DURING BID PERIOD

No request for substitution approval will be considered unless written request has been electronically submitted with standard form bound herein in addition to substitution documentation noted above, and has been received by Architect by 5:00 PM at least 10 calendar days prior to bid opening day.

Request submitted after this date will not be individually acknowledged.

Architect will issue Addenda prior to bid opening listing all approved substitutions.

SUBSTITUTIONS AFTER CONTRACT AWARD

Refer to "Marion County General Conditions for Public Improvement Contracts" for additional information on substitutions after contract award.

END OF SECTION

SUBSTITUTION REQUEST

TO:

PROJECT:

SPECIFIED ITEM:

Section	Page	Paragraph	Description
---------	------	-----------	-------------

PROPOSED SUBSTITUTION:

Attached data includes product description, specifications, drawings, photographs, performance and test data adequate for evaluation of request including identification of applicable data portions.

Attached data also includes description of changes to Contract Documents and proposed substitution requires for proper installation.

Undersigned certifies following items, unless modified by attachments, are correct:

1. Proposed substitution does not affect dimensions shown on drawings.
2. Undersigned pays for changes to building design, including engineering design, detailing, and
3. construction costs caused by proposed substitution.
4. Proposed substitution has no adverse effect on other trades, construction schedule, or specified warranty requirements.
5. Maintenance and service parts available locally or readily obtainable for proposed substitution.

Undersigned further certifies function, appearance, and quality of proposed substitution are equivalent or superior to specified item.

Undersigned agrees, if this page is reproduced, terms and conditions for substitutions found in Bidding Documents apply to this proposed substitution.

Submitted by:

Name (Printed or typed)	
Signature	
Firm Name	
Address	
City, State, Zip	
Date	
Tel:	Fax:

July 1999

The Construction Specifications Institute
Northwest Region



General Contractor (if after award of Contract)

For use by A/E	
☐ Approved	☐ Approved as noted
☐ Not Approved	☐ Received too late
By	
Date	
Remarks	

Owner (if after award of Contract)

Date

SECTION INCLUDES

Pre-bid meeting, pre-construction meeting, pre-installation conferences, progress meetings, and Requests for Information.

PRE-BID MEETINGAttendees:

Owner, Architect, Bidders, Sub-bidders, and Suppliers.

A written list of attendees will be prepared (sign-in sheet).

Agenda:

Introduction of parties involved, review of scope of project, overview of project requirements, review of project schedule, review of project budget, and questions from Bidders.

A walk-through of the project site will be conducted.

Architect will record meeting minutes and distribute minutes and copy of sign-in sheet to Owner and Bidders. Copies will be sent to other attendees upon request.

PRE-CONSTRUCTION MEETINGMeeting Requirements:

Owner, Architect, Contractor schedule date and time for a Preconstruction Site Meeting as soon as possible after Contractor receives signed contract or Notice to Proceed.

Attendees:

Contractor, Subcontractors, Suppliers, and Consultants deemed necessary by Architect and Contractor.

Agenda:

Schedule Progress Meetings.

Discuss lines of communication and methods on how to reduce possible miscommunications between parties involved. Reach conclusions and abide by them. Maintain communication and cooperation.

Discuss waste management plan and indoor air quality management plan.

Discuss hazardous materials.

Review list of subcontractors and suppliers.

Discuss Construction Progress Schedule and agree on date of publication.

Discuss critical scheduling requirements.

Discuss Contractor requirements.

Discuss Design-Build requirements if applicable.

Discuss procedures for Contractor's RFIs. Requirements as follows:

 Contact Architect for items apparently requiring immediate attention.

 If Contractor requires additional information, clarification, unforeseen conditions are encountered or suggestions for betterment of project, document apparent item, provide a due date and indicate whether additional time/cost or savings are involved and submit RFI on form at end of this Section. Prepare each RFI for a single subject matter.

 Record each RFI in a Log, identifying each RFI by number, subject, date submitted, date of response and disposition.

 Contractor may prepare RFI by copying or scanning form at end of this Section. Number each RFI numerically and record in log. Architect answers RFIs in a timely manner by written response on submitted RFI. If Change Order is indicated change order request prepared and forwarded to Contractor.

 Design Clarification/Verification Request (DCVR) or other forms are unacceptable.

Review procedures for processing shop drawings, product data, samples, field decisions, and change orders.

Review procedures for maintaining project record documents, security, deliveries, safety, housekeeping, and first aid.

Discuss procedures of work forces and working relations with Owner's staff and others.

Review use of site for parking, staging, temporary buildings and construction activities.

Schedule future meeting dates and times.

PRE-INSTALLATION CONFERENCESMeeting Requirements:

Conduct Pre-installation Conference before each activity that requires coordination with other construction activities.

See each Specification Sections to verify if a pre-installation conference is required.

PROJECT MEETINGS

01 31 19-2

Attendees:

Architect, Contractor, Subcontractor(s) involved, manufacturer's representative if required by manufacturer and/or specifications. Code enforcement personnel if required by local codes.

Agenda:

Review progress of other activities and preparations for activity under consideration, including time schedules, manufacturer's preparation and installation recommendations, safety requirements, weather limitations, substrate acceptability, compatibility problems, and inspection and testing requirements.

Contractor conducts and records significant discussions, agreements and disagreements of each conference. It is recommended that this meeting be held before or after Progress Meeting.

Number and record meetings sequentially. Distribute meeting record to concerned parties including Architect and Owner within 72 hours after meeting.

PROGRESS MEETINGS

Meeting Requirements:

Contractor conducts Progress Meetings at weekly intervals.

Contractor prepares agenda and provides meeting minutes.

Weekly meetings, or as scheduled, conducted at jobsite.

Attendees:

Owner, Architect, Contractor, Consultants and Subcontractors deemed necessary by Architect and Contractor.

Agenda:

Review construction progress schedule.

Review last Meeting Minutes for accuracy. Correct items if needed.

Discuss old business and new business agenda items.

Review RFI log, ASI log, change order requests, and submittal log for current status.

Contractor distributes written minutes of each meeting to concerned parties, as determined, within 72 hours.

END OF SECTION

1 **REQUEST FOR INFORMATION**

2
3 FACET ARCHITECTS
4 3095 River Road North
5 Salem, Oregon 97303
6 503 390-0281
7

RFI NO.: _____

DATE: _____

8
9 CONTRACTOR'S PROJECT NO.: _____

10
11 ARCHITECT'S PROJECT NO.: 05625

12
13 PROJECT: Marion County Fresh Start Remodel

14
15 OWNER: Marion County

16
17 TO: _____

18
19 INITIATED BY: _____

20
21 QUESTION: _____

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37
38 Potential Cost Impact: _____

39
40 Potential Time Impact: _____

41
42 Response needed within _____ days

43
44 RESPONSE: _____

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59 Signature: _____ Date: _____

PART 1 - GENERAL**SECTION INCLUDES**

Submit shop drawings, product data, and samples required by Contract Documents.

RELATED DOCUMENTS

"Marion County General Conditions for Public Improvement Contracts".

DEFINITIONS

Portable Document Format (PDF): An open standard file format licensed by Adobe Systems used for representing documents in a device-independent and display resolution-independent fixed-layout document format.

File Transfer Protocol (FTP): Communications protocol that enables transfer of files to and from another computer over a network and that serves as the basis for standard Internet protocols. An FTP site is a portion of a network located outside of network firewalls within which internal and external users are able to access files.

Action Submittals: Written and graphic information and physical samples that require the Architect's responsive action. Action submittals are those submittals indicated in individual specification sections as action submittals.

Informational Submittals: Written and graphic information and physical samples that do not require the Design Professional's responsive action: Submittals may be rejected for not complying with requirements. Informational submittals are those submittals indicated in individual specification sections as informational submittals.

SPECIAL REQUIREMENTS**General:**

Shop Drawings and Product Data shall be forwarded as electronic submittals in the form of PDF files. Electronic files may be forwarded by e-mail, or by interactive website services such as an FTP site, Smartsheet, or BlueBeam, established by the Contractor or the Contractors Project Information Management (PIM) software.

The electronic submittal process is not intended for color samples, color charts, or physical material samples.

Commissioning Authority will review submittals applicable to systems being commissioned for compliance with commissioning needs, concurrent with the Architect's review and approval.

Submit all submittal items required for each Specification Section concurrently unless partial submittals for portions of the Work are indicated on approved submittal schedule.

Submittal Schedule:

Designate in Construction Schedule, or in separate coordinated schedule, submission dates and dates that reviewed Shop Drawings, Product Data and Samples will be needed.

Once the submittal schedule has been developed by the Contractor, the Owner's Project Representative will identify those submittals that will require Marion County review.

Shop Drawings:

Identify Shop Drawing details by reference to drawing sheet, detail, schedule, or room number shown on contract drawings.

If shop drawings are not submitted as three-dimensional, provide detailed two-dimensional drawings.

Paper Copies: Sheet Size 8 1/2 X 11 inch, or folded to that size to facilitate filing.

Product Data:

Clearly mark each copy to identify pertinent products.

Show performance characteristics and capacities.

Show dimensions and required clearance.

Show wiring and piping diagrams, and controls.

Manufacturer's standard schematic drawings and diagrams:

Modify to delete information not applicable to work.

Supplement standard information to provide information specifically applicable to work.

Samples:

Size and quantity: See respective specification sections.

Show full range of color, texture, and pattern.

Deliver to Architect's office, unless otherwise specified.

Costs:

Cost of the project interactive website services shall be included in the Contractor's bid.
If using an FTP website or PIM software, Contractor shall provide training for Owner's representatives, Architect, and Architect's consultants, regarding use of website or PIM software.
Internet Service and Equipment Requirements:
Email address and Internet access at Contractor's main office.
Adobe Acrobat (www.adobe.com), Bluebeam PDF Revu (www.bluebeam.com), or other similar PDF review software for applying electronic stamps and comments. As an option, the project's interactive website provider shall provide free of charge to any party requesting it, a free downloadable PDF review software from their website.

CONTRACTOR'S RESPONSIBILITIES

Review Shop Drawings, Product Data, and Samples prior to submission.

Determine and verify:

- Field measurements.
- Field construction criteria.
- Catalog numbers and similar data.
- Conformance with specifications.

Comply with Contract Documents.

Coordinate each submittal with requirements of work.

Notify Architect in writing, at submission time, of any deviations in submittals from Contract Document requirements.

Contractor is responsible for providing submittals in one fully complete and vetted package. Failure to comply will cause the submittal to be returned to the Contractor for correction for proper submittal.

Perform no work or fabrication requiring submittal until Architect approves submittal.

SUBMISSION REQUIREMENTS

Make submittals promptly in accordance with approved Progress Schedule, and in such sequence as to cause no work delay.

Shop Drawings:

Submittal shall contain:

- Project title and names of Contractor, Supplier, and Manufacturer.
- Project identification complete with specification section number.
- Field measurements, clearly identified as such.
- Relation to critical features and adjacent work.
- Applicable standards, such as ASTM or Federal Specifications numbers.
- Identification of deviations from Contract Documents.
- Identification of resubmittal revisions.
- At least 6 X 8 inch space on each page for Contractor's and Architect's stamps.
- Contractor's stamp, signed and certifying that products, field measurements, field construction criteria, and information submitted has been reviewed and accepted by him as accurate and conforming with Contract Documents.

Product Data:

Submittal shall contain:

- Project title and names of Contractor, Supplier, and Manufacturer.
- Project identification complete with specification section number.
- Applicable standards, such as ASTM or Federal Specifications numbers.
- Identification of deviations from Contract Documents.
- Identification of resubmittal revisions.
- At least 6 X 8 inch space on the first page for Contractor's and Architect's stamps.

Contractor's stamp, signed and certifying that products and information submitted has been reviewed and accepted by him as accurate and conforming with Contract Documents.

Samples:

Submit number stated in respective specification section.

Submittal shall contain:

- Project title and names of Contractor, Supplier, and Manufacturer.
- Project identification complete with specification section number.
- Field measurements, clearly identified as such.
- Relation to critical features and adjacent work.

1 Applicable standards, such as ASTM or Federal Specifications numbers.
2 Identification of deviations from Contract Documents.
3 Identification of resubmittal revisions.
4 At least 6 X 8 inch space on each page for Contractor's and Architect's stamps.
5 Contractor's stamp, signed and certifying that products, field measurements, field construction
6 criteria, and information submitted has been reviewed and accepted by him as accurate and
7 conforming with Contract Documents.
8

RESUBMISSION REQUIREMENTS

9
10 Make any corrections or changes in submittals required by Architect and resubmit until approved.
11 Contractor to be allowed a single original submittal review and a follow up submittal for corrections.
12 Beyond the two reviews, the Contractor may be penalized to pay for the Architect and Owner review time.
13 Shop Drawings and Product Data:
14 Revise initial drawings or data, and resubmit as specified for initial submittal.
15 Identify any changes made other than those requested by Architect.
16 Samples:
17 Submit new samples as required for initial submittal.
18

ARCHITECT'S RESPONSIBILITIES

19
20 Review submittals with reasonable promptness.
21 Affix signature, and indicate approval or requirements for resubmittal.
22 Return submittals to Contractor for distribution, or resubmission.
23

REQUIRED SUBMITTALS

24
25 Refer to individual sections in this Project Manual.
26

DEFERRED SUBMITTALS

27
28 As required in other specification sections, submit to the Authority Having Jurisdiction (AHJ) shop
29 drawings and design professional's engineering calculations as required by the AHJ for those products
30 required to be bidder designed based on performance criteria noted.
31 Submit the number of paper copies required by the AHJ. Upon receiving approval by the AHJ, make
32 submittal to the Architect for his review and approval. Obtain Architect's approval before fabricating work.
33

SUBMITTAL ADMINISTRATIVE REQUIREMENTS

34
35 Architect's Digital Data Files: Electronic copies of CAD Drawings of the Contract Drawings may be
36 provided by Architect for Contractor's use in preparing submittals, subject to execution of an AIA E201 –
37 2007 Digital Data Protocol Exhibit and the Architect's Digital File Disclaimer/Waiver Form.
38

39
END OF SECTION

1 REFERENCED SPECIFICATIONS AND STANDARDS

2 For products or workmanship specified by Referenced Specification or Standard, comply with
3 requirements of the Specification or Standard, except when more rigid requirements are specified or are
4 required by governing codes.

5 Except where a specific date is specified, the date of Referenced Specification or Standard is that in
6 effect as of the date of Owner-Contractor Agreement.

7 Obtain a copy of all Referenced Specifications and Standards, and maintain at jobsite during the specific
8 work until Substantial Completion of the Project.

9 Wherever referenced Standard Specifications or Standards issued by manufacturers or other similar
10 organizations contain provisions which conflict with the Contract Documents the Contract Documents
11 shall govern.

12
13 REFERENCED REGULATORY AGENCIES

14 ADAAG Americans with Disabilities Act (ADA) Accessibility Guidelines for Buildings and
15 Facilities

16 Office on the Americans with Disabilities Act

17 Civil Rights Division

18 U.S. Department of Justice

19 Washington, D.C. 20530

20 www.access-board.gov

21
22 AASHTO American Association of State Highway and Transportation Officials
23 444 North Capital Street, NW
24 Washington, D.C 20001
25 www.aashto.org

26
27 ANSI American National Standards Institute
28 1430 Broadway
29 New York, NY 10018
30 www.ansi.org

31
32 ASHRAE American Society of Heating, Refrigeration and Air-Conditioning Engineers
33 1791 Tullie Circle NE
34 Atlanta, GA 30329
35 www.ashrae.org

36
37 ASCE American Society of Civil Engineers
38 1801 Alexander Bell Drive
39 Reston, VA 20191
40 www.asce.org

41
42 ASTM American Society for Testing and Materials
43 1916 Race Street
44 Philadelphia, PA 19103
45 www.astm.org

46
47 CS Commercial Standards of the Commodities Division of the
48 Department of Commerce
49 Washington, D.C. 20006
50 www.doc.gov

51
52 EPA Environmental Protection Agency
53 Ariel Rios Building
54 1200 Pennsylvania Avenue, N.W.
55 Washington, DC 20460
56 www.epa.gov

57
58 Fed. Spec. Federal Specifications of the United States General Services Administration
59 Specifications and Consumer Information Distribution Section (WF SIS)

1		Washington Navy Yard, Building 197
2		Washington, D. C. 20407
3		www.apps.fss.gsa.gov/pub/fedspecs/iindex.cfm
4		
5	FMG	FM Global [formerly Factory Mutual (FM)]
6		1301 Atwood Avenue
7		P.O. Box 7500
8		Johnston, RI 02919
9		www.fmglobal.com
10		
11	IBC	International Building Code
12		Published by International Code Council (see ICC below)
13		
14	ICBO	International Conference of Building Officials
15		5360 Workman Mill Road
16		Whittier, CA 90601-2298
17		
18	ICC	International Code Council
19		5203 Leesburg Pike, Suite 708
20		Falls Church, VA 22041-3401
21		www.intlcode.org
22		
23	IMC	International Mechanical Code
24		Published by International Code Council (see ICC above)
25		
26	LEED	Leadership in Energy and Environmental Design
27		U.S. Green Building Council
28		1015 18 th Street NW, Suite 805
29		Washington, D.C. 20036
30		www.usgbc.org
31		
32	NEC	National Electric Code published by the
33		National Fire Protection Association
34		(See NFPA below)
35		
36	NFPA	National Fire Protection Association International
37		Battery March Park
38		Quincy, MA 02269
39		www.nfpa.org
40		
41	OSHA	Occupational and Safety Health Administration
42		U.S. Department of Labor
43		Occupational Safety & Health Administration
44		200 Constitution Avenue
45		Washington, D.C. 20210
46		www.osha.gov
47		
48	OSSC	2022 Oregon Structural Specialty Code (based on the 2021 International Building
49		Code)
50		Building Codes Division
51		1535 Edgewater Street NW
52		Salem, OR 97310
53		www.oregonbcd.org
54		
55	PS	Product Standards of the Commodities Division of the
56		Department of Commerce
57		Washington, D. C.
58		www.doc.gov
59		

REFERENCES

01 42 00-3

- 1 SMACNA Sheet Metal & Air Conditioning Contractors National Association
2 4201 Lafayette Center Drive
3 Chantilly, Virginia 20151-1219
4 www.smacna.org
5
6 UFAS Uniform Federal Accessibility Standards
7 United States Architectural and Transportation Barriers
8 Compliance Board
9 1111 Eighteenth Street NW, Suite 501
10 Washington, D.C. 20036-3894
11 www.access-board.gov
12
13 UL Underwriter's Laboratories
14 333 Pfingston Road
15 Northbrook, Illinois 60062
16 www.ul.com
17
18 USGBC U.S. Green Building Council
19 1015 18th Street NW, Suite 805
20 Washington, D.C. 20036
21 www.usgbc.org
22

TRADE ASSOCIATION REFERENCES

24 See specific Specification Sections.

27 END OF SECTION

PART 1 - GENERAL

SECTION INCLUDES

Inspection and testing laboratory qualifications, duties, and responsibilities. Contractor's quality control requirements. Contractor's and Owner's responsibilities.

COSTS

Paid by Owner:

For Testing Laboratory Services specified in this section and as noted on Structural Drawings.

For special inspections of concrete, masonry, welding, and post-installed anchors specified in building code.

Paid by Contractor

For inspection and testing required by laws, ordinances, regulations, and orders of Public Authorities, but not specified in this section.

For re-inspections and retesting required because of defective work of ill-timed notices.

QUALIFICATIONS OF LABORATORY

Independent laboratory acceptable to Architect and Building Official.

Meet "Recommended Requirements for Independent Laboratory Qualification," latest edition, published by American Council of Independent Laboratories, 1050 17th Street NW, Suite 1000, Washington, D.C. 20038, (202) 887-5872.

Meet ASTM E-329 latest edition, "Standards of Recommended Practice for Inspection and Testing Agencies for Concrete and Steel as used in Construction."

LABORATORY'S DUTIES

Provide qualified personnel for specified inspections, sampling, and testing.

Ascertain and certify compliance with contract documents.

Promptly submit written inspection and test reports to Owner's Representative, Building Official, Contractor, and Architect.

Include the following on test reports:

Date issued.

Project title and locations.

Testing laboratory name and address.

Inspector's name.

Date of inspection or sampling.

Record of temperature and weather.

Date of test.

Identification of product tested.

Test location in project.

Type of inspection or test.

Observations regarding compliance with contract documents.

Laboratory is not authorized to:

Release, revoke, alter, or enlarge on contract document requirements.

Approve or accept any portion of work.

Perform any duties for Contractor.

CONTRACTOR'S RESPONSIBILITIES

Cooperate with laboratory personnel, provide access to work and to manufacturer's operations.

Provide to laboratory, representative samples of materials to be tested, in required quantities.

Furnish casual labor and facilities:

Provide access to work to be tested.

To obtain and handle test samples at site.

To facilitate inspections and tests.

For laboratory's exclusive use for storage and curing of test samples until removed to laboratory.

Notify laboratory at least 24 hours in advance of operations to allow for personnel assignments and test scheduling.

Repair test holes to match original conditions.

1 LIABILITY

2 Laboratory service is provided for Owner's self-assurance and in no way relieves Contractor's
3 responsibility to comply with Contract Documents.

4
5 **PART 2 - PRODUCTS**

6
7 Not Used

8
9 **PART 3 - EXECUTION**10
11 SLAB MOISTURE

12 Testing Standard: ASTM F 1869-98 standard test method for measuring vapor emission rate at interior
13 concrete slabs on grade requiring floor covering using anhydrous calcium chloride.

14 Testing Procedure: Sinak Dome Test vapor emission measuring system; Sinak Corporation, 861 Sixth
15 Avenue, Suite 411, San Diego, CA 92101, phone 800-523-3147.

16
17 SLAB PH LEVEL

18 Method: ASTM F 710 "Standard Practice for Preparing Concrete Floors to Receive Resilient Flooring.
19 Provide tests at area for each new flooring type.

20
21 CAST-IN-PLACE CONCRETE22 Test Concrete Slump as follows:

23 Follow ASTM C-143 and C-172.

24 Prepare tests from same batch as that employed in preparing strength test specimens, unless otherwise
25 directed.

26 If measured slump falls outside specified limits retest immediately from another portion of same load. In
27 event of second failure concrete shall be considered as failing specification requirements.

28 Test Concrete Compressive Strength as follows:

29 Follow ASTM C-31, C-39, and C-172.

30 Prepare not less than 4 test cylinders for each 100 cubic yards or less for each strength of concrete cast
31 in any one day.

32 Break 2 cylinders at 7 days of age, and unless otherwise directed break remainder at 28 days.

33 If any one set of two cylinders does not develop full design strength at 28 days of age, cores may be
34 called for. All coring costs paid by Contractor.

35 If tests indicate concrete has failed to meet specifications, replace substandard material when directed by
36 Architect.

37 Test Concrete Air Content as Follows:

38 Follow ASTM C-231.

39 Test each cylinder containing air entrainment.

40
41
42
43
44
END OF SECTION

PART 1 - GENERAL

SECTION INCLUDES

Temporary utilities and miscellaneous temporary facilities required during construction.

JOB CONDITIONS

Establish and initiate use of each temporary facility at time first reasonably required for proper performance of the work. Terminate use and removal of temporary facilities at earliest reasonable time when no longer needed.

Comply with governing codes and regulations.

Pay required fees and easement assessments.

Enforce safe and sanitary practices.

Maintain clean facilities.

Prevent interference with Owner's normal use of his own facilities.

Prevent wasteful utility uses.

Should Owner occupy part of facility, Owner will pay his proportional utility cost.

PART 2 - PRODUCTS

MATERIALS AND EQUIPMENT

Materials and equipment may be new or used, but must be suitable and adequate in capacity for required usage.

PART 3 - EXECUTION

TELEPHONE

Provide wall-mounted directory at each instrument listing name and business phone number of at least the following:

Each Contractor and Subcontractor

Architect

Architect's Consulting Engineers

Testing laboratories

Physicians

Hospitals

Ambulance

Local Fire Department

ENVIRONMENTAL PROTECTION

General:

Establish procedures among subcontractors to prevent environmental harm (air pollution, water pollution, soil erosion, excessive noise, excessive odors and similar problems).

Comply with environmental regulations.

Complete construction operations by methods that minimize pollution and contamination.

Noise:

Avoid construction operations that produce harmful noise levels. Restrict use of noisy equipment and operations to hours that will have minimum effect on workers and neighboring buildings.

Dust Control:

Provide dust-tight enclosures and/or sprinkle with water where necessary to control dust.

Do not use enough water to cause flooding, icing, or contaminated runoff.

Protect existing return air duct systems against demolition dust by providing filter media across duct openings. Replace dirty media with clean when necessary to protect systems.

Water Run-off Control:

Provide erosion control measures as required by Construction Documents. Provide additional measures if necessary to control erosion.

If high water table is encountered during construction, and water removal is necessary from excavations, lower water table by means of pumping, trenching below water table or other acceptable means to ensure drainage, proper soil compaction and placement of materials.

Dispose of excess water legally.

Where practical, direct excess water to storm water drainage system. Pre-treat water if necessary.

1 Conform to anti-pollution laws and regulations.

2 3 TEMPORARY WATER

4 Mechanical contractor shall provide and maintain water for the following purposes:

5 Service standpipe equipped with sufficient 3/4 inch hydrants that any work Center can be reached
6 with 100 ft. extension hose. Each Contractor shall provide his own extension hoses.

7 Drinking water dispensed in single-service containers or sanitary fountains.

8 Maintain cool as practicable, clean and fresh.

9 Maintain adequate volume.

10 Protect against freezing.

11 Water, in quantities judged reasonable by Architect, will be furnished without charge by Owner.

12 Ascertain where water service is available, provide required connections, and extend system to work
13 area.

14 15 TEMPORARY TOILET FACILITIES

16 General Contractor shall provide at the rate of one fixture for each 40 workers.

17 Type: Comply with Building Code.

18 For enclosures accommodating more than one person, provide privacy screens for each toilet fixture.

19 If both men and women are working, provide separate facilities for each sex.

20 Maintain sufficient light and ventilation.

21 Maintain each toilet with toilet tissue on suitable dispenser.

22 Remove temporary toilets and use building fixtures as soon as feasible.

23 Disinfect premises after removal and restore to specified condition.

24 Do not use Owner's existing facilities.

25 26 TEMPORARY ENCLOSURES

27 Provide sufficient enclosure to prevent infiltration of rainwater, wind and other elements, and prevent
28 undue heat loss from within enclosed area.

29 30 TEMPORARY BARRICADES

31 Provide all necessary to protect public against injury and protect project against damage and
32 unauthorized intrusion.

33 34 TEMPORARY FIRE PROTECTION

35 Provide and maintain necessary facilities and equipment to safeguard project against fire damage.

36 37 TEMPORARY FENCING

38 Provide as shown on drawings to secure work area, 6 ft. high galvanized steel chain-link fencing.

39 40 TEMPORARY ELECTRICITY

41 Power:

42 Electrical Contractor shall provide and maintain structurally and electrically sound temporary power
43 distribution system as follows:

44 Sufficient 20 amp load centers that any work area can be reached with 100 foot extension cord.

45 Each Contractor shall provide his own grounded, UL approved extension cords.

46 Load centers shall include:

47 Weatherproof distribution boxes.

48 Circuit breakers for each outlet.

49 Equipment grounding continuity for entire system.

50 Power at proper voltage for:

51 Temporary field offices.

52 Temporary storage and construction buildings.

53 Temporary lighting and power.

54 Temporary heating and ventilating.

55 Pumping.

56 Testing and checking equipment.

57 Owner's facilities continuous operation during electrical services change over.

58 General Contractor and Subcontractors shall provide their own power and distribution system for field
59 welders and any other special power beyond that specified herein.

Lighting:

Provide and maintain temporary lighting as follows:

30 ft. candles measured 3 feet above floor in spaces during work. Energize permanent lighting fixtures prior to painting, except where fixtures are mounted on walls or ceilings to be painted. Maintain from 14 minutes prior to until 15 minutes past scheduled work hours. Maintain 5 ft candles measured 3 feet above floor as necessary to prevent damage or injury. Maintain when authorized Personnel are present. Provide light control switches at area entrances, or successive areas, so personnel access to project can be through lighted areas.

Wiring:

Prevent conflict with General Construction.

Maintain cords clear of walkways and other heavy traffic areas.

Power Source:

Contractor to utilize a temporary connection on the Owner's power system. Power, in quantities judged reasonable by Architect, will be furnished without charge by Owner.

Ascertain where water service is available, provide required connections, and extend system to work area.

TEMPORARY EXTERIOR ENCLOSURES

Provide temporary weather-tight closure of exterior openings to accommodate acceptable working conditions and protection of products, to allow for temporary heating and maintenance of required ambient temperatures identified in individual specification Sections, and to prevent entry of unauthorized persons.

Provide access doors with self-closing hardware.

Provide temporary roofing as required.

After work is started, Contractor shall provide a watertight roof enclosure at the end of each day's work.

TEMPORARY HEATING AND VENTILATING

Provide temporary heat and ventilation throughout enclosed construction areas to:

Facilitate work progress.

Protect work and products against dampness and cold.

Prevent moisture condensation on surfaces.

Provide suitable ambient temperatures and humidity levels for installation and curing of products.

Provide adequate ventilation to meet health regulations for safe working environment.

Mechanical Contractor shall expedite work so permanent facilities will be structurally, mechanically, and electrically sound throughout and ready to provide "temporary" service as soon as possible.

Operate no permanent heating, ventilating, or air conditioning equipment without Mechanical Engineer's authorization that equipment is properly installed, has clean air filters, and is otherwise properly prepared. Replace temporary air filters with new units and restore system to like-new condition immediately prior to turning project over to Owner.

Temporary portable heaters, as may be required, shall be provided by General Contractor.

Continue temporary heating and ventilation until Owner occupies or finally accepts project, whichever the sooner.

Maintain ventilated areas in clean condition to avoid undue circulation of dust and air-borne particles.

Minimum temperatures to be maintained:

Generally, 24 hours a day: 40° minimum.

Temperatures required for work of various trades: See technical specific specification sections.

Fuel costs for temporary heating shall be paid by General Contractor.

TEMPORARY VERTICAL TRANSPORTATION

General Contractor shall provide and pay costs for temporary stairs, ramps, personnel hoists, chutes, etc., required for execution of work of all trades. Subcontractors shall provide their own material hoists and scaffolds.

VEHICLE PARKING AND MATERIAL STORAGE

Coordinate with Owner's Representative.

Utilize areas shown on Drawings for contractor parking and material storage.

Do not use existing paved streets or paved parking lots.

TEMPORARY FACILITIES AND CONTROLS

01 50 00-4

1 TEMPORARY EQUIPMENT

2 Thermometer:

3 Maintain one 10 inch minimum size outdoor thermometer. Mount at convenient location not in direct
4 sunlight.

5 Temperature Range: Minus 20°F to plus 110°F.

6

7 FACILITIES REMOVAL

8 Remove temporary facilities, at project completion, or sooner, if directed.

9 Repair damage, if any, resulting from temporary facilities.

10

11

12

END OF SECTION

PART 1 - GENERAL

SECTION INCLUDES

General requirements for transportation, handling, storage and protection of materials and equipment.
Contractor's options in selection of products, manufacturers and procedures.

PERFORMANCE REQUIREMENTS

Materials and Equipment incorporated into work shall:

Conform to applicable specifications and standards.

Comply with size, make, type, and quantity specified, unless otherwise approved in writing.

Manufactured and Fabricated Products:

Manufactured like parts of duplicate units to standard sizes and gauges, to be interchangeable.

Two or more items of same kind shall be identical, and by same manufacturer.

Products shall be suitable for service conditions.

Equipment shall comply with capacity, sizes, and dimensions shown or specified, unless otherwise approved in writing.

Do not use Materials or Equipment for any purpose other than that for which designed or specified.

CONTRACTOR'S OPTIONS

For products specified only by referenced standard, select any product meeting standard.

For products specified by naming several products, select any one complying with specifications.

For products specified by naming one or more products and "or accepted substitute," select any one specified product or submit request for substitution as required below.

INAPPROPRIATE PRODUCTS AND METHODS

If Contractor believes that any specified product, method, or system is inappropriate for use he shall, if possible, so notify Architect at least 5 working days prior to bid opening, and if not possible such notice shall be given before performing work in question.

If notice of objection is not received within the specified time limits, it will be assumed by the Owner that Contractor agrees that specified products, methods, and systems are not inappropriate for use on this project.

SALVAGE MATERIAL

All salvageable material will remain the property of the Owner, unless otherwise noted or released for the disposal by the Contractor.

NUMBER OF PRODUCTS REQUIRED

Wherever in Specifications a product is referred to in singular number, such reference shall include as many such products as are shown on Drawings or are required to complete the work.

PRODUCTS LIST

Before Contractor's first request for payment, submit to Architect complete list of major products proposed for use; include proprietary product names, Manufacturer's name, and installing Subcontractor's name.

MANUFACTURER'S INSTRUCTIONS

Perform work in accord with Manufacturer's instructions.

Do not omit preparatory or installation procedures required by Manufacturer, unless specifically modified or exempted by Contract Documents.

When Contract Documents require work to comply with Manufacturer's instructions, obtain and distribute such instructions to parties performing work including two copies to Architect. Maintain one set at job site during installation and until acceptance.

Handle, install, connect, clean, condition, and adjust products in strict accord with such instructions and in conformance with specified requirements.

Should job conditions or specified requirements conflict with Manufacturer's instructions, consult Architect for further instructions.

Do not proceed with work without clear instructions.

TRANSPORTATION AND HANDLING

Arrange product deliveries in accord with construction progress schedule; coordinate to avoid conflict with

work and site conditions.
Deliver products undamaged, in Manufacturer's original containers or packaging, and with legible identifying labels intact.
Immediately upon delivery, inspect shipments to assure that products are properly protected and undamaged.

STORAGE AND PROTECTION

Follow Manufacturer's instructions.
Maintain product identity labels legible and intact.
Store products subject to weather-damage in weathertight enclosures.
Maintain storage room temperature and humidity within ranges required by Manufacturer's instructions.
Maintain reasonable protection against product theft and vandalism.

Exterior Storage:

Store fabricated products above ground, on blocking or skids; prevent product damage and discoloration.
Cover products subject to deterioration with impervious sheet coverings; provide adequate ventilation to prevent condensation.
Store loose granular materials in well-drained area on solid surface to prevent mixing with foreign matter.

Storage of Materials Off-site:

Not allowed unless previously approved by Marion County.

Inspection of Stored Products:

Arrange storage to permit easy access for inspection.
Make periodic inspections of stored products to assure that products are maintained as specified and are free from damage, discoloration, and deterioration.

Protection after Installation:

Provide substantial coverings as necessary to protect installed products against damage and discoloration. Remove covering when no longer needed.

END OF SECTION

PART 1 - GENERAL**SECTION INCLUDES**

Procedures and limitations for cutting, removing, replacing or refinishing products or materials after initial installation of such products or materials.

EXTENT OF WORK

Perform all cutting, fitting, and patching, including attendant excavation and backfill, required to complete work or to:

- Make work fit properly together.
- Uncover work for installation of ill-timed work.
- Remove and replace defective work and work not conforming to Contract Documents.
- Remove samples of installed work for testing.
- Provide penetrations through non-structural surfaces for mechanical and electrical work.

SUBMITTALS

Submit written request for cutting approval to Architect well in advance of any cutting which affects:

- Work of Owner
- Structural value or integrity of any completed or existing work.
- Waterproof value or integrity of any weather-exposed or moisture-resistant work.
- Visual qualities of any sight-exposed work.

Request shall include:

- Project identification.
- Description of affected work.
- Necessity for cutting, alteration, or excavation.
- Effect on Owner's work.
- Effect on structural or weatherproof integrity on completed or existing work.
- Description of proposed work including:
 - Extent of cutting, patching, alteration, or excavation.
 - Trades who will execute work.
 - Products proposed for use.
 - Extent of required refinishing.
- Alternatives to cutting and patching.
- Cost proposal, when applicable.

Submit written notice to Architect designating date and time work will be performed.

PART 2 - PRODUCTS**MATERIALS**

Products similar to those specified elsewhere in this Project Manual:

Follow those specifications.

Other Products:

Follow Architect's instructions.

PART 3 - EXECUTION**EXISTING CONDITIONS**

Inspect existing conditions and identify work subject to damage or movement caused by proposed cutting and patching.

After uncovering work, inspect conditions affecting products installation or performance. Report unsatisfactory and questionable conditions to Architect in writing; do not proceed with work until Architect provides further instructions.

PREPARATION

Maintain adequate temporary support necessary to assure structural integrity of affected work.

Protect other portions of project work against damage and discoloration.

Protect work exposed by cutting against damage and discoloration.

PERFORMANCE

Provide proper surfaces for repairs.

Employ original installer or qualified contractor to perform cutting and patching for:

Weather-exposed or moisture-resistant surfaces.

Sight-exposed finished surfaces.

Restore cut or removed work with new products to provide work complete in accordance with Contract Documents.

Fit work air-tight to pipes, sleeves, ducts, conduits, and other surface penetrations.

Where patching occurs refinish entire surface to provide even finish to match adjacent work as follows:

Continuous Surfaces: Refinish to nearest intersection.

Assemblies: Refinish entire unit.

CUTTING STRUCTURAL FRAMING

Not permitted at any location, unless shown on Drawings or otherwise approved.

Exposed Members:

Not permitted, unless shown on Drawings or otherwise approved.

Concealed Framing Members:

Verify with Structural Engineer.

CLEANING AND REPAIRING

Including work of this section, clean, repair and touch-up, or replace when directed, products which have been soiled, discolored, or damaged by work of this section. Remove debris from project site upon work completion or sooner, if directed.

END OF SECTION

PART 1 - GENERAL**SECTION INCLUDES**

Special procedures for waste recycling, material and equipment recycling, and requirements for indoor air quality prior to building occupancy.

REGULATORY AGENCY REQUIREMENTS

Comply with governing codes, regulations, ordinances, and anti-pollution requirements.

Comply with Environmental Protection Agency standards for indoor air quality as they apply to this project.

Comply with State Department of Environmental Quality standards.

COORDINATION

Coordinate with other trades affecting or affected by Work of this section.

Cooperate to maintain continuous operation of Owner's activities.

PART 2 - PRODUCTS

Not used.

PART 3 - EXECUTION**WASTE RECYCLING**

Recycle waste materials resulting from construction operations to the greatest extent possible unless otherwise specified herein.

Deliver recyclable waste materials, or arrange for transportation to, a construction materials waste recycling company or enterprise.

Provide designated on-site containers for disposal of recyclable and salvageable materials.

Instruct employees and subcontractors on proper sorting and disposal of recyclable materials.

Periodically remove recyclable materials from site.

Dispose of at Contractor's expense at appropriate recycling centers.

Maintain recycling area clean and clearly marked in order to avoid contamination and co-mingling of materials.

Materials to be recycled include, but are not limited to, the following:

- Demolition lumber and wood waste

- Dimensional lumber waste

- Plywood, OSB and particle board

- Cardboard, paper and packaging

- Metals

- Paint

- Glass

- Plastics including foam plastic and film

AIR QUALITY

Minimize dust spread, both to the exterior of the building and within the building, to the greatest extent possible.

Protect existing return air duct systems against demolition dust by providing filter media across duct openings. Replace dirty media with clean when necessary to protect systems.

CLEANING AND REPAIRING

Allow no debris to accumulate in buildings, or on grounds, streets, or walks.

Clean, repair and touch-up, or replace when directed, adjacent property and surfaces which have been soiled, discolored, or damaged by Work of this Section.

END OF SECTION

PART 1 - GENERAL**SECTION INCLUDES**

Cleaning and trash removal during work progress, and at work completion.

REGULATORY AGENCY REQUIREMENTS

Comply with governing codes, regulations, ordinances, and anti-pollution requirements.

PART 2 – PRODUCTS**CLEANING MATERIALS**

Use only those which will not create hazards to health or property and which will not damage surfaces.

Use only those recommended by Manufacturer of surface to be cleaned.

Use only on surfaces recommended by cleaning material manufacturer.

PART 3 – EXECUTION**GENERAL**

Follow cleaning material and surface manufacturer's instructions.

DURING CONSTRUCTION

Periodically clean to maintain work, site and adjacent properties free from accumulations of waste, rubbish, and windblown debris, resulting from construction operations.

Provide on-site containers for collection of waste, debris, and rubbish.

Periodically remove waste material, debris, and rubbish and legally dispose of away from project site.

DUST CONTROL

Clean interior surfaces prior to painting, and continue cleaning as needed until painting is complete.

Schedule cleaning so that resultant dust and contaminants will not fall on wet or newly coated surfaces.

FINAL CLEANING

Remove waste, debris, and surplus material from project site.

Clean grounds as follows:

Paved Surfaces: Remove stains, spills, and foreign substances and sweep clean.

Other Surfaces: Rake clean.

In addition to debris removal and cleaning specified in other sections, clean exposed-to-view interior and exterior surfaces.

Employ skilled workers to perform final cleaning.

Remove any temporary protection and labels not required to remain.

Remove grease, mastic, adhesive, dust, dirt, stains, fingerprints, labels, and other foreign matter from sight-exposed interior and exterior surfaces.

Wash and shine glazing, including mirrors.

Polish glossy surfaces to clear shine.

Vacuum carpet and similar soft materials.

Clean equipment surfaces; remove excess lubricants.

Clean and sanitize food service equipment and plumbing fixtures.

Ventilating system, if used during construction:

Permanent Filters: Clean

Disposable Filters: Replace

Clean Ducts, Blowers, and Coils: Clean

Clean light fixtures and lamps.

Clean Owner provided furniture installed prior to turn-over of the building.

Remove waste, debris, and foreign matter from roofs and roof drainage system.

Maintain structure and components clean until substantial completion.

END OF SECTION

PART 1 - GENERAL**SECTION INCLUDES**

Contract condition requirements and specified administrative procedures in closing out work.

RELATED DOCUMENTS

"Marion County General Conditions for Public Improvement Contracts"

SUBSTANTIAL COMPLETION

When Contractor considers work substantially complete, as defined in General Conditions, he shall submit to the Architect:

Written notice that work, or designated portion thereof, is substantially complete.

List of items to be completed or corrected.

Architect will, as soon as possible thereafter, make inspection to determine completion status.

Should Architect determine that work is not substantially complete:

Architect will promptly notify Contractor in writing, giving reasons therefore.

Contractor shall remedy work deficiencies, and send second Notice of Substantial Completion to Architect.

Architect will reinspect.

When Architect concurs that work is substantially complete, he will:

Prepare Certificate of Substantial Completion using AIA Form G704, accompanied with Contractor's list of items to be completed or corrected.

Submit Certificate to Owner and Contractor for their written acceptance of the responsibilities assigned to them in the Certificate.

FINAL INSPECTION

When Contractor considers work complete, he shall submit written certification that:

Contract Documents have been reviewed.

Contractor has inspected work for compliance with Contract Documents.

Work has been completed in accordance with Contract Documents.

Equipment and Systems have been tested in presence of Owner's Representative and are operational.

Work is complete and ready for final inspection.

Architect will inspect work to verify completion status as soon as possible after receipt of Contractor's certification.

Should Architect consider work incomplete or defective:

Architect will promptly notify Contractor in writing, listing incomplete or defective work.

Contractor shall immediately remedy deficiencies, and send second written certification to Architect that work is complete.

Architect will reinspect work.

When Architect finds work acceptable under Contract Documents, he shall request Contractor to make closeout submittals.

REINSPECTION FEES

Should Architect be required to make more than two final inspections due to Contractor's failure to correct specified deficiencies:

Owner will compensate Architect for such additional services.

Owner will deduct Architect's compensation amount from Contractor's final payment as follows:

Architect's time at \$170.00 per hour.

Architect's employees time at currently published hourly rates.

Others at 1.10 times the direct cost incurred.

Charges will be made for necessary travel time, auto expense computed at the

Architect's currently published mileage rate, and all other expenses incurred in making inspections.

EVIDENCE OF PAYMENTS AND RELEASE OF LIENS

Contractor shall submit the following:

Contractor's Affidavit of Payments of Debts and Claims, AIA Document G706.

Contractor's Affidavit of Release of Liens, AIA Document G706A including the following:

1 Consent of Contractor's Surety to Final Payment, AIA Document G707.
2 Contractor's Release of Waiver of Liens.
3 Separate releases or waivers of lien for Subcontractors, Suppliers, and others with lien
4 rights against Owner's Property, together with list of those parties.
5 Duly sign and execute all submittals before delivery to Architect.
6

CONTRACTOR'S CLOSEOUT SUBMITTALS TO ARCHITECT**Extra Materials:**

9 Verify and comply with each specification section for required extra stock of materials or product.
10 Certificate of domestic water disinfection.
11 Project Record Documents, see Section 01 78 39.
12 Owner's Operating and Maintenance Manual, see Section 01 78 23.
13

INSTRUCTION

14 Instruct Owner or Owner's personnel in operations of all systems and equipment in accordance with
15 Section 01 78 23.
16

FINAL ADJUSTMENT OF ACCOUNTS

17 Submit final statement of accounting to Architect, including the following:

20 Original contract sum.

21 Additions and deductions resulting from:

22 Previous change orders.

23 Other adjustments.

24 Deductions for uncompleted work.

25 Deductions for reinspection payments.

26 Total Contract Sum, as adjusted.

27 Previous payments.

28 Sum remaining due.

29 Architect will prepare and issue final Change Order, reflecting approved adjustments to Contract Sum not
30 previously made by change orders.
31

FINAL APPLICATION FOR PAYMENT

32 Follow procedures specified in Supplementary Conditions, Section 00 7300.
33
34
35

36 END OF SECTION

PART 1 - GENERAL

SECTION INCLUDES

Compile product data and related information appropriate for Owner's maintenance and operation of Products furnished under Contract.

Prepare as specified herein and in other specification sections.

Instruct Owner's personnel in maintenance of products and in operation of equipment and systems.

RELATED DOCUMENTS

"Marion County General Conditions for Public Improvement Contracts"

QUALITY ASSURANCE

Data preparation shall be done by personnel:

Trained and experienced in maintenance and operation of described products.

Completely familiar with requirements of this section.

Sufficiently skilled as technical writer to communicate essential data.

Sufficiently skilled as draftsman to competently prepare required drawings.

FORM OF SUBMITTALS

Printed Copies:

Prepare data in form of instructional manual for use by Owner's personnel.

Format:

Size: 8 1/2 X 11 inches.

Text: Manufacturer's printed data or neatly typed.

Drawings:

Reinforce edges against tear-out.

Bind-in with text.

Fold larger drawings to match size of text pages.

Provide fly-leaf for each separate product.

Identify each fly-leaf with labeled tabs.

Cover: Identify each volume with typed or printed title "Operating and Maintenance Instructions," and list:

Project title

Identity of general subject matter contained in manual.

Electronic Copy:

Prepare data in the form of PDF files. Electronic files must be separate for each Division.

Provide one copy to the Owner on flash drive.

PART 2 - PRODUCTS

BINDERS

Commercial quality, three-ring type with durable and cleanable plastic covers.

When multiple binders are used, correlate data into related consistent groupings.

MANUAL CONTENT, GENERAL

Neatly typewritten table of contents for each volume, arranged in systematic order.

List:

Contractor, name of responsible principal, address, and telephone number.

Each product including name, address, and telephone number of:

Subcontractor or installer

Recommended maintenance contractor

Local source for replacement parts

Product name and other identifying symbols as set forth in Contract Documents.

Product Data:

Include only those sheets which are pertinent to specific product.

Annotate each sheet to:

Clearly identify product or part installed.

Clearly identify data applicable to installation.

Delete references to inapplicable data.

Drawings:

- Supplement product data with drawings where necessary to clearly illustrate:
 - Relations of component parts
 - Control and flow diagrams
- Do not use Project Record Documents as maintenance drawings.

Written Text:

- Provide where necessary to supplement Product Data and Drawings.
- Organize in consistent format under separate headings for different procedures.
- Provide logical sequence of instructions for each procedure.

Warranties, Bonds, and Maintenance Contracts:

- Provide copy of each.
 - Including the following:
 - Proper procedures in event of failure.
 - Instances which might affect validity or Warranties, Bonds, or Contract.

MANUAL FOR ARCHITECTURAL MATERIALS AND FINISHES

Include the following Manufacturer's data:

- Catalog number, size, composition.
- Color and texture designations.
- Required reordering information.
- Recommended cleaning materials and methods.
- Cautions against detrimental cleaning materials and methods.
- Recommended cleaning and maintenance schedule.

Submit specified information as called for in each specification section.

MANUAL FOR WEATHER PROTECTION MATERIALS

Include the following Manufacturer's data:

- Applicable manufacturing standards.
- Instructions for inspection, maintenance, and repair.

Submit specified information as called for in each specification section.

MANUAL FOR MECHANICAL EQUIPMENT AND SYSTEMS

Include the following Manufacturer's data:

- Description of unit and component parts including:
 - Function, normal operating characteristics, and limiting conditions.
 - Performance curves, engineering data and tests.
 - Complete nomenclature and commercial number of replaceable parts. Operating procedures including:
 - Start-up, break-in, routine and normal operating instructions.
 - Regulation, control, stopping, shut-down, and emergency instructions.
 - Summer and winter operating instructions.
 - Special operating instructions.
- Maintenance procedures including:
 - Routine operations.
 - Trouble-shooting guide.
 - Disassembly, repair, and reassembly.
 - Alignment, adjusting, and checking.
 - Servicing and lubricating schedule, including recommended Lubricants.
- Manufacturer's printed operating and maintenance instructions.
- Control Systems operation sequences.
- Parts list, illustrations, assembly drawings, and diagrams necessary for maintenance, including:
 - Life expectancy of parts subject to wear.
 - Items recommended to be stocked as spare parts.
- As-installed control system diagrams.
- Color-code legend, if any.
- Valve Tag Number Chart, with location and function of each valve.
- Submit specified information for the following:
 - Mechanical Equipment specified in Division 23.

MANUAL FOR ELECTRICAL EQUIPMENT AND SYSTEMS

Include the following Manufacturer's data:

Description of unit and component parts including:

Function, normal operating characteristics, and limiting conditions.

Performance curve, engineering data and tests.

Complete nomenclature and commercial number of replaceable parts.

Panelboard circuit directories indicating:

Electrical service.

Controls.

Communications, if any.

As-installed wiring color-code legend, if any.

Operating procedures, including:

Routine and normal operating instructions.

Sequences required.

Special operating instructions.

Maintenance procedures, including:

Routine operations.

Trouble-shooting guide.

Disassembly, repair, and reassembly.

Adjustment and checking.

Manufacturer's printed operating and maintenance instructions.

Parts list, including current prices, and recommended spare parts to be maintained in storage.

Submit specified information for the following:

Electrical equipment specified in Divisions 23 and 26.

ADDITIONAL DATA

Prepare and include the following:

Additional data when need become apparent during instruction of Owner's personnel.

Additional data specified in other sections of Specifications to be included.

PART 3 - EXECUTION

SUBMITTAL SCHEDULE

Preliminary Draft:

Submit two copies of proposed format. Architect will review, and return one copy with comments.

Final Submittal:

Submit, in final form, one copy of complete data 15 days prior to final inspection.

Copy will be returned with comments.

Submit three paper copies and one electronic copy, in approved final form, within 10 days of final inspection.

INSTRUCTION OF OWNER'S PERSONNEL

Prior to final acceptance, instruct Owner's personnel in operation, adjustment, and maintenance of all products, equipment, and systems.

Operating and Maintenance Manual shall constitute basis of instruction.

Submit training materials and instruction schedule for Architect's review and acceptance at least 30 days prior to training session.

Training:

Location: At project site.

Review manual contents with Owner's personnel in detail to explain all aspects of operations and maintenance.

END OF SECTION

1 REQUIREMENTS INCLUDED

2 Compile specified warranties and bonds.
3 Compile specified service and maintenance contracts.
4 Review submittals to verify compliance with Contract Documents.
5

6 RELATED DOCUMENTS

7 "Marion County General Conditions for Public Improvement Contracts"
8

9 SUBMITTAL REQUIREMENTS

10 Assemble warranties, bonds and service and maintenance contracts, executed by each of the respective
11 Manufacturers, Suppliers, and Subcontractors.

12 Number of original signed copies required: Provide 1 for each volume of Owner's maintenance manual
13 as specified in Section 01 78 23.

14 Table of Contents: Neatly typed in orderly sequence.

15 Provide complete information for each item:

16 Product or work item.

17 Firm, with name of principal, address and telephone number.

18 Beginning date of warranty, bond, or service and maintenance contract.

19 Duration of warranty, bond, or service and maintenance contract.

20 Provide the following information for Owner's personnel:

21 Procedure in case of failure or malfunction.

22 Instances which affect warranty or bond validity.

23 Contractor, name of responsible principal, address, and telephone number.
24

25 SUBMITTAL FORM

26 Punch sheets for standard 3-ring binder.

27 Size: 8 1/2 x 11 inches.

28 Fold larger sheets to fit into Binder.

29 Cover: Identify each packet with typed or printed title "WARRANTIES AND BONDS".

30 List:

31 Title of project.

32 Name of Contractor.

33 Electronic Copy:

34 Prepare data in the form of PDF files.

35 Provide one copy to owner on flash drive.
36

37 SUBMITTAL TIME

38 See Section 01 78 23.
39

40 SUBMITTAL LOCATION

41 Bind into Owner's maintenance manuals specified in Section 01 78 23.
42

43
44 **END OF SECTION**
45

PART 1 - GENERAL**SECTION INCLUDES**

Procedures for Record Documents to be used throughout the execution of the work and at final completion of the work.

RELATED DOCUMENTS

"Marion County General Conditions for Public Improvement Contracts"

SUBMITTAL

At Contract close-out deliver Record Documents to Architect for Owner.

Provide two paper copies and one electronic copy of all documents.

Accompany submittal with transmittal letter in duplicate, containing:

Project title.

Date.

Contractor's name and address.

Title and number of each Record Document.

Signature of Contractor or his authorized representative.

PART 2 - PRODUCTS**REQUIRED DOCUMENTS**

Maintain at project site for Owner one record copy of:

Contract Drawings and Specifications.

Addenda.

Change Orders and other Contract Modifications.

Field Orders and other written instructions.

Approved Shop Drawings, Product Data, and Samples.

Field Test Reports.

REQUIRED DRAWINGS

Maintain one black-line or blue-line print of Contract Drawings as "work set", marking as required to record all Contract changes.

Prior to submittal, transfer recorded information to electronic format, such as PDF.

Contractor may retain "work-set" for his records.

PART 3 - EXECUTION**MAINTENANCE OF DOCUMENTS AND SAMPLES**

Store in Contractor's field office apart from documents used for construction.

Provide files, shelving, and cabinets necessary to safely and securely store documents and samples.

Maintain documents clean, dry, legible, and in good order.

Do not use Record Documents for construction purposes.

Make documents available at all times for Architect's inspection.

RECORDING

Label each document "Project Record" in neat, large, printed letters.

Record information concurrently with construction progress.

Do not conceal any work until required information is recorded.

Drawings; legibly mark to record the following actual construction:

Depths of foundation elements in relation to first floor elevation.

Horizontal and vertical locations of underground utilities and Appurtenances, referenced to permanent surface improvements.

Location of internal utilities and appurtenances concealed in construction, referenced to visible and accessible features of structure.

Field changes of dimensions and details.

Changes made by Change Order or Construction Change Directive.

Details not shown on original Contract Drawings.

Specifications and Addenda: Legibly mark to record the following:

- 1 Manufacturer, trade name, catalog number, and supplier of each product actually installed.
 - 2 Changes made by Change Order or Construction Change Directive.
 - 3
 - 4
- END OF SECTION

PART 1 - GENERAL**SECTION INCLUDES**

Interior demolition such as removing partitions, doors, equipment, fixtures and components, identify and cap utilities, clean up and preparation, temporary partitions.

SALVAGE

To Owner:

None.

To Contractor:

Items noted for reuse in new project.

All other salvage becomes property of Contractor. It may be re-used on work if Architect judges it equal to new products specified.

Remove other debris from site.

COORDINATION

Coordinate with other trades affecting or affected by work of this section.

Cooperate to maintain continuous operation of Owner's activities.

PART 2 - PRODUCTS**PLYWOOD**

Sound; thickness as required to satisfy installation and use conditions.

PLASTIC SHEETING

Clear or translucent polyethylene sheets, minimum 6 mil thickness.

FILTER MEDIA

Fiberglass, 8 inch minimum thickness, or accepted substitute.

WHEELING EQUIPMENT

Use only pneumatic-tired equipment.

PART 3 - EXECUTION**EXAMINATION**

Verify that area to be demolished is vacant and not in use.

Do not start work until conditions are satisfactory.

PREPARATION

General:

Arrange for, and verify utility service termination including capping active lines.

Remove Salvage and store where directed.

Protect existing portions which are to remain against damage and discoloration.

Allow no leaks, even temporary, in existing building.

Barriers, Safety Guards, and Warning Lights:

Provide where necessary for public protection.

Utilities:

Keep active utilities intact and in continuous operation.

Party Walls:

Exercise extreme care not to damage party walls and adjacent construction.

DUST-PROOF PARTITIONS

Build as shown on Drawings to prevent dust-spread.

Fasten plywood solidly to studs and cross blocking.

Cover joints with reinforced kraft paper cemented in place.

Maintain dust-proof; remove only when no longer needed.

Provide access and egress doors as required to maintain fire escape routes.

DUST CURTAINS

- Construct of plastic sheeting.
- Provide where necessary or where directed to prevent dust-spread.
- Install continuously from floor to ceiling.
- Fasten to existing construction in such a manner to prevent sagging and accidental damage or removal.
- Do not damage existing construction to remain.
- Cover joints with tape.
- Provide temporary supports for sheeting as required.
- Maintain dust-proof; remove only when no longer needed.
- Provide access and egress curtains as required to maintain fire escape routes.

CLEANING AND REPAIRING

- Allow no debris to accumulate in buildings, or on grounds, streets, or walks.
- Haul away from site as soon as removed. Do not burn or bury materials on site.
- Dispose of at Contractor's expense.
- Clean, repair and touch-up, or replace when directed, adjacent property and surfaces which have been soiled, discolored, or damaged by work of this section.

PROTECTION

- Protect work specified herein against damage and discoloration.
- Protect other work against damage and discoloration caused by work of this section.

END OF SECTION

PART 1 - GENERAL**SECTION INCLUDES**

Reinforcing steel and required supports for cast-in-place concrete and reinforced masonry.

REFERENCES

"2022 Oregon Structural Specialty Code (OSSC) based on the International Building Code (IBC) 2021 Edition", published by the International Code Council (ICC).

"Manual of Standard Practice for Detailing Reinforced Concrete Structures Standard 315" (ACI Manual 315), published by American Concrete Institute, Box 19150, Redford Station, Detroit, Mich. 48219.

"Manual of Standard Practice" (CRSI Manual), published by Concrete Reinforcing Steel Institute, 180 N. LaSalle Street; Chicago, Ill. 60601.

SUBMITTALS

Submit in accordance with Section 01 33 00.

Shop Drawings:

Follow ACI Manual 315.

PRODUCT DELIVERY, HANDLING AND STORAGE

Protect against damage, rust, mud, grease, and oil.

Tag each piece or bundle; indicate size, grade, and location.

COORDINATION

Coordinate with other trades affecting or affected by work of this section.

PART 2 - PRODUCTS**BARS**

ASTM A 615, #3 and smaller: Grade 40; #4 and larger: Grade 60.

SMOOTH WIRE REINFORCING

ASTM A 615, Grade 60.

TIE WIRE

Black, annealed steel 16 ga. minimum; Fed. Spec. QQ-W-461.

ACCESSORIES**General:**

Conform to CRSI "Manual of Standard Practice.

Include all devices necessary for proper reinforcement placement, spacing, supporting, and fastening.

Fabricate from concrete ceramics, metal or plastic. Galvanize metal accessories in contact with finished concrete surfaces.

Slab-on-grade Bar Supports:

Precast concrete spacer blocks at bars placed over vapor retarders; wire chairs permitted only where vapor retarders are not scheduled.

FABRICATION

Follow CRSI "Manual of Standard Practice."

TOLERANCES**Fabrication:**

Sheared length: Plus or minus 1 inch.

Stirrup, Spiral, and Tie dimensions: 1/2 inch plus or minus.

All other bend dimensions: Plus or minus 1 inch.

PART 3 - EXECUTION**EXISTING CONDITIONS**

Verify that surfaces to receive reinforcement are accurately sized and located, square, plumb, rigid,

secure, and otherwise accurately prepared.
Prior to starting work notify general contractor of defects requiring correction.

INSTALLATION

General:

Conform to Building Code and the following:

Bending:

Bend bars without heat.

Field bending partially embedded bars not permitted without Architect's approval.

Placing:

Secure against displacement.

Do not displace or damage vapor barrier.

Spacing:

Clear distance between parallel bars, including splices, unless otherwise permitted by Code, not less than:

Nominal Bar diameter.

1-1/2 times maximum concrete aggregate size.

1 inch.

Splicing:

Do not weld or tackweld reinforcement splices.

Minimum Lap at Splices at Bar Reinforcement: 24 bar diameters.

Protective Concrete Covering:

At principal structural members cast directly against the ground, including footings: 3 inches minimum.

At principal structural members in direct contact with the ground after formwork removal: 2 inches minimum.

At walls not exposed directly to ground or weather: 3/4 inches minimum, or bar diameter, whichever the larger.

All other locations: 1-1/2 inches minimum, or bar diameter, whichever larger.

SPECIAL REINFORCEMENT, unless otherwise shown on Drawings

At Corners and Intersections:

Splice horizontal wall reinforcing with corner bars; same size and spacing. Extend beyond corner or intersection 40 bar diameters, minimum.

TOLERANCES

Placement:

Concrete cover: Plus or minus 1/4 inch.

Spacing between Bars: 1/4 inch.

Top Bars in Slabs and Beams:

Members 8 inches deep or less: Plus or minus 1/4 inch.

Members from 8 to 24 inches deep: Plus or minus 1/2 inch.

Members more than 24 inches deep: Plus or minus 1 inch.

Stirrups and Transverse Bars: Space evenly within 2 inches of stated separation.

Bar relocation to avoid interference with other reinforcement, conduits, or embedded items: 1 Bar diameter, unless otherwise approved by Architect.

COORDINATION

Coordinate with other trades affecting or affected by work of this section.

CLEANING AND REPAIRING

Prior to concrete placement, remove loose flaky rust, mud, oil, and other bond-reducing coatings; conform to IBC, Chapter 19.

Remove debris from project site upon work completion or sooner, if directed, including work of other sections, clean, repair and touch-up, or replace when directed, products which have been soiled, discolored, or damaged by work of this section.

END OF SECTION

PART 1 - GENERAL**SECTION INCLUDES**

Cast-in-place or in-situ concrete for structural building frame, slabs on fill or grade, and other concrete components associated with the construction.

RELATED SECTIONS

03 20 00 Concrete Reinforcement

SUBMITTALS

Submit in accordance with 01 33 00.

Shop Drawings:

For any location where layout and detailing has been provided in the Contract Documents, submit Shop Drawings indicating understanding for architect's approval.

Product Data:

Design Mixes: Submit for each type and class of concrete specified.

Include prior laboratory test data and compressive strength results in accordance with ACI 301 and ASTM standards.

Indicate amounts of mixing water to be withheld for later addition at Project site.

Samples:

Pigment Color Selection: Submit manufacturer's complete sample chip set, including pigment number and required dosage rate for each color.

Verification Samples: Submit sample chips of specified colors indicating pigment numbers and required dosage rates, for subsequent comparison to installed concrete.

QUALITY ASSURANCE

Perform work in accordance with ACI 301.

Obtain materials from same source throughout the work.

Installer Qualifications:

A qualified installer with a minimum of 3 years of experience, who employs on Project personnel qualified as ACI-certified Flatwork Technician and Finisher and a supervisor who is an ACI-certified Concrete Flatwork Technician."

Manufacturer Qualifications:

A firm with a minimum of 3 years of experience in manufacturing ready-mixed concrete products and that complies with ASTM C 94/C 94 M requirements for production facilities and equipment."

Pre-Installation Meeting:

Convene one week before starting work of this section to verify project requirements, coordinate with installers of other work, embedded items and penetrations required by other trades.

Establish condition and finish of concrete surfaces, including exposed form finish concrete.

Review construction joint layouts at walls and slabs.

Review control joint layouts at slabs.

SUSTAINABILITY REQUIREMENTS**Volatile Organic Compounds:**

Comply with the following limits for VOC content when calculated according to 40 CFR 59, Subpart D (EPA method 24):

Concrete Curing and Hardening Compounds: 60 g/L

Concrete Sealer: 10 g/L

PRODUCT DELIVERY, HANDLING, AND STORAGE

Protect against deterioration, foreign matter intrusion, contamination, and dampness.

Conform to ASTM C 94.

ENVIRONMENTAL REQUIREMENTS**Cold Weather:**

Place no concrete on frozen subgrade.

Remove ice and snow from reinforcing, forms, and embedded items.

Raise temperature of all surfaces in contact with concrete above freezing prior to concrete placement.

Minimum concrete temperature during placement: 65°F.

Minimum concrete temperature for 72 hours after placement: 55°F.
 Maximum air temperature drop during first 24 hours after protection removal: 55°F.
 Use of salts or chemical admixtures to prevent concrete freezing prohibited.
 Do not permit temporary heaters to locally over-heat or over-dry concrete.
 Assume responsibility, including costs, for testing suspected frozen concrete.
 Remove and replace freeze-damaged concrete at contractor's expense.
Warm Weather:
 When air temperature exceeds 90°F and when wind exceeds 20 mph place concrete in accordance with the following requirement:
 Maximum concrete temperature at time of placement 75°F.
 Mix concrete minimum possible time, and place as soon as possible thereafter.
 Sprinkle forms, reinforcing, embedded items, and subgrade with cool water immediately prior to concrete placement.
 Protect unstripped formwork and exposed concrete surfaces against excessive drying with water spray, or other approved method.
 Assume responsibility, including costs, for testing suspected damaged concrete.
 Remove and replace damaged concrete at contractor's expense.

COORDINATION

Coordinate with other trades affecting or affected by work of this section.

PART 2 - PRODUCTS

PORTLAND CEMENT

ASTM C 150, Type 1.
 Use one brand only for exposed concrete.

AGGREGATE

Conform to ASTM C 33.
 Maximum size: 1-1/2 inch, and not more than one-fifth of narrowest space between forms, one-third of slab depths, nor three-fourths of minimum clear space between reinforcing bars.
 Use same source for course and fine aggregate used in exposed concrete.
 Minimum 60% of surface of course aggregate to have crushed faces.

ENTRAINED AIR

ASTM C 260, non-toxic after 30 days, not containing chloride.
 Provide in exterior curbs, walks, and flatwork that are subject to freezing while wet.

WATER REDUCING ADMIXTURES (PLASTICIZER)

ASTM C 494, Type A.
 Provide at all concrete slabs on grade.
 Provide with dosages high enough to reduce water by minimum 10% from the same mix without admixture.

CALCIUM CHLORIDE

Not approved for use.

BONDING AGENT

Euclid "Flex-Con", W.R. Meadows "Interlock 1059", Sika "Sika Bond", Tammsweld, Larsen "Weld-Crete", Nox-Crete "Vinl-hesive", Dayton Superior J-40, or accepted substitute.

EXPANSION JOINT FILLER

W.R.Meadows Fibre Expansion Joint #320-F, 1/2 inch thick, conforming to ASTM D 1751.
 Depth as required to bring top to within 1/4 inch of surface of slab.

STANDARD GROUT

Parts by volume:

Cement	1
Lime	1/4

1	Fine Aggregate	3
2	Pea Gravel, as graded below	1 1/2
3	<u>Sieve Size</u>	<u>% Passing</u>
4	3/8	95-100
5	#3	45-75
6	#4	10-20
7	#8	0-5

8 Water: Minimum amount to produce required compressive strength at 28 days, and to provide pouring
9 consistency without aggregate segregation.

10 Provide around pipes, conduit and ducts passing through floors and walls, and elsewhere necessary to
11 prevent air and sound passage through walls and floors.

12 FLOOR FILLER

13 Dowman "Fix-All", or accepted substitute.

14 Provide over concrete floor slabs which are too rough or uneven to provide satisfactory base for resilient
15 covering or carpeting.

16 CURING AND HARDENING COMPOUNDS

17 Interior Flatwork to receive Finish Covering:

18 Clear, colorless, with fugitive dye, approved by covering contractor; meet or exceed ASTM C 309, Type 1.

19 Interior Flatwork without Finish Covering:

20 Water-based chemical hardener; Dayton Superior "Day-Chem Hardener J-15", Tamms "Hornolith," Euclid
21 "Surfhard", Sonneborn "Lapidolith," Nox-crete "Harbeton," or accepted substitute.

22 Do not apply curing compound to surfaces scheduled to receive ceramic or stone tile. Wet cure only.

23 CONCRETE SEALER

24 At interior flatwork without finish covering, provide topcoat sealer, Prosoco "Consolideck LS" or accepted
25 substitute.

26 OTHER INGREDIENTS

27 Conform to Building Code.

28 CONCRETE MIX DESIGN

29 General:

30 Conform to ACI Code 318-02 and 201 OSSC Section 1905.

31 Selection of concrete proportions shall be based on required average compressive strength of concrete
32 f'cr stated in table below unless concrete production facility has 15 or more test records meeting the
33 requirements of ACI-11 5.3.1.

34 Documentation that proposed concrete proportions will produce an average compressive strength equal
35 to or greater than required average compressive strength f'cr shall consist of more than 30 but not less
36 than 10 consecutive test records which encompass a period of time not less than 45 days. Such records
37 shall represent materials and conditions similar to those expected. When an acceptable record of field
38 test results is not available, concrete proportions may be established based on trial mixtures meeting the
39 requirements of ACI-11 5.3.3.2.

40 Concrete Strength and Minimum Cement Content:

41 Location	42 f'c	43 Max w/c ratio	44 Min. cement (sacks/cu. yd.)
45 Slabs-on-grade, Curbs	46 3500 psi	47 0.44	48 5.5

49 Note: One sack of cement equals 94 lbs.

50 Engineer may order cement content for any class of concrete to be increased over the quantity specified
51 if determined that such increase is necessary to attain required strength. Increased quantities of cement
52 ordered to be furnished by contractor at no additional cost to owner.

53 Air Entrainment:

54 Footings: 2% to 4% of concrete volume.

55 Walls, Exterior Slabs: 4% to 6% of concrete volume.

56 Concrete Slump:

57 Minimum: 2 inches.

58 Slabs-on-grade, Curbs: Maximum 4 inches, 7 inches maximum with plasticizers.

59 Footings: 6 inches.

Verify that design mix test results reflect the slumps to be used and adequate slump is produced to

properly transport and place the mix.

PART 3 - EXECUTION

EXISTING CONDITIONS

Verify that formwork, reinforcement, and embedded items are accurately and securely placed, clean, water and frost-free, and ready to receive concrete.

Verify that vapor retarder is not punctured or otherwise damaged. Repair all damage.

Remove water from vapor retarder with portable high-speed air blowers just prior to slab-on-grade pour.

Prior to starting work notify General Contractor of defects requiring correction.

Do not start work until conditions are satisfactory.

SURFACE PREPARATION

Remove foreign matter from surfaces and areas to receive concrete.

If vapor retarder is wet, blow water off with power blower.

Sprinkle subgrades and other porous surfaces with water to eliminate suction.

Install slab-on-grade screeds without penetrating vapor retarder.

PLACING

Convey and place by methods which will prevent material separation and loss.

Deposit continuously, or in layers that will not form seams or weakened planes; where seams or weakened planes are unavoidable provide construction joints as specified hereunder.

Do not convey pneumatically placed concrete through aluminum pipe.

Do not retemper or use set concrete.

Maximum height of vertical drop without use of trunk, placement ports in sides of formwork, or other approved method is five (5) feet. When under-water concrete placement is approved, deposit fresh concrete into mass of previously placed concrete causing water to be displaced with minimum concrete surface disturbance.

COMPACTION

Employ mechanical high frequency vibrators to consolidate concrete around reinforcement, into corners and angles of forms, and to exclude rock pockets, air bubbles, and honey comb.

Hold vibrator in one spot no longer than 30 seconds; keep in constant motion, insert and withdraw at points approximately 18 inches on center.

Maintain vibrator in vertical position when penetrating concrete.

Transporting concrete with vibrator not permitted.

Maintain spare vibrator at jobsite during concrete placement.

CURING

Curing Period:

Not less than 7 days at 50°F minimum.

Interior Flatwork:

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

Maintain concrete with minimal moisture loss at relatively constant temperature for period necessary for hydration of cement and hardening of concrete.

Avoid alternate wetting and drying and fluctuations of concrete temperature.

Curing compound prohibited at interior slabs-on-grade installed over vapor retarder.

Moist cure interior slabs-on-grade installed over vapor retarder only when weather conditions involve high temperatures, wind, or both. Moist cure for minimum 48 hours.

Cure concrete slabs scheduled to receive ceramic tile by keeping the surface continuously moist for minimum 48 hours. Do not use curing compounds.

Immediately prior to occupancy clean interior floors to remain exposed and treat with hardener.

CONSTRUCTION JOINTS IN FLATWORK

General:

Form to true, straight lines, with slabs flush at joints.

Locate under walls wherever possible.

Spacing:

At Interior Flatwork:
Spacing shown on Drawings.

CRACK CONTROL JOINTS IN FLATWORK

General:

Form to true, straight lines, with slabs flush at joints.

Spacing:

At Interior Flatwork:

Maximum slab area without joints: 300 sq. ft.

Maximum spacing, unless otherwise shown on Drawings:

At uncovered Flatwork: 15 ft. apart, both ways.

At covered Flatwork: 15 ft. apart, both ways.

At Exterior Flatwork:

Maximum spacing, unless otherwise shown on Drawings:

At Walks and Drives: 15 ft. apart, both ways.

At Curbs: 15 ft. apart.

VOIDS AND GRAVEL POCKETS

Repair as directed wherever, in Architect's opinion, it is necessary.

CONCRETE SLAB FINISHES

General:

Screed all slabs, for whatever finish, to true levels or slopes.

Non-Slip Finish:

Screed and tamp to bring fine particles to surface.

Float with wood or carpet float to true surfaces.

Slightly roughen surfaces with hair broom before tooling edges.

Mark off slabs as shown or directed; round edges to 1/4 inch radius.

Provide at exterior driveways and walks unless otherwise indicated.

Troweling:

At interior slabs-on-grade installed over vapor retarder: Provide single finish troweling.

Do not absorb wet spots with Neat cement or mixture of cement and sand.

Wait until surfaces are dry enough for proper troweling.

Chemical dryers not permitted.

Trowel floors level to true slopes.

Provide at all concrete slabs unless otherwise noted.

Slopes to Drains:

True to line, evenly graded, 1/8 inch per foot unless otherwise shown on Drawings.

STANDARD GROUT

Saturate concrete contact surfaces prior to grouting. Remove excess water.

Thoroughly compact grout free of air pockets. Do not vibrate.

Cure with moisture for 24 hours minimum.

Do not retemper set grout.

FLOOR FILLER

Prime floor with asphalt emulsion prior to filler application.

Mix filler with asphalt emulsion as required to improve bond.

TOLERANCES

Troweled Surfaces: True within 1/8 inch per 10 ft.

Non-Slip Surfaces: True within 1/4 inch per 10 ft.

All Other Surfaces: True within 1/4 inch per 2 ft.

FIELD QUALITY CONTROL

Tests:

Average minimum test results for lab-cured concrete cylinders, compression:

Design Strength	Lab-Cured Value
-----------------	-----------------

3,000 psi	3,750 psi
-----------	-----------

1 3,500 psi 4,400 psi
2 4,000 psi 5,000 psi

3 If a test cylinder shows manifest evidence of damage, improper sampling, molding, or testing, it shall be
4 discarded and the remaining cylinders strengths averaged.

5 During the progress of the work, if lab-cured values shown for each concrete design strength and quality
6 as determined by compression test cylinders and tests fail to attain the requirements specified, suspend
7 all concrete work until new mixes are designed and reviewed as outlined.

8 Concrete that has been placed and does not meet specified requirements will be reviewed by the
9 Architect and Contractor.

10 Any field testing such as core drilling required to verify in-place concrete strengths shall be at the
11 Contractor's expense.

12 Correct or remove defective work in a manner approved by the Architect with no additional cost to the
13 Owner.

14 Inspection:

15 Notify Architect at least 24 hours before intended concrete placement.

16 Place no concrete until formwork and reinforcement have been inspected.

17
18 **DEFECTIVE WORK**

19 Remove and replace, when directed by Architect, loose topping, surfaces which show excessive cracks,
20 any slabs which do not drain properly, and other defective concrete. On surfaces scheduled to receive
21 floor or wall coverings remove, by grinding if necessary, defects of magnitude to show through covering.

22 Remove honeycombed and other defective concrete down to sound concrete. If chipping is necessary,
23 shape edges perpendicular to surface or slightly undercut.

24 Feathered edges not permitted.

25
26 **CLEANING AND REPAIRING**

27 Remove debris from project site upon work completion or sooner, if directed.

28 Including work of other sections, clean, repair and touch-up, or replace when directed, products which
29 have been soiled, discolored, or damaged by work of this section.

30
31 **PROTECTION**

32 Protect work specified herein against damage and discoloration.

33 Protect other work against damage and discoloration caused by work of this section.

34
35
36 **END OF SECTION**

PART 1 -GENERAL**SECTION INCLUDES**

Treatment of wood products to increase their durability against decay or retard burning characteristics.

PRODUCTS FURNISHED BUT NOT INSTALLED UNDER THIS SECTION

Deliver to General Contractor sufficient preservative solution for field-cut treatments.

REFERENCES

Pressure Treatments specified hereunder refer to quality mark designations of American Wood Protection Association, P.O. Box 361784, Birmingham, Alabama 35236-1784, and hereinafter referred to as AWPB. Specifications may be obtained from Association.

SUBMITTALS**Certification:**

Indicate moisture content of treated wood, chemical used, and retention obtained.

DELIVERY, STORAGE, AND HANDLING

Protect against damage, moisture, and discoloration.

EXTRA MATERIAL

Deliver to General Contractor sufficient brush treatment material for field-cut treatments.

COORDINATION

Protect other work against damage or discoloration caused by work of this section.

PART 2 - PRODUCTS**PRESERVATIVE TREATMENT****General:**

Provide AWPB, Standard P5, Use Standard UC4A, Copper Azole – (CA-C) treatment using CA-C dissolved in a solution of ethanolamine in water for wood preservative in the following locations:
In contact with masonry, concrete, roofing, and elsewhere shown on drawings.

Minimum Retention:

Above Ground: 0.10 pcf CA-C.

Ground or Fresh Water Contact: 0.21 pcf CA-C.

Structural Posts and Poles (Sawn or Round): 0.31 pcf CA-C.

Furring Strips:

Provide AWPB, Standard P5, Use Standard UC4B, Copper Azole – (CA-C).

BRUSH TREATMENT MATERIAL

Material: Recommended by preservative treatment manufacturer for application to field cut treated lumber.

Treat any field cuts to pressure-treated wood.

PART 3 - EXECUTION**EXAMINATION**

Verify that material to receive treatment does not exceed moisture content specified for similar untreated wood.

Prior to starting work notify General Contractor of conditions requiring correction.

Do not start work until conditions are satisfactory.

APPLICATION - PRESERVATIVE TREATED WOOD**General:**

Follow referenced specifications.

Incise members prior to treatment.

Field Cuts and Brush Treatment:

Apply 2 liberal coats of brush treatment material to field cut surfaces.

WOOD TREATMENT

06 05 73-2

- 1 PROTECTION
- 2 Protect other work against damage or discoloration caused by work of this section.
- 3
- 4
- 5

END OF SECTION

PART 1 - GENERAL**SECTION INCLUDES**

Construction of wood framework using lumber, plywood, and other sheathing materials. Miscellaneous blocking and curbing, concealed wood framing and furring. Includes rough hardware to join members and anchor framework.

QUALITY ASSURANCE**Framing Lumber:**

Grade mark and trademark of association listed below and having jurisdiction must appear on each piece of material.

On members scheduled to receive transparent finish do not place grade mark stamp where exposed to view. In lieu thereof stamp where concealed, or submit Certificate of Inspection.

WWPA: Western Wood Products Assn., 522 SW Fifth Avenue, Portland, OR 97204-2122.

APA: American Plywood Assn., 1119 A Street; Tacoma, WA 98401.

DELIVERY, STORAGE, AND HANDLING

Protect against moisture, damage, and discoloration.

Do not store wood materials in wet or damp areas, or in contact with ground.

Avoid overloading floor and roof framing with stored materials.

COORDINATION

Coordinate with other trades affecting or affected by work of this section.

PART 2 - PRODUCTS**FRAMING LUMBER****Material:**

Douglas fir, surfaced 4 sides to standard nominal dimensions except where rough sawn stock or special shapes are indicated.

Grade:

Comply with current WWPA Standard Grading Rules as follows:

Framing Lumber: Standard and better.

Furring, Bracing and Blocking: Utility grade.

Maximum moisture content when delivered to project:

All wood materials: 19%.

PLYWOOD

US Product Standard 1-07, exterior type where exposed to moisture.

Each piece shall bear APA Grade mark.

Unless otherwise specified use Group 1 Douglas Fir; Grade "A" for exposed surfaces, "C" or better elsewhere.

FASTENERS

Bolts: Fed. Spec. FF-B-575.

Nuts: Fed. Spec. FF-N-836.

Expansion Shields: Fed. Spec. FF-S-325.

Lag Screws and Lag Bolts: Fed. Spec. FF-B-561.

Wood Screws: Fed. Spec. FF-S-111.

Nails and Staples: Fed. Spec. FF-N-105B.

Provide washers under bolt heads, lag heads, and nuts.

Provide all necessary for installation of work specified herein.

Hot-dip galvanize steel fasteners exposed to moisture.

WOOD BLOCKING

Provide 2 inch nominal framing lumber behind cabinets, doors, windows, finish hardware including door stops, toilet room accessories, mirrors, miscellaneous specialties, building equipment, drapery track, and mechanical and electrical work. Verify exact location.

1 ADHESIVE

2 Glue conforming with APA Spec. AFG-01.

3 Approved manufacturers: Evans, Franklin, Georgia-Pacific, Glidden-Durkee, 3M, Weldwood, Willhold,
4 Weyerhaeuser.6 **PART 3 - EXECUTION**

8 EXAMINATION

9 Verify that surfaces to receive work specified herein are rigid, secure, accurately sized and located, and
10 otherwise properly prepared.

11 Prior to starting work notify General Contractor of surfaces requiring correction.

12 Do not start work until conditions are satisfactory.

14 VERIFICATION OF CONDITIONS

15 Where necessary verify field measurements prior to fabrication.

16 If field measurements differ slightly from drawing dimensions, modify work as required for accurate fit. If
17 measurements differ substantially, notify Architect prior to fabrication.

19 INSTALLATION - GENERAL

20 Install proprietary products in accordance with manufacturer's directions.

21 Use additional fasteners to those specified herein where necessary to insure rigidity and permanence.

22 Provide washers under nuts and heads when making bolted or lag screwed connections.

23 Drive nails perpendicular to grain in lieu of toe-nailing, where feasible.

24 Machine nailing or stapling with written approval only.

25 Provide for installation and support of plumbing, heating, ventilating, and electrical work.

26 Accurately, located, cut, fit, and install work secure rigid, to true lines, plumb, and level, unless otherwise
27 indicated.

29 CLEANING AND REPAIRING

30 Including work of other sections, clean, repair and touch-up or replace when directed, products which
31 have been soiled, discolored, or damaged by work of this section.

32 Leave surfaces ready for finishing specified in other sections.

33 Remove debris from project site upon work completion or sooner, if directed.

35 PROTECTION

36 Protect other work against damage or discoloration caused by work of this section.

38 NAILING SCHEDULE

39 Unless otherwise shown on drawings or in this specification, nailing shall be in accordance with the
40 Building Code.

44 END OF SECTION

PART 1 - GENERAL

SECTION INCLUDES

Shop fabricated institutional casework including base, full-height, and wall-mounted cabinets, countertops, wardrobes, and other similar units.

SYSTEM DESCRIPTION

Casework modules of reveal overlay design with continuous countertops.

Exposed cabinet exterior finished with high-pressure plastic laminate.

Exposed cabinet interior overlaid with low-pressure plastic laminate.

Edges of case bodies, doors, drawers, and shelves finished with color coordinated protective edge.

Hardware of institutional type and quality.

SUBMITTALS

Submit in accordance with Section 01 33 00.

Product Data:

Include manufacturer's descriptive literature for specialty items.

Identify each item as to location, material grade, workmanship grade, construction, finishes, and hardware.

Provide manufacturer's product data for composite wood and agrifiber products (including but not limited to particleboard, wheatboard, strawboard, agriboard products, engineered wood components, solid-core wood doors, OSB, MDF, and plywood products) verifying that these products contain no urea-formaldehyde resins.

Provide product data for field-applied paints and coatings which have a potential impact on indoor air, including manufacturer's MSDS sheets or other Product Data listing VOC content.

Provide product data for adhesives and sealants which have a potential impact on indoor air, including manufacturer's MSDS sheets or other Product Data listing VOC content. Provide manufacturers' documentation verifying all adhesives used to apply laminates, whether shop-applied or field-applied, contain no urea-formaldehyde.

Shop Drawings:

Show profiles, joint details, and other pertinent items.

Show connections to adjacent work, and complete assembly, whether or not manufacturer furnishes materials.

EMISSIONS STANDARDS

Conform to the following minimum standards for adhesive emissions:

Adhesive Type	VOC Limits	Standard
Adhesive Primer for Plastic:	550 g/L	SCAQMD Rule #1168
Contact Adhesive:	80 g/L	SCAQMD Rule #1168
Special Purpose Contact Adhesive:	250 g/L	SCAQMD Rule #1168
Wood Adhesive:	140 g/L	SCAQMD Rule #1168
Top & Trim Adhesive:	250 g/L	SCAQMD Rule #1168

Aerosol Adhesives: Green Seal Standard for Commercial Adhesive GS-36 requirements.

Submit manufacturer's product data listing volatile organic compound (VOC) content of products specified herein.

Provide manufacturer's documentation verifying that adhesives and sealants contain no urea-formaldehyde.

QUALITY STANDARDS

Except as herein modified, material and workmanship grades shall be determined by Quality Standards of Architectural Woodwork Institute, current edition, published by Architectural Woodwork Institute, 5055 S. Chesterfield Road; Arlington, VA 22206. Institute hereinafter referred to as "AWI".

Qualifications - General:

Work of this Section shall be provide by a shop that employs skilled workers who custom fabricate products similar to those required for this project and whose products have a record of successful in-service performance.

Fabricator/installer qualifications:

Fabricator/installer shall have a minimum of ten (10) years experience in architectural casework

manufacturing and have successfully performed a minimum of five (5) projects of similar size.

DELIVERY, STORAGE, AND HANDLING

Do not deliver products to job site until notified by General Contractor that project is conditioned and prepared to handle and store products without damage or discoloration.

Protect against damage and discoloration.

PROJECT CONDITIONS

Illumination:

Perform no work with less than 30 ft. candles of light measured 3 ft. above floor.

Temperature:

Maintain 50°F minimum in interior spaces where casework and shelving are located and installed.

COORDINATION

Coordinate with other trades regarding work of this section.

PART 2 - PRODUCTS

LUMBER

Concealed: Poplar or Alder, vertical grain.

Exposed (if any): Douglas fir, hemlock or poplar, AWI Custom grade, vertical grain.

PLYWOOD

Type:

Douglas fir, US Product Standard PS 1-07, exterior type where exposed to moisture or around sinks.

Roseburg Forest Products ¾ inch thermally fused melamine sides, bottoms, shelving, interior doors and stretchers.

Melamine Color: White.

Face:

Rotary cut veneer, AWI Custom Grade.

PLASTIC LAMINATE (HPDL)

Manufacturing Standard: Conform to NEMA Standard LD-3.

Exposed Surfaces: NEMA GP28, 0.030 inch thickness, unless noted otherwise.

Post-Forming Grade: 0.042 inch material thickness for coved countertops and other forming.

Manufacturer, Color and Pattern: As noted on finish legend on Drawings.

Locations as noted on interior elevations.

Primer, Sealer and Adhesive: Water-resistant type made or recommended by plastic laminate manufacturer.

PVC EDGE BANDING

Impact resistant, machine applied with hot melt adhesive.

Standard 3mm thick at doors and drawer fronts and vertical case ends, 0.030 inch thick at bottoms, shelves, and sub-tops.

Color: To match plastic laminate, architect to approve prior to ordering.

HARDWARE

Hinges: Salice 200 Series.

Adjustable Shelf Hardware: Nickel plated steel brackets, 5mm diameter.

Door and Drawer Pulls: Wire type, 4 inches wide, brushed nickel finish.

Drawer Slides: Roller type, full extension, epoxy coated; Knappe & Vogt 8400; Blum 430E series.

Door and Drawer Bumpers: Hemisphere 0.335 inch diameter by 0.085 inch height, clear finish.

All Other Hardware: Manufacturer's standard.

FABRICATION

General:

Conform to AWI 400B standards for laminate clad cabinets, Premium Grade.

Construction: Overlay reveal, unless indicated otherwise.

1 Surfaces: Laminated plastic.
2 All shelves adjustable unless otherwise shown.
3 Verify dimension of sinks and other items to be built into cases and counters.
4 Assemble at factory where feasible.
5 Use concealed fastenings wherever possible.
6 Use screws and bolts in addition to adhesive where required for strength and rigidity.
7 Install finish hardware specified herein at factory.
8 Materials, unless specifically noted otherwise:
9 Bases: Exterior grade 3/4 inch plywood with thermally fused melamine.
10 Countertops: 3/4 inch plywood with 0.050 plastic laminate, backed with 0.020 balancing sheet.
11 Exposed materials: HPDL clad plywood.
12 Semi-exposed materials: LPDL clad plywood.
13 Concealed materials: Softwood.
14 Casework Bottoms, Ends, and Vertical Standards: 3/4 inch thick plywood with thermally fused melamine.
15 Back and Side Splash: 3/4 inch plywood with 0.050 plastic laminate.
16 Fixed Shelving at Breakroom 1142: 3/4 inch plywood with 0.050 plastic laminate. Overall thickness per
17 drawings.
18 Fixed Shelving elsewhere: 3/4 inch plywood with 0.050 plastic laminate. Overall thickness per drawings.
19 Adjustable Shelving: 3/4 inch plywood with thermally fused melamine.
20 Adjustable Shelf Hardware: Provide bracket holes at 32 mm centers to within 6 inches of top and bottom
21 of space where adjustable shelves are shown.
22 At Sink Cabinets: Hold shelves 3/4 inch back from rear face of door to provide space for ventilation.
23 Swinging Doors: 3/4 inch thick plywood with 0.050 plastic laminate.
24 Casework Backs:
25 Concealed Base Cabinets: 1/4 inch prefinished hardboard.
26 Exposed Backs: 3/4 inch plywood with 0.050 plastic laminate.
27 Semi-exposed Backs: 3/4 inch plywood with thermally fused melamine.
28 Upper Wall Cabinets: 3/4 inch plywood with thermally fused melamine.
29 Drawers:
30 Exposed Fronts: 3/4 inch prefinished plywood with 0.050 plastic laminate.
31 Semi-exposed Fronts: 3/4 inch prefinished plywood with thermally fused melamine.
32 Sides: 1/2 inch thick plywood with thermally fused melamine.
33 Backs: 1/2 inch thick plywood with thermally fused melamine.
34 Bottoms: 1/2 inch plywood with thermally fused melamine.
35 Drawer Stops: Integral side type. Do not use drawer front as stop.
36 Edge Banding: Provide at exposed plywood and particle board edges in accordance with AWI Standards
37 and as specified herein.
38

39 **PART 3 - EXECUTION**

41 **EXAMINATION**

42 Verify that surfaces to receive casework and shelving are straight, plumb, true, solid, rigid, and otherwise
43 properly prepared.
44 Prior to starting work, notify General Contractor of defects requiring correction.
45 Do not start work until conditions are satisfactory.
46

47 **FIELD MEASUREMENTS**

48 Verify prior to fabricating casework and shelving.
49 If field measurements differ slightly from drawing dimensions modify Work as required for accurate fit. If
50 measurements differ substantially, notify Architect prior to fabricating work.
51

52 **INSTALLATION**

53 Casework to be installed factory-trained personnel.
54 Bases secured to floor and cases secured to each other and tight to adjacent walls.
55 Countertops fastened to cases and secure tight to walls.
56 Provide continuous bases under in-line base casework, unless otherwise indicated.
57 Secure casework in place plumb, square, true, level, and without distortion; level where necessary with

concealed shims. Provide sealant at intersection of differing materials.

PLASTIC LAMINATE COUNTERTOPS

No "L" shaped pieces at countertop corners or longitudinal seams permitted; cross seams 12 ft. apart minimum and at least 24 inches away from any counter sinks.

Provide cut-outs for sinks and other openings; verify size and location

ADJUSTMENTS

Adjust moving parts to operate satisfactorily at time of final project acceptance and during warranty period.

CLEANING AND REPAIRING

Including Work of other Sections, clean, repair, and touch-up, or replace when directed, products which have been soiled, discolored, or damaged by work of this Section.

Remove debris from project site upon work completion or sooner, if directed.

PROTECTION

Protect other surfaces against damage or discoloration caused by Work of this Section.

END OF SECTION

PART 1 - GENERAL**SECTION INCLUDES**

Non-structural plastic fabrications formed to various profiles for a variety of purposes.

SUBMITTALS

Provide in accordance with Section 01 33 00.

Product data:

Submit manufacturer's specifications and installation instructions for each type of product indicated.

Shop drawings:

Show location of each item, dimensioned plans and elevations, large-scale details, attachment devices and other components.

Show full-size details, edge details, thermoforming requirements, attachments, etc.

Show locations and sizes of furring, blocking, including concealed blocking and reinforcement specified in other Sections.

Show locations and sizes of cutouts and holes for plumbing fixtures, faucets, soap dispensers, waste receptacle and other items installed in solid surface.

Samples:

For each type of product indicated submit minimum 6-inch by 6-inch sample in specified gloss.

Cut sample and seam together for representation of inconspicuous seam.

Indicate full range of color and pattern variation.

Approved samples will be retained as a standard for work.

Product certificates:

For each type of product, signed by product manufacturer.

Fabricator/installer qualifications: Provide copy of certification number.

Manufacturer certificates: Signed by manufacturers certifying that they comply with requirements.

Maintenance data:

Submit manufacturer's care and maintenance data, including repair and cleaning instructions.

Maintenance kit for finishes shall be submitted.

Include in project closeout documents.

QUALITY ASSURANCE**Qualifications - General:**

Work of this Section shall be provide by a shop that employs skilled workers who custom fabricate products similar to those required for this project and whose products have a record of successful in-service performance.

Fabricator/installer qualifications:

Work of this section shall be by a certified fabricator/installer, certified in writing by the manufacturer.

Applicable standards:

Standards of the following, as referenced herein:

American National Standards Institute (ANSI)

American Society for Testing and Materials (ASTM)

National Electrical Manufacturers Association (NEMA)

NSF International

Fire test response characteristics:

Provide with the following Class A (Class I) surface burning characteristics as determined by testing identical products per UL 723 (ASTM E84) or another testing and inspecting agency acceptable to authorities having jurisdiction:

Flame Spread Index: 25 or less.

Smoke Developed Index: 450 or less.

DELIVERY, STORAGE, AND HANDLING

Protect against damage and discoloration.

ENVIRONMENTAL REQUIREMENTS**Illumination:**

Perform no work with less than 30 ft. candles of light measured 3 ft. above floor.

Temperature:

Maintain 65°F minimum in interior spaces where solid surfacing fabrications materials are located and

installed.

Humidity:

35% minimum, 80% maximum.

WARRANTY

Provide manufacturer's standard warranty against defects in materials.

Warranty shall provide material and labor to repair or replace defective materials.

Damage caused by physical or chemical abuse or damage from excessive heat will not be warranted.

COORDINATION

Coordinate with other trades regarding work of this section.

PART 2 - PRODUCTS

SOLID SURFACING - POLYMER (SS-1)

Type: Solid polymer components, cast, nonporous, filled polymer, not coated, laminated or of composite construction with through body colors meeting ANSI Z124.3 or ANSI Z124.6, having minimum physical and performance properties specified.

Superficial damage to a depth of 0.010 inch (.25 mm) shall be repairable by sanding and/or polishing.

Thickness: 1/2 inch.

Edge Treatment: Eased edge.

Finish: Uniform, matte.

Manufacturer: Wilsonart Engineered Surfaces (basis of design).

Color: 9230SS Powder White.

Backsplash and Sidesplash: Coved.

ACCESSORIES

Joint Adhesive: Manufacturer's standard one- or two-part adhesive kit to create inconspicuous, nonporous joints.

Sealant: Manufacturer's standard mildew-resistant, FDA-compliant, NSF 51-compliant (food zone — any type), UL-listed silicone sealant in colors matching components.

FABRICATION

Solid Surfacing - Polymer:

Shop fabricate components to greatest extent practical to sizes and shapes indicated, in accordance with manufacturer's printed instructions and technical bulletins and approved shop drawings.

Fabricate backsplashes from solid surfacing material with radius cove where counter and backsplashes meet as indicated on Drawings. Refer to manufacturer's installation instructions for integral splashes.

Form joints between components using manufacturer's standard joint adhesive with inconspicuous lines.

Reinforce with strip of solid polymer material, 2" wide.

Provide factory cutouts for plumbing fittings and bath accessories.

Thermoform corners and edges or other objects to shapes and sizes indicated, prior to seaming and joining. Cut components larger than finished dimensions and sand edges to remove nicks and scratches.

Heat entire component uniformly prior to forming.

Ensure no blistering, whitening and cracking of components during forming.

Rout and finish component edges with clean, sharp returns.

Rout cutouts, radii and contours to template, smooth edges.

Repair or reject defective and inaccurate work.

PART 3 - EXECUTION

EXAMINATION

Verify that surfaces to receive solid surfacing are dry, clean, smooth, sound, well-fastened, free from conditions that would damage surfacing or impair adhesive-bond, and otherwise properly prepared.

Examine substrates and conditions, with fabricator present for compliance with requirements for installation tolerances and other conditions affecting performance of work.

Prior to starting work notify general contractor of defects requiring correction.

Do not start work until conditions are satisfactory.

INSTALLATIONGeneral:

Install in accordance with manufacturer's instructions and approved Shop Drawings.

Install plumb, level and rigid, scribed to adjacent finishes.

Solid Surfacing - Polymer:

Install with largest size pieces available.

Install components plumb, level, rigid, scribed to adjacent finishes in accordance with reviewed Shop Drawings and Product installation details.

Fabricate field joints using manufacturer's recommended adhesive, with inconspicuous joints in finished work. Exposed joints/seams are not permitted. Keep components and hands clean when making joints.

Reinforce field joints as specified herein.

Cut and finish component edges with clean, sharp returns.

Route radii and contours to template.

Anchor securely to base component or other supports.

Align adjacent components and form seams to comply with manufacturer's written recommendations using adhesive in color to match work.

Carefully dress joints smooth, remove surface scratches and clean entire surface.

Install countertops with no more than 1/8" sag, bow or other variation from a straight line.

Adhere undermount mount sinks/bowls to countertops using manufacturer's recommended adhesive and mounting hardware.

Seal between wall and components with joint sealant as specified herein and in Section 07 92 00, as applicable.

Provide coved backsplashes and sidesplashes at walls and adjacent millwork. Fabricate radius cove at intersection of counters with backsplashes to dimensions shown on reviewed Shop Drawings. Adhere to countertops using manufacturer's standard color-coordinated joint adhesive.

Keep components and hands clean during installation. Remove adhesives, sealants and other stains.

Coordinate connections of plumbing fixtures with other trades.

CLEANING AND REPAIRING

Promptly remove any excess adhesive or sealant.

Remove any stains or markings from surfaces.

Repair minor imperfections and cracked seams and replace areas of severely damaged surfaces in accordance with manufacturer's "Technical Bulletins".

Including work of other sections, clean, repair and touch-up, or replace when directed, products which have been soiled, discolored, or damaged by work of this section.

Remove debris from project site upon work completion, or sooner, if directed.

PROTECTION

Protect other materials against damage and discoloration caused by work of this section.

END OF SECTION

PART 1 - GENERAL

SECTION INCLUDES

Wallcoverings of prefinished panels over solid substrate for light, medium and heavy duty usage.

QUALITY ASSURANCE

Qualifications:

Workmen must have at least 2 years prior experience performing work of type specified herein, and be approved by covering manufacturer.

Regulatory Requirements:

Maximum ASTM E 84 Flame Spread Rating: Class C.

Maximum ASTM E 84 Smoke Developed Rating: 450.

DELIVERY, STORAGE, AND HANDLING

Store in clean and dry storage area.

Protect against damage and discoloration.

Protect from sunlight exposure.

Lay panels flat. Do not stand panels on edge.

ENVIRONMENTAL REQUIREMENTS

Install wall covering only when air temperature and humidity conditions approximate those that will exist when building is occupied.

Acclimate panels to installation environment minimum 24 hours prior to installation.

Do not install covering on surfaces which are colder than 65°F.

Do not install covering under less than 30 ft. candles of light measured 3 ft. above floor.

Notify General Contractor, if necessary, to provide additional light.

COORDINATION

Coordinate with other trades affecting or affected by work of this section.

PART 2 - PRODUCTS

FIBERGLASS REINFORCED PANELS

Panel Type: Prefinished fiberglass reinforced plastic with Class A Smooth finish surface.

Material: Random chopped fiberglass reinforcement, modified polyester copolymer resin mix with inorganic fillers and pigments.

Panel Size: 48" X 96", or as required for installation.

Nominal Thickness: 0.075".

Color: White 85.

Manufacturer and Pattern: Valto Engineered Materials "Glasbord", or accepted substitute.

Location: As noted on drawings.

ACCESSORIES

Moldings: Manufacturer's standard one-piece extruded plastic, color to match panel color.

Fasteners: Insulating nylon drive rivets, length as required for installation, color to match panels color.

Adhesive: Waterproof type recommended by panel manufacturer.

Sealant: Silicone type as specific in Section 07 92 00, color to match panel color.

PART 3 - EXECUTION

EXAMINATION

Verify that surfaces to receive wall and ceiling covering are true, sound, clean, dry and dust-free, free from conditions that would damage covering or impair adhesive bond, and otherwise properly prepared.

Prior to starting work notify General Contractor about defects requiring correction,

Do not start work until conditions are satisfactory.

1 PREPARATION

2 Before applying covering remove any finish hardware, electric cover plates, mechanical grilles and registers,
3 etc. which would interfere with covering application.

4 Carefully store removed items and replace following covering application.

6 SURFACE PREPARATION

7 Follow manufacturer's directions.

9 INSTALLATION

10 Follow manufacturer's directions.

11 Take special care to insure complete adhesion at joints, edges, and corners.

12 Provide minimum 1/4" gap at ceiling joint and 1/8" gap between adjacent panels.

13 Pre-drill fastener holes oversized 1/8" to allow for panel expansion and contraction.

14 Apply adhesive to entire panel surface.

15 Set panels prior to "skinning" of adhesive.

16 Press panels firmly to substrate and install fasteners.

17 Provide single row of fasteners at top and bottom of panel as recommended by panel manufacturer for
18 adhesive installation.

19 Install panels with moldings between adjacent panels, at wall corners, and exposed panel edges.

20 Apply sealant to molding channel prior to installing on panel. Apply sealant to opposite molding channel
21 prior to installing adjacent panel.

22 Allow for specified gap between adjacent panels when installing moldings.

23 Remove excess sealant.

25 CLEANING AND REPAIRING

26 Remove adhesive and sealant from surfaces during application.

27 Replace defective and improperly applied material.

28 Leave surfaces clean and defect-free at time of final acceptance.

29 Remove debris from project site upon work completion or sooner, if directed.

30 Including work of other sections, clean, repair and touch-up, or replace when directed, products which have
31 been soiled, discolored, or damaged by work of this section.

33 PROTECTION

34 Protect other work against damage and discoloration caused by work of this section.

37 END OF SECTION

PART 1 - GENERAL**SECTION INCLUDES**

Elastic sheet vapor retarders for all exterior thermal insulation and air barrier installed as part of the exterior envelope construction.

SUBMITTALS

Submit in accordance with Section 01 33 00.

Product Data:

Manufacturer's data and details to include installation instructions.

Samples:

Two 8 1/2" x 11" samples of vapor retarder material.

QUALITY ASSURANCE

Subcontract the vapor retarder work of this section to the installer of associated work so there will be undivided responsibility for the related items of work.

PROJECT CONDITIONS

Proceed with vapor retarder work only after substrate work has been completed.

The contractor shall examine the substrate and the conditions under which the vapor retarder work is to be performed. Do not proceed with the work until satisfactory conditions have been corrected.

Environmental Requirements:

Proceed with vapor retarder work only when weather conditions will permit the materials to be applied in accordance with manufacturer's recommendations.

COORDINATION

Coordinate with other trades affecting or affected by work of this section.

PART 2 - PRODUCTS**VAPOR RETARDERS****Sheet Barrier Below Grade:**

Polyolefin geomembrane sheet, 15 mils thickness, maximum permeance = 0.01 perms as tested in accordance with ASTM E1745 Section 7.1 (7.1.1-7.1.5); Stego Industries "Stego Wrap", Fortifiber "Moistop Ultra 15", Raven Industries "Vapor Block 15", or accepted substitute.

ACCESSORIES**Vapor Retarder Tape:**

Sheet Barrier Below Grade: Polyethylene Tape as recommended by vapor retarder manufacturer.

Sealant:

Vapor Barrier Sealant: Elastic, polyurethane base, flexible sealant used to seal vapor retarder materials together or to other substrates as recommended by vapor retarder manufacturer.

PART 3 - EXECUTION**EXAMINATION**

Verify that surfaces to receive work specified herein are rigid, secure, accurately sized and located, and otherwise properly prepared.

Prior to starting work notify General Contractor of surfaces requiring correction.

Do not start work until conditions are satisfactory.

PREPARATION

Clean substrate of projections and substances detrimental to the work; comply with recommendations of the vapor retarder manufacturer.

Remove ice, snow, grease, dust or other foreign material that may prevent bonding to substrate.

Install cant strips, flashings and similar accessory items as shown, and as recommended by vapor retarder manufacturer. Prime substrate where recommended by the manufacturer.

1 INSTALLATION - VAPOR RETARDERS

2 Concrete Floor Slabs:

3 Install underslab vapor retarder over smooth surface substrate, and without puncture under the entire
4 area of floor slab or any accessory concrete on grade construction in accordance with manufacturer's
5 instructions and ASTM E 1643.

6 Install with the longest dimension parallel with the direction of the concrete pour.

7 Lap edges minimum 6 inches and seal with vapor retarder tape.

8 Tape all seams with vapor retarder tape.

9 Seal all penetrations, including pipes and conduit per manufacturer's instructions. Install vapor
10 retarder boots around all penetrations and seal with vapor retarder tape.

11 Do not penetrate vapor retarder with screed pins, stakes or other items. No penetration of the vapor
12 retarder is allowed except for reinforcing steel and permanent utilities.

13 **Sand or other granular fill prohibited above vapor retarder.**

14 Coordinate sequence of installation, treatment of penetrations, and sealing of edges identical with that of
15 exterior walls above.

16 Repair damaged areas, if any, by cutting patches of vapor retarder, overlapping damaged area 6 inches
17 and taping all four sides with vapor retarder tape.

18 Penetrations:

19 Carefully seal all penetrations of vapor retarder by lapping additional piece of Vapor Retarder minimum 6"
20 around all penetration edges. Carefully cut center "cut out" to fit the penetration. Seal all edges with
21 specified sealant to ensure continuous vapor retarder performance.

22
23 PROTECTION

24 Protect other work against damage and discoloration caused by work of this section.
25
26

27 END OF SECTION

PART 1 - GENERAL**SECTION INCLUDES**

Elastomeric and non-elastomeric sealants, caulking compounds, compression seals, joint fillers and related accessories.

DELIVERY, STORAGE, AND HANDLING

Protect against damage.

Store products in original, tightly sealed containers, original labels thereon.

Do not exceed sealant shelf life.

SUBMITTALS

Submit in accordance with Section 01 33 00.

Manufacturer's Data:

Provide Manufacturer's installation instructions for each product used.

Provide Manufacturer's Literature and Data for primers and each type of sealant including compatibility when different sealants in contact with each other.

Sustainability Requirements:

Submit manufacturer's product data listing volatile organic compound (VOC) content of products specified herein.

Provide manufacturer's documentation verifying that sealants contain no urea-formaldehyde.

Samples:

Provide cured samples of exposed sealants for each color where required to match adjacent material.

ENVIRONMENTAL REQUIREMENTS

Perform no work when weather exceeds manufacturer's specified limits.

EMISSIONS STANDARDS

Conform to the following minimum standards for sealant emissions:

Sealant Type	VOC Limits	Standard
Architectural Sealants:	250 g/L	SCAQMD Rule #1168
Other Sealants:	420 g/L	SCAQMD Rule #1168

QUALITY ASSURANCE**Installer Qualifications:**

Experienced installer who has specialized in installing joint sealants similar in material, design, and extent to those indicated for this Project and whose work has resulted in joint-sealant installations with a record of successful in-service performance.

Source Limitations:

Obtain each type of joint sealant through one source from a single manufacturer.

Sealant Testing:

Product Testing: Obtain test results from a qualified testing agency based on testing current sealant formulations within a 12-month period.

Testing Agency Qualifications: An independent testing agency qualified according to ASTM C1021.

Test elastomeric joint sealants according to SWRI's Sealant Validation Program for compliance with requirements specified by reference to ASTM C920 for adhesion and cohesion under cyclic movement, adhesion-in peel, and indentation hardness.

Test other joint sealants for compliance with requirements indicated by referencing standard specifications and test methods.

Preconstruction Field-Adhesion Testing: Before installing elastomeric sealants, field test their adhesion to joint substrates in accordance with sealant manufacturer's recommendations:

Locate test joints as directed by Architect.

Conduct field tests for each application indicated below:

Each type of elastomeric sealant and joint substrate indicated.

Each type of non-elastomeric sealant and joint substrate indicated.

Notify Architect seven days in advance of dates and times when test joints will be installed

Arrange for tests to take place with joint sealant manufacturer's technical representative present.

ENVIRONMENTAL REQUIREMENTS

Perform no work when weather exceeds manufacturer's specified limits.

WARRANTY

Caulking and sealing subject to 2 year weatherproof warranty called for in Supplementary Conditions, Section 00 73 00.

Prior to final project acceptance submit in accordance with Section 01 78 23, 2 copies of the Warranty for inclusion in Owner's Maintenance Manual:

COORDINATION

Coordinate with other trades affecting or affected by work of this section.

PART 2 - PRODUCTS**SILICONE SEALANT****Food Areas:**

Single-Component, Silicone USDA Approved Joint Sealant: ASTM C920, Type S, Grade NS, Class 25, for Use NT

Dow Corning Corporation "DOWSIL 786 Mildew Resistant Silicone Sealant", Momentive Performance Materials (formerly GE Advanced Materials) "Sanitary SCS1002", Pecora Corporation "898", Sika Corporation, Construction Products Division "Sikasil-N-Plus", Tremco Commercial Sealants & Waterproofing "Tremsil 600".

Locations of Use: Interior joints in contact with food.

General Areas:

Mildew-resistant, single-component silicone joint sealant, ASTM C 920, Type S, Grade NS, Class 25, for Use NT.

Dow Corning "Dowsil 786 Mildew Resistant Silicone Sealant", Momentive Performance Materials "Sanitary SCS1700", Pecora Corp. "898", Sika Corp. "Sikasil-GP", Tremco Commercial "Tremsil 200 Sanitary" or "Tremsil 600"

Locations of use: Interior joints between plumbing fixtures and adjoining walls, floors, and counters. Interior joints between cabinetry and counters and adjoining walls.

URETHANE SEALANT**Vertical Joints:**

ASTM C920, Type S, Grade NS, Class 50 for use NT.

Non-sag, one component type; BASF Building Systems, MasterSeal NP100.

Horizontal Joints:

ASTM C920, Type M, Grade P, Class 25 for use T and I.

Self-leveling, multicomponent type; BASF Building Systems, MasterSeal NP100.

FOAM AIR-INFILTRATION SEALANT

Two-component, semi-rigid, closed-cell polyurethane foam; Central Urethane "X-Press Seal 200" or accepted substitute.

SEALANT COLORS

Urethane Sealant: Approximate color of adjacent surfaces, unless otherwise directed.

Silicone Sealant: Approximate color of adjacent surfaces, or clear if color not available.

Foam Sealant: Contractor's choice.

PRIMER AND SURFACE CONDITIONER

Made or recommended by manufacturer of compound or sealant.

BACKER ROD

Closed-cell polyethylene gasketing rod, Dow "Ethaform," or accepted substitute.

Diameter: 1/4 greater than width of joint where to be installed.

PART 3 - EXECUTION**EXAMINATION**

Inspect joints to be sealed and verify that joints are clean, dry, and free from dust, oil, grease, rust, lacquer, laitance, loose mortar, or other bond-reducing matter.
Allow concrete surfaces to dry at least 4 weeks before sealing.
Prior to starting work notify General Contractor of defects requiring correction.
Do not start work until conditions are satisfactory.

PREPARATION**General:**

Remove dust, dirt and other foreign matter from joints to be sealed by brushing and air-blowing.

Priming:

Prime unpainted surfaces to receive sealant.
Apply with bristle brush. Do not flood surfaces.

BACKER INSTALLATION

Install backer rod behind sealant in accordance with manufacturer's directions.
Provide in as long continuous lengths as practicable.
Stretch taut and force into joints to uniform depth, approximately 1/2 Joint width but not to exceed 1/2 inch.
Replace any punctured backer rod.

FOAM SEALANT INSTALLATION

Follow sealant manufacturer's directions.
Inject sealant continuously until opening is filled.
If opening is not filled within sealant snap time or maximum of 3 minutes, stop application for at least 15 minutes before resuming work.
Trim cured foam flush with adjacent surface.

OTHER SEALANT INSTALLATION

Apply sealant in accordance with manufacturer's directions using gun-type dispenser.
Size gun nozzle to fit joint.
Seal joints before applying final paint coat.
Fill joints and voids solid; superficial pointing with skin bead not acceptable.
Install flush with adjacent surfaces.
Tool joints smooth within 10 minutes after installation.
Remove masking materials, if any, immediately after sealant installation.

APPLICATION

Caulk exterior and interior joints around window frames, door frames, and louver frames and other openings in exterior walls with urethane sealant.
Apply color-matched sand to joints in masonry.
Where subject to air infiltration, caulk spaces between wall framing members and windows, doors, and other openings in exterior walls with foam air-infiltration sealant.
Caulk space beneath exterior wall base plates with foam air infiltration sealant.
Caulk with silicone sealant where shown on Drawings.

CLEANING AND REPAIRING

Remove excess material as work progresses and leave surfaces neat, smooth, and clean.
Remove debris from project site upon work completion or sooner, if directed.
Including work of other sections, clean, repair and touch-up, or replace when directed, products which have been soiled, discolored, or damaged by work of this section.

PROTECTION

Protect other work against damage and discoloration caused by work of this section.

END OF SECTION

PART 1 - GENERAL**SECTION INCLUDES**

Light gage metal framing, acoustical treatment, gypsum board with paper or vinyl facings, and finishing of board joints.

REFERENCES

Conform to Recommended Specifications for the Application and Finishing of Gypsum Board, GA-216-1989, and "Recommended Specification: Levels of Gypsum Board Finish" as modified and supplemented herein.
Recommended material and methods are mandatory; those proposed by Contractor as equal or equivalent must be accepted by Architect.
Referenced Specifications may be obtained from Gypsum Association, 810 1st Street NE, Suite 510, Washington D.C. 20002; 310 277-8686.

PERFORMANCE REQUIREMENTS

Maximum ceiling deflection: 1/360 of span.

Maximum deviation from true plane: 1/8 inch per 10 ft. and 1/16 inch in any running foot.

REGULATORY REQUIREMENTS

Where fire-rated ceilings are noted, construct to obtain specified rating as listed and rated by Underwriter's Laboratories (UL).

DELIVERY, STORAGE, AND HANDLING

Deliver products to site with manufacturer's original labels intact and legible.

Identify fire-rated materials with testing agency label.

Protect gypsum materials against damage and discoloration and metal materials against rust.

Do not stack gypsum board with long lengths overhanging shorter lengths.

Do not overload floor system with stockpiled materials.

Indicate adhesive "open time" on adhesive container label.

ENVIRONMENTAL CONDITIONS

Maintain between 55°F and 75°F for 24 hours before and during work, and for at least 24 hours after materials have dried.

Maintain at least 30 ft. candles of illumination measured 3 ft. above floor in work spaces during joint treatment.

Maintain sufficient ventilation for proper joint treatment drying.

COORDINATION

Coordinate with other trades affecting or affected by work of this section.

PART 2 - PRODUCTS**GYPSUM BOARD**

Manufacturing Standard: ASTM C 1396.

Edges: Tapered

Type and Thickness:

Interior stud walls and furred ceilings: Standard board, Type X, 5/8" thk., unless otherwise noted.

Restrooms and "Wet" Walls: Water-resistant board, Type X, 5/8" thick.

FASTENERS**Screws:**

Self-tapping, self-drilling, bugle head, ASTM C 626, Type S.

Length: 1 5/8 inches

Do not use nails.

METAL TRIM**Casing Bead:**

US Gypsum No. 200-A, 200-B, or as noted in drawings, or accepted substitute.

Corner Bead:

US Gypsum No. 101, or accepted substitute.

Reveal Molding:

Extruded aluminum, Gordon 300 Series, Fry "Z" molding, or accepted substitute.

JOINT TAPE

ASTM C 475, perforated.

JOINT COMPOUND

ASTM C 475.

WATER RESISTANT SEALANT

Silicone with mildew inhibitor conforming to Fed. Spec. TT-S-001543; GE, Dow, or accepted substitute.
Clear translucent color.

OTHER MATERIALS

Made or recommended by gypsum board manufacturer.
Provide all indicated or required for complete installation.

PART 3 - EXECUTION**EXAMINATION**

Verify that surfaces to receive gypsum board are accurately located, plumb, square, true, secure, and otherwise properly prepared.
Prior to starting work notify General Contractor of defects requiring correction.
Do not start work until conditions are satisfactory.

GYPSUM BOARD INSTALLATION

Install board horizontally, and extend to within 1/4 inch of floor.
Loosely butt joints.
Place tapered edges together, except at angles.
Do not place butt ends against tapered edges.
Where possible apply boards without butt joints. Where butt joints are necessary, locate as far from ceiling centers as possible and stagger.
Support board ends and edges on framing members.
Maintain 3/8 inch minimum distance between fastener and board edge.
Dimple board surface 1/32 inch with fastener; do not fracture face paper.
Secure to framing as follows:
 Wood Wall Framing: Screw at 8 inches on center along board perimeter and at 12 inches on center at intermediate supports.

JOINT, CORNER, AND EDGE TREATMENT

Application and finishing standard: ASTM C 840.
Fill joints and fastener holes in accordance with referenced standards.

Conform to GA 216, as follows:

 Dining areas: Level 3, finish to match existing texture.

 Food Prep area: Level 5, smooth finish.

Fill joints and fastener holes in accordance with referenced specifications.
Reinforce inside corners in accordance with manufacturer's directions.
Protect external corners and exposed edges with metal trim.
Provide control joints, unless otherwise shown on drawings, where and if framing changes direction, and at 30 ft. maximum spacings.

SEALANT INSTALLATION**Water Resistant Sealant:**

Provide at raw edges and around cutouts in water-resistant gypsum board.

1 SURFACE TEXTURE**2 Walls:**

3 Spray apply to produce light orange peel finish.

4 Application:

5 Apply after joints are taped and dry.

6 Follow manufacturer's directions.

8 REPAIRS**9 General:**

10 After installation and before finishing, correct surface damage and defects.

11 Leave surfaces clean, smooth, and ready for finishing specified in Section 09 90 00.

12 Ridging:

13 Sand ridges smooth without cutting joint tape.

14 Fill concave areas on both sides of ridge with compound and finish flush and smooth.

15 Cracks:

16 Fill with compound and finish flush and smooth.

18 CLEANING

19 Including work of other sections, clean, repair and touch-up, or replace when directed products which
20 have been soiled, discolored, or damaged by work of this section.

21 Leave surface ready for finishing specified in other sections.

22 Remove debris from project site upon work completion or sooner, if directed.

24 PROTECTION

25 Protect other work against damage and discoloration caused by work of this section.

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27
28
29
END OF SECTION

PART 1 - GENERAL**SECTION INCLUDES**

Epoxy or methylmethacrylate flooring incorporating ceramic coated colored inorganic quartz aggregate and integral base. Preparation of substrate surfaces.

REFERENCES**ASTM International (ASTM):**

ASTM F 710, "Standard Practice for Preparing Concrete Floors and Other Monolithic Floors to Receive Resilient Flooring."

ASTM F 1869, "Standard Test Method for Measuring Vapor Emission Rate of Concrete Subfloor Using Anhydrous Calcium Chloride."

ASTM F 2170, "Standard Test Method for Determining Relative Humidity in Concrete Floor Slabs Using in situ Probes."

ASTM G 21 - Standard Practice for Determining Resistance of Synthetic Polymeric Materials to Fungi.

SUBMITTALS

Provide in accordance with Section 01 33 00.

Samples:

One 3 X 6 inch sample in color and quartz combination as selected.

Product Data:

Provide manufacturer's data for products specified herein. Include information on materials, installation, colors and finishes.

Provide manufacturer's product data listing recycled content.

Submit manufacturer's product data listing volatile organic compound (VOC) content of products specified herein.

Provide manufacturer's documentation verifying that materials contain no urea-formaldehyde.

Maintenance Instructions:

In accordance with Section 01 33 00, submit manufacturers recommended maintenance products and methods to General Contractor, for inclusion on Owner's maintenance manual.

QUALITY ASSURANCE

Experienced installer or applicator specializing in installation of resinous flooring types similar to that required for this project and acceptable to manufacturer of primary materials.

Obtain fluid components of flooring materials, including primers, resins, hardening agents, and finish or sealing coats, from single manufacturer.

Obtain ceramic-coated quartz aggregate from primary manufacturer of that product.

Mock up:

Provide 3'x3' sample area showing texture, color and cove base. Mockup shall not be part of finished work.

DELIVERY, STORAGE AND HANDLING

Deliver materials in original packages and containers with seals unbroken and bearing manufacturer's labels containing brand name and directions for storage and mixing with other components.

Store materials to comply with manufacturer's directions to prevent deterioration from moisture, heat, cold, direct sunlight, or other detrimental effects.

ENVIRONMENTAL REQUIREMENTS**Work Space Air and Surface Temperatures:**

Not less than 70°F 48 hours before, during, and 48 hours after laying.

Not lower than 55°F thereafter.

Work Space Ventilation:

When using offensive odor adhesive provide sufficient ventilation to maintain healthy and pleasant environment for all trades.

Work Space Illumination:

Do not work under less than 30-foot candles measured 3 ft. above floor.

COORDINATION

Coordinate with other trades affecting or affected by work of this section.

PART 2 - PRODUCTS**EPOXY FLOORING**

Manufacturer and Model Basis of Design: Sherwin-Williams, Poly-Crete MDB.

Type: 100% solids aromatic cementitious urethane system with a broadcast aggregate and integral 6" cove base.

Thickness: 1/4" thick.

Primer:

Solvent-free, low viscosity, epoxy-based, two-component resin with coupling agent additive.

Matrix Layer:

Type: Semi-rigid, 100% solids, cured epoxy with standard grade 28 mesh quartz (or colored quartz for multi-color pattern floors).

Polymer/aggregate ratio: 1:2 by volume

Vertical Surfaces: Semi-rigid, 100% solids cured epoxy and aggregate composition with polymer/aggregate ratio of 1:4, or polymer/aggregate ratio of 1 to 3 with thixotropic agent such as fumed silica added to the matrix composition.

Topcoat:

Type: Semi-rigid, 100% solids cured epoxy without aggregates or fillers, clear for multi-colored quartz patterns or pigmented for solid-colored floors.

Texture: F-60 Broadcast Grit Level.

Anti-Microbial Additive: Incorporate anti-microbial additive to control growth of most bacteria, fungi, algae and actinomycetes.

Color: Charcoal.

PRIMER, SEALER, CRACK FILLER, AND ADHESIVE

Water-resistant type, made or approved by covering manufacturer.

CLEANER

Neutral type approved by covering manufacturer.

PART 3 - EXECUTION**EXAMINATION**

Verify that surfaces to receive work specified herein are solid, dry, clean, level, and otherwise properly prepared.

Prior to starting work notify General Contractor of defects requiring correction.

Do not start work until conditions are satisfactory.

PREPARATION

Perform preparation and cleaning procedures according to flooring manufacturer's instructions for particular substrate conditions involved, and as specified. Provide clean, dry, and neutral substrate for flooring application.

Shot blast, acid etch or power scarify as required to obtain optimum bond of flooring to concrete.

Remove sufficient material to provide a sound surface, free of laitance, glaze, efflorescence, and any bond inhibiting curing compounds or form release agents. Remove grease, oil, and other penetrating contaminants. Repair damaged and deteriorated concrete to acceptable condition. Leave surface free of dust, dirt, laitance and efflorescence.

AREAS TO BE COVERED

In Spaces Scheduled to have Floor Covering:

Generally throughout entire building with the exception of the mechanical mezzanine.

Where Base is scheduled:

Provide integral with floor covering around perimeter of room or space, unless otherwise indicated elsewhere.

INSTALLATION

Follow manufacturer's instructions and applicable sections of referenced specifications to produce a uniform monolithic flooring surface of thickness indicated.

Apply trowel coating of flooring manufacturer's recommended primer.

1 Trowel self-leveling resin adhesion coats according to manufacturer's directions.
2 Trowel or broadcast quartz granule aggregate into wet adhesion coat. Allow to set to hardness, sweep
3 off excess unbonded aggregate, and repeat process to achieve total nominal thickness specified.
4 Apply coats of clear sealer resin by trowel or squeegee to fill and seal aggregate to specified texture,
5 uniform in color, and free of trowel marks.
6 Apply cove base mix to wall surfaces at locations shown to form integral cove base.
7 Cove Base Height: 6 inches.
8 Follow manufacturer's printed instructions and details including taping, mixing, priming, troweling,
9 sanding, and top coating of cove base.

10 11 CLEANING, REPAIRING, AND FINISHING

12 Cure decorative quartz fluid-applied flooring materials according to manufacturer's directions, taking care
13 to prevent contamination during application stages and before completing curing process.
14 Leave surfaces smooth and defect-free.
15 Remove debris from project site upon work completion or sooner, if directed.
16 Including work of other sections, clean, repair and touch-up, or replace when directed products which
17 have been soiled, discolored, or damaged by work of this section.

18 19 PROTECTION

20 Protect other work against damage and discoloration caused by work of this section.
21 Close application area for a minimum of 24 hours and/or provide necessary coverings to protect work of
22 this section.
23
24

25
END OF SECTION

PART 1 - GENERAL**SECTION INCLUDES**

Exterior and interior painting with transparent or opaque finishes. Includes stains, varnishes, lacquers, fillers, and preparation of surfaces.

SUBMITTALS

Provide in accordance with Section 01 33 00.

Product List:

Before ordering, submit complete and detailed list of materials proposed for use.

Obtain Architect's acceptance before ordering.

Provide product data for field-applied interior paints and coatings which have a potential impact on indoor air quality, including manufacturer's MSDS sheets or other Product Data listing VOC content as noted below.

Provide product data for exterior field-applied paints and coatings, which have a potential impact on ambient air quality, including manufacturer's MSDS sheets or other manufacturer's Product Data listing VOC content as noted below.

Color Samples:

One Sample of each required finish, color, and sheen. Sample size 8 1/2 X 11 inches, minimum.

Use suitable substrate for each sample, such as stiff paper for paint and specified wood for stains.

Obtain Architect's acceptance before proceeding with work.

QUALITY ASSURANCE

Each product container shall bear manufacturer's legible label indicating the following:

Manufacturer's Name

Type of Material

Manufacturer's Product Number

Manufacturer's Batch Number

Color

Instructions for reducing, where applicable.

DELIVERY, STORAGE, AND HANDLING

Deliver in original, unopened containers.

Do not open containers or remove labels until Architect inspects.

Store in suitable location where directed by General Contractor.

Protect against contamination by foreign matter.

Remove unacceptable materials from project site.

ENVIRONMENTAL REQUIREMENTS

Follow manufacturer's directions.

Minimum ambient air and surface temperature for 24 hours prior to and during application and until film is dry hard thereafter: 40°F.

Do not work where dust or insects are present.

Do not work where inclement weather may damage surface.

Do not work with less than 30 foot candles of available light measured 3 ft. above floor.

EMISSIONS STANDARDS

Conform to the following minimum standards for coating emissions:

<u>Coating Type</u>	<u>VOC Limits</u>	<u>Standard</u>
Architectural Flat Paints – Interior	50 g/L	Green Seal GS-11
Architectural Non-Flat Paints - Interior	150 g/L	Green Seal GS-11
Primer or Undercoat	150 g/L	Green Seal GS-11
Anti-Corrosive Coating	250 g/L	Green Seal GS-11
Clear Wood Finishes - General	350	SCAQMD Rule 1113
Clear Wood Finishes – Varnish	350	SCAQMD Rule 1113
Clear Wood Finishes – Sanding Sealer	275	SCAQMD Rule 1113
Clear Wood Finishes – Lacquer	550	SCAQMD Rule 1113
Clear Wood Finishes – Pigmented Lacquer	550	SCAQMD Rule 1113
Stains – Interior	250	SCAQMD Rule 1113

EXTRA STOCK

Leave, in previously unopened original containers, one gallon of each top coat.
Label for positive identification.
Store on project premises where directed.

COORDINATION

Coordinate with other trades affecting or affected by work of this section.

PART 2 - PRODUCTS**GENERAL**

Products for each general purpose shall be of same manufacturer.
Do not use products of different manufacturers over one another, except for shop prime coats specified in other sections of these Specifications.

MATERIALS

Select from the following Approved Products Table unless otherwise specified herein.
All listed products will not necessarily be employed on this project. Consult painting schedule for required materials.
Product numbers are given to establish desired quality and do not indicate color.

COLORS

As selected by Architect.
Color Quantity:
Interior Walls: Maximum 5 colors.
Interior Colors: Noted on Drawings.

MIXING AND TINTING

Deliver paints and enamels ready-mixed to jobsite.
Job-mix and job-tint only when acceptable to Architect.
Mix only in clean, rust-resistant containers.
Use tinting colors recommended by manufacturer for specific type of surface.
Factory-add fungicidal agent to all exterior coatings and to interior coatings applied in any high humidity spaces.

PART 3 - EXECUTION**EXAMINATION**

Examine surfaces to receive coating for conditions that will adversely affect execution, permanence, and Work quality.
Verify that General Contractor has removed door hardware.
Prior to starting work notify General Contractor about defects requiring correction.
Do not start work until conditions are satisfactory.

PREPARATION**Protection:**

Cover or otherwise protect work of other trades, including walls and floors of paint storage and mixing rooms.

Remove finish hardware, accessories, plates, lighting fixtures, and similar items. Obtain Architect's approval for protection in lieu of removal.

Post signs and install barricades as required to protect work of this section against damage or discoloration.

Take extraordinary care to prevent fire. Open cans of paint and varnish only when needed.

Keep rubbing cloths and oily rags submersed in water.

Surface Preparation:

General: Remove any loose material, dirt, or dust.

Galvanized Metal: Thoroughly clean with surface conditioner in accordance with manufacturer's instructions.

Etch metal with metal conditioner or in accordance with Steel Structures Painting Council Specification 7.

1 Non-Galvanized Steel: Remove any rust and scale.

2 Wood Doors: Lightly hand block-sand faces and edges with 180 grit sandpaper to remove any raised grain.

4 Preparation at Existing Doors: remove all surface contamination by washing with an appropriate cleaner, rinse thoroughly and allow to dry. Existing peeled or chipped paint should be scraped and sanded to a sound surface. Glossy surfaces should be sanded dull. Stains from water, smoke, ink, pencil, grease, etc. Should be sealed with the appropriate primer/sealer. Recognize that any surface preparation short of total removal of the old coating may compromise the service length of the system.

8 Fill any Voids. At natural finish, color filler to match wood.

9 Other Wood: Clean soiled surfaces with alcohol or approved.

11 Hand block-sand with 180 grit sandpaper to remove any raised grain.

12 At opaque coating seal knots, pitch, and resinous sapwood before prime coat application.

13 Fill voids, cracks, and other defects. At natural finish, color filler to match wood.

14 Existing surfaces to be refinished: Clean thoroughly; remove loose, scaly, and other defective film, fill holes and cracks.

16 Remove gloss by washing and sanding; touch-up bare spots with proper type primer.

18 COATING APPLICATION

19 General:

20 Follow manufacturer's directions.

21 Do not apply initial coating until moisture content of surface to be finished is within limitations recommended by paint manufacturer. Test with moisture meter.

23 Apply coating with suitable brushes, rollers, or spraying equipment as recommended by coating manufacturer.

25 Do not exceed coating manufacturer's application rate.

26 Follow coating manufacturer's recommended drying time between succeeding coats.

27 Apply finish coats smooth, free of brush marks, streaks, laps, coating pile-up, and skips.

28 Keep brushes, rollers, and spraying equipment clean, dry, free from contaminants, and suitable for finish required.

30 Leave moldings and ornaments clean and true to detail without excessive coating build-up in corners and depressions.

32 Where paint abuts other materials or colors, cut paint edges clean and sharp and with no overlap.

33 Finish door tops, bottoms and edges as specified below: Remove doors from frames, if necessary.

34 Painted Work:

35 Flat Metalwork except Doors: Apply paint with brush, roller or airless spray equipment.

36 Doors: Apply paint with roller or airless spray equipment only, do not apply with brush.

37 Face runs not permitted.

38 Stained and Natural Work:

39 Adjust finishes where necessary to obtain similar appearance between different adjacent materials.

41 FIELD QUALITY CONTROL

42 For each required color scheme, request Architect to inspect first finished room, space, or item for color, texture, and workmanship.

44 Dry paint film thicknesses will be measured upon painting completion using Tooke Paint Inspection Gage IV, a precision instrument designed for measuring and evaluating paint coatings. Re-coat any Work measuring less than specified thickness.

48 FIELD SAMPLE

49 Before proceeding with painting, apply where directed at least 30 sq. ft. of each specified coating on actual wall and ceiling surfaces, and at least one sample door, door frame, and cabinet. Simulate building's design lighting during Architect's review.

52 Accepted sample represents minimum standards for subsequent work.

53 Accept samples in like-new condition may be used in contract work.

54 Touch-up test surfaces, which will measure approximately 1 sq. inch per Test.

56 CLEANING

57 Remove spills, splatters, and stains from all surfaces including other work and those in paint storage and mixing rooms.

59 Unless otherwise approved, refinish entire wall or surface where portion of finish has been damaged or is

otherwise unacceptable.

Remove debris from project site upon work completion or sooner, if directed.

Including work of other sections, clean, repair and touch-up, or replace when directed, products which have been soiled, discolored, or damaged by work of this section.

PAINTING SCHEDULE

General:

Prime coats specified below may be omitted where factory-applied shop coats are specified in other Sections.

Prime coats specified may be omitted from existing finished surfaces, provided existing coating is sound.

Number of coats hereunder specified is minimum. Finished work shall be even, uniform color, and free from cloudy and mottled surfaces. Apply additional coats where necessary for any deep tone colors.

Minimum coating thicknesses specified below include prime coat and finishing coats combined.

Surfaces not coated, unless otherwise shown on Drawings:

Items having complete factory finish.

Rubber.

Non-ferrous metal.

Elastomeric sealants.

Tempered hardboard.

Acoustic tile.

Glass.

Flooring.

Fire-resistance rating labels and instructional labels.

Portions of buildings where no alterations occur, except as noted on Finish Schedule on Drawings.

Interior Gypsum Board:

Paint System - 15: Latex Enamel

One coat wallboard primer, 1.6 mils.

Two coats eggshell gloss latex enamel, 2.6 mils.

Total minimum dry thickness: 4.2 mils.

Interior Ferrous and Non-ferrous Metal:

Paint System – 18: Latex Enamel

One coat metal primer, 2.5 mils.

Two coats semi-gloss latex enamel, 2.6 mils.

Total minimum dry thickness: 5.1 mils.

Interior Woodwork:

Paint System - 22: Latex Enamel

One coat enamel undercoat, 1.9 mils.

Two coats semi-gloss latex enamel, 2.6 mils.

Total minimum dry thickness: 4.5 mils.

Exposed Mechanical and Electrical Work except in Mechanical or Electrical Equipment Rooms:

Paint System -25: Exterior metal work including that on roof:

Prepare and paint as specified for other exterior metal of same kind.

Paint System - 26: Interior metal work:

Prepare and paint as specified for other interior metal of same kind.

Paint System - 27: Electrical conduit, panel boards, and service boxes:

Prepare and paint as specified for other interior metal of same kind.

END OF SECTION

APPROVED PRODUCTS TABLE

Manufacturers ► Products ▼ 	Benjamin Moore	Miller	PPG	Rodda Cloverdale	Sherwin Williams	Other
Concrete Block Filler – water base	571	481-0-11	6-7	501901	B25W25	
Masonry Primer Sealer – water base	609	620-0-XX	4-808	501601	A24W300	
Wood Primer Sealer – water base	027	270-0-11	17-921X1	501601	B42W08041	
Galvanized Iron Primer – water base	HP04	310-2-10	4020PF	501601	B66W1	
Ferrous Metal Primer – water base	HP04	310-2-10	4020PF	70323	B66W1	
Heavy-bodied Stain – water base	610	Storm 412XX	FLD 820	70303	A15W00053	Olympic, Cabot,
Exterior Satin Enamel – water base	448	320-4-00	6-2045XI	532201	A82W00107	
Exterior Semi-gloss Enamel – water base	449	320-5-XX	PP919	542001	A08W00116	
Elastomeric Coating – water base	359	550-2-XX	4-110XI	511301	A5-600	
Epoxy Enamel Semi-gloss – water base	V341	183-5-10	16-510	70503	B70/B60V25	
Enamel Undercoat – water base	027	270-0-11	17-921X1	502001	B28W02600	
Wallboard Primer – water base	534	220-0-11	6-2	503601	B28W02600	
Interior Eggshell Enamel – water base	537	120-3-XX	6-4310XI	523601	B20-2600	
Interior Satin Enamel – water base	538	120-4-00	6-4410XI	533001	A87W011XX	
Interior Semi-gloss Enamel – water base	539	120-5-73	4216 HP	543601	B31W046XX	
Dry Fall – water base	395	181-1-11	6-725XI	513801	B42W1	
Interior Stain – water base	1WB1300	700	DFT300	06680	618074444	Varathane
Urethane Varnish Gloss – water base	422		DFT157	59324	A68V00091	
Urethane Varnish Satin – water base	423		DFT159	59314	A68F00090	
Traffic Paint – White	TP-22XX	8001	11-53	57341A	TM2152	
Traffic Paint – Yellow	TP-32XX	8013	11-54	57342A	TM2153	

PART 1 - GENERAL**SECTION INCLUDES**

Collection of small specialty items not found in independent sections.

SUBMITTALS

Submit in accordance with Section 01 33 00.

Shop Drawings:

Show layout, dimensions, details of construction, methods of joining to other work, required clearances, finishes, accessories, and other pertinent items.

Manufacturer's printed data or samples may be substituted, provided required information is included.

Approved samples in like-new condition may be used on contract work.

Product Data:

Provide manufacturer's data for products specified herein. Include information on mounting, operation, finishes, and sizes.

DELIVERY, STORAGE, AND HANDLING

Protect against damage and discoloration.

Deliver in manufacturer's original, unopened, protective wrapping with original, legible label intact.

COORDINATION

Coordinate with other trades affecting or affected by work of this section.

PART 2 - PRODUCTS**FIRE EXTINGUISHERS (FE)**

Type: OSHA Approved, silver, multi-purpose dry chemical.

Rating: UL rated 2A:K, 6 liter capacity.

Fill and service extinguishers prior to substantial completion of project.

Install on manufacturer's standard wall bracket where "FE" is noted on Drawings.

FIRE EXTINGUISHER SIGNS

Type: 3D Tent Style, 5" x 6".

Manufacturer and Type: J. L. Industries 24S or accepted substitute.

Provide at each fire extinguisher is noted on Drawings, mount bottom of sign at 84" above finish floor.

CORNER GUARDS

Size: 1½" X 1½" wings or 2" x wall width, 48 inches length.

Material: 16 gage, type 304 stainless steel, No. 4 finish.

Mounting: Cement-on type.

Manufacturer: IPC Door and Wall "181124C-304" Protection, Babcock-Davis "CG-SS304", Korogard Wall Protection Systems "GS20", or accepted substitute.

Location: Provide at all 90-degree interior corners and wall end caps, existing and new, throughout the entire building.

SHOP PAINTING

Factory-apply one coat rust-preventative metal primer to ferrous metal surfaces after fabrication, but before installation, unless hereunder specified otherwise.

Substitute complete factory-finish where so specified herein.

BLOCKING AND BACKING

Provide where necessary.

Specialties are shown on Drawings for Contractor's convenience; verify location, type and extent of Work before installing blocking and backing.

PART 3 - EXECUTION**EXAMINATION**

Verify that surfaces to receive specialties are properly prepared, sized, and located.

OTHER SPECIALTIES

10 80 00-2

Prior to starting work notify General Contractor of defects requiring correction.
Do not start work until conditions are satisfactory.

INSTALLATION

General:

Follow manufacturer's instructions and approved shop drawings.

Secure plumb, level, square, straight, and true as applicable.

Fire Extinguishers:

Mount on bracket on wall where "FE" is shown on Drawings unless otherwise directed by building official.

ADJUSTMENTS

Adjust moving parts to operate satisfactorily at time of final project acceptance and during warranty period.

CLEANING AND REPAIRING

Remove debris from project site upon work completion or sooner, if directed.

Including work of other sections, clean, repair and touch-up, or replace when directed products which have been soiled, discolored, or damaged by work of this section.

Leave installation clean and defect-free.

PROTECTION

Protect other work against damage and discoloration caused by work of this section.

END OF SECTION

PART 1 - GENERAL**SECTION INCLUDES**

Fabrication, supply, and installation of certain food service equipment. Mechanical and electrical services fitting to, and mounting on, the equipment. Connections, fasteners, and anchors required for proper attachment of equipment.

REFERENCES

Welding: AWS D1.1 - Structural Welding Code for general steel and stainless steel.
Stainless Chromium Nickel Steel Clad Plate, Sheet, and Strip: ASTM A264.

SYSTEM DESCRIPTION

Furnish and install stainless steel counters with open bases as shown on Drawings.
Furnish and install stainless steel counters with plastic laminate surfaced bases, bases as specified in Section 06 41 00, as shown on Drawings.

SUBMITTALS

Provide in accordance with Section 01 33 00.

Product Data:

Provide manufacturer's product literature, instructions and all data regarding warranties.

Shop Drawings:

Provide large scale detail drawings of custom fabricated equipment showing construction methods, type and gage of metal, hardware, and fittings; with plan, front elevation, and a minimum of one cross-section.
Show complete details of food service equipment and its installation.

Operation and Maintenance:

Submit at the time of start-up two binders containing the following information, indexed and cataloged on each item of equipment:

- Service and maintenance literature from manufacturer.
- Warranty certificates with copy of warranty card properly filled out.
- Manufacturer's service agency for authorized warranty work.
- Worker's warranty and agent for all custom fabricated equipment.

At completion of work, provide a qualified and trained manufacturer's representative to demonstrate the operation of each item of equipment and instruct Owner in the operating procedure and maintenance.

QUALITY ASSURANCE**Qualifications:**

Fabricator/Installer having personnel and facilities totally engaged in design, fabrication, and installation of food service equipment of type and size specified for this project.
Provide at least one person who shall be thoroughly trained and experienced in the skills required, who shall be completely familiar with the requirements of this work, and who shall personally direct all installation performed under this Section of these Specifications.

Regulatory Requirements:

Underwriter's Laboratories label (UL) required all electrically operated equipment.
National Sanitation Foundation Standard No. 2.
NFPA Standard No. 96, latest edition.
Comply with requirements of Oregon State Board of Health.

DELIVERY, STORAGE, AND HANDLING

Deliver, store, and handle equipment to prevent damage and disfigurement.
Deliver in manufacturer's original, unopened containers with legible labels intact.

WARRANTY

Warrant the work of this Section for two (2) years from date of Substantial Completion of Project against defect in materials and workmanship under normal use and service.

This is an extension of the 1 year warranty on all work called for in the General Conditions.

Repair or replace defective work at no additional cost to the Owner.

COORDINATION

Coordinate with other Trades affecting or affected by Work of this Section.

PART 2 - PRODUCTS

STAINLESS STEEL COUNTERTOPS AND TABLES

Materials:

Sheet Metal: Stainless Steel, Type 304, Finish No. 4, conforming to ASTM A 167.

Structural Steel Tubing: Type 302/304 conforming to ASTM A554.

Feet: Solid stainless steel, closed bottom, adjustable by concealed threaded stem with lug to fit inside leg.

Coatings: Sound deadening compound conforming to Fed. Spec. TT-C-520-A.

Provide all other materials not specifically described but required for complete and proper fabrication and installation of food service equipment.

Equipment: Refer to Drawings and Owner Cut Sheets for requirements.

Metal Thickness (Unless otherwise shown on Drawings):

Counter Tops: 16 gage

Sink Inserts: 18 gage

Reinforcements: 14 gage

Finishes:

Hammer and peen depressed sunken surfaces to restore plane.

No apparent defect when viewed from a distance of 3 feet under 100 foot candles illumination.

Grind and polish exposed surface to No. 4 finish.

Exercise care in grinding to avoid discoloration from excessive heat.

Use abrasive wheels and belts unused on carbon steel, and free from iron.

Remove die marks by re-polishing to match original finish.

Finished surfaces to be smooth, uniform, and free from ripples and orange peel texture.

Legs:

1 1/4 inch 16 gage stainless steel tubing.

Welded 2 inch high steel socket to framing.

Fit legs into sockets and secure in place with set screws.

Fit bottom of legs with feet.

Brace between legs using 1 1/4 inch diameter tubing as stretchers and crossrails set 10 inches above floor and fastened together with fillet welds.

Rubber Feet:

Install rubber or nylon button feet or other protective features on the bearing surface of any item positioned on a finished surface.

Divider Rails:

Satin stainless steel, 2 inch outside diameter, prefabricated rails 30 inches high and 36 or 42 inches long as noted on Drawings; Lawrence FSS-2, or accepted substitute.

Fabrication:

One-piece construction, front sloped ten degrees.

14 inches high x length indicated on Drawings.

One panel units, up to five feet in length.

Legs: Stainless steel tubing with sanitary one-piece coved base and concealed fastenings.

Top Shelf: 14 gage stainless steel, 10 inches wide.

Fabrication:

Weld intersecting joints solid and remove excess metal by grinding flush and smooth.

Use neutral gas shielded arc method on stainless steel.

Tack welds 1/2 inch minimum length, spaced not more than 4 inches n center.

Full penetration welds over entire length, flat without buckles, voids, or other imperfections.

Polish to match adjacent surfaces.

Fabricate surfaces without sharp edges, overlapping joints, or open crevices.

PART 3 - EXECUTION**EXAMINATION**

Verify that surfaces to receive equipment and shelving are straight, plumb, true, solid, rigid, and otherwise properly prepared.

Prior to starting work, notify General Contractor of defects requiring correction.

Do not start work until conditions are satisfactory.

FIELD MEASUREMENTS

Verify prior to fabricating equipment and shelving.

If field measurements differ slightly from drawing dimensions modify Work as required for accurate fit. If measurements differ substantially, notify Architect prior to fabricating work.

INSTALLATION – STAINLESS STEEL COUNTERTOPS AND TABLES**General:**

Equipment to be installed factory trained personnel.

Assemble units and set in position.

Adjust feet to make countertops level within 1/16 inch.

Fasten units securely to floor, wall, and other construction.

Bases secured to floor and cases scribed and secured to each other and to adjacent walls.

Countertops fastened to cases and scribed to walls.

Install in accordance with NSF Manual on Sanitation Aspect of Installation of Food Service Equipment.

Cut and drill tops, backs and other elements as required for service outlets and fixtures.

Metal Field Joints:

Reinforcement and welds equivalent to shop welds.

Grinds exposed welds flush and polish to match finish of adjoining surfaces.

Close ends of all fixtures, splash aprons, shelves, and bases by sealing or welding end plates.

Wall Joints:

Fill joints between wall and equipment that are less than 3/8 inch wide with backer rod and sealant.

Joints greater than 3/8 inch and less than 4 inches, close with filler strip; fit tightly and fasten securely using concealed clips at ends and space 6 inches o.c.

Connection to Services:

By mechanical/electrical trades as required.

ADJUSTING

Test and adjust equipment and apparatus to ensure proper working order and conditions.

CLEANING

Remove masking/protection from stainless steel and other finished surfaces. Thoroughly clean equipment.

Polish glass, hardware, fixtures, fittings, and accessories.

Including work of other sections, clean, repair, and touch-up, or replace when directed, products which have been soiled, discolored, or damaged by work of this section.

Remove debris from project site upon work completion or sooner, if directed.

PROTECTION

Protect other surfaces against damage or discoloration caused by work of this section.

END OF SECTION

PART 1 - GENERAL**SECTION INCLUDES**

Furnishing and installing roll-up fabric interior window shades including mounting and operating hardware.

PERFORMANCE REQUIREMENTS

As a shade cloth, the fabric shall hang flat, without buckling or distortion. The edge, when trimmed, shall hang straight without raveling. An unguided shade fabric shall roll true and straight without shifting sideways more than 1/8 inch in either direction due to warp distortion or weave design.

Performance Classification: Premium, heavy-duty, clutch operated design for use in demanding applications.

REFERENCES

NFPA 701-99 - Fire Tests for Flame-Resistant Textiles and Films.

SUBMITTALS

Submit in accordance with Section 01 33 00.

Product Data:

For each product specified.

Shop Drawings:

Show mounting details with appropriate fasteners for specific project substrates.

Samples:

Submit two copies of manufacturer's fabric samples.

QUALITY ASSURANCE

Manufacturer Qualifications: Obtain roller shades through one source from a single manufacturer with a minimum of 20 years experience in manufacturing products comparable to those specified in this section.

NFPA Flame-Test: Passes NFPA 701. Materials tested shall be identical to products proposed for use.

PRODUCT DELIVERY, STORAGE, AND HANDLING

Deliver in Manufacturer's protective container with legible identifying labels intact.

Store flat and above ground.

Protect against moisture, damage, and discoloration.

WARRANTY

Manufacturer's warranty from date of substantial completion that covers the following:

Shade Hardware: 25 years.

Fabric: 10 years.

Aluminum and Steel Coatings: 5 years.

Installation: One year commencing on date of final acceptance.

COORDINATION

Coordinate with other Trades affecting or affected by Work of this Section.

PART 2 - PRODUCTS**ROLLER SHADES**

Manufacturers: Draper, Inc., Nysan Shading Systems Ltd, MechoShade Systems, Roll-A-Shade.

Mounting: Wall/Door mount as shown on drawings.

Basis of Design: Draper, Inc.

Operation:

Bead chain and clutch operating mechanism allowing shade to stop when chain is released. Designed never to need adjustment or lubrication. Provide limit stops to prevent shade from being raised or lowered too far.

Bead chain loop: No. 10 stainless steel bead chain rated to 90 lb. minimum breaking strength.

Bead Chain Hold Down: Spring-loaded tensioner.

Clutch mechanism:

Fabricated from high carbon steel and molded fiberglass reinforced polyester or injected molded nylon.
Minimum 20 lb. lifting capacity. White color.

Idler Assembly:

Provide roller idler assembly of molded nylon with adjustable or spring-loaded length idler pin to facilitate easy installation, and removal of shade for service.

Single Roller Configuration:

Mounting: Universal mounting brackets, endcaps and fascia. Provide size compatible with roller size.

Mounted to walls and doors as noted on drawings.

Endcap covers: To match fascia or headbox color.

Fascia: L shaped aluminum extrusion to conceal shade roller and hardware.

Attachment: Snaps onto endcaps without requiring exposed fasteners of any kind. Fascia can be mounted continuously across two or more shade bands. No notching is required.

Shape: Square Fascia Panel.

FABRIC

Light-Filtering Fabrics:

Manufacturer and Model: Phifer SheerWeave PW4001 1%.

Composition: 25% Polyester, 75% Vinyl on Polyester, Microban Antimicrobial Protection certification.

Acoustical Value: NRC .55 / SAA .55

UV Blockage: Approximately 99%

Approximate Openness Factor: 1 percent.

Average Fabric Thickness: 0.033 inch (.068 mm).

Average Fabric Weight: 21.3 ounces per square yard.

Microbial Resistance, ASTM E2180 and ASTM G21: Pass.

Color: To be selected from manufacturer's standard colors by Architect.

Extent of Work: At all exterior windows as noted on drawings.

ACCESSORIES

Dynamic Hembar: Extruded aluminum profile, single lengths for each shade panel; insert in fabric pockets and sew both ends.

PART 3 - EXECUTION

EXISTING CONDITIONS

Verify that surfaces to receive work of this section are solid, true, square, plumb, accurately sized and located, and otherwise properly prepared.

Prior to starting work notify General Contractor of defects requiring corrections.

Do not start work until conditions are satisfactory.

INSTALLATION

Fabricate shades completely in the factory.

Coordinate requirements for blocking and structural supports to ensure adequate means for installation of window shades.

Install level and plumb with anchorage and support as shown on drawings.

ADJUSTMENTS

Adjust moving parts to operate smoothly and free from binding or malfunction throughout entire range at time of final project acceptance and during warranty period.

PRODUCT CLEANING AND REPAIRING

Including work of other sections, clean, repair and touch-up, or replace when directed, products which have been soiled, discolored, or damaged by work of this section.

Remove debris from project site upon work completion or sooner, if directed.

PROTECTION

Protect other Work against damage and discoloration caused by work of this section.

END OF SECTION

FOR DOCUMENTS THAT ARE DIGITALLY SIGNED: IF PRINTED, THE PRINTED COPY NO LONGER MEETS REQUIREMENTS OF OAR 820-025-0010 AND PRINTED DOCUMENTS DO NOT BEAR THE SIGNATURE OF THE ENGINEER. UNSIGNED DOCUMENTS ARE PRELIMINARY, AND NOT FOR CONSTRUCTION.

**THIS STAMP, ON THIS PROJECT APPLIES
ONLY TO SECTIONS AUTHORED BY:**

**JEREMY WENGER, PE
FLUENT ENGINEERING, INC.
2110 STATE STREET
SALEM, OR 97301
503-447-5030**

22 05 00 Common Work Results for Plumbing

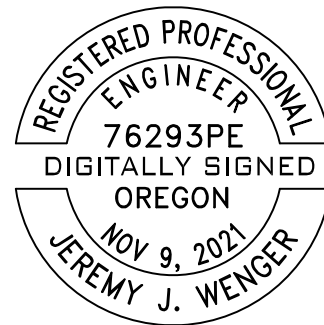
22 05 05 Selective Demolition for Plumbing

22 11 16 Domestic Water Piping

22 13 16 Sanitary Waste and Vent Piping

22 33 00 Electric Domestic Hot Water Heaters

22 42 00 Plumbing Fixtures



EXPIRES: 06/30/2026

PART 1 - GENERAL**SUMMARY**

Products under this contract must meet minimum specification requirements in detail without exception unless specifically noted and approved as provided in these Specifications. Equipment submitted for review must clearly state on cover sheet any differences from specified product. Equipment substitution or submittal review does not relieve Contractor from meeting all requirements of specified item.

CONTRACT DOCUMENTS

The Contract Documents are inclusive. All requirements of all Contract Documents shall be binding as if repeated herein and with this Division as required by any other Division or Contract Document. Applicable provisions of Division 1 govern work under this section. This Division does not express or imply separation of the Contract Documents and shall not be considered as separation of the Work. See Advertisement For Bids, Instructions to Bidders, Supplemental Instructions to Bidders, General Conditions, Supplemental General Conditions, Drawings and Specifications, and modifications incorporated in the documents before execution of the Agreement.

Conflicts: If any conflicts exist the more stringent Contract Document is required.

DEFINITIONS

Definitions herein are intended as advisory and shall not limit requirements within the Contract Documents. Where a conflict of definitions exists, the more stringent standard shall be used. Where a term is defined on a Drawing the Drawing definition shall be used for that drawing. Not all definitions are included. Trade standard terms are not defined.

SCOPE OF WORK

General: Provide complete and functional plumbing systems as specified, as shown on Drawings, as required, and as intended.

Omissions: Contractor shall be responsible for additional labor, or additional material necessary for the proper execution of the Work. Omissions of expressed reference to any item shall not relieve the responsibility to conform to the Contract Documents.

Scope of Plumbing Work: All materials and workmanship shall be furnished for complete, tested, and operating plumbing systems as shown on the drawings and specified herein. Plumbing work is to include the water and sanitary service. Complete to the point of connection with the serving utility(ies). Any changes of or work required by the serving utility(ies), are part of this work and shall be fully included in the bid price.

Contractor shall obtain, maintain (keep current), any required permits including any permits obtained (prior, during, or after bidding/quoting) by any other party, including the Owner, for the proper and lawful execution of the work. Pay for such required permitting unless otherwise arranged by the Owner.

Contractor shall hire (sub-contract) as required for proper permitting such as permits that require electrical, mechanical, plumbing, low voltage, medium voltage, etc. licenses required to obtain permit(s).

CODES

Comply with the requirements of local, federal, Oregon Administrative Code, and Oregon Plumbing Specialty Code.

SUBMITTALS

Reference: Division 1, General Conditions, Submittals.

Engineer Review: Allow not less than 20 Days.

Submittal Content

Submittal information not expressly required by the specifications will not be reviewed.

Submittal information shall be provided in sufficient detail to establish conformance with specified requirements. Where submitted literature includes multiple models, features, or options, the specific models, features, or options proposed shall be clearly indicated. Where a brief inspection shows that product data is not complete, the submittal will be rejected without review.

Submittal data shall be clear, concise, legible, and relevant. Where data is not properly organized and contains significant information that is not relevant, the submittal will be rejected without review.

The following definitions apply.

Manufacturer's Label: Manufacturer's label shall include a typewritten list of manufacturer's name, sizes and model or catalog numbers.

Manufacturer's Catalog Data: Manufacturer's catalog data shall include standard catalog information (Cut Sheets) marked to indicate specific equipment and options for complete and functional system. All components of the system shall be included. Include listing information. Include installation instructions.

Manufacturer's Technical and Engineering Data: Manufacturer's technical and engineering data shall include materials, dimensions, details, installation instructions, weights, capacities, illustrations, wiring diagrams, control diagrams, control schematics, piping diagrams, connection diagrams, performance data, trip curves, listings, mix design, test results, and any other information required for a complete evaluation of the equipment specified, and to verify compliance with the Contract Documents. All available details shall be included with any modifications to the equipment indicated. All manufacturers and associated model numbers used for complete system shall be indicated.

Shop Drawings: Shop drawings are Construction drawings of items manufactured specifically for this project. Shop drawings shall include dimensions, construction details, weights, and additional information to identify the physical features of the system or piece of equipment. Drawings shall be adequately sized and scaled for a complete review.

Samples: Samples include actual example of the equipment to be installed. Include actual color, finish, and functioning replica of equipment to be installed. Samples will be returned to the Contractor when submitted with pre-paid postage.

Certifications and Qualifications: Submit list of past projects with same systems. Submit information listing references, copies of certificates issued by manufacturer, school, and standards organizations. Submit information mandated in specific specification section.

Materials List: Provide tabular list of materials including specification reference, specification product name, manufacturer, model/part number, and size and/or quantity where appropriate. Do not include supplemental data, except where specifically requested.

Special Requirements Listed: Additional requirements indicated in individual specification sections.

Submit: Not less than Fixtures, Stops, Pumps, Valves, and Piping catalog information.

CONFORMANCE WITH REQUIREMENTS

General: All work shall conform to the reasonable requirements of the project within the scope of the project and authorizations. All work shall conform to the methods and requirements of Code at the location of the Work.

Access and inspection: All portions of the Work shall be accessible to inspections and review at all reasonable times during construction. Contractor is responsible for providing access for review and inspection of the Work. Contractor shall secure written inspection reports prior to concealing Work.

Contractor is responsible for damages to properly review the Work due to lack of at least 7 Days advance written notification to the Architect, and Engineer that Work is ready for inspection.

Accounting: Provide general accounting information as to labor and equipment costs to assist in determination of modifications to the Contract. Provide accounting breakdown when required for securing Owner financing, or for analysis of equipment costs or equipment payback periods, as well as information for Owners incentives.

COORDINATION OF TRADES

Check all other trade drawings to avert potential installation conflicts. Should major changes from the Drawings be required to resolve potential conflicts, notify the Architect and secure written approval and agreement on necessary adjustments prior to start of installation. Check all equipment locations and connections on the site for coordination with other Divisions equipment and connections and structure and the like. Contractor is responsible for scheduling trades to properly execute all the Work as intended.

STANDARD OF CARE AND QUALIFICATIONS

General: Contractor shall be experienced and knowledgeable to Provide Work. Owner is not responsible for improper operation, incompliance, or installation due to Contractor's lack of knowledge or experience. Upon request, and where requested herein the Contractor shall supply qualifications and experience.

Drawings are presented with industry terms, statements, and trade practices and it is the responsibility of the Contractor to be familiar. Provide written notification prior to Bid to the Architect if any representation is not understood, or outside standard practice.

Like Materials and Quality Control: All systems provided shall be new and of like materials provided through manufacturer. Items of the same by different manufacturers will be rejected. Equipment shall conform to all applicable Code and applicable listing criteria as of the date of the Contract Documents. Equipment determined to be manufactured under any other listing or Code prior to the date of the Contract is not acceptable, even if the equipment is new or has not been used. All equipment provided to project shall be listed by an approved listing organization.

EXAMINATION OF SITE

Examine Site of Work prior to making Bid. Ascertain all related physical conditions. Verify at the Site of Work prior to Bid scale dimensions shown due to exact locations, distances, and levels will be governed by actual field conditions. Owner will not be responsible for any loss or costs that may be incurred due to a Bidder's failure to fully inform themselves prior to Bid in regard to conditions pertaining to the Work and nature of the Work.

MINOR DEVIATIONS

Make minor changes in equipment locations and equipment connections as directed or required without extra cost.

RECORD DRAWINGS

Maintain a marked set of prints at job site at all times. Show all changes from the original drawing set whether visible or concealed. Include all addendums, field orders, change orders, clarifications, request for information drawn responses, and deviations. Dimension accurately from building lines, floor, or curb elevations. Show exact location, elevation, and size of conduit/raceway, access panels and doors, equipment, and all other information pertinent to the Work. At project completion, submit marked set to Architect for review.

WARRANTY

Warrant Work, materials, and equipment for not less than one year.

CONTINUITY OF EXISTING SERVICES

Do not interrupt or change existing services without prior written approval from the Owner's Project Representative. When interruption is required, coordinate scheduling of down-time with the Owner to minimize disruption to his activities. Unless specifically stated, all work involved in interrupting or changing existing services is to be done during non-working hours.

CERTIFICATES AND INSPECTIONS

Reference: Division 1, General Conditions, Permits, Regulations, Utilities and Taxes.

Inspections: Obtain and pay for all required installation inspections except those provided by the Architect. Deliver the originals of inspection certificates and test records to the Owner's Project Representative. Include copies of the certificates and test records in the Operating and Maintenance Instructions.

PROTECTION OF FINISHED SURFACES

Refer to Division 1, General Requirements, Protection of Finished Surfaces.

SLEEVES AND OPENINGS

Refer to Division 1, General Requirements, Sleeves and Openings.

SEALING AND FIRESTOPPING

Sealing and firestopping of sleeves/openings between piping, etc. and the sleeve or structural opening shall be the responsibility of the contractor whose work penetrates the opening. The contractor responsible shall hire individuals skilled in such work to do the sealing and fireproofing. Provide all fire stopping of fire rated penetrations and sealing of smoke rated penetrations in compliance with Specifications Fire Stopping.

OPERATION AND MAINTENANCE DATA

All operations and maintenance data shall comply with the submission and content requirements specified under section GENERAL REQUIREMENTS.

In addition to the general content specified under GENERAL REQUIREMENTS supply the following additional documentation:

- Records of tests performed a to certify compliance with system requirements
- Manufacturer's wiring diagrams for electrically powered equipment
- Certificates of inspection by regulatory agencies
- Valve schedules
- Lubrication instructions, including list/ frequency of lubrication
- Parts lists for fixtures, equipment, valves and specialties
- Manufacturers installation, operation and maintenance recommendations for fixtures, equipment, valves and specialties
- Additional information as indicated in the technical specification sections

PART 2 - PRODUCTS

ACCESS PANELS AND DOORS

Lay-in Ceilings:

- Removable lay-in ceiling tiles in 2 X 2 foot or 2 X 4 foot configuration provided under Division 9 are sufficient; no additional access provisions are required unless specifically indicated.

Masonry walls, Gypsum Board and Plaster Walls And Ceilings:

- 16 gauge frame with not less than a 20 gauge hinged door panel, prime coated steel for general applications, stainless steel for use in toilets, showers, and similar wet areas, concealed hinges, screwdriver operated cam latch for general applications, key lock for use in public or secured areas, UL listed for use in fire rated partitions if required by the application. Use the largest size access opening possible, consistent with the space and the item needing service; minimum size is 8" by 8".

PART 3 - EXECUTION

EXCAVATION AND BACKFILL

Perform all excavation and backfill work necessary to accomplish indicated plumbing systems installation. Excavate to bottom of pipe and structure bedding, 4" in stable soils, 6" in rock or wet trenches and 8" in unstable soil. Finish bottoms of excavations to true, level surface.

Tunnel or remove sidewalk and curb in areas of excavation to the nearest joint. Remove pavements, curbs and gutters to neat and straight lines to the limits of removal. Make sawcut lines parallel to existing joints, or parallel or perpendicular to pavement edges to form a neat patch. Carefully remove remaining pavement within the sawcut area. Leave existing base materials between the area disturbed by the work and the sawcut line undisturbed by the sawcutting, pavement removal, or pavement replacement processes.

Strip topsoil from area to be excavated, free from subsoil and debris, and store for later respreading.

At no time place excavated materials where they will impede surface drainage unless such drainage is being safely rerouted away from the excavation.

Excavate whatever materials are encountered as required to place at the elevations shown, all pipe, manholes, and other work. Remove debris and rubbish from excavations before placing bedding and backfill material.

Remove surplus excavated materials from site.

Verify the locations of any water, drainage, gas, sewer, electric, telephone or steam lines which may be encountered in the excavation. Underpin and support all lines. Cut off service connections encountered which are to be removed at the limits of the excavation and cap.

Provide and maintain all fencing, barricades, signs, warning lights, and/or other equipment necessary to keep all excavation pits and trenches and the entire subgrade area safe under all circumstances and at all times. No excavation shall be left unattended without adequate protection.

Elevations shown on the plans are subject to such revisions as may be necessary to fit field conditions.

No adjustment in compensation will be made for adjustments up to two (2) feet above or below the grades indicated on the plans.

Install lines passing under foundations with minimum of 1-1/2 inch clearance to concrete and insure there is no disturbance of bearing soil.

234 Bed pipe up to a point 12" above the top of the pipe. Take care during bedding, compaction and backfill
235 not to disturb or damage piping.
236 Mechanically compact bedding and backfill to prevent settlement.

237
238 **ROCK EXCAVATION**

239 Remove rock encountered in the excavation to a minimum dimension of six (6) inches outside the pipe.
240 Rock excavation includes all hard, solid rock in ledges, bedded deposits and unstratified masses, all
241 natural conglomerate deposits so firmly cemented as to present all the characteristics of solid rock; which
242 material is so hard or so firmly cemented that in the opinion of the Engineer it is not practical to excavate
243 and remove same with a power shovel except after thorough and continuous drilling and blasting. Rock
244 excavation includes rock boulders of 1/2 cubic yard or more in volume.
245 Rock excavation will be computed on the basis of the depth of rock removed and a trench width two (2)
246 feet larger than the outside diameter of the pipe where one (1) pipe is laid in the trench and three (3) feet
247 larger than the combined outside diameter where two (2) pipes are laid in the trench. Include 6" pipe and
248 structure bedding in rock excavation. Include rock excavation shown on the plans in the Base Bid.

249
250 **SURFACE RESTORATION**

251 Completely restore the surface of all disturbed areas to a like condition of the surface prior to the work.
252 Level off all waste disposal areas and clean up all areas used for the storage of materials or the
253 temporary deposit of excavated earth. Remove all surplus material, tools and equipment.

254
255 **WIRING**

256 Unless otherwise noted, all wiring for motors, starters, and equipment is specified in Division 26.
257 Wiring of temperature controls shall be performed in accordance with the requirements of Division 26 but
258 shall be performed as outlined in other sections of these specifications.
259 All power for control circuits required for the Temperature Control System shall be provided and installed
260 where indicated on the Division 26 Drawings, but shall otherwise be provided as indicated in other
261 sections of these specifications.
262 Each supplier of equipment requiring control shall have wiring diagrams furnished with submittals. This
263 shall be used to determine conduit layouts required to complete the electrical portions of the
264 instrumentation and control systems.
265 All motors furnished as a portion of work specified in Division 22 shall be wired as specified in Division 26.
266 Except where combination starter-disconnects are specified elsewhere herein or in Division 26, all motors
267 shall be provided with safety disconnect switches in accordance with the National Electrical Code as
268 specified in Division 26.

269
270 **FOUNDATION**

271 Provide equipment foundations associated with the work specified in Division 22.
272 All top corners and edges of all foundations shall be neatly chamfered at a one inch (1") high 45 degree
273 angle.
274 Foundation bolts shall be placed in the forms when the concrete is poured. Allow one inch (1") below the
275 equipment bases for alignment, leveling, and grouting with non-shrinking grout. Grouting shall be done
276 after the equipment is leveled in place. After the grout has hardened, the foundation bolts shall be pulled
277 up tight and the equipment shimmed, if necessary.
278 After removal of the forms, the surface of the foundation shall be rubbed until smooth.
279 Unless otherwise noted, foundations shall be four inches (4") thick for plumbing equipment, unless
280 specifically noted otherwise on the Drawings.
281 All concrete work shall conform to the requirements of Division 03, Cast-in-Place Concrete.
282 Provide housekeeping pads and foundations for every item of floor mounted equipment specified in
283 Division 22 specifications. Pads shall extend a minimum of two inches (2") in each direction beyond the
284 equipment size.

285
286 **ACCESSIBILITY & SAFETY**

287 Accessibility
288 All equipment which must be serviced or operated shall be located in fully accessible position.
289 Minor changes from the drawings may be made to allow for better accessibility. All changes shall
290 be approved prior to actual installation.
291 Access panels shall be provided if required for accessibility. Access panels to be steel, flanged,
292 hinged doors by Cendrex, model AHD, or equal. Size as required for installation. Subcontractor

shall furnish the required panels to the General Contractor and the required location for all access panels, unless otherwise specified in the Architectural specifications. Panels shall be installed by the General Contractor.

Safety

No water piping shall run immediately over or within a 3-foot plan view clearance of any electrical panel or motor starter. Where piping must be located within these zones, install piping inside a conduit to prevent water access to electrical equipment.

TRAINING

See individual specification sections for additional training requirements.

Provide training of Owner's selected staff for plumbing systems specified herein.

Training of systems shall be digitally recorded, and two copies shall be distributed to Owner.

Notify and Coordinate with Owner for training and attendance not later than 15 days prior to training.

Provide 2 hours of general Plumbing system training

Training shall be conducted by qualified individuals familiar with the Work, and with the equipment.

Instructor shall be familiar with programming and operations of equipment and shall provide instruction to do such.

Provide contact information to Owner for an additional 4 hours support for plumbing systems.

Provide Owner with survey after training on each system is complete. Execute a survey prepared by the Owner and Contractor for evaluation of the training. Survey shall show Owner's satisfaction with training received.

Training shall not occur prior to systems being fully inspected, operational, and complete.

Utilize necessary training materials, conduct training at project location including walk-through of equipment on-site.

Provide Owner with required Operation, Maintenance, and Programing manuals provided by equipment manufacturer.

Owner shall determine attendees at training, not the Contractor. Contractor shall retrain if attendees were not selected by the Owner.

END OF SECTION

PART 1 - GENERAL**SUMMARY**

This Section includes requirements for selective demolition and removal of plumbing, sprinkler systems and related mechanical components and incidentals required to complete work described in this Section ready for new construction.

RELATED REQUIREMENTS

Section 01 74 19 - Construction Waste Management and Disposal

DEFINITIONS

Demolish: Detach items from existing construction and legally dispose of items off site, unless indicated as removed and salvaged, or removed and reinstalled.

Remove: Planned deconstruction and disassembly of items from existing construction including removal of conduit, junction boxes, cabling and wiring from electrical component to panel taking care not to damage adjacent assemblies designated to remain; legally dispose of items off site, unless indicated as removed and salvaged, or removed and reinstalled.

Remove and Salvage: Detach items from existing construction and deliver them to Owner ready for reuse.

Remove and Reinstall: Detach items from existing construction, prepare them for reuse, and reinstall them where indicated.

Existing to Remain: Existing items of construction that are not removed and that are not otherwise indicated as being removed and salvaged, or removed and reinstalled.

Hazardous Substances: Dangerous substances, dangerous goods, hazardous commodities and hazardous products may include asbestos, mercury and lead, PCB's, poisons, corrosive agents, flammable substances, radioactive substances, or other material that can endanger human health or wellbeing or environment if handled improperly as defined by the Federal Hazardous Products Act (RSC 1985) including latest amendments.

ADMINISTRATIVE REQUIREMENTS

Coordination: Coordinate work of this Section to avoid interference with work by other Sections.

Account for Owner's continued occupancy requirements during selective demolition and schedule staged occupancy and worksite activities.

SITE CONDITIONS

Condition of materials identified as being salvaged or demolished are based on their observed condition on date that tender is accepted.

SALVAGE AND DEBRIS MATERIALS

Demolished items become Contractor's property and will be removed from Project site; except for items indicated as being reused, salvaged, or otherwise indicated to remain Owner's property.

Carefully remove materials and items designated for salvage and store in a manner to prevent damage or devaluation of materials

PART 2 - PRODUCTS (NOT USED)**PART 3 - EXECUTION****EXAMINATION**

Prior to starting work, carefully inspect installed work of other trades and verify that such work is complete to the point where work of this Section may properly commence. Notify the Architect in writing of conditions detrimental to the proper and timely completion of the work.

Do not begin installation until all unsatisfactory conditions are resolved. Beginning work constitutes acceptance of conditions as satisfactory.

PREPARATION

Protect systems and components indicated to remain in place during selective demolition operations and as follows:

Prevent movement and install bracing to prevent settlement or damage of adjacent services and parts of existing buildings scheduled to remain.
Notify Owner and cease operations where safety of buildings being demolished, adjacent structures or services appears to be endangered and await additional instructions before resuming demolition work specified in this Section.
Prevent debris from blocking drainage inlets.
Protect plumbing and sprinkler systems that must remain in operation.
Ensure hazardous materials are removed or abated prior to commencing demolition.
For components intended for relocation and reuse, remove, store, protect, clean and reinstall and connect to Plumbing systems, and recommission.
Sequence demolition work so that interference with the use of the building by the Owner and users is minimized and as follows:
Prevent debris from endangering the safe access to and egress from occupied buildings.
Notify Owner and cease operations where safety of occupants appears to be endangered and await additional instructions before resuming demolition work specified in this Section.

DEMOLITION, REMOVAL AND DISPOSITION

Disconnect and cap gas supply and electrical services in accordance with requirements of local Authority Having Jurisdiction.
Do not disrupt active or energized utilities without approval of the Owner.
Erect and maintain dust proof and weather tight partitions to prevent the spread of dust and fumes to occupied building areas; remove partitions when complete.
Demolish parts of existing building to accommodate new construction and remedial work as indicated.
At end of each work day, leave worksite in safe condition.
Perform demolition work in a neat and workmanlike manner:
Remove any tools or equipment after completion of work, and leave site clean and ready for subsequent renovation work.
Repair and restore damages caused as a result of work of this Section to match existing materials and finishes.
Conduct demolition of plumbing and sprinkler systems in accordance with local Authority Having Jurisdiction (AHJ)
Saw-cut concrete as shown or required.
Piping, and Equipment to Be Removed: Remove all piping, and equipment as indicated on the Drawings.
Piping Removed: Drawings do not show all existing piping which is to be removed. Unless indicated otherwise, where existing equipment has been removed, or its use replaced by new equipment, remove connecting piping back to the branch in the main so that there will be no dead ends or unused pipe lines at completion.
Control Wiring and Tubing To Be Removed: Remove all control wiring and tubing as indicated. Drawings do not show all existing control wiring and tubing which is to be removed. Unless indicated otherwise, where existing equipment has been removed, or its use replaced by new equipment, remove connecting piping and ductwork back to the branch in the main so that there will be no dead ends or unused pipe lines in mechanical spaces at completion.
Materials to Owner: All items or materials removed from the project shall be made available for the Owner's inspection. The Owner retains the option to claim any item or material. The Contractor shall deliver any claimed item or material in good condition to the place designated by the Owner. All items not claimed become the property of the Contractor and shall be removed from the site by the Contractor.
Protect any active piping and/or wiring encountered that are not designated for removal; remove, plug or cap utilities to be abandoned in accord with code and regulatory requirements. Notify the Architect of utilities encountered whose service is not known.
Debris Removal: Existing materials removed and not reinstalled or turned over to the Owner shall be immediately removed from the site and disposed of by the Contractor.
Repairs: Any portion of the facility damaged, cut back or made inoperable by this Contractor shall be repaired with similar materials as the existing structure and/or damaged item as instructed by the Architect.

CLOSEOUT ACTIVITIES

SELECTIVE DEMOLITION FOR PLUMBING

22 05 05-3

117 Arrange for legal disposal and remove demolished materials to accredited landfill site or alternative
118 disposal site (recycle center).
119

120
END OF SECTION

PART 1 - GENERAL**CONTRACT CONDITIONS**

Work of this Section is bound by the Contract Conditions and Division 1, bound herewith, in addition to this Specification and accompanying Drawings.

RELATED WORK

22 05 00 - Common Work Results for Plumbing

22 05 29 - Hangers and Supports for Plumbing Piping and Equipment

REFERENCE STANDARDS

ANSI B16.3 Malleable Iron Threaded Fittings

ANSI B16.4 Cast Iron Threaded Fittings

ANSI B16.5 Pipe Flanges and Flanged Fittings

ANSI B16.22 Wrought Copper and Wrought Copper Alloy Solder Joint Pressure Fittings

ASTM B32 Solder Metal

ASTM B88 Seamless Copper Water Tube

ASTM B813 Liquid and Paste Fluxes for Soldering Applications of Copper and Copper Alloy Tube

ASTM E84 Standard Test Method for Surface Burning Characteristics of Building Materials

ASTM F876 Standard Specification for Crosslinked Polyethylene (PEX) Tubing

ASTM F877 Standard Specification for Crosslinked Polyethylene (PEX) Plastic Hot- and Cold-Water Distribution Systems

ASTM F1960 Standard Specification for Cold Expansion Fittings with PEX Reinforcing Rings

AWWA C904 Standard for Crosslinked Polyethylene (PEX) Pressure Pipe, 1/2-inch Through 3-inch, for Water Service

AWS A5.8 Brazing Filler Metal

AWWA C651 Disinfecting Water Mains

AWWA Disinfecting Building Potable Water Plumbing in New or Repaired Systems (Nov 2024)

QUALITY ASSURANCE

Substitution of Materials: Refer to Section 01 60 00 Project requirements. No PEX Piping substitutions permitted.

Order copper, and PEX pipe with each length marked with the name or trademark of the manufacturer and type of pipe; with each shipping unit marked with the purchase order number, metal or alloy designation, temper, size, and name of supplier.

Any installed material not meeting the specification requirements must be replaced with material that meets these specifications without additional cost to the Owner.

PEX Piping:

Test Reports: Upon request, submit test reports from recognized testing laboratories.

Certificates: Submit manufacturer's certificate that products comply with specified requirements.

DELIVERY, STORAGE, AND HANDLING

Promptly inspect shipments to ensure that the material is undamaged and complies with specifications.

Cover pipe to prevent corrosion or deterioration while allowing sufficient ventilation to avoid condensation.

Do not store materials directly on grade. Protect pipe, tube, and fitting ends so they are not damaged.

Where end caps are provided or specified, take precautions so the caps remain in place. Protect fittings, flanges, and unions by storage inside or by durable, waterproof, above ground packaging.

Storage and protection methods shall allow inspection to verify products.

PEX Piping:

General: Comply with Division 1 Product Requirement Section.

Comply with manufacturer's ordering instructions and lead-time requirements to avoid construction delays.

Delivery: Deliver materials in manufacturer's original, unopened, undamaged containers with identification labels intact.

Storage and Protection: Store materials protected from exposure to harmful environmental conditions and at temperature and humidity conditions recommended by the manufacturer.

Store PEX tubing in cartons or under cover to avoid dirt or foreign material from being introduced into the tubing.

Do not expose PEX tubing to direct sunlight for more than 30 days. If construction delays are encountered, provide cover to portions of tubing exposed to direct sunlight.

DESIGN CRITERIA

Not smaller than ½ inch size.

Use only new material, free of defects, rust and scale, and meeting the latest revision of ASTM, AWWA or CISPI specifications as listed herein.

Construct all piping for the highest pressures and temperatures in the respective system and add 25% more.

Non-metallic piping will be acceptable only for the services indicated.

Where ASTM B88, type L H (drawn) temper copper tubing is specified, ASTM B88, type K H (drawn) temper copper tubing may be used at Contractor's option.

Standard grade hydrostatic pressure ratings from Plastics Pipe Institute (PPI) in accordance with TR-3 as listed in TR-4. The following three standard-grade hydrostatic ratings are required for PEX piping:

200°F (93°C) at 80 psi (551 kPa)

180°F (82°C) at 100 psi (689 kPa)

73.4°F (23°C) at 160 psi (1,102 kPa)

Certification of flame spread/smoke development rating of 25/50 in accordance with ASTM E84 provided the PEX installation meets one of the following requirements:

Tubing spacing is a minimum of 18 inches apart for the following sizes.

½ inch

⅝ inch

¾ inch

PEX Tubing is wrapped with acceptable fire rated insulation (fiberglass wrap is not acceptable) with a flame spread of not more than 20 and a smoke-developed rating of not more than 30 and a nominal density of 4.0 to 4.5 pcf. Tubing can run with three tubes separated by zero inches and then 18 inches between the next group of three tubes for the following sizes.

½ inch

⅝ inch

¾ inch

1 inch

1¼ inch

1½ inch

2 inch

or greater

Provide Copper if more stringent fire/smoke rating is required.

WARRANTY

Provide 25 year manufacturer warranty.

PART 2 - PRODUCTS

DOMESTIC WATER

ABOVE GROUND:

Type L copper water tube, H (drawn) temper, ASTM B88; wrought copper pressure fittings,

Approved Joining Methods

Soldered joints in accordance with ANSI B16.22; lead free (<.2%) solder, ASTM B32; flux, ASTM B813;

Not permitted on pipes 2-1/2-inches or larger

Brazed joints using copper phosphorous brazing alloy, AWS A5.8 BCuP.

Press-connect fittings shall comply with ASTM F3226, IAPMO Z1117, or ASME B16.51. Press-connect joints shall comply with ASTM B1029.

Alloy: Copper alloy – UNS C12200. Zero Lead silicon bronze alloy – C87710 (cast) or C87700 (machined), Peroxidically cured EPDM sealing element, 420 stainless steel grip ring for 2½" to 4" fittings, PBT separator ring for 2½" to 4" fittings. 300 psi maximum pressure rating. 0°F - 250°F operating temperature. Sealing elements shall be factory installed or an alternative supplied by fitting manufacturer.

Not permitted on pipes larger than 4-inches in diameter.

- 118 Copper mechanical grooved fittings and couplings on roll grooved pipe may be
119 used. Mechanically formed brazed tee connections may be used in lieu of
120 specified tee fittings for branch takeoffs up to one-half (1/2) the diameter of the
121 main.
- 122 Crosslinked Polyethylene (PEX-a Engel Method) plastic pipe and fittings
- 123 Manufacturer: Uponor, or approved
- 124 Material Standard: Manufactured in accordance with ASTM F876 and ASTM F877 and
125 tested for compliance by an independent third party agency.
- 126 Rated for a temperature of 180 degrees F at 100 psi
- 127 Fire-rated assembly listings in accordance with ANSI/UL 263
- 128 UL Design No. L557 — 1-hour wood frame floor/ceiling assemblies
- 129 UL Design No. K913 — 2-hour concrete floor/ceiling assemblies
- 130 UL Design No. U372 — 1-hour wood stud/gypsum wallboard wall assemblies
- 131 UL Design No. V444 — 1-hour steel stud/gypsum wallboard wall assemblies
- 132 Minimum Bend Radius (cold bending): No less than six times the outside diameter. Use a
133 bend support as supplied by the PEX tubing manufacturer for tubing with a bend radius
134 less than stated.
- 135 Nominal Inside Diameter: 1/2" to 3". Provide tubing with nominal inside diameter, in
136 accordance with ASTM F876.
- 137 Colors:
- 138 Hot/Hot Return- Red
- 139 Cold- Blue
- 140 See Insulation for additional color requirements.
- 141 Fittings
- 142 Fittings shall be from the same manufacturer of the pipe.
- 143 Material: Fitting assembly is manufactured from material listed in paragraph 5.1
144 of ASTM F1960.
- 145 Material Standard: Comply with ASTM F1960.
- 146 Fittings for PEXa to PEXa connection to be poly plastic
- 147 Transition fittings PEX-to-Metal, one-piece lead free, brass threaded or sweat
148 adapter, with PEX-a reinforcing cold expansion ring.
- 149 Manifolds
- 150 Material:
- 151 Type L copper body with UNS 3600 series brass poly plastic outlet
152 connections.
- 153 Engineered Plastic (EP) body with poly plastic outlet connections.
- 154 Manifold Type:
- 155 1" Copper Manifold, or approved
- 156 Uponor engineered plastic (EP) Manifold, or approved
- 157 All manifolds manufactured with the appropriate-sized poly plastic fittings on the
158 manifold supply inlets.
- 159 Accessories:
- 160 Angle stops and straight stops that are compatible with PEX tubing are supplied
161 by the PEX tubing manufacturer.
- 162 1/4 turn type Stops only.
- 163 Bend supports designed for maintaining tight radius bends are supplied by the
164 PEX tubing manufacturer.
- 165 Cold expansion tool to install the ASTM F1960 compatible fittings are supplied by
166 the PEX tubing manufacturer.
- 167 The tubing manufacturer provides clips and/or PEX rails for supporting tubing
168 runs.
- 169 All horizontal tubing hangers and riser clamps are epoxy-coated material.
- 170 Stub Outs to visible space:
- 171 For PEX installations, provide copper where stubbing to interior side of wall to
172 stop. Provide 100% fully backed, braced, bracketed copper extending into visible
173 space (stub out in copper). Transition to from copper to PEX behind wall. Copper
174 shall be fully braced and bracketed to prevent damage of PEX or copper
- 175 BELOW GROUND 2-1/2" AND SMALLER:

Type K copper water tube, O (annealed) temper, ASTM B88; with cast copper pressure fittings, ANSI B16.18; wrought copper pressure fittings,

Approved Joining Methods

Soldered joints in accordance with ANSI B16.22; lead free (<.2%) solder, ASTM B32; flux, ASTM B813;

Brazed joints using copper phosphorous brazing alloy, AWS A5.8 BCuP.

Press-connect fittings shall comply with ASTM F3226, IAPMO Z1117, or ASME B16.51. Press-connect joints shall comply with ASTM B1029.

Alloy: Copper alloy – UNS C12200. Zero Lead silicon bronze alloy – C87710 (cast) or C87700 (machined), Peroxidically cured EPDM sealing element, 420 stainless steel grip ring for 2½" to 4" fittings, PBT separator ring for 2½" to 4" fittings. 300 psi maximum pressure rating. 0°F - 250°F operating temperature. Sealing elements shall be factory installed or an alternative supplied by fitting manufacturer.

Not permitted on pipes larger than 4-inches in diameter.

Cast copper flared pressure fittings, ANSI B16.26

FREEZE PROTECTION

Provide where installed in attics, crawl spaces, or other above grade unheated spaces.

Electrical heating tape with integrated thermostat mounted against pipe, with an activation temperature not less than 37-Degrees F.

Connect via Ground Fault Circuit Interrupter Breaker.

Do not exceed 10 Amps. total load/length per circuit.

UL Listed.

AMERICAN MANUFACTURED:

ALL Domestic Water tubing, piping and fittings are to be U.S. Manufactured. The contractor shall furnish proof of manufacture's location(s) to the Owner upon request.

DIELECTRIC UNIONS AND FLANGES

Watts Regulator Company, Lochinvar, Wilkins, EPCO Sales, or approved dielectric unions 2" and smaller; with iron female pipe thread to copper solder joint or brass female pipe thread end connections, non-asbestos gaskets, having a pressure rating of not less than 175 psig at 180 degrees.

UNIONS AND FLANGES

Unions, flanges and gasket materials to have a pressure rating of not less than 150 psig at 180 degrees.

Gasket material for flanges and flanged fittings shall be teflon type. Treated paper gaskets are not acceptable.

2" and Smaller Copper: ANSI B16.18 cast bronze union coupling or ANSI B15.24 Class 150 cast bronze flanges.

2-1/2" and Larger Copper: ANSI B15.24 Class 150 cast bronze flanges with full face teflon gaskets.

NOT PERMITTED

Galvanized pipe is not permitted under any circumstances, even if existing/already within an existing facility. Repairs/Extensions and the like shall be by materials specified herein, no exceptions.

PART 3 - EXECUTION

GENERAL

Install pipe and fittings in accordance with reference standards, manufacturer's recommendations and recognized industry practices.

Use PEX to the extent permitted by Code for new construction, or domestic water piping replacement projects.

Replace electrical bonding when replacing metal type main service with PEX. Maintain electrical ground bonding. See Electrical.

Use Copper for repairs/existing projects.

Use Copper as required for fire rating Construction Type.

PREPARATION

Cut pipe ends square. Ream ends of piping to remove burrs. Clean scale and dirt from interior and exterior of each section of pipe and fitting prior to assembly.

EXAMINATION

Site Verification of Conditions:

Verify that site conditions are acceptable for installation of the potable water system.

Do not proceed with installation of the potable water system until unacceptable conditions are corrected.

ERECTION

Install all piping parallel to building walls and ceilings and at heights which do not obstruct any portion of a window, doorway, stairway, or passageway. Where interferences develop in the field, offset or reroute piping as required to clear such interferences. Coordinate locations of plumbing piping with piping, ductwork, conduit and equipment of other trades to allow sufficient clearances. In all cases, consult drawings for exact location of pipe spaces, ceiling heights, door and window openings, or other architectural details before installing piping.

Where copper piping is embedded in masonry or concrete, provide protective sleeve covering of elastomeric pipe insulation.

Install underground warning tape 6"-12" below finished grade above all exterior below ground piping.

Where existing underground warning tape is encountered, repair and replace.

Maintain piping in clean condition internally during construction.

Provide clearance for installation of insulation, access to valves and piping specialties.

Provide anchors, expansion joints, swing joints and/or expansion loops so that piping may expand and contract without damage to itself, equipment, or building.

Do not route piping through transformer vaults or above transformers, panelboards, or switchboards,

including the required service space for this equipment, unless the piping is serving this equipment

Install all valves and piping specialties, including items furnished by others, as specified and/or detailed.

Provide access to valves and specialties for maintenance. Make connections to all equipment, fixtures and systems installed by others where same requires the piping services indicated in this section.

COPPER PIPE JOINTS

Remove all slivers and burrs remaining from the cutting operation by reaming and filing both pipe surfaces. Clean fitting and tube with metal brush, emery cloth or sandpaper. Remove residue from the cleaning operation, apply flux and assemble joint to socket stop. Apply flame to fitting until solder melts when placed at joint. Remove flame and feed solder into joint until full penetration of cup and ring of solder appears. Wipe excess solder and flux from joint.

Press Connections: Copper and copper alloy press connections shall be made in accordance with the manufacturer's installation instructions. The tubing shall be fully inserted into the fitting and the tubing marked at the shoulder of the fitting. The fitting alignment shall be checked against the mark on the tubing to assure the tubing is fully engaged (inserted) in the fitting. The joints shall be pressed using the tool(s) approved by the manufacturer.

THREADED PIPE JOINTS

Use a thread lubricant or teflon tape when making joints; no hard setting pipe thread cement or caulking will be allowed.

MECHANICALLY FORMED TEE FITTINGS

Form mechanically extracted collars in a continuous operation, consisting of drilling a pilot hole and drawing out the tube surface to form a collar having a height of not less than three times the thickness of the tube wall. Use an adjustable collaring device. Notch and dimple the branch tube. Braze the joint with neutral flame oxy-acetylene torch, applying heat properly so that pipe and tee do not distort; remove distorted connections.

DOMESTIC WATER

Maintain piping system in clean condition during installation. Remove dirt and debris from assembly of piping as work progresses. Cap open pipe ends where left unattended or subject to contamination.

Daisy-Chain method or manifold method may be utilized within units. Manifolds are required where needed for specified isolation, otherwise at contractor's option. Manifolds shall be accessible. Access panels shall be approved in writing by Owner prior to Bid if not shown on Drawings.

Install exterior water piping below predicted frost level in accordance with code, but in no case less than 18" bury depth to top of pipe.

Install interior water piping with drain valves where indicated and at low points of system to allow complete drainage. Install shutoff valves where indicated and at the base of risers to allow isolation of portions of system for repair. Do not install water piping within exterior walls.

FLUSHING AND DISINFECTION OF POTABLE WATER SYSTEMS

Disinfection shall occur within 3 weeks of expected building occupancy.

Disinfection of new or repaired building potable water systems shall be performed in accordance with the local Plumbing code or AWWA Nov 2024 Technical report "Disinfecting Building Potable Water Plumbing in New or Repaired Systems", whichever is the most stringent.

Provide Lab testing if required by AHJ: Wait 24 hours after final flushing. Take samples of water for lab testing. The number and location of samples shall be representative of the system size and configuration and are subject to approval by AHJ. Test shall show the absence of coliform bacteria and/or any other contaminant absence/level required by AHJ. If test fails, repeat disinfection and testing procedures until no coliform bacteria are detected and any other substance is at required level(s). Submit test report indicating date and time of test along with test results.

DIELECTRIC UNIONS AND FLANGES

Install dielectric unions or flanges at each point where a copper-to-steel pipe connection is required in domestic water systems.

UNIONS AND FLANGES

Install a union or flange at each connection to each piece of equipment and at other items which may require removal for maintenance, repair, or replacement. Where a valve is located at a piece of equipment, locate the flange or union connection on the equipment side of the valve. Concealed unions or flanges are not acceptable.

PEX PIPING INSTALLATION

Install PEXa tubing in accordance with the tubing manufacturer's recommendations and as indicated in the installation handbook.

Cold expansion method is preferred.

If Contractor does not have tools for cold-expansion method, "shark-bite" method is permitted.

Gluing/Glue method, is not permitted.

Clean pipe as required by manufacturer.

Do not install PEX tubing within 6 inches of gas appliance vents or within 12 inches of any recessed light fixtures.

Do not solder within 18 inches of PEX tubing in the same waterline. Make sweat connections prior to making PEX connections.

Do not expose PEX tubing to direct sunlight for more than 30 days.

Ensure no glues, solvents, sealants, or liquid chemicals come in contact with the tubing that is not permitted by the tubing manufacturer. Gluing tubing is not permitted.

Use grommets or sleeves at the penetration for PEX tubing passing through metal studs.

Protect PEX tubing with sleeves where abrasion may occur.

Use strike protectors where PEX tubing penetrates a stud or joist and has the potential for being struck with a screw or nail.

Use tubing manufacturer-supplied bend supports where bends are less than six times the outside tubing diameter.

Minimum horizontal supports are installed not less than 32 inches between hangers in accordance with model plumbing codes and the installation handbook.

PEX riser installations require epoxy-coated riser clamps installed at the base of the ceiling per floor.

A mid-story support is required for riser applications.

Pressurize PEXa tubing with air in accordance with applicable codes or in the absence of applicable codes to a pressure of 150 psi.

Comply with safety precautions when pressure testing, including use of compressed air, where applicable. Do not use water to pressurize the system if ambient air temperature has the possibility of dropping below 32°F (0°C).

THROUGH-PENETRATION FIRESTOP

Ensure compliance of one- and two-hour rated through penetration assemblies in accordance with ASTM E814.

A list of firestop manufacturers that list PEX tubing with their firestop systems is available from the PEX tubing manufacturer.

FREEZE PROTECTION

Provide Freeze Protection where installed in attics, in crawl spaces, and other above-ground unheated spaces.

PIPING SYSTEM LEAK TESTS

Do not test with any fixtures installed, rough-in only. Remove components from system which are specified as rated for test pressure. Test piping in sections or entire system as required by sequence of construction, and AHJ. Do not insulate or conceal pipe until it has been successfully tested.

If required for the additional pressure load under test, provide temporary restraints at fittings or expansion joints. Backfill underground water mains prior to testing with the exception of thrust restrained valves which may be exposed to isolate potential leaks.

For hydrostatic tests, use clean water and remove all air from the piping being tested by means of air vents or loosening of flanges/unions. Measure and record test pressure at the high point in the system.

Inspect system for leaks. Where leaks occur, repair the area with new materials and repeat the test; caulking will not be acceptable.

Entire test shall be witnessed as required by the Owner's Representative.

Test

<u>System</u>	<u>Medium</u>	<u>Pressure</u>	<u>Duration</u>
Below Ground Domestic Water	Water	150 psig	24 hr
Above Ground Domestic Water	Water	150 psig	24 hr

Durations of leak test shall be longer if required by AHJ.

Flush, and clean system utilizing choline method indicated above after testing.

END OF SECTION

PART 1 - GENERAL**CONTRACT CONDITIONS**

Work of this Section is bound by the Contract Conditions and Division 1, bound herewith, in addition to this Specification and accompanying Drawings.

RELATED WORK

Section 22 05 00 - Common Work Results for Plumbing

Section 22 05 29 - Hangers and Supports for Plumbing Piping and Equipment

Section 22 11 19 - Domestic Water Piping Specialties

REFERENCE

Applicable provisions of Division 1 govern work under this section.

REFERENCE STANDARDS

ANSI B16.29 Wrought Copper and Wrought Copper Alloy Solder Joint Drainage Fittings - DWV

ASTM A74 Cast Iron Soil Pipe and Fittings

ASTM A105 Forgings, Carbon Steel, for Piping Components

ASTM A126 Gray Cast Iron Castings for Valves, Flanges, and Pipe Fittings

ASTM A861 High Silicon Iron Pipe and Fittings

ASTM A888 Hubless Cast Iron Soil Pipe and Fittings for Sanitary and Storm Drain, Waste, and Vent Piping Applications

ASTM B32 Solder Metal

ASTM C564 Standard Specifications for Rubber Gaskets for Cast Iron Soil Pipe and Fittings

ASTM C1540 Standard Specifications for Heavy Duty Shielded Couplings Joining Hubless Cast Iron Soil Pipe and Fittings

ASTM D1785 Poly Vinyl Chloride (PVC) Plastic Pipe

ASTM D2241 Poly Vinyl Chloride (PVC) Pressure-Rated Pipe (SDR Series)

ASTM D2321 Standard Practice for Underground Installation of Thermoplastic Pipe for Sewers and Other Gravity-Flow Applications

ASTM D2466 Poly Vinyl Chloride (PVC) Plastic Pipe Fittings, Schedule 40

ASTM D2564 Solvent Cements for Poly Vinyl Chloride (PVC) Plastic Pipe and Fittings

ASTM D2661 Standard Specification for Acrylonitrile-Butadiene-Styrene (ABS) Schedule 40 Plastic Drain, Waste, and Vent Pipe and Fittings

ASTM D2665 Poly Vinyl Chloride (PVC) Plastic Drain, Waste and Vent Pipe and Fittings

ASTM D2729 Poly Vinyl Chloride (PVC) Sewer Pipe and Fittings

ASTM D2855 Making Solvent Cemented Joints with Poly Vinyl Chloride (PVC) Pipe and Fittings

ASTM D3034 Type PSM Poly Vinyl Chloride (PVC) Sewer Pipe and Fittings

ASTM D3212 Joints for Drain and Sewer Plastic Pipes Using Flexible Elastomeric Seals

ASTM D3311 Drain, Waste and Vent (DWV) Plastic Fitting Patterns

AWS A5.8 Brazing Filler Metal

CISPI 301 Hubless Cast Iron Soil Pipe and Fittings for Sanitary and Storm Drain, Waste and Vent Piping Applications

CISPI 310 Couplings For Use In Connection With Hubless Cast Iron Soil Pipe And Fittings For Sanitary And Storm Drain, Waste And Vent Piping Applications

QUALITY ASSURANCE

Substitution of Materials: Refer to Section 01 60 00 Project requirements.

Order all pipe with each length marked with the name or trademark of the manufacturer and type of pipe; with each shipping unit marked with the purchase order number, metal or alloy designation, temper, size, and name of supplier.

Any installed material not meeting the specification requirements must be replaced with material that meets these specifications without additional cost to the Owner.

DELIVERY, STORAGE, AND HANDLING

Promptly inspect shipments to ensure that the material is undamaged and complies with specifications.

Cover pipe to prevent corrosion or deterioration while allowing sufficient ventilation to avoid condensation.

Do not store materials directly on grade. Protect pipe, tube, and fitting ends so they are not damaged.

Where end caps are provided or specified, take precautions so the caps remain in place. Protect fittings, flanges, and unions by storage inside or by durable, waterproof, above ground packaging. Storage and protection methods must allow inspection to verify products.

DESIGN CRITERIA

Use only new material, free of defects, rust and scale, and meeting the latest revision of ASTM, or CISPI specifications as listed in this specification.

Construct all piping for the highest pressures and temperatures in the respective system.

Non-metallic piping will be acceptable only for the services indicated.

Contractor is required to meet application criteria and requirements.

Conceal work.

Use of foam core or cellular core plastic pipe is permitted for dry vent pipe only

PART 2 - PRODUCTS

SANITARY WASTE AND VENT

INTERIOR ABOVE GROUND

PVC plastic pipe, Schedule 40 or 80 as required by AHJ, Class 12454-B (PVC 1120), ASTM D1785; PVC plastic drain, waste and vent pipe and fittings, ASTM D2665; socket fitting patterns, ASTM D3311; primer, ASTM F656; solvent cement, ASTM D2564. Color: Black

ABS Plastic, Schedule 40 or 80 as required by AHJ; ASTM D2661. ABS plastic drain, waste and vent pipe and fittings. ASTM D2661 socket fitting patterns. ASTM approved primer, and solvent. Color: Black

Hubless cast iron soil pipe and fittings, ASTM A888; with no-hub couplings, CISPI 301, CISPI 310, ASTM A74. Pipe and fittings shall be marked with the collective trademark of the Cast Iron Pipe Institute or receive prior approval of the Engineer. Cast iron piping and fittings shall be of A B & I Foundry, Charlotte Pipe and Foundry, or Tyler Pipe manufacturers.

BELOW GRADE, INSIDE OF BUILDING ENVELOPE

PVC plastic pipe, Schedule 40 or 80 as required by AHJ, Class 12454-B (PVC 1120), ASTM D1785; PVC plastic drain, waste and vent pipe and fittings, ASTM D2665; socket fitting patterns, ASTM D3311; primer, ASTM F656; solvent cement, ASTM D2564. Color: White

Cast iron soil pipe and fittings, hub and spigot, service weight, ASTM A74, with neoprene rubber compression gaskets, ASTM C564, CISPI 301, and CISPI HSN 85. Pipe and fittings shall be marked with the collective trademark of the Cast Iron Pipe Institute. Cast iron piping and fittings shall be of A B & I Foundry, Charlotte Pipe and Foundry, or Tyler Pipe manufacturers.

EXTERIOR BELOW GROUND 15" AND SMALLER:

Cast iron soil pipe and fittings, CISPI 301, ASTM A74 or ASTM A888 with neoprene rubber compression gaskets, ASTM C564 and CISPI HSN 85. Pipe and fittings shall be marked with the collective trademark of the Cast Iron Pipe Institute. Cast iron piping and fittings shall be of A B & I Foundry, Charlotte Pipe and Foundry, or Tyler Pipe manufacturers.

PVC plastic pipe, Schedule 40, Class 12454 (PVC 1120), ASTM D1785; PVC plastic drain, waste and vent pipe and fittings, ASTM D2665; socket fitting patterns, ASTM D3311; primer, ASTM F656; solvent cement, ASTM D2564.

Type PSM PVC sewer pipe and socket fittings, SDR 35, Class 12454-B (PVC 1120), ASTM D3034; primer, ASTM F656; solvent cement, ASTM 2564; or integral bell and flexible elastomeric seal, ASTM D3212.

Corrugated PVC pipe and fittings with smooth interior, ASTM F949; gasketed joint, ASTM D3212; elastomeric gasket, ASTM F477.

HYDROMECHANICAL GREASE INTERCEPTOR

Manufacturers: Schier, MiFab, or approved

Whole facility type, located on-site with readily accessible maintenance access.

Sized not less than code required- See Drawings.

Molded polyethylene with minimum 3/8" uniform wall thickness. Interceptor shall be furnished for below-grade installation with adjustable cover adapter, access restrictor built into each cover adapter, and three outlet options. Unit shall be certified for hydromechanical performance to ASME A112.14.3 (Type C or D) and CSA B481.1. Integral air relief

Accessories: Pedestrian-rated poly cover shall provide water/gas-tight seal and have a minimum of 2,000 lbs load capacity. For indoor installation.

PART 3 - EXECUTION**GENERAL**

Install pipe and fittings in accordance with reference standards, manufacturer's recommendations and recognized industry practices.

Install all piping parallel to building walls and ceilings and at heights which do not obstruct any portion of a window, doorway, stairway, or passageway. Where interferences develop in the field, offset or reroute piping as required to clear such interferences. Coordinate locations of plumbing piping with piping, ductwork, conduit and equipment of other trades to allow sufficient clearances. In all cases, consult drawings for exact location of pipe spaces, ceiling heights, door and window openings, or other architectural details before installing piping.

Install underground warning tape with integrated tracer wire 6"-12" below finished grade above all exterior below ground piping. Where existing underground warning tape is encountered, repair and replace.

Do not route piping through transformer vaults or above transformers, panelboards, or switchboards, including the required service space for this equipment, unless the piping is serving this equipment

Maintain piping in clean condition internally during construction.

Provide anchors, expansion joints, swing joints and/or expansion loops so that piping may expand and contract without damage to itself, equipment, or building.

Where copper or steel piping is embedded in masonry or concrete, provide protective sleeve covering of elastomeric pipe insulation.

Provide clearance for installation of insulation, access to valves and piping specialties.

Flush piping inlets (floor drains, fixtures, etc.) with high flow of water at completion of project to demonstrate full flow capacity. Remove blockages and make necessary repairs where flow is found to be impeded.

Install all valves and piping specialties, including items furnished by others, as specified and/or detailed.

Provide access to valves and specialties for maintenance. Make connections to all equipment, fixtures and systems installed by others where same requires the piping services indicated in this section.

Nonmetallic building sewer piping shall have an electrically conductive tracer wire, 14-gauge or heavier, insulated copper, green colored, or other approved material installed in the trench for determining pipe location. Tracer wire shall run along the developed length of the building sewer, with one end left above the finished grade at the building end of the pipe, or at a cleanout next to the building wall, and shall be clearly marked. The other end of the tracer wire shall be spliced into the serving utility tracer wire, if present.

PREPARATION

Cut pipe ends even. Ream ends of piping to remove burrs. Clean scale and dirt from interior and exterior of each section of pipe and fitting prior to assembly.

INSTALLATION**Waste and Sewer Pipe**

Install PVC piping according to ASTM D 2665 for above ground installations and ASTM D2321 for underground installations.

Install exterior piping below predicted frost level and not less than 24" bury depth to top of pipe wherever possible. Where piping is located above predicted frost level, provide frost protection.

Slope

Verify invert elevations and building elevations prior to installation. Install exterior piping pitched to drain at indicated elevations and slope. Install interior piping pitched to drain at minimum slope of 1/4 inch per foot where possible and in no case less than Code per foot for piping 3" and larger.

Vents

Excessive roof penetrations will not be permitted. Excessive is defined by Owner. To the extent possible, gang vent piping that is less than 2-Inch together for a single roof penetration. Visible from ground roof penetrations shall occur not less than 4-feet from gutter side of roof. Where non-visible from ground roofs are provided, no vent penetration shall be visible from the ground.

Provide at locations shown when shown on Architectural drawings/elevations. Contractor is advised to obtain approval from Owner for each vent location as not to deem any vents as excessive. Where one or more visible roof breakups are visible, line-up vents in parallel or perpendicular to other visible roof breaks for a neat and professional installation. Breaks include

and are not limited to: attic vents, mechanical equipment, other penetrations, eaves, peaks, valleys, etc.
Extend vents above roof without reduction in size and terminate not less than 10 feet away from, or not less than 3 feet above: operable windows, doors, vent shaft, or air intake openings.
All vent and branch vent pipes shall be sloped to drip back to sanitary waste pipe by gravity.
Extend vent lines at least 6 inches above flood level rim of vented fixture before offsetting.
Extend all vents a minimum of 12 inches above the roof surface.
Extend roof vent flashing onto roof surface minimum of 8 inches on all sides in accordance with the roofing system manufacturer's recommendations.
Coat metal sheet flashing with bituminous mastic where in contact with mortar or concrete to prevent direct contact with masonry materials.
Coordinate roof penetrations and flashing with other sections of these specifications.

Traps

Each fixture, floor drain, or equipment directly connected to the building drain shall be protected with a P-trap.
Traps shall be placed as close to the fixture outlet as possible.
Double trapping is not permitted.

Cleanouts

Install in each change of direction exceeding 90 degrees, at end of lines, at no greater than 100-foot length increments, base of risers, and other points necessary to permit cleaning of pipe sections.
Cleanouts shall be readily accessible.
Extend cleanouts on concealed piping through and terminate flush with wall, floor, or grade.
Coordinate floor and wall cleanout cover plate locations with the Architect prior to pipe installation.

Floor Drains

Coordinate with other trades to ensure floors are sloped toward floor or area drains for proper drainage.
Coordinate floor drains for food service equipment with kitchen plans.
Install floor drains, floor sinks, area drains, and equipment drains flush to the floor or basin to be drained unless otherwise specified.

WELDED PIPE JOINTS

Make all welded joints by fusion welding in accordance with ASME Codes, ANSI B31, and State Codes where applicable. "Weldolets" and "Threadolets" may be used for branch takeoffs up to one-half (1/2) the diameter of the main.

THREADED PIPE JOINTS

Use a thread lubricant or teflon tape when making joints; no hard setting pipe thread cement or caulking will be allowed.

SOLVENT WELDED PIPE JOINTS

Install in accordance with ASTM D2855 "Making Solvent Cemented Joints With PVC Pipe and Fittings".
Saw cut piping square and smooth. Tube cutters may be used if they are fitted with wheels designed for use with PVC/CPVC pipe that do not leave a raised bead on pipe exterior. Support and restrain pipe during cutting to prevent nicks and scratches. Bevel ends 10-15 degrees and deburr interior. Remove dust, drips, moisture, grease and other superfluous materials from pipe interior and exterior. Check dry fit of pipe and fittings. Reject materials which are out of round or do not fit within close tolerance. Use heavy body solvent cement for large diameter fittings.
Maintain pipe, fittings, primer and cement between 40 and 100 degrees during application and curing. Apply primer and solvent using separate daubers (3" and smaller piping only) or clean natural bristle brushes about 1/2 the size of the pipe diameter. Apply primer to the fitting socket and pipe surface with a scrubbing motion. Check for penetration and reapply as needed to dissolve surface to a depth of 4-5 thousandths. Apply solvent cement to the fitting socket and pipe in an amount greater than needed to fill any gap. While both surfaces are wet, insert pipe into socket fitting with a quarter turn to the bottom of the socket. Solvent cement application and insertion must be completed in less than 1 minute. Minimum of 2 installers is required on piping 4" and larger. Hold joint for 30 seconds or until set. Reference manufacturers recommendations for initial set time before handling and for full curing time before

pressure testing. Cold weather solvent/cement may be utilized only under unusual circumstances and when specifically approved by the Owner Representative.

MECHANICAL HUBLESS PIPE CONNECTIONS

For above-ground installation only, and where permitted. Below ground requires sealant. Place the gasket on the end of one pipe or fitting and the clamp assembly on the end of the other pipe or fitting. Firmly seat the pipe or fitting ends against the integrally molded shoulder inside the neoprene gasket. Slide the clamp assembly into position over the gasket. Tighten fasteners to manufacturers recommended torque.

MECHANICAL JOINT PIPE CONNECTIONS

Comply with AWWA C600/C605 installation requirements. Clean pipe end and socket. Clean and lubricate pipe end, socket and gasket with soapy water or gasket lubricant. Place gland and gasket, properly oriented, on pipe end. Insert pipe end fully into socket and press gasket evenly into recess keeping joint straight. Press gland evenly against gasket, insert bolts and hand tighten nuts. Make joint deflection prior to tightening bolts. Evenly tighten bolts in sequence to recommended torque.

PUSH-ON GASKETED PIPE CONNECTIONS

Clean pipe end, bell, gasket seat and gasket of dirt or debris. Coat end of pipe and gasket with gasket lubricant. Insure pipe is supported off the ground so lubricant does not pick up dirt. Push spigot end into gasket bell with levered pipe joining tool recommended by pipe manufacturer. Large diameter exterior mains may be joined by pushing end of pipe section with backhoe against wood blocking over pipe end. Insert to fully seated position or to reference mark on pipe.

LEAK TESTING

Contractor to furnish tools, labor, and instrumentation required to conduct test.

Test underground waste piping prior to backfilling.

Do not insulate, backfill, or conceal pipe until it has been successfully tested. Isolate or remove components from system which are not rated for test pressure. Test piping in sections or entire system as required by sequence of construction.

If required for the additional pressure load under test, provide temporary restraints at fittings or expansion joints.

Inspect system for leaks. Where leaks occur, repair the area with new materials and repeat the test; caulking will not be acceptable.

Testing procedures, and the times and dates the tests were conducted shall be included in the O&M manuals at project close-out.

Water Test

Test to be performed prior to plumbing fixture installation.

For hydrostatic tests, use clean water and remove all air from the piping being tested by means of air vents or loosening of flanges/unions. Measure and record test pressure at the high point in the system.

If testing the entire system, tightly close openings in pipe except for the highest opening.

If testing in sections, each opening in that section shall be plugged except for the highest opening in that section.

Test Requirements

<u>Test System</u>	<u>Medium</u>	<u>Pressure</u>	<u>Duration</u>
Sanitary Waste and Vent	Rough in Water	10' water	2 hrs
Sanitary Waste and Vent	Final Smoke	1 in-wc	15 min

END OF SECTION

PART 1 - GENERAL**RELATED DOCUMENTS**

Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

SUMMARY

Section Includes:

- Commercial, medium-duty, storage, electric, domestic-water heaters.
- Domestic-water heater accessories.

PERFORMANCE REQUIREMENTS

Seismic Performance: Commercial domestic-water heaters shall withstand the effects of earthquake motions determined according to ASCE/SEI 7.

The term "withstand" means "the unit will remain in place without separation of any parts from the device when subjected to the seismic forces specified."

ACTION SUBMITTALS

Product Data: For each type and size of domestic-water heater indicated. Include rated capacities, operating characteristics, electrical characteristics, and furnished specialties and accessories.

Shop Drawings:

- Wiring Diagrams: For power, signal, and control wiring.

INFORMATIONAL SUBMITTALS

Basis for Certification: Indicate whether withstand certification is based on actual test of assembled components or on calculation.

Dimensioned Outline Drawings of Equipment Unit: Identify center of gravity and locate and describe mounting and anchorage provisions.

Detailed description of equipment anchorage devices on which the certification is based and their installation requirements.

Product Certificates: For each type of commercial, electric, domestic-water heater, from manufacturer.

Domestic-Water Heater Labeling: Certified and labeled by testing agency acceptable to authorities having jurisdiction.

Source quality-control reports.

Field quality-control reports.

Warranty: Sample of special warranty.

CLOSEOUT SUBMITTALS

Operation and Maintenance Data: For electric, domestic-water heaters to include in emergency, operation, and maintenance manuals.

QUALITY ASSURANCE

Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.

ASHRAE/IESNA Compliance: Applicable requirements in ASHRAE/IESNA 90.1.

Comply with efficiency requirements in ASHRAE 189.1, which supersede requirements in

ASHRAE/IESNA 90.1.

ASME Compliance: Where ASME-code construction is indicated, fabricate and label commercial, domestic-water heater storage tanks to comply with ASME Boiler and Pressure Vessel Code: Section VIII, Division 1.

NSF Compliance: Fabricate and label equipment components that will be in contact with potable water to comply with NSF 61, "Drinking Water System Components - Health Effects," and NSF 372, "Drinking Water System Components - Lead Content."

COORDINATION

Coordinate sizes and locations of concrete bases with actual equipment provided.

WARRANTY

Special Warranty: Manufacturer's standard form in which manufacturer agrees to repair or replace components of electric, domestic-water heaters that fail in materials or workmanship within specified warranty period.

Failures include, but are not limited to, the following:

- Structural failures including storage tank and supports.

- Faulty operation of controls.

- Deterioration of metals, metal finishes, and other materials beyond normal use.

- Warranty Periods: From date of Substantial Completion.

Commercial, Electric, Storage, Domestic-Water Heaters:

- Storage Tank: Five years.

- Controls and Other Components: One year.

PART 2 - PRODUCTS

COMMERCIAL, ELECTRIC, DOMESTIC-WATER HEATERS

Commercial, Medium-Duty, Storage, Electric, Domestic-Water Heaters:

- Basis-of-Design Product: Subject to compliance with requirements, provide products by one of the following manufacturers:

- Bradford White Corporation

- Rheem Manufacturing Company.

- State Water Heaters

- Standard: UL 1453.

- Storage-Tank Construction: Non-ASME-code, steel vertical arrangement.

- Tappings: ASME B1.20.1 pipe thread.

- Interior Finish: Vitraglas lining to comply with NSF 61 barrier materials for potable-water tank linings.

Factory-Installed Storage-Tank Appurtenances:

- Anode Rod: Replaceable magnesium.

- Drain Valve: Low restriction brass ball-type complying with ASSE 1005.

- Insulation: Comply with ASHRAE/IESNA 90.1.

- Jacket: Steel with painted finish.

- Heating Elements: Three electric, screw-in immersion type, with incoloy sheathing; wired for simultaneous operation. Limited to 6 kW per element.

- Temperature Control: Adjustable surface mount thermostat.

- Safety Controls: High-temperature-limit devices or systems.

- Relief Valves: ASME rated and stamped for combination temperature-and-pressure relief valves.

- Include one or more relief valves with total relieving capacity at least as great as heat input, and include pressure setting of 150 psig (1035 kPa). Select one relief valve with sensing element that extends into storage tank.

- Special Requirements: NSF 5 construction.

DOMESTIC-WATER HEATER ACCESSORIES

Domestic-Water Compression Tanks:

- Manufacturers: Subject to compliance with requirements, provide products by the following:

- AMTROL, Inc.

- Flexcon Industries.

- Watts

- State Industries.

- TACO Comfort Solutions, Inc.

- Description: Steel pressure-rated tank constructed with welded joints and factory-installed butyl-rubber diaphragm. Include air precharge to minimum system-operating pressure at tank.

Piping-Type Heat Traps: Field-fabricated piping arrangement according to ASHRAE/IESNA 90.1.

Combination Temperature-and-Pressure Relief Valves: ASME rated and stamped. Include relieving capacity at least as great as heat input, and include pressure setting less than domestic-water heater working-pressure rating. Select relief valves with sensing element that extends into storage tank.

Pressure Relief Valves: ASME rated and stamped. Include pressure setting less than domestic-water heater working-pressure rating.

Vacuum Relief Valves: ANSI Z21.22/CSA 4.4.

PART 3 - EXECUTION**DOMESTIC-WATER HEATER INSTALLATION**

- Maintain manufacturer's recommended clearances.
- Arrange units so controls and devices that require servicing are accessible.
- Fill electric, domestic-water heaters with water.
- Charge domestic-water compression tanks with air.
- Provide seismic strapping in accordance with code requirements.

CONNECTIONS

- Comply with requirements for piping specified in Section 22 11 16 "Domestic Water Piping." Drawings indicate general arrangement of piping, fittings, and specialties.
- Where installing piping adjacent to electric, domestic-water heaters, allow space for service and maintenance of water heaters. Arrange piping for easy removal of domestic-water heaters.

FIELD QUALITY CONTROL

- Perform tests and inspections.
- Leak Test: After installation, charge system and test for leaks. Repair leaks and retest until no leaks exist.
- Operational Test: After electrical circuitry has been energized, start units to confirm proper operation. Be sure units are full of water to eliminate dry-firing elements.
- Test and adjust controls and safeties. Replace damaged and malfunctioning controls and equipment.
- Electric, domestic-water heaters will be considered defective if they do not pass tests and inspections.
- Comply with requirements in Section 014000 "Quality Requirements" for retesting and reinspecting requirements and Section 017300 "Execution" for requirements for correcting the Work.
- Prepare test and inspection reports.

DEMONSTRATION

- Train Owner's maintenance personnel to adjust, operate, and maintain commercial, electric, domestic-water heaters.

END OF SECTION

PART 1 - GENERAL**CONTRACT CONDITIONS**

Work of this Section is bound by the Contract Conditions and Division 1, bound herewith, in addition to this Specification and accompanying Drawings.

RELATED WORK

Section 22 05 00 – Common Work Results for Plumbing

Section 22 11 16 – Domestic Water Piping

Section 22 13 16 - Sanitary Waste and Vent Piping

QUALITY ASSURANCE

Substitution of Materials: Section 01 60 00 Product Requirements.

Meet Owner and regulatory requirements.

SHOP DRAWINGS

Include data concerning sizes, utility sizes, rough in-dimensions, capacities, materials of construction, ratings, weights, trim, finishes, manufacturer's installation requirements, manufacturer's performance limitations, and appropriate identification.

OPERATION AND MAINTENANCE DATA

All operations and maintenance data shall comply with the submission and content requirements specified under section 01 78 00.

DESIGN CRITERIA

ANSI A112.6.1M-88 - Supports for Off-the Floor Plumbing Fixtures for Public Use.

ANSI A112.18.1-94 - Finished and Rough Brass Plumbing Fixture Fittings.

ANSI A112.19.1-90 - Enameled Cast Iron Plumbing Fixtures.

ANSI A112.19.2M-82 - Vitreous China Plumbing Fixtures.

SUBMITTALS

Product Data: For each type of plumbing fixture indicated. Include selected fixture and trim, fittings, carriers, accessories, appliances, appurtenances, equipment, and supports. Indicate materials and finishes, dimensions, construction details, and flow-control rates.

PART 2 - PRODUCTS**PIPING**

Piping, fittings, and related items as specified in related Sections 22 11 16.

INTERIOR PLUMBING MATERIALS

Shock Arrester: Precharged bellows or sealed piston type manufactured to meet PDI WH-201 and ASSE1010 Standards. Size in accordance with PDI Procedures. J.R. Smith, PPP, Sioux Chief, Wade, Zurn, Watts, Josam, or approved.

Traps: Except chrome plated fixture traps. Recessed drainage pattern for threaded pipe and same grade as pipe for cast iron pipe; with cleanout plugs in trap body in all above grade locations.

Commercial Dishwasher Cooking Equipment Pressure Reducing Valve: For installation with commercial dishwasher booster heater and other kitchen equipment, all brass, single seat tupe for dead end service, with renewable stainless steel seat and valve. Designed for service on hot water to reduce pressure from 60 to psi to 20 psi. Leslie, Watts, Cash-Acme, Zurn-Wilkins or approved.

Hand sink Tempering Valve: Pressure compensating water mixing valve. Precision Plumbing Products "Tempera" valve or approved.

Secondary piping supports: Install manufactured secondary piping supports for support and positioning of fixture rough-in piping from framing members. Hubbard, Sioux Chief, or approved.

PLUMBING TRIM

Stops: Furnish stop valves for all fixtures. ¼ turn handle style, in wall, angle or straight through pattern to fit installation. Stops to be all brass with ¼ turn brass stem and replaceable washer, no plastic.

Compression nuts to be high copper content brass. Finish to be copper nickel chrome plate. Product to

carry manufacturer's name. Risers to be chrome plated copper. Provide chrome plated shallow escutcheons. McGuire, Chicago, Brasskraft, Keeney, Zurn, or approved.

Fixture Traps: Exposed fixture tail pieces, traps, and wastes shall be smooth tubular plastic unless plastic not permitted, use non-combustible iron.

Provide compliant fixture piping ADA protector kit on all exposed accessible fixture traps and water supplies. Provide fire rated where required.

Supplies: Braided Stainless Steel, flexible. Stainless steel connectors, 125 psig rated, with burst pressure at 2000 psi at 70-degrees F. Integrated EPDM rubber washers, Ferguson ProFlo, or approved.

Aerators: Tamperproof, flow per code, Female/Male- Niagara N3215B F/M TP-PC or approved.

PLUMBING FIXTURES- SEE DRAWINGS FOR SCHEDULE(S), LOCATIONS, AND ADDITIONAL REQUIREMENTS

General: Install equipment in accordance with manufacturer's instructions including providing any necessary mounted hardware, caulking, sealants, appurtenances, connecting piping, p-traps, and any other accessory equipment.

FLOOR SINKS

Description: FS-1 Floor Sink

Model: See fixture schedule or approved.

Features: Porcelain coated cast iron, enamel coated cast iron ½ grate, dome strainer.

CLEANOUTS

Manufacturers: Josam, Smith, Wade, Watts, Zurn, or approved.

INTERIOR CONCRETE FLOOR AREAS: Enameled cast iron body with round or square adjustable scoriated polished nickel bronze cover, tapered threaded PVC or ABS closure plug.

INTERIOR FINISHED WALL AREAS: Line type cleanout tee with tapered threaded PVC or ABS cleanout plug, round polished stainless steel access cover secured with machine screw. (Note: Screw shall not pass completely through the ABS plug, trim screw as necessary)

INTERIOR EXPOSED VERTICAL STACKS: Line type cleanout tee with tapered threaded PVC or ABS closure plug.

INTERIOR HORIZONTAL LINES: Cast iron hub with tapped ferrule and tapered threaded PVC or ABS closure plug, or no-hub coupling and blind plug.

PART 3 - EXECUTION

INSTALLATION

Install plumbing fixtures in accordance with manufacturer's instructions. Set level and plumb. Secure in place to counters, floors and walls providing solid bearing and secure mounting. Bolt fixture carriers to floor and wall. Secure rough-in fixture piping to prevent movement of exposed piping.

Install each fixture with trap easily removable for servicing and cleaning. Install fixture stops in readily accessible location for servicing.

Provide ADA protection wraps/shields guards around exposed piping/stops/supplies at every sink. See Piping Insulation Specification.

Each fixture shall have a stop valve installation to control the fixture. Stop valves shall be heavy duty type, 1/4 turn, with brass stems and screwed or sweat inlet connections. Compression type inlets are not acceptable.

Cover pipe penetrations with escutcheons. Exposed traps, stops, piping and escutcheons to be chrome plated brass, same items in concealed locations may be of rough brass finish.

Seal openings between walls, floors and fixtures with mildew-resistant silicone sealant same color as fixture. Fixtures in contact with finished walls and floors shall be caulked with waterproof, non-hardening sealant which will not crack, shrink or change color with age. Color to match fixture.

Test fixtures to demonstrate proper operation. Replace malfunctioning units or components. Adjust valves for intended water flow rate to fixtures without splashing, noise or overflow. Adjust shower valve temperature limit stops to 110 degree maximum outlet temperature.

Protect fixtures during construction. At completion clean plumbing fixtures and trim using manufacturer's recommended cleaning methods and materials.

Foodservice Equipment: Provide rough-in piping, traps, tailpieces, indirect waste lines and make final and necessary connections for foodservice equipment. Install faucets, spray units, drains, lever drains, vacuum breakers, solenoid valves, check valves, flow control valves, water inlet fittings, filters, strainers,

PLUMBING FIXTURES

22 42 00-3

118 pressure reducing valves and gas valves furnished by foodservice equipment contractor. Make all final
119 and necessary plumbing connections.
120 Existing Fixtures: Where existing fixtures and fittings are indicated to be reused or relocated, this
121 contractor is responsible for documenting condition prior to construction and for damages incurred during
122 construction.

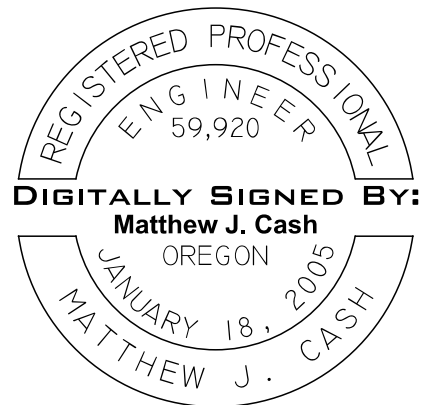
123
124

END OF SECTION

FOR DOCUMENTS THAT ARE DIGITALLY SIGNED: IF PRINTED, THE PRINTED COPY NO LONGER MEETS REQUIREMENTS OF OAR 820-025-0010 AND PRINTED DOCUMENTS DO NOT BEAR THE SIGNATURE OF THE ENGINEER. UNSIGNED DOCUMENTS ARE PRELIMINARY, AND NOT FOR CONSTRUCTION.

**THIS STAMP, ON THIS PROJECT APPLIES
ONLY TO SECTIONS AUTHORED BY:**

**MATTHEW J. CASH, PE
FLUENT ENGINEERING, INC.
2110 STATE STREET
SALEM, OR 97301
503-447-5030**



EXPIRES: 12/31/2027

26 00 01 General Electrical Provisions
26 00 20 Electrical Demolition
26 00 26 Submittals and Shop Drawings
26 05 19 Building Wire and Cables
26 05 26 Grounding
26 05 29 Supporting Devices
26 05 33 Raceways and Fittings
26 05 33.16 Outlet, Junction, and Pull Boxes
26 05 53 Electrical Identification
26 05 60 Overcurrent Protective Devices
26 05 83 Wire Connections
26 24 17 Panelboards
26 24 18 SPD (Surge Protection) Equipment
26 27 26 Wiring Devices
26 29 12 Disconnects and Manual Starters
26 32 10 Automatic Transfer Switch

PART 1 - GENERAL

Products under this contract must meet minimum specifications requirements in detail without exception unless specifically noted and approved as provided in these Specifications. Equipment submitted for review must clearly state on cover sheet any differences from specified product. Equipment substitution or submittal review does not relieve Contractor from meeting all requirements of specified item.

DEFINITIONS

Definitions herein are intended as advisory and shall not limit requirements within the Contract Documents. Where a conflict of definitions exists, the more stringent standard shall be used. Where a term is defined on a Drawing the Drawing definition shall be used for that drawing. Not all definitions are included. Trade standard terms are not defined.

CONTRACT DOCUMENTS

The Contract Documents are inclusive. All requirements of all Contract Documents shall be binding as if repeated herein and within this Division as required by any other Division or Contract Document.

This Division does not express or imply separation of the Contract Documents and shall not be considered as separation of the Work.

See Advertisement For Bids, Instructions to Bidders, Supplemental Instructions to Bidders, General Conditions, Supplemental General Conditions, Drawings and Specifications, and modifications incorporated in the documents before execution of the Agreement.

Conflicts: If any conflicts exist the more stringent is required.

SCOPE OF WORK

General: Provide complete and functional electrical systems as specified, as shown on Drawings, as required, and as intended. Work generally includes, inspections, electrical distribution, devices, wiring systems, raceways, and control systems.

Omissions: Contractor shall be responsible for additional labor, or additional material necessary for the proper execution of the Work. Omissions of expressed reference to any item shall not relieve the responsibly to conform to the Contract Documents

Scope of Electrical Work

All materials and workmanship shall be furnished for complete, tested, and operating electrical systems as shown on the drawings and specified herein.

Electrical work is to include the service. Complete to the point of connection with the serving utility. Any changes of or work required by the serving utility, are part of this work and shall be fully included in the bid price.

Work is also to include main distribution panel, feeder system and branch circuit panels.

Complete branch circuit wiring. Switches, receptacles and similar items, wiring, and connection to all mechanical equipment and kitchen equipment as required.

Provide Power Connections to Equipment provided by other subcontractors, specified not shown, and/or part of a complete and operable system. This equipment may, or may not be shown, may, or may not be on this project, and generally includes, and is not limited to:

Fire Alarm Control Panel (FACP), Fire Alarm Equipment Power Supplies, etc.

Lighting Control Panels, Lighting Controller Equipment, Lighting Controls.

Building Management Control System, Direct Digital Controls, HVAC Controls, and the like.

Window Treatments, Automatic Shades, Automatic Curtains, and the like.

Automatic Door Operators, ADA Doors, Sliding Automatic Doors, and the like.

Unitary, generally self-contained access controls.

Doorbells, door cameras, door locks, door strobes/flashers, etc.

Sump Pumps, freeze protection, and similar site equipment (including equipment located within the building footprint).

Domestic Water circulation pump(s).

Plumbing fixtures with automatic sink/flush valves, and the like.

Automatic plumbing electronic trap primers.

Control Connections to unitary Equipment provided by other subcontractors, specified, not shown, and/or part of a complete and operable system. This equipment may, or may not be shown, may, or may not be included in the project, and generally includes, and is not limited to, control wiring for:

Window Treatments, Automatic Shades, Automatic Curtains, and the like.

Automatic Door Operators, ADA Doors, Sliding Automatic Doors, and the like.

Unitary, generally self-contained access controls

Doorbells, door cameras, door locks, door strobes/flashers, etc.

Sump Pump Controls, alarms, and the like.

Water Level/Monitoring alarms, controls, etc.

Automatic plumbing fixtures, and trap primer systems.

The lists above are intended to indicate equipment that is generally shown/specified elsewhere.

Where specified, and/or shown otherwise, and/or specified by electrical follow additional power, and control requirements as indicated.

Contractor shall obtain, maintain (keep current), any required permits including any permits obtained (prior, during, or after bidding/quotting) by any other party, including the Owner, for the proper and lawful execution of the work. Pay for such required permitting unless otherwise arranged by the Owner.

Contractor shall hire (sub-contract) as required for proper permitting such as permits that require electrical/mechanical/plumbing/low voltage/medium voltage/etc. licenses required to obtain permit(s).

Provide Equipment per Manufacturer's Operation, Installation, and Programming requirements. Follow manufacturer's Guidelines, Installation manuals. Provide additional equipment and as required for a complete, and satisfactory Installation.

CONFORMANCE WITH REQUIREMENTS

General: All Work shall conform to the reasonable requirements of the project within the scope of the project and authorizations. All work shall conform to the methods and requirements of Code at the location of the Work.

Access and inspection: All portions of the Work shall be accessible to inspections and review at all reasonable times during construction. Contractor is responsible for providing access for review and inspection of the Work. Contractor shall secure written inspection reports prior to concealing Work. Contractor is responsible for damages to properly review the Work due to lack of at least 7 Days advance written notification to the Architect, and Engineer that Work is ready for inspection.

Plenums: Provide raceway where conductors, and/or cables are routed through plenums. If specifically noted, or specified raceway is not required, plenum routes may utilize conductors/cables rated for use in plenums, and shall be marked as such per NEC. Supporting devices utilized shall also be rated for use in plenums.

Fire Stop Seal (firestopping) as required.

Accounting: Provide general accounting information as to labor and equipment costs to assist in determination of modifications to the Contract. Provide accounting breakdown when required for securing Owner financing, or for analysis of equipment costs or equipment payback periods, as well as information for Owner incentives.

COORDINATION OF TRADES

Check all other trade drawings to avert potential installation conflicts. Should major changes from the Drawings be required to resolve potential conflicts, notify the Architect and secure written approval and agreement on necessary adjustments prior to start of installation.

Check all equipment locations and connections on the site for coordination with other Divisions equipment and connections and structure and the like.

Contractor is responsible for scheduling trades to properly execute all the Work as intended.

STANDARD OF CARE AND QUALIFICATIONS

General: Contractor shall be experienced and knowledgeable to Provide Work. Owner is not responsible for improper operation, incompliance, or installation due to Contractor's lack of knowledge or experience. Upon request, and where requested herein the Contractor shall supply qualifications and experience. Drawings are presented with industry terms, statements, and trade practices and it is the responsibility of the Contractor to be familiar. Provide written notification prior to Bid to the Architect if any representation is not understood, or outside standard practice.

Like Materials and Quality Control: All systems provided shall be new and of like materials provided through manufacturer authorized distributors. Provide equipment of same system and type by same manufacturer. Items of the same by different manufacturers will be rejected. Equipment shall conform to all applicable Code and applicable listing criteria as of the date of the Contract Documents. Equipment determined to be manufactured under any other listing or Code prior to the date of the Contract is not

acceptable, even if the equipment is new or has not been used. All equipment provided to project shall be listed by an approved listing organization.

EXAMINATION OF SITE

Examine Site of Work prior to making Bid. Ascertain all related physical conditions.

Verify at the Site of Work prior to Bid scale dimensions shown due to exact locations, distances, and levels will be governed by actual field conditions.

Owner will not be responsible for any loss or costs that may be incurred due to a Bidder's failure to fully inform themselves prior to Bid in regard to conditions pertaining to the Work and nature of the Work.

SPARE RACEWAY

In addition to spare raceways required herein (see Panelboards), provide spare raceways emanating from equipment pads where pads prevent access to equipment mounted on pads. Examples include transformers, MCC's, switchboards, generators, and the like. Route spares to landscaped areas at exterior locations or to equipment room interior accessible walls at interior locations.

Provide not less than (2) 4" and (4) 2" spare raceway. Coordinate termination and route locations/direction with Owner. See Raceway Specifications. Additional Spare Raceway may be shown on Drawings, or required elsewhere herein.

MINOR DEVIATIONS

Make minor changes in equipment locations and equipment connections as directed or required without extra cost.

RECORD DRAWINGS

Maintain a marked set of prints at job site at all times. Show all changes from the original drawing set whether visible or concealed. Include all addendums, field orders, change orders, clarifications, request for information drawn responses, and deviations. Dimension accurately from building lines, floor, or curb elevations. Show exact location, elevation, and size of conduit/raceway, access panels and doors, equipment, and all other information pertinent to the Work.

At project completion, submit marked set to Architect for review.

TRAINING

See individual specifications sections for additional requirements.

Provide training of Owner's selected staff for all electrical systems specified herein.

Notify and Coordinate with Owner for training and attendance.

Provide 2 hours of general system training.

Training shall be conducted by qualified individuals familiar with the Work, and with the equipment.

Provide contact information to Owner for an additional 1 hours support for all electrical systems.

Training shall not occur prior to systems being fully inspected, operational, and complete.

Provide Owner with all required Operation, Maintenance, and Programming manuals provided by equipment manufacturer.

Owner shall determine attendee's at training, not the contractor. Contractor shall re-train if attendee's were not selected by the Owner.

WARRANTY

Warrant Work, materials, and equipment for not less than one year.

Provide additional warranty as required herein.

PART 2 - PRODUCTS

THIS PART NOT USED

PART 3 - EXECUTION

THIS PART NOT USED

END OF SECTION

PART 1 - GENERAL**INTENT**

The electrical system shall be adjusted to accommodate installation of the new work and is required to meet Code. Necessary adjustments are shown on Drawings and indicated herein.

EXISTING CONDITIONS

The locations of existing utilities and equipment are shown in an approximate way only and have not been independently verified by the Owner or Owner's Representative. Contractor shall determine the exact location of every existing utility before commencing work, and agrees to be fully responsible for any and all damages which might be occasioned by the Contractor's failure to exactly locate and preserve utilities and equipment. Replace damaged items with new material to match existing. Promptly notify Owner if utilities are found which are not shown.

Existing equipment to be removed may contain PCB's, Mercury, and other hazardous materials.

PART 2 - PRODUCTS

THIS PART NOT USED

PART 3 - EXECUTIONS**DEMOLITION**

Verify exact location of existing equipment in the field. Only partial electrical shown. Locations of items shown on the Drawings as existing are partially based on field inspection of unconcealed equipment and record drawings that may contain errors. The contractor shall verify the accuracy of the information shown prior to bidding and provide such labor and material as is necessary to accomplish the intent of the Contract Documents.

Remove existing fixtures, and associated electrical equipment from areas scheduled for remodeling, relocation, or demolition unless indicated as retained, or noted on the Drawings.

Maintain continuity of existing systems that remain. Remove or relocate electrical boxes, conduit, wiring, equipment, fixtures, etc. as may be encountered in removed or remodeled areas in the existing affected by this work. Wiring which serves usable existing equipment shall be removed and restored clear of the construction or demolition. If existing junction boxes will be made inaccessible, or if abandoned outlets serve as feed through boxes for other existing electrical equipment which is being retained, new conduit and wire shall be provided to bypass the abandoned equipment. If existing conduits pass through areas being removed or remodeled, new conduit and wire shall be provided to reroute clear of the construction or demolition and maintain service to the existing load.

Remove abandoned wiring, and leave site clean.

Do not disconnect service without approval from the Owner and Utility. Coordinate demolition work with the utility.

Verify with the General Contractor a location for storage of materials, supplies, tools, rubbish, etc. prior to start of Work.

Include disposal costs in bid unless item is specifically noted as salvage to Owner, or retained. Include removal, retainment, and salvage to Owner costs in bid; including relocating equipment to another location on the Owner's site. Owner has first right of refusal for any other equipment scheduled for demolition not already noted as salvaged to Owner. Owner may elect to salvage any equipment scheduled for disposal.

Protect equipment salvaged to Owner. For equipment with disposal/recycle/salvage value, such proceeds shall be passed to Owner through inclusion in total bid.

Equipment being retained shall be protected from damage, stored, labeled and reused. Contractor is responsible for damage to retained equipment. Contractor is responsible for labeling retained equipment with non-damaging labels. Should Contractor not label retained equipment, labels become separated, and/or labeling is inaccurate, Contractor shall be responsible for costs to determine equipment type, labeling, as part of a survey to re-install retained equipment in a specific condition, location, with specific required function. Equipment varies and labeling/function type of retained equipment is essential to protect success, schedule, and budget. Contractor is responsible for schedule delays, and equipment costs, as a result of equipment damage, replacement equipment procurement, (due to Contractor's damage or not labeling properly), and/or labeling errors, omission, adherent.

(E) Ballasts with PCB's and (E) Lamps: Contractor shall properly handle, prepare for disposal (such as box, barrel, etc.), and dispose of equipment as required. Recycling is to be used to the extent feasible

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where costs to recycle properly do not exceed cost to dispose of properly. (E) ballasts contain PCB's unless marked by the manufacturer on the ballast "No PCB's"

Barrel leaking PCB ballasts per disposal requirements in approved barrels, not exceeding barreling volume/quantity allowances. Dispose of PCB's ballasts in a facility regulated under the Federal Toxic Substances Control Act.

Non-leaking PCB ballasts not recycled shall be disposed at a PCB disposal facility in approved leak-proof containers.

See DEQ Fact Sheets attached herein. Follow regulatory requirements for proper disposal of removed equipment. Submit certificate of disposal.

END OF SECTION

PART 1 - GENERAL**REQUIREMENTS**

Refer to Division 1

Organization

Order submittals in logical form with tab dividers indicating specification section, and specification title

Equipment shown on schedules shall be in logical order as the equipment appears on the schedule (i.e. light fixture type A precedes light fixture type Z), and be submitted with IDs matching schedule(s).

Clearly readable electronic submittals are permitted per discussion.

Contractor is responsible to verify receipt of electronic submittals by Engineer.

Electronic Submittals shall include the project title in the subject line with unique submittal number, and description of submittal.

Submit per Division 1.

Fluent Engineering has Microsoft 365 on E-mail sizes; however, from time to time our email service provider may restrict incoming e-mails beyond our control.

Contractor is responsible for any damage as a result of viruses or other malicious software or links to such contained with submittal

Fluent Engineering will accept only PDF electronic files. ZIP files, links, images files, images within an email message, and Dropbox type services, etc. will not be opened/accepted.

Open file sharing programs such as Dropbox are not permitted and are considered a compromise of project security / non-disclosure agreements.

Coordinate with Engineer if PDF E-mail is too large to be sent.

Engineer may elect on a case by case basis to utilize the/a Contractor's online submittal system with Owner's approval.

Allow no less than 20 Days for review by Engineer for every Architects submittal/resubmittal.

Contractor is responsible to submit and verify receipt of comments for all submittals.

Resubmittals shall clearly indicate changes. Only revised items not marked as accepted will be reviewed.

Items previously accepted will not be reviewed again, and may continue to indicate accepted on review forms unless Contractor submits a separate RFI, or letter requesting another review of that specific item and describes what changes from the previously accepted item. The Engineer's review may or may not indicate if an items status has changed. For the purposes of this paragraph submittals marked as "make corrections noted", 'D' letter codes, or similar are considered accepted. "Revise and Resubmit", "Rejected", or similar are not accepted.

Contractor is responsible for Engineer's fees after three submittal reviews of equipment of the same specification section.

Substitutions shall be separately submitted. Submit substitution request form as outlined by Division 01, and/or Division 00, if no form specified, provide CSI Substitution After Bidding Form, complete, signed, and filled out as to reason(s) for substitution request.

Submittals do not satisfy requirement(s) to "coordinate", "verify", "make sure", or other direction to the Contractor to actively determine. For example, if "verify finish" with another party direction is given, the EOR is not providing that verification with an accepted review. Submit RFI, or other specified action (such as discussed meeting minutes) to satisfy such direction.

No item requiring review shall be delivered to the site or otherwise provided to the Project until submittals have been reviewed by the Engineer.

DEFINITIONS

Manufacturing Data: Information regarding the product(s) and equipment issued by the manufacturer as described below.

Manufacturer's Label: Manufacturer's label shall include a typewritten list of manufacturer's name, sizes and model or catalog numbers.

Manufacturer's Catalog Data: Manufacturer's catalog data shall include standard catalog information (Cut Sheets) marked to indicate specific equipment and options for complete and functional system. All components of the system shall be included. Include listing information. Include installation instructions.

Manufacturer's Technical and Engineering Data: Manufacturer's technical and engineering data shall include materials, dimensions, details, installation instructions, weights, capacities, illustrations, wiring diagrams, control diagrams, control schematics, piping diagrams, connection diagrams, performance

data, trip curves, listings, mix design, test results, and any other information required for a complete evaluation of the equipment specified, and to verify compliance with the Contract Documents. All available details shall be included with any modifications to the equipment indicated. All manufacturers and associated model numbers used for complete system shall be indicated.

Programming Data: Provide complete technician-level programming and configuration information necessary to install, adjust, restore, and maintain the Controls. Include as applicable:

Sequence of Operation / Programming Matrix – Tabular or narrative description of control logic and cause–effect relationships, coordinated with Contract Documents.

Protection and Safety Settings – All adjustable trip points, setpoints, delays, interlocks, and safety limits required for safe and compliant operation.

Programming Tools / Interfaces – Identification of software, interface hardware, cables/adapters, and communication protocols necessary to access and modify system programming in the field.

Programming Interface Software – Name, version, and licensing status (temporary or permanent) number of users, user level (admin, operator, maintenance, etc.) of all software required for reprogramming and diagnostics; include access credentials and remote/onsite accessibility.

Future Replacement / Reprogramming Data – Instructions and data sets enabling replacement components to be programmed or reprogrammed to match as-left conditions without additional engineering.

Shop Drawings: Shop drawings are Construction drawings of items manufactured specifically for this project. Shop drawings shall include dimensions, construction details, weights, and additional information to identify the physical features of the system or piece of equipment. Drawings shall be adequately sized and scaled for a complete review.

Samples: Samples include actual example of the equipment to be installed. Include actual color, finish, and functioning replica of equipment to be installed. Samples will be returned to the Contractor when submitted with pre-paid postage.

Certifications and Qualifications: Submit list of past projects with same systems. Submit information listing references, copies of certificates issued by manufacturer, school, and standards organizations. Submit information mandated in specific specification section.

SUBMITTALS REQUIRED

Product Evaluation Data. 5 copies of product literature. The submittal schedule for product evaluation data is as indicated below. Each item requiring a submittal is given the following code:

L	Manufacturer's Label
C	Manufacturer's catalog data (Cuts)
E	Manufacturer's technical and engineering data
P	Programming Data
S	Shop drawings
SA	Samples
CR	Certifications
Q	Qualifications

SUBMITTAL SCHEDULE

Division 26 - Electrical

Section 26 05 19- BUILDING WIRE AND CABLES	C
Section 26 05 26- GROUNDING	C
Section 26 05 29- SUPPORTING DEVICES	L
Section 26 05 33- RACEWAYS & FITTINGS	L
Section 26 05 33.16- OUTLET, JUNCTION, AND PULL BOXES	C
Section 26 05 53- ELECTRICAL IDENTIFICATION	L
Section 26 05 60- OVERCURRENT PROTECTIVE DEVICES	C,E,S
Section 26 05 83- WIRE CONNECTIONS	L
Section 26 24 17- PANELBOARD	C,E,S
Section 26 24 18- SPD (SURGE PROTECTION) EQUIPMENT	C,E,S
Section 26 27 26- WIRING DEVICES	C,E,S
Section 26 29 12- DISCONNECTS & MANUAL MOTOR STARTER	C,S

PART 2 - PRODUCTS

THIS PART NOT USED

PART 3 - EXECUTION

THIS PART NOT USED

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120

END OF SECTION

PART 1 - GENERAL**WORK INCLUDED**

Wires and Cables

REFERENCE STANDARDS

National Fire Protection Association (NFPA).
NFPA 70 National Electrical Code.

DELIVERY, STORAGE AND HANDLING

Deliver new wire and new cable to site in new packaging with standard cable coils/reels. Packaging shall clearly show length, wire size, wire/cable type, and manufacturer.
Protect products from weather, moisture, and damage.

PART 2 - PRODUCTS**MATERIALS**

Building Wiring & Insulation: Copper, 98 percent conductivity, stranded. Solid may be used at contractor's option for wire smaller than #8 AWG. 600 Volt insulation, Type THHN for dry interior and damp interior locations. Type THW, THWN or XHHW for wet locations, and exterior locations.

Listed MC (Metal-Clad) Cable with Listed outer sheath for ground path, interior dry-location use only.

Every MC Cable shall include dual ground path routing with outer sheath, and inherent ground conductor. Bond ground conductor to equipment and outer sheath to metal termination boxes.
Cable conductors THHN- 90 Degree C. rated. Use of MC cable not permitted in wet/damp locations.

Number of conductors/cables as required per circuiting/load requirement.

Conductor cable with conductors smaller than #12 AWG for branch circuits not permitted.

Exterior cables exposed to sunlight shall be listed "sunlight resistant."

Control panel wiring no smaller than #14 AWG stranded switchboard Type MTW unless otherwise specified on the Drawings or required by system manufacturer.

Motor control wires shall be no smaller than #14 AWG.

Wire for other areas as shown on the Drawings.

PART 3 - EXECUTION**INSTALLATION**

Parallel feeders shall have identical conductor length.

Use UL listed pulling lubricant for greater than equivalent #4 AWG wire diameter.

Use UL listed pulling lubricant for pulls greater than 75 feet.

Remove moisture from raceway prior to wire pull.

Provide copper grounding conductors. Provide a ground wire through conduits. Utilize the ground wire as the equipment grounding conductor no smaller than #12 AWG otherwise sized as shown and per NEC.

Do not splice feeders, or services. Splices only permitted in accessible junction or outlet boxes where circuit routes deviate. Do not splice or tap branch circuits terminating in a single outlet.

Color code conductors per NEC to designate neutral, phase, and ground as follows:

CONDUCTOR	120/240 (High-LEG Shall be Orange)
Phase A/B	Black, or per (E) facility standard
Phase B/C	Blue, or per (E) facility standard
Neutral	White
Ground	Green
Travelers	Pink, or per (E) facility standard

Identify facility High-Leg with signage and consistent coloring (Orange) as required by NEC.

If (E) facility standards do not differentiate phase by color, or offer suitable marking, and/or differentiate voltage, provide unique identification marking, coloring on new.

59 Wires shall be factory color coded. Coloring shall be integral to the insulation. Plastic tape permitted on
60 #6 AWG and larger where insulation coloring is not available or practical. Apply tape in spiral half-lap
61 over exposed portions of cable at all locations that cable is accessible.
62 Maintain feeder/branch circuit coloring throughout entire circuit run (do not change colors of the same
63 circuit phase).
64 Conductors shall be identified with circuit number where conductors are accessible such as at terminals,
65 outlets, switches, circuit breakers, motor control centers, etc. Identify the ends of a given conductor circuit
66 the same.
67 Do not install wires of different voltage systems in same raceway, box, or other enclosure. Control
68 voltage is permitted in same enclosure only where specific equipment is listed for multiple voltage use,
69 and a listed voltage barrier is provided.
70 Radius of cable bends shall not be less than 10 times the outer diameter of the cable unless specifically
71 noted difference such as on a cable/VFD cable schedule.
72 Do not install cable within conduit per NEC.
73 Follow standards of practice for storage, handling, and termination of aluminum conductors. Provide anti-
74 oxidation gel, and remove any oxidation by approved means when terminating conductors.
75 Provide metal "nail guards" or EMT raceway where cables are subject to damage at studs from nails at
76 exposure distances per NEC.
77 Route parallel or perpendicular to building lines.
78 No Cable (power, low voltage, etc.) shall be unconcealed in any finished area.
79 MC Cable may be utilized where permitted by NEC. MC cable shall not be routed in wet or damp
80 locations which includes unconditioned spaces such as attics, out buildings, crawlspaces, garages, and
81 the like. MC cable shall not be exposed in any areas including where there are no architectural ceilings.
82 Refer to Drawing Details, when present, for additional requirements, and restrictions. Do not use MC
83 cable for homeruns, do not use MC Cable for feeders.

84
85

END OF SECTION

PART 1 - GENERAL**WORK INCLUDED**

Electrical systems grounding.

Signal systems grounding.

APPLICABLE STANDARDS

Underwriters Laboratories (UL)

UL 467 Standard for Grounding and Bonding Equipment

Institute of Electrical and Electronic Engineers (IEEE)

IEEE 81 Guide for Measuring Earth Resistivity, Ground Impedance, and Earth Surface Potentials of a Ground System Part 1: Normal Measurements

IEEE 142 Recommended Practice for Grounding of Industrial and Commercial Power Systems

APPLICABLE REGULATIONS

National Fire Protection Association (NFPA)

NFPA 70 National Electrical Code (NEC)

NEC references below are based on the 2023 edition. Contractor shall meet current NEC requirements.

TESTS

Measure ground grid resistance with earth test megger and provide additional listed and approved earth grounding devices and conductors as required until resistance is 25 ohms or less. Inform engineer in writing, if resistance is greater than 5 ohms.

PART 2 - PRODUCTS**GROUNDING ELECTRODES**

Encased Electrode: NEC 250.52(A). One, no smaller than #4 bare solid copper conductor. Install in concrete foundation or footing near contact with earth. Connect to steel reinforcing bars, where available, not less than two times.

Ground Rods: 3/4" diameter, 8' long, copper, with approved clamp near surface. Listed as ground rod for direct contact with earth.

Grounding Electrode: NEC 250.52(A).

GROUNDING CONDUCTORS, AND JUMPERS

Size: Per NEC 250.

Material: Copper.

Protection: Conductors not in raceway or concealed shall be insulated. Provide raceway where shown or required for physical protection.

PART 3 - EXECUTION**INSTALLATION**

Regardless of TESTS results above, Provide not less than the following:

Underground Metal Cold Water Pipe electrode.

Two (2) Ground Rods or Ground Rods as shown.

Connection to building steel when present.

Per NEC 250.104

Grounding Electrodes: Bond all electrodes together. Do not provide other type of electrode than shown without written approval. Provide additional quantity of electrodes as required by TESTS above.

Provide access to all grounding electrode conductor connections.

Electrically bypass water meters when required by utility with use of full-size bonding jumper rated for location installed and with pipe clamps routed around and clear of meter.

POWER AND SIGNAL SYSTEM GROUNDING

All equipment grounding conductors shall be routed through same equipment conductor raceway from beginning to end (distribution source to load).

Every metallic raceway (including MC Cable, and Liquidtight Flexible Metal Conduit) circuit/feeder is intended to have dual ground paths from the raceway/sheath itself, and the separate equipment grounding conductor within the raceway/cable.

Metallic raceways are not approved as equipment grounds.

Circuit Grounding: Install grounding bushings, studs, and jumpers at distribution centers, pullboxes, motor control centers, panelboards, and junction boxes.

Ground Connections: Clean surfaces thoroughly before applying ground lugs or clamps. If surface is coated, the coating must be removed down to the conductive material. After the coating has been removed, apply a listed and approved noncorrosive compound to cleaned surface and connections. Where galvanizing is removed from metal, it shall be re-applied or painted.

Bonding Jumpers: Provide with green insulation and size not smaller than per NEC and larger where shown. Connection to neutral only at service neutral bar. Bonding jumpers shall be contiguous without break, joint, or splice.

Service Panel:

- Connect the various feeder green grounding conductors to the ground bus in the enclosure with suitable pressure connectors.

- Connect the grounding electrode conductor to the ground bus.

- Connect the neutral to the ground bus as the main bonding jumper unless shown differently on

- Drawings. Provide neutral to ground bond where otherwise indicated on Drawings.

- Connect metallic conduits, which terminate without mechanical conductive connection to the enclosure, by grounding bushings and ground wire to the ground bus.

Feeders and Branch Circuits: Install green grounding conductors with feeders and branch circuits.

Additional locations and systems as shown.

Raceway Systems:

- Ground all metallic enclosed raceway systems.

- All enclosed raceway connecting to equipment shall contain a grounding conductor.

- Conduit systems shall contain a grounding conductor.

- Bond grounding conductor at beginning and end of raceway provided for mechanical protection containing only a grounding conductor.

Boxes, Cabinets, Enclosures, and Panelboards:

- Bond the grounding wires to each pullbox, junction box, outlet box, cabinets, and other enclosures through which the ground conductors pass.

- Provide lugs in each box and enclosure for ground wire termination.

- Provide ground bars in panelboards, bolted to the housing, with sufficient lugs for terminating the ground wires.

Receptacles - Refer to Section 26 27 26.

Ground lighting fixtures to the equipment grounding conductor of the wiring system.

Fixed electrical equipment shall have a ground lug installed for termination of the equipment ground conductor.

Motors: Install a separate insulated equipment grounding conductor from the equipment ground connection in the motor controller through the raceway and flexible conduit to the ground terminal on the motor housing. Ground motor controller through feeder raceway. No reductions.

Variable Frequency (Speed) Drives (VFD/VSD): Additional grounding requirements as shown on Drawings, and with not less than 3 concentric Ground conductor cable between VFD and motor.

Control and Signaling Equipment: Ground metallic enclosures and raceways, terminate shields and drain wires to building ground system. Provide additional grounding as required by equipment manufacturer.

TESTING

Test per IEEE 81.

Grounding Electrode Conductor:

- Measure resistance between switchboard ground bus and each grounding electrode, using a Megger and a single length of additional wire.

- Measure resistance between both ends of the additional wire used.

- Grounding Electrode Conductor resistance is the difference between 1 and 2.

- Correct any inadequate connections as indicated.

END OF SECTION

PART 1 - GENERAL**WORK INCLUDED**

Raceway Supports.

Cable supports.

Provide all hardware and materials to support, as required, a complete and congruent raceway system.

APPLICABLE STANDARDS

National Fire Protection Association (NFPA)

NFPA 70 National Electrical Code

Underwriters Laboratories (UL)

UL 2239 Hardware for the Support of Conduit, Tubing, and Cable

National Electrical Contractors Association (NECA)

ECA 101 Standard for Installing Steel Conduit

PART 2 - PRODUCTS**RACEWAY SUPPORTS**

Single Runs: Steel rod hangers, galvanized single hole conduit straps, or ring bolt type hangers with spring clips. Adhesives, tape, staples, clamps (including beam clamps), zip/wire ties, or "J-nails" not acceptable.

Multiple Runs: Rack with 25 percent spare capacity. Maximum width per manufacturer's recommendations.

Vertical Runs: U-channel support with conduit fittings.

All hardware such as inserts, straps, bolts, nuts, screws and washers shall be galvanized or plated steel.

PVC coated galvanized steel in exterior and wet locations.

Channel manufacturers: Kindorf, Unistrut, or approved.

CABLE SUPPORTS

Approved plastic coated wire-ties.

Approved PVC coated hangers.

Building studs as permitted by Code and specifications.

PART 3 - EXECUTION**INSTALLATION**

Supporting devices shall be listed for the location installed. Supports shall be of like material of raceway and be rated for location installed.

Layout to maintain headroom, neat mechanical appearance, and to support equipment loads required.

Exact location and spacing between supports per manufacturer's recommendations and NEC requirements.

Provide adequate spacing to prevent moisture build-up. All runs of conduit shall be arranged so as to be devoid of traps wherever possible.

Cable "Sag" greater than 3-Inches from valley to peak of run, not acceptable.

END OF SECTION

PART 1 - GENERAL**WORK INCLUDED**

Conduit, Fittings, and Tubing.
Flexible Conduit.

REFERENCE STANDARDS

National Fire Protection Association (NFPA).
NFPA 70 National Electrical Code--Chapter 3.
Underwriters Laboratories (UL) 6,
UL797
UL1990

PART 2 - PRODUCTS**MATERIALS AND COMPONENTS**

General: No smaller than 3/4-inch unless otherwise shown or indicated herein.

Conduit and Tubing: Electrical metallic tubing, galvanized rigid steel threaded conduit, Schedule 40 PVC.

Flexible Conduit: Flexible plastic jacketed type with liquidtight connectors and steel wrap armor (liquidtight flexible metallic conduit).

Metal Clad (MC Cable): See Building Wires and Cables.

Fittings:

General: Listed and approved for purpose. Water, gas, concrete tight where required.

Electrical Metallic Tubing (EMT): Connectors to be steel. All connectors shall have factory insulated throats. Couplers and connectors shall be compression, setscrew type.

Galvanized Rigid Steel Conduit (GRC): Threaded. Do not use pressure type. Provide factory insulated throats on bushings.

PV Coated Galvanized Rigid Steel Conduit (PGRC): Same as GRC, with PVC coating meeting UL White Book Guidance, Steel Tube Institute.

Liquidtight Flexible Metallic Conduit: Continuous copper ground in core; approved watertight.

Metal Clad (MC Cable): Listed for continuous outer sheath connection ground path, screw-in box termination with locking nut, screw-down compression type cable grips. Outer surface shall clamp-down on cable sheath. Use of screw(s) as pinching/clamp where screw comes into direct contact with cable is not permitted. "Snap-on/in", "biting", "shark-bite" type fittings are not approved. Box connections shall be tight with no movement of fitting when secured to box.

Expansion Joints: Offset or sliding type with bending straps and clamps. Listed for purpose.

Entrance Seal: Shall be modular, mechanical type, consisting of inter-locking synthetic rubber links shaped to continuously fill the annular space between the pipe and the wall opening. The elastomeric element shall be sized and selected per manufacturer's recommendations. Garlock Link-Seal or approved.

Exterior Underground: Marking Tape: 6-inches wide, yellow, low-density polyethylene 4 mil thickness.

Imprinted: "CAUTION: STOP DIGGING - BURIED ELECTRIC LINE BELOW" and current date. Tape for telephone line similar, except green.

TYPE

Utilize PGRC in concrete with concrete-tight connectors.

Utilize GRC for exterior with watertight connectors.

Utilize electrical metallic tubing concealed in finished interior spaces.

Utilize electrical metallic tubing exposed in unfinished spaces, where not subject to physical damage.

For underground conduit, utilize Schedule 40 PVC or PGRC. Provide PGRC elbows and PGRC risers through penetrations where PVC is used.

Utilize surface metal raceways for exposed runs in finished areas. Paint to match wall finish. Use only where shown on Drawings, or where approved.

Connections to motors, vibrating equipment, and movable equipment shall be with flexible metallic conduit listed for use as ground or liquidtight flexible metallic conduit (with ground conductor core). Use liquidtight type in damp locations. No smaller than 1/2-inch for motor connections. Use 3/8-inch only for light fixture wiring where provided by light fixture manufacturer. Provide sufficient length of flexible conduit to stop vibration into connecting support. Sizes not noted on the Drawings shall be as required by

the NEC and no smaller than upstream connection conduit size. Flex shall not be sole means of ground path, include conductor within flex for dual ground pathways (raceway and conductor). Flexible metallic conduit not to exceed 6-feet at any one location unless request is affected by engineer in writing.

PART 3 - EXECUTION

INSTALLATION

Install raceway concealed in all areas where required concealment not required in mechanical and electrical rooms, connections to motors, above suspended ceilings, and underfloor spaces.

Coordinate installation of conduit in masonry, cabinetry, and building slab work.

Underground Raceways: Watertight, including fittings, slope 3 inches per 100 feet downward from building. Install underground marking tape. Bury 6 inches to 8 inches below grade directly above raceway. Seal exterior junction boxes or provide with drainage.

Galvanized rigid steel conduit installed in contact with earth shall be wrapped with 2-half laps of 10 mil, all weather, corrosion protection tape. Underground Galvanized rigid steel shall be PVC coated type.

Provide GRC (use PGRC) per NEC 344.10 (including 344.10(B)(1))

Route all conduits parallel or perpendicular to building lines.

Vertical Runs: Straight and plumb.

Raceways Running in Groups: Run at same elevation, properly spaced and supported.

Install conduit in concrete slab with minimum 2-inch cover. Do not install conduit larger than one inch maximum in concrete slabs unless approved.

Do not interfere with placement of concrete re-bar. Place raceway between re-bar layers. Space at least 8-inches on center. Space as far as possible where terminating at same area. Secure raceway, boxes, inserts, etc. by mechanical means prior to pour.

Install conduit free with no dents or bruises. Cap ends to prevent entry of foreign materials and moisture.

Clean raceway before installation of conductor.

Alter conduit routing to avoid obstructions, minimizing crossovers. Avoid use of bends and offsets where possible. Only bend raceway with an approved conduit bending machine or approved hand (hickey) bender.

Provide listed expansion complete fittings with grounding jumpers where conduits intersect building expansion joints and for longer runs where conduit expansion may be excessive.

Allow minimum of 6 inches clearance at flues, steam pipes, and heat sources.

Dissimilar Metals: Avoid contact with pipe or duct runs of other systems.

Lengths and Bends: Maximum number of bends in any run shall be the equivalent of four quarter bends (360 degrees total). Maximum length of any run shall be 300 feet, less 50 feet for each equivalent quarter bend. Provide Junction and pull boxes to meet these limits.

Provide entrance seal for all exterior wall, underground, and exterior slab raceway penetrations.

All empty raceways shall be provided with pull string or #12 conductor. Provide #12 conductor for exterior empty PVC raceways.

Flexible connections lengths shall not be excessive as deemed by EOR.

Maintain separation of MC Cables. MC cables are not permitted in exposed areas, including exposed ceilings unless accepted by Architect, not subject to damage, and/or not within a wet/damp location. If accepted by Architect, exposed ceiling MC cables shall be racked, with no sag per Supporting Devices.

Paint as per Architect. In no case, shall MC cabling exceed 5 total cables in any one group. In no case shall groups be tied, or otherwise held with zip-ties, string, and the like. Grouping if required, shall be routed through mechanical clamps, and in neat, professional, workman like manner parallel and perpendicular to building lines with group stacking, and racking as required maintaining separations; otherwise, provide EMT. Contractor shall provide legible layout/routing sketches with applicable elevations and separations, cable counts, etc. Submit for acceptance, provide grouping MC Cables in any exposed area accepted by Architect.

END OF SECTION

PART 1 - GENERAL**DESCRIPTION OF WORK**

Provide electrical boxes and fittings as required for a complete, protected, and operable system.
Comply with local Codes and NEC as required for Providing electrical boxes and fittings.

REFERENCE STANDARDS

American National Standards Institute (ANSI).

C73 Series Dimensions of Attachment Plugs and Receptacles

National Electrical Manufacturers Association (NEMA)

OS 1 Sheet-Steel Outlets Boxes, Device Boxes, Covers, and Box Supports

FB 1 Fittings, Cast Metal Boxes, and Conduit Bodies for Conduit, Electrical Metallic Tubing, and Cable

APPLICABLE REGULATIONS

American National Standards Institute (ANSI).

C2 National Electrical Safety Code (ANSI/IEEE C2)

National Fire Protection Association (NFPA).

NFPA 70 National Electrical Code.

Underwriters' Laboratories (UL).

UL50 Cabinets and Boxes (ANSI/UL50).

UL514 Outlet Boxes and Fittings (ANSI/UL514).

PART 2 - PRODUCTS**OUTLET BOXES:**

No smaller than 4-inch, 1-1/2-inches deep box. Provide raised covers where required for surface mounted outlets, plaster rings on flush outlets. Provide tile rings where flush outlets installed in tile. Concrete type where installed in concrete.

Receptacle Outlets and Flush Switch: 4-inch square box, 1-1/2-inches deep, with single or two-gang plaster ring.

Match one piece gang boxes to number of devices, install one device per gang. Devices requiring more than one-gang shall be installed in individual boxes matched to device size. Do not exceed 5-gang configuration per row of devices at same location.

Provide galvanized steel interior dry location outlet wiring boxes for emt raceway shaped and sized, to conform to each individual location and installation. Provide with factory knockouts in back and sides, and with threaded holes with screws for securing box covers or devices.

Provide outlet box accessories as required. Accessories include mounting brackets, wallboard hangers, extension rings, fixture studs, cable clamps and metal straps for supporting outlet boxes. Choice of accessories is Contractor's option.

Outlet Box Covers:

Flush Mounting: Bevelled, 302 stainless steel, match device installed or full cover where no device installed.

Surface Mounting: Bevelled, steel, pressure formed, match device installed or full cover where no device installed.

WEATHERPROOF / WET LOCATION OUTLET BOXES:

Provide corrosion-resistant cast metal weatherproof outlet wiring boxes, shaped and sized, to conform to each individual location and installation. Provide with threaded conduit ends, suitably configured for each application, including face plate gasket and corrosion proof fasteners.

Weatherproof boxes shall have smooth sides, gray finish.

Boxes used in contact with earth shall be cast iron alloy with gasketed screw cover and water-tight hubs.

Weatherproof Plates: Cast metal, gasketed for switches provide spring loaded sealed door(s).

Weatherproof Receptacle Outlet Cover: Cast metal, NEMA 3R, In-Use type, with locking tab. Match device configuration. 3 ¼ -inches internal depth. T&B CK series, or approved

WEATHERPROOF JUNCTION AND PULL BOXES:

Provide galvanized sheet steel junction and pull boxes, with screw-on covers; of the type, shape and size, to suit each respective location and installation; with welded seams and equipped with stainless steel nuts, bolts, screws and washers.

KNOCKOUT CLOSURES:

Provide punched-steel knockout closures for steel boxes.

PULLBOXES

Provide sheet metal in interior dry locations for EMT raceway. Provide cast metal in exterior, or damp locations. Type and material shall conform to National Electrical Code, with screw-on cover.

Flush Mounted Pullboxes: Provide overlapping covers with flush head screws, finished in light gray enamel.

Box volumes shall meet NEC for size and number of entering conduits and cables.

UNDERGROUND PULLBOXES

Underground Pull Boxes: Cast concrete with suitable concrete cover to withhold loads in location installed. Provide heavy-duty traffic cover where installed with vehicle traffic. Cover and box shall not deform and be rated for location installed. Provide drainage and no less than 4 feet compacted gravel below installation. Size, and configuration to match installation. Provide where required, and shown on Drawings.

PART 3 - EXECUTION**INSTALLATION**

Match one piece gang boxes to number of devices, install one device per gang. Do not exceed 4-gang configurations per row of devices at same location.

Locate outlet boxes flush other than in mechanical rooms, electrical rooms, and above suspended ceilings. Provide insulation behind box to prevent condensation for boxes mounted in exterior walls.

Provide insulation behind box for walls with insulation for sound reduction.

Coordinate location and mounting heights with built-in units and cabinetry. Outlet mounting height shall be at same level required for equipment served.

When mounting receptacle, or voice/voice outlet boxes above bench or counter, mount box to the side (horizontally) for finished receptacle grounding pole at left.

Locate pullboxes and junction boxes concealed above suspended ceilings or in electrical rooms, mechanical rooms, or unfinished areas.

Support: Provide adequate support of all outlet boxes. Secure boxes independent raceway, by attaching directly to building structure by approved means.

Identify each junction and pullbox with system description including branch circuit numbers of enclosed circuits, and voltage.

Secure all raceway to entering boxes with approved bushings, and locknuts.

Do not mount boxes back-to-back. Boxes on opposite sides of wall shall be separated by at least 3 inches.

Maintain sound transmission and fire properties of surface installed. Provide appropriate fire stop and sound stop materials as required to maintain these properties.

Provide separate boxes where two voltage systems have equipment at same location. Provide separate boxes for equipment on emergency power system.

END OF SECTION

PART 1 - GENERAL**WORK INCLUDED**

Permanent Identification of system components.

APPLICABLE REGULATIONS

National Fire Protection Association (NFPA)

NFPA 70: National Electrical Code.

SUBMITTAL

Provide sample of each label type upon request.

PART 2 - PRODUCTS**MATERIALS**

Phenolic Nameplate:

Three -layer, white front and back with black core.

Neatly engraved through outer layer to show white characters on black background.

Beveled edges, print lettering.

Other colors as specified or shown. Use red for fire alarm, or fire sprinkler only.

Stenciling and Silk Screening: Printed lettering with enamel or lacquer paints. Legends contrasting with the background on which applied

Panelboard Directory Card: Fiberboard typed. Laminate or place in protective cover.

Concealed Box Labels: Permanent black ink such as "Sharpie" pen with neat and legible writing. Red permanent ink for fire alarm.

Concealed Conductor Labels: Listed white tape wrapped around individual conductor or cable, with permanent black ink with printed lettering

Permanent Self-Adhesive Labels: Temperature, moisture and UV resistant. Metallic and reflective background with printed contrasting lettering.

Exterior Weather-proof Adhesive Label. Temperature, moisture and UV resistant with printed contrasting lettering.

Outlet / Device covers: Clear / transparent tape with matching printed black ink letter / numbering.

Power Conductor Labels: Flame resistant UL224 Listed, 600V rated, wrap around label shrinkable sleeve type. White label with black lettering. Impact, Inc AWMS series or approved label system.

PART 3 - EXECUTION**EQUIPMENT TO BE IDENTIFIED**

Motor starters, panels, lighting panels and the disconnecting devices contained therein.

Power Conductors (at Panel/Lighting Control Panel/Line Terminal Blocks)

Disconnects.

Control panels, starters, pushbutton stations, pilot lights and other control devices.

Transformers.

Remote control devices.

Conductors at both device and terminal strip terminations for control and instrumentation cables and conductors.

Other items as specified, required by NEC, or noted on Drawings

Including and not limited to Arc-Flash Hazard (NEC 110.16), Available Fault current (NEC

110.24), protection ratings, etc. Code required markings shall be adhered/affixed/integrated into

to equipment from factory with factory labeling/nameplates.

Devices in lighting panels and power panels shall be identified on the panelboard directory card.

Receptacles and Switches (clear transparent on device cover)

Junction Boxes.

PHENOLIC NAMEPLATES

Power panels shall be labeled on the door of the interior with a nameplate. Letters for panels shall be printed and no less than 1/2 inch high.

Provide nameplate on switchboard

Provide nameplates where specified and as shown.

POWER CONDUCTOR LABELS

Label at emanating location (source)- i.e. home run termination.

Applicable to every power source over 70V.

Label ~ 1-inch from breaker lug, Relay Lug, Terminal Block. Orient for view toward open readily viewable side.

Label each Hot Conductor, Label Neutral Conductor(s) as indicated. Circuit Ground Labeling is not required.

Every new conductor home-run at emanating power panel.

Load name shall be used, not circuit number. Refer to description in panel schedule.

Associate/same label Neutral on same circuits

Every existing conductor home-run at emanating power panel where re-named if existing.

Load name shall be used, not circuit number. Refer to description in panel schedule.

Existing Multi-Wire Branch Circuits (shared) Neutral- Label as "SHARED" or "MULTI-WIRE" with associated circuits, unique circuit identification required/abbreviations

acceptable. If associated circuiting is unknown, label only as "SHARED" or "MULTI-WIRE" without associated circuiting is acceptable.

Associate/same label Neutral on same circuits that are not existing Multi-wire branch circuits.

Prior to removal of conductors from existing breakers, and/or extension of circuiting provide the following. Label every existing conductor home-run at emanating power panel.

Circuit numbers shall not be indicated, numbers only are not acceptable, load name required for future re-configuration of panel.

APPLYING IDENTIFICATION

Stenciled letters shall be applied by brush or by spraying.

Nameplates shall be attached with either adhesive or screws. If adhesive is used, it shall adequately adhere to the surface installed.

IDENTIFICATION REQUIREMENTS

Indicate Voltage for all concealed labels, and for Disconnects, panelboard and switchboard identification.

Identification for disconnecting devices contained in panels and motor control centers shall show the equipment name and location by floor, area, and direction to adequately indicate location of load. Do not include Voltage when the Voltage is the same as for the panel or motor control center.

Nameplates on disconnect devices located in the area but not part of a panel or motor control center shall have the equipment name, power source identification, and voltage designation. Nameplates for disconnect devices located remotely from the equipment shall also show the equipment location by floor, area, and direction to adequately indicate location of load.

All indicators and controls for control panels, starters, and the like shall be labeled, such as (Start, Stop, On, Off, Reset, Fault, etc.).

Panelboard directory cards shall list the circuit numbers and show the equipment name and location supplied by the circuits. Equipment locations shall be shown by floor, area and direction, or by room numbers.

Device covers to include serving circuit and panelboard name, include at receptacles, switches, outlets, system furniture connections, floor boxes, etc. Apply clear/ translucent adhesive tape with typed black lettering not more than 1/4" in height via use of label maker

END OF SECTION

PART 1 - GENERAL**WORK INCLUDED**

Circuit Breakers.

Fuses.

REFERENCE STANDARDS

American National Standards Institute (ANSI).

C37.16 Preferred Ratings, Related Requirements, and Application Recommendations for Low Voltage Power Circuit Breakers and AC Power Circuit Protectors.

C37.17 Trip Devices for AC and General-Purpose DC Low-Voltage Power Circuit Breakers.

C37.50 Test Procedure for Low-Voltage AC Power Circuit Breakers Used in Enclosures - Test Procedures.

C97.1 Low Voltage Cartridge Fuses 600 Volts or Less.

Institute of Electrical and Electronic Engineers, Inc. (IEEE).

20-73 Low Voltage AC Power Circuit Breakers Used in Enclosures: ANSI C37.13.

National Electrical Manufacturer's Association (NEMA).

FU-1 Low Voltage Cartridge Fuses.

APPLICABLE REGULATIONS

Underwriters' Laboratories (UL).

UL 489-72 Molded Case Circuit Breakers and Circuit Breaker Enclosures.

UL 198 E Class R Fuses.

UL 869 Service Disconnects

UL 1066 Standard for Low-Voltage AC and DC Power Circuit Breakers Used in Enclosures

National Fire Protection Association (NFPA).

NFPA 70 National Electrical Code.

QUALITY CONTROL

Breakers shall be inherently coordinated with feeder breakers by manufacture.

Breakers shall be of the same manufacturer.

PART 2 - PRODUCTS**CIRCUIT BREAKERS****Construction**

Bolt-on connection to bus.

Thermal-magnetic, molded case, with inverse time current overload and instantaneous magnetic tripping.

Quick-make, quick-break, with tripped indication clearly shown by breaker handle taking a position between ON and OFF.

Multiple phase breakers shall have a common internal trip. Do not use handle ties between single pole breakers.

Breaker shall be switch (T) rated.

Include locking handle for each breaker provided it does not impede GFI/AFCI or other testing requirements. Utilize for maintenance lock-out tag-out.

Where used as service disconnects, breakers shall be listed for use as service entrance equipment and shall include locking handle.

Building normal power service main breaker shall include power monitoring with LCD display on breaker.

Voltage- each phase L-L, L-N

Amps- each phase

kW/KVA

Integrated customer meter in service panel, or service switchboard is acceptable in lieu of main breaker power monitoring.

Breakers, 400 amps and larger, shall include externally operable mechanical means to trip the circuit breaker, enabling maintenance personnel to verify the ability of the breaker trip mechanism to operate as well as exercising the breaker latch and operating mechanisms.

Fully rated at fault current of panel or switchboard.

Inherently coordinated by manufacturer with upstream protection device.
Breakers, 225 amps and larger:
Shall include externally operable mechanical means to trip the circuit breaker, enabling maintenance personnel to verify the ability of the breaker trip mechanism to operate as well as exercising the breaker latch and operating mechanisms.
Long Delay Protection (Long Delay Pickup, Long Delay Time) setting
Short Delay Protection (Short Delay Pickup, Short Delay Time) setting
Instantaneous Setting
Fully rated at fault current of panel or switchboard.

GFI BRANCH CIRCUIT BREAKERS

Meet construction requirements herein.
Ground fault protection with integral push-to-test button.
Class 1.
Adjustable setting pickup from 0.03 to 30 Amps.
Adjustable time delay from instantaneous to 2.0 seconds.

TESTING

By Manufacturer at factory. Timed thermal trip test and timed magnetic trip test.
As required by local authority.
Submit test results to Engineer upon request.

FUSES

Feeder, Branch Circuit and Service Entrance Fuses: 600 amperes and below, UL Class J or RK1 current limiting type, 600 volt 200,000 ampere interrupting capacity.
Motor and Inductive Circuit Fuses: UL class RK5 time delay current limiting type, 600 volt, 200,000 ampere interrupting capacity.
Control Circuit Fuses: UL Class J or R current, limiting type, 600V.
Manufacturer: Bussmann, or approved

PART 3 - EXECUTION**CIRCUIT BREAKER INSTALLATION**

Label each breaker located in switchboard or separate enclosure to indicate load served.
Adjust settings on breakers to operate properly under actual field conditions and to provide selective system coordination.
Post breaker settings in electrical rooms, alongside one-line.
Torque breakers to bus per manufacturer's requirements and installation procedures.

FUSE INSTALLATION

Label each switch to indicate type and rating of fuse installed.
All fuses shall be selected to provide selective system coordination.
Provide the greater of 10%, or not less than 3 spare fuses of each size, and rating used.

END OF SECTION

PART 1 - GENERAL**WORK INCLUDED**

Wires Connectors

REFERENCE STANDARDS

National Fire Protection Association (NFPA).

NFPA 70 National Electrical Code.

Underwriters' Laboratories, Inc (UL

UL 486A through UL 486E

American National Standards Institute (ANSI)

ANSI/UL 467

PART 2 - PRODUCTS**TWIST-ON CONNECTOR**

Pressure-type wound spring twist on connector.

Solderless pressure connectors.

Shell rating of 105 degrees C.

"Push-On" or "punch" type connectors not permitted.

Use for up to #8 AWG sizes.

MULTI-TAP CONNECTOR

600V Fully insulated, chemical resistant insulation coating.

90 °C Rated

Fully rated for SCA in locations installed.

Torque wrench lug tightening

Clear insulation (Vision Tap) transparent design for conductor placement verification.

Removable plugs, pre-filled oxide inhibitor

AL/CU Rated Terminals

For J-Box use only, new feeder extensions not permitted

Not for submersible use.

NSI (Polaris) ITD Vision Tap Series, Burndy Clear Series, or approved.

COMPRESSION ADAPTER

Dual rated for use with both aluminum and copper cable conductors.

Diameter and ampacity as current carrying equivalent copper wire.

Pre-filled with approved joint compound

Connectors shall be clearly marked with Catalog Number, wire size and color-coded die index number.

Burndy "Hyplug" type AYP or equal by T&B, or approved.

TERMINAL, CRIMP TYPE

Flat; fork tongue, or flat circular matched to terminal size.

Color coded to wire size.

T&B "Sta-Kon", or approved.

PIN TERMINATION CONNECTOR, CRIMP COMPRESSION TYPE

Dual-rated for both copper, and aluminum conductors.

Straight or Offset as required for application.

90 °C Rated

Size as required for application.

Solid-barrel pin design with factory-installed oxide inhibitor.

Tin-Plated, or greater for application requirements.

EPDM Rubber covers rated for 600V and 90 °C

Burndy AYP/AYPO Series, or approved.

WP COATING

Liquid

For use as an outer seal on vinyl tape splice, fast-drying, suitable for use for direct burial and moisture protection.
3M Scotchkote Electrical Coating FD, or approved

PART 3 - EXECUTION

INSTALLATION

Provide Twist-On Connectors at taps and splices for conductors no larger than #10 AWG. Provide only in approved junction and outlet boxes.

Provide Compression Adapters for terminating a single conductor into mechanical connectors such as a circuit breaker or set screw lugs. Provide only where required for AL/CU transitions or where lugs require adapters.

Provide Crimp terminal at all Control voltage terminal blocks, unless otherwise recommended by manufacturer.

Pin Compression termination types lugs are only permitted where due to conductor size exceeding lug conductor size capacity rating (such as with Voltage Drop Applications).

Compression Pin Connectors:

Compression requirements:

Use a ratchet-type crimp tool with hexagonal (indent) dies sized to the lug's die index

Perform one full-cycle crimp—no "half-crims"—achieve UL Listed tensile strength.

Provide per UL 486 including tensile pull-out tests. Submit recorded test results (as required by UL486) upon request. Failed tests shall be recompressed, and replaced with entirely new connector, re-crimping is not acceptable.

After crimping, apply manufacturer-approved corrosion inhibitor spray to exposed metal surfaces; re-verify lug marking legibility.

Do not nick conductor when stripping insulation. No "ringing"

Conductor and cable shall not be reduced at the terminal for connections.

Connectors shall be approved and listed for the purpose used.

Wrap all twist-on connectors with listed tape to maintain equivalent insulation of wire.

Exterior, Underground, and WP connections shall include 2-coats of WP Coating.

Remove any obstructions on connection to maintain continuity prior to installation of connectors, such as paint, dirt, and construction materials.

Copper conductors can be terminated in approved compression or mechanical connector, including set screws.

Provide slack at equipment to allow for a neat termination, access to conductors, and ability to repair or replace equipment.

Connections shall not be made where in-contact with moisture. Utilize fully unbroken conductor through entire run.

END OF SECTION

PART 1 - GENERAL**WORK INCLUDED**

Provide panelboards incorporating equipment of the number, rating and type specified herein and shown in Panel Schedules.

REFERENCE STANDARDS

American National Standards Institute (ANSI).

ANSI C37 Standard for Metal-Enclosed Low-Voltage Power Circuit Breaker Switchgear

Institute of Electrical and Electronics Engineers (IEEE).

Std. 241-74 Electric Systems for Commercial Buildings.

National Fire Protection Association (NFPA).

NFPA 70 National Electrical Code.

Underwriters' Laboratory (UL).

UL 67 Standard for Panelboards.

UL 869A Reference Standard for Service Equipment

National Electrical Contractors Associations (NECA)

NECA 407 Standard for Maintaining and Installing Panelboards

National Electrical Manufacturer's Association (NEMA)

NEMA PB 1.1 General Instructions for Proper Installation, Operation, and Maintenance of

Panelboards Rated 600 Volts or Less.

QUALITY ASSURANCE

Panelboard breakers shall be selectively coordinated with feeder breakers.

Inherently coordinated by manufacture- i.e., manufacturer shall provide faster trip on smaller breakers such that a smaller rated breaker trips before a larger rated breaker.

Study not required, unless otherwise indicated, or unless AHJ and/or Code required study (such as medical, emergency, etc.)

Acceptable Manufacturers: Eaton, Square D, or approved.

PART 2 - PRODUCTS**CONSTRUCTION****General:**

Mounting hardware shall be captive type, and shall not pose a danger of dropping onto exposed parts if trim is opened, or removed.

Provide Arc-Flash Protection label per NEC.

Box:

Galvanized code gauge steel.

20-inch minimum width; 4-inch minimum gutter space on all sides. Larger as required by manufacturer and NEC.

Minimum 4 interior mounting studs.

Individual knockouts by manufacturer or field-cut per manufacturer requirements. Concentric knockouts are not permitted.

All exterior and interior steel surfaces of panelboard door and trim shall be cleaned and finished with industry standard gray baked enamel paint over a rust-inhibiting phosphatized primer coating approved by the paint manufacturer. Panelboards exposed in finished spaces shall have factory finish to match adjacent surfaces.

Bussing:

Copper- All phases, ground, and neutral.

Fully Rated. No reductions.

Bolt-on breaker Lugs

Tap Arrangement shall be phase sequence type, permitting any breaker configuration mounted at any location.

Short Circuit Bracing: Fully rated.

Neutral Bussing:

Full size, unless otherwise noted.

Properly sized lug for each outgoing neutral connection.

59 All bolts used to connect current-carrying parts together shall be accessible for tightening from
60 the front of the panel.
61 Wiring terminals: Compression or setscrew type for copper conductors; bolted to bus.
62 Secured not less than at 6 separate locations to the enclosure. Bus movement in any direction in
63 excess of 1/8-inch. is not acceptable.
64 Through (THRU) Lugs- Where indicated on the one-line, and/or schedules. Provide as follows:
65 Dual lugs at top or bottom of panel only does not satisfy requirement for Through lugs.
66 Provide lugs at top and bottom of board, connected to bussing
67 If panel includes main breaker, through lugs are permitted to be on load side of main
68 such that they de-energize with breaker OFF or TRIP.
69 Additionally, provide dual lugs on panels with main breakers on the line side of
70 the main (incoming feeder). These dual lugs (extra lugs) are not switched by the
71 main in-panel breaker, and are in addition to the lugs at the other end of the bus
72 which are switched with the main in-panel breaker.
73 Trim:
74 Code gauge steel.
75 Flush panels shall include trim overlap around box not more than 1.5-inches.
76 Surface Panels: Same width and height as box.
77 Mountable by screwdriver, no special tools.
78 Tamper-proof: Trim shall not be removable with door closed.
79 Include separate trim door and access door. Door-in-Door type construction.
80 Doors:
81 Shall conceal all breakers unless otherwise noted.
82 Provide internal concealed access door hinges. Exterior door hinge is not required to be
83 concealed, but shall be painted to match exterior color of panel.
84 Over 48-inches in Height: Shall have auxiliary fasteners at top and bottom of door in
85 addition to flush latch (3-point).
86 Latches:
87 Spring-Type, flush, number as required by manufacturer
88 Where more than one latch is installed, access door shall be operable by only one
89 person. Three simultaneously operated latches is not acceptable.
90 Equip latches with flush locks keyed alike. All panelboards shall be keyed alike.
91 Not less than NEMA 1 unless otherwise noted or otherwise required for location installed.

CIRCUIT BREAKERS

Main Breaker:

95 Provide where required and noted. Mount separate from branch breakers.
96 Covered by a metal plate, except for the operating handle, trip flag (if applicable), and trip button
97 (if applicable).
98 Connection to breaker load side shall be contiguous bus bar. Connection by separate conductors
99 is not acceptable.
100 Panel and breaker shall be listed as service disconnect where used in such applications,
101 including alternate power service such as from an emergency generator.

Branch Breakers:

103 Bolt-on connection to bus. Securely mounted; Deflection of breaker with force applied in any
104 direction greater than 1/4-inch is not acceptable.
105 Additional requirements are noted elsewhere in these Specifications, shown on Drawings, and as
106 per Code.

PART 3 - EXECUTION

INSTALLATION

111 Provide mounting brackets, busbar drillings, and fillers for unused spaces.
112 Maintain fire properties of surface installed. Provide appropriate fire stop materials to maintain these
113 properties.
114 Prepare and affix typed directory to inside cover of panelboard indicating loads and location of loads
115 controlled by each circuit.
116 Provide panelboards flush in all finished areas. Unfinished areas include mechanical rooms and electrical
117 rooms.

PANELBOARDS

26 24 17-3

118 Securely mount raceway to panelboards with appropriate bushings. Bushings shall be insulated, and
119 threaded through panelboard with locknut securing to box. Coordinate raceway size and locations
120 entering box for neat a professional installation, as well as for appropriate routing.
121 For flush panels, provide (1) 2-inch spare, (2) 1-inch spares, and (2) ¾-inch spares raceways stubbed to
122 accessible ceiling space.
123 Combine all keys on one key ring and furnish to Owner at time of substantial completion.
124
125

END OF SECTION

PART 1 - GENERAL**DESCRIPTION**

Provide surge suppression device (SPD) (previously known as TVSS- Transient Voltage Surge Suppression) equipment for the electrical distribution system.

REFERENCE STANDARDS

Underwriters Laboratories (UL)

UL 1449 Standard for Transient Voltage Surge Suppressers

UL 1283 Standard for Safety for Electromagnetic Interference Filters

American National Standards Institute (ANSI)

C62.41 IEEE Recommended Practice for Surge Voltages in Low-Voltage AC Power Circuits

PART 2 - PRODUCTS**INTEGRAL PANELBOARD SURGE SUPPRESSOR**

Provide in every Panelboard.

Unit shall be rated for Category B location per ANSI/IEEE C62.41-1991.

Unit shall be factory integrated into panelboard.

Each unit module shall be fused with a surge rated fuse and incorporate a thermal cutout device.

Minimum surge current capability shall be 80,000 amperes per phase, measured between L-N & L-G.

Unit diagnostics, mounted in door of distribution equipment, shall include the following:

Operational LEDs to indicate loss of protection and circuit fully operational for each protection status.

The internal design of the unit shall have a minimum EMI/RFI filtering of -50 dB from 100kHz to 100MHz

The UL 1449 Listed and Recognized Component Suppression Voltage ratings shall not exceed:

330 Volts for 120/208 or 240 voltage configurations.

700 Volts for 480 voltage configurations.

All required "burn-in" tests shall be conducted at factory, prior to shipment.

Rated for not less than 200,000 AIC.

Installation shall not decrease available over-current protection device spaces including main breaker.

Acceptable manufacturer: Advanced Protection Technologies, by panelboard manufacturer, or approved.

PART 3 - EXECUTION**INSTALLATION**

System shall be complete.

Comply with applicable Sections of this Division.

WARRANTY

Full five year warranty by manufacturer and includes unlimited replacement of all components.

END OF SECTION

PART 1 - GENERAL**WORK INCLUDED**

Wall Switches.

Receptacles.

Ground Fault Receptacles.

REFERENCE STANDARDS

American National Standards Institute (ANSI).

C73 Series Dimensions of Attachment Plugs and Receptacles.

National Electrical Manufacturer's Association (NEMA).

WD 6 Wiring Devices- Dimensional Requirements

WD 1 General Color Requirements for Wiring Devices.

National Fire Protection Association (NFPA).

NFPA 70 National Electrical Code.

Underwriters' Laboratory (UL).

UL-20 Standard for Snap Switches.

UL 498 Attachment Plugs and Receptacles

UL 467 Grounding and Bonding Equipment

UL 514D Cover Plates for Flush-Mounted Wiring Devices

2006 UL 943 Safety for Ground-Fault Circuit-Interruption

QUALITY ASSURANCE

Provide type 5362 receptacles.

Acceptable Manufacturers: Hubbell, Pass and Seymour, Arrow-Hart, Leviton, or approved

PART 2 - PRODUCTS**MATERIALS**

Switches: 120/277 Volt. AC Quiet, slow make, slow break design, toggle style handle, with totally enclosed case, 20 Ampere, specification grade. Provide matching two-pole, three-way and four-way switches.

Receptacles: 20 Ampere (unless otherwise indicated), 125 Volts (unless otherwise shown), duplex, polarized, full gang size, specification grade, separate ground terminal, 20 Amp. break-off tab for split circuit wiring.

Ground Fault (GFI) Receptacles: 20 Ampere, specification grade duplex receptacle with integral ground fault circuit interrupter. LED operation indicator. Test and reset buttons. End of life protection- GFI component failure results in no power delivered to equipment (2006 UL 943).

Tamper Proof Type: Same as Receptacles, or Ground Fault (GFI) when GFI required. Provide Tamper Proof type where children may be present. Provide in common areas open to the public, and areas open to the public. Provide in areas where children may visit. Provide also in areas per NEC.

USB Receptacles: Same as Receptacles, with (2) Standard USB charge combination ports.

Wall Plates: 302 Stainless Steel, Match device configuration.

Colors: Verify colors with Architect.

Gray Receptacles, Gray Switches.

Kitchen area shall be stainless steel.

USB Receptacles: Same as Receptacles, with (2) Standard USB charge combination ports.

PART 3 - EXECUTION**INSTALLATION**

Do not use back wiring wells, terminate conductors on mechanical screw terminals.

Do not use GFI-Feed through function, GFI receptacles with test, reset, etc. required at each location where GFI is required.

Provide Tamper Proof type receptables where children may be present. Provide in common areas open to the public including bathrooms, and any other area open to the public. Provide in areas where children may visit. Provide also in areas per NEC. Generally, Tamper Proof is not required: on Roofs, on Ceilings, in Mechanical/Electrical Rooms.

Provide wiring devices as shown.

60 Install devices plumb and consistent with building lines. Wall Plates shall make contact on four corners
61 and shall fit flush with device.
62 Devices to include same configuration outlet box, cover, wall plate and other necessary installation
63 materials for a complete operating circuit.
64 Mount switches 42 inches (to center line of faceplate) above floor except as otherwise noted on the
65 Drawings.
66 Coordinate mounting locations with architectural details.
67 Mount receptacles vertically at 15 inches (to bottom of faceplate) above finished floor, with grounding pole
68 at bottom.
69 Coordinate receptacle height with benches and counters.
70 When mounting receptacle above bench or counter, mount receptacle to the side with grounding pole at
71 left.
72 Where installed with disposal: Provide split switched GFI receptacle (or GFI via Breaker) for receptacles
73 mounted under sinks. Provide switch for ½ duplex receptacle in approved ADA location such as under
74 sink within counter, or above counter if ADA accessible. Delete switch if air-switch or other control
75 device is specified.
76 Grounding: Install a separate bare conductor between the receptacle strap grounding (green) screw and
77 a screw into the outlet box. Self-grounding strap not approved as grounding means.
78 Where existing receptacle circuiting is changed to emergency power, remove existing receptacle, and
79 replace with distinctive color per NEC. Replace with like receptacle removed including GFI, AFCI, etc.1
80

81 **END OF SECTION**

PART 1 - GENERAL**WORK INCLUDED**

Provide motor disconnects as shown, and as required by Codes.
Provide circuit disconnects as shown, and as required by Codes.
Provide manual motor starters for single phase motors below one horsepower where disconnect is shown as required by Codes.
Disconnects to include adequate support, required hardware, and accessories for complete functional installation.

APPLICABLE REGULATION

Conform to National Electrical Code and inspection authority.
Provide disconnects rated for the location installed, as required by National Electrical Code, as shown, and as indicated herein.

REFERENCE STANDARDS

Underwriters' Laboratory (UL).
UL-98 Enclosed Switches.
National Electrical Manufacturer's Association (NEMA).
NEMA KS-1 Enclosed Switches.

PART 2 - PRODUCTS**MANUAL MOTOR STARTER**

Toggle horsepower rated, switch with thermal overload and pilot light.
Switch tab for locking switch in "OFF" Position.

DISCONNECT

Motor and circuit disconnects shall have a UL label.
Construction: Dry, Indoor Locations shall be not less than NEMA 1. Enclosures for outdoor, or wet locations shall be not less than NEMA 3R. Rated at 600 Volt. Operational handle on outside of enclosure. Heavy duty, quick make, quick break. Number of poles and ampacity as noted or required by Code. Fusible with dual element fuses where shown. Short circuit rating sufficient to withstand the available fault current. Solid ground, solid neutral.
Compression lugs or set-screw lugs approved for use with copper wire.
ON/OFF Positions clearly marked.
Lockable in "OFF" position.
Interlock:
Prevents switch from being opened when "ON."
Prevents closing switch when cover is open.
Provide defeater to permit authorized personnel to open door and inspect switch when "ON," or operate with cover open.

COMBINATION MOTOR STARTER AND DISCONNECT

Include features of Disconnect above.
Provide molded case magnetic only circuit breakers with operating handle and lock-off facility.
Provide contactors with three overload relays.
Holding coil at 120 Volts.
Provide pilot lights in cover, red & green neon or LED type.
Provide reset button, and Hand-Off-Automatic switch in cover, field convertible to Off/Auto or Start/Stop momentary pushbutton.
Provide starters with a sufficient number of auxiliary contacts (N.O. and N.C.) to afford the control and interlocking required in addition to standard auxiliary holding contacts supplied with each contactor.
Provide control transformer with 120 volt secondary voltage of sufficient capacity to handle operating coil and associated controls. Protect transformers with fuses on primary and secondary sides of transformers as required by Code.
Minimum size NEMA 1.
Enclosure for dry, indoor locations: NEMA 1, drip-proof. Others as required by location.

PART 3 - EXECUTION**INSTALLATION**

Install motor and circuit disconnects as recommended by manufacturer, required by Code, required by UL, and where shown.

Maintain Code clearances and access.

Provide Manual Motor Starter where shown for single phase motors rated less than one horsepower. Manual Motor Starter is not required for motors with integral thermal overload protection. Provide Switch with locking tab for motors with integral thermal overload protection.

Provide Manual Motor Starters as required for single phase motors without integral or other protection, otherwise provide Disconnect.

Provide a phenolic nameplate on each disconnect identifying the equipment item served.

Independently support disconnects. Do not mount disconnects on vibrating, HVAC, or Plumbing equipment.

Install heaters correlated with full load current of motors provided.

Set overload devices according to measured current of motors provided.

END OF SECTION

PART 1 - GENERAL**WORK INCLUDED**

Provide Automatic Transfer Switch (ATS) to include switching, required interconnections, instrumentation and control wiring.

REFERENCE STANDARDS

National Electrical Manufacturer's Association (NEMA)

NEMA KS-1: Enclosed and Miscellaneous Distribution Equipment Switches (600 Volts Maximum)

Underwriters Laboratories (UL)

UL 50: Standard for Enclosures for Electrical Equipment

UL 869A: Reference Standard for Service Equipment

NATIONAL FIRE PROTECTION ASSOCIATION (NFPA)

NFPA 70, 76A, 101, 110/111

QUALITY ASSURANCE

Acceptable Manufacturers: ASCO Power Technologies, or approved.

SUBMITTALS

Shop Drawings:

Certified elevations, power and control diagrams, material list.

PART 2 - PRODUCTS**ATS CONSTRUCTION**

An outdoor, non-ventilated NEMA 3R enclosure with key locked door shall house the transfer switch and control components. Vandal/Tamperproof.

Voltage sensors and time delays shall be solid-state, plug-in devices. The control relays shall be dust covered, plug-in devices. These control accessories shall mount on a dead-front, swing-out, control accessory panel to avoid generator shock hazard while adjusting control functions, but will swing out exposing the wiring to facilitate servicing.

The transfer switch, with terminal lugs for either copper or aluminum wire, shall have individual heat resistant chambers enclosing solid silver cadmium oxide, double-break contacts. The transfer switch, with mechanical and electrical and interlocks to prevent simultaneously energizing both normal and standby service shall be mechanically held on line side with auxiliary contacts rated 6-amp, 120 volt AC; 3-amp, 240 volt, AC on line side and generator side of transfer switch.

Solid Neutral

AUTOMATIC TRANSFER SWITCHES

The complete automatic load transfer control shall be designed, built, and tested by the manufacturer.

The load transfer control shall be rated for continuous duty and for all classes of load. The automatic load transfer control shall be provided with two poles for normal standby service of 120/240 Volt, 60 Hz, 1 phase.

Operation: The Automatic Load Transfer Control shall sense complete loss of normal power on any phase and signal or standby generating set to start after normal power failure. When the standby power attains proper voltage and frequency, the Load Transfer Control will automatically transfer the load to standby power. This operation shall occur within 10 seconds. When the normal power is restored, the Automatic Load Transfer Control shall sense this and retransfer the load from standby power to normal power, and signal the standby source to stop.

Rating and Performance:

The transfer switch shall be rated for all classes of load including inductive and noninductive load at 600 Volts. The transfer switch portion of the control shall be designed, built, and tested to close on an inrush current up to and including twenty (20) times the continuous rating of the switch without welding or excessive burning of the contacts. The transfer switch shall be capable of switching the load up to and including fifteen (15) times the continuous rating of the switch and capable of enduring six thousand (6000) cycles of operation, at rated current, at a rate of six (6) cycles per minute, without failure. One cycle shall consist of one complete opening and closure of both sets of contacts on an inrush current of ten (10) times the continuous rating of the switch.

Transfer switch shall be rated for amps as shown and have a withstand current of not less than switchboard rating, or as shown.

ATS ACCESSORIES THE FOLLOWING ACCESSORIES SHALL BE PROVIDED WITH THE AUTOMATIC TRANSFER SWITCH.

Open transition type. Microprocessor controlled, with backlit LCD readout display including Time-to-Transfer estimate behind vandal covers/doors.

A time delay to start standby power, adjustable from 0 - 10 seconds, shall be provided to prevent needless starting and stopping during periods of momentary voltage fluctuations from the normal power source.

A time delay to pick-up load, adjustable from .5 - 30 seconds, shall be provided to prevent the standby power from accepting load until proper voltage and frequency is reached.

A time delay to retransfer the load, adjustable from 0 - 30 minutes, shall be provided to delay retransfer to avoid short term normal power restoration.

A time delay to stop the engine-generator after the load has been transferred to normal power shall be provided. The time delay, adjustable from 1 to 15 minutes, shall permit engine to run unloaded to cool down before shutdown.

Automatic bypass to re-transfer the load from generating set to normal power source if the standby set should fail during the delay period.

Provide a test switch to simulate an interruption of power from the normal source.

Provide an exerciser clock to automatically start the generating set at regular intervals and allow it to run for a preset time period.

A load selector switch shall be provided to test or exercise generator with or without building load.

Adjustable solid state voltage sensors, one per phase on line side. Sensors shall be temperature compensated over the temperature range of 225 degrees F. to +175 degrees F.

Disconnect plug to electrically disconnect the control section from the transfer switch for maintenance service during normal operation.

Manually operable should "automatic" portion of transfer switch fail.

Normal and emergency indicating lamps to indicate which source is supplying power to the load shall be provided on the front of the enclosure door.

No operable switches on front. ATS is accessible by public and shall be tamper/vandal resistant.

MOUNTING

See Drawings for Additional Requirements.

PART 3 - EXECUTION

INSTALLATION

Align before bolting. Tighten with torque wrench. Torque to manufacturer's requirements.

Level and securely fasten to mounting.

Provide adequate cable supports for cables entering from point of entry to termination.

ATS INITIAL TIME SETTINGS

Loss of normal power to power available: Within 10 seconds.

Load re-transfer back to utility: 15 minutes.

Cool down period (no load): 10 minutes.

END OF SECTION

MARION COUNTY FRESH START MARKET REMODEL

	NEW STEEL STUD WALL		NEW DOOR & DOOR MARK		DETAIL NUMBER
	NEW WOOD STUD WALL		EXISTING DOOR TO REMAIN		DETAIL CUT BUBBLE
	NEW CMU WALL		EXISTING DOOR TO BE REMOVED		VIEW OF ELEVATION
	NEW CONCRETE WALL				INTERIOR ELEVATION SHEET NO. WHERE DRAWN
	ITEM TO BE REMOVED				VIEW OF SECTION
	KEY NOTE SYMBOL		ROOM FINISH SYMBOL		SECTION CUT SYMBOL
	WINDOW MARK		ROOM NAME SYMBOL		REVISION TAG & REVISION CLOUD
			FIRE EXTINGUISHER		

	EARTH
	GRANULAR FILL
	BRICK
	CONCRETE
	PLASTER, GROUT
	ASPHALT
	LOOSE, BATT INSUL
	RIGID INSULATION
	GLASS
	METAL
	PLYWOOD
	CONCRETE MASONRY UNITS
	FINISH WOOD
	DIMENSION WOOD
	ACOUSTICAL TILE
	GYPSUM WALLBOARD
	CERAMIC TILE

CODE SUMMARY		GOVERNING BUILDING CODE: OSSC 2022 (IBC 2021)
THIS PROJECT COMPRISES THE INTERIOR REMODEL OF A FOOD PREP SPACE.		
ZONING CODE		
PLANNING ZONE	PH - PUBLIC HEALTH	
EXISTING PARKING AND LANDSCAPING TO REMAIN		
BUILDING CODE		
OCCUPANCY GROUP	A-2	
CONSTRUCTION TYPE	V-B	
REMODEL	NON FIRE-SPRINKLERED	
A-2 ALLOWABLE BUILDING AREA	= 6,000 SF	
EXISTING BUILDING AREA TO REMAIN	= 2,791 SF	
EXISTING OCCUPANTS AND EXITS TO REMAIN		

DIVISION 26 - LIGHTING ALTERNATE:

CODES: COMPLY WITH REGULATIONS OF THE SERVING ELECTRIC UTILITY, TELEPHONE UTILITY, NATIONAL ELECTRIC CODE, NATIONAL FIRE CODES, AND OTHER APPLICABLE CODES.

LIGHT FIXTURES: PROVIDE NEW LIGHT FIXTURES IN ACCORDANCE WITH ALTERNATE #1 IN FOOD PREP 103.

FIXTURES TO BE FOOD GRADE IN ACCORDANCE WITH MARION COUNTY HEALTH REQUIREMENTS. VERIFY LIGHT LEVELS IN AREA OF WORK TO MEET REQUIRED LEVELS FOR THAT ROOM TYPE. REVISE SWITCHING/OCCUPANCY SENSORS TO CONTROL LIGHTING SEPARATELY IN THIS AREA. PROVIDE NEW EMERGENCY EGRESS SIGNS AS REQUIRED BY CODE.

PROVIDE DRAWINGS AND SUBMITTALS FOR ARCHITECT REVIEW, INCLUDING, BUT NOT LIMITED TO:

- DEMOLITION AND REVIEW OF EXISTING LIGHTING CIRCUITING
- LIGHTING CALCULATIONS AND PHOTOMETRIC ANALYSIS
- LIGHTING CONTROLS DESIGN
- COMCHECK FORMS (ENERGY CODE COMPLIANCE)
- LIGHTING CONNECTIONS/POWER
- EGRESS LIGHTING DESIGN.

PROVIDE AS-BUILT DRAWINGS AT COMPLETION OF WORK.

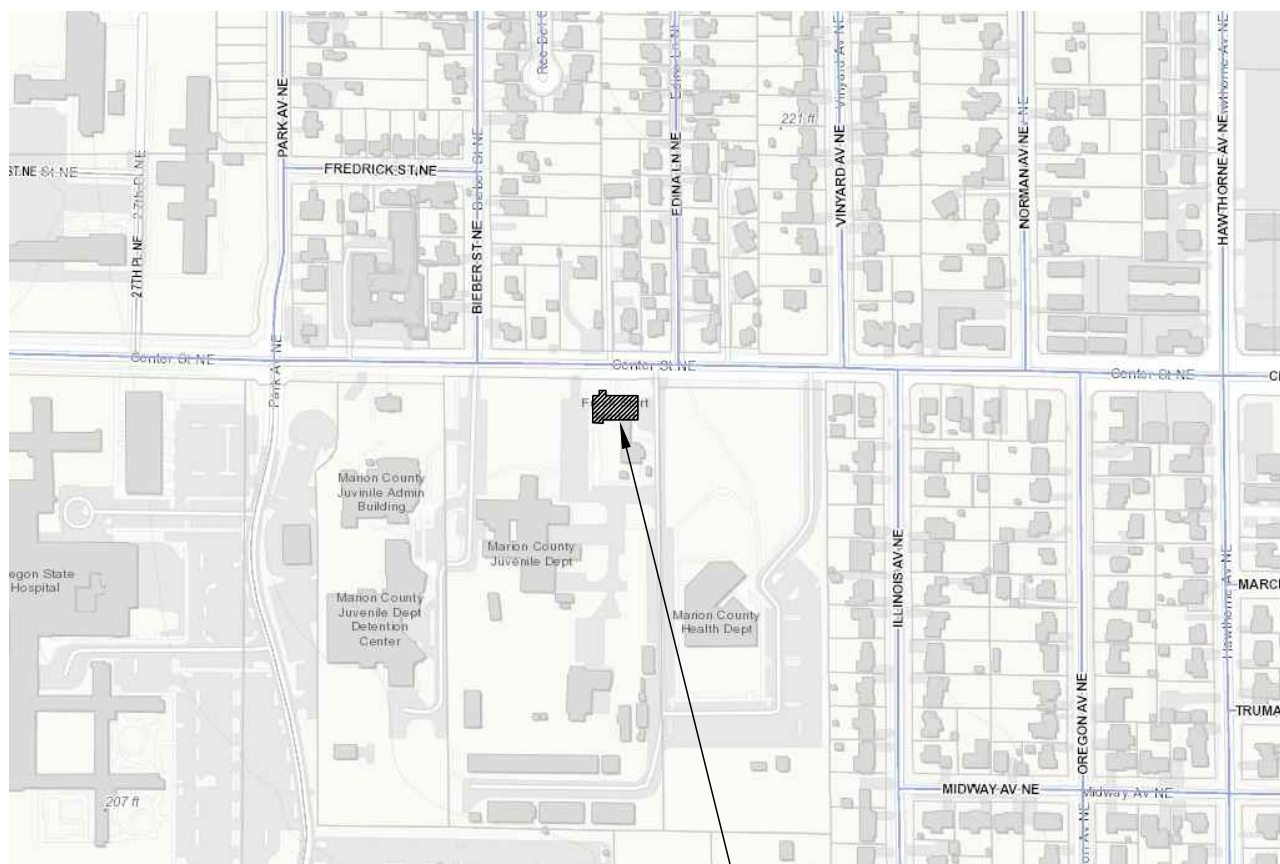
PERMITS, LICENSES AND TAXES: OBTAIN AND PAY FOR ELECTRICAL PERMITS APPLICABLE TO THIS PROJECT AS REQUIRED BY LAW.

OWNER:
MARION COUNTY
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GENERAL	
G-001	TITLE SHEET
ARCHITECTURAL	
A-100	SITE PLAN & EGRESS PLAN
A-101	FLOOR PLAN - DEMOLITION
A-102	FLOOR PLAN - NEW WORK & LARGE SCALE PLAN
A-201	INTERIOR ELEVATIONS & DETAILS
PLUMBING	
P0.00	PLUMBING TITLE SHEET
PD1.00	LEVEL 1 PLUMBING DEMO PLAN
P1.00	LEVEL 1 PLUMBING PLAN
P6.00	DETAILS
ELECTRICAL	
E0.00	COVER SHEET
E1.00	ELECTRICAL FLOOR PLANS
E2.00	PANEL SCHEDULES
E3.00	ELECTRICAL DETAILS



(REFER TO CONSULTANT DRAWINGS FOR ADDITIONAL ABBREVIATIONS)

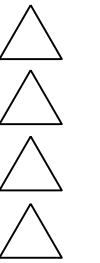
AB	ANCHOR BOLT	DF	DRINKING FOUNTAIN	FPS	FACE OF STUD	LAV	LAVATORY	PAF	POWDER ACTUATED	S	SOUTH	VCT	VINYL COMPOSITION TILE
ACST	ACOUSTIC	DIA	DIAMETER			LS	LANDSCAPING		FASTENER	SC	SOLID CORE	VERT	VERTICAL
ADJ	ADJUSTABLE, ADJUST	DIM	DIMENSION	GA	GAGE	LT	LIGHT	PBD	PARTICLE BOARD	SCR	SCREW	VNR	VEENER
AFF	ABOVE FINISHED FLOOR	DIV	DIVIDE, DIVIDED, DIVISION	GALV	GALVANIZED			PL	PROPERTY LINE, PLATE	SD	SOAP DISPENSER,	VTR	VENT THROUGH ROOF
ALUM	ALUMINUM	DR	DOOR	GB	GRAB BAR			PLAM	PLASTIC LAMINATE		SMOKE DETECTOR,		
ANOD	ANODIZED	DS	DOWNSPOUT	GL	GLASS	MATL	MATERIAL	PLBG	PLUMBING		STORM DRAIN	WAINS	WAINSCOT
APPROX	APPROXIMATELY	DTL	DETAIL	GLB	GLU-LAM BEAM	MB	MACHINE BOLT	PLYVOD	PLYWOOD	SF	SQUARE FOOT	W	WEST, WIDE, WIDTH
ASPH	ASPHALT	DWNG	DRAWING	GYP BD	GYPSPUM BOARD	MECH	MECHANICAL	PNL	PANEL	SHTHG	SHEATHING	WC	WATER CLOSET
						MFR	MANUFACTURER	PR	PAIR	SHT	SHEET	WD	WOOD
						MH	MANHOLE	PRKG	PARKING	SIMIL	SIMILAR	WIDW	WINDOW
						MI	MIRROR	PTD	PAPER TOWEL DISPENSER	SPEC	SPECIFICATION, SPECIFIED	WH	WATER HEATER
						MIN	MINIMUM	PTN	PARTITION	SPKR	SPEAKER	W/O	WITHOUT
BD	BOARD	E	EAST	HB	HOSE BIBB	MISC	MISCELLANEOUS	PT	POINT	SQ	SQUARE	WP	WATERPROOFING
BLDG	BUILDING	EA	EACH	HCP	HANDICAP, HOLLOW CORE	MO	MASONRY OPENING	PVC	POLYVINYL CHLORIDE	SSK	SERVICE SINK	WRB	WEATHER RESISTIVE
BLKG	BLOCKING	EF	EXHAUST FAN	HDR	HEADER	MT	MOUNT	PVMT	PAVEMENT	SST	STAINLESS STEEL		BARRIER
BM	BENCH MARK, BEAM	EJ	EXPANSION JOINT	HDW	HARDWARE	MTL	METAL			STD	STANDARD	WT	WEIGHT
BOT	BOTTOM	EL	ELEVATION	HC	HOLLOW CORE					STL	STEEL	WWF	WELDED WIRE FABRIC
BUR	BUILT-UP ROOFING	ELEC	ELECTRIC, ELECTRICAL	HORIZ	HORIZONTAL			QUAL	QUALITY	STOR	STORAGE		
		ELEV	ELEVATOR	HS	HOLLOW STEEL,					STRUC	STRUCTURE, STRUCTURAL		
CAB	CABINET	ENCL	ENCLOSURE		HIGH STRENGTH	N	NORTH			SUSP	SUSPENDED		
CB	CATCH BASIN, CORNER BEAD	EQ	EQUAL	HT	HEIGHT	NIC	NIGHT IN CONTRACT	R	RADIUS, RISER				
CG	CORNER GUARD	EQUIP	EQUIPMENT	HVAC	HEATING VENTILATING	NL	NIGHT LIGHT	RC	RESILIENT CHANNEL				
CHBD	CHALKBOARD	EW	EACH WAY		AIR CONDITIONING	RD	ROOF DRAIN	R	ROOF DRAIN				
CJ	CAST IRON	EXIST	EXISTING	HW	HOT WATER	NTS	NOT TO SCALE	RECEP	RECEPTACLE	T	TEMPERED, TREAD	@	ANGLE
CJ	CONTROL JOINT	EXP B	EXPANSION BOLT					REF	REFERENCE, REFRIGERATOR	TEL	TELEPHONE	£	AT
CLG	CEILING	EXT	EXTERIOR	INSUL	INSULATE, INSULATED,	OA	OVERALL OUTSIDE AIR	REINF	REINFORCE, REINFORCEMENT	T&G	TONGUE & GROOVE	¢	CENTERLINE
CLR	CLEAR, CLEARANCE				INSULATION	OBS	OBSCURE	REQD	REQUIRED	THK	THICK, THICKNESS, THICKENED	£	CHANNEL
CMU	CONCRETE MASONRY UNIT	FD	FLOOR DRAIN	INT	INTERIOR	OC	ON CENTER	REV	REVISION, REVISED	TOC	TOP OF CURB	©	PLATE, PROPERTY LINE
COL	COLUMN	FDTN	FOUNDATION	INV	INVERT	OCEW	ON CENTER EACH WAY	RHWS	ROUND HEAD WOOD SCREW	TPD	TOILET PAPER DISPENSER	®	DIAMETER, ROUND
CONC	CONCRETE	FE	FIRE EXTINGUISHER	JAN	JANITOR	OD	OUTSIDE DIAMETER	RM	ROOM	TYP	TYPICAL	⊥	PERPENDICULAR
CONSTR	CONSTRUCTION	FEC	FIRE EXTINGUISHER CABINET	J-B	JUNCTION BOX	OFCI	OWNER FURNISHED-CONTRACTOR INSTALLED	RO	ROUGH OPENING				
CONT	CONTINUOUS, CONTINUE	FH	FIRE HYDRANT	JST	JOIST			ROW	RIGHT OF WAY	ULMT	UNDERLAYMENT		
CONTR	CONTRACTOR	FHWS	FLATHEAD WOOD SCREW	JT	JOINT	OPG	OPENING			UN	UNLESS OTHERWISE NOTED		
CNTR	COUNTER	FIN	FINISH, FINISHED	KD	KNOCKED DOWN	OPF	OWNER FURNISHED-OWNER INSTALLED			UR	URINAL		
CPS	COURSES, COURSES	FIN FLR	FINISHED FLOOR										
CRS	COUNTERSINK, COUNTERSUNK	FL	FLOOR										
CSK	COUNTERSINK, COUNTERSUNK	FLASH	FLASHING	LAM	LAMINATE								
CW	COLD WATER	FTG	FOOTING			OPP	OPPOSITE						



PERMIT SET

FRESH START MARKET REMODEL
3020 CENTER STREET NE
SALEM, OREGON, 97301

Revisions:



ate: 01-23-26

Project: 05625

Wq file: G-001-05625

Drawn by: JM

checked by: AF

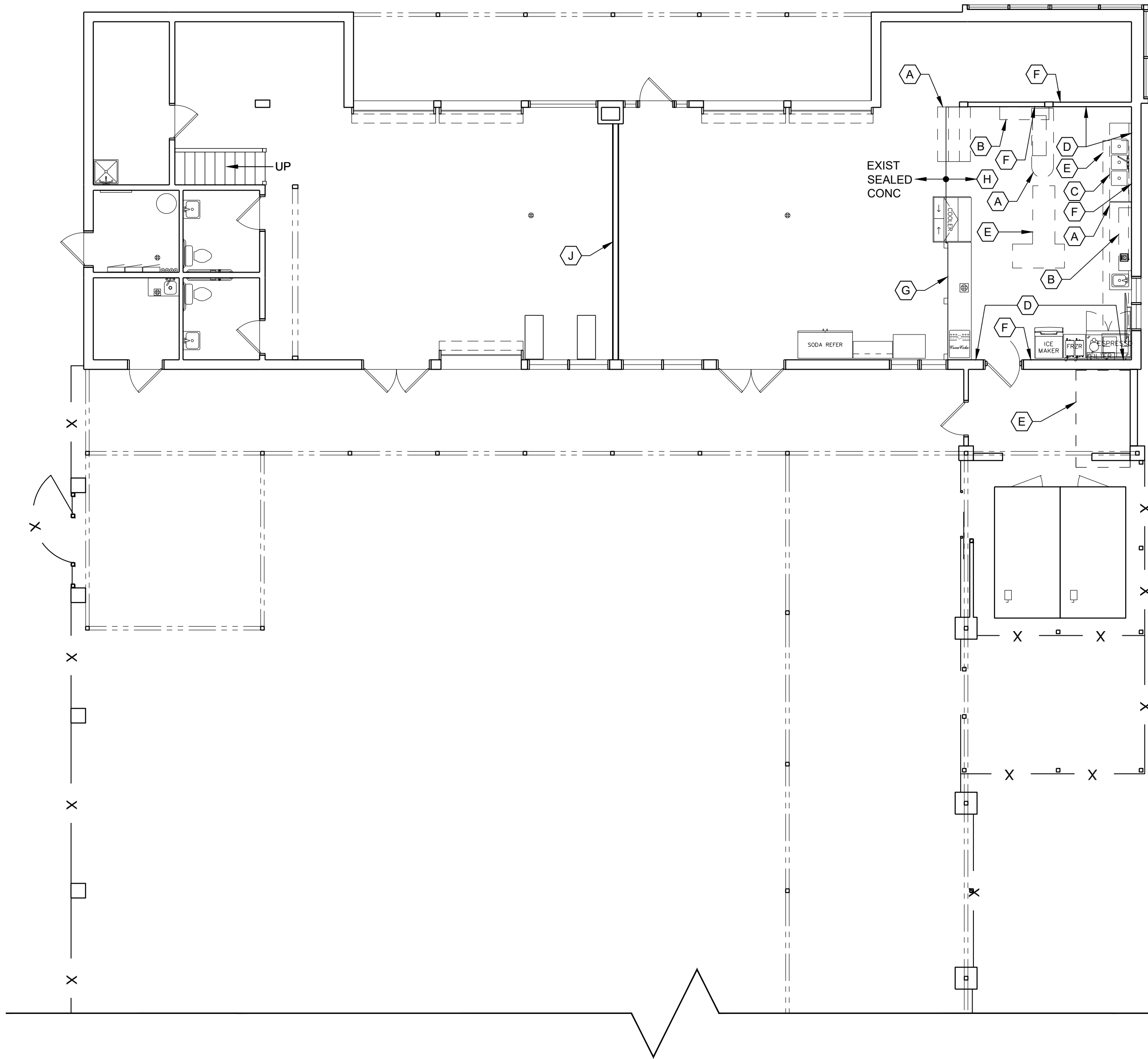
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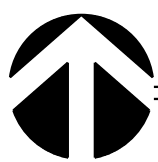


GENERAL NOTES

1. ALL STRUCTURAL COLUMNS, BEAMS, & BRACING TO REMAIN
2. CONTRACTOR IS RESPONSIBLE FOR ALL DUST CONTROL & PROTECTION OF EXISTING FINISHES & SYSTEMS DURING COURSE OF CONSTRUCTION
3. CONTRACTOR TO MOVE SANDWICH BAR & COOLER DISPLAY TO ADJ BUILDING. ALL OTHER KITCHEN EQUIP. CONTRACTOR TO MOVE NEXT TO DUST PROOF PARTITION & COVER W/ PLASTIC SHEETING

DEMOLITION NOTES

- (A) REMOVE EXIST CASEWORK AND DISCARD
- (B) REMOVE EXIST UPPER CABINETS. SALVAGE FOR REINSTALLATION. COORD W/ OWNER
- (C) REMOVE 3-COMPARTMENT SINK AND SALVAGE FOR REINSTALLATION. CAP EXIST LINES PER PLUMBING DRAWINGS
- (D) REMOVE EXIST WALL BASE, THIS WALL
- (E) SAWCUT AND REMOVE CONC SLAB AS REQ'D FOR NEW WORK
- (F) REMOVE PORTION OF WALL FINISH FOR NEW WORK. PATCH/REPAIR TO MATCH ADJ SURFACES
- (G) OWNER TO REMOVE AND REPLACE FRONT COUNTER, GC TO COORD ADJ WORK
- (H) PREP EXIST SEALED CONC FOR NEW FLUID APPLIED FLOORING
- (J) FULL HT DUST PROOF PARTITION



FLOOR PLAN - DEMO

1/8" = 1'-0"

FACET
ARCHITECTS



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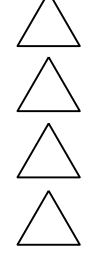


project: **MARION COUNTY
FRESH START MARKET REMODEL**
3020 CENTER STREET NE
SALEM, OREGON, 97301

consultants:

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date: 01-23-26

project: 05625

dwg file: A-101-X-05625

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**FLOOR PLAN -
DEMOLITION**

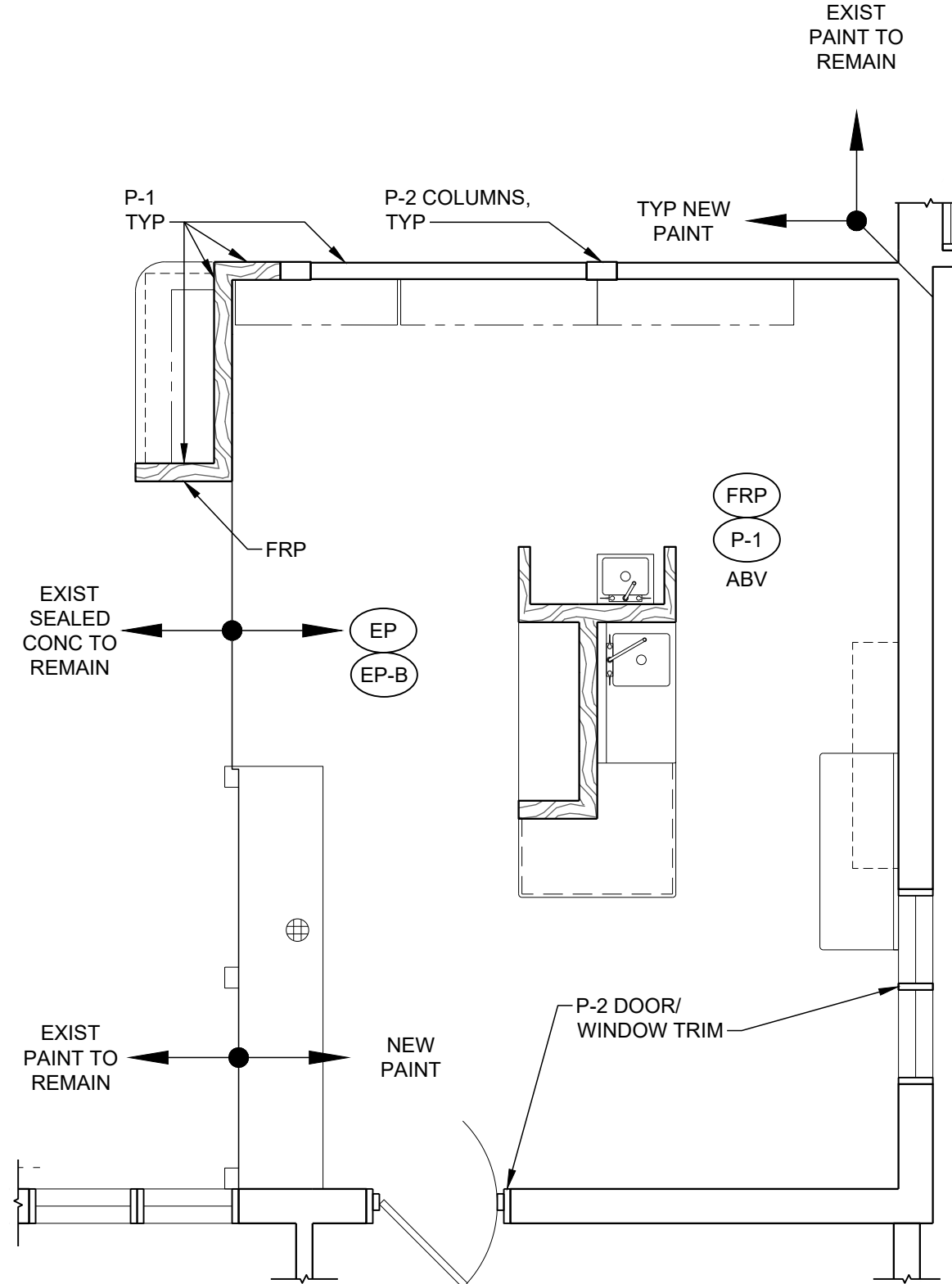
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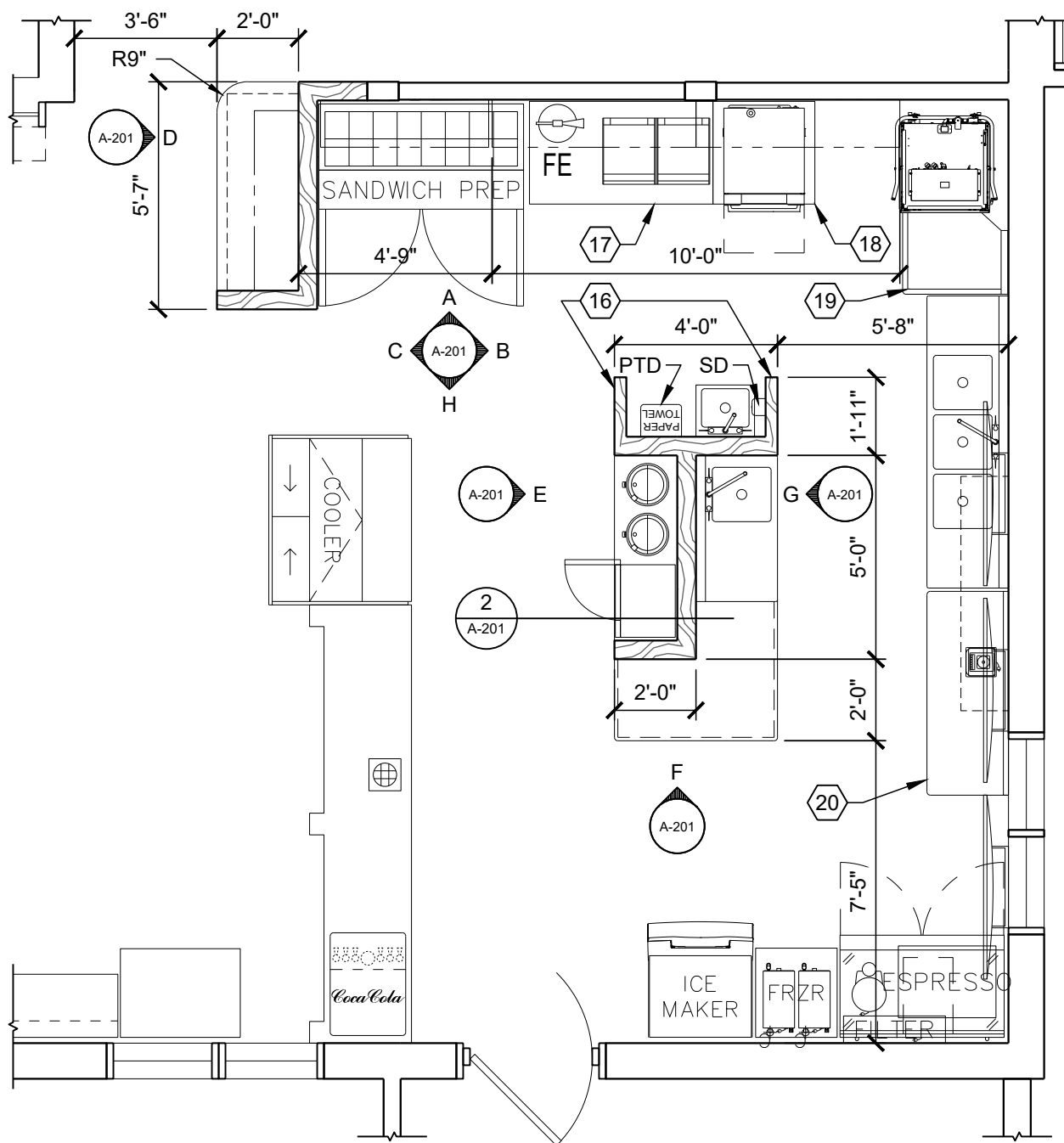
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GENERAL NOTES - FINISH

- DO NOT PAINT UNPAINTED/ STAINED WD/ TRIM UON
- PROTECT/ MASK EXIST EQUIP/ DEVICES TO REMAIN
- EPOXY FLOORING TO RUN CONTINUOUS UNDERNEATH KITCHEN EQUIPMENT/ TABLES ON SST LEGS



1 LARGE SCALE FINISH PLAN
1/4" = 1'-0"



2 LARGE SCALE PLAN - FOOD PREP
1/4" = 1'-0"

INTERIOR FINISH SCHEDULE						
TAG	DESCRIPTION	MANUFACTURER	STYLE	COLOR/FINISH	SIZE	NOTES
FLOORING						
EP	EPOXY FLUID APPLIED FLOORING	SHERWIN WILLIAMS, POLY-CRETE MDB	SEMI-RIGID	CHARCOAL	1/4" THICK	-
BASE						
EP-B	EPOXY FLUID APPLIED BASE	SHERWIN WILLIAMS, POLY-CRETE MDB	SEMI-RIGID	CHARCOAL	6" SELF COVE	-
PAINT						
P-1	FIELD	-	SEMI-GLOSS	GREY - TO MATCH EXISTING	-	-
P-2	TRIM/ ACCENT	-	SEMI-GLOSS	WHITE - TO MATCH EXISTING	-	DOOR, WINDOW, AND WALL TRIM
P-3	TRIM/ ACCENT	-	SATIN	BLACK - TO MATCH EXISTING	-	UPPER WALL ABV TRIM
SOLID SURFACE						
SS-1	SOLID SURFACE	WILSONART	-	POWDER WHITE - 9230SS	1/2" THICK	-
PLASTIC LAMINATE						
PL-1	PLASTIC LAMINATE	LAMINART	-	SILVERSCAPE 5333-E/ VELLUM	-	VERTICAL SURFACES
PL-2	PLASTIC LAMINATE	WILSONART	-	NORTH SEA D90-60/ MATTE	-	OPEN SHELVING
WALL PROTECTION						
FRP	FIBERGLASS REINFORCED PANELS	VALTO ENGINEERED MATERIALS "GLASBORD"	-	WHITE 85/ CLASS A SMOOTH		FOOD PREP WALLS UP TO 8'-0" AFF

GENERAL NOTES

- ALL NEW INTERIOR WALLS TO BE 2X6 WD STUD WALLS (UON), @ 24" OC W/ ACOUSTIC INSULATION AND (1) LAYER OF GYP BD BOTH SIDES
- REPAIR OR REPLACE WALL FINISH AT WALLS WHERE DEMOLITION HAS OCCURRED
- AT AREAS WHERE SLAB HAS BEEN REMOVED, PROVIDE NEW CONC SLAB, MATCH EXIST THICKNESS, ON VAPOR RETARDER ON 6" COMPACTED ROCK BASE, SEE DTL 4/A-201
- INTERIOR DIMENSIONS ARE TO FACE OF NEW STUD OR FACE OF EXIST FINISH UON
- REFER TO OWNER CUT SHEETS FOR CFCI FOOD PREP EQUIPMENT.
- ALTERNATE #1: PROVIDE NEW LIGHTING AT FOOD PREP 103, DESIGN-BUILD BY CONTRACTOR. REFER TO SPECIFICATIONS FOR ADD'L INFORMATION.

CONSTRUCTION NOTES

- 1 NEW CASEWORK

2 8' PARTIAL HEIGHT WALL

3 4' PARTIAL HEIGHT WALL W/ STAINLESS STEEL CAP

4 NEW SST HAND SINK

5 NEW SST PREP SINK

6 6'-6" PARTIAL HEIGHT WALL

7 WAREWASHER BY OWNER

8 NEW CLEAN DISH TABLE

9 RELOCATE EXISTING UPPER CABINET

10 CUSTOM SST COUNTERS & STORAGE

11 NEW GREASE INTERCEPTOR IN GROUND PER PLUMBING DRAWINGS

12 CUSTOM SST SHELVING

13 OFOI COUNTER/ CABINET, COORD ADJACENT WORK

14 CLASS K FE ON WALL BRACKET
- 15 NEW ROLLER SHADE

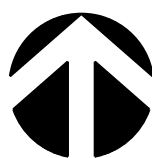
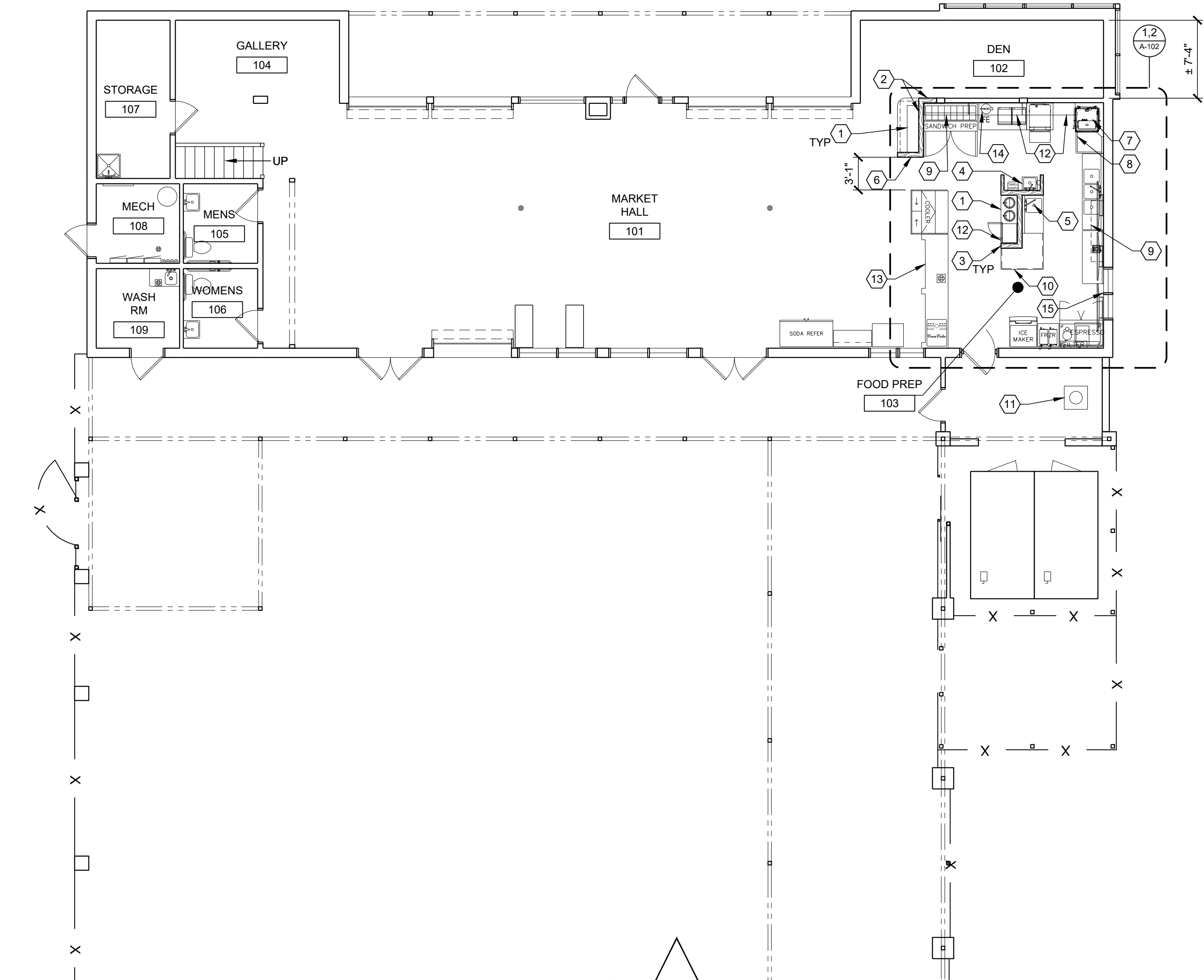
16 2x4 WD STUD WALL

17 54" X 30" SST WORK TABLE

18 30" X 30" SST WORK TABLE

19 CLEAN DISH TABLE

20 60" X 24" X 36" SST WORK TABLE W/ SPLASH GUARD



FLOOR PLAN - NEW WORK

1/8" = 1'-0"

FACET ARCHITECTS



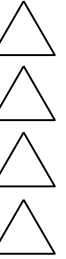
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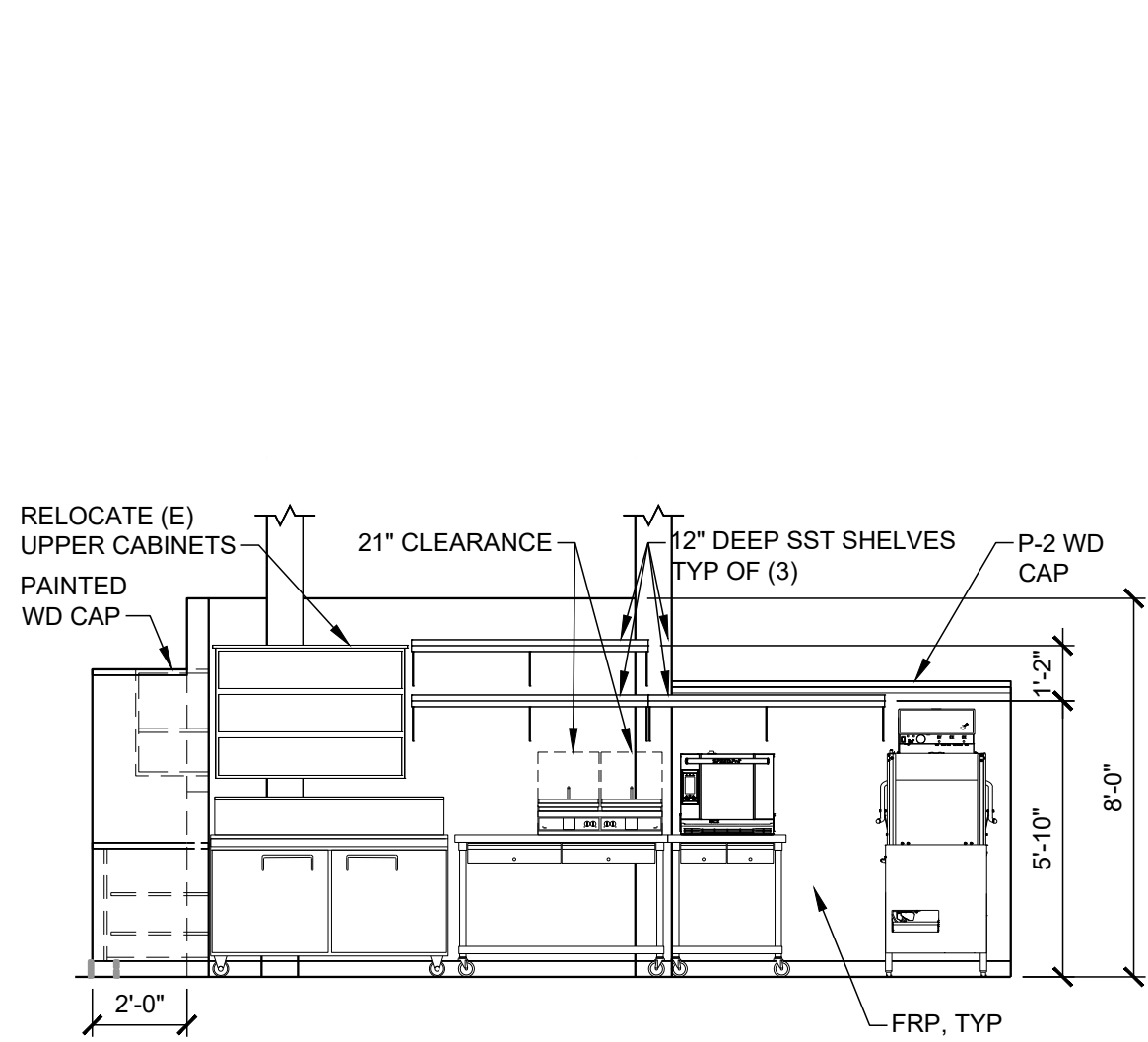
FLOOR PLAN - NEW
WORK & LARGE
SCALE PLAN

sheet:

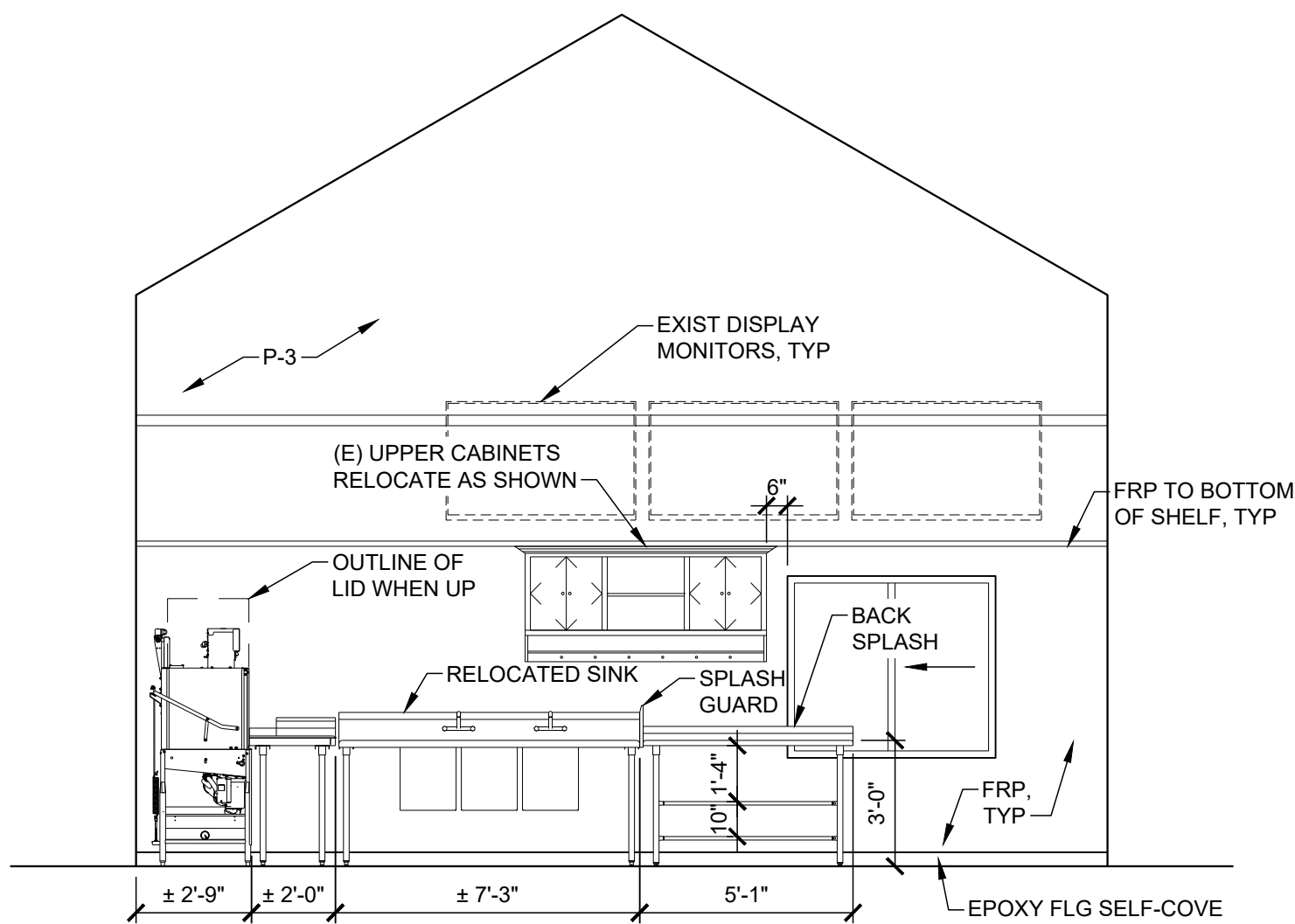
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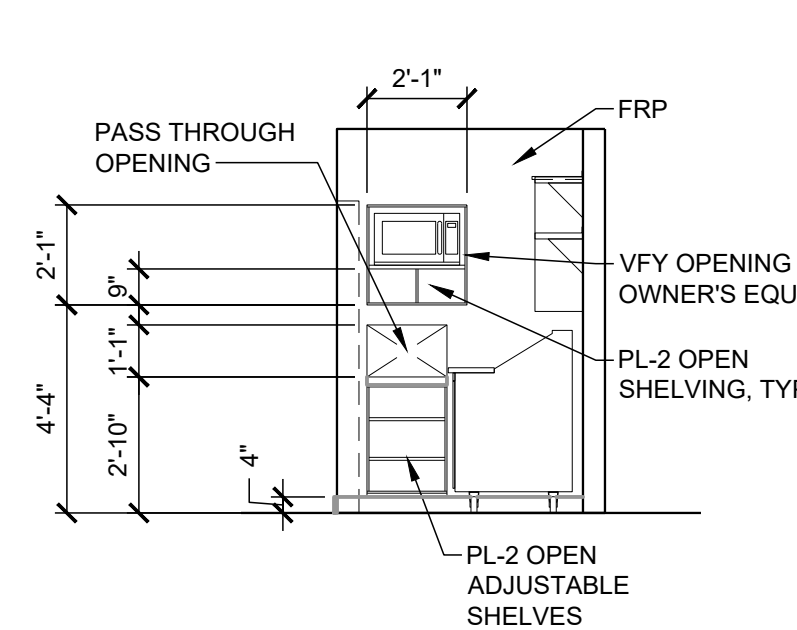
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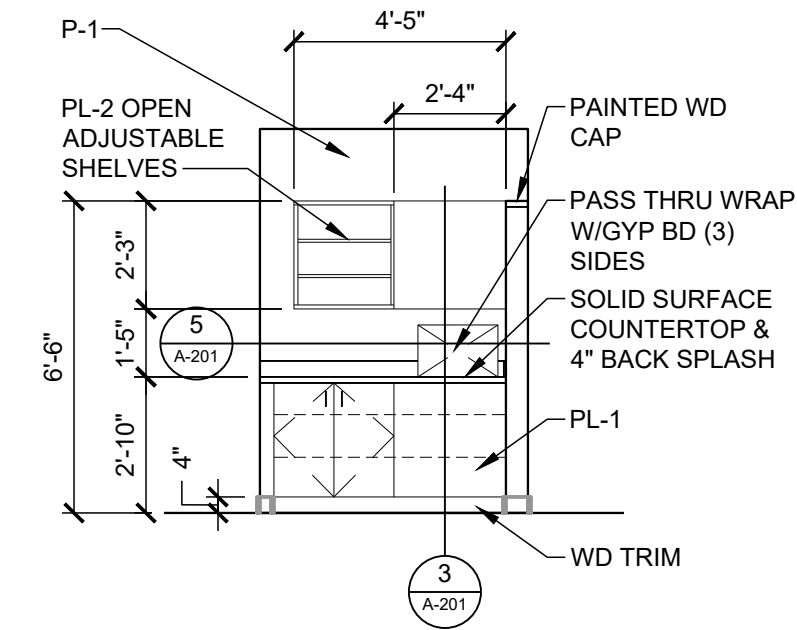
A KITCHEN 103 - NORTH
1/4" = 1'-0"



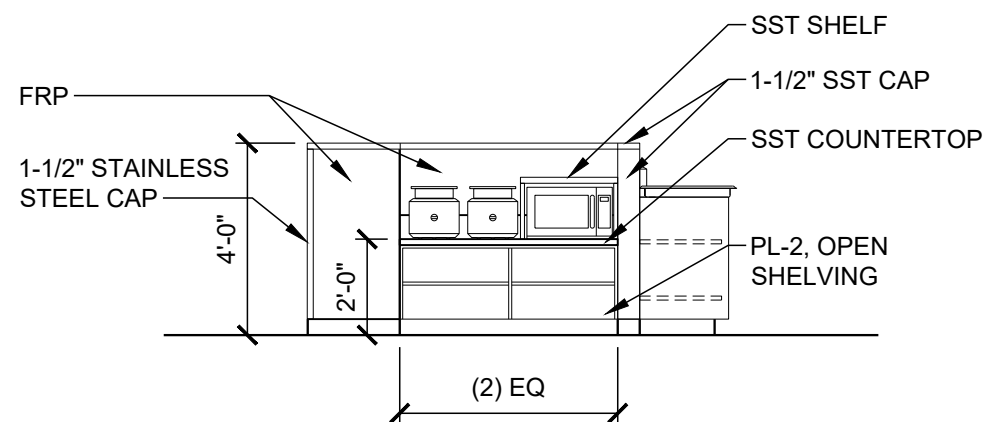
B KITCHEN 103 - EAST
1/4" = 1'-0"



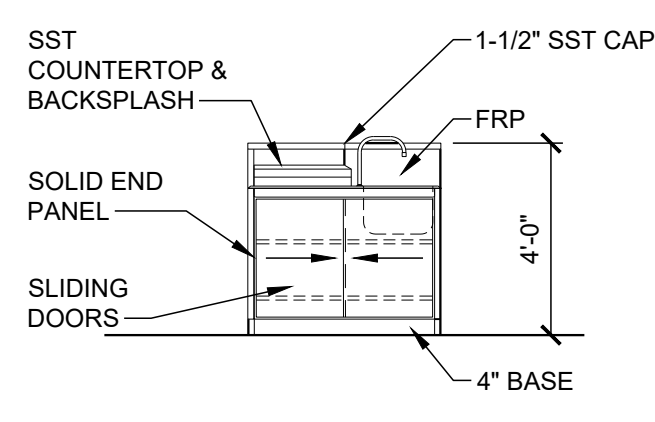
C KITCHEN 103 - WEST
1/4" = 1'-0"



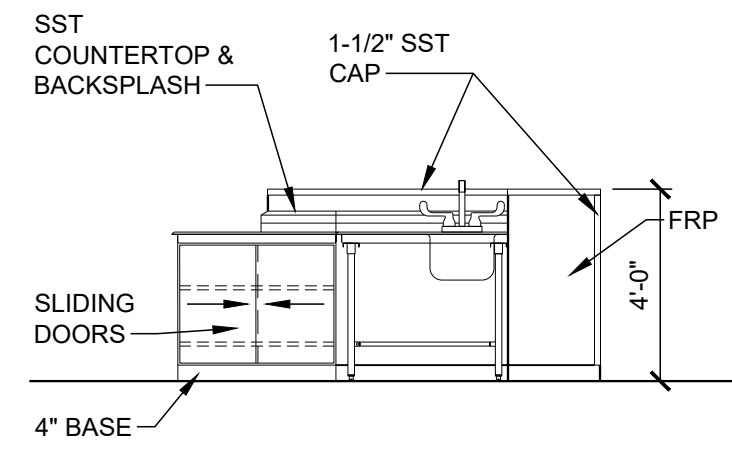
D END CABINETS
1/4" = 1'-0"



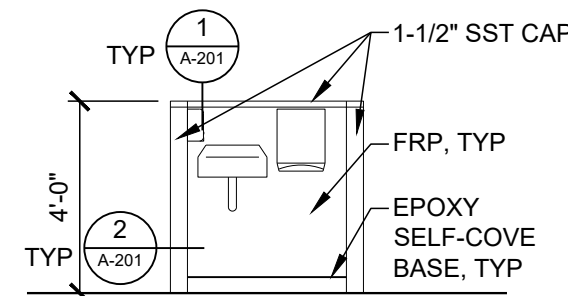
E ISLAND EAST SIDE
1/4" = 1'-0"



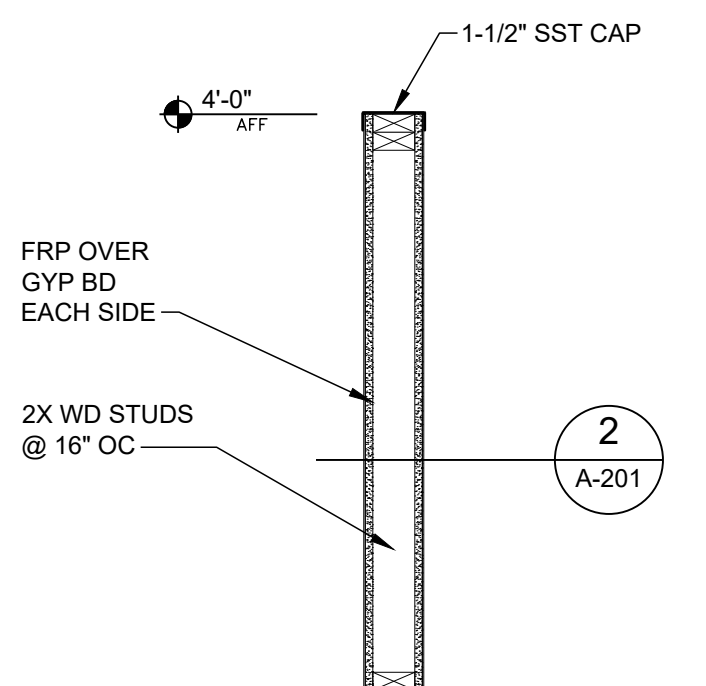
F ISLAND NORTH SIDE
1/4" = 1'-0"



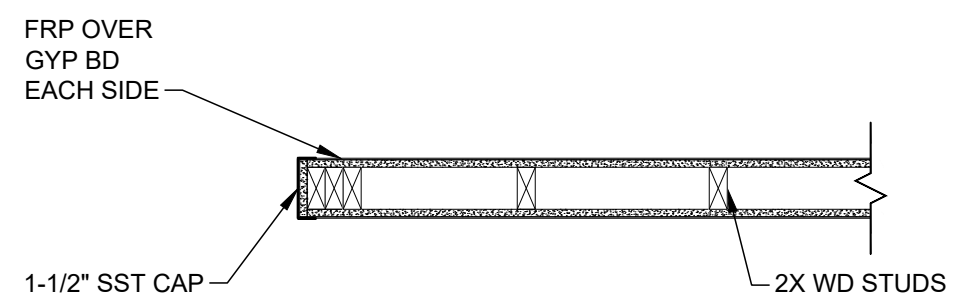
G ISLAND WEST SIDE
1/4" = 1'-0"



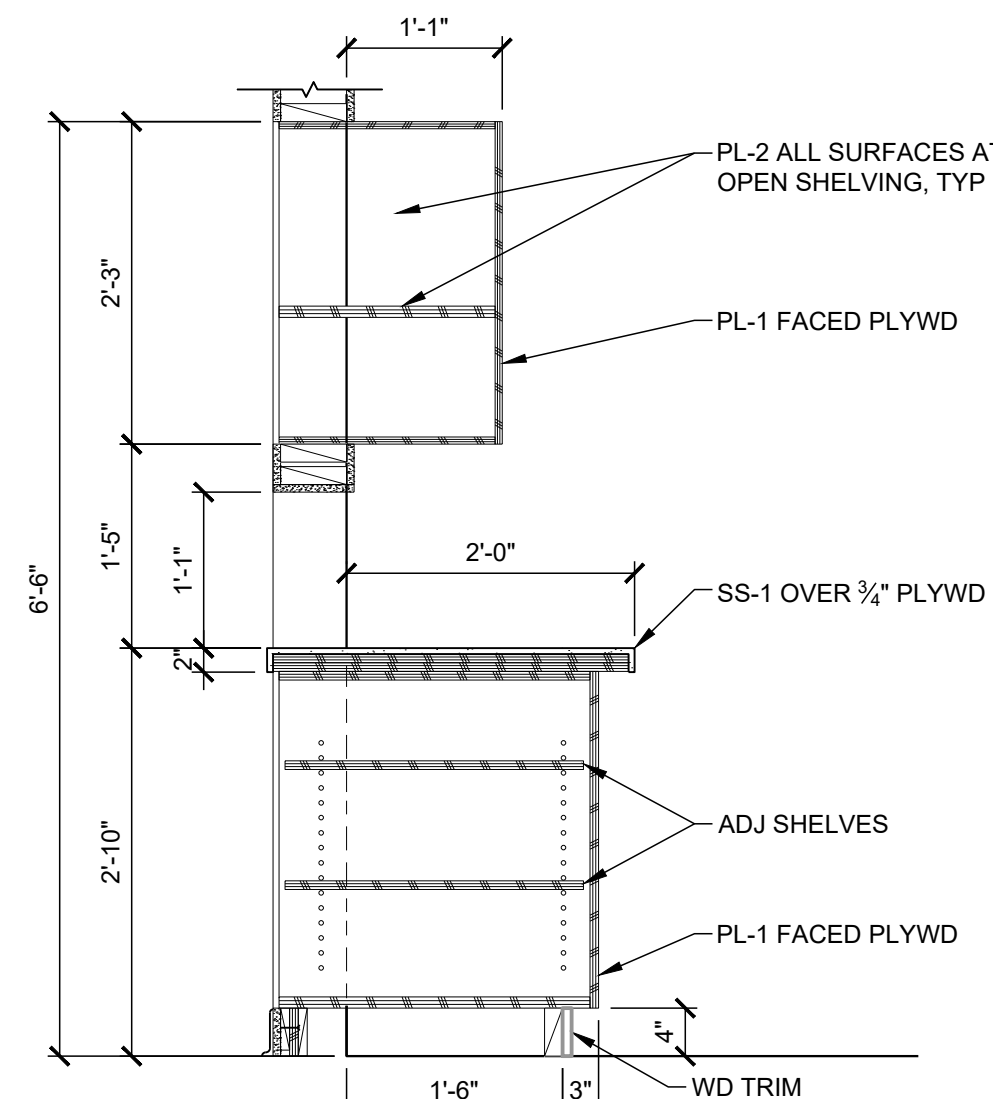
H ISLAND SOUTH SIDE
1/4" = 1'-0"



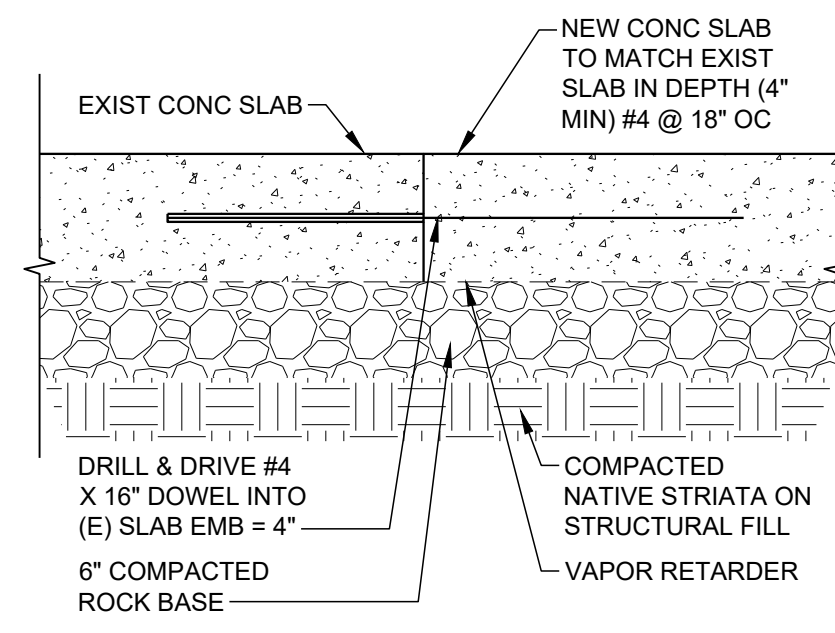
1 WALL SECTION - ISLAND
3/4" = 1'-0"



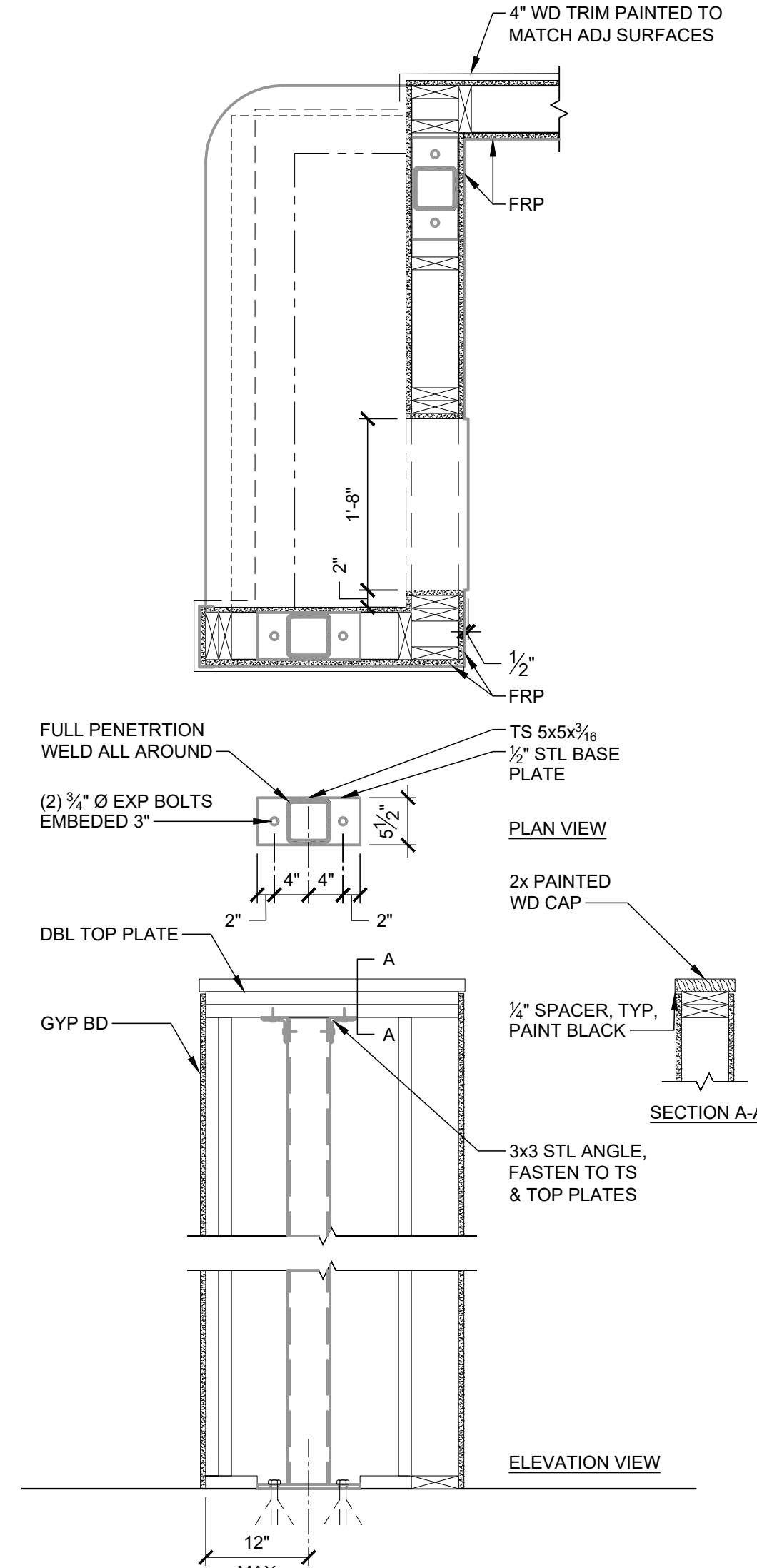
2 WALL SECTION - ISLAND PLAN VEIW
3/4" = 1'-0"



3 CASEWORK
3/4" = 1'-0"



4 CONC SLAB INFILL
1" = 1'-0"



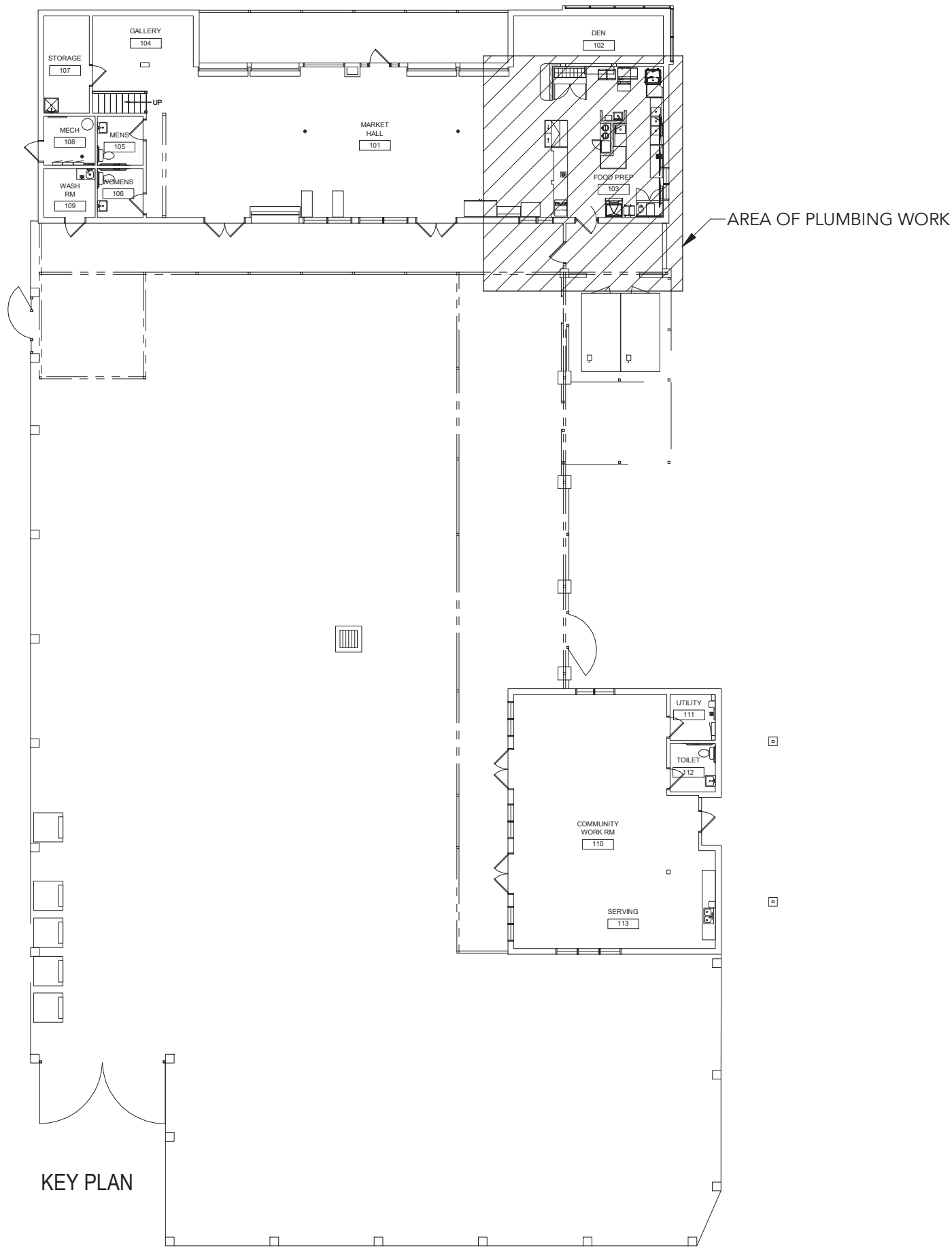
5 PARTIAL HT WALL
3/4" = 1'-0"

GENERAL PLAN SYMBOLS		
	PLAN REVISION NUMBER	
	DETAIL NUMBER ON SHEET	
	SHEET NUMBER WHERE DETAIL IS PLACED	
	KEYNOTE SYMBOL	
	CONTINUATION SYMBOL	
	POINT WHERE NEW CONNECTS TO EXISTING	
	ROOM NAME / NUMBER	
	AREA BEING DEMOLISHED	
	AREA NOT IN CONTRACT	
ABBREVIATIONS		
Ø	ROUND	LVR LOUVER
AAV	AIR ADMITTANCE VALVE	LWT LEAVING WATER TEMPERATURE
ABV	ABOVE	M/A MIXED AIR
AC	AIR CONDITIONING	MAX MAXIMUM
AD	AREA DRAIN	MBH ONE THOUSAND BTU PER HOUR
ADD	ADDENDUM	MCF ONE THOUSAND CUBIC FEET
AFB	ABOVE FINISHED FLOOR	MD MOTORIZED DAMPER
AFUE	ANNUAL FUEL UTILIZATION EFFICIENCY	MECH MECHANICAL
ALT	ALTERNATE	MFR MANUFACTURER
AP	ACCESS PANEL	MIN MINIMUM
ARCH	ARCHITECT/ARCHITECTURAL	MISC MISCELLANEOUS
BFF	BELOW FINISHED FLOOR	MTR MAKE-UP/AIR
BLW	BELOW	MUA MAKE-UP/AIR
BMS	BUILDING MANAGEMENT SYSTEM	NC NOISE CRITERIA
BTU	BRITISH THERMAL UNITS	NC NORMALLY CLOSED
BTUH	BRITISH THERMAL UNITS PER HOUR	NIC NOT IN CONTRACT
CAP	CAPACITY	NO NUMBER
CB	CATCH BASIN	NO NORMALLY OPEN
CFM	CUBIC FEET PER MINUTE	NTS NOT TO SCALE
CLG	CEILING	O OXYGEN
CO	CLEAN OUT	O/A OUTSIDE AIR
CW	COLD WATER	OFCI OWNER FURNISHED, CONTRACTOR INSTALLED
D	DEGREE	ORD OVERFLOW ROOF DRAIN
DB	DRY BULB	PD PRESSURE DROP
DIA	DIAMETER	PIV POST INDICATOR VALVE
DN	DOWN	PLBG PLUMBING
DW	DISTILLED WATER	PRESS PRESSURE
EACH	EACH	PRV PRESSURE REDUCING VALVE
EAT	ENTERING AIR TEMPERATURE	PSI POUNDS PER SQUARE INCH
ELEC	ELECTRICAL	PSIG POUNDS PER SQUARE INCH GAUGE
EQUIP	EQUIPMENT	PWR POWER
EW	ELECTRIC WATER COOLER	R DUCT RISER
EWT	ENTERING WATER TEMPERATURE	R/A RETURN AIR
E/A	EXHAUST AIR	RCP RADIANT CEILING PANEL
EXIST	EXISTING	RD ROOF DRAIN
F	DEGREES FAHRENHEIT	REC RECESSED
FCO	FLOOR CLEAN OUT	RED REDUCER
FD	FLOOR DRAIN	RH RELATIVE HUMIDITY
FDC	FIRE DEPARTMENT CONNECTION	R/LA RELIEF AIR
FLD	FLOOR DRAIN	RM ROOM
FO	FUEL OIL	RPM REVOLUTIONS PER MINUTE
FOV	FUEL OIL VENT	RW RAIN WATER
FOR	FUEL OIL RETURN	SF SQUARE FOOT
FOS	FUEL OIL SUPPLY	SA SUPPLY AIR
FS	FEET PER MINUTE	SAN SANITARY
FS	FLOOR SINK	SF SQUARE FOOT
FT	FOOT/FEET	SD SMOKE DAMPER
FTR	FIN TUBE RADIATION	SM SURFACE MOUNT
GAL	GALLON	SP STANDPIPE
GF	GAS-FIRED	SP STATIC PRESSURE
GC	GENERAL CONTRACTOR	STM STEAM
GPM	GALLONS PER MINUTE	T THERMOSTAT
GW	GREASE WASTE	TD TEMPERATURE DROP
H	HOSE BIB	TDR TRENCH DRAIN
HP	HORSE POWER	TEMP TEMPERATURE
HTG	HEATING	TYP TYPICAL
HTR	HEATER	UG UNDERGROUND
HW	HOT WATER	UOS UNLESS OTHERWISE SPECIFIED
HYD	HYDRANT	VAC VACUUM
ID	INDIRECT	V VENT
INH	INCH	VAV VARIABLE AIR VOLUME
INV	INVERT	VENT VENTILATION
LB	POUND	VTR VENT THROUGH ROOF
LB/Hr	POUNDS PER HOUR	W WASTE
LAT	LEAVING AIR TEMPERATURE	WB WET BULB
LP	LOW PRESSURE	WCO WALL CLEAN OUT
LPG	LIQUEFIED PETROLEUM GAS	WH WALL HYDRANT
EQUIPMENT ABBREVIATIONS		
AC	AIR CONDITIONING UNIT	EWH ELECTRIC WATER HEATER
ACCU	AIR COOLING CONDENSING UNIT	F FURNACE
AHU	AIR HANDLING UNIT	FCU FAN COIL UNIT
AS	AIR SEPARATOR	FP FIRE PUMP
B	BOILER	GI GREASE INTERCEPTOR
BS	BRANCH SELECTOR	GRV GRAVITY ROOF VENTILATOR
C	AIR CURTAIN	HWP HEATING WATER PUMP
CH	CHILLER	HRT HEAT RECOVERY UNIT
CT	COOLING TOWER	IH INFRARED HEATER
CU	CONDENSING UNIT	PRV POWER ROOF VENTILATOR
CUH	CABINET UNIT HEATER	RE RETURN/EXHAUST FAN
CHWP	CHILLED WATER PUMP	RTU ROOFTOP UNIT
DBP	DOMESTIC WATER BOOSTER PUMP	ST SUMP PUMP
DC	DUCT MOUNTED COIL	SP SUPPLY FAN
DCP	DOMESTIC WATER CIRCULATING PUMP	UH UNIT HEATER
EDC	ELECTRIC DUCT COIL	WH WATER HEATER
EF	EXHAUST FAN	VRF VARIABLE REFRIGERANT
ET	EXPANSION TANK	VUF VOLUME OUTDOOR UNIT
* NOTE *		
ALL OF GENERAL NOTES ON THIS SHEET ARE TO BE APPLIED TO ALL OTHER DRAWINGS IN THIS SET THE SYMBOLS AND ABBREVIATIONS SHOWN ON THIS SHEET MAY OR MAY NOT BE USED IN THIS SET OF DRAWINGS.		

PLUMBING SYMBOLS	
	NOMINAL PIPE SIZE
	ABOVE GROUND PIPING
	BELOW GROUND PIPING
	PIPE SLOPE (WHEN APPLICABLE)
	EXISTING PIPE TO REMAIN
	PIPE TO BE DEMOLISHED
	DOMESTIC COLD-WATER
	NON-POTABLE WATER
	SOFT COLD-WATER
	FILTERED COLD WATER
	REVERSE OSMOSIS WATER
	DOMESTIC HOT-WATER
	DOMESTIC HOT-WATER 140°
	HOT-WATER RECIRCULATION
	HOT-WATER RECIRCULATION 140°
	SANITARY DRAIN
	SANITARY VENT
	SANITARY WET VENT
	COMBINATION DWV
	CONDENSATE DRAIN
	INDIRECT DRAIN
	GREASE WASTE
	GREASE VENT
	OIL WASTE
	OIL VENT
	PUMP DISCHARGE
	SOLAR WATER RETURN
	SOLAR WATER SUPPLY
	STORM DRAIN
	STORM OVERFLOW
	COMPRESSED AIR
	NATURAL GAS
	LIQUID PROPANE
	PIPE RISE / DROP
PIPE ACCESSORY NOTES	
	CLEANOUT
	SWING CHECK
	CHECK VALVE
	ALTERNATE CHECK VALVE
	BALANCING VALVE
	CIRCUIT SETTER
	GATE VALVE
	QUICK OPENING VALVE
	BALL VALVE
	FLUID STRAINER
	EMERGENCY GAS SHUTOFF
	PLUG VALVE
	GAS SHUTOFF COCK
	GAS REGULATOR
	THERMOSTATIC VALVE
	TRAP PRIMER
	ELEC. CONTROL VALVE
	MIXING VALVE
	EMERGENCY MIXER
	PRESSURE REDUCING VALVE
	WATER METER
	IRRIGATION METER
	DOUBLE CHECK VALVE
	REDUCED PRESSURE ZONE
PLUMBING FIXTURE NOTES	
	DESIGN SIZE
	IDENTITY TYPE
	DRAINAGE FIXTURE UNITS
	FLOOR DRAIN W/ DEEP SEAL TRAP
	FLOOR DRAIN W/ TRAP PRIMER
	"P" INDICATES PRIMER CONNECTION
	FLOOR DRAIN W/ INTEGRAL CO
	AREA DRAIN (NO TRAP)
	DECK DRAIN
	HUB DRAIN (FUNNEL TYPE)
	FLOOR SINK
	ROOF DRAIN
	COMBINATION DRAIN
	RAINFALL SURFACE AREA

PROJECT GENERAL NOTES

3. THE ENGINEER'S SEAL SIZE SHALL NOT BE RELIED UPON FOR DRAWING SCALE, AND/OR PAPER SIZE. DIGITALLY SIGNED DOCUMENTS SHALL NOT BE CONSIDERED FINAL DOCUMENTS WHEN THEY ARE PRINTED AT A SIZE OTHER THAN AT THE INTENDED PAPER SIZE AND DRAWING SCALE.
2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR FIELD VERIFYING, PRIOR TO FINAL BID, ARCHITECTURAL, AND OTHER EXISTING CONDITIONS SHOWN ON THESE PLANS FOR PLUMBING SYSTEMS, MECHANICAL SYSTEMS, ARCHITECTURAL, AND OTHER BUILDING CONDITIONS WITHIN TENANT SPACE AND WITHIN CLOSE PROXIMITY OF TENANT SPACE. CONTRACTOR IS TO REMEDY, AT NO COST TO THE OWNER, ANY DEFICIENCIES CAUSED BY FAILURE TO PERFORM SUCH VERIFICATIONS. NOTIFY ARCHITECT AS SOON AS POSSIBLE OF ANY CONDITIONS IN CONFLICT WITH THESE PLANS.
3. THE CONTRACTOR SHALL FURNISH AND INSTALL COMPONENTS REQUIRED TO MEET THE REQUIRED SYSTEM PERFORMANCE AND THE PROPER EXECUTION AND COMPLETION OF WORK. CONTRACTOR SHALL FURNISH AND INSTALL NECESSARY WIRING, CONTROLS, HARDWARE, FITTINGS, PARTS, AND ACCESSORIES INCLUDING SAFETY DEVICES REQUIRED FOR PROPER OPERATION OF SYSTEM IN ACCORDANCE WITH LOCAL CODE REQUIREMENTS.
4. BUILDING ENVELOPE PENETRATIONS ARE PER ARCHITECTURAL. REFER TO ARCHITECTURAL FOR ADDITIONAL REQUIREMENTS AT EACH PENETRATION.
5. WHERE FLOOR DRAINS OCCUR WITHIN THE LIMITS OF CONSTRUCTION, PREVENT CONSTRUCTION DEBRIS FROM ENTERING DRAIN BODY BY SEALING DRAIN OPENING PRIOR TO START OF WORK. UNSEAL DRAINS AT COMPLETION OF CONSTRUCTION.
6. COORDINATE INSTALLATION OF PIPING, CONDUIT, LIGHTS, CABLE TRAY, STRUCTURE, AND EQUIPMENT TO PREVENT CONFLICTS.
7. FINAL PRODUCT SHALL BE A COMPLETE AND FUNCTIONING SYSTEM, AND SHALL CONFORM TO REQUIREMENTS OF APPLICABLE FEDERAL, STATE, AND LOCAL CODES, INCLUDING BUT NOT LIMITED TO OREGON BUILDING CODE, OREGON PLUMBING CODE, AND MARION COUNTY STANDARDS.
8. PENETRATIONS OF RATED ASSEMBLIES SHALL BE FIRE STOPPED. FIRE STOPPING SHALL BE AN APPROVED MATERIAL AND SHALL BE U.L. LISTED.
9. PROVIDE SLEEVES AND/OR OPENINGS WHERE PIPES PENETRATE THROUGH FOUNDATIONS, FLOORS, WALLS, AND ROOF.
10. MAINTAIN CLEAR ACCESS TO SERVICE EQUIPMENT AND OTHER ACCESSORIES REQUIRING SERVICE, VISUAL INSPECTION OR HAND OPERATION. WHERE INDICATED OR REQUIRED, PROVIDE ACCESS PANELS OF THE TYPE SELECTED TO SUIT MATERIALS IN WHICH INSTALLED.
11. FOR DETAILS, EQUIPMENT CONNECTIONS, AND PIPE SIZES NOT SHOWN ON THE SEGMENTS, REFER TO DETAILS, SCHEDULES AND SPECIFICATIONS.
12. INSTALL EQUIPMENT IN ACCORDANCE WITH RESPECTIVE MANUFACTURER'S WRITTEN INSTALLATION INSTRUCTIONS, AT A LEVEL OF QUALITY AND WORKMANSHIP CONSISTENT WITH THE SPECIFICATIONS.
13. WASTE AND VENT PIPING BELOW FLOOR AND THROUGH FLOOR SHALL BE 2" MINIMUM.
14. PROVIDE LABELING FOR PLUMBING VALVES. ENSURE LABELING IDENTIFIES THE FIXTURE SERVED, ROOM NAME, AND AREA THE VALVE IS SERVING.
15. COORDINATE INSTALLATION OF PIPING BELOW AND ABOVE GRADE WITH STRUCTURAL COMPONENTS AND OTHER SYSTEMS.
16. COORDINATE FIXTURES, EQUIPMENT, CONNECTION LOCATIONS, AND DRAIN LOCATIONS WITH ARCHITECTURAL DRAWINGS.
17. ROUTE DOMESTIC WATER PIPING ABOVE THE CEILING AND BELOW DUCTWORK TO THE EXTENT POSSIBLE. CONCEAL PIPING IN FINISHED AREAS.
18. PROVIDE ACCESSIBLE BALL SHUTOFF VALVES WHERE NEW PIPE CONNECTS TO EXISTING PIPES OR FIXTURES.
19. HORIZONTAL WASTE PIPING SLOPE:
 - A. 1/4" PER FOOT UNLESS OTHERWISE SPECIFIED. 1/8" PER FOOT PERMITTED FOR 4" WASTE PIPE IF APPROVAL IS GRANTED BY THE AHJ.



KITCHEN PLUMBING EQUIPMENT SCHEDULE														
Type Identity	Description	Basis of Design or Approved		Product Type	Domestic Connections			Drain-Waste-Vent					Notes	
		Manufacturer	Model		Cold Water	Hot Water	Piping Size(s)	Drain Direct	Drain Indirect	Vent Pipe Connection	Drain Size	DWV Tee		Vent Size
KE-01	Prep Sink	Advance Tabco	FE1-1812-18	1-Compartment	Yes	Yes	1/2"	Yes	No	Yes	2"	2"	2"	Faucet Model Advance Tabco K-121 Existing to be reused. Indirect Waste To Floor Sink By Plumbing Contractor
KE-02	Commercial Sink	Existing		3-Compartment	Yes	Yes	1/2"	No	Yes	No	2"			
KE-03	Hand Sink	Advance Tabco	7-PS-68	Hand Sink	Yes	Yes	1/2"	Yes	No	Yes	1 1/2"	1 1/2"	1 1/2"	Owner furnished, Contractor installed
KE-04	Dishwasher	Noble	WAREFORCE 1-E-LTH	Dishwasher	No	Yes	1/2"	No	Yes	No	2"			

FLOOR SINK SCHEDULE											
Type Identity	Basis of Design		Product Type	Body Material	Strainer Type	Design Pipe Size	Drain-Waste-Vent				Product Specification
	Manufacturer	Model					Vent Connection	Drain Size	DWV Tee	Vent Size	
FS-1	Watts	FS-730	12" Square X 6" Deep	Cast Iron	Aluminum	2"	Yes	2"	2"	2"	12" Square X 6" Deep Sanitary Floor Sink With White Porcelain Enamel Coated Interior, Loose Set Porcelain Enamel Coated Cast Iron Grate, Aluminum Dome Bottom Strainer, And No Hub Outlet.

Type Identity	Basis of Design		Product Type	Installation Type	Material Description	Cover Description	System Pipe Size	Rated Fluid Flow Rate	Min Retention Capacities			Connected DFU	Product Weight	Operating Weight	Specification	Notes
	Manufacturer	Model							Grease	Solids	Liquid					
GI-50	Schier	GB-50	Hydromechanical	Buried	Polypropylene	Polypropylene	4"	50.0 GPM	439 lb	13.0 gal	65 gal	13	78 lb	621 lb	Molded Polyethylene Interceptor Pedestrian Rated Cover	1, 2, 3, 4

NOTES:

1. INSTALL PER MANUFACTURER INSTRUCTIONS.
2. SIZING BASED ON 13 DFU. 50 GPM SELECTED BASED ON OPSC TABLE 1014.2.1.
3. INSTALLATION DEPTH AS REQUIRED TO MEET SANITARY SEWER INVERT. PROVIDE RISER AS REQUIRED TO BRING LID FLUSH TO FINISHED FLOOR.
4. PROVIDE PUMP OUT KIT.

Identity	Connected Equipment	Basis of Design		Product Type	Storage Capacity	Domestic Piping Size	Temp. Range		Temp. Rise	Hot Setpoint	Electric Heat		Electrical		Product Weight	Notes
		Manufacturer	Model				Cold	Hot			Rating	Load	Voltage	Phase		
WH-1	KE-02, KE-04	Bradford White	E32-S05-3	Storage Type	50 gal	1 1/4"	50 °F	150 °F	100 °F	140 °F	18.0 kW	75 A	240 V	1	137 lb	1,2,3

NOTES:

1. PROVIDE CPVC T&P DISCHARGE TO BUILDING EXTERIOR WITH END OF PIPE 12-INCHES ABOVE GRADE AND POINTED DOWN.
2. PROVIDE SEISMIC RESTRAINTS.
3. PROVIDE 240V, 1-PH ELECTRICAL CONVERSION KIT.

PLUMBING SHEET INDEX	
P0.00	PLUMBING TITLE SHEET
P1.00	LEVEL 1 PLUMBING PLAN
P6.00	DETAILS
PD1.00	LEVEL 1 PLUMBING DEMOLITION PLAN

FACET
ARCHITECTS



EXPIRES: 06/30/2026

project:
MC FRESH START MARKET REMODEL

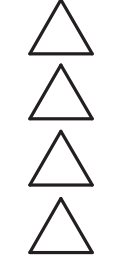
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PERMIT SET

revisions



date: 02/06/2026

project: 24-105

dwg file:

drawn by: AM

checked by: JW

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Facet Architects PC

PLUMBING TITLE

SHEET

sheet:

P0.00

of:

DRAWINGS ORIGINALLY PRODUCED IN COLOR FOR ADDITIONAL CLARITY AND CONVENIENCE. FLUENT IS NOT RESPONSIBLE FOR ERRORS OR OMISSIONS IN DRAWING INTERPRETATION FOR DRAWINGS NOT REPRODUCED IN COLOR

SHEET NOTES

1. LOCATION AND SIZES OF EXISTING PIPES SHOWN ARE BASED ON RECORD DRAWINGS PROVIDED BY OWNER. CONTRACTOR SHALL FIELD VERIFY THE LOCATION AND SIZE OF EXISTING PLUMBING WORK AND MAKE MODIFICATIONS TO NEW WORK SHOWN AS REQUIRED TO CONNECT TO EXISTING.
2. PLUMBING DEMOLITIONS SHALL BE COORDINATED WITH NEW WORK.
3. THE CONTRACTOR SHALL PATCH AND REPAIR EXTERIOR WALLS TO MATCH ADJACENT MATERIAL, FINISH, AND COLOR UNLESS OTHERWISE SPECIFIED. THE CONTRACTOR SHALL PATCH AND REPAIR OPENINGS MADE IN THE ROOF DUE TO DEMOLITION IN ACCORDANCE WITH ARCHITECT AND ROOF MFG REQUIREMENTS. WORK DONE TO ROOF SHALL NOT VIOLATE ROOF WARRANTY.
4. ITEMS TO BE REMOVED FROM THE SITE SHALL BE PROPERLY DISPOSED OF UNLESS OTHERWISE NOTED.
5. ITEMS CALLED TO BE REMOVED SHALL BE REMOVED COMPLETELY. THIS INCLUDES HANGERS, SUPPORTS, AND ASSOCIATED ITEMS.
6. CAP EXISTING SEWER PIPE WHERE FIXTURES ARE REMOVED.
7. OWNER SHALL HAVE FIRST RIGHT OF REFUSAL FOR REMOVED EQUIPMENT.
8. DEAD LEGS IN WATER SUPPLY PIPING ARE NOT PERMITTED PER OREGON PLUMBING CODE SECTION 309.5.

KEYNOTES

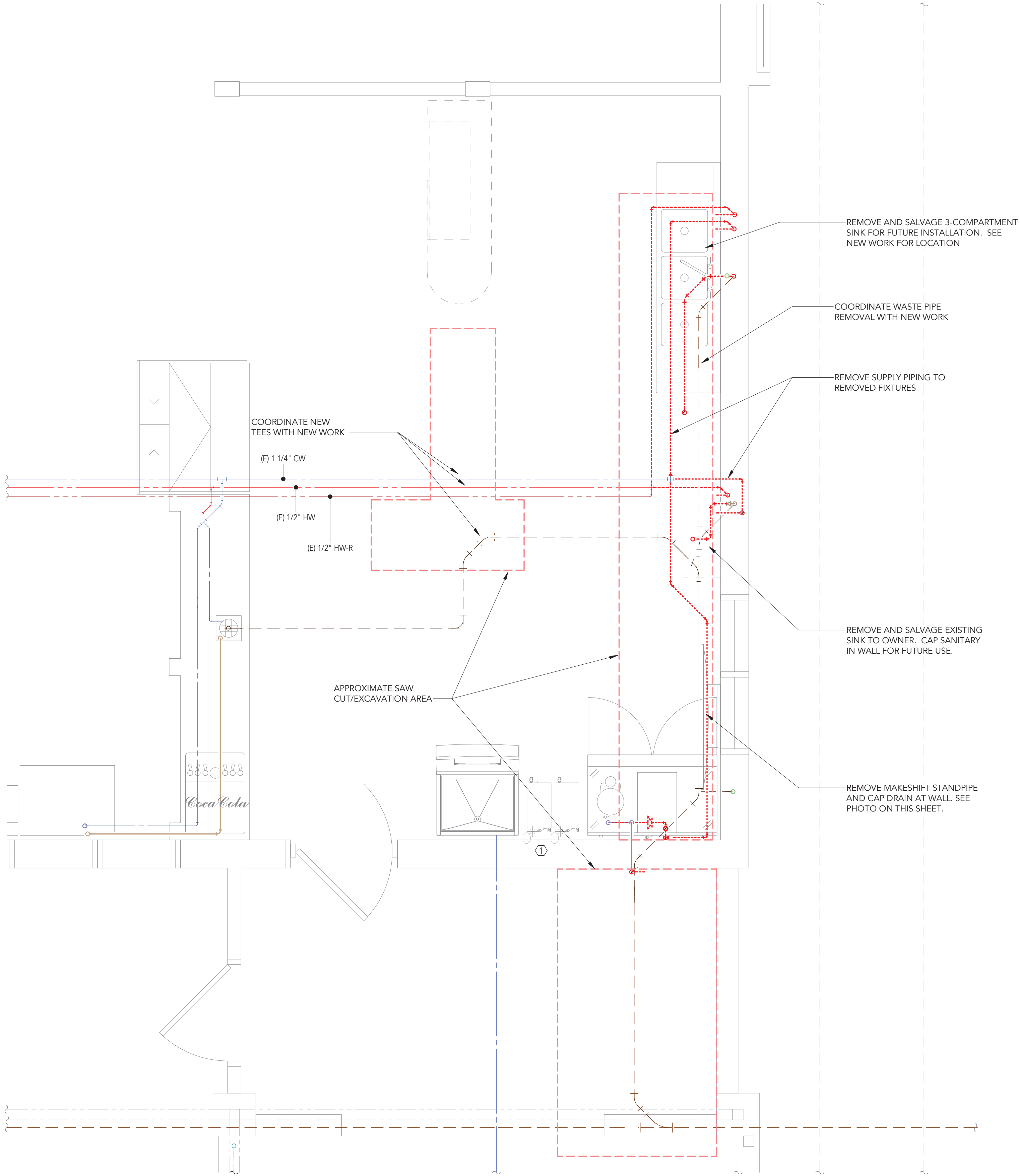
- 1 PROTECT EXISTING COFFEE MACHINES, WATER FILTERS, ICE MAKER, AND OTHER APPLIANCES IN THIS AREA



2 EXISTING ESPRESSO MACHINE DRAIN
NOT TO SCALE



3 (E) KITCHEN APPLIANCE WATER SUPPLY REROUTE
12" = 1'-0"



1 LEVEL 1 PLUMBING DEMOLITION PLAN
1/2" = 1'-0"

PLUMBING PIPE MATERIALS		PIPE MATERIAL					
		PEX-A PIPE	TYPE "L" COPPER	TYPE "K" COPPER	CAST IRON SOIL PIPE	SCHED. 40 PVC DWV	SCHED. 40 ABS DWV
TYPE OF SERVICE							
WATER	ABOVE GROUND	✓	✓				
	BELOW GROUND			✓			
SANITARY DRAINAGE	ABOVE GROUND					✓	✓
	BELOW GROUND				✓	✓	
SANITARY VENT	ABOVE GROUND					✓	✓
	BELOW GROUND				✓	✓	
	ABOVE ROOF					✓	✓
NOTES:							
A.		SEE SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.					
B.		USE OF CELLULAR OR FOAM CORE PIPE IS NOT PERMITTED FOR DRAIN PIPE.					

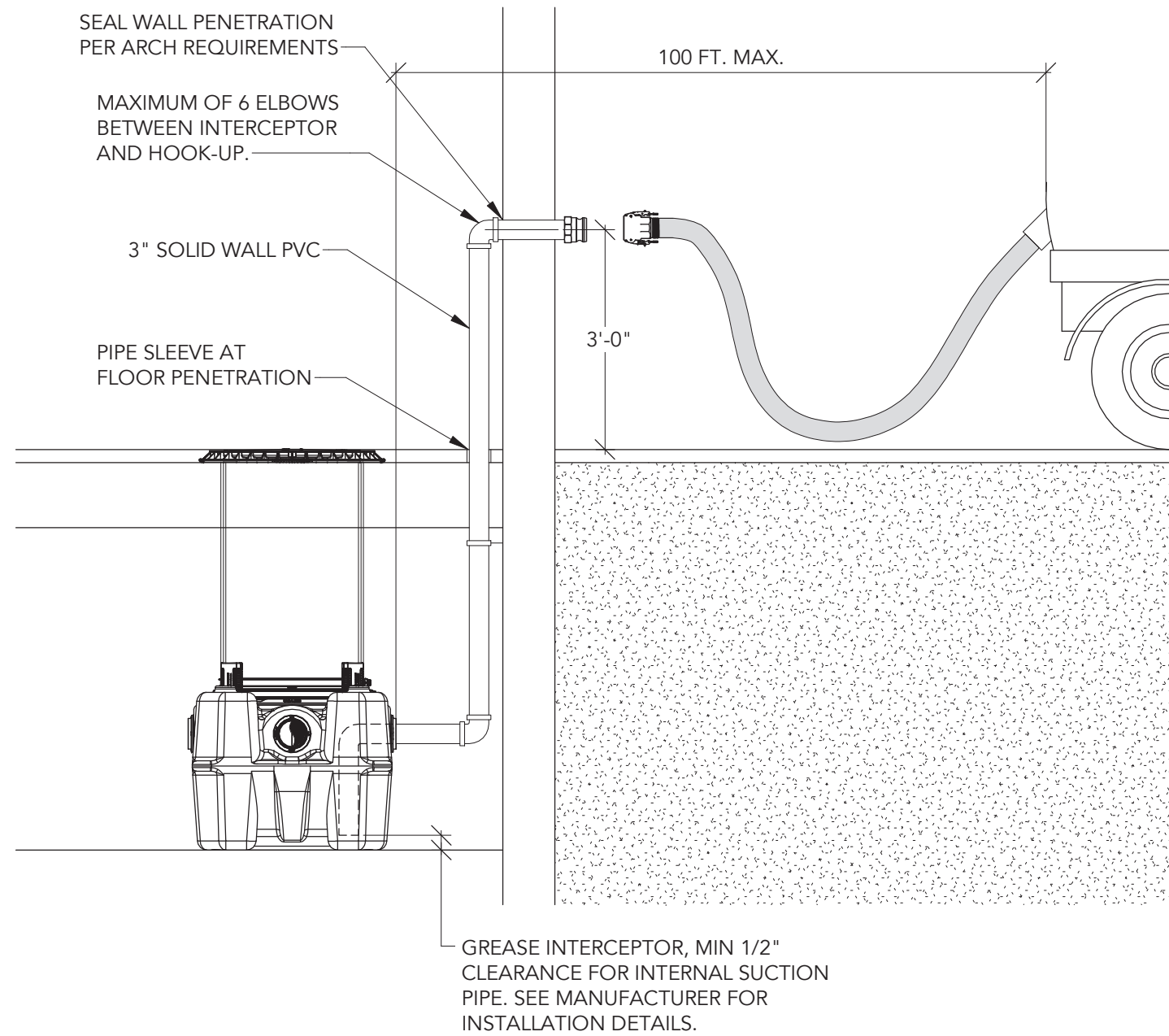
SHEET NOTES

- LOCATION AND SIZES OF EXISTING PIPES SHOWN ARE BASED ON RECORD DRAWINGS PROVIDED BY OWNER. CONTRACTOR SHALL FIELD VERIFY THE LOCATION AND SIZE OF EXISTING PLUMBING WORK AND MAKE MODIFICATIONS TO NEW WORK SHOWN AS REQUIRED TO CONNECT TO EXISTING. DEPTH OF EXISTING UNDERFLOOR PIPING IS UNKNOWN AND SHALL BE FIELD VERIFIED.
- THE CONTRACTOR SHALL PATCH AND REPAIR EXTERIOR WALLS TO MATCH ADJACENT MATERIAL, FINISH, AND COLOR UNLESS OTHERWISE SPECIFIED. THE CONTRACTOR SHALL PATCH AND REPAIR OPENINGS MADE IN THE ROOF DUE TO DEMOLITION IN ACCORDANCE WITH ARCHITECT AND ROOF MFG REQUIREMENTS. WORK DONE TO ROOF SHALL NOT VIOLATE ROOF WARRANTY.
- DEAD LEGS IN WATER SUPPLY PIPING ARE NOT PERMITTED PER OREGON PLUMBING CODE SECTION 309.5.
- APPROXIMATE CLEANOUT LOCATIONS SHOWN, COORDINATE WALL AND FLOOR CLEANOUT LOCATIONS WITH ARCHITECT. PROVIDE WHERE SHOWN AND AS OTHERWISE REQUIRED BY LOCAL AND STATE CODES.
- PROVIDE SLEEVES AND/OR OPENINGS WHERE PIPES PENETRATE THROUGH FOUNDATIONS, FLOORS, WALLS, AND ROOF.
- PENETRATIONS OF RATED ASSEMBLIES SHALL BE FIRE STOPPED. FIRE STOPPING SHALL BE AN APPROVED MATERIAL AND SHALL BE U.L. LISTED.
- PIPE SIZES SHOWN SHALL BE CONTINUED IN THE DIRECTION OF FLOW UNTIL ANOTHER SIZE IS SHOWN.

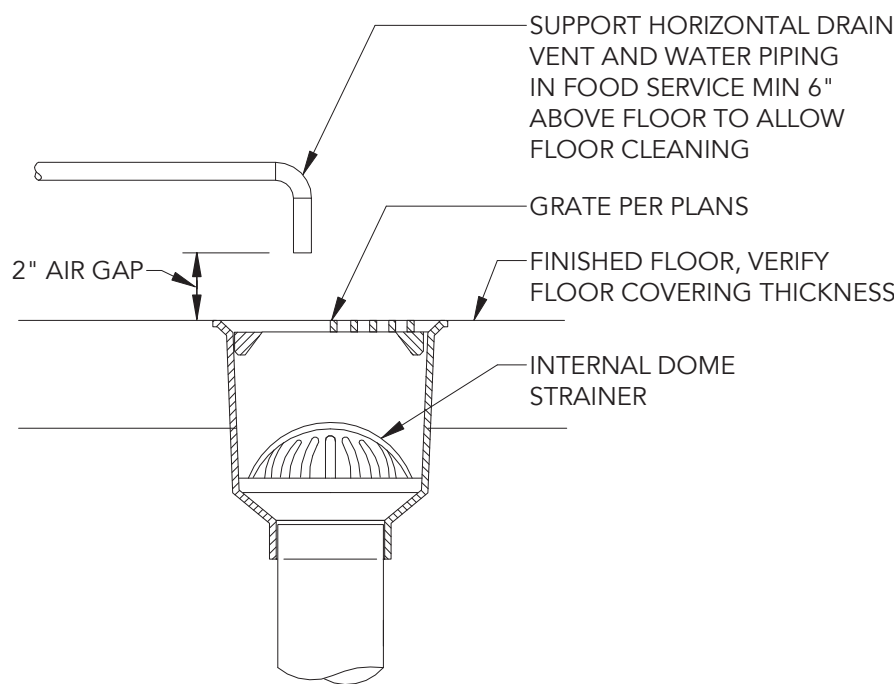
KEYNOTES

- USE OF AIR ADMITTANCE VALVES SUBMITTED UNDER ALTERNATIVE ENGINEERED DESIGN PER OPSC 301.5
- RECONNECT (E) WATER SUPPLY TO FILTERBOX. PROVIDE BALL VALVE WHERE NEW CONNECTS TO EXISTING.
- RELOCATED EXISTING 3-COMPARTMENT SINK
- H & CW TO KE-01 AND KE-03 LOCATED BELOW GRADE
- ROUTE DRAIN FROM ESPRESSO MACHINE TO NEW FLOOR SINK
- EXISTING WATER FILTER STATION AND SUPPLIES TO APPLIANCES TO REMAIN.
- CAP UNUSED EXTENSIONS OF CW AND HW LINES
- PROVIDE WATER HAMMER ARRESTOR ON WAREWASHER SUPPLY
- PROVIDE GREASE INTERCEPTOR PUMP OUT KIT. TERMINATE END CAP 3 FT ABOVE GRADE ON EXTERIOR WALL.

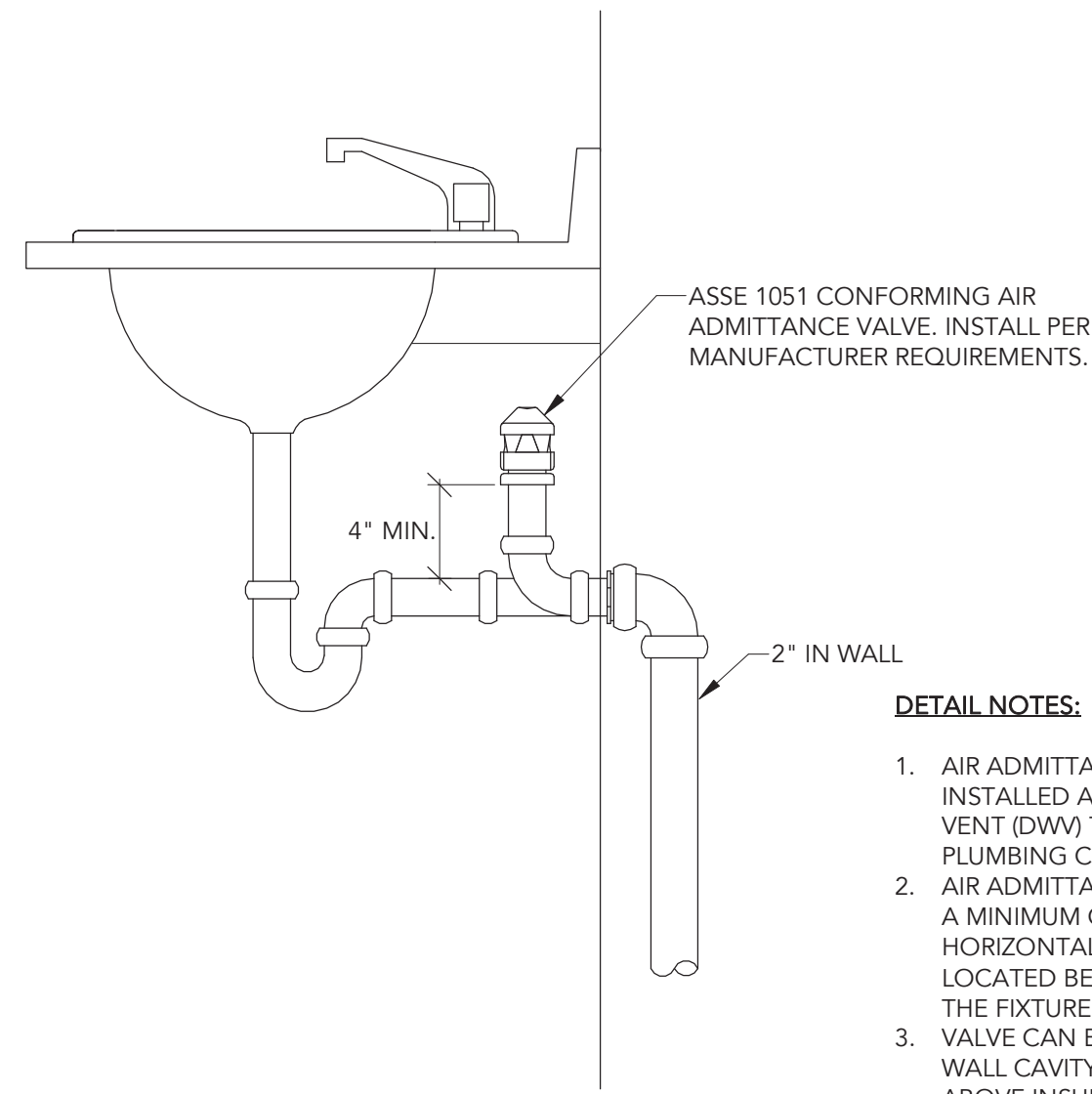
WATER AND WASTE SERVICE CALCULATION										
(Calculations are limited to area of work only and do not represent entire building)										
		HW (EACH)	CW (EACH)	WSFU (TOTAL)	HW (TOTAL)	CW (TOTAL)	MIN FIXTURE CONNECTION SIZE	DRAINAGE (EACH)	DRAINAGE (TOTAL)	COMMENTS
FIXTURE DESCRIPTION	Qty	FU	FU	FU	FU	FU	INCHES	DFU	DFU	
Comm Kitchen Sink w/ food waste	1	1.125	1.125	1.5	1.125	1.125	1/2"	3		3-Compartment Scullery Sink- Indirect Connection
Comm Kitchen Sink w/ food waste	1	1.125	1.125	1.5	1.125	1.125	1/2"	3	3	
Hand Sink	1	0.75	0.75	1	0.75	0.75	1/2"	2	2	Direct Drain
Coffee/Tea maker/soda machine	3		1	3		3	1/2"			Indirect drain to floor sink
Icemaker, kitchen	1		0.5	0.5		0.5	1/2"			Indirect drain to floor sink
Dishwasher, comercial	1	1.5		1.5	1.5		1/2"	2		Indirect drain to floor sink
Floor Drain	1							2	2	
Receptor, indirect waste, 1.5" trap	1							2	2	Receive Waste from Espresso Machine
Receptor, indirect waste, 2" trap	1							4	4	Receives waste from DW and 3-comp sink
TOTALS	10			7.5	3.375	5.375			13	
				TOTAL H2O	HW	CW			TOTAL DRAIN	
TOTAL H2O FIXTURE UNITS		7.5	WSFU	TOTAL EQUIV. GPM:	12.3 GPM Total 9.6 GPM for CW 7.1 GPM for HW	SUMMARY: Drain Sizing: 3" required based on OPSC Table 703.2 Water Service: Existing 1-1/4" CW line is sufficient to feed proposed fixtures. (E) 1/2" HW line to be reused for island sinks. 3-compartment sink and new dishwasher to be served by point of use water heaters				



3 GREASE INTERCEPTOR ELEVATION & PUMP OUT KIT
P6.00 NOT TO SCALE



2 FLOOR SINK
P6.00 NOT TO SCALE



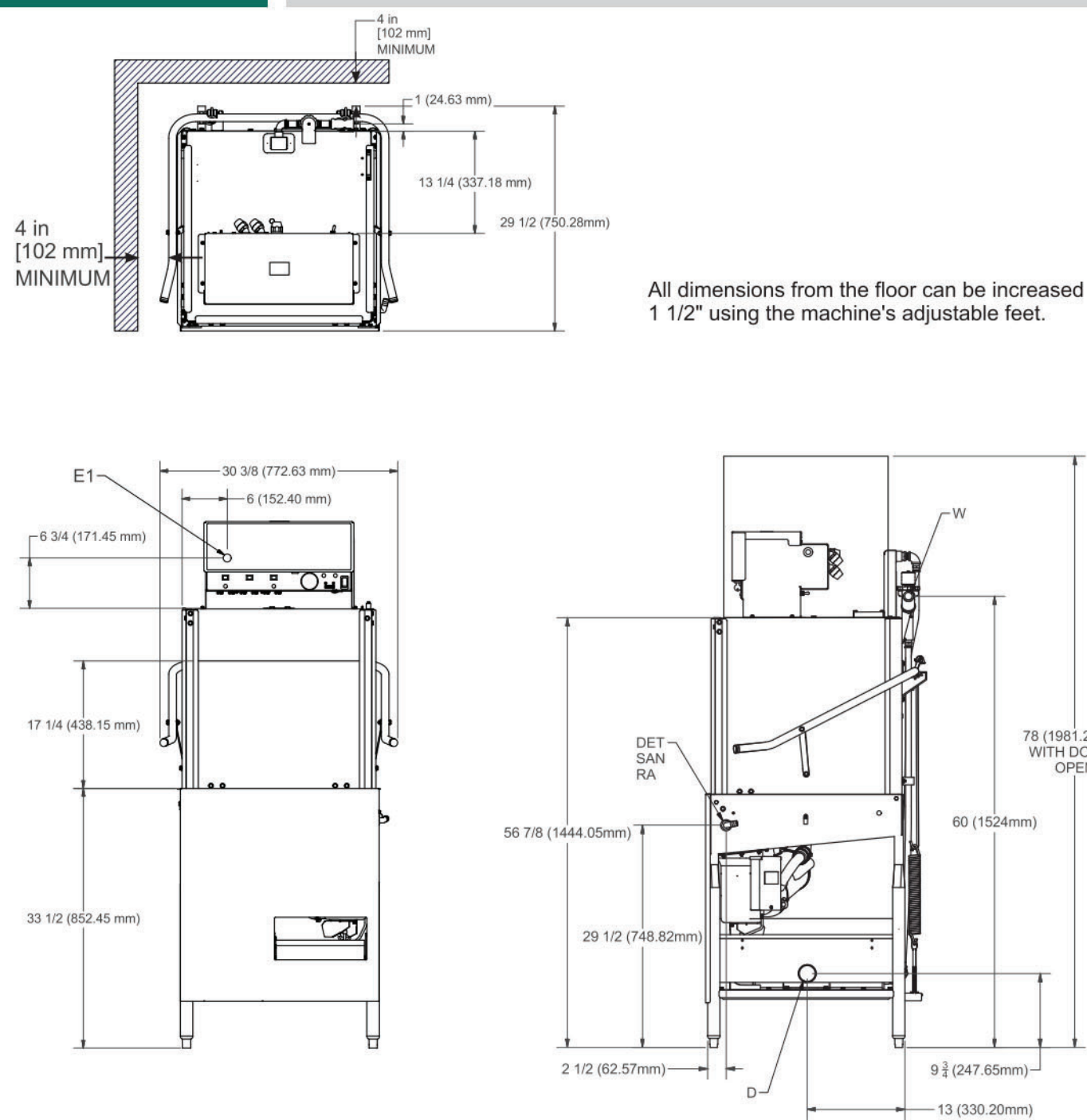
DETAIL NOTES:

1. AIR ADMITTANCE VALVES SHALL BE INSTALLED AFTER THE DRAIN, WASTE, AND VENT (DWV) TESTING REQUIRED BY PLUMBING CODE HAS BEEN PERFORMED.
2. AIR ADMITTANCE VALVE MUST BE LOCATED A MINIMUM OF 4 INCHES ABOVE THE HORIZONTAL DRAIN. THE VALVE CAN BE LOCATED BELOW THE FLOOD LEVEL RIM OF THE FIXTURE BEING VENTED.
3. VALVE CAN BE LOCATED IN AN ATTIC OR WALL CAVITY. NOTE: MUST BE LOCATED 6" ABOVE INSULATION.

1 AIR ADMITTANCE VALVE @ INDIVIDUAL SINK
P6.00 NOT TO SCALE

SPECIFICATIONS

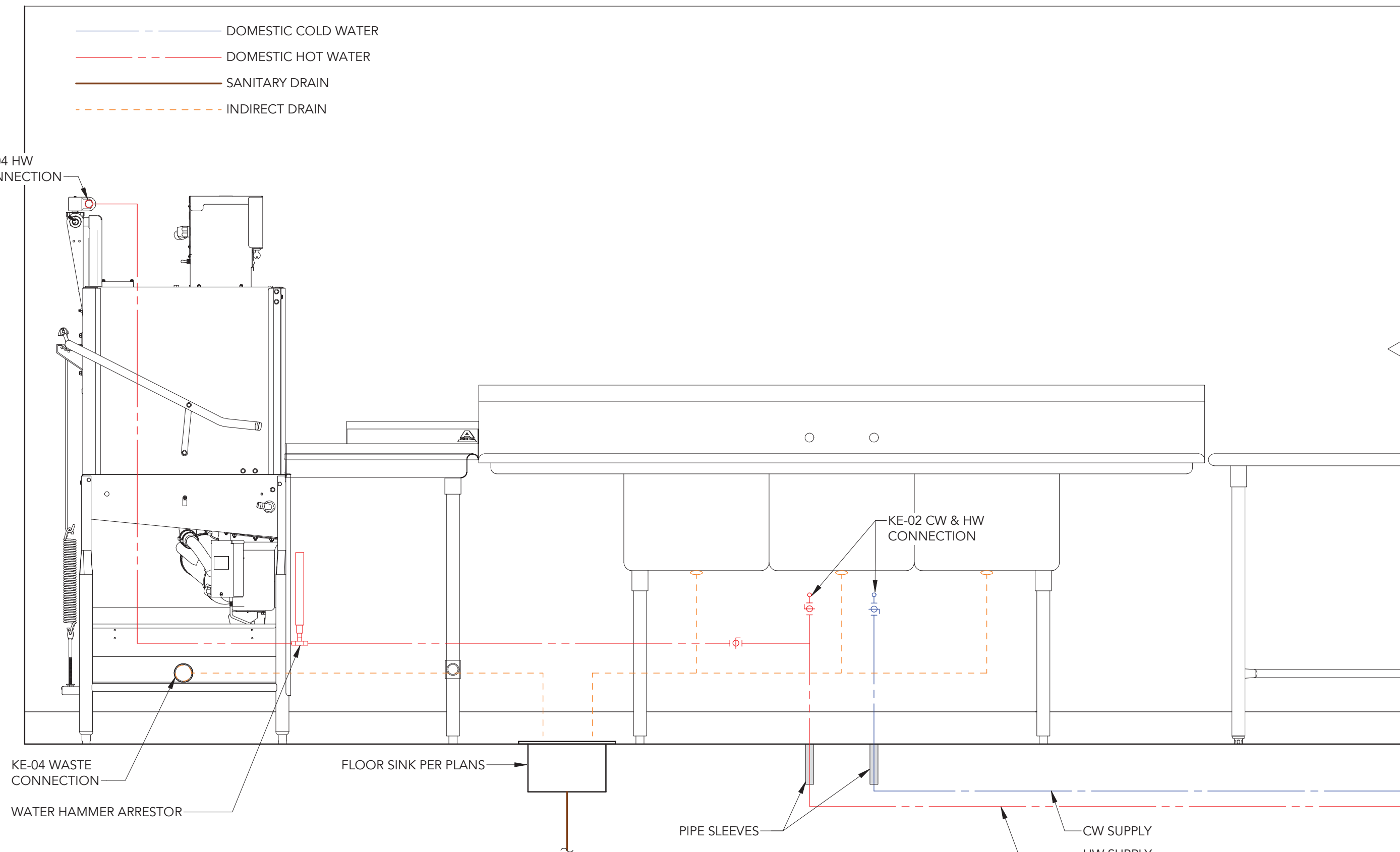
I-E-LTH DIMENSIONS



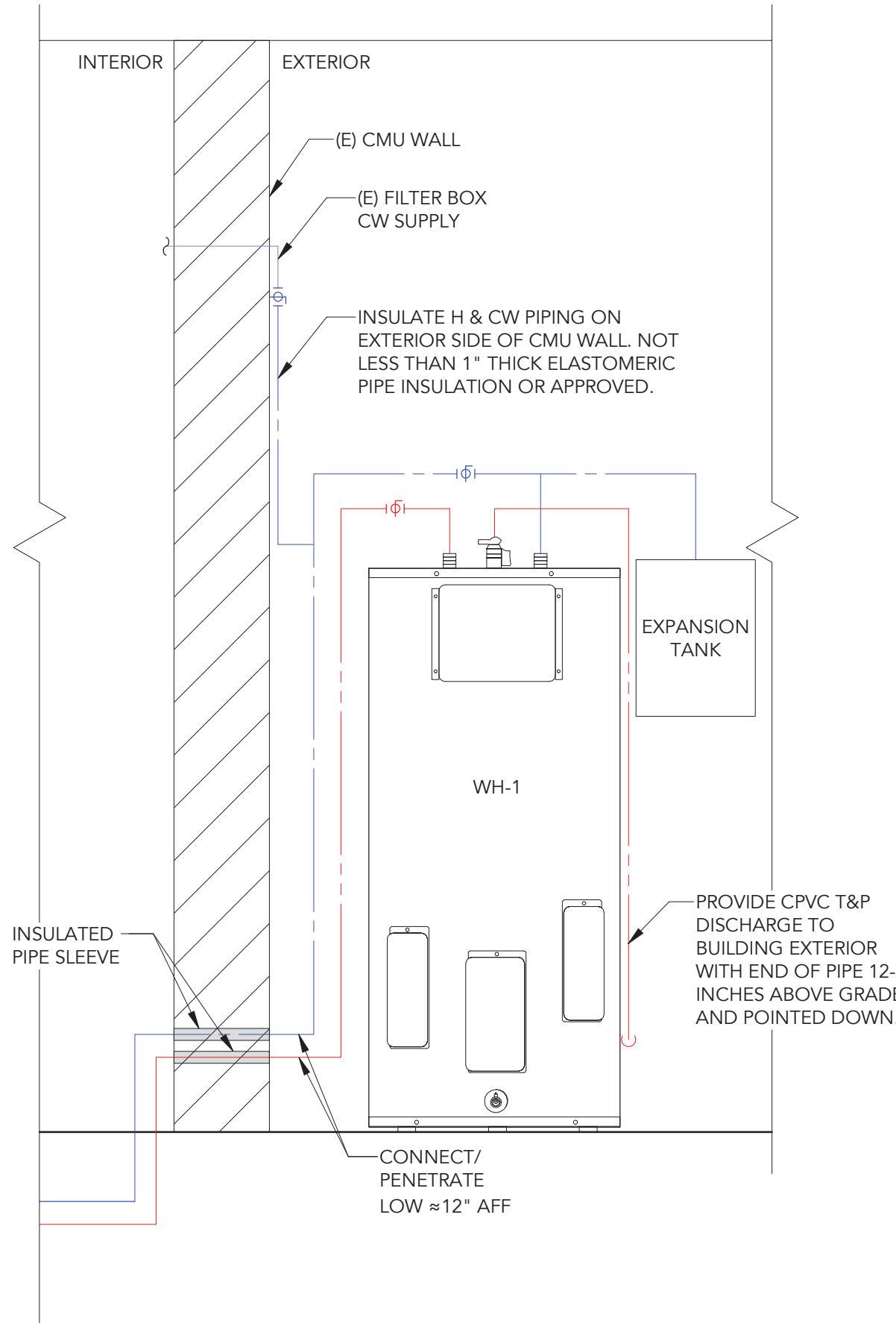
E1	MAIN ELECTRICAL CONNECTION (1 1/8" HOLE) (Located on back of control box)
W	MAIN INLET WATER CONNECTION (3/4" NPT)
D	DRAIN CONNECTION (2" NPT)
DET	DETERGENT BULKHEAD ACCESS (7/8" HOLE)
SAN	SANITIZER INLET
RA	RINSE-AID INLET

3

07610-004-25-06-H



4 EAST WALL SECTION
P6.00 NOT TO SCALE



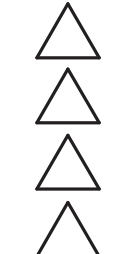
project: MC FRESH START MARKET REMODEL

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revisions:



date: 02/06/2026

project: 24-105

dwg file:

drawn by: AM

checked by: JW

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DETAILS

sheet:

P6.00

of:

EXPIRES: 06/30/2026

PERMIT SET

ELECTRICAL SYMBOL LEGEND

ABBREVIATIONS	
AFF, A.F.F.	ABOVE FINISHED FLOOR
AHJ	AUTHORITY HAVING JURISDICTION
ARCH.	ARCHITECT/ARCHITECTURAL
BLDG.	BUILDING
C	CONDUIT
CD	CANDELA
CKT	CIRCUIT
C.L.	COLUMN LINE
(E)	EXISTING
ELEC	ELECTRICAL
EMERG	EMERGENCY
FAM/FACP	FIRE ALARM MASTER/FIRE ALARM CONTROL PANEL
FT.	FEET
GFI/B	GROUND FAULT INTERRUPTER/BREAKER
GND, G	GROUND
HVAC	HEATING, VENTILATION & AIR CONDITIONING
IDF	INTERMEDIATE DISTRIBUTION FRAME
LV	LOW VOLTAGE
MDF	MAIN DISTRIBUTION FRAME
MECH	MECHANICAL
N.L.	NIGHT LIGHT
PNL	PANEL
PROVIDE	FURNISH AND INSTALL
SD	SUB - DISTRIBUTION
TTB	TELEPHONE TERMINAL BOARD
TVSS / SPD	TRANSIENT VOLTAGE SURGE SUPPRESSION/SURGE PROTECTION DEVICE
TYP	TYPICAL
WP	WEATHER PROOF
"	INCH/INCHES
'	FOOT/FEET

GENERAL	
	KEYNOTE
	REVISION TAG
	EQUIPMENT TAG (EXHAUST FAN 1 SHOWN)
	CALLOUT (SHEET E0.00, DETAIL #1)
	KITCHEN EQUIPMENT TAG
	ELECTRICAL EQUIPMENT AS IDENTIFIED ON DRAWINGS.
	UNDERGROUND/ UNDERFLOOR RACEWAY
	HOMERUN WITH 2 #12 CONDUCTORS (GROUND NOT SHOWN)
	HOMERUN WITH 2 #10 CONDUCTORS (GROUND NOT SHOWN)
	HOMERUN WITH 3 #10 CONDUCTORS (GROUND NOT SHOWN)
	CONCEALED RACEWAY AND CONDUCTORS. NUMBER OF SLASHES INDICATES NUMBER OF CONDUCTORS. PROVIDE GROUND CONDUCTOR NOT SHOWN. ZERO SLASHES = 2 CONDUCTORS WITH 3RD GROUND CONDUCTOR. PROVIDE #12 CONDUCTORS UNLESS OTHERWISE SHOWN.
	LOW VOLTAGE CABLE/ HOMERUN C = CONTROL
	FLEX CONNECTION
	CONTINUATION

POWER	
	POWER PANEL - SURFACE
	POWER PANEL - RECESSED
	DUPLEX RECEPTACLE
	GROUND FAULT, WEATHERPROOF TYPE
	SPLIT WIRED WITH 1/2 SWITCHED, +44 A.F.F UNO
	240 SPECIALTY RECEPTACLE, NEMA SIZE PER EQUIPMENT SCHEDULE.
	DOUBLE DUPLEX RECEPTACLE
	+44 A.F.F. UNO DOUBLE DUPLEX RECEPTACLE
	FLOOR BOX, FLOOR BOX WITH DATA
	JUNCTION BOX
	MOTOR
	DISCONNECT (F=FUSED, "BLANK"=SWITCH ONLY)
	SPECIFIC RECEPTACLE, SEE PNL SCHED. AND MECH FOR CONFIGURATION. MATCH CONFIGURATION PER EQUIPMENT INSTALLED
	VARIABLE FREQUENCY DRIVE
	BREAKER
	GFI BREAKER
	TRANSFORMER
	METER
	GROUND

LIGHTING	
	SWITCH
	SWITCH, a = LIGHTS CONTROLLED, 3 = THREE-WAY.
	OCCUPANCY SENSING WALL SWITCH
	LOW VOLTAGE WALL SWITCH
	DIMMABLE WALL SWITCH
	KEYED SWITCH
	WIRELESS SWITCH
	DIMMABLE WIRELESS SWITCH
	DIMMABLE WIRELESS DUAL SWITCH a,b = LIGHTS CONTROLLED (SEPARATE).
	2x2/2x4/LINEAR RECESSED LIGHT FIXTURE.
	2x2/2x4/LINEAR SURFACE FIXTURE
	STRIP/WRAP FIXTURE
	PENDANT, SURFACE MOUNT FIXTURE
	RECESSED DOWN LIGHT FIXTURE.
	DIRECTIONAL RECESSED DOWN LIGHT FIXTURE.
	LINEAR FIXTURE IN 4', 8', AND 12' LENGTHS.
	WALL SCONCE
	WALL MOUNT LIGHT
	EXIT SIGN WITH DIRECTIONAL ARROWS. TYPE "X1"
	POLE MOUNTED LIGHTING
	LIGHTING FIXTURE NOTATION A1 = FIXTURE TYPE "A1". E = EMERGENCY POWER.
	LINE-VOLTAGE OCCUPANCY SENSOR

SERVICE CALCULATION 120/240V, SINGLE-PHASE

EXISTING MAXIMUM DEMAND 30KW @ 240 1-PHASE: 125 AMPS (2)	
125 x 1.25	157A @240V 1-PHASE
ADDITIONAL LOAD:	
PANINI PRESS:	27A @240V 1-PHASE
COUNTERTOP OVEN:	28A @240V 1-PHASE
HOT WATER HEATER:	75A @240V 1-PHASE
TOTAL ADDED LOAD:	130A @240V 1-PHASE
TOTAL:	287A @240V 1-PHASE
GRAND TOTAL:	
1.25 x 287A	359A @240V 1-PHASE
SERVICE SIZE:	
(359A < 400A THEREFORE SERVICE SIZE OK)	

GENERAL NOTES

- SEE SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.
- DRAWINGS ARE DEVELOPED AS DIGITAL DOCUMENTS. IF CONTRACTOR ELECTS TO PRINT, CONTRACTOR SHALL NOT VIOLATE COPYRIGHT AND DRAWING OWNERSHIP. UTILIZE PROPER SCALE. TEXT SIZE READABILITY IS THE RESPONSIBILITY OF THE CONTRACTOR. IF TEXT IS UNREADABLE ON PRINTED VERSION, CONTACT THE EOR. DRAWINGS ARE INTENDED TO BE READ WITH DIGITAL ZOOM FUNCTION.
- HARD-COPY SIGNED AND STAMPED FINAL DOCUMENTS SHALL BE PRINTED AT THE INTENDED SCALE, AND SHALL BE PRINTED SUCH THAT ENGINEER'S SEAL IS LEGIBLE, AND NOT LESS THAN 2-INCHES BY 2-INCHES POINT-TO-POINT PER OAR 820-025-0005. SCALE OF ENGINEER'S SEAL MAY BE DIFFERENT THAN INTENDED DRAWING SCALE. DO NOT RELY UPON ENGINEER'S SEAL SIZE AS ANY INDICATION OF CORRECT DRAWING SCALE, AND/OR PAPER SIZE. DRAWINGS ARE INTENDED AS DIGITAL DOCUMENTS SUCH THAT SEAL SIZE IS ZOOMABLE TO MEET OAR 820-025-0005.
- DRAWING DETAIL CALL-OUTS MAY BE PARTIAL. EVERY DETAIL IS APPLICABLE TO THE PROJECT AS A WHOLE WHERE SUCH DETAILED CONDITION EXISTS.
- THIS DOCUMENT IS DIGITALLY SIGNED. IF PRINTED, OR "VALID SIGNATURE" BANNER IS NOT DISPLAYED BY THE PDF SOFTWARE, THE PRINTED/DIGITAL COPY IS NO LONGER SIGNED. UNSIGNED DOCUMENTS ARE PRELIMINARY, AND NOT FOR CONSTRUCTION.
- (E) CIRCUIT INDICATIONS ARE FOR REFERENCE ONLY. NOT BY EOR. VERIFY INDICATED CIRCUITS PRIOR TO DEMO. PROTECT EXISTING CIRCUITS THAT MAY NOT BE DEMOLISHED COMPLETE.

KEYNOTES

- CONTRACTOR TO VERIFY CONFIGURATION OF EQUIPMENT INSTALLED.
- PER UTILITY, OCCURRED IN SEPTEMBER, 2025.

ELECTRICAL EQUIPMENT SCHEDULE											
ID	DESCRIPTION	VOLTS	AMPS	kW	HP	PROVIDE (1)	PROTECTION SIZE	WIRING	RACEWAY	(E) CIRCUIT (REMOVE)	NEW CIRCUIT
E_01	(E) WALK-IN COOLER	240	12	-	-	DIRECT	SEE PANEL SCHEDULE	(2) #10 + (1) #10 GND	3/4"C	C - 12, 14	K - 24, 26
E_02	(E) WALK-IN FREEZER	240	12	-	-	DIRECT	SEE PANEL SCHEDULE	(2) #10 + (1) #10 GND	3/4"C	C - 16, 18	K - 28, 30
E_03	(E) WATER HEATER	240	18.8	4.5	-	DIRECT	SEE PANEL SCHEDULE	EXISTING	EXISTING	PROTECT	N/A
E_04	(E) WAREWASHER	240	52.8	-	-	DIRECT	SEE PANEL SCHEDULE	(2) #4 + (1) #8 GND	1-1/2"C	NOT SHOWN	K - 20, 22
E_06	(E) REFRIGERATED SANDWICH PREP UNIT	120	4.9	-	0.5	NEMA 5-20R	SEE PANEL SCHEDULE	(2) #12 + (1) #12 GND	3/4"C	A1 - 12	K - 10
E_07	(E) CURVED GLASS BAKERY DISPLAY CASE	120	16	-	-	NEMA 5-20R	SEE PANEL SCHEDULE	(2) #10 + (1) #10 GND	3/4"C	A1 - 16	K - 34
E_09	(E) DRINK DISPENSER	120	3	-	-	NEMA 5-20R	SEE PANEL SCHEDULE	(2) #12 + (1) #12 GND	3/4"C	A1 - 2	K - 35
E_10	(E) ICE MACHINE	120	12.7	15	-	NEMA 5-20R	SEE PANEL SCHEDULE	(2) #10 + (1) #10 GND	3/4"C	A1 - 8	K - 40
E_12(a)	(E) COFFEE BREWER	120	14	1.675	-	NEMA 5-20R	SEE PANEL SCHEDULE	(2) #10 + (1) #10 GND	3/4"C	A - 40	K - 25
E_12(b)	(E) COFFEE BREWER	120	14	1.675	-	NEMA 5-20R	SEE PANEL SCHEDULE	(2) #10 + (1) #10 GND	3/4"C	A - 40	K - 23
E_13	(E) REFRIGERATED WORKTOP	120	5	-	0.2	NEMA 5-20R	SEE PANEL SCHEDULE	(2) #10 + (1) #10 GND	3/4"C	A1 - 17 & A - 38	K - 41
E_14	(E) COFFEE GRINDER	120	5	-	-	NEMA 5-20R	SEE PANEL SCHEDULE	(2) #10 + (1) #10 GND	3/4"C	A - 38	K - 17
E_17	(E) ESPRESSO MACHINE	240	17.7	4.25	-	NEMA 6-30R	SEE PANEL SCHEDULE	(2) #10 + (1) #10 GND	3/4"C	A - 35, 37	K - 27, 29
E_18	(E) BLENDER	120	13	1.56	2	NEMA 5-20R	SEE PANEL SCHEDULE	(2) #10 + (1) #10 GND	3/4"C	A - 32	K - 5
E_19	(E) SOUP WARMER	120	6.3	0.75	-	NEMA 5-20R	SEE PANEL SCHEDULE	(2) #12 + (1) #12 GND	3/4"C	C - 10	K - 38
E_20	(E) MICROWAVE	120	9	1	-	NEMA 5-20R	SEE PANEL SCHEDULE	(2) #10 + (1) #10 GND	3/4"C	NOT SHOWN	K - 36
E_21	(E) REACH-IN COOLER	120	2	-	0.5	NEMA 5-20R	SEE PANEL SCHEDULE	EXISTING	EXISTING	PROTECT	N/A
E_22	(E) REACH-IN COOLER	120	10.5	-	0.5	NEMA 5-20R	SEE PANEL SCHEDULE	EXISTING	EXISTING	PROTECT	N/A
E_23	(E) REACH-IN COOLER	120	9.3	-	0.5	NEMA 5-20R	SEE PANEL SCHEDULE	EXISTING	EXISTING	PROTECT	N/A
N_06	(N) PANINI PRESS	240	27	6.5	-	NEMA 6-50R	SEE PANEL SCHEDULE	(2) #6 + (1) #10 GND	1"C	N/A	K - 6, 8
N_07	(N) COUNTERTOP SPEED OVEN	240	28	6.5	-	NEMA 6-50R	SEE PANEL SCHEDULE	(2) #6 + (1) #10 GND	1"C	N/A	K - 16, 18
WH-1	HOT WATER TANK	240	75	18		DIRECT	SEE PANEL SCHEDULE	(2) #2 + (1) #8 GND	1-1/2"C	N/A	C - 26, 28

NOTES

NOT ALL MATERIALS, HARDWARE, AND DEVICES INDICATED. CONTRACTOR IS REQUIRED TO REVIEW ALL MANUFACTURERS INSTRUCTIONS AND PROVIDE MATERIALS AND HARDWARE AS INDICATED BY MANUFACTURER, CODE, AND THESE DOCUMENTS FOR A COMPLETE AND FUNCTIONAL INSTALLATION. PROVIDE CODE REQUIRED EQUIPMENT, RATINGS, SIZES, AND THE LIKE COORDINATED WITH ACTUAL EQUIPMENT INSTALLED.

ENSURE DISCONNECTS ARE CAPABLE OF BEING LOCKED IN THE OPEN POSITION.

WHERE MOTOR RATED SWITCH IS REQUIRED, PROVIDE MANUAL MOTOR STARTER IF INSTALLED MOTOR IS NOT PROVIDED WITH INTEGRAL OVERLOAD PROTECTION. EVERY MOTOR TO INCLUDE OVERLOAD PROTECTION, COORDINATE SETTINGS WITH ELECTRICAL ENGINEER IF NOT INCLUDED BY MANUFACTURER.

SEE ARCHITECT FOR ADDITIONAL REQUIREMENTS.

FACET
ARCHITECTS



Formerly Carlson Veit Junge Architects
3095 River Road N. Salem, OR 97303 / 503.390.0281



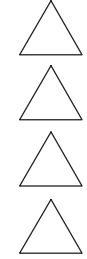
EXPIRES: 12/31/2027

project: MC FRESH START MARKET
REMODEL
3020 CENTER STREET NE
SALEM, OREGON, 97301

consultants:

FLUENT
ENGINEERING

revisions:



date: 02/06/2026

project: 24-105

dwg file:

drawn by: NM

checked by: MJC

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COVER SHEET

sheet:

E0.00

of:

SHEET INDEX

E0.00	COVER SHEET
E1.00	ELECTRICAL FLOOR PLAN
E2.00	PANEL SCHEDULES
E3.00	DETAILS

- A. PROVIDE GROUND CONDUCTOR IN ENCLOSED BREAKER TO ATS, AND ATS TO MDP FEEDS.
- B. SAW-CUT MAY BE REQUIRED FOR ISLAND RECEPTACLES. PROVIDE AS REQUIRED.
- C. (E) CIRCUITS SHOWN MAY BE INCOMPLETE/INACCURATE. SEE SPECIFICATIONS, SHOWN FOR REFERENCE ONLY.
- D. PROVIDE NEW CIRCUITS WITH GFI PROTECTION. SEE PANEL SCHEDULES.
- E. MC CABLE PERMITTED FOR BRANCH CIRCUITS, NOT PERMITTED FOR FEEDERS, HOMERUNS, AND UNDERGROUND. SEE SPECIFICATIONS.

1. PROTECT, AND REUSE (E) RACEWAY BETWEEN PANEL C, AND (E) UTILITY DEMARK, TO CONNECT NEW MDP TO (E) PANEL B FEEDER. REUSE (E) RACEWAY TO PANEL B. PROVIDE EXTENSION AS REQUIRED. SEE DETAILS.
2. EXISTING PANEL SCA IS 10KAIC. AVAILABLE FAULT CURRENT AT MDP IS <10,000A.
3. (E) PANEL IS BOTTOM FEED WITH TOP MAIN, TOP, OR BOTTOM FEED IS PERMITTED. TOP FEED SHOWN FOR CLARITY. RECONFIGURE GUTTER BELOW (E) PANEL AS REQUIRED TO RE-FEED FROM BOTTOM IF UTILIZED. LEAVE (E) BOTTOM FEED RACEWAY IN-PLACE IF NOT USED. PROVIDE INTERIOR CAP IF NOT USED TO RE-FEED FROM MDP (BOTTOM). SEE DETAILS FOR EXTERIOR CAPPING.

4. WP
5. ENCLOSED BREAKER. RATED 10,000 SC
6. PROVIDE INTEGRAL SPD.
7. AVOID CONFLICT WITH BACKSPASH. COORDINATE WITH ARCHITECT.
8. DOOR SWING IS REVERSED OF SHOWN. SEE DETAILS. DO NOT MOUNT EQUIPMENT WITHIN DOOR SWING.
9. PROVIDE TAMPER TYPE.
10. CONTRACTOR MAY CHANGE TO (1) 4" C 3#500, 1#2 GND FOR THIS FEED. CONTRACTOR'S OPTION.
11. 2" C (2) #3/0, (1) #3/0 NEUTRAL, (1) #6 GND
12. PROVIDE SPARE 200/2 BREAKER.
13. PROVIDE 1" C, CONDUCTORS, AND CONNECTIONS TO WH-1 AS REQUIRED.



14. COORDINATE RECEPTACLE MOUNTING HEIGHT WITH OWNER.
15. 2" C, 2#4/0, 1#4/0 NEUTRAL, 1#4 GND.
16. REMOVE MAIN BONDING JUMPER IF (E) (GROUND TO NEUTRAL BOND).
17. PROVIDE MAIN BONDING JUMPER AT THIS LOCATION.



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3095 River Road N Salem, OR 97303 / 503.390.0281



EXPIRES: 12/31/2027

Project: **MC FRESH START MARKET
REMODEL**
3020 CENTER STREET NE
SALEM, OREGON, 97301

TM

consultants:
FLUENT
ENGINEERING

PERMIT SET

revisions:



date: 02/06/2026

project: 24-105

dwg file:

drawn by: NM

checked by: MJC

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ELECTRICAL FLOOR PLANS

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of:

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PANEL SCHEDULE (E) Panel A1 SURFACE MOUNTED									
10,000 SCA AVAILABLE			1 PHASE		120/240 VOLTS				
100 AMP BUS					100 AMP LUGS				
SERVICE	LOAD (AMP)	BREAKER (A/P)	CIRCUIT (# & Ø)	BREAKER (A/P)	LOAD (AMP)	SERVICE			
SW ENTRANCE LIGHTS	3.0	20/1	1 A 2	15/1	0.0	*SPARE			
NEAR WOMEN'S BATHROOM LIGHTS	3.0	20/1	3 C 4	20/1	4.0	EXT LITES SE WALL			
CASH REGISTER STATION LIGHTS	1.5	20/1	5 A 6	20/1	0.0	SPARE			
EXT S. WALL RECPTS	1.5	20/1	7 C 8	20/1	0.0	*SPARE			
EXT S. WALL RECPTS	1.5	20/1	9 A 10	20/1	0.0	SPARE			
SODA REFER RECPTS	1.5	20/1	11 C 12	20/1	0.0	*SPARE			
EXT LIGHTS RECPTS	6.0	20/1	13 A 14	20/1	1.5	TELECOM BACKBOARD RECPTS			
GAS RADIANT HEATER RECPTS	2.0	20/1	15 C 16	20/1	0.0	*SPARE			
CASH REGISTER RECPTS	1.5	20/1	17 A 18	20/1	0.0	UNDER KICTHEN COUNTER			
LITES ON FRONT PORCH RECPTS	6.0	20/1	19 C 20	20/1	1.5	EXIT/EMERGENCY LITES			
HEAT TAPE RECPTS	5.0	20/1	21 A 22	20/1	5.0	LIGHTS RECPTS			
SPARE	0.0	20/1	23 C 24	20/1	1.5	LIGHTS S. WALKWAY AND CANOPY			
NOTES: 1-PHASE, 3-WIRE: No B-PHASE (HIGH LEG). *CHANGE MADE TO EXISTING CIRCUIT									
SUMMARY (AMPS):									
PHASE LOAD									
		A		C					
CONNECTED	25.0								
DEMAND	25.0								
		DEMAND LOAD		25.0					
		CONTINUOUS LOAD		0.6					
		SPARE LOAD		1.3					
		TOTAL LOAD		26.9					
		FUTURE		1.3					
				28.2		DESIGN LOAD			

PANEL SCHEDULE (E) Panel B SURFACE MOUNTED							
10,000 SCA AVAILABLE		1		120/240 VOLTS			
225 AMP BUS		PHASE		200/2 MAIN BREAKER			
SERVICE	LOAD (AMP)	BREAKER (A/P)	CIRCUIT (# & Ø)	BREAKER (A/P)	LOAD (AMP)	SERVICE	
E. WALL BELOW EL PANEL RECPTS	2.5	15/1	1 A	2	15/1 3.0	GFI KITCHEN COUNTER	
E. WALL H.W. HEATER RECPTS	2.5	15/1	3 C	4	15/1 1.5	WALTED CEILING ATTIC	
LIGHTS, FLOURESCENT BANKS LIGH	4.5	15/1	5 A	6	15/1 5.0	GFI LITES, EF. BATHROOM	
LITES FLOURESCENT BANKS LIGHTS	4.5	15/1	7 C	8	15/1 4.5	FLOOR FRONT ENTRY&EXT	
ELECT/MECH ROOM LIGHTS RECPT	2.0	15/1	9 A	10	15/1 4.5	GFI X-MAS & TIME CLOCK	
N. WALL ELECT/MECH RM RECPTS	1.5	15/1	11 C	12	15/1 2.0	EXIT & EMERGENCY LITES	
N. WALL &NW WALL RECPTS	6.0	15/1	13 A	14	15/1 0.0	SERVING AREA	
WEST WALL RECPTS	3.0	15/1	15 C	16	15/1 2.5	GFI, REFER & KITCHEN RECPTS	
GAS FURNACE	2.0	15/1	17 A	18	15/1 3.0	TRACK LITES	
CEILING PROJECTOR	1.5	15/1	19 C	20	15/1 2.0	EXT LITES, E. FRONT PORCH	
A/C CONDENSOR	15.0	20/2	21 A	22	15/1 3.0	S. WALL & S.W. WALL	
A/C CONDENSOR	15.0		23 C	24	15/1 1.5	EXT. GFI AC SERVICE RECPTS	
SPACE	0.0	15/1	25 A	26	15/1 0.0	SPARE	
SPACE	0.0	15/1	27 C	28	15/1 0.0	SPARE	
SPACE	0.0	15/1	29 A	30	15/1 0.0	SPARE	
SPACE	0.0	15/1	31 C	32	15/1 0.0	SPARE	

NOTES: 1-PHASE, 3-WIRE:
* PROVIDE GFI BREAKER

SUMMARY (AMPS):		
PHASE LOAD		
	A	C
CONNECTED	50.5	42.0
DEMAND	50.5	42.0
	DEMAND LOAD	50.5
	CONTINUOUS LOAD	0.8
	SPARE LOAD	<u>2.5</u>
	TOTAL LOAD	53.8
	FUTURE	<u>2.7</u>
		56.5 DESIGN LOAD

PANEL SCHEDULE (E) Panel C SURFACE MOUNTED									
10,000 SCA AVAILABLE				1		120/240 VOLTS			
225 AMP BUS				PHASE		200/2 MAIN BREAKER			
SERVICE		LOAD BREAKER (AMP) (A/P)		CIRCUIT (# & Ø)		BREAKER LOAD (A/P) (AMP)		SERVICE	
AC#1		15.0 20/2		1 A 2		20/2 15.0		AC#3	
AC#1		15.0		3 C 4		15.0		AC#3	
AC#2		15.0 20/2		5 A 6		20/2 15.0		AC#4	
AC#2		15.0		7 C 8		15.0		AC#4	
*SPARE		0.0 20/1		9 A 10		20/1 0.0		*SPARE	
*SPARE		0.0 20/1		11 C 12		20/1 0.0		*SPARE	
*SPARE		0.0 20/2		13 A 14		20/1 0.0		*SPARE	
*SPARE		0.0		15 C 16		20/1 0.0		*SPARE	
LITES + DOOR HEATER		5.0 15/1		17 A 18		20/1 0.0		*SPARE	
SPACE		0.0 20/1		19 C 20		20/1 1.5		WLKIN FRZR, HEAT RECPTS	
SPACE		0.0 20/1		21 A 22		20/1 0.0		SPACE	
SPACE		0.0 20/1		23 C 24		20/1 0.0		SPACE	
SPACE		0.0 20/1		25 A 26		100/2 75.0		**WATER HEATER TANK	
SPACE		0.0 20/1		27 C 28		75.0		**WATER HEATER TANK	
SPACE		0.0 20/1		29 A 30		20/1 0.0		SPACE	
SPACE RECPTS		0.0 20/1		31 C 32		20/1 0.0		SPACE	
NOTES: 1-PHASE, 3-WIRE: No B-PHASE (HIGH LEG). EXISTING PANEL. *CHANGE MADE TO EXISTING CIRCUIT. **PROVIDE NEW									
SUMMARY (AMPS):									
PHASE LOAD									
		A				C			
CONNECTED		140.0				136.5			
DEMAND		140.0				136.5			
		DEMAND LOAD				140.0			
		CONTINUOUS LOAD				0.0			
		SPARE LOAD				14.0			
		TOTAL LOAD				154.0			
		FUTURE				15.4			
						169.4		DESIGN LOAD	

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revisions:

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date: 02/06/2026

project: 24-105

dwg file:

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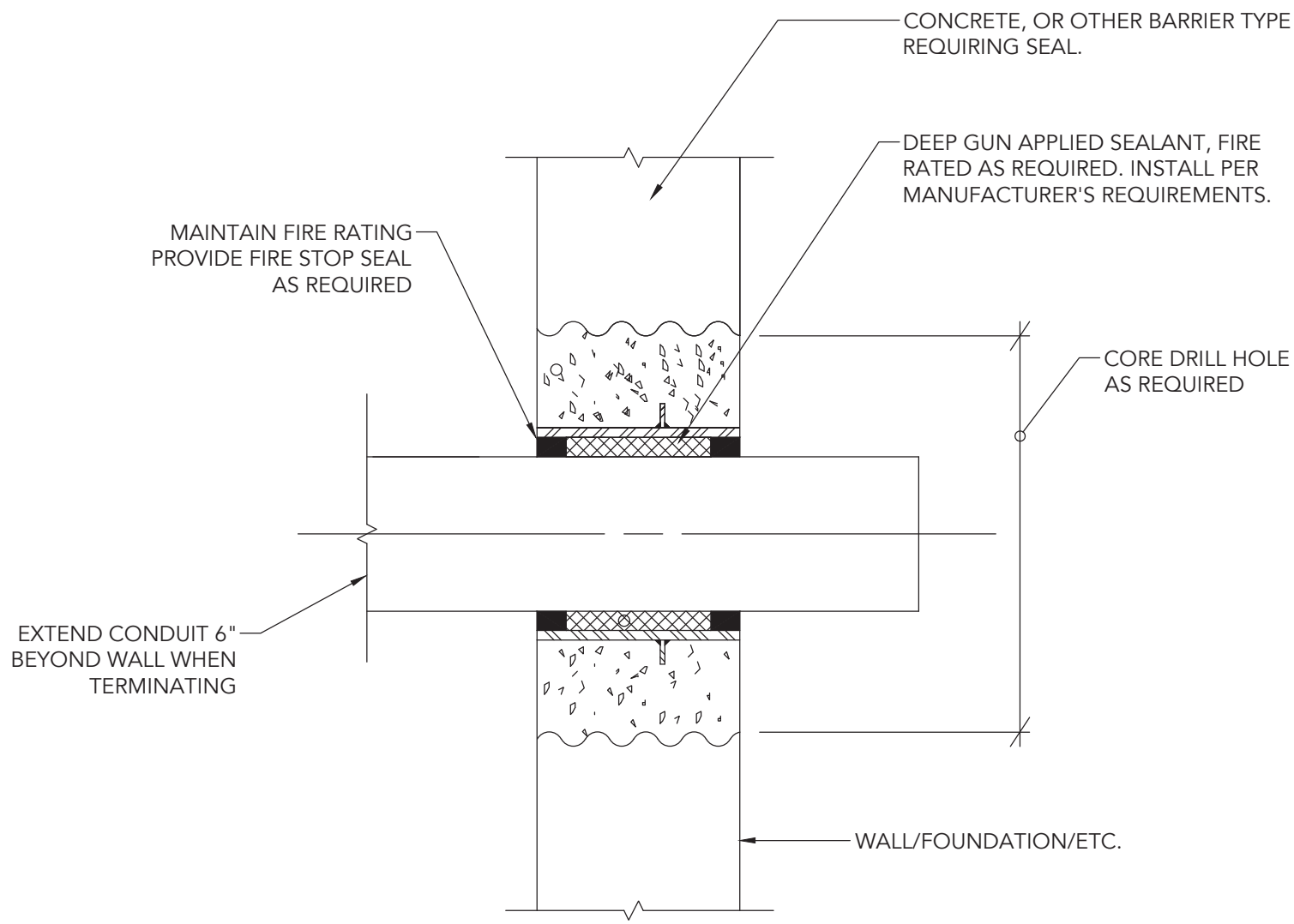
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SCHEDULES

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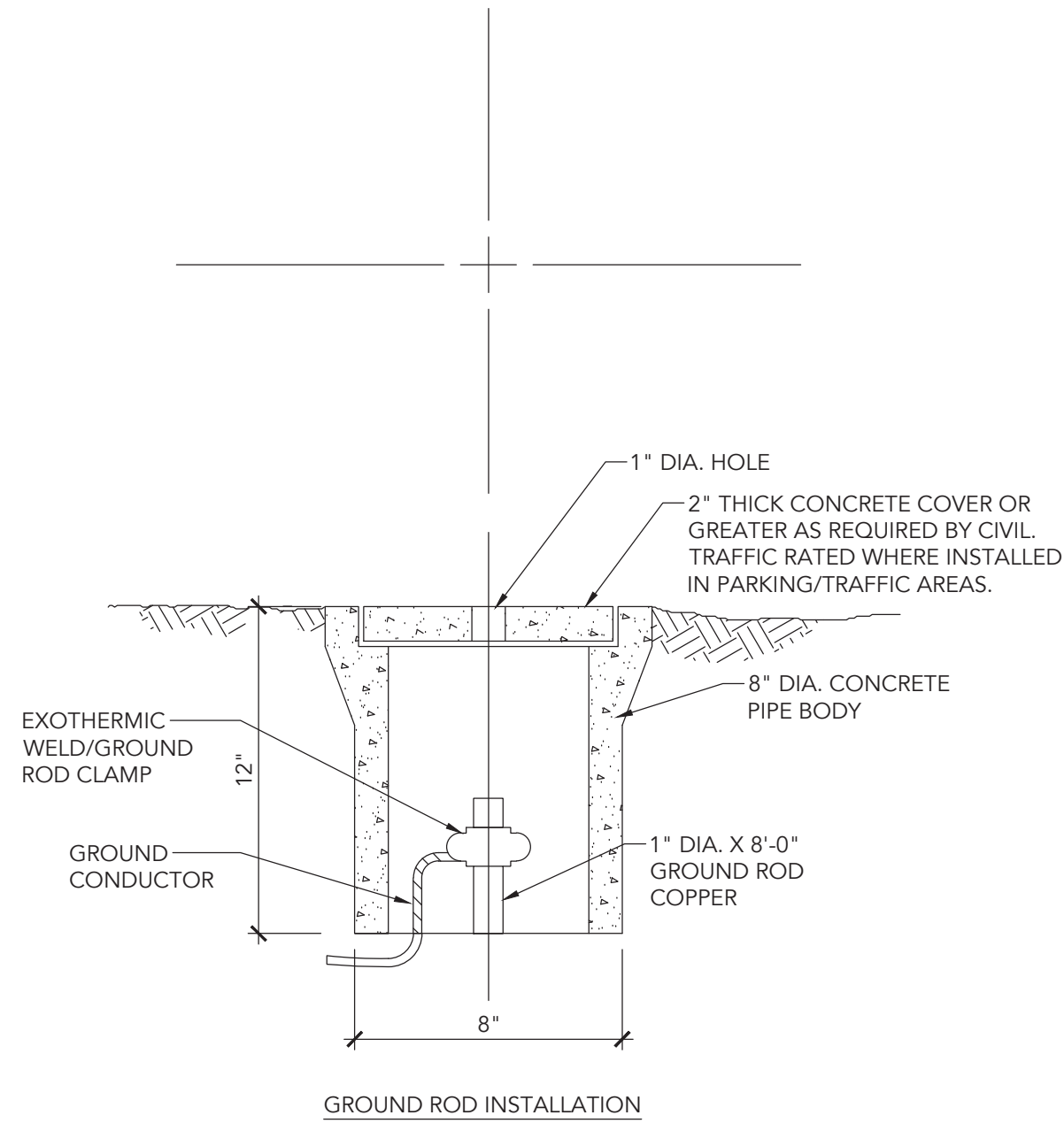
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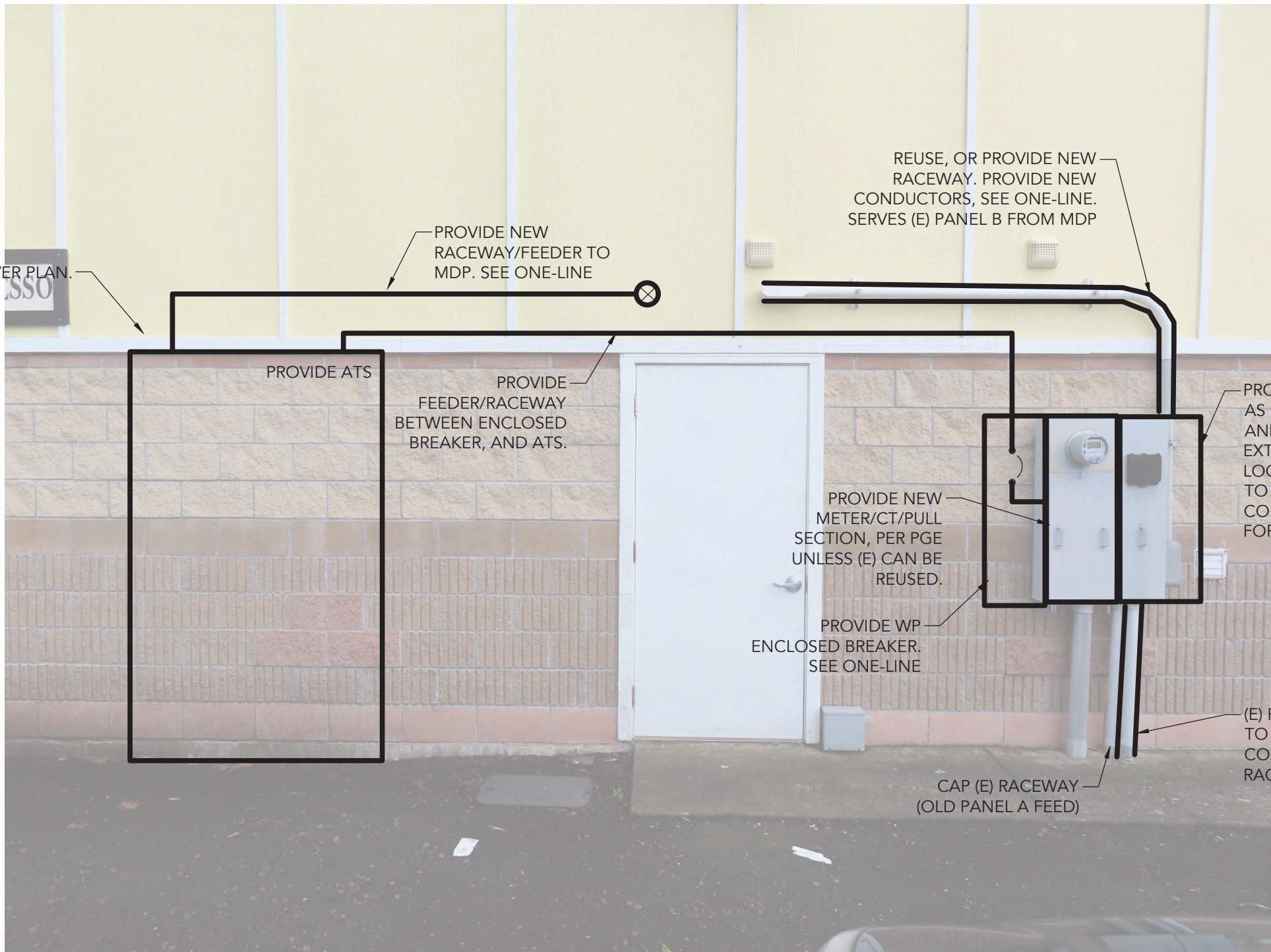
3 EXISTING CONFIGURATION
E3.00 SCALE: NTS



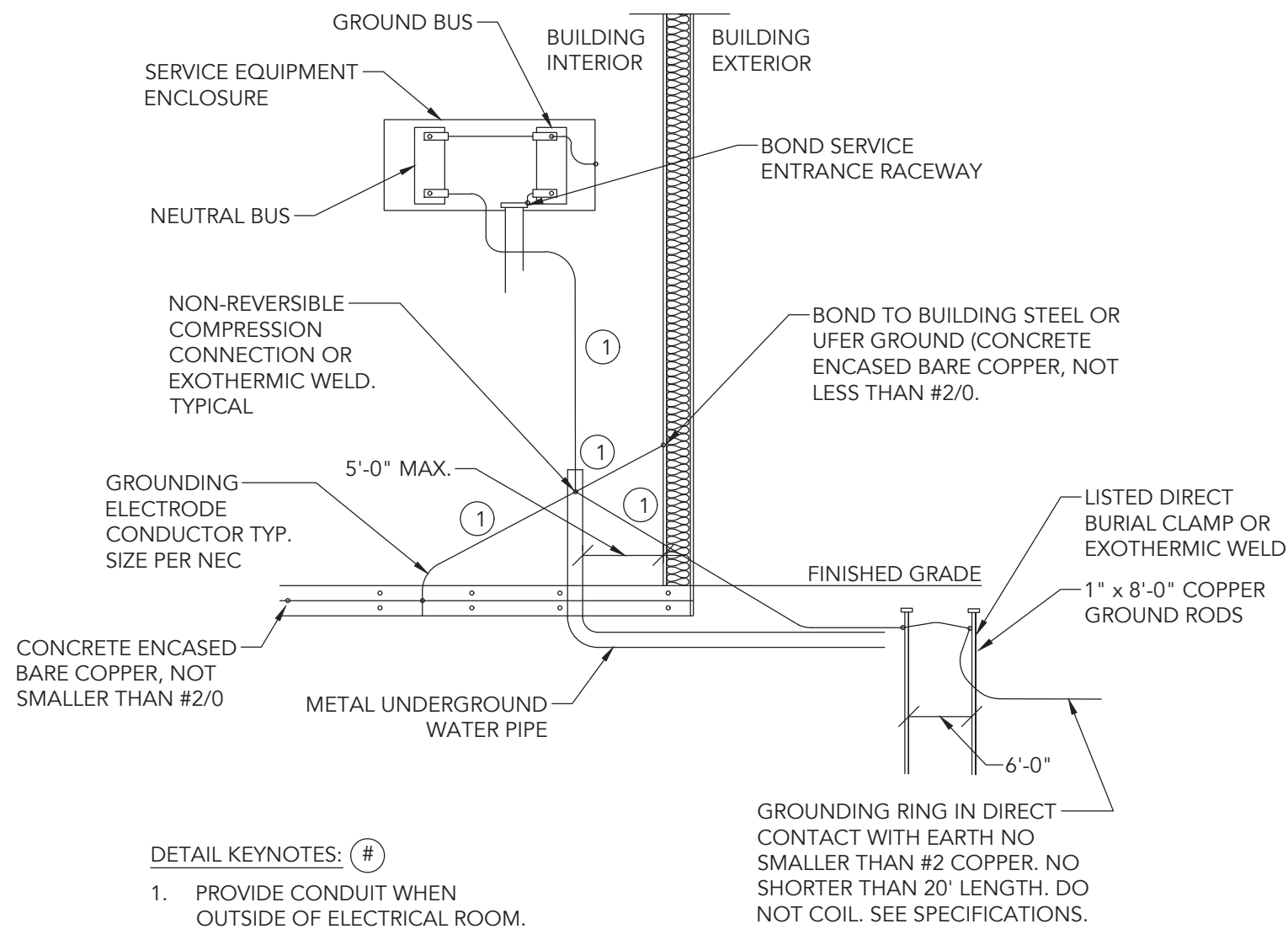
2 RACEWAY OUTER SEAL DETAIL
E3.00 SCALE: NTS



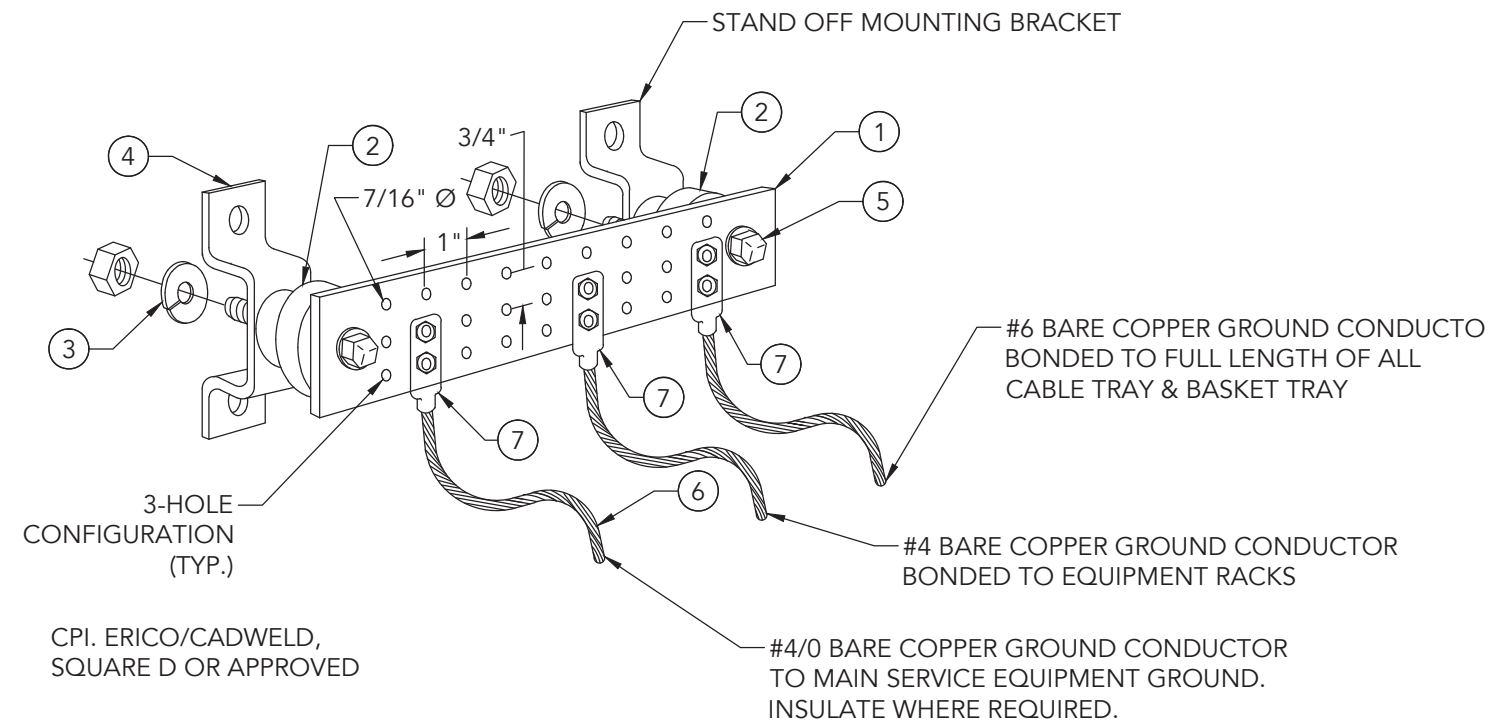
1 GROUND ROD DETAIL
E3.00 SCALE: NTS



6 NEW CONFIGURATION
E3.00 SCALE: NTS



5 SERVICE GROUNDING DETAIL (DEFAULT)
E3.00 SCALE: NTS



- DETAIL KEYNOTES: (#)
1. COPPER GROUND BAR, 1/4" X 4" X 12", HOLE CENTERS TO MATCH NEMA DOUBLE LUG CONFIGURATION.
 2. INSULATORS.
 3. 5/8" LOCK WASHERS.
 4. WALL MOUNTING BRACKET LAG BOLT TO WALL PLYWOOD.
 5. 5/8-11 X 1" H.H.C.S. BOLTS.
 6. 4/0 BARE COPPER GROUND CONDUCTOR TO MAIN SERVICE EQUIPMENT GROUND.
 7. 2 HOLE LUG.

4 GROUND BUS BAR DETAIL
E3.00 SCALE: NTS

BS-7185-26_ASP_BOC 07.15.26_Kaufman - JV Fresh Start Remodel

Final Audit Report

2026-06-29

Created:	2026-06-17
By:	Chalyce MacDonald (CMacDonald@co.marion.or.us)
Status:	Signed
Transaction ID:	CBJCHBCAABAADoiOG5IGqyUFEQ_nkW3Fusv-28s8ziBX

"BS-7185-26_ASP_BOC 07.15.26_Kaufman - JV Fresh Start Re model" History

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-  Signer tgoettsch@co.marion.or.us entered name at signing as Tamra Goettsch
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