



LINN BENTON COMMUNITY COLLEGE

BENTON CENTER ROOFING PROJECT

BID DOCUMENTS

PROJECT MANAGER:

Paul Chamberlin, Regional Director
HMK Company
363 State Street
Salem, OR 97301
Phone: 503-949-5569
Email: paul.chamberlin@hmkco.org

DESIGN PROFESSIONAL:

Dan Rundle, Director of Envelope Services
Certa Building Solutions
2715 SE 8th Ave., Suite 100
Portland, OR 97202
Phone: 206-941-6953
Email: drundle@certasolutions.com

CONSULTANT:

Dan Rouse, President
G2 Consultants
7312 SW Durham Road
Portland, OR 97224
Phone: 503-701-7325
Email: dan@g2ci.com

COLLEGE:

P. Sheldon Flom, Vice President Finance and
Operations
Linn Benton Community College
6500 Pacific Blvd. SW
Albany, OR 97321
Phone: 541-917-4999
Email: floms@linnbenton.edu

PROJECT:

Benton Center Roofing Project

LOCATIONS:

Linn Benton Community College
Benton Center
757 NW Polk Ave.
Corvallis, OR 97330

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**LINN BENTON COMMUNITY COLLEGE
ROOFING PROJECT
BENTON CENTER
CORVALLIS CAMPUS
Bids Due 2:00 PM, February 26, 2026**

INVITATION FOR BIDS

NOTICE IS HEREBY GIVEN that sealed bids will be accepted at **the HMK Company Salem Office**, by Paul Chamberlin, Regional Director, HMK Company, **363 State Street, Salem, OR 97301** until **2:00 PM** Local Time, **February 26, 2026** at which time and place bids will be closed. The bids will be publicly opened and read immediately after closing.

The work consists of: The Re-Roofing of the Benton Center

The following deadlines and restrictions are applicable to the project: Project start date **May 4, 2026**. Contract must meet a Substantial Completion date of **August 11, 2026**.

A **MANDATORY Pre-Bid** Meeting will be held at **Time 4:00 PM on February 12, 2026** at the **Linn Benton Community College, Benton Center located at 757 NW Polk Ave., Corvallis, OR 97330**. Representatives of the Contractors will meet with the Owner and Project Manager for review of the project specifications and then visit the site for a walk of the facility.

All bids must be submitted on the bid forms furnished to the bidders. Each bid shall be submitted in a sealed envelope and plainly marked **“LINN BENTON COMMUNITY COLLEGE – BENTON CENTER ROOFING PROJECT”** and show the name and business address of the bidder. Each bid must be accompanied by an unconditional cashier's check, certified check or surety bond of the bidder in the amount of ten percent (10%). Unsuccessful bidders will have their security refunded to them when the contract has been awarded.

Bid documents may be obtained from HMK Company web site <https://www.hmkco.org/bid-documents/>.

Any objections to or comments upon the bid specifications must be submitted in writing to the attention of Paul Chamberlin, Regional Director, HMK Company, PO Box 3223, Salem, OR 97302. To be considered, such objections or comments must be received at least SEVEN (7) calendar days before the bid closing date.

This contract is for a public work subject to ORS 279C.800 to 279C.870 (the Oregon Prevailing Wage Rate Law). **BOLI wage rates will be applicable to this project.** The wage rates are included in the bid documents which are available as noted above.

No bid for a construction contract shall be received or considered by the public contracting agency unless the bidder is licensed by the Construction Contractors Board of the State of Oregon as required by ORS 701.035 and 701.055. Each bid must identify whether the bidder is an Oregon resident bidder, as defined in ORS 279A.120.

Bidder's attention is directed to compliance with ORS 279C.370 regarding submission of the First-Tier Subcontractor Disclosure Form. If the contract amount exceeds \$100,000.00, the First-Tier Subcontractor Disclosure Form will be required and may be submitted either with the bid or within **two (2)** hours after the bid closing time and date at the bid site address. Failure to provide the First-Tier Subcontractor Disclosure Form may result in bid rejection.



LINN BENTON COMMUNITY COLLEGE
ROOFING PROJECT
BENTON CENTER
CORVALLIS CAMPUS
INVITATION FOR BID
SECTION 00 1113

The Linn Benton Community College reserves the right to reject any or all bids, to waive formalities, and to postpone the award of the contract for sixty (60) days. All bids and all prices quoted in bids shall be firm for a period of sixty (60) days after the bid closing date.

Dated this February 9, 2025

Paul Chamberlin
Regional Director, HMK Company
on behalf of Linn Benton Community College

PART 1 – GENERAL**1.1 GENERAL**

- A. The Work contemplated under this contract with the Linn Benton Community College, (also referred to as “Owner” or “the College”), includes all labor, materials, transportation, equipment and services necessary for, and reasonably incidental to, the completion of all Work in connection with the project described in the bidding documents.
- B. A brief summary of the Work to be completed for the Owner is as follows:

The project is the Re-Roofing of the Benton Center
- C. Provide Alternate Pricing as indicated in 01 2300

1.2 EXAMINATION OF SITE AND CONDITIONS

- A. Prior to submitting a bid, the bidder shall examine the facilities, and ascertain all of the physical conditions in relation thereto. The bidder shall also make a careful examination of the drawings, specifications and other contract documents and shall fully inform himself as to the quantity of materials and the sources of supply of the materials. Failure to make these precautions will not release the successful bidder from entering into a contract or excuse him from performing the Work in strict accordance with the terms of the contract.
- B. The Owner will not be responsible for any loss or any unanticipated costs that may be suffered by the successful bidder as a result of such bidder's failure to fully inform himself in advance with regard to all conditions pertaining to the Work and the character of the Work required. No statement made by any officer, agent or employee of the Owner in relation to the physical conditions pertaining to the site of the Work will be binding on the Owner.

1.3 INTERPRETATION OF CONTRACT DOCUMENTS

- A. If any person contemplating submitting a bid for the proposed contract finds discrepancies in, or omission from, or is in doubt as to the true meaning of any part of the drawings, specifications or form of contract documents, they may submit to the Architect a written request for an interpretation thereof to be received in the office of the Architect no later than **SEVEN (7) calendar days before bid, before 2:00 PM** local time. The person submitting the request will be responsible for its delivery prior to the time of closing.
- B. Any official interpretation of the drawings, specifications, and conditions of the contract or forms of contract documents will be made only by subsequent addenda issued by the Project Manager. The Owner will not be responsible for any other explanation or interpretation of the proposed documents.

1.4 SPECIFIED PRODUCTS AND SUBSTITUTIONS

- A. Bids must be based upon the use of items and manufacturers named in the specifications, or, approved equals issued by addenda during the bidding period.
Approval of equals or substitutions must not be assumed.

- B. If a prospective bidder or supplier seeks approval of a particular manufacturer's material or product other than the material, product and / or manufacturer designated in the specifications, he may submit a written request for such substitute material, product and / or manufacturer. Substitution requests are to be submitted using the Substitution Request Form included in this project manual. Substitution requests must be received in the office of the architect no later than **7 calendar days before bid, before 2:00 PM** local time. The person requesting the substitution will be responsible for delivery of the substitution request form prior to the time of closing. **Emailed Substitution Request Forms will be accepted by Paul Chamberlin, Regional Director, at paul.chamberlin@hmkco.org**
- C. Approval of substitution requests will be made only by addenda issued by the Project Manager during the bidding period. The Owner will not be responsible for any other approval of a particular manufacturer's materials.

1.5 PRE-BID MEETING

- A. A **MANDATORY Pre-Bid** Meeting will be held at Time 4:00 PM on February 12, 2026 at the **Linn Benton Community College, Benton Center located at 757 NW Polk Ave., Corvallis, OR 97330**. Representatives of the Contractors will meet with the Owner and Project Manager at the site for review of the project specifications and site walk of the facility.
- B. Contractors intending to submit proposals for this project must attend this pre-bid meeting. No other meeting will be held.

1.6 GENERAL STATUTORY PROVISIONS CONCERNING PUBLIC CONTRACTS

- A. In accordance with the provisions of Oregon Revised Statutes (ORS) 279C.530, it is agreed that the Contractor shall make prompt payment, as due, to all person supplying to the contractor labor or materials for the prosecution of the Work provided for herein, pay all contributions or amounts due the State Industrial Accident Fund from the Contractor incurred in the performance of the contract herein, not permit any lien or claims to be file or prosecuted against the Owner on account of any labor or material furnished, and to pay the State Tax Commission all sums withheld from employees pursuant to ORS 316.169, ORS 316.189 and ORS 316.167.
- B. Pursuant to ORS 279C.515, it is agreed that if the Contractor fails, neglects or refuses to make prompt payment on any claim for labor or services furnished to the Contractor by any persons in connection with this agreement as such claim becomes due, the proper officer or officers representing the Owner may pay such claim to the person furnishing the labor or service and charge the amount of the payment against the Contractor. The payment of a claim in the manner authorized in this paragraph shall not relieve the Contractor or his surety from obligation with respect to any unpaid claims.
- C. Pursuant to ORS 279C.520, it is a condition of this agreement that no person shall be employed by the Contractor for more than eight (8) hours in any one (1) day, or forty hours in any one (1) week, except in cases of necessity, emergency or where the public policy absolutely requires it, and in such cases, the person shall be paid at least time and a half pay for all overtime in excess of eight (8) hours in any one (1) day and for Work performed on Saturdays and legal holidays.

- D. Pursuant to ORS 279C.525 the Contractor shall comply with the provisions of all federal, state and local statutes, ordinances and regulations dealing with the prevention of environmental pollution and the preservation of natural resources that affect the project.
- E. Pursuant to ORS 279C.530, it is an express condition of this agreement that the Contractor shall, promptly, as due, make payment to any person, co-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, or all sums which the Contractor may or shall have deducted from their wages of his employees for such services pursuant to the terms of ORS 279B.230, and any contract entered into pursuant thereto, or collected or deducted from the wages of its employees pursuant to any law, contract or agreement for the purposes of providing or paying for such service.
- F. The hourly rate of wage to be paid by the Contractor (and incorporated in his subcontracts) shall not be less than provided in ORS 279C.800 to ORS 279C.870, and as hereinafter included in Section 00 7343-BOLI Wage Rate Requirements.
- G. Pursuant to ORS 645.001 et seq. OAR Chapter 437, Div. 3 and OAR Chapter 437-002-0320 through OAR Chapter 437-002-0325, the Contractor shall comply with the following conditions under any contract to provide the Owner with goods or services.
1. Contractors and their employees shall comply with the requirements of the above cited Laws, Rules, Policies and Regulations
 2. The Contractor shall review the Material Safety Data Sheets filed by the Owner to determine if there are any chemicals stored at the site of Work which the Contractor or any subcontractors will use, or could be exposed to in an emergency
 3. Workers shall inform the executive officer at the location where services are being performed of all hazardous chemicals which they or their subcontractors bring upon education facility property, and upon request, provide the Owner with M.S.D.S. for such chemicals
- H. Each bid shall identify whether the bidder is an Oregon resident bidder, as defined in ORS 279A.120.
- I. Pursuant to ORS 279C.830 (3), the contractor and every subcontractor must have a public works bond filed with the Construction Contractors Board before starting work on the project, unless exempt under ORS 279C.836 (4), (7), (8) or (9).

1.7 BID SECURITY

- A. No bid will be considered unless accompanied by a cashier's check or bid bond executed in favor of the Owner and associated facility for an amount equal to at least ten percent (10%) of the base bid and shall accompany the bid as evidence of good faith and as guarantee that if awarded the contract the bidder will execute the contract and provide a performance bond and payment bond as required. The successful bidder's check or bid bond will be retained until the bidder has entered into a satisfactory contract and furnished a 100% performance bond and payment bond. The

Owner reserves the right to hold the bid security as hereinafter noted.

- B. The bid bond shall be furnished by a bonding company licensed to do business in the State of Oregon.
- C. Should the successful bidder fail to execute and deliver the signed agreement and a satisfactory payment bond and performance bond within ten (10) days after the bid has been accepted by the Owner, the cashiers check or bid bond may be forfeited as liquidated damages at the option of the Owner. The date of acceptance of the bid and the award of the contract as contemplated by the contract documents shall mean the day on which the Owner takes official action in making the award.

1.8 EXECUTION OF THE BID FORM

- A. The bid form invites bids on definite drawings and specifications. Only the amounts and information asked for on the bid form furnished will be considered as the bid. Each bidder shall bid upon the Work exactly as specified and provided in the bid form. The bidder shall include in a sum to cover the cost of all items contemplated by the bidding documents.
- B. The bid form included in the project manual as Document 00 4100 is the official bid form that will be used in submitting a bid. Only the official bid form may be used in submitting a bid.
- C. All blank spaces in the official bid form shall be filled and numbers shall be stated both in writing and in figures. If the bid is made by a partnership, it shall contain the names of each partner and shall be signed in the firm name, followed by the signature of the partner signing for the firm. The address of the bidder shall be typed or printed on the bid form.
- D. Bids which are incomplete, or which are conditioned in any way, or which contain erasures or alterations may be rejected.

1.9 SUBMISSION OF BID

- A. The bid proposal shall be sealed in an opaque envelope, addressed as follows:

BID PROPOSAL
ROOFING PROJECT
BENTON CENTER
LINN BENTON COMMUNITY COLLEGE
Attn: Paul Chamberlin
363 State Street
Salem, OR 97301
- B. Bids will be received up to **2:00 pm, local time, February 26, 2026** at the address listed above.
- C. Bids shall be considered late if received any time after **2:00 PM Local time on February 26, 2026**. Any bid submitted after the scheduled closing time shall be rejected and will be returned to the bidder unopened.

- D. The First Tier Subcontractors list **MUST** be received **by 4:00 PM Local time on February 26, 2026.**
- E. The following attachments are the only items to be included with your Bid Package for the Benton Center Roofing Project.
 - 1. Attachment 1: Bid Form
 - 2. Attachment 2: Bid Bond
 - 3. Attachment 3: First Tier Subcontractors List
 - 4. Attachment 4: References
 - 5. Attachment 5: Checklist
- F. There are to be **NO** additional items included with your Bid. This checklist **MUST** be signed and dated to make your bid complete.

1.10 OPENING OF BIDS

- A. A public bid opening will be held immediately following the scheduled closing. Each and every bid received prior to the closing time will be publicly opened and read aloud irrespective of any irregularities or informalities contained in such bids.

1.11 DURATION OF BID PROPOSALS

- A. The base bid shall be irrevocable for a period of sixty (60) days from the date and time of bid opening.
- B. The base bid may be adjusted for alternate prices and / or unit prices for a period of sixty (60) days from the date and time of bid opening.

1.12 CONTRACT AND BOND

- A. Within ten (10) days after receipt of Notice of Award, any bidder to whom a contract is awarded shall execute a formal written contract and shall furnish corporate surety bonds with a surety company satisfactory to the Owner in an amount equal to the full contract sum based upon the estimated quantities of items covered by the contract for the faithful performance of said contract and all provisions thereof; provided, the formation of said contract shall not be completed and the Owner shall not be liable thereon until said formal written contract has been executed both by the successful bidder and by the Owner and a performance bond and a payment bond, properly executed has been delivered and accepted by the Owner.
- B. The cashiers check or bid bond of the bidder with whom a contract is entered into will be returned when said contract has been properly executed by the bidder and said performance and payment bond, properly executed, has been delivered to and accepted by the Owner. The cashiers check or bid bond to each bidder who was not awarded a contract will be returned promptly after the contract and bond of the successful bidder, properly executed, has been delivered to and accepted by the Owner.
- C. Any bidder to whom a contract is awarded and who shall default in executing said formal written contract or in furnishing a satisfactory performance and payment bond within the time and in the manner required by these specifications shall be liable to the

Owner for whatever damages, including expenses and attorney's fees as may be incurred by the Owner in recovering to another bidder whether by a single action or by successive actions, shall not operate to release any defaulting bidder from said liability. The parties agree that the cashiers check or bid bond amount is fair determination of the amount of damages which the Owner would incur as a result of any such failure on the part of the bidder and the full amount will be forfeited as liquidated damages and will not constitute a penalty. In the event competent tribunal finds that this amount does not properly represent an award of liquidated damages, expenses and attorney's fees incurred by the Owner as a result of the bidder's default, then the final determination of the tribunal shall be deemed to represent the damages, expenses and attorney's fees incurred by the Owner as a result of the bidder's default.

1.13 SUBSTANTIAL COMPLETION AND LIQUIDATED DAMAGES

- A. Substantial Completion shall occur at **August 11, 2026**.
- B. Should the building not be ready for occupancy by the time and date listed above, liquidated damages to be paid by the Contractor to the Owner for each calendar day of delay, shall be included in the terms of any contract awarded hereunder in lieu of a penalty. The amount of liquidated damages shall be \$1,000.00 per day.

1.14 COLLEGE PERSONNEL EXCLUDED FROM THE CONTRACT

- A. No officer, agent or employee of the College shall be permitted any interest in the contract.

1.15 RESERVATIONS

- A. The Board of Directors of College, expressly reserves the following rights:
 - 1. To reject all bids
 - 2. To waive any or all irregularities in bids submitted
 - 3. To consider the responsibility and competency of bidders in making any award
 - 4. In the event two or more bids shall be for the same amount for the same Work, to award the contract by lot or otherwise as it deems appropriate
 - 5. To award contract to one Contractor with the aggregate low bid
 - 6. To reject any bid or bids not in compliance with prescribed bidding procedures and requirements
 - 7. To reject any bid or bids not meeting the specifications set forth herein
 - 8. In the event any bidder to whom a contract is awarded shall default in executing said formal contract or in furnishing a satisfactory performance and payment bond within the time and in the manner herein before specified, to re-award the contract to another bidder.

9. To accept Alternates in any order or combination, and to determine the low Bidder on the basis of the sum of the Base Bid and Alternates accepted.

1.16 ACCEPTANCE OF CONDITIONS

- A. Each bidder by submission of a bid assents to each and every term and condition set forth anywhere in these contract documents and agrees to be bound thereby.

1.17 INTERPRETATION UPON CONTRACT DOCUMENTS

- A. Only the Board of Directors of the College as represented by the Project Manager has authority to place any interpretation upon the foregoing or annexed contract documents. Any interpretation, either verbal or written, attempted to be placed thereon by any other person will not be binding upon the Owner.

1.18 EQUAL EMPLOYMENT

- A. All bidders shall comply with the Provision of Executive Order 1246 (30 F.R. 12319-25) regarding Equal Employment Opportunity.
- B. All contractors and subcontractors working on college property must comply with the institution's Title 9 policies, which prohibit discrimination, harassment, and sexual misconduct. Any violations or incidents must be reported to the College's Title IX coordinator, and the College reserves the right to remove any individual from campus for behavior inconsistent with these standards. Misconduct may include, for example, unwelcome comments of a sexual nature directed at students or staff, such as repeated remarks about someone's appearance or inappropriate jokes.

1.19 IMMIGRATION REFORM AND CONTROL ACT

- A. All bidders shall comply with the provisions of the Immigration Reform and Control Act of 1986 regarding the verification of employment eligibility.

1.20 REFERENCES REQUIREMENTS

- A. All bidders shall provide a list of three different project references for projects that the Contractor worked on within the last three years of comparable size and scope. **References must be submitted with the Bid From.**
- B. Bidders shall use their own form to supply their list of references. The list of project references shall include the following information:
1. Name of the Project
 2. Project description
 3. Project location
 4. Project date
 5. Dollar value of the Project

6. Name of the project contact person
7. Telephone number for contact person
8. Email for contact person
- C. The references will be checked to determine if they are supportive of the bidder's ability to meet the requirements of this ITB.
- D. The bidder must provide references that can be contacted regarding the quality of workmanship, level of service provided, timeliness of completion, and adherence to specifications.
- E. The Owner reserves the right to choose and investigate any reference whether or not furnished by the bidder, and to investigate past performance of any bidder with respect to its successful performance on similar projects, its completion or delivery of service on schedule, and its lawful payment of suppliers, Subcontractors, and employees.
- F. The Owner may postpone the award or execution of the Contract after the announcement of the apparent successful Contractor in order to complete its investigation. The Owner may reject a bid if, in the opinion of the Owner the overall reference responses indicate inadequate performance of the Contractor.
- G. The Owner representative will make three attempts to contact the references from the list provided by the Contractor. If the reference is not contacted after three attempts that reference will be removed from the list and the bid rejected as non-responsive.
- H. Each reference contacted shall be asked the same questions, including but not limited to: (1) quality of service; (2) delivery; (3) responsiveness to reported problems, including orders and billing; (4) how well the Contractor met the terms of the contract; and (5) whether or not the reference would choose to hire the Contractor again.

1.21 CRIMINAL HISTORY CHECK / PHOTO ID – NOT USED**1.22 TOBACCO FREE EDUCATION FACILITY**

- A. All bidders shall comply with OAR 581.021.0110 and ORS 326.051 regarding Tobacco Use on Public Grounds.
- B. For the purpose of this document “tobacco” is defined to include any lighted or unlighted cigarette, cigar, pipe, clove cigarette, and any other smoking product, spit tobacco, also known as smokeless, dip, chew, snuff, in any form, nicotine or nicotine delivering devices, chemicals or devices that produce the physical effect of nicotine substances or any other tobacco substitute (e.g., e-cigarettes). This does not include FDA approved nicotine replacement therapy products used for the purpose of cessation.
- C. No employee, sub-contractor, material supplier, or project visitor is permitted to smoke, inhale, dip, or chew or sell tobacco at any time, including non-education hours.
 1. In any building, facility; or

2. On education facility grounds, athletic grounds, or parking lots.

END OF SECTION



DATE: _____

LEGAL NAME OF BIDDER: _____

To: Linn Benton Community College
Board of Directors;
6500 Pacific Blvd. SW
Albany, OR 97321

The Undersigned, having examined the Contract Documents, including the Bidding and Contract Requirements, the General Requirements, the Technical Specifications entitled:

LBBC- Benton Center Roofing Project

As prepared by Certa Building Solutions, G2 Consultants, and Linn Benton Community College, as well as the premises and conditions affecting the Work, hereby proposes and agrees to perform, within the time stipulated, the Work, including all its component parts, and everything required to be performed, and to provide and furnish all labor, material, tools, expendable equipment, transportation and all other services required to perform the Work and complete in a workmanlike manner ready for use, all as required by and in strict accordance with the Contract Documents for the sums computed as follows:

BASE BIDS:

Project: Benton Center Roofing Project

_____ DOLLARS \$

which lump sums are hereby designated as BASE BIDS,

ALTERNATES

Provide all labor and materials necessary for the provisions of these alternate prices as referenced in 01 2300

Alternate 1: _____ Dollars \$

Description: North Roof Re-Coating
Contractor shall provide an alternate for the application of a liquid-applied roof Restoration overcoat at the North Roof zone currently provided with an in-service, single-ply thermoplastic membrane.

Provide Garland LiquiTec restoration system. Refer to Specification Section 07 5600 FLUID APPLIED RESTORATIVE RESTORATION - ALTERNATE 1.

Alternate 2: _____ Dollars \$

Description: Thermoplastic Membrane Roofing – Adhered
Contractor shall provide an alternate for adhered PVC in lieu of the basis-of-design SBS roofing system.



Provide Sika Sarnafil G410 60-mil felt-backed PVC. Refer to Specification Section 07 5400 THERMOPLASTIC MEMBRANE ROOFING - ADHERED

Alternate 3: _____ Dollars \$ _____

Description: Thermoplastic Membrane Roofing – Induction Welded
Contractor shall provide an alternate for induction-welded PVC in lieu of the basis-of-design SBS roofing system.

Provide Sika Sikaplan 60 mil PVC. Refer to Specification Section 07 5400 THERMOPLASTIC MEMBRANE ROOFING - INDUCTION WELDED.

TIME OF COMPLETION

The Undersigned agrees if awarded the Contract to complete all the Work in an acceptable manner in conformance with the Contract Documents and within the time specified.

ADDITIONAL REQUIREMENTS

1. The Undersigned agrees that the enclosed Bid Guarantee (bid bond, certified or cashier's check) in the amount of ten percent (10%) of the Basic Bid sum made payable to the Owner, shall be kept in escrow with the Owner; that its amount shall be a measure of liquidated damages the Owner will sustain by failure of the Undersigned to execute agreement and furnish bond, and that if the Undersigned fails to deliver the prescribed bond within ten (10) calendar days after receipt of the written notice of award, then the Bid Guarantee shall become the property of the Owner.
2. Should this proposal not be accepted within sixty (60) calendar days after the date and time of bid opening, or if the Undersigned executes Agreement and delivers bond, the Bid Guarantee shall be returned.
3. Contractor's State of Oregon Contractors' License Registration Number.

4. Receipt of Addenda numbered _____ is hereby acknowledged.
5. The undersigned certifies that the Bidder is a _____ Bidder as defined in ORS 279A.120. ("Resident" or "Non-Resident", to be filled in by Bidder)
6. References are to be submitted with Bid Form as per Section 00 2113, 1.20.

SIGNATURES

Legal Name of Bidder's Firm

By: _____ Title: _____

Address: _____ Telephone: _____

Email: _____



LINN BENTON COMMUNITY COLLEGE
ROOFING PROJECT
BENTON CENTER
CORVALLIS CAMPUS
FORM OF PROPOSAL
SECTION 00 4100

State of Incorporation, if Corporation: _____

Names of Partners, if Partnership:

Signed By _____

Printed Name of Bidder / Firm



LINN BENTON COMMUNITY COLLEGE
ROOFING PROJECT
BENTON CENTER
CORVALLIS CAMPUS
BID FORM CHECK LIST
SECTION 00 4110

Company Name: _____

The following attachments are the only items to be included with your Bid Package for the Linn Benton Community College Roofing Project at the Benton Center. All items need to be submitted individually. There are to be **NO** additional items included with your Bid. This checklist **MUST** be signed and dated to make your bid complete. **All Bids are to be submitted in sealed envelope to Paul Chamberlin, Regional Director, HMK Salem Office, located at 363 State Street, Salem, OR 97301 by 2:00 PM Local Time, February 26, 2026**

Attachment 1: Bid Form _____

Attachment 2: Bid Bond _____

Attachment 3: First Tier Sub Contractors List _____

Attachment 4: Reference's _____

Attachment 5: Checklist _____

Signature: _____

Date: _____



Bids which are submitted by Bid Closing, but for which a required disclosure submittal has not been made by the specified Disclosure Deadline, are not responsive and shall not be considered for Contract award.

AGENCY SUPPLIED INFORMATION:

PROJECT NAME: **Benton Center Roofing Project**

BID #: N/A BID CLOSING: Date: **February 26, 2026** Time: **2:00 PM**

REQUIRED DISCLOSURE DEADLINE: Date: **February 26, 2026** Time: **4:00 PM**

Deliver Form To (Agency): HMK Company Salem Office

Designated Recipient (Person): Paul Chamberlin, Regional Director

Agency's Address: 363 State Street
Salem, OR 97301

INSTRUCTIONS:

The contracting agency will insert "N/A" below if the contract value is not anticipated to exceed \$100,000. Otherwise, this form must be submitted either with the bid or within **TWO (2)** working hours after the advertised bid closing date and time;

FAILURE TO SUBMIT THIS FORM BY THE DISCLOSURE DEADLINE WILL RESULT IN A NON-RESPONSIVE BID. A NON-RESPONSIVE BID WILL NOT BE CONSIDERED FOR AWARD.

It is the responsibility of bidders to submit this disclosure form and any additional sheets, with the bid number and project name clearly marked, and must be submitted at the location specified in the Invitation to Bid on the advertised bid closing date and within two (2) working hours after the advertised bid closing time at the location indicated by the specified disclosure deadline. See "Instructions to Bidders".

List below the name of each subcontractor that will be furnishing labor or materials and that is required to be disclosed, the category of work that the subcontractor will be performing and the dollar value of the subcontract. Enter "NONE" if there are no subcontractors that need to be disclosed. (ATTACH ADDITIONAL SHEETS IF NEEDED).

BIDDER DISCLOSURE:

SUBCONTRACTOR NAME	DOLLAR VALUE	CATEGORY OF WORK
1)		
2)		
3)		
4)		
5)		
6)		



LINN BENTON COMMUNITY COLLEGE
ROOFING PROJECT
BENTON CENTER
CORVALLIS CAMPUS
FIRST-TIER SUBCONTRACTOR DISCLOSURE FORM
SECTION 00 4339

7)		
8)		
9)		
10)		
11)		
12)		
13)		
14)		
15)		
16)		

The above listed first-tier subcontractor(s) are providing labor, or labor and material, with a Dollar Value equal to or greater than:

a) Five percent (5%) of the total Contract Price, but at least \$15,000. (If the Dollar Value is less than \$15,000, do not list the subcontractor above);

or

b) \$350,000 regardless of the percentage of the total Contract Price.

Form Submitted By (Bidder Name): _____

Contact Name: _____

Phone #: _____

Email: _____

END OF SECTION



LINN BENTON COMMUNITY COLLEGE
ROOFING PROJECT
BENTON CENTER
CORVALLIS CAMPUS
AGREEMENT FOR STIPULATED SUM
SECTION 00 5000

AGREEMENT made as of the ____ day of _____, 2026, between **LINN BENTON COMMUNITY COLLEGE** (hereinafter "the Owner") and _____, (hereinafter "the Contractor").

The Project is: Benton Center Roofing Project
Corvallis Campus

The Owner is: Linn Benton Community College
P. Sheldon Flom, Vice President Finance and Operations
6500 Pacific Blvd. SW
Albany, OR 97321

The Consultant is: Certa Building Solutions
Dan Rundle, Director of Envelope Services
2715 SE 8th Ave., Suite 100
Portland, OR 97202

The Consultant is: G2 Consultants
Dan Rouse, President
7312 SW Durham Road
Portland, OR 97224

The Contractor is: **To Be Determined**

The Owner and Contractor agree as follows:

ARTICLE 1 THE CONTRACT DOCUMENTS

The Contract Documents consist of this Agreement, the General Conditions of the Contract, any Supplementary, or other Conditions, Drawings, Specifications, Addenda issued prior to execution of this Agreement, other documents listed in this Agreement and Modifications issued after execution of this Agreement; these form the Contract, and are incorporated by this reference herein. The Contract represents the entire and integrated agreement between the parties and supersedes prior negotiations, representations or agreements, either written or oral. An enumeration of the Contract Documents, other than Modifications, appears in Article 8.

ARTICLE 2 THE WORK OF THIS CONTRACT

The Contractor shall fully execute the Work described in the Contract Documents, including such construction activity as is reasonably inferable from the Contract Documents as necessary to produce the results intended by the Contract Documents, except to the extent specifically indicated in the Contract Documents to be the responsibility of others.

ARTICLE 3 DATE OF COMMENCEMENT AND SUBSTANTIAL COMPLETION

3.1 The date of commencement of the Work shall be the date of the date to be fixed in a notice to proceed issued by the Owner, which shall be issued no less than two (2) days prior to the date of commencement.

3.2 The Contract Time shall be measured from the date of commencement.

3.3 The Contractor shall continuously and diligently prosecute the Work and shall achieve Substantial Completion of the entire Work not later than **August 11, 2026**, subject to approved adjustments of this Contract Time as provided in the Contract Documents.

3.4. If the Contractor fails to achieve Substantial Completion of the Work within the Contract Time and as otherwise required by the Contract Documents, the Owner shall be entitled to recover from the Contractor

as liquidated damages and not as a penalty \$1,000.00 per day which shall commence on the first day following the expiration of the Contract Time and continuing until the date of Substantial Completion. Such liquidated damages are hereby agreed to be a reasonable estimate of the damages the Owner will incur as a result of delay in the completion of the Work. The Owner may deduct any accrued liquidated damages from any unpaid amount due or to become due to the Contractor. Any Liquidated damages not so deducted shall be paid to the Owner upon demand together with interest as provided by Oregon law.

ARTICLE 4 CONTRACT SUM

4.1 The Owner shall pay the Contractor the Contract Sum in current funds for the Contractor's proper and timely performance of the Contract and full and final completion of the Work. The Contract Sum shall be _____ **DOLLARS AND 00/100 (\$_____)**. This sum includes all general conditions, profit, overhead and all other amounts due or to become due to the Contractor for the proper and timely performance of the Contract and full and final completion of the Work. The Contract sum is subject to authorized additions and deductions as provided in the Contract Documents.

4.2 PERMITS, FEES AND NOTICES

4.2.1 The Contractor shall secure and pay for:

- .1** All pertinent specialty permits. (The owner is securing and paying for the plan review, building permit, and system development fees.)

4.2.2 The Contractor will be responsible for any renewals of and penalties arising from the building permit and from all other permits and governmental or utility fees. The Contractor shall secure and pay for all other permits and governmental fees, licenses and inspections necessary for proper execution and completion of the Work which are customarily secured after execution of the Contract and which are legally required when bids are received or negotiations concluded, including without limitation electrical, sewer, water, and plumbing permits and fees.

4.3 The Contract Sum is based upon the following alternates, if any, which are described in the Contract Documents and are hereby accepted by the Owner:

4.4 Unit prices, if any, are as follows: See Section 00 4100, Bid Form

ARTICLE 5 PAYMENTS

5.1 PROGRESS PAYMENTS

5.1.1 Based upon Applications for Payment which include all the necessary supporting documentation is received by the Owners Delegated Representative, and Owner not later than the first day of the month, and Certificates for Payment are issued by the Owners Delegated Representative, the Owner shall make progress payments on account of the Contract Sum to the Contractor as provided below and elsewhere in the Contract Documents.

5.1.2 The period covered by each Application for Payment shall be one calendar month ending on the last day of the month, or as follows:

5.1.3 Provided that an Application for Payment and all supporting documentation, including all full and unconditional lien waivers related to the Work for which payment is requested is received by the Owners Delegated Representative and Owner not later than the first day of a month, the Owner shall make payment

to the Contractor not later than the last day following the Owners Delegated Representative's approval. If an Application for Payment is received by the Owners Delegated Representative after the application date fixed above, payment shall be as set forth below.

5.1.4 Each Application for Payment shall be based on the most recent schedule of values submitted by the Contractor in accordance with the Contract Documents. The schedule of values shall allocate the entire Contract Sum among the various portions of the Work. The schedule of values shall be prepared in such form and supported by such data to substantiate its accuracy as the Owners Delegated Representative and any Lender may require. This schedule, unless objected to by the Owners Delegated Representative, shall be used as a basis for reviewing the Contractor's Applications for Payment, provided, however, in no instance shall the schedule of values ever exceed the reasonable value of the Work performed.

5.1.5 Applications for Payment shall indicate the percentage of completion of each portion of the Work as of the end of the period covered by the Application for Payment.

5.1.6 Unless otherwise provided in the Owner's agreement with any Lender, and subject to other provisions of the Contract Documents, the amount of each progress payment shall be computed as follows:

- .1** Take that portion of the Contract Sum properly allocable to completed Work as determined by multiplying the percentage completion of each portion of the Work by the share of the Contract Sum allocated to that portion of the Work in the schedule of values, less retainage of Five percent (5%). Pending final determination of cost to the Owner of changes in the Work, amounts not in dispute shall be included as provided in Subparagraph 7.3.8 of the General Conditions, or as modified by the parties;
- .2** Add that portion of the Contract Sum 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, suitably stored off the site at a location agreed upon in writing), less retainage of five percent (5%);
- .3** Subtract the aggregate of 9.5 previous Payments made by the Owner; and
- .4** Subtract amounts, if any, for which the Owners Delegated Representative has withheld or nullified a Certificate for Payment as provided in Paragraph 9.5 of the General Conditions.

or as modified by the parties.

5.1.7 The progress payment amount determined in accordance with Subparagraph 5.1.6 shall be further modified under the following circumstances:

- .1** Add, upon Substantial Completion of the Work, a sum sufficient to increase the total payments to the full amount of the Contract Sum, less such amounts as the Owners Delegated Representative, any Lender or the Owner shall determine for incomplete Work, retainage applicable to such Work and unsettled claims;

- .2** Add, if final completion of the Work is thereafter materially delayed through no fault of the Contractor, any additional amounts payable in accordance with Subparagraph 9.10.3 of the General Conditions.

5.1.8 Reduction or limitation of retainage, if any, shall be as follows:

5.1.9 Except with the Owner's prior written approval, the Contractor shall not make advance payments to suppliers for materials or equipment which have not been delivered and stored at the site.

5.1.10 Contractor shall:

- .1** Make payment promptly, as and when due, to all persons supplying to labor, materials, equipment or services;
- .2** Pay all contributions or amounts due the Industrial Accident Fund from Contractor or any Subcontractor incurred in the performance of the Work;
- .3** Not permit any lien or claim to be filed or prosecuted against the Owner, on account of any labor, materials, equipment or services furnished, supplied or provided;
- .4** Pay to the Department of Revenue all sums withheld from employees pursuant to ORS 316.167;
- .5** Demonstrate that an employee drug testing program as set forth herein is in place for Contractor and all Subcontractors pursuant to ORS 279C.505;
- .6** To the extent that any demolition is included as a part of the Work, salvage or recycle construction and demolition debris, if feasible and cost-effective;
- .7** To the extent that any lawn or landscape maintenance is included as a part of the Work, compost or mulch yard waste material at an approved site, if feasible and cost-effective.

5.1.11 If the Contractor fails, neglects or refuses to make prompt payment of any claim for labor or services furnished to the Contractor or any Subcontractor by any person in connection with the Work as such claim becomes due, the proper officer or officers representing the Owner may pay such claim to the person furnishing the labor or services and charge the amount of the payment against funds due or to become due the Contractor by reason of this Agreement.

5.1.12 If the Contractor or a first-tier Subcontractor fails, neglects or refuses to make payment to a person furnishing labor or materials in connection with the Work within 30 days after receipt of payment from the Owner or the Contractor, the Contractor or first-tier Subcontractor shall owe the person the amount due plus interest charges commencing at the end of the 10-day period that payment is due under ORS 279C.505 and 279C.580 and ending upon final payment, unless payment is subject to a good faith dispute as defined in ORS 279C.505 and 279C.580. The rate of interest charged to the Contractor or first-tier Subcontractor on the amount due 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 30 days after the date when payment was received from the Owner or from the Contractor, but the rate of interest shall not exceed 30 percent. The amount of interest may not be waived.

5.1.13 If the Contractor or a Subcontractor fails neglects or refuses to make payment to a person furnishing labor or materials in connection with the Work, 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.505 and 279C.580.

5.1.14 The payment of a claim in the manner authorized in this Agreement shall not relieve the Contractor or the Contractor's surety from obligation with respect to any unpaid claims.

5.1.15 No person shall be employed by the Contractor or any Subcontractors, which are subject to the statutory limitations of Oregon law for more than ten (10) hours in any one (1) day, or 40 hours in any one (1) week, except in cases of necessity, emergency, or where the public policy absolutely requires it, and in such cases, the employee shall be paid at least time and a half pay:

- .1** For all overtime in excess of eight (8) hours a day or 40 hours in any one (1) week when the work week is five (5) consecutive days, Monday through Friday; or
- .2** For all overtime in excess of ten (10) hours a day or 40 hours in any one (1) week when the work week is four (4) consecutive days, Monday through Friday; and
- .3** For all Work performed on Saturday and on any legal holiday specified in ORS 279.334.

5.1.16 The Contractor shall give notice to employees in writing, either at the time of hire or before commencement of Work on the Project, or by posting a notice in a location frequented by employees, of the number of hours per day and days per week that the employees may be required to work. The Contractor shall include an identical provision in its subcontracts and require all Subcontractors, of any tier, to include an identical provision in all subcontracts.

5.1.17 The Contractor shall promptly, as and when due, make payment to any person, co-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 the Contractor, of all sums which the Contractor agrees to pay for such services and all moneys and sums which Contractor collected or deducted from the wages of employees pursuant to any law, contract or agreement for the purpose of providing or paying for such service.

5.1.18 Every Subcontractor will comply with ORS 656.017, unless it is an exempt employer under ORS 656.126.

5.1.19 The Contractor is not a contributing member to the Public Employees' Retirement System and will be responsible for any and all federal, state and local taxes applicable to payments received under this Agreement. The 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.

5.1.20 The hourly rate of wage to be paid by the Contractor or every Subcontractor subject to prevailing wage rates to workers, shall be not less than the prevailing rate of wage for an hour's work in the same trade or occupation in the locality where such labor is performed.

5.1.21 The Contractor and every Subcontractor subject to prevailing wage rates to employees shall keep the prevailing wage rates for that project posted in a conspicuous and accessible place in or about the project.

5.1.22 The Contractor and every Subcontractor subject to prevailing wage rates to employees and shall also provide for or contribute to a health and welfare plan or a pension plan, or both, for its employees on the Project and shall post notice describing such plans in a conspicuous and accessible place in or about

the Project. The notice preferably shall be posted in the same place as the notice required under 5.1.16. In addition to the description of the plans, the notice shall contain information on how and where to make claims and where to obtain further information.

5.1.23 The Contractor represents and agrees that the specifications contain a sufficient provision stating the existing prevailing rate of wage which must be paid to workers in each trade or occupation required for

such public work employed in the performance of the Work either by the Contractor or any Subcontractor or other person doing or contracting to do the whole or any part of the Work contemplated by the contract. Such workers shall be paid not less than such specified minimum hourly rate of wage.

5.1.24 The Owner represents and agrees that the specifications contain a sufficient provision stating that a fee is required to be paid to the Commissioner of the Bureau of Labor and Industries as provided in ORS 279C.825. The fee shall be paid to the commissioner pursuant to the administrative rule of the commissioner.

5.1.25 The Contractor or the Contractor's surety and every Subcontractor or Subcontractor's surety subject to prevailing wage rates shall file certified statements with the Owner in writing in the form prescribed by the Commissioner of the Bureau of Labor and Industries, certifying the hourly rate of wage paid each worker which Contractor or the Subcontractor has employed upon such public work, and further certifying that no worker employed upon such public work 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 Contractor or the Contractor's surety or Subcontractor or the Subcontractor's surety that the Contractor or Subcontractor has read such statement and certificate and knows the contents thereof and that the same is true to the Contractor's or subcontractor's knowledge. 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. Each certified statement required shall be delivered or mailed by Contractor or the Subcontractor to the public contracting agency. Certified statements for each week, during which the Contractor or the Subcontractor employs a worker upon the Project shall be submitted once a month, by the fifth (5th) business day of the following month.

5.1.26 The Contractor or Subcontractor shall preserve the certified statements for a period of three (3) years from the date of completion of the contract.

5.1.27 Per ORS 279C.855, the Contractor represents and agrees that the Owner has fully and timely included a provision in the Contract Documents that the Contractor and any Subcontractor shall comply with ORS 279C.840 in the invitation for bids, the request for bids, the contract specifications, the accepted bid or elsewhere in the Contract Documents and that the Owner has no liability for unpaid minimum wages.

5.1.28 Owner shall make progress payments on the contract monthly as Work progresses. Payments shall be based upon estimates of Work completed that are approved by the Owner. A progress payment shall not be considered acceptance or approval of any Work or waiver of any defects therein. In instances when an invoice is filled out incorrectly, or when there is any defect or impropriety in any submitted invoice or when there is a good faith dispute, the Owner shall so notify the Contractor within 15 days stating the reason or reasons the invoice is defective or improper or the reasons for the dispute. A defective or improper invoice, if corrected by the Contractor within seven days of being notified by the Owner, shall not cause a payment to be made later than specified in this section.

5.1.29 If requested in writing by a first-tier Subcontractor, Contractor, within ten (10) calendar days after receiving the request, shall send to the first-tier Subcontractor a copy of that portion of any invoice, request

for payment submitted to the Owner or pay document provided by the Owner to the Contractor specifically related to any labor or materials supplied by the first-tier Subcontractor.

5.1.30 Payment of interest may be postponed when payment on the principal is delayed because of disagreement between Owner and Contractor.

5.1.31 The Owner may reserve as retainage from any progress payment an amount not to exceed five percent of the payment. As Work progresses, the Owner may in its sole discretion reduce the amount of the retainage and the Owner may in its sole discretion eliminate retainage on any remaining monthly contract payments after 50 percent of the Work under the contract is completed if, in the Owner's sole 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 the Contractor's surety; except that when the contract 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 a written application by the Contractor, the Owner shall respond in writing within a reasonable time.

5.1.32 The retainage held by the Owner shall be included in and paid to the Contractor as part of the final payment of the contract price. The Contractor shall notify the Owner in writing when the Contractor considers the Work complete and the Owner shall, within 15 days after receiving the written notice, either accept the Work or notify the Contractor of Work yet to be performed on the contract.

5.1.33 The Contractor shall not request payment from the Owner of any amount withheld or retained in accordance herewith.

5.1.34 Such time as the Contractor has determined and certified to the Owner that the Subcontractor is entitled to the payment of such amount. A dispute between the Contractor and a first-tier Subcontractor relating to the amount or entitlement of a first-tier Subcontractor to a payment or a late payment interest penalty under a clause included in the subcontract pursuant to the terms hereof does not constitute a dispute to which the Owner is a party. The Owner shall not be included as a party in any administrative or judicial proceeding involving such a dispute. The Contractor shall include in each subcontract for property or services entered into by the Contractor and a first-tier Subcontractor, including a material supplier, for the purpose of performing a construction contract:

- .1** A payment clause that obligates the Contractor to pay the first-tier Subcontractor for satisfactory performance under its subcontract within ten (10) days out of such amounts as are paid to the Contractor by the Owner under such contract; and
- .2** An interest penalty clause that obligates the Contractor, if payment is not made within 30 days after receipt of payment from the Owner, to pay to the first-tier Subcontractor an interest penalty on amounts due in the case of each payment not made in accordance with the payment clause included in the subcontract pursuant to subparagraph .1 of this 5.1.34. The Contractor or first-tier Subcontractor shall not be 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 the Owner or the Contractor when payment was due. The interest penalty shall be:
 - (A)** For the period beginning on the day after the required payment date and ending on the date on which payment of the amount due is made; and
 - (B)** Computed at the rate specified in ORS 279C.515(2).

5.1.35 The Contractor shall include in each of its subcontracts, for the purpose of performance of such contract condition, a provision requiring the first-tier Subcontractor to include a payment clause and an interest penalty clause conforming to the standards of 5.1.33 in each of its subcontracts and to require each of its Subcontractors to include such clauses in their subcontracts with each lower-tier Subcontractor or supplier.

5.1.36 If the Contractor is an employer, the Contractor is a subject employer under Oregon's Workers' Compensation Law and shall comply with ORS 656.017 and shall provide Workers' Compensation coverage for all their "subject workers" as defined in ORS Chapter 656.

5.1.37 The Contractor and all Subcontractors subject to licensing with the Oregon Construction Contractors Board shall be duly licensed therewith at the time they bid any Work, enter into any contract to perform any Work, perform any Work and at all times under which any warranty or repair obligation applies. The Contractor and all Subcontractors performing any Work which requires any other governmental licensing, such as those with the Elevator and Electrical Board, Plumbing Board or Landscape Contractors Board, shall be duly licensed with all appropriate governmental agencies at the time they bid any Work, enter into any contract to perform any Work, perform any Work and at all times under which any warranty or repair obligation applies.

5.1.38 If federal funds are involved, federal laws, rules and regulations applicable to the grant shall govern in the event they conflict with any provision of this Agreement or other required by law. The Contractor certifies that it is not currently employed by the federal government. This provision does not preclude the Contractor from holding another contract with the federal government.

5.1.39 The Contractor shall timely provide the Owner its name, address, social security, federal employee identification number and such other information as the Department of Revenue may require or request.

5.1.40 The Contractor shall comply and require all Subcontractors to comply with the applicable requirements of all laws, codes, ordinances, regulations and statutes, including but not limited to those in ORS Chapters 279A, B and C. To the extent that ORS Chapters 279A, B and C, or any other law, code, ordinance or regulations, requires any tender or condition to be included in this Agreement, such tender or condition is hereby incorporated by this reference. Nothing contained herein shall be construed so as to require the commission of any act contrary to law, code, rule, statute, ordinance or regulation, and wherever there is any conflict between any provisions contained herein and any statute, law, code, ordinance, rule or regulation the provision of this Agreement which is affected shall be curtailed and limited only to the extent necessary to bring it within the requirements of the law, code, rule, statute, ordinance or regulation.

5.1.41 If the Contractor is a foreign Contractor and the contract price exceeds \$10,000, the Contractor shall promptly report to the Department of Revenue on forms to be provided by the Department of Revenue the total contract price, terms of payment, length of contract and such other information as the Department of Revenue may require before final payment can be received on the public contract. For purposes of this A.3 I, a foreign Contractor is one who is not domiciled in or registered to do business in the State of Oregon.

5.1.42 The Contractor represents and agrees that the bid documents make sufficient specific reference to federal, state and local agencies that have enacted ordinances or regulations dealing with the prevention of environmental pollution and the preservation of natural resources that affect the performance of the contract and have allocated all known environmental and natural resource risks to the Contractor by listing such environmental and natural resource risks with specificity in the bid documents.

5.1.43 The Contractor shall not discriminate against minority, women or emerging small business enterprises in the awarding of subcontracts. The Contractor shall certify that the Contractor has not and will

not discriminate against minority, women, or emerging small business enterprises in obtaining any required subcontracts.

5.1.44 The Contractor shall use recyclable products to the maximum extent economically feasible in the performance of the Contract Work set forth in this document.

5.1.45 As referenced herein, an employee drug testing policy shall be as follows:

- .1** The Contractor or Subcontractor shall have 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:
 - (A)** A written employee drug testing policy;
 - (B)** 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
 - (C)** Required testing of a Subject Employee when the Contractor or Subcontractor 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.

- .2** The Contractor shall require each Subcontractor providing labor for the Project to:
 - (A)** 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
 - (B)** Require that the Subcontractor's Subject Employees participate in Contractor's Qualifying Employee Drug Testing Program for the duration of the subcontract.

5.2 FINAL PAYMENT

5.2.1 Final payment, constituting the entire unpaid balance of the Contract Sum, shall be made by the Owner to the Contractor when:

- .1** A final Certificate for Payment has been issued by the Owners Delegated Representative.

5.2.2 The Owner's final payment to the Contractor shall be made no later than 30 days after the issuance of the Owners Delegated Representative's final Certificate for Payment.

ARTICLE 6 TERMINATION OR SUSPENSION

6.1 The Contract may be terminated by the Owner or the Contractor as provided in Article 14 of the General Conditions.

6.2 The Work may be suspended by the Owner as provided in Article 14 of the General Conditions.

6.3 The Owner shall, in addition to the Right to Stop the Work, have the right to require that the Contractor replace or remove construction personnel assigned to the Work, if, in the Owner's sole determination, specific construction personnel are impairing or impeding the prosecution of the Work.

ARTICLE 7 MISCELLANEOUS PROVISIONS

7.1 Where reference is made in this Agreement to a provision of the General Conditions or another Contract Document, the reference refers to that provision as amended or supplemented by other provisions of the Contract Documents.

7.2 Payments due and unpaid under the Contract shall bear interest from the date payment is due at the rate stated below, or in the absence thereof, at the legal rate prevailing from time to time at the place where the Project is located.

7.3 The Owner's representative is: Paul Chamberlin, Regional Director, HMK Company. The Owner may change this representative at any time.

7.4 The Contractor's Representative is: Name, Title, Company.

7.5 Neither the Owner's nor the Contractor's Representative shall be changed without ten (10) days written notice to the other party.

7.6 CONTRACTOR'S CONSTRUCTION SCHEDULES

7.6.1 Within ten (10) days after issuance of the Notice to Proceed, the Contractor shall submit a preliminary schedule of the Work. Within 30 days after issuance of the Notice to Proceed, and before any progress payment need be made, the Contractor, after consultations with its Subcontractors and Suppliers of any tier, shall submit six copies of a Contractor's Construction Schedule to the Owners Delegated Representative and one copy to the Owner. Not less than ten percent of the Progress Payment may be withheld until a Contractor's Construction Schedule in a form satisfactory to the Owners Delegated Representative and Owner has been submitted. Neither the Owner nor the Owners Delegated Representative will review the substance of the Contractor's Construction Schedule.

7.6.2 The Contractor's Construction Schedule shall be based upon a critical path method ("CPM") analysis of construction activities and sequence of operations needed for the orderly performance and completion of all separable parts of the Work in accordance with the Contract and within the Contract Time. The schedule shall be a critical path method type in the form of a precedence diagram and activity listing and shall be time-scaled. It shall include the Notice to Proceed date, the Date(s) of Substantial Completion, and the Date(s) of Final Completion in accordance with the Contract Documents. The Critical Path shall be clearly indicated on the Contractor's Construction Schedule. No more than 20% of the progress activities shall be on the critical path, and no more than 30% shall have less than five days of float. The value of any single activity shall not exceed \$50,000, except that 5% of the total activities may exceed this limit without prior approval. The time-scaled network diagram shall be summarized on a single sheet not to exceed 11"x 17".

7.6.2.1 The network diagram shall show in detail and in order the sequence of all significant activities, their descriptions, start and finish dates, durations and dependencies, necessary to complete all Work and any separable parts thereof. The activity listing shall show the following information for each activity on the network diagram:

.1 Description;

-
- .2 Duration (not to exceed fifteen working days);
 - .3 Craft;
 - .4 Equipment (including hours of usage);
 - .5 Start and finish dates;
 - .6 Total float time and free float time;
 - .7 Dates that work must be performed and completed by other Contractors or Subcontractors to support the Work and the interfaces with such other Contractors; and
 - .8 Cost-loading, correlated to the Schedule of Values, which, upon approval, shall be used as a basis for determining action on progress payments throughout the Project.

7.6.2.2 A schedule for the purchase and receipt of items required for performance of the Work, showing lead times between purchase order placement and delivery dates, shall be integrated with the Contractor's Construction Schedule. The Contractor shall furnish the Owners Delegated Representative with copies of all purchase orders and acknowledgments and fabrication, production, and shipping schedules for all major items on the critical path within ten days of the Contractor's receipt of each purchase order, acknowledgment or schedule. Neither the Owners Delegated Representative nor the Owner shall be deemed to have approved or accepted any such material, or its schedule, nor deemed to have waived this requirement if some or all of the material is not received.

7.6.2.3 Milestone completion dates shall be clearly defined on the Contractor's Construction Schedule.

7.6.2.4 If abbreviations are used in the Contractor's Construction Schedule, a legend shall be provided to define all abbreviations.

7.6.2.5 The Contractor shall prepare and keep current a schedule of submittals, coordinated with the Contractor's Construction Schedule, which allows the Owners Delegated Representative at least ten (10) days to review the submittals.

7.6.2.6 The Progress Schedules shall be submitted as both a paper copy and in electronic format using the latest version of Microsoft Project. The Contractor may request to use different project management software, such as, Suretrak, but must first receive approval from the Owner, by demonstrating its capabilities. This can be accomplished by submitting a sample CPM printout of similar scope. If the alternative software is accepted, the Contractor will be required to supply the Owner an authorized copy of the software with all user support manuals.

7.6.2.7 At each monthly meeting with the Owner, the Contractor shall submit (a) a bar chart schedule showing the activities planned for the next month, and (b) a report showing actual starts and finishes from the previous month. The bar-chart schedule shall show all Work activities numbered according to the CPM, any submittal or delivery activities with less than five (5) days, one (1) float, and any permitting, testing, or inspection activities by others.

7.6.3 Within ten days after receipt by the Owners Delegated Representative, two copies of the Contractor's Construction Schedule will be returned to the Contractor with comments, following review by the Owner. Review by the Owner and Owners Delegated Representative of the Contractor's Construction Schedule shall not constitute an approval or acceptance of the Contractor's construction means, methods, or sequencing, or its ability to complete the Work in a timely manner.

7.6.4 The Contractor shall utilize and comply with the Contractor's Construction Schedule. The Contractor shall not be entitled to any adjustment in the Contract Time, the Contractor's Construction Schedule, or the Contract Sum, or to any additional payment of any sort by reason of the loss or use of any float time, including time between the Contractor's anticipated completion date and end of the Contract Time, whether or not the float time is described as such on the Contractor's Construction Schedule.

7.6.5 Should the Contractor fail to meet any scheduled date as shown on the current Contractor's Construction Schedule, the Contractor shall, if requested, be required at its own expense to submit within ten days of the request an updated Contractor's Construction Schedule. If the Contractor's progress indicates to the Owner that the Work will not be Substantially Completed within the Contract Time, the Contractor shall, at its own expense, increase its work force and / or working hours to bring the actual completion dates of the activities into conformance with the Contractor's Construction Schedule and Substantial Completion within the Contract Time. The Contractor shall also submit a revised Contractor's Construction Schedule at its own expense within ten days of notice from the Owners Delegated Representative that the sequence of Work varies significantly from that shown on the Contractor's Construction Schedule. Neither the Owner nor the Owners Delegated Representative will, however, review the substance or sequence of the Contractor's Construction Schedule.

7.6.6 Schedule Float Utilization. Float belongs to the benefit of the Project for the Owner's use and no float shall be used without the Owner's written approval. Any float time to activities not on the critical path shall be used by the Contractor to optimize its construction process. Any float time between the end of the final construction activity and the final completion date shall be used by the Owner in determining if additional contract days are to be awarded for changes in the contract or for delays to the contract caused by the Owner. The Contractor will not be entitled to any adjustment in the Contract Time, the Construction Schedule, or the Contract Sum, or to any additional payment of any sort by reason of the Owner's use of float time between the end of the final construction activity and the final completion date.

7.6.7 Delays. The Contractor shall, within seven days of the event, notify the Owner and Owners Delegated Representative in writing of any proposed changes in the Contractor's Construction Schedule or the Contract Time and of any event which could delay performance or supplying of any item of the Work and shall indicate the expected duration of the delay, the anticipated effect of the delay on the Contractor's Construction Schedule, and the action being taken to correct the delay situation. In the event the Contractor is entitled to a change in the Contract Time, the adjustment to the Contract Time shall be limited to the change in the critical path of construction activities.

7.6.8 Final Completion. The Contractor shall attain Final Completion of the Work in accordance with the Contract within 60 days after the date of Substantial Completion.

7.6.9 Meetings. During the period commencing with the issuance of Notice to Proceed and ending with the date of Final Completion of the Work, the Contractor shall attend and participate in and ensure applicable Subcontractors of any tier and Suppliers attend and participate in:

- .1 A pre-contract meeting;
- .2 A pre-construction meeting;
- .3 Regular weekly Project status meetings scheduled by the Owner or by the Owners Delegated Representative to review progress of the Work, to discuss the Contractor's progress reports, to obtain necessary Owner's or Owners Delegated Representative's approvals, and generally to keep the Owner and Owners Delegated Representative informed and involved in the progress of the Project; and

- .4 Regular on-site meetings scheduled by the Owner or by the Owners Delegated Representative to review progress of the Work and other pertinent matters.

7.7 Any and all references to "Engineer" or "the Engineer" in this Agreement or in the General Conditions of the Contract shall be deemed for all purposes to mean and refer to: Owners Delegated Representative.

7.8 If any provision of this Agreement or application thereof to any extent shall be invalid or unenforceable the remainder of the Agreement or its application thereof shall not be affected thereby and the provision or application shall be enforced to the fullest extent permitted by law.

7.9 The Contractor shall not assign this Agreement without the prior written permission of the Owner. Contractor shall assign to Owner any and all rights that the Contractor now has or hereafter may acquire pursuant to a contract related to the Project which rights the Owner shall thereafter be entitled to assign to another person or entity including without limitation any Lender, upon the request of the Owner, provided, however, until the exercise of such rights of assignment by the Owner, there shall be no privity or contractual relationship between the Owner and such persons and entities. The Contractor hereby consents to the free assignment of this Agreement in whole or in part by the Owner to any other person or entity including but not limited to any Lender.

7.10 The Contractor represents and warrants to the Owner who relies thereon as follows:

7.10.1 It and all of its Subcontractors are financially solvent, able to pay debts as they become due and have sufficient working capital to timely perform and complete all obligations related to the Project.

7.10.2 That it is able to timely and completely furnish all the labor, material, equipment and services to necessary to fully complete the Work within the Contract Time.

7.10.3 It and all of its Subcontractors are duly and properly licensed with the Oregon Construction Contractors Board and all other governmental agencies and are signatories to collective bargaining agreements.

7.10.4 It has visited the site, undertaken any and all tests it deems advisable, is familiar with the structure and that it is unaware of any potential condition with would increase the Contract Sum or Contract Time.

7.10.5 It and all of its Subcontractors possess a high level of experience and expertise in projects similar to the Project.

7.10.6 Neither Contractor nor any of its Subcontractors are "exempt" from the requirement to provide Workers' Compensation Insurance under Oregon law.

7.10.7 It is fully authorized to execute this Agreement and perform all the obligations required of it hereunder.

7.11 The representations and warranties of 7.11 are in addition to and not in lieu of any other obligation or law and survive the execution of this Agreement and final completion of the Project.

ARTICLE 8 ENUMERATION OF CONTRACT DOCUMENTS

8.1 The Contract Documents, except for Modifications issued after execution of this Agreement, are enumerated as follows:



8.1.1 This Agreement.

8.1.2 The General Conditions.

8.1.3 The Supplementary and other Conditions of the Contract.

8.1.4 The Specifications are those contained in the Project Manual dated **February 9, 2026**.

8.1.5 The Drawings are bound in the project manual.

8.1.6 The Addenda, if any, are as follows:

Portions of Addenda relating to bidding requirements are not part of the Contract Documents unless the bidding requirements are also enumerated in this Article 8.

8.1.7 Other documents, if any, forming part of the Contract Documents are as follows:

a. Exhibits _____

This Agreement is entered into as of the day and year first written above and is executed in at least three original copies, of which one is to be delivered to the Contractor, one to the Owners Delegated Representative for use in the administration of the Contract, and the remainder to the Owner.

CONTRACTOR TO BE DETERMINED

LINN BENTON COMMUNITY COLLEGE

By: _____
Name

By: _____
P. Sheldon Flom

Title: _____

Title: _____
Vice President Finance and Operation

Date: _____

Date: _____

**Federal
ID #:** _____

ARTICLE 1 GENERAL PROVISION**1.1 BASIC DEFINITIONS****1.1.1 THE CONTRACT DOCUMENTS**

The Contract Documents consist of the Agreement between Owner and Contractor (hereinafter the Agreement), the Request for Bids or Proposals. Conditions of the Contract (General, Supplementary and other Conditions), Drawings, Specifications, and Addenda issued prior to execution of the Contract, other documents listed in the Agreement and Modifications issued after execution of the Contract. A Modification is (1) a written amendment to the Contract signed by both parties, (2) a Change Order, (3) a Construction Change Directive or (4) a written order for a minor change in the Work issued by the Consultant. Contractor acknowledges and represents that it has examined all Contract Documents and will examine all Contract Documents created after execution of the Agreement. Contractor represents that such Contract Documents are suitable and sufficient to enable Contractor to timely complete the Work for the Contract Sum within the Contract Time.

1.1.2 THE CONTRACT

The Contract Documents form the Contract for Construction. The Contract represents the entire and integrated agreement between the parties hereto and supersedes prior negotiations, representations or agreements, either written or oral. The Contract may be amended or modified only by a Modification. The Contract Documents shall not be construed to create a contractual relationship of any kind (1) between the Consultant and Contractor, (2) between the Owner and any Subcontractor, including, but not limited to, any Sub-subcontractor, (3) between the Owner and Consultant or (4) between any persons or entities other than the Owner and Contractor. The Consultant shall, however, be entitled to performance and enforcement of obligations under the Contract intended to facilitate performance of the Consultant's duties.

1.1.3 THE WORK

The term "Work" means the construction and services required by the Contract Documents, whether completed or partially completed, and includes any and all labor (including, but not limited to, supervision and management), transportation, materials, equipment and services provided or to be provided by the Contractor to timely fulfill the Contractor's obligations and render the Project complete and usable for its intended purpose. The Work includes all labor, material, equipment and services incidental to or which may be inferred from any of the Contract Documents. The Work may constitute the whole or a part of the Project.

1.1.4 THE PROJECT

The Project is the total construction of which the Work performed under the Contract Documents may be the whole or a part and which may include construction by the Owner or by separate contractors.

1.1.5 THE DRAWINGS

The Drawings are the graphic and pictorial portions of the Contract Documents showing the design, location and dimensions of the Work, generally including plans, elevations, sections, details, schedules and diagrams.

1.1.6 THE SPECIFICATIONS

The Specifications are that portion of the Contract Documents consisting of the written requirements for materials, equipment, systems, standards and workmanship for the Work, and performance of related services.

1.1.7 THE PROJECT MANUAL

The Project Manual is a volume assembled for the Work which may include the bidding requirements, sample forms, Conditions of the Contract and Specifications.

1.2 CORRELATION AND INTENT OF THE CONTRACT DOCUMENTS

1.2.1 The intent of the Contract Documents is to include all items necessary for the proper execution and completion of the Work by the Contractor. The Contract Documents are complementary, and what is required by one shall be as binding as if required by all; performance by the Contractor shall be required only to the extent consistent with the Contract Documents and reasonably inferable from them as being necessary to produce the indicated results. In case of any conflict in the requirements of the Contract Documents, the Contractor is deemed to have included the better Quality and larger Quantity of the Work.

1.2.2 Organization of the Specifications into divisions, sections and articles, and arrangement of Drawings shall not control the Contractor in dividing the Work among Subcontractors or in establishing the extent of Work to be performed by any trade.

1.2.3 Unless otherwise stated in the Contract Documents, words which have well-known technical or construction industry meanings are used in the Contract Documents in accordance with such recognized meanings.

1.3 CAPITALIZATION

1.3.1 Terms capitalized in these General Conditions include those which are (1) specifically defined, (2) the titles of numbered articles and identified references to Paragraphs, Subparagraphs and Clauses in the document or (3) the titles of other documents.

1.4 INTERPRETATION

1.4.1 In the interest of brevity the Contract Documents frequently omit modifying words such as "all" and "any" and articles such as "the" and "an," but the fact that a modifier or an article is absent from one statement and appears in another is not intended to affect the interpretation of either statement.

1.5 EXECUTION OF CONTRACT DOCUMENTS

1.5.1 The Contract Documents shall be signed by the Owner and Contractor. If either the Owner or Contractor or both do not sign all the Contract Documents, the Consultant shall identify such unsigned Documents upon request.

1.5.2 Execution of the Agreement by the Contractor is a representation that the Contractor has visited the site, become fully familiar with the nature, location and character of the site and surrounding areas, weather conditions, availability of labor, materials, equipment and services, site conditions, surface conditions, subsurface conditions, the Contract Documents, existing local conditions under which the Work is to be performed, the time period for performance and completion of the Work. Contractor represents that it has performed personal observations and correlated the observations with the requirements of the Contract Documents such that the Contractor is not aware of any discrepancies, omissions, ambiguities or conflicts in or among any of the Contract Documents.

1.6 OWNERSHIP AND USE OF DRAWINGS, SPECIFICATIONS AND OTHER INSTRUMENTS OF SERVICE

1.6.1 The Drawings, Specifications and other documents, including any in electronic form, prepared by the Consultant and the Consultant's consultants are documents through which the Work to be executed by the

Contractor is described. The Contractor may retain one record set. Neither the Contractor nor any Subcontractor, including, but not limited to, any Sub-subcontractor or material or equipment supplier shall own or claim any intellectual property rights in the Drawings, Specifications and other documents prepared by the Consultant or the Consultant's consultants. All copies of the documents, except the Contractor's record set, shall be returned or suitably accounted for to the Consultant, on request, upon completion of the Work. The Drawings, Specifications and other documents prepared by the Consultant and the Consultant's consultants, and copies thereof furnished to the Contractor, are for use solely with respect to this Project. They are not to be used by the Contractor or any Subcontractor, including, but not limited to, any Sub-subcontractor or material or equipment supplier on other projects or for additions to this Project outside the scope of the Work without the specific written consent of the Owner, Consultant and the Consultant's consultants. The Contractor, Subcontractors, including, but not limited to, any Sub-subcontractors and material or equipment suppliers are authorized to use and reproduce applicable portions of the Drawings, Specifications and other documents prepared by the Consultant and the Consultant's consultants appropriate to and for use in the execution of their Work under the Contract Documents only. All copies made under this authorization shall bear the statutory copyright notice, if any, shown on the Drawings, Specifications and other documents prepared by the Consultant and the Consultant's consultants. Submittal or distribution to meet official regulatory requirements or for other purposes in connection with this Project is not to be construed as publication in derogation of the any intellectual property right or other reserved rights.

ARTICLE 2 OWNER

2.1 GENERAL

2.1.1 The Owner is the entity identified as such in the Agreement and is referred to throughout the Contract Documents. The Owner may designate in writing a representative who subject to the limitations provided by law, shall have express authority to bind the Owner with respect to all matters requiring the Owner's approval or authorization. Except as otherwise provided in Subparagraph 4.1, the Consultant does not have such authority. The term "Owner" means the Owner or the Owner's Authorized Representative.

2.2 INFORMATION AND SERVICES REQUIRED OF THE OWNER

2.2.1 Except for permits and fees, including those required under Subparagraph 3.7, which are the responsibility of the Contractor under the Contract Documents, the Owner shall secure and pay for necessary approvals, easements, assessments and charges required for construction, use or occupancy of permanent structures or for permanent changes in existing facilities.

2.3 OWNER'S RIGHT TO STOP THE WORK

2.3.1 If the Contractor fails to correct Work which is not in accordance with the requirements of the Contract Documents as required by Paragraph 1.1.3, or persistently fails to carry out Work in accordance with the Contract Documents, the Owner may issue a written order to the Contractor to stop the Work, or any portion thereof, until the cause for such order has been eliminated; however, the right of the Owner to stop the Work shall not give rise to a duty on the part of the Owner to exercise this right for the benefit of the Contractor or any other person or entity, nor give rise to any claim for additions to the Contract Sum or Contract Time.

2.3.2 The Owner shall, in addition to the Right to Stop the Work, have the right to require that the Contractor replace or remove construction personnel assigned to the Work, if, in the Owner's sole determination, specific construction personnel are impairing or impeding the prosecution of the Work.

2.4 OWNER'S RIGHT TO CARRY OUT THE WORK

2.4.1 If the Contractor defaults or neglects to carry out the Work in accordance with the Contract Documents and fails within a seven-day period after receipt of written notice from the Owner to commence and continue

correction of such default or neglect with diligence and promptness, the Owner may, immediately without prejudice to other remedies the Owner may have, correct such deficiencies. In such case an appropriate Change Order shall be issued deducting from payments then or thereafter due the Contractor the reasonable cost of correcting such deficiencies, including Owner's expenses and compensation for the Consultant's additional services made necessary by such default, neglect or failure. Such change order shall be deemed signed by the Contractor for the purposes of this Agreement even if the Contractor fails to physically sign such Change Order. If payments then or thereafter due the Contractor are not sufficient to cover such amounts, the Contractor shall promptly pay the difference to the Owner. The rights stated herein shall be in addition to and not in lieu of any rights afforded the Owner.

ARTICLE 3 CONTRACTOR

3.1 GENERAL

3.1.1 The Contractor is the person or entity identified as such in the Agreement and is referred to throughout the Contract Documents as if singular in number. The term "Contractor" means the Contractor or the Contractor's Authorized Representative.

3.1.2 The Contractor shall perform and complete the Work in accordance with the Contract Documents for the Contract Sum and within the Contract Time.

3.1.3 The Contractor shall not be relieved of obligations to perform the Work in accordance with the Contract Documents either by activities or duties of the Consultant in the Consultant's administration of the Contract, or in the performance of its obligations or by tests, inspections or approvals required or performed by persons other than the Contractor.

3.2 REVIEW OF CONTRACT DOCUMENTS AND FIELD CONDITIONS BY CONTRACTOR

3.2.1 Since the Contract Documents are complementary, before starting each portion of the Work, the Contractor shall carefully study and compare the various Drawings and other Contract Documents relative to that portion of the Work, as well as the information furnished by the Owner, shall take field measurements of any existing conditions, including all general reference points and interfering site conditions related to that portion of the Work and shall observe any conditions at the site affecting it and shall carefully compare such field measurements and conditions and other information known to the Contractor with the Contract Documents before commencing such activities. These obligations are for the purpose of facilitating construction by the Contractor and are not for the purpose of discovering errors, omissions, or inconsistencies in the Contract Documents; however, any errors, inconsistencies or omissions known, recognized or discovered by the Contractor shall be reported promptly to the Consultant in writing as a request for information in such form as the Consultant may require.

3.2.2 Any design errors or omissions noted by the Contractor during this review shall be reported promptly to the Consultant in writing, but it is recognized that the Contractor's review is made in the Contractor's capacity as a contractor and not as a licensed design professional unless otherwise specifically provided in the Contract Documents. The Contractor is not required to ascertain that the Contract Documents are in accordance with applicable laws, statutes, ordinances, building codes, and rules and regulations, but any nonconformity recognized discovered by or made known to the Contractor shall be reported promptly to the Consultant in writing. The accuracy of grades, elevations, dimensions, locations or otherwise of existing conditions are not warranted to be accurate. The Contractor is solely responsible for verifying the accuracy of grades, elevations, dimensions, locations or otherwise of existing conditions prior to entering in to the Contract.

3.2.3 If the Contractor believes that additional cost or time is involved because of clarifications or instructions issued by the Consultant in response to the Contractor's notices or requests for information pursuant to Subparagraphs 3.2.1 and 3.2.2, the Contractor shall make Claims as provided in

Subparagraphs 4.3.6 and 4.3.7. If the Contractor fails to perform the obligations of Subparagraphs 3.2.1 and 3.2.2, the Contractor shall pay such costs and damages to the Owner as would have been avoided if the Contractor had performed such obligations. Except as provided herein, the Contractor shall not be liable to the Owner or Consultant for damages resulting from errors, inconsistencies or omissions in the Contract Documents or for differences between field measurements or conditions and the Contract Documents unless the Contractor discovered, had knowledge of, recognized or should have recognized such error, inconsistency, omission or difference and failed to report it to the Owner and to the Consultant or accepted the responsibility to verify the same. If the Contractor performs any construction activity it knows or reasonably should have known involves an error, inconsistency or omission in the Contract Documents or reports referenced therein without such notice to the Owner and the Consultant, the Contractor shall assume responsibility for such performance and shall bear the costs attributed to the correction.

3.2.4. In addition to and not in derogation of the Contractor's duties the Contractor shall take all field measurements and verify all field conditions and shall carefully compare such field measurements and conditions with all other information known to the Contractor or included in any of the Contract Documents before commencing any construction activity for the Work. The Owner shall not be liable for any errors, inconsistencies or omissions which should have been reasonably discovered and the Contractor shall report in writing to the Consultant and Owner any errors, inconsistencies or omissions.

3.2.5. Any investigations of subsurface conditions have been made for design purposes only. The results of these investigations may be available for the convenience of the Bidders and the Sub-bidders but are not a part of the Contract Documents. While the Contractor may rely on such investigation results there is no representations or warranties, express or implied that the conditions indicated are representative of those existing at the site or that unforeseen developments may not occur. The Contractor is solely responsible for reasonably interpreting the information and extrapolating beyond the location of each individual boring, test pit, or other testing location.

3.2.6. The Contractor shall do no work without applicable Drawings, Specifications, or written modifications or, where required, Shop Drawings, Product Data, or Samples, unless instructed to do so in writing by the Consultant and Owner.

3.3 SUPERVISION AND CONSTRUCTION PROCEDURES

3.3.1 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. Contractor shall review any specified construction or installation procedure and shall advise the Owner and the Consultant in writing if the specified procedure deviates from acceptable construction practices will impact any warranty or if the Contractor has any objection thereto.

3.3.2 The Contractor shall be responsible to the Owner for acts and omissions of the Contractor's employees, Subcontractors, of any tier, and their agents and employees, and any other persons or entities performing portions of the Work for or on behalf of the Contractor or any Subcontractors of any tier and for any damages, losses, costs and expenses resulting from such acts or omissions.

3.3.3 The Contractor shall be responsible for inspection of portions of Work already performed to determine that such portions are in proper condition to receive subsequent Work.

3.3.4. The Contractor shall inspect, prior to installation, all materials and equipment delivered to, installed at, or fabricated at the site and shall reject that which will not conform to the Contract Documents when fully and properly installed.

3.4 LABOR AND MATERIALS

3.4.1 Unless otherwise provided in the Contract Documents, the Contractor shall provide and pay for labor, materials, equipment, tools, telephone, data transmission, construction equipment and machinery, water, heat, utilities, transportation, and other facilities and services necessary for proper execution and completion of the Work, whether temporary or permanent and whether or not incorporated or to be incorporated in the Work.

3.4.2 The Contractor may make substitutions only with the written consent of the Owner, after evaluation by the Consultant and in accordance with a Change Order.

3.4.3 The Contractor shall enforce strict discipline and good order among the Contractor's employees and other persons carrying out the Contract. The Contractor shall not permit employment of unfit persons or persons not skilled in tasks assigned to them.

3.5 WARRANTY

3.5.1 The Contractor warrants to the Owner and Consultant that the Work, including, but not limited to, any and all 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 not inherent in the quality required or permitted, and that the Work will conform to the requirements of the Contract Documents. Work not conforming to these requirements, including substitutions not properly approved and authorized, may be considered defective. The Contractor's warranty excludes remedy for damage or defect caused by abuse, modifications not executed by the Contractor, improper or insufficient maintenance, improper operation, or normal wear and tear and normal usage. If required by the Consultant, the Contractor shall furnish satisfactory evidence as to the kind and quality of materials and equipment. In addition, the Contractor assigns to the Owner any and all warranties. The Contractor further warrants that all construction activity of the Work shall be performed on the Work so as to preserve all such warranties. To the extent that any warranty is non-assignable, Contractor warrants that it will pursue such warranty claim for the use and benefit of the Owner without cost or expense to the owner. The Contractor shall require this provision to be included in all subcontracts of any tier.

3.6 TAXES

3.6.1 The Contractor shall pay as and when due sales, consumer, property, occupational, Social Security benefits, unemployment compensation, use and similar taxes, excises, duties and assessments for the Work provided by the Contractor.

3.7 PERMITS, FEES AND NOTICES

3.7.1 Unless otherwise provided in the Contract Documents, the Contractor shall secure and pay for the building permit and other permits and governmental fees, licenses and inspections necessary for proper execution and completion of the Work which are customarily secured after execution of the Contract and which are legally required when bids are received, negotiations concluded or the Contract is executed. To the extent that there is any difference in these requirements the most stringent requirements on the Contractor shall apply.

3.7.2 The Contractor shall comply with and give notices required by laws, ordinances, rules, regulations and lawful orders of public authorities applicable to performance of the Work. If the Contractor fails to comply or give such notices it will be liable for and shall to the fullest extent permitted by law defend indemnify and hold the Owner and Consultant and their respective employees, officers and agents harmless from any costs, loss, penalty or damage.

3.7.3 Except as otherwise provided herein, it is not the Contractor's responsibility to ascertain that the Contract Documents are in accordance with applicable laws, statutes, ordinances, building codes, and rules and regulations. However, if the Contractor becomes aware, gains knowledge, recognizes or observes that portions of the Contract Documents are at variance therewith, the Contractor shall promptly notify the Consultant and Owner in writing, and necessary changes shall be accomplished by appropriate Modification.

3.7.4 If the Contractor performs Work knowing the construction activity to be contrary to laws, statutes, ordinances, building codes, and rules and regulations without such notice to the Consultant and Owner, the Contractor shall assume appropriate responsibility for such Work and shall bear the costs, loss, damages and penalties attributable to correction.

3.8 ALLOWANCES

3.8.1 The Contractor shall include in the Contract Sum any and 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, but the Contractor shall not be required to employ persons or entities to whom the Contractor has reasonable objection.

3.8.2 Unless otherwise provided in the Contract Documents:

- .1** allowances shall cover the cost to the Contractor of materials and equipment delivered at the site and all required taxes, less applicable trade discounts;
- .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 Sum but not in the allowances;
- .3** whenever costs are more than or less than allowances, the Contract Sum shall be adjusted accordingly by Change Order. The amount of the Change Order shall reflect (1) the difference between actual costs and the allowances under Clause 3.8.2.1 and (2) changes in Contractor's costs under Clause 3.8.2.2.

3.8.3 Materials and equipment under an allowance shall be selected by the Owner in sufficient time to avoid delay in the Work.

3.9 SUPERINTENDENT

3.9.1 The Contractor shall employ an experienced and competent superintendent and necessary assistants who shall be in attendance at the Project site at all times during performance of the Work including completion of the punch list. The Contractor shall notify the Consultant and the Owners Representative as to the identity of the superintendent who shall not be changed during the course of the Work without prior written notification to the Consultant and Owner Representative. The superintendent shall represent the Contractor, and communications given to the superintendent shall be as binding as if given to the Contractor. Important communications shall be confirmed in writing. Other communications shall be similarly confirmed on written request in each case.

3.10 CONTRACTOR'S CONSTRUCTION SCHEDULES

3.10.1 The Contractor, promptly and within ten (10) days after being awarded the Contract, shall prepare and submit for the Owner's and Consultant's information a preliminary Contractor's construction schedule for the Work consistent with the requirements of the Contract Documents. Prior to submitting its first Application for Payment, the Contractor, after consultation with its subcontractors, shall submit six (6) hard copies and one electronic copy of the Contractor's construction schedule consistent with the

requirements of the Contract Documents. The schedule shall not exceed time limits current under the Contract Documents, shall be revised at appropriate intervals as required by the conditions of the Work and Project, shall be related to the entire Project to the extent required by the Contract Documents, and shall provide for expeditious and practicable execution of the Work. The construction schedule shall not be changed without the prior written consent of the Owners Representative.

3.10.2 The Contractor shall prepare and keep current, for the Consultant's review, a schedule of submittals which is coordinated with the Contractor's construction schedule and allows the Owner and the Consultant reasonable time to review in accordance with the Specifications and submittal procedures. The Contractor should expect a response time of approximately 21 days from the Consultant and Consultant's consultants. Neither the Consultant nor Owner can represent or guarantee response times from governmental authorities, such as permitting agencies. Neither the Contractor's preparation, nor the Consultant's receipt or review shall modify the Contractor's responsibility to make required submittals or to do so in a timely manner.

3.10.3 The Contractor shall perform the Work in accordance with the most recent schedules submitted to the Owner and accepted by the Owner and shall promptly notify the Owner of any deviations from the schedule. Should the Contractor fail to comply with the schedule, or in the Owner's opinion fail, refuse, or neglect to supply a sufficient amount of labor, materials, equipment or services in the prosecution of the Work, the Owner shall have the right to direct the Contractor to furnish such additional labor, materials, equipment or services to comply with the schedule and all costs thereof shall be borne by the Contractor and shall not increase the Contract Sum. All schedules submitted shall be in the form acceptable to the Owner using critical path methodology (CPM) clearly showing overall Project and specific items and tasks of construction activities, dependencies and durations as well as overall and specific commencement and completions dates. The critical path activities shall be highlighted, float and non-critical activities shall be shown and the start and stop times for each activity shall be listed. Float belongs to the benefit of the Project for the Owner's use and no float shall be used without the Owner's written approval. The Contractor shall at all times monitor the progress of the Work for conformance with the CPM schedule accepted by the Owner and shall promptly advise the Owner and Consultant of any impacts or delays or potential impacts or delays. The Contractor shall also update the construction schedule to reflect actual conditions and shall propose plans in order to avoid or correct any impact or delays.

3.11 DOCUMENTS AND SAMPLES AT THE SITE

3.11.1 The Contractor shall maintain at the site for the Owner one (1) record copy of the Drawings, Specifications, Addenda, Change Orders and other Modifications, in good order and marked currently to record field changes and selections made during construction, and one (1) record copy of approved Shop Drawings, Product Data, Samples and similar required submittals. These shall be accessible to inspectors and available to the Consultant and Owner and shall be delivered to the Consultant for submittal to the Owner upon completion of the Work and before Contractor's request for final payment.

3.12 SHOP DRAWINGS, PRODUCT DATA AND SAMPLES

3.12.1 Shop Drawings are drawings, diagrams, schedules and other data specially prepared for the Work by the Contractor or a Subcontractor, Sub-subcontractor, manufacturer, supplier or distributor to illustrate some portion of the Work.

3.12.2 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.

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

3.12.4 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 by the Consultant or any other person is subject to the limitations of Subparagraph 4.2. 7. Information submittals upon which the Consultant 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 Consultant without action.

3.12.5 The Contractor shall review for compliance with the Contract Documents, approve and submit to the Consultant, 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 Consultant without action.

3.12.6 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.

3.12.7 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 Consultant.

3.12.8 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 any approval of Shop Drawings, Product Data, Samples or similar submittals unless the Contractor has specifically informed the Consultant and Owner in writing of such deviation at the time of submittal and (1) the Consultant has given specific written approval to the specific deviation as a minor change in the Work, or (2) a Change Order or Construction Change Directive has been issued authorizing the deviation. The Contractor shall not be relieved of responsibility for errors or omissions in Shop Drawings, Product Data, Samples or similar submittals by the, any person's approval thereof.

3.12.9 The Contractor shall direct specific attention, in writing or on resubmitted Shop Drawings, Product Data, Samples or similar submittals, to revisions other than those requested by the Consultant on previous submittals. In the absence of such written notice, any person's approval of a resubmission shall not apply to such revisions. Contractor shall submit Shop Drawings, Product Data, Samples and similar submittals in forms and in a manner reasonably acceptable to the Consultant. Contractor shall submit no less than two (2) copies or examples for review of any Shop Drawings, Product Data, Samples or similar submittals at Contractor's sole cost and expense.

3.12.10 The Contractor shall not be required to provide professional services which constitute the practice of Architecture or engineering unless such services are specifically required by the Contract Documents for a portion of the Work or unless the Contractor needs to provide such services in order to carry out the Contractor's responsibilities for construction means, methods, techniques, sequences and procedures. The Contractor shall not be required to provide professional services in violation of applicable law. If professional design services or certifications by a design professional related to systems, materials or equipment are specifically required of the Contractor by the Contract Documents, the Owner and the Consultant will specify all performance and design criteria that such services must satisfy. The Contractor shall cause such services or certifications to be provided by a properly licensed design professional, whose signature and seal shall appear on all drawings, calculations, specifications, certifications, Shop Drawings and other submittals prepared by such professional. Shop Drawings and other submittals related to the Work designed or certified by such professional, if prepared by others, shall bear such professional's written

approval when submitted to the Consultant. The Owner and the Consultant shall be entitled to rely upon the adequacy, accuracy and completeness of the services, certifications or approvals performed by such design professionals, provided the Owner and Consultant have specified to the Contractor all performance and design criteria that such services must satisfy. Pursuant to this Subparagraph 3.12.10, the Consultant will review, approve or take other appropriate action on submittals only for the limited purpose of checking for conformance with information given and the design concept expressed in the Contract Documents. The Contractor shall not be responsible for the adequacy of the performance or design criteria required by the Contract Documents.

3.13 USE OF SITE

3.13.1 The Contractor shall confine operations at the site to areas permitted by law, ordinances, permits and the Contract Documents and shall not unreasonably encumber the site with materials or equipment. Notwithstanding anything contained in the Contract Documents to the contrary, the Contractor shall, as part of the Work, not disrupt or interfere in any manner with any of the Owner's or Owner's authorized provider's operations at the Project site or any other locations, including, without limitation any and all educational, social, athletic or recreational programs, activities, classes or events. Contractor shall not park or otherwise utilize any other area designated by the Owner or typically used by Owner's employees, staff, students, parents or visitors or local residents or businesses.

3.14 CUTTING AND PATCHING

3.14.1 The Contractor shall be responsible for cutting, fitting or patching required to complete the Work or to make its parts fit together properly.

3.14.2 The Contractor shall not damage or endanger a portion of the Work or fully or partially completed construction of the Owner or separate contractors by cutting, patching or otherwise altering such construction, or by excavation. The Contractor shall not cut or otherwise alter such construction by the Owner or a separate contractor except with written consent of the Owner and of such separate contractor; such consent shall not be unreasonably withheld. The Contractor shall not unreasonably withhold from the Owner or a separate contractor the Contractor's consent to cutting or otherwise altering the Work. To the extent that the Work involves renovation, alteration or repair of existing improvements, cutting and patching essential for the Project shall be successfully completed and Contractor shall perform the Work so that it is fully integrated into the existing improvements operationally and aesthetically.

3.15 CLEANING UP

3.15.1 The Contractor shall at all times keep the premises and surrounding area free from accumulation of waste materials or rubbish caused by operations under the Contract. At completion of the Work, the Contractor shall remove from and about the Project waste materials, rubbish, the Contractor's tools, construction equipment, machinery and surplus materials.

3.15.2 If the Contractor fails to clean up as provided in the Contract Documents, the Owner may do so and the cost thereof shall be charged to the Contractor.

3.16 ACCESS TO WORK

3.16.1 The Contractor shall provide the Owner and Consultant and their employees, agents and officers access to the Work in preparation and progress wherever located.

3.17 ROYALTIES, PATENTS AND COPYRIGHTS

3.17.1 The Contractor shall pay all royalties and license fees. The Contractor shall defend suits or claims for infringement of copyrights and patent rights and shall hold the Owner and Consultant harmless from loss on account thereof, but shall not be responsible for such defense or loss when a particular design, process or product of a particular manufacturer or manufacturers is required by the Contract Documents or where the copyright violations are contained in Drawings, Specifications or other documents prepared by the Owner or Consultant. However, if the Contractor has reason to believe that the required design, process or product is an infringement of a copyright or a patent, the Contractor shall be responsible for such loss unless such information is promptly furnished to the Consultant in writing.

3.18 INDEMNIFICATION

3.18.1 To the fullest extent permitted by law and to the extent claims, damages, losses or expenses are not covered by Project Management Protective Liability insurance purchased by the Contractor in accordance with Paragraph 11.2, the Contractor shall indemnify and hold harmless the Owner, Consultant, Consultant's consultants, and agents and employees of any of them from and against claims, damages, losses and expenses, including, but not limited to, attorneys' fees, arising out of or resulting from performance of the Work, provided that such claim, damage, loss or expense is attributable to bodily injury, sickness, disease or death, or to injury to or destruction of tangible property (other than the Work itself), but only to the extent caused by the negligent acts or omissions of the Contractor, any Subcontractor, anyone directly or indirectly employed by them or anyone for whose acts they may be liable, regardless of whether or not such claim, damage, loss or expense is caused in part by a party indemnified hereunder. Such obligation shall not be construed to negate, abridge, or reduce other rights or obligations of indemnity which would otherwise exist as to a party or person described in this Paragraph 3.18.

3.18.2 In claims against any person or entity indemnified under this Paragraph 3.18 by an employee of the Contractor, Subcontractor, anyone directly or indirectly employed by them or anyone for whose acts they may be liable, the indemnification obligation under Subparagraph 3.18.1 shall not be limited by a limitation on amount or type of damages, compensation or benefits payable by or for the Contractor or a Subcontractor under workers' compensation acts, disability benefit acts or other employee benefit acts.

ARTICLE 4 ADMINISTRATION OF THE CONTRACT

4.1 CONSULTANT OR OWNER'S REPRESENTATIVE

4.1.1 The term "Consultant" as used in the Contract Documents, shall mean Certa Building Solutions and "Owner's Representative", as used in the Contract Documents, shall mean HMK Company (HMKCO), and its respective personnel.

4.1.2.1 If a licensed Consultant is engaged by Owner who is not designated as the "Owner's Representative", the Owner shall make written directive and notification to Contractor, which shall perform any Contract Administration duties. For ease of reference and consistency, the term "Consultant" shall be used in the Contract Documents to refer to the contract administrator.

4.1.2 Duties, responsibilities and limitations of authority of the Consultant as set forth in the Contract Documents shall not be restricted, modified or extended without written consent of the Owner, and Consultant.

4.1.3 If the employment of the Consultant is terminated, the Owner shall employ a new Consultant under such terms and conditions as are agreeable between the Owner and the new Consultant.

4.2 CONSULTANT'S ADMINISTRATION OF THE CONTRACT

4.2.1 The Consultant may provide administration of the Contract as described in the Contract Documents, and may be an Owner's representative (1) during construction, (2) until final payment is due and (3) with

the Owner's concurrence, from time to time during the one-year period for correction of Work described in Paragraph 12.2. The Consultant will have authority to act on behalf of the Owner only to the extent provided in the Contract Documents, unless otherwise modified in writing in accordance with other provisions of the Contract.

4.2.2 The Consultant, as a representative of the Owner, 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 the Work is being performed in a manner indicating that the Work, when fully completed, will be in accordance with the Contract Documents.

However, the Consultant will not be required to make exhaustive or continuous on-site inspections to check the quality or quantity of the Work. The Consultant 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, since these are solely the Contractor's rights and responsibilities under the Contract Documents, except as provided in Subparagraph 3.3.1.

4.2.3 The Consultant will not be responsible for the Contractor's failure to perform the Work in accordance with the requirements of the Contract Documents. The Consultant will not have control over or charge of and will not be responsible for acts or omissions of the Contractor, any Subcontractors, or their agents or employees, or any other persons or entities performing portions of the Work.

4.2.4 Communications Facilitating Contract Administration. The Owner, Owners Representative and Contractor may communicate with each other through the Consultant about matters arising out of or relating to the Contract. The Contractor shall also PROVIDE THE OWNER AND OWNERS REPRESENTATIVE WITH A DIRECT COPY OF ALL WRITTEN COMMUNICATIONS TO THE CONSULTANT, including all notices, requests, Claims and potential changes in the Contract Sum or Time, but not including Shop Drawings, Product Data or Samples. Communications by and with the Consultant's consultants shall be through the Consultant. Communications by and with Subcontractors and material suppliers shall be through the Contractor. Communications by and with separate contractors shall be through the Owner.

4.2.5 Based on the Consultant's evaluations of the Contractor's Applications for Payment, the Consultant may review and certify the amounts due the Contractor and will issue Certificates for Payment in such amounts.

4.2.6 The Consultant may have authority to reject Work that does not conform to the Contract Documents. Whenever the Consultant considers it necessary or advisable, the Consultant may have authority to require inspection or testing of the Work in accordance with Subparagraphs 13.5.2 and 13.5.3, whether or not such Work is fabricated, installed or completed. However, neither this authority of the Consultant nor a decision made in good faith either to exercise or not to exercise such authority shall give rise to a duty or responsibility of the Consultant to the Contractor, Subcontractors, material and equipment suppliers, their agents or employees, or other persons or entities performing portions of the Work.

4.2.7 The Consultant will review and approve or take other appropriate action upon the Contractor's submittals such as Shop Drawings, Product Data and Samples, but only for the limited purpose of checking for conformance with information given and the design concept expressed in the Contract Documents. The Consultant's action will be taken with such reasonable promptness as to cause no delay in the Work or in the activities of the Owner, Contractor or separate contractors, while allowing sufficient time in the Consultant's professional judgment to permit adequate review. Review of such submittals 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, all of which remain the responsibility of the Contractor as required by the Contract Documents. The Consultant's review of the Contractor's submittals shall not relieve the Contractor of the obligations under Paragraphs 3.3, 3.5 and 3.12. The Consultant's review shall not constitute approval of safety precautions or, unless

otherwise specifically stated by the Consultant, of any construction means, methods, techniques, sequences or procedures. The Consultant's approval of a specific item shall not indicate approval of an assembly of which the item is a component.

4.2.8 The Consultant may prepare Change Orders and Construction Change Directives, and may authorize minor changes in the Work as provided in Paragraph 7.4.

4.2.9 The Consultant may conduct inspections to determine the date or dates of Substantial Completion and the date of final completion, may receive and forward to the Owner, for the Owner's review and records, written warranties and related documents required by the Contract and assembled by the Contractor, and may issue a final Certificate for Payment upon compliance with the requirements of the Contract Documents.

4.2.10 If the Owner and Consultant designate, the Consultant will provide one or more project representatives to assist in carrying out the Consultant's responsibilities at the site.

4.2.11 The Consultant may interpret and decide matters concerning performance under and requirements of, the Contract Documents on written request of either the Owner or Contractor. The Consultant's response to such requests will be made in writing within any time limits agreed upon or otherwise with reasonable promptness. If no agreement is made concerning the time within which interpretations required of the Consultant shall be furnished in compliance with this Paragraph 4.2, then delay shall not be recognized on account of failure by the Consultant to furnish such interpretations until 5 days after written request is made for them.

4.2.12 Interpretations and decisions of the Consultant, if any, will be consistent with the intent of and reasonably inferable from the Contract Documents and will be in writing or in the form of drawings. When making such interpretations and initial decisions, the Consultant will endeavor to secure faithful performance by both Owner and Contractor, will not show partiality to either and will not be liable for results of interpretations or decisions so rendered in good faith.

4.2.13 The Consultant's decisions on matters relating to aesthetic effect may be final if consistent with the intent expressed in the Contract Documents. The terms and conditions of the Owner's agreement with the Consultant shall govern the Consultant's responsibilities.

4.3 CLAIMS AND DISPUTES

4.3.1 Definition. A Claim is a demand or assertion by one of the parties seeking, as a matter of right, adjustment or interpretation of Contract terms, payment of money, and extension of time or other relief with respect to the terms of the Contract. The term "Claim" also includes other disputes and matters in question between the Owner and Contractor arising out of or relating to the Contract. Claims must be initiated by written notice. The responsibility to substantiate Claims shall rest with the party making the Claim.

4.3.2 Time Limits on Claims. Claims by either party must be initiated within 21 days after occurrence of the event giving rise to such Claim or within 21 days after the claimant first recognizes the condition giving rise to the Claim, whichever is later. Claims must be initiated by written notice to the Consultant and the other party.

4.3.3 Continuing Contract Performance. Pending final resolution of a Claim except as otherwise agreed in writing or as provided in Subparagraph 9.7.1 and Article 14, the Contractor shall proceed diligently with performance of the Contract and the Owner shall continue to make payments in accordance with the Contract Documents.

4.3.4 Claims for Concealed or Unknown Conditions. Except as otherwise provided herein, if conditions are encountered at the site which are (1) subsurface or otherwise concealed physical conditions which differ

materially from those indicated in the Contract Documents or (2) unknown physical conditions of an unusual nature, which differ materially from those ordinarily found to exist and generally recognized as inherent in construction activities of the character provided for in the Contract Documents, the Contractor shall give written notice to the Owner and the Consultant promptly before conditions are disturbed and in no event later than seven (7) days after first observance of the conditions. The Consultant may promptly investigate such conditions and, if they differ materially and cause an increase or decrease in the Contractor's cost of, or time required for, performance of any part of the Work, will recommend an equitable adjustment in the Contract Sum or Contract Time, or both, consistent with the requirements of the Contract Documents. If the Consultant determines that the conditions at the site are not materially different from those indicated in the Contract Documents and that no change in the terms of the Contract is justified, the Consultant may so notify the Owner and Contractor in writing, stating the reasons. Any claim of the Contractor arising from the Consultant's determination shall be made in accordance with the dispute resolution procedures set forth in Paragraphs 4.4 through 4.6. No adjustment in the Contract Time or Sum shall be permitted, however, if connection with any concealed or unknown condition which does not materially differ from those disclosed or which should have reasonably been discovered by the Contractor's prior visits, observations, tests or for which the Contractor assumed any responsibility to verify.

4.3.5 Claims for Additional Cost. If the Contractor wishes to make Claim for an increase in the Contract Sum, written notice as provided herein shall be given before proceeding to execute the Work, and a Claim must be made in accordance with Paragraphs 4.4 through 4.6 or it will be deemed waived. Prior notice is not required for Claims relating to an emergency endangering life or property arising under Paragraph 10.6.

4.3.6 If the Contractor believes additional cost is involved for reasons, including, but not limited to:

- .1 a written interpretation from the Consultant
- .2 an order by the Owner to stop the Work where the Contractor was not at fault
- .3 a written order for a minor change in the Work issued by the Consultant
- .4 failure of payment by the Owner
- .5 termination of the Contract by the Owner
- .6 Owner's suspension or
- .7 other reasonable grounds, Claim shall be filed in accordance with this Paragraph 4.3.

All Claims for additional costs shall include any and all costs, including, but not limited to, any and all direct and indirect costs thereof.

4.3.7 Claims for Additional Time

4.3.7.1 If the Contractor wishes to make Claim for an increase in the Contract Time, written notice as provided herein shall be given and a Claim shall be made as provided herein. The Contractor's Claim shall include an estimate of any cost and of probable effect of delay on progress of the Work. In the case of a continuing delay, only one Claim is necessary. If the delay was not caused by the Owner, the Contractor, a Subcontractor of any tier, or the Consultant, or anyone acting on behalf of any of them, the Contractor shall be entitled only to an increase in the Contract Time, in accordance with the Contract documents, but not a change in the Contract Sum. If the delay was caused by the Contractor, a Subcontractor of any tier, or anyone acting on behalf of any of them, the Contractor is not entitled to an increase in the Contract Time or in the Contract Sum.

4.3.7.2 If adverse weather conditions are the basis for a Claim for additional time, such Claim shall be documented by data substantiating that weather conditions were abnormal for the period of time, could not have been reasonably anticipated and had an adverse effect on the scheduled construction, and that the Work was on schedule (or was not behind schedule through the fault of the Contractor) at the time the adverse weather conditions occurred. Neither the Contract Time nor the Contract Sum will be adjusted for normal inclement weather. The Contractor shall be entitled to a change in the Contract Time only if the Contractor can substantiate to the reasonable satisfaction of the Owner and Consultant that there was materially greater than normal inclement weather considering the full term of the Contract Time and using a ten-year average of accumulated record mean values from climatological data compiled by the U.S. Department of Commerce National Oceanic and Atmospheric Administration for the locale of the Project, and that the alleged abnormal inclement weather actually extended the critical path of the Work. IF the total net accumulated number of calendar days lost due to inclement weather from commencement of the Work until Final Completion exceeds the total net accumulated to be expected for the same period from the aforesaid data, and the Owner grants the critical path.

4.3.8 Injury or Damage to Person or Property. If either party to the Contract suffers injury or damage to person or property because of an act or omission of the other party, or of others for whose acts such party is legally responsible, written notice of such injury or damage, whether or not insured, shall be given to the other party within a reasonable time not exceeding 21 days after discovery. The notice shall provide sufficient detail to enable the other party to investigate the matter.

4.3.9 If unit prices are stated in the Contract Documents or subsequently agreed upon, and if quantities originally contemplated are materially changed in a proposed Change Order or Construction Change Directive so that application of such unit prices to quantities of Work proposed will cause substantial inequity to the Owner or Contractor, the applicable unit prices shall be equitably adjusted.

4.3.10 Time is of the Essence. The parties agree that the Owner shall be entitled to recover liquidated damages at the rate stated in the Agreement, which shall commence on the first day following the expiration of the Contract Time and continuing until the date of Substantial completion.

4.4 RESOLUTION OF CLAIMS AND DISPUTES

4.4.1 In an effort to reduce the incidence and costs to all parties of extended disputes, all Claims, direct or indirect, arising out of, or relating to, the Contract Documents or the breach thereof, except claims which have been waived under the terms of the Contract Documents, shall be decided exclusively by the following alternative dispute resolution procedure unless the parties mutually agree in writing otherwise.

4.4.2 The Contractor shall submit a written notice of any Claim to the Owner and the Consultant within 14 days of the occurrence of the event giving rise to such Claim and shall include a clear description of the event leading to or causing the Claim. The Contractor shall submit a written Claim as providing herein within 30 days of the notice. Claims shall include a clear description of the Claim and any proposed change in the Contract Sum (showing all components and calculations) and/or Contract Time (showing cause of and analysis of the resultant delay in the critical path) of the Claim and shall provide data fully supporting the Claim. Failure to properly submit the notice of Claim shall constitute waiver of the Claim. The Claim shall be deemed to include all changes, direct and indirect, in cost and in time to which the Contractor (and Subcontractors of any tier) is entitled. Any claim of a Subcontractor of any tier may be brought only through, and after review by, the Contractor.

4.4.3 Upon receipt of a Claim against the Contractor or at any time thereafter, the Consultant or the Owner may, but is not obligated to, notify the surety, if any, of the nature and amount of the Claim. If the Claim relates to a possibility of a Contractor's default, the Consultant or the Owner may, but is not obligated to, notify the surety and request the surety's assistance in resolving the controversy.

4.4.4 If a claim relates to or is the subject of a mechanic's lien or construction lien, the party asserting such Claim may proceed in accordance with applicable law to comply with the lien notice or filing deadlines prior to resolution of the Claim by the Consultant, by mediation or by litigation.

4.4.5 Within 30 days of the Owner's receipt of the written Claim, the Contractor may require that an officer of the Contractor, a principal of the Consultant, and the Owner's Superintendent or designee (all with authority to settle) meet, confer, and attempt to resolve the Claim during the following 21 days. The Owner may continue the meeting to a time after it has assembled and reviewed data. If the Claim is not resolved, the Contractor may bring no claim against the Owner unless the Claim is first subject to nonbinding mediation as described in Paragraph 4.5. This requirement cannot be waived except by an explicit written waiver.

4.4.6 The Contractor agrees that the Owner may join the Contractor as a party to any litigation/arbitration involving the alleged fault of the Contractor or Subcontractor of any tier.

4.5 MEDIATION

4.5.1 Any Claim arising out of or relating to the Contract, except Claims relating to aesthetic effect and except those waived shall be subject to mediation as a condition precedent to the institution of legal or equitable proceedings by either party. This requirement cannot be waived except by an express written waiver.

4.5.2 The parties shall endeavor to resolve their claims by mediation, which unless the parties mutually agree otherwise, shall be in accordance with the Construction Industry Mediation Rule of the American Arbitration Association currently in effect. Request for mediation shall be filed in writing with the other party to the Contract and with the American Arbitration Association. Mediation shall proceed in advance of legal or equitable proceedings, which shall be stayed pending mediation unless stayed for a longer period by agreement of the parties or court order.

4.5.3 The parties to the mediation shall share the mediator's fee and any filing fees equally. The mediation shall be held in the place where the Project is located, unless another location is mutually agreed upon. Agreements reached in mediation shall be enforceable as settlement agreements in any court having jurisdiction thereof.

4.5.4 An officer of the Contractor and the Owner's Superintendent or designee must attend the mediation session with authority to settle the Claim. To the extent there are other parties in interest, such as the Consultant or Subcontractors, their representatives, also with the authority to settle the Claim, shall also attend the mediation session. Unless the Owner and the Contractor mutually agree in writing otherwise, all unresolved Claims shall be considered at a single mediation session which shall occur prior to Final Acceptance by the Owner.

4.6 LITIGATION

4.6.1 The Contractor may bring no litigation on Claims unless such Claims have been properly raised and considered in the procedures of Subparagraphs 4.4.1 through 4.4.3 above. All unresolved Claims of the Contractor shall be waived and released unless the Contractor has complied with the time limits of the Contract Documents, and litigation is served and filed within the earlier of (a) 120 days after the Date of Substantial Completion approved in writing by the Owner or (b) 60 days after Final Acceptance. This requirement cannot be waived except by an explicit written waiver signed by the Owner and the Contractor. The pendency of mediation shall toll these deadlines until the later of the mediator providing written notice to the parties of impasse or 30 days after the date of the last mediation session. Neither the Contractor nor a Subcontractor of any tier, whether claiming under a lien statute or otherwise, shall be entitled to attorneys' fees directly or indirectly from the Owner (but may recover attorneys' fees from the statutory Retainage fund itself to the extent allowable under law).

4.6.2 Judgment on Final Award. The award rendered by the arbitrator or arbitrators shall be final, and judgment may be entered upon it in accordance with applicable law in any court having jurisdiction thereof.

ARTICLE 5 SUBCONTRACTORS

5.1 DEFINITIONS

5.1.1 The term "Subcontractor" is referred to throughout the Contract Documents as if singular in number and means a Subcontractor or an authorized representative of the Subcontractor. The term "Subcontractor" does not include a separate contractor or subcontractors of a separate contractor.

5.2 AWARD OF SUBCONTRACTS AND OTHER CONTRACTS FOR PORTIONS OF THE WORK

5.2.1 The Contractor shall not change a Subcontractor, person or entity previously selected if the Owner or Consultant makes reasonable objection to such substitute. The Contractor shall require bids and contracts

from Subcontractors to be submitted in a format which specifically sets for the amount of any credit that the Owner will ultimately be the benefit of, if all or any portion of any Subcontractor's Work is deleted. In no instance shall the Owner be obligated to pay any fee, profit or overheard for Work which is deleted from any Subcontractor's scope or from that of the Contractor.

5.3 SUBCONTRACTUAL RELATIONS

5.3.1 By appropriate agreement, written where legally required for validity, the Contractor shall require each Subcontractor, to the extent of the Work to be performed by the Subcontractor, to be bound to the Contractor by terms of the Contract Documents, and to assume toward the Contractor all the obligations and responsibilities, including the responsibility for safety of the Subcontractor's Work, which the Contractor, by these Documents, assumes toward the Owner or Consultant. Each subcontract agreement shall preserve and protect the rights of the Owner and Consultant under the Contract Documents with respect to the Work to be performed by the Subcontractor so that subcontracting thereof will not prejudice such rights. Where appropriate, the Contractor shall require each Subcontractor to enter into similar agreements with other Subcontractors. The Contractor shall make available to each proposed Subcontractor, prior to the execution of the subcontract agreement, copies of the Contract Documents to which the Subcontractor will be bound, and, upon written request of the Subcontractor, identify to the Subcontractor terms and conditions of the proposed subcontract agreement which may be at variance with the Contract Documents. Subcontractors will similarly make copies of applicable portions of such documents available to their respective proposed Sub-subcontractors.

5.4 CONTINGENT ASSIGNMENT OF SUBCONTRACTS

5.4.1 Each subcontract agreement for a portion of the Work is assigned by the Contractor to the Owner or to another contractor should Owner so elect and consent, provided that:

- .1** assignment is effective only after termination of the Contract by the Owner and only for those subcontract agreements which the Owner accepts by notifying the Subcontractor and Contractor in writing; and
- .2** assignment is subject to the prior rights of the surety, if any, obligated under bond relating to the Contract.

5.4.2 Each subcontract shall specifically provide that the Owner (or other contractor) shall only be responsible to the subcontractor for those obligations that accrue after the Owner's or other contractor's exercise of rights under the conditional assignment required hereby.

ARTICLE 6 CONSTRUCTION BY OWNER OR BY SEPARATE CONTRACTORS**6.1 OWNER'S RIGHT TO PERFORM CONSTRUCTION AND TO AWARD SEPARATE CONTRACTS**

6.1.1 The Owner reserves the right to perform construction or operations related to the Project with the Owner's own forces, and to award separate contracts in connection with other portions of the Project or other construction or operations on the site under Conditions of the Contract identical or substantially similar to these including those portions related to insurance and waiver of subrogation. If the Contractor claims that delay or additional cost is involved because of such action by the Owner, the Contractor shall make such Claim as provided in Paragraph 4.3.

6.1.2 When separate contracts are awarded for different portions of the Project or other construction or operations on the site, the term "Contractor" in the Contract Documents in each case shall mean the Contractor who executes each separate Owner-Contractor Agreement.

6.1.3 The Owner shall provide for coordination of the activities of the Owner's own forces and of each separate contractor with the Work of the Contractor, who shall cooperate with them. The Contractor shall participate with other separate contractors and the Owner in reviewing their construction schedules when directed to do so. The Contractor shall make without an increase in the Contract Time or Sum any revisions to the construction schedule deemed necessary after a joint review and mutual agreement. The construction schedules shall then constitute the schedules to be used by the Contractor, separate contractors and the Owner until subsequently revised.

6.1.4 Unless otherwise provided in the Contract Documents, when the Owner performs construction or operations related to the Project with the Owner's own forces, the Owner shall be deemed to be subject to the same obligations and to have the same rights which apply to the Contractor under the Conditions of the Contract, including, without excluding others, those stated in Article 3, this Article 6 and Articles 10, 11 and 12.

6.2 MUTUAL RESPONSIBILITY

6.2.1 The Contractor shall afford the Owner and separate contractors reasonable opportunity for introduction and storage of their materials and equipment and performance of their activities, and shall connect and coordinate the Contractor's construction and operations with theirs as required by the Contract Documents.

6.2.2 If part of the Contractor's Work depends for proper execution or results upon construction or operations by the Owner or a separate contractor, the Contractor shall, prior to proceeding with that portion of the Work, promptly report to the Consultant apparent discrepancies or defects in such other construction that would render it unsuitable for such proper execution and results. Failure of the Contractor so to report shall constitute an acknowledgment that the Owner's or separate contractor's completed or partially completed construction is fit and proper to receive the Contractor's Work, except as to defects not then reasonably discoverable.

6.2.3 The Owner shall be reimbursed by the Contractor for costs incurred by the Owner which are payable to a separate contractor because of delays, improperly timed activities or defective construction of the Contractor or any Subcontractors. The Owner shall be responsible to the Contractor for costs incurred by the Contractor because of delays, improperly timed activities, and damage to the Work or defective construction of a separate contractor.

6.2.4 The Contractor shall promptly remedy damage wrongfully caused by the Contractor or Subcontractors to completed or partially completed construction or to property of the Owner or separate contractors as provided in Subparagraph 10.2.5.

6.3 OWNER'S RIGHT TO CLEAN UP

6.3.1 If a dispute arises among the Contractor, separate contractors and the Owner as to the responsibility under their respective contracts for maintaining the premises and surrounding area free from waste materials and rubbish, the Owner may clean up and the Consultant may allocate the cost among those responsible.

ARTICLE 7 CHANGES IN THE WORK

7.1 GENERAL

7.1.1 Changes in the Work may be accomplished after execution of the Contract, and without invalidating the Contract, solely by Change Order, Construction Change Directive or order for a minor change in the Work, subject to the limitations stated in this Article 7 and elsewhere in the Contract Documents.

7.1.2 A Change Order shall be based upon agreement among the Owner, Contractor and Consultant; a Construction Change Directive requires agreement by the Owner and Consultant and may or may not be agreed to by the Contractor; an order for a minor change in the Work may be issued by the Consultant alone.

7.1.3 Changes in the Work shall be performed under applicable provisions of the Contract Documents, and the Contractor shall proceed promptly, unless otherwise provided in the Change Order, Construction Change Directive or order for a minor change in the Work.

7.1.4 Before effectuating a change in the Work, the Owner may request the Contractor to propose the amount of change in the Contract Sum, if any, and the extent of change in the Contract Time, if any, arising from the proposed change in the Work. The Contractor shall submit its responsive proposal as soon as possible and within 14 days and shall in good faith specify the components and amounts by which the Contract Sum and/or Contract Time would change. Labor, materials and equipment shall be limited to and itemized in the manner described in Paragraph 7.5 for the Contractor and major Subcontractors. If the Contractor fails to respond within this time, the Owner may withhold some or all of a progress payment otherwise due until the tardy proposal is received. If the Owner accepts the proposal in writing, the Owner will be immediately bound, the change will be included in a future Change Order, and the change in the Work shall commence expeditiously. The Owner may reject the proposal, in which case the Owner may either not effectuate the change in the Work or may order the change through a Construction Change Directive or an order for a minor change in the Work. The Consultant may confer directly with Subcontractors of any tier concerning any item proposed to the Owner under this Article.

7.2 CHANGE ORDERS

7.2.1 A Change Order is a written instrument which may be prepared by the Consultant and signed by the Owner, Contractor and which may be signed by the Consultant, stating their agreement upon all of the following:

- .1** change in the Work;
- .2** the amount of the adjustment, if any, in the Contract Sum; and
- .3** the extent of the adjustment, if any, in the Contract Time.

7.2.2 Methods used in determining adjustments to the Contract Sum may include those listed in Subparagraph 7.3.3. Agreement on a Change Order shall constitute full and final settlement of all issues and matters related to the change in Work which is subject to the Change Order including, without limitation,

any and all direct and indirect costs and all adjustments in the Contract Time and Sum. There shall be no fee due or to become due to the Contractor related to deductive Change Orders.

7.3 CONSTRUCTION CHANGE DIRECTIVES

7.3.1 A Construction Change Directive is a written order which may be prepared by the Consultant and signed by the Owner, and which may be signed by the Consultant, directing a change in the Work prior to agreement on adjustment, if any, in the Contract Sum or Contract Time, or both. The Owner may by Construction Change Directive, without invalidating the Contract, order changes in the Work within the general scope of the Contract consisting of additions, deletions or other revisions, the Contract Sum and Contract Time being adjusted accordingly.

7.3.2 A Construction Change Directive shall be used in the absence of total agreement on the terms of a Change Order.

7.3.3 If the Construction Change Directive provides for an adjustment to the Contract Sum, the adjustment shall be based on one of the following methods:

- .1** mutual acceptance of a lump sum properly itemized and supported by sufficient substantiating data to permit evaluation;
- .2** unit prices stated in the Contract Documents or subsequently agreed upon;
- .3** cost to be determined in a manner agreed upon by the parties (accompanied by an itemized estimate of probable cost) and a mutually acceptable fixed or percentage fee; or
- .4** as provided in Subparagraph 7.3.6.

7.3.4 Upon receipt of a Construction Change Directive, the Contractor shall promptly proceed with the change in the Work involved. As soon as possible and within seven (7) days of receipt the Contractor shall advise the Consultant in writing of the Contractor's agreement or disagreement with the proposed adjustment or the method, if any, provided in the Construction Change Directive for determining the proposed adjustment in the Contract Sum or Contract Time. The Contractor's response shall reasonably specify the reasons for its disagreement and the adjustment or other terms that it proposes. Without such timely written response, the Contractor shall conclusively be deemed to have accepted the Owner's adjustment. The Contractor's disagreement shall not relieve the Contractor of its obligations to comply promptly with any written notice issued by the Owner or the Consultant. The adjustment shall then be determined by the Consultant in accordance with the provisions of the Contract Documents.

7.3.5 A Construction Change Directive signed by the Contractor indicates the agreement of the Contractor therewith, including adjustment in Contract Sum and Contract Time or the method for determining them. Such agreement shall be effective immediately and shall be incorporated into and be construed and interpreted as a Change Order.

7.3.6 If the Contractor does not respond promptly or disagrees with the method for adjustment in the Contract Sum, or if cost is to be determined under Clause 7.3.3.3, the Contractor shall keep and present itemized in the categories of Paragraph 7.5 and in such form as the Consultant may prescribe, an itemized accounting together with appropriate supporting data. In order to facilitate checking of such quotations, all proposals, except those so minor that their propriety can be seen by inspection, shall be accompanied by complete itemization of costs, including labor, equipment, material and subcontract costs. Labor, equipment and materials shall be itemized in the manner described in Paragraph 7.5. When major cost items arise from Subcontractors of any tier, these items shall also be similarly itemized. Approval may not be given without such itemization. Failure to provide data within 21 days of the Owner's request shall constitute waiver of any Claim for changes in the Contract Time or Contract Sum. The total cost of any

change, including a Claim under Paragraph 4.3 or 4.4, shall be limited to the reasonable value, as determined by the Consultant (subject to appeal through the dispute resolution procedure of Paragraph 4.4), of the items in Paragraph 7.5. Unless otherwise agreed in writing by the Owner, the cost shall not exceed the lower of the prevailing cost for the work in the locality of the Project or the cost of the work in the current edition of R.S. Means Company, Inc., Building Construction Cost Data as adjusted to local costs and conditions. The Consultant and the Owner may communicate directly with Subcontractors concerning costs of any Work included in a Construction Change Directive. If the Contractor disagrees with the method for the adjustment in the Contract Time, the adjustment and method shall be referred to the Consultant for determination, and any adjustment shall be limited to the change in the actual critical path of the Contractor's Construction Schedule directly caused thereby.

7.3.7 The amount of credit to be allowed by the Contractor to the Owner for a deletion or change which results in a net decrease in the Contract Sum shall be the largest of (1) the reasonable and prevailing value of the deletion or change; (2) the line item value in the Schedule of Values; or (3) the actual net cost as confirmed by the Consultant. When both additions and credits covering related Work or substitutions are involved in a change, the allowance for overhead and profit shall be figured on the basis of net increase, if any, with respect to that change.

7.3.8 Pending final determination of the total cost of a Construction Change Directive to the Owner and provided that any amounts not in dispute for such changes in the Work shall be included in Applications for Payment accompanied by a Change Order indicating the parties' agreement with part or all of such costs. If the Contractor adds a reservation of rights that has not been initialed by the Owner, all the amounts for the Construction Change Directive shall be considered disputed unless costs are renegotiated or the reservation is withdrawn or changed in a manner satisfactory to the Owner.

7.3.9 When the Owner and Contractor agree with the determination made by the Consultant concerning the adjustments in the Contract Sum and Contract Time, or otherwise reach agreement upon the adjustments, such agreement shall be effective immediately and shall be recorded by preparation and execution of an appropriate Change Order.

7.4 MINOR CHANGES IN THE WORK

7.4.1 The Consultant and the Owner will have authority to order minor changes in the Work not involving adjustment in the Contract Sum or extension of the Contract Time and not inconsistent with the intent of the Contract Documents. Such changes shall be effected by written order and shall be binding on the Owner and Contractor. The Contractor shall carry out any and all such written orders promptly. If at the option of the Owner, the Consultant exercises any authority, right(s) or duty(ies) stated anywhere in this Agreement or any other Contract Document as an authority, right or duty the Consultant may perform, the Contractor shall comply with, be bound by and respond therewith and thereto, including, but not limited to, the exercise of any authority, right(s) or duty(ies) related to minor work.

7.5 PRICING COMPONENTS

7.5.1 The total cost of any changed Work or of any other increase or decrease in the Contract Sum, including a Claim, shall be limited to the following components:

- .1** Basic wages: The hourly wage (without markup, fringe benefits or labor burden) not to exceed that specified in the applicable "Intent to Pay Prevailing Wage" for the laborers, apprentices, journeymen, and foremen performing and/or directly supervising the changed Work on the site. The premium portion of overtime wages is not included unless pre-approved by the Owner.
- .2** Fringe benefits: Fringe benefits paid by the Contractor as established by the Oregon Bureau of Labor and Industries or contributed to labor trust funds as itemized fringe

benefits, whichever is applicable. Costs paid or incurred by the Contractor for vacations, per diem, bonuses, stock options, or discretionary payments to employees are not reimbursable.

- .3 Workers' insurances: Direct contributions to the State of Oregon as industrial insurance; medical aid; and supplemental pension by class and rates established by the Oregon Bureau of Labor and Industries.
- .4 Federal insurances: Direct contributions required by the Federal Insurance Compensation Act (FICA); Federal Unemployment Tax Act (FUTA); and State Unemployment Compensation Act (SUCA).

7.5.2 Direct material costs: This is an itemization, including material invoice, of the quantity and cost of additional materials reasonable and necessary to perform the change in the Work. The unit cost shall be based upon the net cost after all discounts or rebates, freight costs, express charges, or special delivery costs, when applicable. No lump sum costs will be allowed except when approved in advance by the Consultant. Discounts and rebates based on prompt payment may be included, however, if the Contractor offers but the Owner declines the opportunity.

7.5.3 Construction equipment usage costs: This is an itemization of the actual length of time that construction equipment appropriate for the Work will be used solely on the change in the Work at the site times the applicable rental cost as established by the lower of the local prevailing rate published in The Rental Rate Blue Book by Data Quest, San Jose, California, or the actual rate paid to an unrelated third party as evidenced by rental receipts. Actual, reasonable mobilization costs are permitted if the equipment is brought to the Site solely for the change in the Work. If equipment is required for which a rental rate is not established by The Rental Rate Blue Book, an agreed rental rate shall be established for the equipment, which rate and use must be approved by the Consultant prior to performing the work. If more than one rate is applicable, the lowest rate will be utilized. The rates in effect at the time of the performance of the changed Work are the maximum rates allowable for equipment of modern design and in good working condition and include full compensation for furnishing all fuel, oil, lubrication, repairs, maintenance, and insurance. Equipment not of modern design and/or not in good working condition will have lower rates. Hourly, weekly, and/or monthly rates, as appropriate, will be applied to yield the lowest total cost. The rate for equipment necessarily standing by for future use on the changed Work shall be 50% of the rate established above. The total cost of rental allowed shall not exceed the cost of purchasing the equipment outright.

7.5.4 Cost of change in insurance or bond premium. This is defined as:

- .1 Contractors' liability insurance: The cost (expressed as a percentage) of any changes in the Contractor's liability insurance arising directly from the changed Work; and
- .2 Public works bond: The cost (expressed as a percentage) of the change in the Contractor's premium for the Contractor's bond arising directly from the changed Work.

Upon request, the Contractor shall provide the Owner with supporting documentation from its insurer or surety of any associated cost incurred.

7.5.5 Subcontractor costs: These are payments the Contractor makes to Subcontractors for changed Work performed by Subcontractors. The Subcontractors' cost of changed Work shall be determined in the same manner as prescribed in this Paragraph 7.5.

7.5.6 Fee: This is the allowance for all combined overhead, profit and other costs, including all office, home office and site overhead (including project manager, project engineers, project foreman, estimator, superintendent and their vehicles), taxes (except for sales tax), warranty, safety costs, quality

control/assurance, purchasing, small or hand tool or expendable charges, preparation of as-built drawings, impact on unchanged Work, Claim preparation, and delay and impact costs of any kind, added to the total cost to the Owner of any Change Order, Construction Change Directive, Claim or any other claim of any kind on this Project. It shall be limited in all cases to the following schedule:

- .1 The Contractor shall receive 15% of the cost of any materials supplied or work properly performed by the Contractor's own forces.
- .2 The Contractor shall receive 8% of the amount owed directly to a Subcontractor or Supplier for materials supplied or work properly performed by that Subcontractor or Supplier.
- .3 Each Subcontractor of any tier shall receive 12% of the cost of any materials properly supplied or work properly performed by its own forces.
- .4 Each Subcontractor of any tier shall receive 8% of the amount it properly incurs for materials supplied or work properly performed by its suppliers or subcontractors of any lower tier.
- .5 The cost to which this Fee is to be applied shall be determined in accordance with Paragraph 7.5.1-7.5.4.
- .6 The total summed Fee of the Contractor and all Subcontractors of any tier shall not exceed 25%. None of the fee percentages authorized in this Paragraph 7.5.6 may be compounded with any other fee percentage or percentages authorized in this paragraph.

If a change in the Work involves both additive and deductive items, the appropriate Fee allowed will be added to the net difference of the items. If the net difference is negative, no Fee will be added to the negative figure as a further deduction.

ARTICLE 8 TIME

8.1 DEFINITIONS

8.1.1 Unless otherwise provided, Contract Time is the period of time, including authorized adjustments, allotted in the Contract Documents for Substantial Completion of the Work.

8.1.2 The date of commencement of the Work is the date established in the Agreement.

8.1.3 The date of Substantial Completion is the date certified by the Consultant in accordance with Paragraph 9.8.

8.1.4 The term "day" as used in the Contract Documents shall mean calendar day unless otherwise specifically defined. Time is expressly declared of the essence as it relates to the performance of the Contractor's Work. Without limiting the foregoing, Contractor must complete the Project in the manner required hereby on the date required hereby. The failure to so complete the Project shall cause the Owner to incur substantial costs and expenses, including, but not limited to, those related to staffing, teachers, management, transportation, publication, communication, signage, and rental, all of which costs and expenses the Contractor shall be liable for.

8.2 PROGRESS AND COMPLETION

8.2.1 Time limits stated in the Contract Documents are of the essence of the Contract. By executing the Agreement the Contractor confirms that the Contract Time is a reasonable period for performing the Work.

8.2.2 The Contractor shall not knowingly, except by agreement or instruction of the Owner in writing, prematurely commence operations on the site or elsewhere prior to the effective date of insurance required by Article II to be furnished by the Contractor and Owner. The date of commencement of the Work shall not be changed by the effective date of such insurance. The Contractor shall notify the Owner in writing not less than five days or other agreed period before commencing the Work.

8.2.3 The Contractor shall proceed expeditiously with adequate forces and shall achieve Substantial Completion and Final Completion within the Contract Time.

8.3 DELAYS AND EXTENSIONS OF TIME

8.3.1 If the Contractor is unreasonably delayed at any time in the commencement or progress of the Work (1) by an act or neglect of the Owner or Consultant, or of an employee of either, or of a separate contractor employed by the Owner, or (2) by changes ordered in the Work only to the extent reflected in approved Change Orders providing for specific extensions of the Contract Time, or (3) by unanticipated, abnormal weather (see Paragraph 4.3.7), or (4) by unexpected industry-wide labor disputes, fire, unusual delay in deliveries, governmental delays (including permit delays not caused by the Owner), unavoidable casualties or other causes beyond the Contractor's control, or (5) by delay authorized by the Owner pending mediation and litigation, or (6) by other causes which the Consultant determines may justify delay, then the Contract Time shall be extended by Change Order for such reasonable time, limited to the change in the actual critical path of the Contractor's Construction Schedule directly caused thereby, as the Consultant may determine consistent with the provisions of the Contract Documents. In no event, however, shall the Contractor be entitled to any extension of time absent proof of (1) delay to an activity on the critical path of the Contract Schedule, also as to actually delay the Project completion beyond the date of Substantial Completion, or (2) delay transforming an activity into the critical path of the Contract Schedule, so as to actually delay the Project completion beyond the date of Substantial Completion.

8.3.2 Claims relating to time shall be made in accordance with applicable provisions of Paragraphs 4.3 and 4.4. That the Owner or Consultant may be aware of the occurrence or existence of a delay through means other than the Contractor's written notification shall not constitute a waiver of a timely or written notice or Claim.

8.3.3 This Paragraph 8.3 does not preclude recovery of damages for delay by either party under other provisions of the Contract Documents.

- .1** If the delay was not caused by the Owner, the Contractor, a Subcontractor of any tier, or the Consultant, or anyone acting on behalf of any of them, the Contractor is entitled only to an increase in the Contract Time in accordance with the Contract Documents, but not a change in the Contract Sum. If the delay was caused by the Contractor, a Subcontractor of any tier, or anyone acting on behalf of any of them, the Contractor is not entitled to an increase in the Contract Time or in the Contract Sum. The Contractor shall not recover damages, an equitable adjustment or an increase in the Contract Sum or Contract Time from the Owner where the Contractor could have reasonably avoided the delay by the exercise of due diligence. The Contractor shall be able to recover an increase in the Contract Sum, consistent with the terms of the Contract Documents, only if a delay in the critical path was unreasonable and caused by the Owner. A Subcontractor is not entitled to damages, an equitable adjustment or an increase in the Contract Sum for any delay that does not increase the Contract Time.
- .2** In the event the Contractor (including any Subcontractors of any tier) is held to be entitled to damages from the Owner for delay beyond the payment permitted in Subparagraph 7.5.6, it is agreed that the total combined damages to the Contractor and any Subcontractors of any tier for each day of delay shall be limited to the same daily liquidated damage rate specified in the Contract Documents due the Owner for the Contractor's delay

in achieving Substantial Completion. No damages will be allowed for any time prior to 14 days before receipt of written notice of the Claim of the delay pursuant to Subparagraph 4.4.2.

- .3 The Contractor shall not in any event be entitled to damages arising out of actual or alleged loss of efficiency; morale, fatigue, attitude, or labor rhythm; constructive acceleration; home office overhead; expectant under run; trade stacking; reassignment of workers; rescheduling of work, concurrent operations; dilution of supervision; learning curve; beneficial or joint occupancy; logistics; ripple; season change; extended overhead; profit upon damages for delay; impact damages; or similar damages.
- .4 The Contractor shall not be entitled to any adjustment in the Contract Time or in the Contract Sum, or to any additional payment of any sort, by reason of the loss or the use of any float time, including time between the Contractor's anticipated completion date and the end of the Contract Time, whether or not the float time is described as such on the Contractor's Construction Schedule.

ARTICLE 9 PAYMENTS AND COMPLETION

9.1 CONTRACT SUM

9.1.1 The Contract Sum is stated in the Agreement and, including authorized adjustments, is the total amount payable by the Owner to the Contractor for performance of the Work under the Contract Documents.

9.2 SCHEDULE OF VALUES

9.2.1 Within seven (7) calendar days of the execution of this the Agreement and with each Application for Payment, the Contractor shall submit to the Consultant a schedule of values in a form satisfactory to the Consultant and Owner allocated to various portions of the Work, prepared in such form and supported by such data to substantiate its accuracy as the Consultant may require. This schedule, unless objected to by the Consultant or Owner, shall be used as a basis for reviewing the Contractor's Applications for Payment.

9.3 APPLICATIONS FOR PAYMENT

9.3.1 At least ten days before the date established for each progress payment, the Contractor shall submit to the Consultant an itemized Application for Payment for operations completed in accordance with the schedule of values. Such application shall be notarized and supported by such data substantiating the Contractor's right to payment as the Owner or Consultant may require, such as copies of requisitions from Subcontractors and material suppliers and reflecting Retainage if provided for in the Contract Documents.

9.3.1.1 As provided in Subparagraph 7.3.8, such applications may include requests for payment on account of changes in the Work which have been properly authorized by Construction Change Directives, or by interim determinations of the Consultant, but not yet included in Change Orders.

9.3.1.2 Such applications may not include requests for payment for portions of the Work for which the Contractor does not intend to pay to any Subcontractor including any material supplier.

9.3.2 Unless otherwise provided in the Contract Documents, payments shall be made on account of materials and equipment delivered and suitably stored at the site for subsequent incorporation in the Work. If approved in advance by the Owner, payment may similarly be made for materials and equipment suitably

stored off the site at a location agreed upon in writing. Payment for materials and equipment stored on or off the site shall be conditioned upon compliance by the Contractor with procedures satisfactory to the Owner to establish the Owner's free and clear title to such materials and equipment or otherwise protect the Owner's interest, and shall include the costs of applicable insurance, storage and transportation to the site for such materials and equipment stored off the site.

9.3.3 The Contractor warrants 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 Certificates for Payment have been previously issued and payments received from the Owner shall, be free and clear of any and all liens, claims, security interests or encumbrances in favor of the Contractor, and any all Subcontractors, including any material suppliers, or other persons or entities making a claim by reason of having provided labor, materials and equipment relating to the Work.

9.4 CERTIFICATES FOR PAYMENT

9.4.1 The Consultant may, within seven (7) days after receipt of the Contractor's Application for Payment, either issue to the Owner a Certificate for Payment, with a copy to the Contractor, for such amount as the Consultant determines is properly due, or notify the Contractor and Owner in writing of the Consultant's reasons for withholding certification in whole or in part as provided in Subparagraph 9.5.1.

9.4.2 The issuance of a Certificate for Payment will constitute a representation by the Consultant to the Owner, based on the Consultant's evaluation of the Work and the data comprising the Application for Payment, that the Work has progressed to the point indicated and that, to the best of the Consultant's knowledge, information and belief, the quality of the Work is in accordance with the Contract Documents. The foregoing representations are subject to an evaluation of the Work for conformance with the Contract Documents upon Substantial Completion, to results of subsequent tests and inspections, to correction of minor deviations from the Contract Documents prior to completion and to specific qualifications expressed by the Consultant. However, the issuance of a Certificate for Payment will not be a representation that the Consultant has (1) made exhaustive or continuous on-site inspections to check the quality or quantity of the Work, (2) reviewed construction means, methods, techniques, sequences or procedures, (3) reviewed copies of requisitions received from Subcontractors and material suppliers and other data requested by the Owner to substantiate the Contractor's right to payment, or (4) made examination to ascertain how or for what purpose the Contractor has used money previously paid on account of the Contract Sum.

9.5 DECISIONS TO WITHHOLD CERTIFICATION

9.5.1 The Consultant may withhold a Certificate for Payment in whole or in part, to the extent reasonably necessary to protect the Owner, if, in the Consultant's opinion the representations to the Owner required by Subparagraph 9.4.2 cannot be made. If the Consultant is unable to certify payment in the amount of the Application, the Consultant may notify the Contractor and Owner as provided in Subparagraph 9.4.1. If the Contractor and Consultant cannot agree on a revised amount, the Consultant may promptly issue a Certificate for Payment for the amount for which the Consultant is able to make such representations to the Owner. The Consultant may also withhold a Certificate for Payment or, because of subsequently discovered evidence, may nullify the whole or a part of a Certificate for Payment previously issued, to such extent as may be necessary in the Consultant's opinion to protect the Owner from loss for which the Contractor is responsible, including loss resulting from acts and omissions described in Subparagraph 3.3.2, because of:

- .1 defective Work not remedied;

- .2 third party claims filed or reasonable evidence indicating probable filing of such claims unless security is acceptable to the Owner is provided by the Contractor;
- .3 failure of the Contractor to make payments properly to Subcontractors or for labor, materials or equipment;
- .4 reasonable evidence that the Work cannot be completed for the unpaid balance of the Contract Sum;
- .5 damage to the Owner or another contractor;
- .6 reasonable evidence that the Work will not be completed within the Contract Time, and that the unpaid balance would not be adequate to cover actual or liquidated damages for the anticipated delay; or
- .7 Any other failure to comply with the Contract Documents or Contractor's persistent failure to carry out the Work in accordance with the Contract Documents.

9.5.2 When the above reasons for withholding certification are removed, certification will be made for amounts previously withheld.

9.6 PROGRESS PAYMENTS

9.6.1 After the Consultant has received all the necessary documents and properly issued a Certificate for Payment, the Owner shall make payment in the manner and within the time provided in the Contract Documents and may so notify the Consultant.

9.6.2 If not done previously, The Contractor shall promptly pay each Subcontractor, upon receipt of payment from the Owner, out of the amount paid to the Contractor on account of such Subcontractor's portion of the Work, the amount to which said Subcontractor is entitled, reflecting percentages actually retained from payments to the Contractor on account of such Subcontractor's portion of the Work. The Contractor shall, by appropriate agreement with each Subcontractor, require each Subcontractor to make payments to Sub-subcontractors in a similar manner.

9.6.3 The Consultant or Owner may on request, furnish to any Subcontractors or any other person or entity, if practicable, information regarding percentages of completion or amounts applied for by the Contractor and action taken thereon by the Consultant and Owner on account of portions of the Work done by such Subcontractor.

9.6.4 Neither the Owner nor Consultant shall have an obligation to pay nor to see to the payment of money to a Subcontractor except as may otherwise be required by law.

9.6.5 Payment to material suppliers shall be treated in a manner similar to that provided for Subcontractors because by the definitions of this Agreement they are a Subcontractor.

9.6.6 A Certificate for Payment, a progress payment, or partial or entire use or occupancy of the Project by the Owner shall not constitute acceptance of Work not in accordance with the Contract Documents.

9.6.7 Payments received by the Contractor for Work properly performed by Subcontractors and suppliers shall be held by the Contractor for those Subcontractors or suppliers who performed Work or furnished

materials, or both, under contract with the Contractor for which payment was made by the Owner. Nothing contained herein shall require money to be placed in a separate account and not commingled with money of the Contractor, shall create any fiduciary liability or tort liability on the part of the Contractor for breach of trust or shall entitle any person or entity to an award of punitive damages against the Contractor for breach of the requirements of this provision.

9.7 FAILURE OF PAYMENT

9.7.1 If the Consultant does not issue a Certificate for Payment, through no fault of the Contractor, within seven days after receipt of the Contractor's Application for Payment, or if the Owner does not pay the Contractor within seven days after the date established in the Contract Documents the amount certified by the Consultant or awarded by arbitration, then the Contractor may, upon seven additional days' written notice to the Owner and Consultant, stop the Work until payment of the amount owing has been received. The Contract Time shall be extended appropriately, and the Contract Sum shall be increased by the amount of the Contractor's reasonable costs of shut-down, delay and start-up, plus interest as provided for in the Contract Documents.

9.8 SUBSTANTIAL COMPLETION

9.8.1 Substantial Completion is the stage in the progress of the Work, or portion thereof designated and approved by the Consultant and Owner, when the Work or designated portion thereof is sufficiently complete in accordance with the Contract Documents so that the Owner can fully occupy and utilize the Work, or designated portion thereof, for its intended use. All Work other than incidental corrective or punch

list work and final cleaning shall have been completed, including but not limited to the following:

- .1** Obtain temporary occupancy permits, pressure vessel permits, elevator permits, and similar approvals or certificates by governing authorities and franchised services, assuring the Owner's full access and use of completed Work.
- .2** Submit the Contractor's punch list of items to be completed or corrected and written request for inspection.
- .3** Complete final start-up, testing, and commence instruction and training sessions on all major building systems, including HVAC and controls, intercom, data communications, fire alarm, telephone, fire sprinkler, security and clocks.
- .4** Make final changeover of locks and transmit new keys to the Owner, and advise the Owner of the changeover in security provisions.
- .5** Discontinue or change over and remove temporary facilities and services from the project site.
- .6** Advise the Owner on coordination of shifting insurance coverages, including proof of extended coverages as required.

The Work is not Substantially Complete unless the Consultant reasonably judges that the Work can achieve Final completion within 60 days, appropriate cleaning has occurred, all systems and parts are commissioned and usable, including balancing of the HVAC system, utilities are connected and operating normally, all required temporary occupancy permits have been issued and the work is accessible by normal

vehicular and pedestrian traffic routes. The fact that the owner may occupy the Work or a designated portion thereof does not indicate that the work is Substantially Complete or is acceptable in whole or in part, nor does such occupation toll or change any liquidated damages due the Owner.

9.8.1.2 Date of commissioning of Critical Systems. The following systems of the Work, and any other systems designated in the Contract Documents, are considered "Critical Systems": the HVAC system, the data communication system(s), the intercom system, the life safety system(s) and the security system. When the Contractor considers that the Critical Systems are up and running and ready for normal operation as specified for each phase, the Contractor shall so notify the Consultant in writing a minimum of 14 days prior to the Date of Substantial Completion for that portion or phase as fixed in the contract Documents. The Consultant will then schedule a pre-commissioning inspection of these systems to determine whether the Critical Systems are complete and ready for normal operation. If the Consultant's inspection discloses that the Critical Systems are not Substantially Complete or that any item which is not in accordance with the requirements of the Contract Documents, the Contractor shall expeditiously, and before the Date of Commissioning, complete or correct such item upon notification by the Consultant. The Contractor shall then submit a request for another inspection by the Consultant to determine completion of the Critical Systems and pay the costs associated with the re-inspection, including fees of the Consultant and its consultants. When the Critical Systems are complete, the Consultant will notify the Owner in writing, which shall establish the Date of Commissioning. Warranties on the Critical Systems required by the Contract Documents shall commence on the Date of Commissioning, unless otherwise provided. The Date of Commissioning shall not have an effect on the duties of the parties at Substantial Completion.

9.8.1.3 Indemnification. The Contractor shall defend, indemnify, and hold harmless the Owner and the Consultant and their agents, employees, and consultants, successors and assigns from and against all claims, damages, losses and expenses of third parties, direct and indirect, or consequential, including costs, design professional fees, and attorneys' fees incurred by the owner related to such claims and in proving the right to indemnification, arising out of or resulting from the failure of the Contractor to attain the Date of Commissioning less than 30 days prior to the Date of Substantial Completion fixed by the Contract Documents. In particular, the Contractor acknowledges that a 30-day period after the Date of Commissioning and prior to occupancy is specified during which the HVAC system is scheduled to operate under a procedure intended to dissipate out-gassing that may occur from interior and other materials.

9.8.2 When the Contractor considers that the Work, or a portion thereof which the Owner agrees to accept separately, is substantially complete, the Contractor shall prepare and submit to the Consultant and Owner a comprehensive list of items to be completed or corrected prior to final payment. The Contractor shall proceed promptly to complete and correct all items on the list. Failure to include an item on such list does not alter the responsibility of the Contractor to complete all Work in accordance with the Contract Documents.

9.8.3 Upon receipt of the Contractor's list, the Consultant and the Owner will make an inspection to determine whether the Work or designated portion thereof is substantially complete. If the Consultant's inspection discloses any item, whether or not included on the Contractor's list, which is not sufficiently complete in accordance with the Contract Documents so that the Owner can occupy and utilize the Work or designated portion thereof for its intended use, the Contractor shall, before issuance of the Certificate of Substantial Completion, complete or correct such item upon notification by the Consultant or Owner. In such case, the Contractor shall then submit a request for another inspection by the Consultant to determine Substantial Completion. If the Owner or Consultant determines that the Work or designated portion is not substantially complete, then the contractor shall expeditiously complete the Work or designated portion, request another inspection and pay all costs associated with any re-inspection.

9.8.4 When the Work or designated portion thereof is substantially complete, the Consultant may prepare a Certificate of Substantial Completion which, upon approval of the Owner, may establish the date of Substantial Completion, shall establish responsibilities of the Owner and Contractor for security, maintenance, heat, utilities, damage to the Work and insurance, and shall fix the time within which the Contractor shall finish all items on the list accompanying the Certificate. Warranties required by the Contract Documents shall commence on the date of Substantial Completion of the Work or designated portion thereof unless otherwise provided in the Certificate of Substantial Completion. The Contractor shall attach and submit with the executed Certificate of Substantial Completion a written list of each outstanding and unresolved Claim; any Claim not so submitted and identified, other than Retainage and the undisputed balance of the Contract Sum, shall be deemed waived and abandoned. If the Owner or Consultant determines that the Work or designated portion is not substantially complete, the Contractor shall expeditiously complete the Work or designated portion, again request an inspection, and pay the costs associated with the re-inspection, including Consultant and consultant fees.

9.8.5 The Certificate of Substantial Completion shall be submitted to the Owner and Contractor for their written acceptance of responsibilities assigned to them in such Certificate. Any items not included by the Consultant but required or necessary for Final Completion of the Contract shall be supplied and installed by the Contractor as a part of the Contract Sum, notwithstanding their not being recorded by the Consultant. Upon written acceptance of the Certificate of Substantial Completion and upon the Contractor's application, the Owner shall make payment as provided in the Contract Documents. Such payment shall be adjusted for Work that is incomplete or not in accordance with the requirements of the Contract Documents. No further payment will be due or owing until the payment at Final Completion.

9.8.6 The Contractor shall prepare, continue to monitor with the Consultant, and cause to be completed, all punch lists with respect to the activity of each Subcontractor and report weekly to the Owner on outstanding punch list items. Beginning 90 days before the scheduled date of Substantial Completion, the Contractor shall prepare reports weekly, identifying items to be completed in order to obtain temporary and permanent certificates of occupancy and make recommendations to the Owner with respect to effectuating the earliest possible completion.

9.9 PARTIAL OCCUPANCY OR USE

9.9.1 The Owner may occupy or use any completed or partially completed portion of the Work at any stage when such portion is designated by separate agreement with the Contractor, provided such occupancy or use is consented to by the insurer as required under Clause 11.3.1.5 and authorized 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 accepted in writing the responsibilities assigned to each of them for payments, Retainage, if any, security, maintenance, heat, utilities, damage to the Work and insurance, and have agreed in writing concerning the period for correction of the Work and commencement of warranties required by the Contract Documents. When the Contractor considers a portion substantially complete, the Contractor shall prepare and submit a list to the Consultant and Owner as provided under Subparagraph 9.8.2. Consent of the Contractor to partial occupancy or use shall not be unreasonably withheld. The stage of the progress of the Work shall be determined by written agreement between the Owner and Contractor or, if no agreement is reached, by decision of the Consultant.

9.9.2 Immediately prior to such partial occupancy or use, the Owner and Contractor shall, and Consultant may, 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.

9.9.3 Unless otherwise agreed upon, 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.

9.10 FINAL COMPLETION AND FINAL PAYMENT

9.10.1 FINAL COMPLETION.

9.10.1.1 If, at sixty (60) days after the Date of Substantial Completion, the Owner considers that the punch list items are unlikely to be completed within sixty (60) days of Substantial Completion, the Owner may, upon seven (7) days' written notice to the contractor, take over and perform some or all of the punch list items. If the Contractor fails to correct the deficiencies within the period required, the Owner may deduct the actual cost of performing this punch list work, including costs, plus 10% to account for the Owner's transaction costs from the Contract Sum.

9.10.1.2 Upon receipt of written notice from the Contractor that the Work is ready for final inspection and acceptance, the Consultant may promptly make such inspection accompanied by the Contractor and, when the Consultant finds all punch list items fully completed and the Work acceptable under the Contract Documents and the Contract fully performed, the Consultant may promptly notify the Contractor and the Owner in writing that to the best of the Consultant's knowledge, information and belief, and on the basis of the Consultant's on-site visits and inspections, the Work has been completed in accordance with terms and conditions of the Contract Documents. If the Consultant determines that some or all of the punch list items are not fully completed, then the Contractor shall be responsible to the Owner for all costs, including re-inspection fees, associated with any subsequent Consultant's inspection. The Consultant's final Certificate for Payment will constitute a further representation that conditions listed in Subparagraph 9.10.2 as precedent to the Contractor's being entitled to final payment have been fulfilled.

9.10.1.3 The Contractor is liable for, and the Owner may deduct from any amounts due the Contractor, all Consultant, architect, engineer or other design consultant fees incurred by the Owner for services performed more than 60 days after Substantial Completion of all the Work, whether or not those services would have been performed prior to that date had Final Completion been achieved in a timely manner.

9.10.1.4 When the Consultant finds that the Work has been concluded, a final occupancy permit has been issued, and the Contractor has submitted all the items in Subparagraph 9.10.2.1 to the Consultant, the Contractor may submit a final Application for Payment. The Consultant will then promptly issue a final Certificate for Payment stating that the entire balance found to be due the Contractor and noted in said final Certificate is due and payable. The Consultant's final Certificate for Payment shall establish the date of Final Completion upon its execution by the Owner.

9.10.1.5 "Final Completion" will be attained when the Contractor has accomplished the following:

- .1** Complete all requirements listed in Paragraph 9.8 for Substantial Completion.
- .2** Complete all remaining punch list items, notify Consultant and Owner that all work is complete.
- .3** Obtain permanent occupancy permits.
- .4** Submit final change order and final Application for Payment.
- .5** Submit recorded documents, final property survey, and operation and maintenance manuals.

- .6 Deliver tools, spare parts, extra stock of material and similar physical items to the Owner.
- .7 Complete final cleaning.
- .8 Complete instruction and train in sessions on all major building systems including HVAC, intercom data communications, fire alarm, telephone, fire sprinkler, security and clocks.

9.10.2 FINAL ACCEPTANCE AND PAYMENT

9.10.2.1 Final payment shall not become due until after the Owner's Board of Directors has formally accepted the Project "Final Acceptance". To achieve Final Acceptance, the Consultant must have issued a final Certificate of Payment under Subparagraph 9.10.1, Final Completion must have occurred, and the Contractor must have submitted to the Consultant the following:

- .1 an affidavit that any and all 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 together with full and final unconditional waivers by the Contractor and all Subcontractors in a form and with content acceptable to the Owner, except for any Subcontractor claims that are specifically identified on the affidavit,
- .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 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,
- .5 other data establishing payment or satisfaction of or protection against 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 shall furnish a bond satisfactory to the Owner to indemnify the Owner against such lien or cash deposit off such lien or claim whichever the Owner may request. Such cash deposit shall be paid with the Contractor's own funds. 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,
- .6 an "Affidavit of Wages" from the Contractor and each Subcontractor of every tier certified by all required governmental authorities.
- .7 a letter from the Consultant indicating that the Work is complete and recommending Final Acceptance of the Project by the Owner.
- .8 certification that all materials in the Work are "lead-free" and "asbestos-free," and
- .9 all warranties, guarantees, training manuals, operation instructions, certificates, spare

parts, maintenance stock, specified excess material, as-built drawings and other documents or items required by the Contract Documents or local governmental entities.

9.10.3 If, after Substantial Completion of the Work, final completion thereof is materially delayed through no fault of the Contractor, and the Consultant so confirms, the Owner shall, upon application by the Contractor and certification by the Consultant, and without terminating the Contract, make payment of the balance due for that portion of the Work fully completed and accepted to the extent permitted by statute. If the remaining balance for Work not fully completed or corrected is less than Retainage stipulated in the Contract Documents, and if bonds have been furnished, the written consent of surety to payment of the balance due for that portion of the Work fully completed and accepted shall be submitted by the Contractor to the Consultant prior to certification of such payment. Such payment shall be made under terms and conditions governing final payment, except that it shall not constitute a waiver of claims.

9.10.4 If a Subcontractor of any tier or supplier refuses to furnish a release or waiver required by the Owner the Owner may (a) retain in the fund, account, or escrow funds in such amount as to defray the cost of foreclosing the liens of such claims and to pay attorneys' fees, the total of which shall be no less than 150% of the claimed amount, or (b) accept a bond from the Contractor, satisfactory to the owner, to indemnify the Owner against such lien. If any such lien remains unsatisfied after all payments from the Retainage are made, the Contractor shall refund to the Owner all moneys that the Owner may be compelled to pay in discharging such lien, including all costs and reasonable attorneys' fees.

9.10.5 Release of Retainage. Retainage will be held and applied by the Owner as required by law. Release of Retainage will be processed in the ordinary course of business upon expiration of sixty (60) days following Final Acceptance of the Work by the Owner provided that no notice of lien shall have been given as provided by law, and that no claims have been brought to the attention of the Owner and that the Owner has no claims under this Contract.

9.10.6 WAIVER OF CLAIMS

9.10.6.1 Final Payment by Owner. The making of final payment shall not constitute a waiver of any Claims by the Owner.

9.10.6.2 Final Payment to Contractor. Acceptance of final payment by the Contractor, or any Subcontractors including but not limited to any material supplier shall constitute a waiver of claims by that payee except those previously timely made in writing delivered to the Owner, Consultant and identified by that payee as unsettled and attached to Contractor's final Application for Payment.

9.10.6.3 Change Orders. The execution of a Change Order shall constitute a waiver of Claims by the Contractor arising out of the Work to be performed or deleted pursuant to the Change Order, except as specifically described in the Change Order. Reservations of rights will be deemed waived and are void unless the reserved rights are specifically described in detail to the satisfaction of the Owner and are initialed by the Owner.

9.10.7 The Contractor shall maintain books, ledgers, records, documents, estimates, correspondence, logs, electronic data and other evidence pertaining to the costs incurred by the Contractor in connection with or related to the Contract ("records") to such extent and in such detail as will properly reflect and fully support compliance with requirements of the Contract Documents and with all costs, charges and other amounts of whatever nature under the contract. The Contractor shall preserve such records for a period of three (3) years following the date of Final Acceptance under the contract and for such longer period as may be required by any other provision of the contract. Within seven (7) days of the Owner's requires, the

Contractor agrees to make available at the office of the Contractor during normal business hours all records for inspection, audit and reproduction by the Owner or its representatives. These requirements shall be applicable to each Subcontractor of any tier and included in each Subcontract and purchase order issued with respect to the Work, except fixed-price Subcontracts where the price is \$25,000 or less.

ARTICLE 10 PROTECTION OF PERSONS AND PROPERTY

10.1 SAFETY PRECAUTIONS AND PROGRAMS

10.1.1 The Contractor shall use best efforts and shall be responsible for initiating, maintaining and supervising all safety precautions and programs in connection with the performance of the Contract.

10.2 SAFETY OF PERSONS AND PROPERTY

10.2.1 The Contractor shall use best efforts to take precautions for safety of, and provide protection to prevent damage, injury or loss to:

- .1** employees on the Work and other persons who may be affected thereby;
- .2** the Work and materials and equipment to be incorporated therein, whether in storage on or off the site, under care, custody or control of the Contractor or the Contractor's Subcontractors or Sub-subcontractors; and
- .3** other property at the site or adjacent thereto, such as trees, shrubs, lawns, walks, pavements, roadways, structures and utilities not designated for removal, relocation or replacement in the course of construction.

10.2.2 The Contractor shall give notices and comply with applicable laws, ordinances, rules, regulations and lawful orders of public authorities bearing on safety of persons or property or their protection from damage, injury or loss.

10.2.3 The Contractor shall use best efforts to erect and maintain, as required by existing conditions and performance of the Contract, safeguards for safety and protection, including posting danger signs and other warnings against hazards, promulgating safety regulations and notifying owners and users of adjacent sites and utilities and to protect adjacent property and improvements from any damage. Any damage to such property or improvements shall be promptly remedied at Contractor's sole cost and expense.

10.2.4 When use or storage of explosives or other hazardous materials or equipment or unusual methods are necessary for execution of the Work, the Contractor shall exercise utmost care and carry on such activities under supervision of properly qualified personnel and notify the Owner and Consultant in advance to such storage. To the extent that Owner's Operations limit the use or storage of explosives or other hazardous materials or equipment they shall not be used or stored at the Project.

10.2.5 The Contractor shall promptly remedy damage and loss (other than damage or loss insured under property insurance required by the Contract Documents) to property referred to in Clauses 10.2.1.2 and 10.2.1.3 caused in whole or in part by the Contractor, any Subcontractors, a Sub-subcontractor, or anyone directly or indirectly employed by any of them, or by anyone for whose acts they may be liable and for which the Contractor is responsible under Clauses 10.2.1.2 and 10.2.1.3, except damage or loss attributable to acts or omissions of the Owner or Consultant or anyone directly or indirectly employed by either of them, or by anyone for whose acts either of them may be liable, and not attributable to the fault or negligence of

the Contractor. The foregoing obligations of the Contractor are in addition to the Contractor's obligations under Paragraph 3.18.

10.2.6 The Contractor shall designate a responsible member of the Contractor's organization at the site whose duty shall be the prevention of accidents. This person shall be the Contractor's superintendent unless otherwise designated by the Contractor in writing to the Owner and Consultant.

10.2.7 The Contractor shall not load or permit any part of the construction or site to be loaded so as to endanger its safety.

10.2.8 Contractor shall specifically comply with any and all laws, rules and regulations related to hazardous materials (including without limitation asbestos) and hazardous material abatement including by not limited to those relating to contracting and the performance of such work.

10.3 HAZARDOUS MATERIALS

10.3.1 If reasonable precautions will be inadequate to prevent foreseeable bodily injury or death to persons resulting from a material or substance, including but not limited to asbestos, encountered on the site by the Contractor, the Contractor shall, upon recognizing the condition, immediately stop Work in the affected area and promptly report the condition to the Owner and Consultant in writing. By executing this Contract, Contractor represents and warrants that it has no knowledge of any material or substance which would give rise to any obligation of the Owner under any provision of 10.3.

10.3.2 The Owner shall obtain the services of a licensed laboratory to verify the presence or absence of the material or substance reported by the Contractor and, in the event such material or substance is found to be present, to verify that it has been rendered harmless. Unless otherwise required by the Contract Documents, the Owner shall furnish in writing to the Contractor and Consultant the names and qualifications of persons or entities who are to perform tests verifying the presence or absence of such material or substance or who are to perform the task of removal or safe containment of such material or substance. The Contractor and the Consultant will promptly reply to the Owner in writing stating whether or not either has reasonable objection to the persons or entities proposed by the Owner. If either the Contractor or Consultant has an objection to a person or entity proposed by the Owner, the Owner shall propose another to whom the Contractor and the Consultant have no reasonable objection. When the material or substance has been rendered harmless, Work in the affected area shall resume upon written agreement of the Owner and Contractor. The Contract Time shall be extended appropriately, and the Contract Sum shall be increased in the amount of the Contractor's reasonable additional costs of shut-down, delay and start-up, which adjustments shall be accomplished as provided in Article 7.

10.4 The Owner shall not be responsible under Paragraph 10.3 for materials and substances brought to the site by the Contractor.

10.5 EMERGENCIES

10.5.1 In an emergency affecting safety of persons or property, the Contractor shall act, at the Contractors discretion, to prevent threatened damage, injury or loss. Additional compensation or extension of time claimed by the Contractor on account of an emergency shall be determined as provided in Paragraph 4.3.

ARTICLE 11 INSURANCE AND BONDS

11.1 CONTRACTOR'S LIABILITY INSURANCE

11.1.1 The Contractor shall purchase from and maintain in a company or companies lawfully authorized to do business in the jurisdiction in which the Project is located such insurance as will protect the Contractor from claims set forth below which may arise out of or result from the Contractor's operations under the Contract and for which the Contractor may be legally liable, whether such operations be by the Contractor or by any Subcontractors, or by anyone directly or indirectly employed by any of them, or by anyone for whose acts any of them may be liable:

- .1 claims under workers' compensation, disability benefit and other similar employee benefit acts which are applicable to the Work to be performed;
- .2 claims for damages because of bodily injury, occupational sickness or disease, or death of the Contractor's employees;
- .3 claims for damages because of bodily injury, sickness or disease, or death of any person other than the Contractor's employees;
- .4 claims for damages insured by usual personal injury liability coverage;
- .5 claims for damages, other than to the Work itself, because of injury to or destruction of tangible property, including loss of use resulting therefrom;
- .6 claims for damages because of bodily injury, death of a person or property damage arising out of ownership, maintenance or use of a motor vehicle;
- .7 claims for bodily injury or property damage arising out of completed operations; and
- .8 claims involving contractual liability insurance applicable to the Contractor's obligations under Paragraph 3.18.

11.1.2 The insurance required by Subparagraph 11.1.1 shall be written for not less than limits of liability specified in the Contract Documents or required by law, whichever coverage is greater. Coverage's, whether written on an occurrence or claims-made basis, shall be maintained without interruption from date of commencement of the Work until date of final payment and termination of any coverage required to be maintained after final payment.

11.1.3 Certificates of insurance acceptable to the Owner shall be filed with the Owner prior to commencement of the Work. These certificates and the insurance policies required by this Paragraph 11.1 shall contain a provision that coverages afforded under the policies will not be canceled or allowed to expire until at least 30 days' prior written notice has been given to the Owner. If any of the foregoing insurance coverages are required to remain in force after final payment and are reasonably available, an additional certificate evidencing continuation of such coverage shall be submitted with the final Application for Payment as required by Subparagraph 9.10.2. Information concerning reduction of coverage on account of revised limits or claims paid under the General Aggregate, or both, shall be furnished by the Contractor with reasonable promptness in accordance with the Contractor's information and belief.

11.2 PROJECT MANAGEMENT PROTECTIVE LIABILITY INSURANCE

11.2.1 The Owner may also in addition to or in the alternative require the Contractor to purchase and maintain Project Management Protective Liability insurance from the Contractor's usual sources as primary coverage for the Owner's, Contractor's and Consultant's vicarious liability for construction operations under

the Contract. Unless otherwise required by the Contract Documents, the Owner shall reimburse the Contractor by increasing the Contract Sum to pay the cost of purchasing and maintaining such optional insurance coverage and the Contractor shall not be responsible for purchasing any other liability insurance on behalf of the Owner. The minimum limits of liability purchased with such coverage shall be equal to the aggregate of the limits required for Contractor's Liability Insurance under Clauses 11.1.1.2 through 11.1.1.5.

11.2.2 To the extent damages are covered by Project Management Protective Liability insurance, the Owner, Contractor and Consultant waive all rights against each other for damages, except such rights as they may have to the proceeds of such insurance. The policy shall provide for such waivers of subrogation by endorsement or otherwise.

11.2.3 The Owner may require the Contractor to include the Owner, Owners Representative, Consultant or any other persons or entities as additional insureds on the Contractor's Liability Insurance coverage under Paragraph 11.1 or as set out elsewhere in the Contract Documents.

11.3 PROPERTY INSURANCE

11.3.1 Unless otherwise provided, the Owner shall purchase and maintain, in a company or companies lawfully authorized to do business in the jurisdiction in which the Project is located, property insurance written on a builder's risk "all-risk" or equivalent policy form in the amount of the initial Contract Sum, plus value of subsequent Contract modifications and cost of materials supplied or installed by others, comprising total value for the entire Project at the site on a replacement cost basis without optional deductibles. Such property insurance shall be maintained, until final payment has been made as provided in Paragraph 9.10 or until no person or entity other than the Owner has an insurable interest in the property required by this

Paragraph 11.3 to be covered, whichever is later. This insurance shall include interests of the Owner, the Contractor, Subcontractors and Sub-subcontractors in the Project.

11.3.1.1 Property insurance may be on an "all-risk" or equivalent policy form and shall include, without limitation, insurance against the perils of fire (with extended coverage) and physical loss or damage including, without duplication of coverage, theft, vandalism, malicious mischief, collapse, earthquake, flood, windstorm, false work, testing and startup, temporary buildings and debris removal including demolition occasioned by enforcement of any applicable legal requirements, and may cover reasonable compensation for Consultant's and Contractor's services and expenses required as a result of such insured loss.

11.3.1.2 If the Owner does not intend to purchase such insurance the Owner shall so inform the Contractor. The Contractor may, then following 14 days prior written notice to the Owner by the Contractor effect such insurance which will protect the interests of the Owner, Contractor, Subcontractors and Sub-subcontractors in the Work, and if approved by the Owner in its discretion and in writing before the purchase thereof the costs thereof may be charged to the Owner.

11.3.1.3 If the property insurance requires deductibles, the Owner need not pay costs not covered because of such deductibles and they shall be paid by Contractor.

11.3.1.4 This property insurance, if any may at the Owner's option cover portions of the Work stored off the site, and also portions of the Work in transit.

11.3.1.5 Partial occupancy or use in accordance with Paragraph 9.9 may commence absent the insurance company or companies providing property insurance having consented to such partial occupancy or use by endorsement or otherwise.

11.3.2 Loss of Use Insurance. The Owner, at the Owner's option, may purchase and maintain such insurance as will insure the Owner against loss of use of the Owner's property due to fire or other hazards, however caused.

11.3.3 If during the Project construction period the Owner insures properties, real or personal or both, at or adjacent to the site by property insurance under policies separate from those insuring the Project, or if after final payment property insurance is to be provided on the completed Project through a policy or policies other than those insuring the Project during the construction period, the Owner shall waive all rights in accordance with the terms of Subparagraph 11.3.5 for damages caused by fire or other causes of loss covered by this separate property insurance. All separate policies shall provide this waiver of subrogation by endorsement or otherwise.

11.3.4 Before an exposure to loss may occur, the Owner shall file with the Contractor a copy of each policy that includes insurance coverage's required by this Paragraph 11.3. Each policy shall contain all generally applicable conditions, definitions, exclusions and endorsements related to this Project. Each policy shall contain a provision that the policy will not be canceled or allowed to expire, and that its limits will not be reduced, until at least 30 days' prior written notice has been given to the Contractor.

11.3.5 Waivers of Subrogation. The Owner and Contractor waive all rights against (1) each other and any of their subcontractors, sub-subcontractors, agents and employees, each of the other, and (2) the Consultant, Consultant's consultants, separate contractors described in Article 6, if any, and any of their subcontractors, sub-subcontractors, agents and employees, for damages caused by fire or other causes of loss to the extent covered by property insurance obtained pursuant to this Paragraph 11.3 or other property insurance applicable to the Work, except such rights as they have to proceeds of such insurance held by the Owner as fiduciary. The Owner or Contractor, as appropriate, shall require of the Consultant, Consultant's consultants, separate contractors described in Article 6, if any, and the subcontractors, sub-subcontractors, agents and employees of any of them, by appropriate agreements, written where legally required for validity, similar waivers each in favor of other parties enumerated herein. The policies shall provide such waivers of subrogation by endorsement or otherwise. A waiver of subrogation shall be effective as to a person or entity even though that person or entity would otherwise have a duty of indemnification, contractual or otherwise, did not pay the insurance premium directly or indirectly, and whether or not the person or entity had an insurable interest in the property damaged.

11.3.6 A loss insured under Owner's property insurance shall be adjusted by the Owner as fiduciary and made payable to the Owner as fiduciary for the insureds, as their interests may appear, subject to requirements of any applicable mortgagee clause and of Subparagraph 11.3.7. 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.

11.3.7 The Owner as fiduciary shall have power to adjust and settle a loss with insurers unless one of the parties in interest shall object in writing within five days after occurrence of loss to the Owner's exercise of this power; if such objection is made, the dispute shall be resolved as provided in Paragraphs 4.5 and 4.6. The Owner as fiduciary shall, in the case of arbitration, make settlement with insurers in accordance with directions of the arbitrators. If distribution of insurance proceeds by arbitration is required, the arbitrators will direct such distribution.

11.4 PERFORMANCE BOND AND PAYMENT BOND

11.4.1 The Owner shall have the right to require the Contractor to furnish bonds covering faithful

performance of the Contract and payment of obligations arising thereunder as stipulated in bidding requirements or specifically required in any of the Contract Documents.

11.4.2 Upon the request of any person or entity appearing to be a potential beneficiary of bonds covering payment of obligations arising under the Contract, the Contractor shall promptly furnish a copy of the bonds or shall permit a copy to be made.

ARTICLE 12 UNCOVERING AND CORRECTION OF WORK

12.1 UNCOVERING OF WORK

12.1.1 If a portion of the Work is covered contrary to the Consultant's or Owner's request or to requirements specifically expressed in the Contract Documents, it must, if required in writing by the Consultant or Owner, be uncovered for the Consultant's or Owner's observation or examination and be replaced at the Contractor's expense without change in the Contract Time.

12.1.2 If a portion of the Work has been covered which the Consultant or Owner has not specifically requested to examine prior to its being covered, the Consultant or Owner may request to see such Work and it shall be uncovered by the Contractor. If such Work is in full and strict accordance with the Contract Documents, costs of uncovering and replacement shall, by appropriate Change Order, be at the Owner's expense. If such Work is not in full and strict accordance with the Contract Documents, correction shall be at the Contractor's sole expense unless the condition was caused by the Owner or a separate contractor in which event the Owner shall be responsible for payment of such costs.

12.2 CORRECTION OF WORK

12.2.1 BEFORE OR AFTER SUBSTANTIAL COMPLETION

12.2.1.1 The Contractor shall promptly correct Work rejected by the Consultant or failing to conform to the requirements of the Contract Documents, whether discovered before or after Substantial Completion and whether or not fabricated, installed or completed. Costs of correcting such rejected Work, including additional testing and inspections and compensation for the Consultant's services and expenses made necessary thereby, shall be at the Contractor's expense. If prior to Substantial Completion the contractor or any Subcontractors or anyone they are responsible for uses or damages any portion of the Work, they shall return it to "like new" condition without any increase in the Contract Time or Sum.

12.2.2 AFTER SUBSTANTIAL COMPLETION

12.2.2.1 In addition to the Contractor's obligations under Paragraph 3.5, if, within one year after the date of Substantial Completion of the Work or designated portion thereof or after the date for commencement of warranties established under Subparagraph 9.9.1, or by terms of an applicable special warranty required by the Contract Documents, any of the Work is found to be not in accordance with the requirements of the Contract Documents, the Contractor shall correct it promptly (but in no event later than seven days) after receipt of written notice from the Owner to do so unless the Owner has previously given the Contractor a full and final written acceptance of such condition. The Owner shall give such notice promptly after discovery of the condition. During the one-year period for correction of Work, if the Owner fails to notify the Contractor and give the Contractor an opportunity to make the correction, the Owner waives the rights to require correction by the Contractor and to make a claim for breach of warranty. If the Contractor fails to correct nonconforming Work promptly during that period after receipt of notice from the Owner or Consultant, the Owner may correct it in accordance with Paragraph 2.4.

12.2.2.2 The one-year period for correction of Work shall be extended with respect to portions of Work first performed after Substantial Completion by the period of time between Substantial Completion and the actual performance of the Work.

12.2.2.3 The one-year period for correction of Work shall be extended by corrective Work performed by the Contractor pursuant to this Paragraph 12.2.

12.2.3 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.

12.2.4 The Contractor shall bear the sole cost of correcting destroyed or damaged construction, whether completed or partially completed, of the Owner or separate contractors caused by the Contractor's correction or removal of Work which is not in accordance with the requirements of the Contract Documents.

12.2.5 Nothing contained in this Paragraph 12.2 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 one-year period for correction of Work as described in Subparagraph 12.2.2 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.

12.3 ACCEPTANCE OF NONCONFORMING WORK

12.3.1 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 Sum will be reduced as appropriate and equitable. Such adjustment shall be effected whether or not final payment has been made.

ARTICLE 13 MISCELLANEOUS PROVISIONS

13.1 GOVERNING LAW

13.1.1 The Contract shall be governed by the law of the State of Oregon.

13.2 SUCCESSORS AND ASSIGNS

13.2.1 The Owner and Contractor respectively bind themselves, their partners, successors, assigns and legal representatives to the other party hereto and to partners, successors, assigns and legal representatives of such other party in respect to covenants, agreements and obligations contained in the Contract Documents.

13.2.2 The Owner may, without consent of the Contractor, assign the Contract to any person or entity. In such event, they shall assume the Owner's rights and obligations under the Contract Documents. The Contractor shall execute all consents reasonably required to facilitate such assignment.

13.3 WRITTEN NOTICE

13.3.1 Written notice shall be deemed to have been duly served if delivered in person to the individual or a

member of the firm or entity or to an officer of the corporation for which it was intended, or if delivered at or sent by registered or certified mail to the last business address known to the party giving notice. Notice by e-mail or facsimile shall not constitute written notice unless the Owner shall otherwise agree.

13.4 RIGHTS AND REMEDIES

13.4.1 Duties and obligations imposed by the Contract Documents and rights and remedies available thereunder shall be in addition to and not a limitation of duties, obligations, rights and remedies otherwise imposed or available by law.

13.4.2 No action or failure to act by the Owner, Consultant or Contractor shall constitute a waiver of a right or duty afforded them under the Contract, nor shall such action or failure to act constitute approval of or acquiescence in a breach thereunder, except as may be specifically agreed in writing.

13.5 TESTS AND INSPECTIONS

13.5.1 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 shall be made at an appropriate time. Unless otherwise provided, the Contractor shall timely make all 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. Except as otherwise provided herein, the cost of private-independent tests by third-parties to this Agreement shall be at Owner's expense. The Contractor shall give the Consultant and Owner timely notice of when and where tests and inspections are to be made so that the Consultant and Owner may be present for such procedures. The Owner shall bear costs of tests, inspections or approvals which do not become requirements until after bids are received or negotiations concluded.

13.5.2 If the Consultant, Owner or public authorities having jurisdiction determine that portions of the Work require additional testing, inspection or approval not included under Subparagraph 13.5.1, the Consultant may, upon written authorization from the Owner, instruct the Contractor to make arrangements for such additional testing, inspection or approval by an entity acceptable to the Owner, and the Contractor shall give timely notice to the Consultant and Owner of when and where tests and inspections are to be made so that the Consultant and Owner may be present for such procedures. Such costs, except as provided in Subparagraph 13.5.3, or otherwise in the Contract Documents shall be at the Owner's expense.

13.5.3 If such procedures for testing, inspection or approval under Subparagraphs 13.5.1 and 13.5.2 reveal 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 Consultant's and Owner's services and expenses shall be at the Contractor's sole cost and expense.

13.5.4 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 Consultant.

13.5.5 If the Consultant is to observe tests, inspections or approvals required by the Contract Documents, the Consultant will do so reasonably and, where practicable, at the normal place of testing.

13.5.6 Tests or inspections conducted pursuant to the Contract Documents shall be made promptly to avoid unreasonable delay in the Work.

13.6 INTEREST

13.6.1 Payments due and unpaid under the Contract Documents shall bear interest from the date payment is due at such rate as the parties may agree upon in writing or, in the absence thereof, at the legal rate prevailing from time to time at the place where the Project is located.

13.7 COMMENCEMENT OF STATUTORY LIMITATION PERIOD

13.7.1 As between the Owner and Contractor any applicable statute of limitations shall accrue as provided by law in all events before substantial completion, between substantial completion and final certificate for payment, after final certificate for payment and otherwise.

ARTICLE 14 TERMINATION OR SUSPENSION OF THE CONTRACT

14.1 TERMINATION BY THE CONTRACTOR

14.1.1 The Contractor may terminate the Contract if the Work is stopped for a period of 30 consecutive days through no act or fault of the Contractor or any Subcontractors, Sub-subcontractor or their agents or employees or any other persons or entities performing portions of the Work under direct or indirect contract with the Contractor, for any of the following reasons:

- .1** issuance of an order of a court or other public authority having jurisdiction which requires all Work to be stopped;
- .2** an act of government, such as a declaration of national emergency which requires all Work to be stopped; or
- .3** because the Consultant has not issued a Certificate for Payment and has not notified the Contractor of the reason for withholding certification as provided in Subparagraph 9.4.1, or because the Owner has not made payment on a Certificate for Payment within the time stated in the Contract Documents following 30 prior written notice to the Owner.

14.1.2 If one of the reasons described in Subparagraph 14.1.1 exists, the Contractor may, upon seven days' written notice to the Owner and Consultant, terminate the Contract and recover from the Owner payment for Work executed and for proven loss with respect to materials, equipment, tools, and construction equipment and machinery, including agreed reasonable overhead and profit.

14.2 TERMINATION BY THE OWNER FOR CAUSE

14.2.1 The Owner may terminate the Contract if the Contractor:

- .1** persistently or repeatedly refuses or fails to supply enough properly skilled workers or proper materials;
- .2** fails to make payment to Subcontractors for materials or labor in accordance with the respective agreements between the Contractor and the Subcontractors;
- .3** persistently disregards laws, ordinances, or rules, regulations or orders of a public authority having jurisdiction; or
- .4** otherwise is guilty of substantial breach of a provision of the Contract Documents.

14.2.2 When any of the above reasons exist, the Owner, upon certification by the Consultant that sufficient cause exists to justify such action, may without prejudice to any other rights or remedies of the Owner and after giving the Contractor and the Contractor's surety, if any, seven days' written notice, terminate employment of the Contractor and may, subject to any prior rights of the surety:

- .1 take possession of the site and of all materials, equipment, tools, and construction equipment and machinery thereon owned by the Contractor (but not the construction equipment owned, operated and used by Subcontractors in the performance of their Work);
- .2 accept assignment of subcontracts pursuant to Paragraph 5.4; and
- .3 finish the Work by whatever reasonable method the Owner may deem expedient. Upon request of the Contractor, the Owner shall furnish to the Contractor a detailed accounting of the costs incurred by the Owner in finishing the Work.

14.2.3 When the Owner terminates the Contract for one of the reasons stated in Subparagraph 14.2.1, the Contractor shall not be entitled to receive further payment until the Work is finished.

14.2.4 If the unpaid balance of the Contract Sum exceeds costs of finishing the Work, including compensation for the Consultant's services and expenses made necessary thereby, and other damages incurred by the Owner and not expressly waived, such excess shall be paid to the Contractor. If such costs and damages exceed the unpaid balance, the Contractor shall pay the difference to the Owner. The amount

to be paid to the Contractor or Owner, as the case may be, shall be certified by the Consultant, upon application, and this obligation for payment shall survive termination of the Contract. Contractor hereby fully, finally and unconditionally waives any and all other claims, including but not limited to those for lost or anticipated profits or overhead.

14.3 SUSPENSION BY THE OWNER FOR CONVENIENCE

14.3.1 The Owner may, without cause, order the Contractor in writing to suspend, delay or interrupt the Work in whole or in part for such period of time as the Owner may determine.

14.3.2 The Contract Sum and Contract Time shall be adjusted for increases in the cost and time caused by suspension, delay or interruption as described in Subparagraph 14.3.1. Adjustment of the Contract Sum shall include profit. No adjustment shall be made to the extent:

- .1 that performance is, was or would have been so suspended, delayed or interrupted by another cause for which the Contractor is responsible; or
- .2 that an equitable adjustment is made or denied under another provision of the Contract.

14.4 TERMINATION BY THE OWNER FOR CONVENIENCE

14.4.1 The Owner may, at any time, terminate the Contract for the Owner's convenience and without cause.

14.4.2 Upon receipt of written notice from the Owner of such termination for the Owner's convenience, the Contractor shall:

- .1 cease operations as directed by the Owner in the notice;

- .2 take actions necessary, or that the Owner may direct, for the protection and preservation of the Work; and
- .3 except for Work directed to be performed prior to the effective date of termination stated in the notice, terminate all existing subcontracts and purchase orders and enter into no further subcontracts and purchase orders.

14.4.3 In case of such termination for the Owner's convenience, the Contractor shall be entitled to receive payment for Work executed, and costs incurred by reason of such termination as provided in 14.4.4,

14.4.4. Upon on such termination Contractor shall recover as its sole remedy payment for Work properly and timely performed and installed prior to the effective date of the termination and for items properly and timely fabricated off the site and delivered and stored in accordance with the Owner's instructions prior to the effective date of termination. Contractor hereby fully, finally and unconditionally waives any and all other claims, including but not limited to those for lost or anticipated profits, or overhead. Owner shall be credited for payments previously made and claims the Owner has.

END SECTION



PAYMENT BOND

Bond No. _____

The undersigned, _____ as Principal and _____ as Surety, a corporation organized and existing under the laws of the state of _____, are held and bound unto **LINN BENTON COMMUNITY COLLEGE** and its heirs, executors, administrators, and assigns as Obligee, for the use and benefit of all persons or entities that provide labor, materials, equipment or supplies for use under the Contract described below, in the penal sum of _____ Dollars (\$ _____), lawful money of the United States of America, for the payment of which Principal and Surety bind themselves and their heirs, executors, administrators, successors and assigns, jointly and severally.

WHEREAS Principal has entered into a Construction Contract ("Contract") dated _____, 2026, with Obligee for the **Benton Center Roofing Project** ("Project"), which Contract is made a part hereof as if fully incorporated herein.

NOW, THEREFORE, THE CONDITIONS OF THIS OBLIGATION are such that if Principal shall promptly make payment to all persons or entities that provide labor, material, equipment or supplies for use under said Contract, then this obligation shall be null and void; otherwise, it shall remain in full force and effect. In the event that Principal shall be, and declared by Obligee to be in default under the Contract, the Surety, at the request of the Obligee, shall promptly remedy the default in a manner acceptable to the Owner.

In any event, this obligation shall remain in full force and effect for the applicable period of limitations or repose, whichever is longer.

Surety acknowledges that Obligee does not owe any duty to Surety to advise, notify or consult with Surety on any matters relating to the Principal or the Project, including, but not limited to, Principal's payments to Architect, Subcontractors or Principal's use of Project funds.

Principal and Surety hereby jointly and severally agree that any person or entity that provides labor, material, equipment or supplies for use under said Contract and has not been paid in full, and any other party entitled to make claim on the bond under ORS 279C, if notice is given within the applicable time period set forth in ORS 279C.605 may sue on this bond for the use of such person or entity, prosecute the suit to final judgment for such sums as may be justly due and owing claimant and have execution thereon. Obligee shall not be liable for the payment of any damages, costs or expenses (including attorney fees) awarded in any such suit.

No prepayment or delay in payment and no change, extension, assignment, addition or alteration of any provision of said Contract and no forbearance on the part of Obligee shall operate to relieve Surety from liability on this bond, and Surety hereby consents to any such changes, extensions, additions and alterations without further notice to or consent by Surety.

In the event arbitration, litigation or any other proceeding is brought upon this bond by Obligee and judgment or award is entered in Obligee's favor, Surety shall pay all of Obligee's costs incurred in such arbitration, litigation or other proceeding, including any attorney and expert witness fees.



LINN BENTON COMMUNITY COLLEGE
ROOFING PROJECT
BENTON CENTER
CORVALLIS CAMPUS
PAYMENT BOND
SECTION 00 6113

Nonpayment of the bond premium will not invalidate this bond, nor shall any Obligee be obligated for the payment of any premiums.

This bond is given and received under authority of ORS Chapter 279C, the provisions of which hereby are incorporated into this bond and made a part hereof.

Executed this _____ day of _____, 2026.

PRINCIPAL

Title

Address

SURETY

Title

Address

COUNTERSIGNED:

Resident Agent

Address

PERFORMANCE BOND

Bond No. _____

The undersigned, _____ as Principal and _____ as Surety, a corporation organized and existing under the laws of the state of _____, are held and bound unto **LINN BENTON COMMUNITY COLLEGE** and its heirs, executors, administrators, and assigns as Obligee, in the penal sum of _____ Dollars (\$_____), lawful money of the United States of America, for the payment of which Principal and Surety bind themselves and their heirs, executors, administrators, successors and assigns, jointly and severally.

WHEREAS Principal has entered into a Construction Contract ("Contract") dated _____, 2026, with Obligee for **Benton Center Roofing Project** ("Project"), which Contract is made a part hereof as if fully incorporated herein.

NOW, THEREFORE, THE CONDITIONS OF THIS OBLIGATION are such that if Principal shall faithfully, punctually and completely perform and abide with the covenants, terms, conditions and provisions of said Contract and any extensions thereof in all respects and within the time prescribed therein, including, but not limited to, the terms of any warranty and guarantee required under the said Contract; shall pay all laborers, mechanics, subcontractors, material and equipment suppliers and all persons supplying to Principal or its subcontractors and suppliers at any tier labor, materials, supplies or equipment for the prosecution of the work or any part thereof; shall fully defend, indemnify and hold Obligee harmless from all cost and damage that Obligee may suffer by reason of Principal's failure to do so; and shall in all respects perform said Contract according to applicable law, then this obligation shall be null and void; otherwise, it shall remain in full force and effect. In the event that Principal shall be, and declared by Obligee to be in default under the Contract, the Surety, at the request of the Obligee, shall promptly remedy the default in a manner acceptable to the Owner.

In any event, this obligation shall remain in full force and effect for the applicable period of limitations or repose, whichever is longer.

Surety acknowledges that Obligee does not owe any duty to Surety to advise, notify or consult with Surety on any matters relating to the Principal or the Project, including, but not limited to, Principal's payments to Subcontractors or Contractor's use of Project funds.

No prepayment or delay in payment and no change, extension, assignment, addition or alteration of any provision of said Contract and no forbearance on the part of Obligee shall operate to relieve Surety from liability on this bond, and Surety hereby consents to any such changes, extensions, additions and alterations without further notice to or consent by Surety.

In the event arbitration, litigation or any other proceeding is brought upon this bond by Obligee and judgment or award is entered in Obligee's favor, Surety shall pay all of Obligee's costs incurred in such arbitration, litigation, or other proceeding, including any attorney and expert witness fees.

In the event there is an arbitration clause in said Contract, Surety agrees to participate in and to be bound by any such arbitration to the same extent Principal is bound.



LINN BENTON COMMUNITY COLLEGE
ROOFING PROJECT
BENTON CENTER
CORVALLIS CAMPUS
PERFORMANCE BOND
SECTION 00 6613

Nonpayment of the bond premium will not invalidate this bond, nor shall any Obligee be obligated for the payment of any premiums.

This bond is given and received under authority of ORS Chapter 279C, the provisions of which hereby are incorporated into this bond and made a part hereof.

Executed this _____ day of _____, 2026.

PRINCIPAL

Title

Address

SURETY

Title

Address

COUNTERSIGNED:

Resident Agent

Address

PART 1 GENERAL**1.01 MINIMUM WAGE RATES**

- A. The minimum wage rates to be paid all crafts and labor on this contract shall be the prevailing wage for the individual crafts involved in the Benton County area during the life of the contract and as determined by the Commissioner of the Oregon Bureau of Labor and Industries, or in the case of a Federal-Aid project, the wage determination decision of the Federal Secretary of Labor, along with conformance to ORS 279C, as may be applicable to the supplying of the services and/or materials called for in the bid.
- B. Every contractor and subcontractor shall pay workers not less than the specified minimum hourly rate of wage for each trade or occupation in each locality. When a public works project is subject to Davis-Bacon Act (40 U.S.C. 3141 et seq) that would otherwise be subject to state prevailing wages, if the state prevailing rate of wage is higher than the federal prevailing rate of wage, the contractor and every subcontractor on the project shall pay at least the state prevailing rate of wage.
- C. Each worker in each trade or occupation employed in the performance of the contract either by the contractor, subcontractor or other person doing or contracting to do or contracting for the whole or any part of the work on the contract, must be paid not less than the applicable state prevailing rate of wage in accordance with ORS 279C.383 and 279C.840, or the applicable federal prevailing rate of wage, whichever is higher.

1.02 GENERAL REQUIREMENTS

- A. If a dispute arises as to what the prevailing wage rate for any class of worker is, and if the dispute cannot be settled by the parties involved, it may be referred to the Commission of the Bureau of Labor and Industries, State of Oregon, for final determination. The Wage Rates are minimum rates only and the Owner will not consider any claims or additional compensation because of payment made by Contractor or a Sub-Contractor of any wage rate in excess of the prevailing rate.
- B. Prevailing Wage Rates:
 - 1. Pursuant to ORS Ch. 279C.800 - 279C.870, "Prevailing Wage Rates for Public Works Contracts in Oregon," effective January 5, 2026, and amendments, if any, are bound hereinafter and are included as a part of this Specification.
- C. Other requirements related to Prevailing Wage are listed in Section 00 5000 – Agreement for Stipulated Sum.

PART 2 PRODUCTS - NOT USED**PART 3 EXECUTION - NOT USED****END OF SECTION**

ARTICLE 11 - INSURANCE AND BONDS**Revise 11.1.2:** Add the following:

The insurance required by 11.1.1 shall be written for not less than the following limits, or greater if required by law and underwritten by an insurance company rated A or A+ by A.M. Best & Co.

1. **Workers' Compensation:** Statutory
2. **Comprehensive General Liability (including Premises-Operations:** Independent Contractor's Protective; Products and Completed Operations; Explosion, Underground & Collapse; Broad-Form Property Damage, Blanket Contractual Liability, Personal Injury with Employment Exclusion Deleted):
 - (a) Bodily Injury
\$2,000,000 Each Occurrence
\$3,000,000 Annual Aggregate
 - (b) Property Damage
\$2,000,000 Each Occurrence
\$3,000,000 Annual Aggregate
 - (c) Products and Completed Operations to be maintained for two (2) years after final payment.
 - (d) Property Damage Liability Insurance shall provide X, C and U coverages.
3. **Comprehensive Automobile Liability:**
 - (a) Bodily Injury
\$2,000,000 Combined Single Limit
 - (b) Property Damage
\$2,000,000 Each Occurrence
4. The Owner shall be named as the Certificate Holder.
5. In addition, furnish true umbrella coverage, which provides excess limits over the primary layer and broader scope, in an amount not less than \$3,000,000.
6. Insurance shall be written by a firm licensed to do business in the State of Oregon and as approved by the Owner. The Owner's specification or approval of this insurance or of its amount shall not relieve or decrease the liability of the Contractor under the Contract Documents or otherwise.

11.1.3: Add the following:

The Contractor shall furnish one copy of the General Liability and Automobile Liability policy. The policies shall name the Linn Benton Community College and its members, partners, officers, directors, agents, and employees, and the successors in interest of the foregoing, as Certificate Holder, using ISO additional insureds endorsement CG 20 10 11 85 or a substitute providing equivalent coverages within ten (10) days after the Owner issues a "Notice of Intent to Award Contract". The Contractor shall furnish to the

Owner copies of any subsequently issued endorsements amending, modifying, altering or restricting coverage or limits.

- 11.2 Subcontractor Insurance.** All Subcontractors' insurance will meet all insurance requirements of Contractor as provided in this Exhibit, including, but not limited to, the types of insurance, extent and durations of coverages, and notice requirements, except that the limits of insurance for Subcontractors will be no less than the following:

Design Professional:

- (i) Workers' Compensation and Employer's Liability: same as above except for the following limits for Employer's Liability:

\$500,000	Each Accident
\$500,000	Disease, Policy Limit
\$500,000	Disease, Each Employee

- (ii) Commercial General Liability (Occurrence Form): Combined Bodily Injury and Property Damage:

\$1,000,000	Each Occurrence
\$1,000,000	Personal and Advertising Injury
\$2,000,000	General Aggregate
\$2,000,000	Products/Completed Operations Aggregate

- (iii) Business Auto: same as above.

- (iv) Excess/Umbrella Liability Coverage: none required.

- (v) Professional Liability (\$1,000,000) per claim and (\$2,000,000) in the aggregate.

Sub Contractor:

- (i) Workers' Compensation and Employer's Liability: same as Contractor

- (ii) Commercial General Liability (Occurrence Form): Combined Bodily Injury and Property Damage:

\$1,000,000	Each Occurrence
\$1,000,000	Personal and Advertising Injury
\$2,000,000	General Aggregate
\$2,000,000	Products/Completed Operations Aggregate

- (iii) Business Auto: same as above.

- (iv) Excess/Umbrella Liability Coverage: \$1,000,000.

- (v) Pollution Liability and Hazardous Materials Liability

\$1,000,000	Each Occurrence
\$1,000,000	General Aggregate

END OF SECTION

PART 1 GENERAL**1.01 PROJECT**

- A. Project Name: Benton Center Roofing Project
- B. Owner's Name: Linn Benton Community College; P.Sheldon Flom, Vice President Finance and Operations
- C. Architect/Consultant's Name: Certa Building Solutions; Dan Rundle, Director of Building Envelope Services
- D. Consultants Name: G2 Consultants; Dan Rouse, President
- E. The Project consists of the construction of The Re-Roofing of the Benton Center.

1.02 CONTRACT DESCRIPTION**1.03 WORK BY OWNER**

- A. Items noted OFOI (Owner-Furnished, Owner-Installed) will be supplied and installed by Owner before Substantial Completion. Some items include:
- B. Items noted OFCI (Owner-Furnished, Contractor-Installed) will be supplied by the Owner for installation by Contractor before Substantial Completion. Some items include:
- C. Items noted OFOICC (Owner Furnished, Owner Install, Contractor Coordinated) will be supplied by the Owner, installed by the Owner's contractor, but the responsibility of the Contractor to coordinate installation before Substantial Completion.

1.04 OWNER OCCUPANCY

- A. Owner intends to occupy the Project upon Substantial Completion
- B. Cooperate with Owner to minimize conflict and to facilitate Owner's operations.
- C. Schedule the Work to accommodate Owner occupancy.

1.05 CONTRACTOR USE OF SITE AND PREMISES

- A. Except as otherwise stipulated herein, Contractors will have complete use of the Premises within the boundaries of the project as shown on the Drawings for the execution of the Work.
- B. The possession, use, or distribution of illicit drugs and alcohol on the Owner's premises is prohibited. Prescription medications brought to the project site shall be in the original container bearing the name of the drug, the name of the physician and the prescribed dosage.
- C. TOBACCO FREE INSTITUTION: All bidders shall comply with OAR 581.021.0110 and ORS 326.051 regarding Tobacco Use on Public Grounds. For the purpose of this document "tobacco" is defined to include any lighted or unlighted cigarette, cigar, pipe,

clove cigarette, and any other smoking product, spit tobacco, also known as smokeless, dip, chew, snuff, in any form, nicotine or nicotine delivering devices, chemicals or devices that produce the physical effect of nicotine substances or any other tobacco substitute (e.g., e-cigarettes). This does not include FDA approved nicotine replacement therapy products used for the purpose of cessation. No employee, sub-contractor, material supplier, or project visitor is permitted to smoke, inhale, dip, or chew or sell tobacco at any time, including non-education hours.

1. In any building, facility; or
 2. On education facility grounds, athletic grounds, or parking lots.
- D. Tools and building materials shall never be left out when an unsecured work area is vacated.
- E. Ladders and scaffolding will be taken down when an unsecured work area is vacated.
- F. Open holes and other tripping hazards shall be fenced or barricaded when an unsecured work area is vacated.
- G. "Secured Work Area" is defined as an area having a perimeter cyclone fence at least 6 feet in height, with gates which close and lock so that no casual entrance is possible by unauthorized personnel.
- H. Operations resulting in vapors, emissions or flying objects shall be conducted in such a way as to prevent exposure to any unprotected parties or property.

1.06 WORK SEQUENCE

1.07 DUST PROTECTION AND SAFETY BARRIERS

- A. The Contractor shall erect temporary Dust and Safety Barriers around all of the Construction Operations to keep dust and debris within the localized work area, and to protect the owner, staff, and the public from construction activities. Additional requirements may be required if airborne dust is judged by the Owner to be a problem.
- B. The Contractor shall take precautions to protect existing smoke detectors from damage or deterioration from dust caused by work of this contract.

1.08 OVERTIME WORK

- A. The Contractor shall notify the Owner in writing, at least 48 hours in advance of any overtime work, including nights, weekends, and holidays. Do no overtime work without Owner's prior approval.
- B. The Contractor shall reimburse the Architect and Owner for any expenses incurred by them because of Contractor's overtime work.

1.09 WORK IN PUBLIC RIGHT-OF-WAY

- A. The Contractor shall obtain any required Permits, pay Permit Fees, arrange for inspections by Regulatory Agencies, and comply with governing Regulatory Agency requirements.

1.10 PROTECTING EXISTING UTILITIES

- A. Original Building Drawings and Site Survey 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.
- B. 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.
- C. If such Utility Lines are encountered, immediately request disposition instructions from Architect.
- D. If Utility Lines are damaged; remove, repair, or replace Lines as directed. Additional compensation and/or extension of time, if any, caused by removing, repairing, or replacing Lines will be determined in accordance with General Conditions.

1.11 PROTECTING EXISTING LANDSCAPING & TREES

- A. Protect existing Trees, not designated for removal, against damage caused by work of this contract.
- B. Provide necessary Fencing and Barricades. Erect prior to Work, and unless otherwise instructed, remove after Work completion.
- C. Prohibit Earth stockpiling, Material storage, and Vehicle Parking and Traffic within Drip-line of Trees.
- D. Prohibit dumping of Refuse, Chemicals, and other Materials and puddling or running Water which may injure Plant growth including Root systems.
- E. Prohibit Foot and Vehicle Traffic which may compact Soil over Root Systems.
- F. Prohibit any unnecessary cutting, breaking and skinning of Branches and Roots, and prohibit skinning and bruising of Bark. All tree pruning activities shall be conducted by a certified arborist.
- G. Prohibit all cutting, breaking, and skinning of branches and roots, and skinning or bruising of bark of any trees within the street Right of Way. Consult with a certified arborist and the Authority having jurisdiction prior to starting and construction activities that may threaten to damage street trees.
- H. Prohibit Fires, High-heat and Smoke adjacent to Trees.
- I. Repair or replace with plants of equal size, any material damaged by Construction Operations.
- J. Where damaged Trees cannot realistically be repaired or replaced, pay Owner, as Liquidated Damage, value of Trees as determined by Council of Tree & Landscape Appraisers and as distributed by International Society of Arboriculture. Copies can be obtained from Society at Box 71, Urbana, IL 61801.

1.12 PROTECTING EXISTING SUBGRADE

- A. Contractor shall protect against damage, existing Subgrade and Earthwork provided under this Contract.
- B. Where necessary to accomplish required protection, provide additional Temporary Fill or other approved Cover over Work to be protected.

1.13 PROTECT EXISTING STRUCTURES

- A. Contractor shall protect against damage, existing building parts not scheduled for repair or remodel under this contract.
- B. Where necessary to accomplish required protection, provide additional Temporary barricades, cushioning, or other approved Cover over material to be protected.

1.14 HAZARDOUS MATERIALS

- A. Building Materials Containing Asbestos and Lead have been found in this building in the past. The Owner has previously removed or encapsulated most of the asbestos. By this notice, the Contractor and the Sub-contractors, and their workers, are asked to be aware of the possible presence of Asbestos Bearing Materials, lead and other hazardous materials and if found, or even suspected, to immediately stop work in the area, and notify the Architect and the Owners Project Mnager of the location and condition. A separate independent contract will be issued by the Owner to have the suspected material tested and if needed removed or encapsulated.
- B. The Contractor and Sub-contractors, and their workers shall be extremely careful when working around any asbestos or encapsulated asbestos materials, and take any necessary precautions to avoid disturbing the asbestos or the encapsulation materials. If the asbestos or the encapsulation is disturbed, immediately stop work in the area, and notify the Engineer and the Owners Facility Manager of the location and condition.

1.15 CRIMINAL HISTORY CHECK / PHOTO ID – NOT USED**PART 2 PRODUCTS - NOT USED****PART 3 EXECUTION - NOT USED****END OF SECTION**

PART 1 GENERAL**1.01 SECTION INCLUDES**

- A. Procedures for preparation and submittal of applications for progress payments.
- B. Documentation of changes in Contract Sum and Contract Time.
- C. Change procedures.
- D. Correlation of Contractor submittals based on changes.
- E. Procedures for preparation and submittal of application for final payment.
- F. Schedule of Values.
- G. Payments for products stored off site.

1.02 RELATED REQUIREMENTS

- A. Section 00 5000 - Agreement Form: Contract Sum, retainages, payment period, monetary values of unit prices.
- B. Section 00 6000 - General Conditions and Document 00 8000 - Supplementary Conditions: Additional requirements for progress payments, final payment, changes in the Work.
- C. Section 00 7343 - Prevailing Wage Rates.

1.03 SUBMITTALS

- A. Submit a preliminary draft to the Consultant 3 weeks prior to the submittal for the first Application. The purpose preliminary draft is to confirm the level of detail required by the Design Team. The Contractor is to make adjusted requested by the Consultant. The level of detail may include values as separate lines (entities) for each Specification Section. The Consultant will not review any Application submitted until changes requested by the Consultant to the preliminary draft have been incorporated.

1.04 SCHEDULE OF VALUES

- A. Form to be used: AIA G703 or equivalent.
- B. Electronic media printout including equivalent information will be considered in lieu of standard form specified; submit draft to Consultant for approval.
- C. Forms filled out by hand will not be accepted.
- D. Submit Schedule of Values in duplicate within 15 days after date of Owner-Contractor Agreement.
 - 1. The purpose of the preliminary draft is to confirm the level of detail required by the Design Team, and the Contractor is to make adjustments as requested. The

Consultant will not review any Application submitted until changes requested by the Consultant to the preliminary draft have been incorporated.

- E. Format: Utilize the Table of Contents of this Project Manual. Identify each line item with number and title of the specification Section. Identify the following.
 - 1. Each major Work Item.
 - 2. Each subcontracted Work Item. For each major Subcontract (i.e. mechanical, electrical and plumbing), list products and operations of that Subcontract as separate line items. List labor and materials separately for each major subcontractor.
 - 3. Any Products to be stored, for which separate payments will be requested.
- F. Include separately from each line item, a direct proportional amount of Contractor's overhead and profit.
- G. Revise schedule to list approved Change Orders, with each Application For Payment.
- H. Round off values to nearest dollar.
- I. Sum of values listed shall equal total Contract Sum.
- J. Substantiating Data: When requested by Consultant, submit justifying Substantiating Data and Line Item Amounts in question.

1.05 APPLICATIONS FOR PROGRESS PAYMENTS

- A. Payment Period: Monthly.
- B. Form to be used: AIA G702 and G703.
- C. Electronic media printout including equivalent information will be considered in lieu of standard form specified; submit sample to Consultant for approval.
- D. Forms filled out by hand will not be accepted.
- E. Execute certification by signature of authorized officer.
- F. Use data from approved Schedule of Values. Provide dollar value in each column for each line item for portion of work performed and for stored products.
- G. List each authorized Change Order as a separate line item, listing Change Order number and dollar amount as for an original item of Work. Include individual line items for change orders involving multiple items.
- H. Submit one digital copy in PDF format of each Application for Payment.
- I. Include the following with the application:

1. Construction progress schedule, revised and current as specified in Section 01 3216.
2. Payment for materials and equipment stored off the site shall be conditioned upon compliance by the Contractor with procedures satisfactory to the Owner.
- J. When Consultant requires substantiating information, submit data justifying dollar amounts in question. Provide one copy of data with cover letter for each copy of submittal. Show application number and date, and line item by number and description.
- K. Submit Applications for Payment to Consultant at times stipulated below.
- L. When Consultant finds Application properly completed and correct, Consultant will transmit 3 copies of Certificate for Payment to Owner for approval of payment, with one copy to Contractor, and one retained for files.

1.06 ALTERNATE CONSTRUCTION PAYMENT MANAGEMENT SYSTEMS:

- A. Nothing contained herein would prohibit the Contractor from proposing the use of a Construction Payment Management System that substantially complies with the requirements of this section. The contractor shall pay all additional fees associated with the Owner and Consultant's use of this system.

1.07 PAYMENT FOR PRODUCTS STORED OFF THE PROJECT SITE

- A. When delay or added cost to Owner can be avoided by storing Products off Site, Owner will make payment to Contractor for said Products provided that
- B. Contractor shall:
 1. Locate Storage Facilities within 20 miles of the Consultant's Office or the Project Site.
 2. Make Storage Facilities available for Consultant's visual inspection.
 3. Segregate and label Stored Products for specified Project.
 4. Assume all risk for loss.
 5. Assume responsibility for exceeding Product "Shelf-Life".
 6. Protect Stored Products and provide applicable Insurance against their damage, discoloration, and theft, listing the Owner and any Mortgagee as Additional Named Insured.
 7. Submit itemized Inventory and Schedule of Values for Stored Products together with Certificate of Insurance.
 8. Submit payment requests to Owner as part of Contractor's regular Progress Payment Request. Payment requests can only be for the actual invoiced amount to the contractor or sub-contractor by their respective material supplier. Provide copies of invoice to justify amount requested.

9. Reimburse Owner for damages sustained if Stored Products are not delivered to Jobsite when needed.
10. Submit to Owner, with copy to Consultant, a written Waiver of Lien insuring Owner against claims for unpaid Storage Costs.
11. Upon receipt of payment from Owner, prepare and issue to Owner, with a copy for Consultant, and any Mortgagee, a Bill of Sale for Stored Products.

1.08 PREVAILING WAGE PAYMENT CERTIFICATION

- A. Submit Prevailing Wage Payment Certification Forms as required by Section 00 7343.

1.09 APPLICATION PAYMENT SCHEDULE

- A. Within 15 Days, following Owner's approval of payment of in-order Application for Payment, the Owner will:
 1. Until Substantial Completion, pay Ninety-Five Percent (95%) as defined in General Conditions during the previous month, as estimated by Consultant.
- B. After execution of Certificate of Substantial Completion, and within 15 days, following Owner's approval of payment of the next in-order Application for Payment, the Owner will pay:
 1. Balance due under Contract, excluding a Retainage Amount of at least \$1,000, or double the estimated value of uncompleted and/or unacceptable portions of Work, whichever is the greater amount.
- C. Thirty (30) days after final inspection and acceptance by Owner, and within 15 days following Owner's approval of payment of final in-order Application for Payment, the Owner will pay:
 1. Balance due under Contract, provided Work be then fully completed and Contract be then fully performed.

1.10 MODIFICATION PROCEDURES

- A. Submit name of the individual authorized to receive change documents and who will be responsible for informing others in Contractor's employ or subcontractors of changes to the Contract Documents.
- B. For minor changes not involving an adjustment to the Contract Sum or Contract Time, Consultant will issue instructions directly to Contractor.
- C. For other required changes, Consultant will issue a Construction Change Directive document signed by Owner instructing Contractor to proceed with the change, for subsequent inclusion in a Change Order.
 1. The document will describe the required changes and will designate method of determining any change in Contract Sum or Contract Time.

2. Promptly execute the change.
- D. For changes for which advance pricing is desired, Consultant will issue a Proposal Request document that includes a detailed description of a proposed change with supplementary or revised drawings and specifications, a change in Contract Time for executing the change with a stipulation of any overtime work required and the period of time during which the requested price will be considered valid. Contractor shall prepare and submit a fixed price quotation within 7 calendar days.
- E. Contractor may propose a change by submitting a request for change to Consultant, describing the proposed change and its full effect on the Work, with a statement describing the reason for the change, and the effect on the Contract Sum and Contract Time with full documentation and a statement describing the effect on Work by separate or other contractors. Document any requested substitutions in accordance with Section 01 6000.
- F. Computation of Change in Contract Amount: As specified in the Agreement and Conditions of the Contract.
 1. For change requested by Consultant for work falling under a fixed price contract, the amount will be based on Contractor's price quotation.
 2. For change requested by Contractor, the amount will be based on the Contractor's request for a Change Order as approved by Consultant.
 3. For pre-determined unit prices and quantities, the amount will be based on the fixed unit prices.
 4. For change ordered by Consultant without a quotation from Contractor, the amount will be determined by Consultant based on the Contractor's substantiation of costs as specified for Time and Material work.
- G. Substantiation of Costs: Provide full information required for evaluation.
 1. On request, provide the following data:
 - a. Quantities of products, labor, and equipment.
 - b. Taxes, insurance, and bonds.
 - c. Overhead and profit.
 - d. Justification for any change in Contract Time.
 - e. Credit for deletions from Contract, similarly documented.
 2. Support each claim for additional costs with additional information:
 - a. Origin and date of claim.
 - b. Dates and times work was performed, and by whom.
 - c. Time records and wage rates paid.

- d. Invoices and receipts for products, equipment, and subcontracts, similarly documented.
- 3. For Time and Material work, submit itemized account and supporting data after completion of change, within time limits indicated in the Conditions of the Contract.
- H. Execution of Change Orders: Consultant will issue Change Orders for signatures of parties as provided in the Conditions of the Contract.
- I. After execution of Change Order, promptly revise Schedule of Values and Application for Payment forms to record each authorized Change Order as a separate line item and adjust the Contract Sum.
- J. Promptly revise progress schedules to reflect any change in Contract Time, revise sub-schedules to adjust times for other items of work affected by the change, and resubmit.
- K. Promptly enter changes in Project Record Documents.

1.11 APPLICATION FOR FINAL PAYMENT

- A. Prepare Application for Final Payment as specified for progress payments, identifying total adjusted Contract Sum, previous payments, and sum remaining due.
- B. Application for Final Payment will not be considered until the following have been accomplished:
 - 1. All closeout procedures specified in Section 01 7000.
 - 2. Submit final Application for Payment with unconditional lien releases and supporting documentation not previously submitted and accepted in accordance with requirements of General Conditions.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION - NOT USED

END OF SECTION

PART 1 GENERAL**1.01 SECTION INCLUDES**

- A. Description of Alternates.
- B. Procedures for pricing Alternates.

1.02 RELATED REQUIREMENTS

- A. Document 00 2113 - Instructions to Bidders: Instructions for preparation of pricing for Alternates.
- B. Document 00 4100 - Bid Form: List of Alternates.

1.03 SUBMISSION REQUIREMENTS

- A. Indicate variation of Bid Price for Alternates described below. The Bid Form requests a "difference" in Bid Price by adding to or deducting from the Base Bid Price.

1.04 ACCEPTANCE OF ALTERNATES

- A. Alternates quoted on Bid Forms will be reviewed and accepted or rejected at Owner's option. Accepted Alternates will be identified in the Owner-Contractor Agreement.
- B. Coordinate related work and modify surrounding work to integrate the Work of each Alternate.
- C. Bids will be evaluated on the Base Bid price plus any or all of the Alternates intended to be exercised by the Owner. The order of the Alternates listed here does not represent the order in which any of these Alternates will be exercised.

1.05 PROCEDURES

- A. Coordination: Modify or adjust affected adjacent work as necessary to completely integrate work of the alternate into Project.
 - 1. Include as part of each alternate, miscellaneous devices, accessory objects, and similar items incidental to or required for a complete installation whether or not indicated as part of alternate.

1.06 SCHEDULE OF ALTERNATES

- A. Alternate No. 1 – North Roof Re-Coating
Contractor shall provide an alternate for the application of a liquid-applied roof Restoration overcoat at the North Roof zone currently provided with an in-service, single-ply thermoplastic membrane.
Provide Garland LiquiTec restoration system. Refer to Specification Section 07 5600
FLUID APPLIED RESTORATIVE RESTORATION - ALTERNATE 1.

- B. Alternate No. 2 – Description: Thermoplastic Membrane Roofing – Adhered
Contractor shall provide an alternate for adhered PVC in lieu of the basis-of-design
SBS roofing system.
Provide Sika Sarnafil G410 60-mil felt-backed PVC. Refer to Specification Section
07 5400 THERMOPLASTIC MEMBRANE ROOFING - ADHERED
- C. Alternate No. 3 – Description: Thermoplastic Membrane Roofing – Induction Welded
The use of Thermoplastic Membrane Roofing – Induction Welded in place of SBS Modified
Bitumen Roofing

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION - NOT USED

END OF SECTION

PART 1 GENERAL**1.01 SECTION INCLUDES**

- A. Preconstruction meeting.
- B. Progress meetings.
- C. Submittals for review, information, and project closeout.
- D. Number of copies of submittals.
- E. Submittal procedures.

1.02 RELATED REQUIREMENTS

- A. Section 00 6000 - General Conditions.
- B. Section 01 3216 - Construction Progress Schedule: Form, content, and administration of schedules.
- C. Section 01 7000 - Execution and Closeout Requirements: Additional coordination requirements.
- D. Section 01 7800 - Closeout Submittals: Project record documents.

1.03 CONSTRUCTION ORGANIZATION & START-UP

- A. Responsible Parties:
 - 1. Immediately following Contract execution, Owner will and Contractor shall identify who, within their respective organizations, will be responsible for Project Coordination.
- B. The Contractor shall establish on-site Lines of Authority and Communications including the following:
 - 1. Schedule attendance at Preconstruction Meeting and schedule and conduct Progress Meetings as specified in Section 01 3000.
 - 2. Establish procedures for Intra-project Communications including:
 - a. Submittals.
 - b. Reports & Records.
 - c. Recommendations.
 - d. Coordination Drawings.
 - e. Schedules.

- f. Resolution of Conflicts.
- 3. Technical Documents Interpretation:
 - a. Consult with Consultant to obtain interpretation.
 - b. Assist in resolution of questions or conflicts which may arise.
 - c. Transmit written interpretations to Subcontractors and to other concerned parties.
- 4. Permits & Approvals:
 - a. Verify that Subcontractors have obtained required Permits and Inspections for Work and for Temporary Facilities.
- 5. Control use of Site:
 - a. Supervise Field Engineering and Project Layout.
 - b. Allocate Field Office Space and Work and Storage Areas for use of each Subcontractor.

1.04 COORDINATING SUBCONTRACTORS' WORK

- A. Coordinate the Work of all Subcontractors and make certain that, where the Work of one Trade is dependent upon the Work of another Trade, the Work first installed is properly placed, installed, aligned, and finished as specified or required to properly receive subsequent Materials applied or attached thereto.
- B. Direct Subcontractors to correct defects in Substrates they install when Subcontractors of subsequent Materials have a reasonable and justifiable objection to such surfaces.
- C. Do not force Subcontractors to apply or install Products to improperly placed or improperly finished Substrates that would result in an unsatisfactory or unacceptable finished Product.

1.05 COORDINATING WORK WITH WORK OF OWNER OR OTHER CONTRACTS

- A. Coordinate, and make certain that, where Work of either party is dependent upon the other party, the Work first performed is properly placed, installed, aligned, and finished as required to permit the proper installation of the Work following.
- B. If the Owner's Work in any way interferes with the Contractor's Work, so notify the Owner sufficiently in advance so that the Owner has reasonable time to make necessary adjustments.
- C. If the Contractor's Work in any way interferes with Owner's Work, so notify the Owner as soon as possible. If the Contractor's Work must be modified to accommodate the Owner's Work, except as described elsewhere in this Specification, the Contract Sum and/or the Contract Time will, when necessary be adjusted by a Change Order.
- D. Mechanical & Electrical Equipment start-up:

1. Coordinate check-out of Utilities, Operational Systems, and Equipment.
 2. Assist in initial start-up and testing.
 3. Record starting dates of Systems and Equipment operation.
- E. At completion of Work of each Subcontract, conduct inspection to assure that:
1. Work is acceptable.
 2. Specified cleaning has been accomplished, and Temporary Facilities and Debris has been removed from Site.
- F. Substantial Completion: See Section 002113 1.13

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION

3.01 PRECONSTRUCTION MEETING

- A. Owner will schedule a meeting after Notice of Award.
- B. Attendance Required:
1. Owner.
 2. Consultant.
 3. Contractor.
 4. Contractor's Superintendent.
 5. Major Subcontractors.
- C. Agenda:
1. Introductions.
 2. Execution of Owner- Contractor Agreement.
 3. Submission of executed bonds, insurance certificates and background checks.
 4. Description of Project
 5. Distribution of Contract Documents.
 6. Submission of list of Subcontractors, list of Products, schedule of values, and progress schedule.
 7. Designation of personnel representing the parties to Contract, Owner and Consultant.

8. Procedures and processing of field decisions, submittals, substitutions, applications for payments, proposal request, Change Orders, and Contract closeout procedures.
 - a. Written Change Order requests required
 - b. Supporting back-up will be required for all Change Orders
 - c. Describe Contractor's procedure for review and oversight in the preparation of Change Orders
 - d. Mark-up limitations on Change Orders (See General Conditions Article 7.1.4)
 - e. Processing time required
 - f. Applications for Payment
 - 1) Use AIA documents G702 and G703 latest edition
 - 2) Provide 4 signed and notarized copies
 - 3) Wage certifications to be attached
9. Scheduling, start date and date of substantial completion.
10. Building permit status.
11. Prevailing wage requirements.
12. Public Agency submittal of RESPONSIBILITY DETERMINATION FORM to Construction Contractor's Board.
13. Communications.
14. Role of Owner's Project Manager.
15. Employee Security Screening and Identification Badging.
16. Submittals required per Contract Documents.
17. MSDS Information
18. Erosion control procedures
19. Waste management procedures
20. Environmental quality requirements
21. Hazardous materials
22. Construction activities, working hours, use of site and building.

23. Staging and parking areas.
 24. Temporary facilities and utilities.
 25. Request for information and clarification of design
 26. Correction of Defects.
 27. Weekly on-site progress meetings.
 28. Safety and Emergency Procedures.
 29. Verify that Contractor's Mandatory Drug Testing Program is in place.
 30. Daily Clean-up
 31. Project Closeout, substantial completion, final completion.
 32. Record drawings and Operations and Maintenance Manuals
 33. Tour of Project by Owner's staff and guests (if applicable)
 34. Additional Comments
- D. Consultant will record minutes and distribute copies within [five] days after meeting to participants, with digital copies to Owner, participants, and those affected by decisions made.

3.02 PROGRESS MEETINGS

- A. Schedule and administer meetings throughout progress of the Work at weekly intervals.
- B. Make arrangements for meetings, prepare agenda with copies for participants, preside at meetings.
- C. Attendance Required:
1. Contractor.
 2. Owner.
 3. Consultant.
 4. Contractor's Superintendent.
 5. Major Subcontractors.
- D. Agenda:
1. Review minutes of previous meetings.
 2. Review of Work progress.

3. Field observations, problems, and decisions.
 4. Identification of problems that impede, or will impede, planned progress.
 5. Review of submittals schedule and status of submittals.
 6. Review of off-site fabrication and delivery schedules.
 7. Maintenance of progress schedule.
 8. Corrective measures to regain projected schedules.
 9. Planned progress during succeeding work period.
 10. Coordination of projected progress.
 11. Maintenance of quality and work standards.
 12. Effect of proposed changes on progress schedule and coordination.
 13. Other business relating to Work.
- E. The Owner's Project Manager will record minutes and distribute copies within five days after meeting to participants, with digital copies to Contractor, Owner, participants, and those affected by decisions made.

3.03 PRE-INSTALLATION CONFERENCES

- A. When required in individual specification sections, the Contractor shall convene a pre-installation meeting prior to commencing work of that section.
- B. Require attendance of parties directly affecting, or affected by, work of the specific section.
- C. Notify Consultant minimum four days in advance of meeting date.
- D. The Contractor shall be responsible to prepare agenda and preside at meeting:
1. Review conditions of installation, preparation and installation procedures.
 2. Review coordination with related work.
- E. The Contractor shall be responsible to record minutes and distribute copies within four days after meeting to participants, with copies to Consultant, Owner's Project Manager, participants, and those affected by decisions made.

3.04 CONSTRUCTION PROGRESS SCHEDULE - SEE SECTION 01 3216

3.05 SUBMITTALS FOR REVIEW

- A. When the following are specified in individual sections, submit them for review:
1. Product data.

2. Shop drawings.
 3. Samples for selection.
 4. Samples for verification.
 5. Other information required in individual specification sections.
- B. Submit to Consultant for review for the limited purpose of checking for conformance with information given and the design concept expressed in the contract documents.
- C. Product Data:
1. Clearly mark each copy to identify pertinent Products.
 2. Show performance characteristics and capacities.
 3. Show dimensions, field dimensions, and required clearances.
 4. Show wiring and piping diagrams, and controls.
 5. Show standard schematic drawings and diagrams:
 - a. Modify to delete information not applicable to Work.
 - b. Supplement standard information to provide information specifically applicable to Work.
 - c. Assure that any photo copied material is clearly legible or provide all original material.
- D. Samples will be reviewed only for aesthetic, color, or finish selection.
- E. After review, provide copies and distribute in accordance with SUBMITTAL PROCEDURES article below and for record documents purposes described in Section 01 7800 - Closeout Submittals.

3.06 SUBMITTALS FOR INFORMATION

- A. When the following are specified in individual sections, submit them for information:
1. Design data.
 2. Certificates.
 3. Test reports.
 4. Inspection reports.
 5. Manufacturer's instructions.
 6. Manufacturer's field reports.

7. Other information required in individual specification sections.
 8. Other types indicated.
- B. Submit for Consultant's knowledge as contract administrator or for Owner. No action will be taken.

3.07 SUBMITTALS FOR PROJECT CLOSEOUT

- A. Submit Correction Punch List for Substantial Completion.
- B. Submit Final Correction Punch List for Substantial Completion.
- C. When the following are specified in individual sections, submit them at project closeout:
1. Project record documents.
 2. Operation and maintenance data.
 3. Warranties.
 4. Bonds.
 5. Other information required in individual specification sections.
 6. Other types as indicated.
- D. Submit for Owner's benefit during and after project completion.

3.08 NUMBER OF COPIES OF SUBMITTALS

- A. Electronic Documents: Submit one electronic copy in PDF format; an electronically-marked up file will be returned. Create PDFs at native size and right-side up; illegible files will be rejected.
- B. Samples: Submit the number specified in individual specification sections; two of which will be retained by Consultant.
1. After review, produce duplicates.
 2. Retained samples will not be returned to Contractor unless specifically so stated.
 3. Show full range of color, texture & pattern.

3.09 SUBMITTAL PROCEDURES

- A. Shop Drawing Procedures:
1. Prepare accurate, drawn-to-scale, original shop drawing documentation by interpreting the Contract Documents and coordinating related Work.

2. Generic, non-project specific information submitted as shop drawings do not meet the requirements for shop drawings.
- B. Transmit each submittal with a copy of approved submittal form.
- C. Transmit each submittal with a transmittal form that clearly describes submittal contents and the quantity of items delivered.
- D. Sequentially number the transmittal form. Revise submittals with original number and a sequential alphabetic suffix.
- E. Identify Project, Contractor, Subcontractor or supplier; pertinent drawing and detail number, and specification section number, as appropriate on each copy.
- F. Apply Contractor's stamp, signed or initialed certifying that review, approval, verification of Products required, field dimensions, adjacent construction Work, and coordination of information is in accordance with the requirements of the Work and Contract Documents.
- G. Deliver submittals to Consultant at business address.
- H. Schedule submittals to expedite the Project, and coordinate submission of related items.
- I. For each submittal for review, allow 15 days excluding delivery time to and from the Contractor.
- J. Identify variations from Contract Documents and Product or system limitations that may be detrimental to successful performance of the completed Work.
- K. Notify Consultant in writing, at submission time, of any deviations in Submittals from Contract Document requirements.
- L. Provide space for Contractor and Consultant review stamps.
- M. When revised for resubmission, identify all changes made since previous submission.
- N. Distribute reviewed submittals as appropriate. Instruct parties to promptly report any inability to comply with requirements.
- O. Submittals not requested will not be recognized or processed.
- P. Submit Shop Drawings, Product Data, and Samples only for those Items specifically required. The Consultant will not be obligated to review Shop Drawings, Product Data, or Samples other than those required by the Contract Documents.
- Q. Perform no Work or Fabrication requiring Submittal until Consultant approves Submittal.

END OF SECTION

PART 1 - GENERAL**1.01 REQUIREMENTS INCLUDED**

- A. Related Requirements
- B. General Requirements
- C. Definition of Schedule Documents and Submittal Requirements
- D. Contractor's Schedule Management
- E. Coordination
- F. Schedule Format Requirements
- G. Weather Impacts and Delays
- H. Schedule Updates and Schedule (Network) Revisions
- I. Time Impact Analysis for Changed Conditions
- J. Recovery Schedule
- K. Timeliness of Schedule Document Submittals
- L. Owner Review of Schedule Submittals

1.02 RELATED REQUIREMENTS

- A. The General Provisions, and General Requirements of the Specifications apply to the work specified in this Section.
- B. Section 00 0120 – Bidder-Designed Items and Deferred Submittals
- C. Section 01 6300 – Approval For Substitution and Product Options

1.03 GENERAL REQUIREMENTS

- A. The Schedules (and schedule documents) described herein are for the following purposes:
 - 1. To define the Contractor's Baseline Plan (including logic and use of resources) for completing the Work
 - 2. To report progress in completion of the Work
 - 3. To evaluate any changes to the Contractor's Baseline Plan and subsequent updated plans
- B. In addition, the schedule documents shall serve as a communication tool between the

Owner and the Contractor, and the Contractor and its subcontractors. The Owner encourages the Contractor to use the Schedule to establish an understanding with all parties of the assumptions regarding the Work, and the various constraints and opportunities that are possible within the plan. As the work progresses, the Contractor and the Owner's Representative will use the Schedule to assess impacts and to formulate the best methods to complete the Work on, or ahead of the contractual completion dates. The schedule documents will also be used by the Contract Administrator to evaluate the Contractor's monthly progress payment requests.

- C. The Work shall be scheduled and performed pursuant to the provisions of the Contract including any specific dates for Contract completion milestones, phase completion and the like or requirements included in the General Conditions, the Owner-Contractor Agreement, or elsewhere in the Contract documents. All Contract milestone and completion dates listed in these specifications, or elsewhere in the Contract documents, represent only interface dates or major items of the Work. The Contractor is responsible for completion of all aspects of the Work in accordance with the Contract.
- D. At any time throughout the course of the Work, the Owner reserves the right to require additional activities to be added to the Schedule to further define the Contractor's plan and intentions regarding the execution of the Work. In each instance, such activities or changes shall be made by the Contractor at no cost or delay to the Owner. The Owner's Representative suggestions would not waive the contractor's right to establish its means and method or its obligation to execute the project in a timely and efficient manner.
- E. Should the Contractor desire or intend to complete the Work, or any portion of the Work, earlier than the specified Contract milestone, phase, or similar dates or the overall Contract completion date, the Owner will not be liable to the Contractor for any costs or other damages should the Contractor be unable to complete the Work before Contractor's earlier milestone or completion dates. The duties and obligations of Owner to the Contractor shall be consistent with and applicable only to the completion of the Work on the specified Contract milestone dates or the Contract completion dates unless the Owner and the Contractor otherwise agree in writing, formalized by a change order. The Contractor may finish early but shall not make any claims for additional time-related costs before the expiration of the specified Contract milestone, phase, or similar dates or the overall Contract completion date.
- F. The services provided by the Owner's Representative, the existence of schedules, networks or any other charts or services prepared or performed by the Owner's Representative, shall in no way relieve the Contractor of the responsibility for complying with all of the requirements of the Contract documents, including, but not limited to, the responsibility for completing the Work within the Contract Time and the responsibility of planning, scheduling, and coordinating the Work.
- G. It is understood that during the prosecution of certain aspects of the work, i.e., phasing; commissioning; work with possible impacts to facilities and/or tenant operations; or utility shutdowns, a separate detailed schedule will be required. The Contractor shall prepare these schedules in a timely manner as required for distribution by the Owner's Representative to all affected parties. The Contractor shall provide these schedules at no additional cost.
- H. In addition to requirements specified herein, schedules shall include the following activities specific to Owner:

1. Delivery of Operational and Maintenance Training Manuals.
 2. Submittal and expected approval of manufacturer's recommended spare parts list.
 3. System inspection and punch list preparation.
- I. The Contractor, including his Project Manager and Superintendent shall hold an orientation meeting with Owner, wherein the Contractor presents his approach to planning the work, developing the schedules, and meeting the requirements of this Section. This orientation meeting shall be held prior to submittal of the Baseline Schedule. The Contractor shall not delay preparation of the required schedules and schedule documents prior to this meeting; however, the Contractor shall be responsible for any changes or corrections to his scheduling as a result of this meeting.

1.04 DEFINITION OF SCHEDULE DOCUMENTS AND SUBMITTAL REQUIREMENTS

- A. The following outlines the schedules and schedule documents required by this section to be submitted by the Contractor. Details on each item (and all items) to be submitted are provided in further paragraphs in this Section and in referenced sections.
1. Preliminary (4-Month) Schedule: This schedule is to detail all Contractor work, including procurement activities, mobilization, submittals, and construction activities for the first four months following the date of Notice to Proceed, and be used while the Contractor is developing his baseline schedule. All critical or completion dates required in the contract shall be incorporated into this schedule. The following submittal requirements apply to the preliminary schedule:
 - a. The Preliminary Schedule shall be submitted in a format and with content acceptable to the Owner's Representative and shall be submitted to the Contract Administrator no later than 10 calendar days after Notice to Proceed.
 - b. For purposes of this Preliminary Schedule, the Contractor is to assume that construction activities will occur within 30 calendar days after Notice to Proceed.
 - c. Allow five (5) working days for initial review and five (5) working days for resubmittal reviews by the Contract Administrator.
 2. Baseline Schedule: This is a detailed schedule including a narrative of schedule status developed using the Critical Path Method (CPM). It represents the Contractor's plan for the Work from the date of award of the Contract and will be used to make the first Progress Schedule.
 - a. Submittal requirements: The Baseline Schedule shall be submitted in Primavera P6 format and with content acceptable to the Owner's Representative. The Contractor shall obtain (1) perpetual license of Primavera P6 EPPM for use by the Owner's PM and (1) license for use by the contractor during the contract duration.
 - b. Narrative of Schedule Status: This is a narrative that describes the key

aspects of the submitted schedules. The Baseline Schedule narrative shall define the key aspects of the Contractor's plan for the Work that includes the following key sections. The narratives submitted with the Baseline Schedules are required to be stand-alone documents that do not require Baseline Schedules to be attached in order to be comprehensible:

- (1) The layout and logic used in the Schedule
- (2) Critical submittals
- (3) Long-lead equipment and material procurement.
- (4) The critical path
- (5) An overall float analysis
- (6) Any interface concerns with Owner
- (7) Costs to date

c. Activities: The schedule shall be grouped by the following work activities:

- (1) Mobilization Activities
- (2) Procurement Activities
- (3) Manufacturing Activities
- (4) Quality Control Activities
- (5) Installation Activities
- (6) Testing Activities
- (7) Commissioning Activities
- (8) Demobilization Activities

3. Master Summary Schedule: The cost-loaded Master Summary Schedule shall be developed by the Contractor and submitted to the Contract Administrator with the Baseline Schedule and each monthly Progress Schedule.

- a. The Master Summary Schedule shall show the sequence in which Contractor proposes to perform the Work, all completion dates and critical dates indicated in the Contract Documents, and the dates on which Contractor plans to start and finish major portions of the Work. The Contractor shall include enough activities in the Master Summary Schedule, so that all significant portions of the Work, critical interfaces, coordination with Owner and milestone and completion dates are addressed.

- b. The Summary Schedule shall be cost-loaded, at a high level, to develop a cash flow curve.
- 4. Critical Path Schedule: This schedule shall show the critical path derived first from the Baseline Schedule and subsequently from the current Progress Schedule. This is a time-scaled network logic diagram, showing only the current critical path of the Work along with its current progress. In the event of near critical path work (less than 10 days of float), the Owner's Representative may request the near critical paths also be shown. The following submittal requirements apply to the Critical Path Schedule:
 - a. Submittal Requirements:
 - (1) Submit with Baseline Schedule.
 - (2) Update and submit with the Progress Schedule.
 - (3) Export Primavera P6 schedule data to the client in live file format for all submissions.
- 5. Progress Schedule: This is a detailed schedule, developed using the Critical Path Method (CPM), which is derived from the Baseline Schedule. The first Progress Schedule is the initial monthly progress update of the Baseline Schedule. Subsequent Progress Schedules will be submitted on a monthly basis that updates the previously issued Progress Schedule. The Progress Schedule will also be used to compare percent complete requested by the Contractor in the monthly progress payment applications, to analyze delays and impacts in all Time Impact Analyses (TIA), and to determine whether a Recovery Schedule is needed from the Contractor.
 - a. Submittal requirements: Progress schedules are due monthly to coincide with the progress payment requests. The updated progress schedule will be targeted against the approved baseline and will include baseline start, finish, float, and original duration.
 - b. Narrative of Schedule Status: This is a narrative that describes the key aspects of the submitted schedules. The Progress Schedule narrative shall define the key aspects of the Contractor's plan for the Work that includes the following key sections. The narratives submitted with the Progress Schedules are required to be stand-alone documents that do not require Progress Schedules to be attached in order to be comprehensible:
 - (1) Progress in Last Period
 - (2) Critical Path Progress and Concerns
 - (3) Potential Delays and Time Impact Analyses
 - (4) Submittal Status (focus on critical submittals and concerns)
 - (5) Equipment and Material Delivery Status

- (6) Quality Control Status
 - (7) Manufacturing Status
 - (8) Costs to Date
- 6. Weekly Short Interval Schedule: This is a three-week Look-Ahead Schedule for use in the weekly schedule review meetings. The weekly interval schedules shall include the current activities from the Progress Schedule and all other schedule information deemed necessary.
 - a. Submittal requirements:
 - (1) Provide the schedule in a format acceptable to the Owner's Representative.
 - (2) Submitted no later than 24 hours before the weekly schedule review meeting.
 - (3) Distribute the final weekly interval schedule to all field supervision no later than the next workday following the weekly schedule review meeting.
- 7. Recovery Schedule: This schedule will be required from the Contractor in the event that certain conditions exist such that critical or milestone dates are in jeopardy of being delayed. Recovery Schedule requirements are defined in later paragraphs of this section.
 - a. Submittal requirements: Submit five (5) working days after notice from the Contract Administrator that a Recovery Schedule is required.
- 8. Time Impact Analysis: This schedule analysis shall be part of the back-up data required from the Contractor in the event the Contractor claims that Contract changes delayed or impacted the Work and shall be included in any change proposal claiming increase in time. The Time Impact Analysis requirements are defined in later paragraphs of this section.
 - a. Submittal requirements: Formal submittal of the Time Impact Analysis shall be within 15 calendar days of occurrence of the delay. Failure to submit within the 15 calendar days waives the Contractor's right to claim additional costs or time as a result of such delay.
- 9. Schedule of Submittals: Submit per the following table:

Deliverable	Hard Copies	Electronic Copies	Submittal Due	Remarks
Preliminary (Four-Month) Schedule	2 color copies of each sort	1	10 calendar days after the Notice to Proceed	One-time submittal. Submit using same format requirements as the Baseline Schedule
Baseline Schedule	2 color copies of each sort	1	30 calendar days after the Notice to Proceed	Acceptance is prerequisite to issuance of NTP. Critical Path Schedule is integral to Baseline Schedule. Also, see Note (1).
Progress Schedule		1	Monthly	Critical Path Schedule is integral to Progress Schedule. Also, see Note (1).
Master Summary Schedule		1	With the Baseline Schedule, then Monthly	One-time submittal. Submit with the Baseline Schedule and each Progress Schedule
As-Built Schedule	Include color copy in project O&M	1	Within 30 days of substantial completion	Project schedule shall be considered as-built for work completed and updated with each progress billing. Final document shall be included in O&M
Weekly Look-Ahead Schedule	Sufficient copies for weekly meeting attendees	1	1 Electronic copy 24 hours before weekly schedule review meeting, harmonize with sufficient copies for attendee's color copies presented at OAC Meeting	
Recovery Schedule	2 color copies	1	Within 5 days of notice to submit	
Time Impact Analysis	2 color copies	1	Within 15 days of date of delay claimed	Submit with all changes requesting time extensions

Note (1) Includes Master Summary Schedule, Narrative of Schedule Status, Manpower Loading Curve, and Subcontractor Log.

1.05 CONTRACTOR'S SCHEDULE MANAGEMENT

- A. Scheduling Organization: The Contractor shall provide a Contractor's Scheduling Manager (CSM) to the implementation and management of the scheduling requirements of the Contract documents. The CSM (who may be the Contractor's Project Manager, Superintendent, or other qualified staff person) shall be on site at all times during the progress of the work, or as otherwise authorized in writing by the Contract Administrator.
- B. Qualifications of Contractor's Scheduling Manager:
 - 1. The CSM shall demonstrate acceptable professional familiarity with P6 software, hardware, and/or other scheduling systems and experience necessary to implement all scheduling requirements of the Contract in a timely and expeditious manner.
 - 2. The Owner's Representative will monitor the performance of the CSM. The CSM's performance will be judged on the timeliness and completeness of Contractor's compliance with the scheduling requirements of the Contract documents. If the CSM fails to perform in accordance with the scheduling requirements of the Contract documents, the CSM shall, at the direction of the Contract Administrator, be replaced at no cost to Owner or delay allowable to the project.

1.06 COORDINATION

- A. The Contractor shall coordinate the Work with that of Owner contractors, Owner Operations, and Owner tenants, and shall cooperate fully with the Owner's Representative in maintaining an orderly progress toward completion of the Work as scheduled.
- B. A Time Impact Analysis (TIA) shall be required to support any claim by the Contractor for delay caused by failure of Owner-furnished equipment and materials to arrive as scheduled, or failure of other Owner interface work or tenants to meet their schedules. The TIA shall be based on Owner activities having the same level of predecessor and successor logic to display delay impacts as the Contractor's Work.
- C. The Contractor shall inform its subcontractors of the delivery status of Owner-furnished equipment and material, and of the progress of other interfacing Owner construction work while the Work is underway.

1.07 SCHEDULE FORMAT REQUIREMENTS

- A. Unless otherwise specified, the Baseline and Progress Schedules shall be produced utilizing the Microsoft Windows based Primavera P6 Project Management of the most current version.
- B. The Baseline and Progress Schedules shall employ the Critical Path Method (CPM) using retained logic for the planning, scheduling and reporting of the work to be performed under this Contract. The type of schedule shall be Precedence Diagramming Method (PDM).
- C. The Baseline and Progress Schedules shall include but not be limited to:

1. All Critical, Milestone, and Completion dates defined in the Contract, as well as Owner-provided equipment delivery dates.
2. Date of Contract Award, Notice To Proceed, Mobilization, Substantial Completion, and Overall Beneficial Occupancy, Completion of each Phase, Pre-final Inspections, Final Inspections, and Final Acceptance.
3. Critical procurement and submittal activities including: shop drawings and sample submittals, Owner review of submittals, re-submittals and Owner review of re-submittals, fabrication and delivery for all key, critical path, near critical path and long-lead equipment and material. Owner reserves the right to require the Contractor to add procurement activities to the schedule for any key or long-lead equipment, materials or submittals it deems necessary to monitor the Contractor's schedule for this work.
4. Quality Control Activities, Testing, Pre-Installation Activities, Commissioning, training and closeout activities.
5. Offsite activities that interface with the Contractor's Work, including work by Owner and Owner contractors, delivery of Owner-furnished materials, utilities, agencies, critical Owner operations, Owner tenants, and other similar activities.

D. Activity Descriptions and Setup

1. The description of work by activity and activity coding shall contain the specific type of work to be done and the physical area of the work to which the activity pertains.
2. Activity boundaries shall be easily measurable, and descriptions shall be clear and concise. Activity descriptions should not be prefaced with "Begin" or "Complete." The beginning and end of each activity shall be readily verifiable, and physical progress shall be quantifiable.
3. In general, each critical path and key activity shall be associated with a single performing organization (subcontractor). For other activities, where there is similar type work in an area, organizations (subcontractors) may be grouped for a single activity. Where deemed necessary to define critical, key or unusual work, Owner reserves the right to require additional activities be added to the Contractor's schedule to provide that an activity be associated with each organization (subcontractor). The organization related to the activity shall be identified in a background sort code, such that reports sorted by organization can be made using the scheduling software. Construction Specifications Institute (CSI) codes relating to the division of the work shall be assigned to activities in the same manner described above for organizations. CSI codes are also to be assigned to background sort codes that allow reports by CSI code to be made using the scheduling software.
4. Activity durations over fifteen (15) working days shall be kept to a minimum and shall be used only for non-construction activities, such as shop drawing and sample submittals, fabrication and delivery of materials and equipment, concrete curing, and General Conditions activities. Exceptions to this shall be accepted in writing by the Contract Administrator. The duration of activities shall be in

workdays.

5. Activity costs shall be limited to a maximum of Two-Hundred-Fifty-Thousand Dollars (\$250,000), excluding major equipment and materials. Exceptions to this shall be accepted in writing by the Contract Administrator.
6. For critical path and near critical path activities, Contractor shall use Finish-to-Start relationships to the extent possible. Contractor shall use more activities if necessary, to use Finish-to-Start relationships in preference to use of Start-to-Start relationships. The Owner reserves the right to require the addition of activities to further define critical path and near critical path work in the Schedule.
7. Activities that constitute the controlling operations or critical path will be identified by use of color (red). The critical path is defined as activities with total float less than one day. Near critical is defined as total float in the range of one to ten days. The critical path and near critical activities shall be less than 25 percent of the total activities in the Baseline Schedule.
8. Imposed completion dates for events other than the Milestone Dates or Completion Dates are generally not permitted. Artificial constraints (imposed start dates) are generally not permitted, except possibly for use in Owner- furnished materials, Owner interface dates and the like. Upon creating a new project schedule in the software, the option planned start and planned completion dates should be appropriately inserted. This will allow the schedule calculations to identify negative float when projected dates slip past the planned completion date. All Owner-furnished materials and Owner interface dates shall have an early start/finish and late start/finish range. All Owner dates shall be related to the Contractor's Work with predecessor and successor logic such that float is correctly calculated on Owner-furnished materials and Owner interface dates.
9. Activity numbering shall be spaced (or gapped) to allow inclusion of new activities between existing activities while still maintaining a similarity of numbering for like activities. Numbering by area, level, etc. is encouraged to assist in analysis. The numbering may be alphanumeric to allow easier identification of areas, etc. At a minimum, the following code fields should be included:
 - a. RESP – Responsibility (Owner, Owner's Representative, Sub Consultants, Jurisdictions, Key Third Parties, Contractors, Sub Contractor and, Vendors)
 - b. PHAS – Phases
 - c. AREA – Locations
 - d. STEP – Steps or Sub AREAs
 - e. ITEM – Specification Section Numbers
 - f. CONO – Change Order Numbers
10. Activities that have started and are in progress shall be "scheduled" on each submitted schedule. Planned durations for remaining work and planned

completions of remaining work on activities shall be used. Activities shall not “ride” the data date line, with scheduled completions being the remaining durations, unless the Contractor actually plans to complete work within the remaining duration. Schedules submitted with activities “riding” the data date line will not be accepted by Owner.

11. The work breakdown and coding structure (WBS) should, at a minimum, incorporate the following:
 - a. Milestones/Hammocks
 - b. Deferred Approvals (by CSI, including Agency Approvals)
 - c. Submittals (by CSI)
 - d. Quality Control Activities, Pre-Installation Activities, Commissioning, Designer of Record Observations, Mock-ups
 - e. Work
 - i. mobilization
 - ii. Grading/Underground Utilities
 - iii. Foundations
 - iv. Structures
 - v. Exterior Skin and Roof
 - vi. Interior Construction:
 - a. By Floor
 - b. By Major Unique Functional Area
 - c. Electrical and MEP Equipment
 - d. Unique Elements
 - e. Equipment, including OFCI, OFOI and OFOICC
 - f. Start-Up, Commissioning and Test & Balance (by system and element)
 - g. Fire and Life-Safety and Systems Pre-Tests (by system and element)
 - h. Fire and Life-Safety Jurisdictional Tests and Inspections (by system and element)
 - i. Final Sign Offs by the Design Team and Jurisdictions

E. Schedule Layout and Sequence of Activities

1. The schedule layout shall be consistent with the Project Conditions and milestones set forth in the Contract documents. Work to complete each milestone shall be easily identifiable in the Contractor's overall schedule.
2. The layout shall be consistent with the Work required to meet the Contract milestone dates. In general, it is desired to have the Work needed to meet the Contract milestones be detailed activities that summarize, or roll-up to provide plan and status information reported for the milestone. The summarized overall schedule shall allow reporting of physical progress, cost, and manpower loading for the entire work. Owner intent will be to use the Contractor's schedule for milestones to summarize activities in Owner Master Schedule for all projects.
3. The Schedule layout shall be arranged to allow easy physical progress monitoring of physical areas. Essentially, each level and area within level or area and level within area or the like shall be broken down within the Schedule. These areas and levels shall summarize (or rollup) for reporting purposes. The Contractor shall establish the layout that is needed to meet his Contract responsibilities. The Contractor shall use his selected layout to coordinate with the Contractor's submitted progress payment applications, such that the Schedule, physical progress, the progress payment application and physical progress can be compared to determine the actual progress payments to be made to the Contractor.
4. The calendar is established including agreed working times and holidays. The calendar should not be altered during the project unless the Owner's Representative expressly agrees.
5. Only activity types such "Start Milestone," "Finish Milestone," and "Task" will be allowed with prior authorization by the Owner's Representative. Level of effort (LOE) activities may be used to summarize work as needed to produce summary level schedules for presentation purposes.
6. All activities should have both predecessor and successor logic ties that accurately represent the sequence and interdependence of all related activities except Project Start (which would not have any predecessors) and the last Contract Milestone (which would not have any successors).
7. Negative lags may not be used (there will be no exceptions to this requirement). FS – Finish-to-Start with zero (0) duration logic ties are preferable.
8. SF – Start-to-Finish logic ties are not acceptable.

F. Formats of Schedules Submitted to Owner's Representative

1. The formats of schedules (and schedule documents) shall be submitted to the Owner's Representative are described below. The formats described are solely for reporting information and analysis use with Owner and are not intended to direct the Contractor in his own methods of scheduling. The Contractor may use any schedule format needed for his own use in performing his responsibilities in the Contract.

2. All schedules (and schedule documents) shall be submitted with clear identification of Owner and Contractor's job numbers, schedule names, descriptions, plot dates, data dates, file numbers, issue numbers and the like.
3. All Baseline, Progress and Summary Schedules submitted shall be formatted in a fixed sequence of summary and detail activities for the Contract duration for ease of reference in progress updates. This sequence shall be established by the Contractor and acceptable to the Owner's Representative. The sequence shall be set up in the software such that re-sequencing or reorganizing of the Schedules is not required to generate Owner required schedules and reports. This allows a one to one comparison of each Schedule issued with previous Schedules for analysis purposes, including the As-built Schedule.
4. All Baseline, Progress, and Summary Schedules shall be submitted with the activity description data listed from left to right, as follows: Activity ID, Activity Description, Original Duration, Remaining Duration, Total Float, Percent Complete, Early Start, and Early Finish. The early start and finish dates shall display an "A" after the dates if started (and finished). The Baseline Schedule shall also have the late start and late finish dates to the right of the early finish dates. The Owner reserves the right, at no cost, to require the Contractor to add the late start and late Finish dates to the Progress and Summary Schedules at any time.
5. The status bars on all schedules shall display the physical percent complete of progress. This same physical percent complete shall also be used in the data field. The percent complete of activity duration to show progress shall not be used.
6. The Baseline and Progress Schedules shall be submitted as color plotted time-scaled logic diagrams, with sufficient calendar and spacing to allow activity description information, bars and logic to be easily read. For each submitted schedule, a color plotted time-scaled logic diagram of just critical path activities shall be submitted. The fixed format, as described above, shall be used for all time-scaled logic diagram submittals throughout the duration of the project.
7. The Baseline, Progress, and Summary Schedules shall be submitted in bar chart format with activity data on the left side and bars on the right side. Logic shall not be displayed. Activity descriptions shall be displayed in the bar area. These bar chart schedules shall be 11" x 17" in size, and readable.
8. The Progress Schedule shall be submitted in an additional bar chart format that displays the previous month's Progress Schedule as a "Target" schedule for comparison use. The first Progress Schedule shall use the Baseline Schedule as the "Target" schedule. The "Target" bars shall be of smaller size, of different color, and below the current schedule's bars. Two color copies shall be submitted. The size shall be 11" x 17".
9. The Baseline and Progress Schedules shall be submitted in a bar chart format, as described above, but shall contain only the critical path activities. In the event that the Contractor's schedule has more than 25 percent of the activities as critical path or near critical path, the Contractor shall submit an additional bar chart schedule containing both the critical path and near critical path (as previously

defined) activities.

10. The Baseline and Progress Schedules shall be submitted with a tabular report that displays the activity data previously listed in this subsection, sorted by Activity Number. Owner reserves the right to request up to two additional tabular reports, in a format requested by the Owner's Representative, with any schedule submittal, Time Impact Analysis, or Recovery Schedule, at no additional cost to Owner.
11. The Baseline and Progress Schedules shall be submitted with a predecessor and successor report in 8-1/2" x 11", black and white format, displaying the activity data previously listed in this subsection and the predecessors and successors for each activity. This shall be in the fixed activity format.
12. All schedules and schedule documents submitted to the Owner's Representative shall be in hard copy, as described above, and in the submitted format via electronic transmission that contains the schedule data files.

1.08 WEATHER IMPACTS AND DELAY

- A. The Contractor agrees that he shall not be entitled to a time extension due to normal inclement weather, which can be expected at the project locale due to precipitation, snow, temperature, or other weather conditions. Normal inclement weather shall be defined as the most recent five-year average of accumulated record mean values from climatological data compiled by the US Department of Commerce, National Oceanic and Atmospheric Administration (NOAA) monitoring station nearest to the project site. The Contractor shall include in its Baseline Schedule and all Progress Schedules, allowances for normal inclement weather. Agreed rain days will be tied to specific activity sequences in specific seasons.
- B. The Contractor shall only be entitled to an extension of Contract time, if the Contractor can substantiate that the severity of the weather was in excess of the normal inclement weather, and such weather conditions actually delayed the critical path of the Work. Time extensions will not be allowed for weather delays to non-critical path portions of the Work. Approved time extensions for abnormal weather conditions shall be deemed excusable and non-compensable.
- C. No extension of time will be made for abnormal inclement weather after the portions of the Work in progress at the time are enclosed, except for site work. Site work delays at that time will be allowed only if the abnormal weather causes a critical path delay to the Contract Time or milestone date related to that site work. For the purpose of this paragraph, the term enclosed is defined to mean when the Work in an area of a structure or building is sufficiently closed in (portions of exterior walls up and portions of roof in place), so as to permit adequate conditioning of the air to allow the various trades to perform the Work.
- D. The Contractor is responsible for providing any temporary weather enclosures necessary for Work to proceed without weather delays.

1.09 SCHEDULE UPDATES AND SCHEDULE (NETWORK) REVISIONS

- A. During the course of the Work and issuance of the Progress Schedules, updating to reflect

actual progress shall not be considered revisions to the Schedule. Such updating shall include revisions to activity durations and certain sequences on a monthly basis. Included in the Progress Schedule updates shall be activities and changes that have already been reviewed and accepted by Owner such as the effect of accepted Owner changes, the agreed duration of delays caused by acts of God or other conditions or events which have affected the progress of the Work. The Progress Schedules, when formally submitted, shall display current progress, as well as displaying the forecast or projected Work to the end of the Project.

- B. On all Progress Schedule submittals, the Contractor shall submit a printed list of all schedule logic changes along with the reason for each change. This list is an integral part of the Schedule submittal. This list shall be generated from the scheduling software and be the same logic included electronic transmission. Owner shall accept this list as part of its overall Progress Schedule submittal review and acceptance process.
- C. Should the Contractor, after Owner acceptance of the Baseline Schedule and any Progress Schedules, desire to change the logic of its plan of construction, the Contractor shall submit in writing its requested revisions to the Owner's Representative. The request shall include a written narrative of the reasons for the activity and logic changes, a description of the logic for rescheduling the work, and the methods of maintaining adherence to critical and milestone dates. In addition, for changes affecting sequences of the Work, the Contractor shall provide a time-scaled logic diagram that compares the original sequence of work to the requested revised sequence of work. The Contractor shall submit the requested revision in a timely manner such that Owner may review the request submittal the same time frame and manner as required for other schedule submittals. Upon Owner acceptance of the request, the Contractor shall include the revision in the next upcoming Progress Schedule.
- D. Neither the updating or revision of the Contractor's Progress Schedule, nor the submittal, updating, change or revision of any schedule (or schedule document) for the Owner's review and acceptance shall have the effect of amending or modifying, in any way, the Contract Time, any Contract completion date, or Contract milestone dates or of modifying or limiting in any way Contractor's obligations under this Contract.

1.10 TIME IMPACT ANALYSIS FOR CHANGED CONDITIONS

- A. If delays are experienced that the Contractor believes are caused by Owner, the Contractor shall submit a formal written Time Impact Analysis (TIA). The TIA shall define the impact of each change or delay to the current accepted Progress Schedule. The TIA shall include a written narrative of the impact of such delays, and a schedule in time-scaled logic diagram format that depicts how the changed or delayed work affects other activities in the current accepted Progress Schedule.
- B. In addition to the Contractor's presentation of the impact in the TIA, the Contractor shall include in the TIA, a mitigation plan that reduces or eliminates the claimed delay. The mitigation plan shall include specific Owner and Contractor actions as well as the cost to the Contractor to proceed with the mitigation.
- C. In the event that the Contractor requests a Contract time extension, the time impacts to critical path activities in the current accepted Progress Schedule shall be clearly shown on a schedule in time-scaled logic diagram format. Extensions of time will be granted only to the extent that such changes or delays cause the time for the changed activity and

related activities to exceed the total float along the affected path of activities at the time of Owner directive to proceed with the change or the actual commencement of the delay included in the TIA.

- D. Schedule float is not for the exclusive use or benefit of either the Contractor or Owner. Neither Owner nor the Contractor “owns” the float. The project or Work “owns” the float. Liability for delay to Contract or milestone dates rests with the party whose action (or inaction) caused the delay beyond the float that was available at the time of the delaying action (or inaction).
- E. Each formal TIA shall be submitted as an integral element of the Contractor's change order proposal.
- F. A copy of Owner accepted TIA will be incorporated in the change order signed by Owner and the Contract Administrator for such change. Any changes to the Schedule will be incorporated into the next update of the Progress Schedule following the Owner's acceptance of the TIA.
- G. The Contractor shall be responsible for all costs associated with the preparation of the TIA and the incorporation of accepted TIA's, or portion of TIA's, in the Progress Schedule.
- H. If agreement is not reached on a TIA, or a portion of a TIA, the Progress Schedule, including any time extensions, shall be revised only to the extent accepted by Owner. For any TIA, or portion of a TIA, that is not accepted by Owner, the Contractor may submit a claim in accordance with the Conditions of the Contract.

1.11 RECOVERY SCHEDULE

- A. Should any conditions exist, such that certain activities shown on the Contractor's Progress Schedule fall behind schedule to the extent that any of the mandatory critical dates or milestone completion dates are at risk of being delayed, the Contractor shall be required, at no cost to Owner, to prepare and submit to the Owner's Representative a supplementary Recovery Schedule. The Recovery Schedule shall be in a form and detail appropriate to the need, to explain and display to the Owner's Representative how the Contractor intends to re-schedule those activities to regain compliance with the last previously accepted Progress Schedule.
- B. After determination by the Owner's Representative of the requirement for a Recovery Schedule, the Contractor shall, within five (5) calendar days, submit to Owner's Representative, the Recovery Schedule. The Recovery Schedule shall represent the Contractor's best judgment as to how the Contractor's work shall be reorganized such that the work may return to the accepted Progress Schedule within the maximum one-month period. The Recovery Schedule shall be prepared at a similar level of detail as the Progress Schedule and shall be based on the accepted Progress Schedule.
- C. The Owner's Representative will have seven (7) calendar days to review the Recovery Schedule submittal. Any revisions that result from the Owners Representative's review shall be resubmitted within three (3) workdays by the Contractor for acceptance by the Contract Administrator. The accepted Recovery Schedule shall then be the Schedule that the Contractor shall use in planning, organizing, directing, coordinating, performing and executing the Work (including all activities of subcontractors, equipment vendors and suppliers) that is included on the Recovery Schedule. All other Work shall proceed per

the accepted Progress Schedule.

- D. No later than five (5) calendar days prior to the expiration of the Recovery Schedule, the Owner's Representative and Contractor will meet to determine whether the Contractor has regained compliance with the accepted Progress Schedule. At the direction of the Owner's Representative, one of the following will occur:
1. If, in the opinion of the Owner's Representative, the Contractor is still behind schedule, the Contractor shall prepare another Recovery Schedule, at the Contractor's expense, to take effect for a maximum of one additional month from the start of the new Recovery Schedule.
 2. If, in the opinion of the Owner's Representative, the Contractor has sufficiently regained compliance with the Progress Schedule, the use of the Progress Schedule shall be resumed.

1.12 TIMELINESS OF SCHEDULE DOCUMENT SUBMITTALS

- A. The Schedule (and schedule documents) shall be submitted in a timely manner, as required by this Section. Failure to submit the Schedule and schedule documents on time and in an acceptable format shall result in withholding of payments and other remedies.

1.13 OWNER REVIEW OF SCHEDULE SUBMITTALS

- A. All schedule documents shall be formally submitted and will be reviewed by Owner and returned to the Contractor with the required acceptance or action noted.
- B. In providing review comments on schedule (and schedule document) submittals, and in this section, Contract Administrator may use the word "accepted", "not accepted" or variations thereof in conveying its review comments to the Contractor. At any time, the "accepted" or similar wording is used, such wording shall have no different meaning than similar wording, such as "no exceptions taken."

END OF SECTION

PART 1 GENERAL**1.01 SECTION INCLUDES**

- A. Submittals.
- B. References and standards.
- C. Testing and inspection agencies and services.
- D. Control of installation.
- E. Mock-ups.
- F. Tolerances.
- G. Manufacturers' field services.
- H. Defect Assessment.

1.02 RELATED REQUIREMENTS

- A. Section 00 6000 - General Conditions: Inspections and approvals required by public authorities.
- B. Section 01 3000 - Administrative Requirements: Submittal procedures.
- C. Section 01 6000 - Product Requirements: Requirements for material and product quality.

1.03 REFERENCE STANDARDS

- A. ASTM C1021 - Standard Practice for Laboratories Engaged in Testing of Building Sealants; 2008 (Reapproved 2014).
- B. ASTM C1077 - Standard Practice for Laboratories Testing Concrete and Concrete Aggregates for Use in Construction and Criteria for Laboratory Evaluation; 2014.
- C. ASTM C1093 - Standard Practice for Accreditation of Testing Agencies for Masonry; 2013.
- D. ASTM D3740 - Standard Practice for Minimum Requirements for Agencies Engaged in the Testing and/or Inspection of Soil and Rock as Used in Engineering Design and Construction; 2012a.
- E. ASTM E329 - Standard Specification for Agencies Engaged in Construction Inspection, Testing, or Special Inspection; 2014a.
- F. ASTM E543 - Standard Specification for Agencies Performing Nondestructive Testing; 2013.
- G. OSSC - Oregon Structural Specialty Code, latest edition.

1.04 SUBMITTALS

- A. See Section 01 3000 - Administrative Requirements, for submittal procedures.
- B. Design Data: Submit for Consultant's knowledge as contract administrator for the limited purpose of assessing conformance with information given and the design concept expressed in the contract documents, or for Owner's information.
- C. Test Reports: After each test/inspection, promptly submit two copies of report to Consultant and to Contractor.
 - 1. Include:
 - a. Date issued.
 - b. Project title and number.
 - c. Name of inspector.
 - d. Date and time of sampling or inspection.
 - e. Identification of product and specifications section.
 - f. Location in the Project.
 - g. Type of test/inspection.
 - h. Date of test/inspection.
 - i. Results of test/inspection.
 - j. Conformance with Contract Documents.
 - k. When requested by Consultant, provide interpretation of results.
 - 2. Test report submittals are for Consultant's knowledge as contract administrator for the limited purpose of assessing conformance with information given and the design concept expressed in the contract documents, or for Owner's information.
- D. Certificates: When specified in individual specification sections, submit certification by the manufacturer and Contractor or installation/application subcontractor to Consultant, in quantities specified for Product Data.
 - 1. Indicate material or product conforms to or exceeds specified requirements. Submit supporting reference data, affidavits, and certifications as appropriate.
 - 2. Certificates may be recent or previous test results on material or product, but must be acceptable to Consultant.
- E. Manufacturer's Instructions: When specified in individual specification sections, submit printed instructions for delivery, storage, assembly, installation, start-up, adjusting, and finishing, for the Owner's information. Indicate special procedures, perimeter conditions

requiring special attention, and special environmental criteria required for application or installation.

- F. Manufacturer's Field Reports: Submit reports for Consultant's benefit as contract administrator or for Owner.
 - 1. Submit for information for the limited purpose of assessing conformance with information given and the design concept expressed in the contract documents.
- G. Erection Drawings: Submit drawings for Consultant's benefit as contract administrator or for Owner.
 - 1. Submit for information for the limited purpose of assessing conformance with information given and the design concept expressed in the contract documents.
 - 2. Data indicating inappropriate or unacceptable Work may be subject to action by Consultant or Owner.

1.05 REFERENCES AND STANDARDS

- A. For products and workmanship specified by reference to a document or documents not included in the Project Manual, also referred to as reference standards, comply with requirements of the standard, except when more rigid requirements are specified or are required by applicable codes.
- B. Conform to reference standard of date of issue current on date of Contract Documents, except where a specific date is established by applicable code.
- C. Obtain copies of standards where required by product specification sections.
- D. Maintain copy at project site during submittals, planning, and progress of the specific work, until Substantial Completion.
- E. Should specified reference standards conflict with Contract Documents, request clarification from Consultant before proceeding.
- F. Neither the contractual relationships, duties, or responsibilities of the parties in Contract nor those of Consultant shall be altered from the Contract Documents by mention or inference otherwise in any reference document.

1.06 TESTING AND INSPECTION AGENCIES AND SERVICES

- A. Owner will employ and pay for services of an independent testing agency to perform other specified testing.
- B. Employment of agency in no way relieves Contractor of obligation to perform Work in accordance with requirements of Contract Documents.

PART 2 PRODUCTS - NOT USED**PART 3 EXECUTION****3.01 CONTROL OF INSTALLATION**

- A. Monitor quality control over suppliers, manufacturers, products, services, site conditions, and workmanship, to produce Work of specified quality.
- B. Comply with manufacturers' instructions, including each step in sequence.
- C. Should manufacturers' instructions conflict with Contract Documents, request clarification from Consultant before proceeding.
- D. Comply with specified standards as minimum quality for the Work except where more stringent tolerances, codes, or specified requirements indicate higher standards or more precise workmanship.
- E. Have Work performed by persons qualified to produce required and specified quality.
- F. Verify that field measurements are as indicated on shop drawings or as instructed by the manufacturer.
- G. Secure products in place with positive anchorage devices designed and sized to withstand stresses, vibration, physical distortion, and disfigurement.

3.02 MOCK-UPS

- A. Before installing portions of the Work where mock-ups are required, construct mock-ups in location and size indicated for each form of construction and finish required to comply with the following requirements, using materials indicated for the completed Work. The purpose of mock-up is to demonstrate the proposed range of aesthetic effects and workmanship.
- B. Accepted mock-ups establish the standard of quality the Consultant will use to judge the Work.
- C. Integrated Exterior Mock-ups: construct integrated exterior mock-up as indicated on Drawings. Coordinate installation of exterior envelope materials and products as required in individual Specification Sections. Provide adequate supporting structure for mock-up materials as necessary.
- D. Notify Consultant fifteen (15) working days in advance of dates and times when mockups will be constructed.
- E. Provide supervisory personnel who will oversee mock-up construction. Provide workers that will be employed during the construction at Project.
- F. Tests shall be performed under provisions identified in this section and identified in the respective product specification sections.
- G. Assemble and erect specified items with specified attachment and anchorage devices, flashings, seals, and finishes.

- H. Obtain Consultant's approval of mock-ups before starting work, fabrication, or construction.
- I. Accepted mock-ups shall be a comparison standard for the remaining Work.
- J. Where mock-up has been accepted by Consultant and is specified in product specification sections to be removed, protect mock-up throughout construction, remove mock-up and clear area when directed to do so by Consultant.
- K. Where possible salvage and recycle the demolished mock-up materials.

3.03 TOLERANCES

- A. Monitor fabrication and installation tolerance control of products to produce acceptable Work. Do not permit tolerances to accumulate.
- B. Comply with manufacturers' tolerances. Should manufacturers' tolerances conflict with Contract Documents, request clarification from Consultant before proceeding.
- C. Adjust products to appropriate dimensions; position before securing products in place.

3.04 TESTING AND INSPECTION

- A. See individual specification sections and the current building code for testing and inspection required.
- B. Testing Agency Duties:
 - 1. Provide qualified personnel at site. Cooperate with Consultant and Contractor in performance of services.
 - 2. Perform specified sampling and testing of products in accordance with specified standards.
 - 3. Ascertain compliance of materials and mixes with requirements of Contract Documents.
 - 4. Promptly notify Consultant and Contractor of observed irregularities or non-conformance of Work or products.
 - 5. Perform additional tests and inspections required by Consultant.
 - 6. Submit reports of all tests/inspections specified.
- C. Limits on Testing/Inspection Agency Authority:
 - 1. Agency may not release, revoke, alter, or enlarge on requirements of Contract Documents.
 - 2. Agency may not approve or accept any portion of the Work.
 - 3. Agency may not assume any duties of Contractor.
 - 4. Agency has no authority to stop the Work.

- D. Contractor Responsibilities:
1. Deliver to agency at designated location, adequate samples of materials proposed to be used that require testing, along with proposed mix designs.
 2. Cooperate with laboratory personnel, and provide access to the Work and to manufacturers' facilities.
 3. Provide incidental labor and facilities:
 - a. To provide access to Work to be tested/inspected.
 - b. To obtain and handle samples at the site or at source of Products to be tested/inspected.
 - c. To facilitate tests/inspections.
 - d. To provide storage and curing of test samples.
 4. Notify Consultant and laboratory 24 hours prior to expected time for operations requiring testing/inspection services.
 5. Employ services of an independent qualified testing laboratory and pay for additional samples, tests, and inspections required by Contractor beyond specified requirements.
 6. Arrange with Owner's agency and pay for additional samples, tests, and inspections required by Contractor beyond specified requirements.
- E. Re-testing required because of non-conformance to specified requirements shall be performed by the same agency on instructions by Consultant.
- F. Re-testing required because of non-conformance to specified requirements shall be paid for by Contractor. Payment for re testing will be charged to the Contractor by deducting testing charges from the Contract Price.

3.05 MANUFACTURERS' FIELD SERVICES

- A. When specified in individual specification sections, require material or product suppliers or manufacturers to provide qualified staff personnel to observe site conditions, conditions of surfaces and installation, quality of workmanship, start-up of equipment, test, adjust and balance of equipment as applicable, and to initiate instructions when necessary.
- B. Submit qualifications of observer to Consultant 30 days in advance of required observations.
1. Observer subject to approval of Consultant.
 2. Observer subject to approval of Owner.
- C. Report observations and site decisions or instructions given to applicators or installers that are supplemental or contrary to manufacturers' written instructions.

3.06 DEFECT ASSESSMENT

- A. Replace Work or portions of the Work not conforming to specified requirements.

END OF SECTION

PART 1 GENERAL**1.01 SECTION INCLUDES**

- A. Temporary telecommunications services.
- B. Temporary sanitary facilities.
- C. Temporary Controls: Barriers, enclosures, and fencing.
- D. Security requirements.
- E. Vehicular access and parking.
- F. Waste removal facilities and services.
- G. Project identification sign.
- H. Field offices.

1.02 RELATED REQUIREMENTS

- A. Section 01 5100 - Temporary Utilities.

1.03 REFERENCE STANDARDS

- A. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials; 2015a.

1.04 TELECOMMUNICATIONS SERVICES

- A. Provide, maintain, and pay for telecommunications services to field office at time of project mobilization.
- B. Telecommunications services shall include:
 - 1. Windows-based personal computer dedicated to project telecommunications, with necessary software and laser printer.
 - 2. ~~Telephone Land Lines: One line, minimum; one handset per line.~~
 - a. Cell phone service with voice mail for the project superintendent is an acceptable alternative to a fixed telephone device for this project.
 - 3. Internet Connections: Minimum of one; DSL modem or faster.
 - 4. Email: Account/address reserved for project use.
 - 5. ~~Facsimile Service: Minimum of one dedicated fax machine/printer, with dedicated phone line.~~

- a. This service may reside at the Contractor's office for this project if someone in the office can regularly check the device for messages.
- C. Provide a digital camera at the site capable of taking pictures of job conditions and sending.jpg images via e-mail to Owner and Architect.

1.05 TEMPORARY SANITARY FACILITIES

- A. Provide and maintain required facilities and enclosures. Provide at time of project mobilization.
- B. Maintain daily in clean and sanitary condition.

1.06 BARRIERS

- A. Provide barriers to protect workers on the site and the public against injury.
- B. Provide barriers to prevent unauthorized entry to construction areas, to prevent access to areas that could be hazardous to workers or the public, to allow for owner's use of site and to protect existing facilities and adjacent properties from damage from construction operations and demolition.
- C. Provide barricades and covered walkways required by governing authorities for public rights-of-way and for public access to existing building.
- D. Provide protection for plants designated to remain. Replace damaged plants.
- E. Protect non-owned vehicular traffic, stored materials, site, and structures from damage.
- F. Traffic Controls: Provide as required to maintain safe working environment for Owner and Contractor personnel using the site.

1.07 TEMPORARY FIRE PROTECTION

- A. Provide and maintain necessary facilities and equipment to safeguard Project against Fire Damage.

1.08 FENCING

- A. Provide 6 foot high fence around construction site; equip with vehicular and pedestrian gates with locks.

1.09 EXTERIOR ENCLOSURES

- A. Provide temporary insulated weather tight closure of exterior openings to accommodate acceptable working conditions and protection for 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 and locks.

1.10 INTERIOR ENCLOSURES

- A. Provide temporary partitions and ceilings as indicated to separate work areas from Owner-occupied areas, to prevent penetration of dust and moisture into Owner-occupied areas, and to prevent damage to existing materials and equipment.
- B. Construction: Framing and reinforced polyethylene sheet materials with closed joints and sealed edges at intersections with existing surfaces:
 - 1. Maximum flame spread rating of 75 in accordance with ASTM E84.

1.11 SECURITY

- A. Provide security and facilities to protect Work, existing facilities, and Owner's operations from unauthorized entry, vandalism, or theft.
- B. Coordinate with Owner's security program.

1.12 VEHICULAR ACCESS AND PARKING

- A. Comply with regulations relating to use of streets and sidewalks, access to emergency facilities, and access for emergency vehicles.
- B. Coordinate access and haul routes with governing authorities and Owner.
- C. Provide and maintain access to fire hydrants, free of obstructions.
- D. Provide means of removing mud from vehicle wheels before entering streets.
- E. Designated existing on-site roads may be used for construction traffic.
- F. Provide temporary parking areas to accommodate construction personnel. When site space is not adequate, provide additional off-site parking.
- G. Existing parking areas may be used for construction parking.
- H. Do not allow vehicle parking on existing pavement.
- I. Use designated drop off and delivery areas for short term parking only.
- J. Do not use Owner's Parking Lots for overnight vehicle storage.
- K. Designate one parking space for Owner and Architect use.
- L. Repair existing facilities damaged by use, to original condition.
- M. Provide trained and equipped flag persons to regulate traffic when construction operations or traffic encroach on public traffic lanes.

1.13 MATERIAL STORAGE SPACE

- A. Maintain within Project Limits in accordance with Architect's and Owner's instructions. Do not block exitways or overload structure.

1.14 WASTE REMOVAL

- A. See Section 01 7419 - Construction Waste Management and Disposal, for additional requirements.
- B. Encourage the separation of waste materials and sorting and disposal at a local recycling center.
- C. Provide waste removal facilities and services as required to maintain the site in clean and orderly condition.
- D. Provide containers with lids. Remove trash from site periodically.
- E. If materials to be recycled or re-used on the project must be stored on-site, provide suitable non-combustible containers; locate containers holding flammable material outside the structure unless otherwise approved by the authorities having jurisdiction.
- F. Open free-fall chutes are not permitted. Terminate closed chutes into appropriate containers with lids.

1.15 PROJECT IDENTIFICATION

- A. A project sign is not required for this project.
- B. No other signs are allowed without Owner permission except those required by law.

1.16 FIELD OFFICES – NOT USED**1.17 VISITOR PERSONAL PROTECTION EQUIPMENT**

- A. Provide six sets of Personal Protection Equipment (PPE) for use by official visitors to the project site during construction. Visitor PPE shall include as a minimum, hard hat and protective eye goggles. Provide high visibility garments when moving vehicles are in use on the construction site. Store in Field Office and reserve for use by visitors to the project site.
- B. Maintain in good condition through the course of the project and replace equipment that does not meet personal safety requirements.

1.18 REMOVAL OF UTILITIES, FACILITIES, AND CONTROLS

- A. Remove temporary utilities, equipment, facilities, materials, prior to Date of Substantial Completion inspection.
- B. Remove underground installations to a minimum depth of 2 feet. Grade site as indicated.
- C. Clean and repair damage caused by installation or use of temporary work.

- D. Restore existing facilities used during construction to original condition.
- E. Restore new permanent facilities used during construction to specified condition.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION - NOT USED

END OF SECTION

PART 1 GENERAL**1.01 SECTION INCLUDES**

- A. Temporary Utilities: Electricity, lighting, heat, ventilation, and water.

1.02 RELATED REQUIREMENTS

- A. Section 01 5000 - Temporary Facilities and Controls:
 - 1. Temporary telecommunications services for administrative purposes.
 - 2. Temporary sanitary facilities required by law.

1.03 CONSERVATION

- A. It is the Owner's practice to utilize natural resources responsibly. Exercise appropriate energy and water conservation measures at all times.

1.04 TEMPORARY ELECTRICITY

- A. Cost of Labor, Material and Energy: By Contractor.
- B. Provide power service required from utility source.
- C. Provide power outlets for construction operations, with branch wiring and distribution boxes located at each floor. Provide flexible power cords as required.
- D. Provide main service disconnect and over-current protection at convenient location and meter.
- E. Permanent convenience receptacles may be utilized during construction.
- F. Provide adequate distribution equipment, wiring, and outlets to provide single phase branch circuits for power and lighting.

1.05 TEMPORARY LIGHTING FOR CONSTRUCTION PURPOSES

- A. Provide and maintain incandescent lighting for construction operations to achieve a minimum lighting level of 2 watt/sq ft.
- B. Provide and maintain 1 watt/sq ft lighting to exterior staging and storage areas after dark for security purposes.
- C. Provide and maintain 0.25 watt/sq ft H.I.D. lighting to interior work areas after dark for security purposes.
- D. Provide branch wiring from power source to distribution boxes with lighting conductors, pigtails, and lamps as required.
- E. Maintain lighting and provide routine repairs.

- F. Permanent building lighting may be utilized during construction.

1.06 TEMPORARY HEATING

- A. Cost of of Labor, Material and Energy: By Contractor.
- B. Provide heating devices and heat as needed to maintain specified conditions for construction operations.
- C. Maintain minimum ambient temperature of 50 degrees F in areas where construction is in progress, unless indicated otherwise in specifications.

1.07 TEMPORARY COOLING

- A. Provide cooling devices and cooling as needed to maintain specified conditions for construction operations.
- B. Maintain maximum ambient temperature of 80 degrees F in areas where construction is in progress, unless indicated otherwise in specifications.

1.08 TEMPORARY VENTILATION

- A. Existing ventilation equipment may not be used.

1.09 TEMPORARY WATER SERVICE

- A. Cost of Labor, Materials, and Water Used: By Contractor.
- B. Provide and maintain suitable quality water service for construction operations at time of project mobilization.
- C. Connect to existing water source.
 - 1. Exercise measures to conserve water.
- D. Extend branch piping with outlets located so water is available by hoses with threaded connections. Provide temporary pipe insulation to prevent freezing.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION - NOT USED

END OF SECTION

PART 1 GENERAL**1.01 SECTION INCLUDES**

- A. Construction procedures to promote adequate indoor air quality after construction.
- B. Building flush-out after construction and before occupancy.
- C. Testing indoor air quality after completion of construction.

1.02 PROJECT GOALS

- A. Dust and Airborne Particulates: Prevent deposition of dust and other particulates in HVAC ducts and equipment.
 - 1. Cleaning of ductwork is not contemplated under this Contract.
 - 2. Contractor shall bear the cost of cleaning required due to failure to protect ducts and equipment from construction dust.
- B. Airborne Contaminants: Procedures and products have been specified to minimize indoor air pollutants.
 - 1. Furnish products meeting the specifications.
 - 2. Avoid construction practices that could result in contamination of installed products leading to indoor air pollution.

1.03 RELATED REQUIREMENTS

- A. Section 01 4000 - Quality Requirements: Testing and inspection services.
- B. Section 01 6116 - Volatile Organic Compound (VOC) Content Restrictions.

1.04 REFERENCE STANDARDS

- A. ASTM D5197 - Standard Test Method for Determination of Formaldehyde and Other Carbonyl Compounds in Air (Active Sampler Methodology); 2009.
- B. CAL (CDPH SM) - Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions From Indoor Sources Using Environmental Chambers; California Department of Public Health; v1.1, 2010.
- C. EPA 600/4-90/010 - Compendium of Methods for the Determination of Air Pollutants in Indoor Air; April 1990.
- D. EPA 625/R-96/010b - Compendium of Methods for the Determination of Toxic Organic Compounds in Ambient Air; January 1999.
- E. SMACNA (OCC) - IAQ Guidelines for Occupied Buildings Under Construction; 2007.

1.05 DEFINITIONS

- A. Adsorptive Materials: Gypsum board, acoustical ceiling tile and panels, carpet and carpet tile, fabrics, fibrous insulation, and other similar products.
- B. Contaminants: Gases, vapors, regulated pollutants, airborne mold and mildew, and the like, as specified.
- C. Particulates: Dust, dirt, and other airborne solid matter.
- D. Wet Work: Concrete, plaster, coatings, and other products that emit water vapor or volatile organic compounds during installation, drying, or curing.

1.06 SUBMITTALS

- A. See Section 01 3000 - Administrative Requirements, for submittal procedures.
- B. Indoor Air Quality Management Plan: Describe in detail measures to be taken to promote adequate indoor air quality upon completion; use SMACNA (OCC) as a guide.
 - 1. Submit not less than 60 days before enclosure of building.
 - 2. Identify potential sources of odor and dust.
 - 3. Identify construction activities likely to produce odor or dust.
 - 4. Identify areas of project potentially affected, especially occupied areas.
 - 5. Evaluate potential problems by severity and describe methods of control.
 - 6. Describe construction ventilation to be provided, including type and duration of ventilation, use of permanent HVAC systems, types of filters and schedule for replacement of filters.
 - 7. Describe cleaning and dust control procedures.
- C. Air Contaminant Test Plan: Identify:
 - 1. Testing agency qualifications.
 - 2. Locations and scheduling of air sampling.
 - 3. Test procedures, in detail.
 - 4. Test instruments and apparatus.
 - 5. Sampling methods.
- D. Air Contaminant Test Reports: Show:
 - 1. Location where each sample was taken, and time.
 - 2. Test values for each air sample; average the values of each set of 3.

3. HVAC operating conditions.
4. Certification of test equipment calibration.
5. Other conditions or discrepancies that might have influenced results.

PART 2 PRODUCTS

2.01 MATERIALS

- A. Low VOC Materials: See Section 01 6116.
- B. Low VOC Materials: See individual sections for specific requirements for materials with low VOC content.

PART 3 EXECUTION

3.01 CONSTRUCTION PROCEDURES

- A. Prevent the absorption of moisture and humidity by adsorptive materials by:
 1. Sequencing the delivery of such materials so that they are not present in the building until wet work is completed and dry.
 2. Delivery and storage of such materials in fully sealed moisture-impermeable packaging.
 3. Provide sufficient ventilation for drying within reasonable time frame.
- B. Begin construction ventilation when building is substantially enclosed.
- C. If extremely dusty or dirty work must be conducted inside the building, shut down HVAC systems for the duration; remove dust and dirt completely before restarting systems.
- D. HVAC equipment and ductwork may NOT be used for ventilation during construction:
 1. Provide temporary ventilation equivalent to 1.5 air changes per hour, minimum.
 2. Exhaust directly to outside.
 3. Seal HVAC air inlets and outlets immediately after duct installation.
- E. Do not store construction materials or waste in mechanical or electrical rooms.
- F. Prior to use of return air ductwork without intake filters clean up and remove dust and debris generated by construction activities.
 1. Inspect duct intakes, return air grilles, and terminal units for dust.
 2. Clean plenum spaces, including top sides of lay-in ceilings, outsides of ducts, tops of pipes and conduit.
 3. Clean tops of doors and frames.

4. Clean mechanical and electrical rooms, including tops of pipes, ducts, and conduit, equipment, and supports.
 5. Clean return plenums of air handling units.
 6. Remove intake filters last, after cleaning is complete.
- G. Do not perform dusty or dirty work after starting use of return air ducts without intake filters.
- H. Use other relevant recommendations of SMACNA (OCC) for avoiding unnecessary contamination due to construction procedures.

3.02 BUILDING FLUSH-OUT

- A. Contractor's Option: Either full continuous flush-out OR satisfactory air contaminant testing is required, not both.
- B. Perform building flush-out before occupancy.
- C. Do not start flush-out until:
1. All construction is complete.
 2. HVAC systems have been tested, adjusted, and balanced for proper operation.
 3. Inspection of inside of return air ducts and terminal units confirms that cleaning is not necessary.
 4. New HVAC filtration media have been installed.
- D. Building Flush-Out: Operate all ventilation systems at normal flow rates with 100 percent outside air until a total air volume of 14,000 cubic feet per square foot of floor area has been supplied.
1. Obtain Owner's concurrence that construction is complete enough before beginning flush-out.
 2. Maintain interior temperature of at least 60 degrees F and interior relative humidity no higher than 60 percent.
 3. If additional construction involving materials that produce particulates or any of the specified contaminants is conducted during flush-out, start flush-out over.
 4. If interior spaces must be occupied prior to completion of the flush-out, supply a minimum of 25 percent of the total air volume prior to occupancy, and:
 - a. Begin ventilation at least three hours prior to daily occupancy.
 - b. Continue ventilation during all occupied periods.
 - c. Provide minimum outside air volume of 0.30 cfm per square foot or design minimum outside air rate, whichever is greater.

- E. Install new HVAC filtration media after completion of flush-out and before occupancy or further testing.

3.03 AIR CONTAMINANT TESTING

- A. Contractor's Option: Either full continuous flush-out OR satisfactory air contaminant testing is required, not both.
- B. Perform air contaminant testing before occupancy.
- C. Do not start air contaminant testing until:
 - 1. All construction is complete, including interior finishes.
 - 2. HVAC systems have been tested, adjusted, and balanced for proper operation.
 - 3. New HVAC filtration media have been installed.
- D. Indoor Air Samples: Collect from spaces representative of occupied areas:
 - 1. Collect samples while operable windows and exterior doors are closed, HVAC system is running normally as if occupied, with design minimum outdoor air, but with the building unoccupied.
 - 2. Collect samples from spaces in each contiguous floor area in each air handler zone, but not less than one sample per 25,000 square feet; take samples from areas having the least ventilation and those having the greatest presumed source strength.
 - 3. Collect samples from height from 36 inches to 72 inches above floor.
 - 4. Collect samples from same locations on 3 consecutive days during normal business hours; average the results of each set of 3 samples.
 - 5. Exception: Areas with normal very high outside air ventilation rates, such as laboratories, do not need to be tested.
 - 6. When retesting the same building areas, take samples from at least the same locations as in first test.
- E. Outdoor Air Samples: Collect samples at outside air intake of each air handler at the same time as indoor samples are taken.
- F. Analyze air samples and submit report.
- G. Air Contaminant Concentration Limits:
 - 1. Formaldehyde: Not more than 27 parts per billion.
 - 2. PM10 Particulates: Not more than 50 micrograms per cubic meter.
 - 3. Total Volatile Organic Compounds (TVOCs): Not more than 500 micrograms per cubic meter.

4. Chemicals Listed in CAL (CDPH SM) Table 4-1, except Formaldehyde: Allowable concentrations listed in Table 4-1.
 5. Carbon Monoxide: Not more than 9 parts per million and not more than 2 parts per million higher than outdoor air.
- H. Air Contaminant Concentration Test Methods:
1. Formaldehyde: ASTM D5197, EPA 625 Method TO-11A, or EPA 600 Method IP-6.
 2. Particulates: EPA 600 Method IP-10.
 3. Total Volatile Organic Compounds (TVOC): EPA 625 Method TO-1, TO-15, or TO-17; or EPA 600 Method IP-1.
 4. Chemicals Listed in CAL (CDPH SM) Table 4-1, except Formaldehyde: ASTM D5197, or EPA 625 Method TO-1, TO-15, or TO-17.
 5. Carbon Monoxide: EPA 600 Method IP-3, plus measure outdoor air; measure in ppm; report both indoor and outdoor measurements.
- I. Air Contaminant Concentration Determination and Limits:
1. Carbon Monoxide: Not more than 9 parts per million and not more than 2 parts per million higher than outdoor air.
 2. Airborne Mold and Mildew: Measure in relation to outside air; not higher than outside air.
 3. Formaldehyde: Not more than 50 parts per billion.
 4. Formaldehyde: Measure in micrograms per cubic meter, in relation to outside air; not more than 20 micrograms per cubic meter higher than outside air.
 5. Total Volatile Organic Compounds (TVOC): Not more than 500 micrograms per cubic meter.
 6. Total Volatile Organic Compounds (TVOC): Measure in micrograms per cubic meter, in relation to outside air; not more than 200 micrograms per cubic meter higher than outside air.
 7. Particulates (PM₁₀): Not more than 50 micrograms per cubic meter.
 8. Total Particulates (PM): Measure in micrograms per cubic meter, in relation to outside air; not more than 20 micrograms per cubic meter higher than outside air.

END OF SECTION

PART 1 GENERAL**1.01 SECTION INCLUDES**

- A. General product requirements.
- B. Re-use of existing products.
- C. Transportation, handling, storage and protection.
- D. Product option requirements.
- E. Substitution limitations and procedures.
- F. Procedures for Owner-supplied products.
- G. Maintenance materials, including extra materials, spare parts, tools, and software.

1.02 RELATED REQUIREMENTS

- A. Document 00 2113 - Instructions to Bidders: Product options and substitution procedures prior to bid date.
- B. Section 01 4000 - Quality Requirements: Product quality monitoring.
- C. Section 01 6023 - Substitution Request Form
- D. Section 01 6116 - Volatile Organic Compound (VOC) Content Restrictions: Requirements for VOC-restricted product categories.
- E. Section 01 7419 - Construction Waste Management and Disposal: Waste disposal requirements potentially affecting packaging and substitutions.

1.03 REFERENCE STANDARDS

- A. GEI (SCH) - GREENGUARD "Children and Schools" Certified Products; GREENGUARD Environmental Institute; current listings at www.greenguard.org.
- B. GreenSeal GS-36 - Commercial Adhesives; Green Seal, Inc.; 2000.
- C. SCAQMD 1168 - South Coast Air Quality Management District Rule No.1168; current edition; www.aqmd.gov

1.04 SUBMITTALS

- A. Proposed Products List: Submit list of major products that comply with the specifications and are proposed for use, with name of manufacturer, trade name, and model number of each product.
 - 1. Submit within 15 days after date of Subcontract Award Notice.
 - 2. For products specified only by reference standards, list applicable reference standards.

- B. Product Data Submittals: Submit manufacturer's standard published data. Mark each copy to identify applicable products, models, options, and other data. Supplement manufacturers' standard data to provide information specific to this Project.
- C. Shop Drawing Submittals: Prepared specifically for this Project; indicate utility and electrical characteristics, utility connection requirements, and location of utility outlets for service for functional equipment and appliances.
- D. Sample Submittals: Illustrate functional and aesthetic characteristics of the product, with integral parts and attachment devices. Coordinate sample submittals for interfacing work.
 - 1. For selection from standard finishes, submit samples of the full range of the manufacturer's standard colors, textures, and patterns.

PART 2 PRODUCTS

2.01 EXISTING PRODUCTS

- A. Do not use materials and equipment removed from existing premises unless specifically required or permitted by the Contract Documents.
- B. Unforeseen historic items encountered remain the property of the Owner; notify Owner promptly upon discovery; protect, remove, handle, and store as directed by Owner.
- C. Existing materials and equipment indicated to be removed, but not to be re-used, relocated, reinstalled, delivered to the Owner, or otherwise indicated as to remain the property of the Owner, become the property of the Contractor; remove from site.
- D. Reused Products: Reused products include materials and equipment previously used in this or other construction, salvaged and refurbished as specified.

2.02 NEW PRODUCTS

- A. Provide new products unless specifically required or permitted by the Contract Documents.

2.03 PRODUCT OPTIONS

- A. Products Specified by Reference Standards or by Description Only: Use any product meeting those standards or description.
- B. Products Specified by Naming One or More Manufacturers: Use a product of one of the manufacturers named and meeting specifications, no options or substitutions allowed.
- C. Products Specified by Naming One or More Manufacturers with a Provision for Substitutions: Submit a request for substitution for any manufacturer not named.

2.04 MAINTENANCE MATERIALS

- A. Furnish extra materials, spare parts, tools, and software of types and in quantities specified in individual specification sections.

PART 3 EXECUTION**3.01 SUBSTITUTION PROCEDURES**

- A. Instructions to Bidders specifies process and time restrictions for submitting requests for substitutions during the bidding period. Comply with requirements specified in that section.
- B. Substitutions may be considered when a product becomes unavailable through no fault of the Contractor.
- C. Document each request on Form 01-6023 with complete data substantiating compliance of proposed substitution with Contract Documents. **Include a point by point comparative analysis in matrix form.**
- D. Substitutions
 - 1. Notify Architect when Contractor is aware of materials, equipment, or products that meet the aesthetic and programmatic intent of Contract Documents, but which are more environmentally responsible than materials, equipment, or products specified or indicated in the Contract Documents.
- E. A request for substitution constitutes a representation that the submitter:
 - 1. Has investigated proposed product and determined that it meets or exceeds the quality level of the specified product.
 - 2. Agrees to provide the same warranty for the substitution as for the specified product.
 - 3. Agrees to coordinate installation and make changes to other Work that may be required for the Work to be complete with no additional cost to Owner.
 - 4. Waives claims for additional costs or time extension that may subsequently become apparent.
- F. Substitutions will not be allowed post bid.
- G. Each request for substitution approval shall include:
 - 1. Identity of Product for which substitution is requested; include Specification Section.
 - 2. Identity of substitution; include complete Product description, drawings, photographs, performance and test data, and any other information necessary for evaluation.
 - 3. ~~Identify compliance with any described LEED product requirements.~~
 - 4. Quality comparison of proposed substitution with specified product.
 - 5. Changes in other Work required because of substitution.
 - 6. Effect on construction progress schedule.

7. Cost of proposed substitution compared with specified product.
 8. Any required license fees or royalties.
 9. Availability of maintenance service.
 10. Source of replacement materials.
- H. Architect will be sole judge of acceptability of any proposed substitution.

3.02 SUBSTITUTIONS AFTER CONTRACT AWARD

- A. Approval will be granted only when:
1. Specified Product cannot be delivered without Project delay, or
 2. Specified Product has been discontinued, or
 3. Specified Product has been replaced by superior Product, or
 4. Specified Product cannot be guaranteed as specified, or
 5. Specified Product will not perform properly, or
 6. Specified Product will not fit within designated space, or
 7. Specified Product does not comply with governing codes, or
 8. Substitution will be clearly in Owner's interest.
- B. Architect will issue Change Order authorizing approved substitutions and revising Contract Sum where appropriate.

3.03 CONTRACT COMPLIANCE

- A. Substitution approval does not relieve Contractor from responsibility for proper execution of the Work and for compliance with other Contract requirements.

3.04 OWNER-SUPPLIED PRODUCTS

- A. See Section 01 1000 for identification of Owner-supplied products.
- B. Owner's Responsibilities:
1. Arrange for and deliver Owner reviewed shop drawings, product data, and samples, to Contractor.
 2. Arrange and pay for product delivery to site.
 3. On delivery, inspect products jointly with Contractor.
 4. Submit claims for transportation damage and replace damaged, defective, or deficient items.

5. Arrange for manufacturers' warranties, inspections, and service.
- C. Contractor's Responsibilities:
1. Review Owner reviewed shop drawings, product data, and samples.
 2. Receive and unload products at site; inspect for completeness or damage jointly with Owner.
 3. Handle, store, install and finish products.
 4. Repair or replace items damaged after receipt.

3.05 TRANSPORTATION AND HANDLING

- A. Package products for shipment in manner to prevent damage; for equipment, package to avoid loss of factory calibration.
- B. If special precautions are required, attach instructions prominently and legibly on outside of packaging.
- C. Coordinate schedule of product delivery to designated prepared areas in order to minimize site storage time and potential damage to stored materials.
- D. Transport and handle products in accordance with manufacturer's instructions.
- E. Transport materials in covered trucks to prevent contamination of product and littering of surrounding areas.
- F. Promptly inspect shipments to ensure that products comply with requirements, quantities are correct, and products are undamaged.
- G. Provide equipment and personnel to handle products by methods to prevent soiling, disfigurement, or damage, and to minimize handling.
- H. Arrange for the return of packing materials, such as wood pallets, where economically feasible.

3.06 STORAGE AND PROTECTION

- A. Designate receiving/storage areas for incoming products so that they are delivered according to installation schedule and placed convenient to work area in order to minimize waste due to excessive materials handling and misapplication.
- B. Store and protect products in accordance with manufacturers' instructions.
- C. Store with seals and labels intact and legible.
- D. Store sensitive products in weather tight, climate controlled, enclosures in an environment favorable to product.
- E. For exterior storage of fabricated products, place on sloped supports above ground.

- F. Protect products from damage or deterioration due to construction operations, weather, precipitation, humidity, temperature, sunlight and ultraviolet light, dirt, dust, and other contaminants.
- G. Comply with manufacturer's warranty conditions, if any.
- H. Cover products subject to deterioration with impervious sheet covering. Provide ventilation to prevent condensation and degradation of products.
- I. Prevent contact with material that may cause corrosion, discoloration, or staining.
- J. Provide equipment and personnel to store products by methods to prevent soiling, disfigurement, or damage.
- K. Arrange storage of products to permit access for inspection. Periodically inspect to verify products are undamaged and are maintained in acceptable condition.

END OF SECTION

SUBSTITUTION REQUEST: DATE SUBMITTED _____

1.01 SUBMIT TO: Paul Chamberlin, Regional Director, at paul.chamberlin@hmkco.org

1.02 PROJECT: Benton Center Roofing Project

1.03 SPECIFIED ITEM:

- A. SECTION NAME AND NUMBER: _____
- B. PRODUCT TYPE AND NAME AND MODEL: _____
- C. PARAGRAPH AND PRODUCT DESCRIPTION: _____

1.04 PROPOSED SUBSTITUTION:

- A. MANUFACTURER AND MODEL NUMBER(S): _____
- B. PRODUCT DESCRIPTION: _____
- C. Attached data includes product description, specifications, drawings, photographs, performance, test data and **point by point comparative matrix** adequate for evaluation of request including identification of applicable data portions. Attached data also includes description of changes to Contract Documents the proposed substitution requires for proper installation.
- D. It is the responsibility of the requestee to assemble a comparative matrix outlining key elements of proposed substitution.

1.05 UNDERSIGNED CERTIFIES FOLLOWING ITEMS, UNLESS MODIFIED BY ATTACHMENTS, ARE CORRECT:

- A. Proposed substitution does not affect dimensions shown on the drawings.
- B. Undersigned pays for changes to building design, including engineering design, detailing, and construction costs caused by proposed substitution.
- C. Proposed substitution has no adverse effect on other trades, construction schedule, or specified warranty requirements.
- D. Maintenance and service parts are available locally or readily obtainable for proposed substitution.

1.06 UNDERSIGNED FURTHER CERTIFIES FUNCTION, APPEARANCE, AND QUALITY OF PROPOSED SUBSTITUTION ARE EQUIVALENT OR SUPERIOR TO SPECIFIED ITEM.

1.07 UNDERSIGNED FURTHER CERTIFIES THAT THE MANUFACTURER OF THE PROPOSED SUBSTITUTION IS AWARE OF THIS SUBSTITUTION REQUEST AND AGREES TO THE STATEMENTS NOTED ABOVE.

1.08 UNDERSIGNED AGREES THAT THE TERMS AND CONDITIONS FOR SUBSTITUTIONS FOUND IN BIDDING DOCUMENTS APPLY TO THIS PROPOSED SUBSTITUTION.

1.09 SUBMITTED BY:

A. PRINT NAME: _____

SIGNATURE: _____

B. FIRM NAME: _____

C. FULL MAILING ADDRESS: _____

City: _____ State: _____ Zip: _____

D. PHONE: _____ E-MAIL: _____

1.10 FOR USE BY ARCHITECT OR ENGINEER

A. APPROVED OR APPROVED AS NOTED BY: _____

B. NOT APPROVED BY: _____

C. RECEIVED TOO LATE: _____

D. REMARKS: _____

E. DATE OF RESPONSE: _____

END OF SECTION

PART 1 GENERAL**1.01 SECTION INCLUDES**

- A. Requirement for installer certification that they did not use any non-compliant products.
- B. VOC restrictions for product categories listed below under "DEFINITIONS."
- C. All products of each category that are installed in the project must comply; Owner's project goals do not allow for partial compliance.

1.02 RELATED REQUIREMENTS

- A. Section 01 3000 - Administrative Requirements: Submittal procedures.
- C. Section 01 4000 - Quality Requirements: Procedures for testing and certifications.
- D. Section 01 5721 - Indoor Air Quality Controls: Procedures and testing.
- E. Section 01 6000 - Product Requirements: Fundamental product requirements, substitutions and product options, delivery, storage, and handling.

1.03 DEFINITIONS

- A. VOC-Restricted Products: All products of each of the following categories when installed or applied on-site in the building interior:
 - 1. Adhesives, sealants, and sealer coatings.
 - 2. Carpet.
 - 3. Carpet tile.
 - 4. Resilient floor coverings.
 - 5. Paints and coatings.
 - 6. Insulation.
 - 7. Gypsum board.
 - 8. Acoustical ceilings and panels.
 - 9. Cabinet work.
 - 10. Wall coverings.
 - 11. Composite wood and agrifiber products used either alone or as part of another product.
 - 12. Other products when specifically stated in the specifications.
- B. Interior of Building: Anywhere inside the exterior weather barrier.

- C. Adhesives: All gunnable, trowelable, liquid-applied, and aerosol adhesives, whether specified or not; including flooring adhesives, resilient base adhesives, and pipe jointing adhesives.
- D. Sealants: All gunnable, trowelable, and liquid-applied joint sealants and sealant primers, whether specified or not; including firestopping sealants and duct joint sealers.

1.04 REFERENCE STANDARDS

- A. CRI (GLP) - Green Label Plus Testing Program - Certified Products; Carpet and Rug Institute; Current Edition.
- B. GreenSeal GC-03 - Anti-Corrosive Paints; Green Seal, Inc.; 2007
- C. GreenSeal GS-11 - Paints; Green Seal, Inc.; 1993.
- D. GreenSeal GS-36 - Commercial Adhesives; Green Seal, Inc.; 2011.
- E. SCAQMD 1113 - South Coast Air Quality Management District Rule No.1113; current edition; <http://www.aqmd.gov/>.
- F. SCAQMD 1168 - South Coast Air Quality Management District Rule No.1168; current edition; www.aqmd.gov.
- G. SCS (CPD) - SCS Certified Products; Scientific Certification Systems; current listings at www.scs-certified.com.

1.05 SUBMITTALS

- A. See Section 01 3000 - Administrative Requirements, for submittal procedures.
- B. Evidence of Compliance: Submit for each different product in each applicable category.
- C. Product Data: For each VOC-restricted product used in the project, submit evidence of compliance.
- D. Installer Certifications Regarding Prohibited Content: Require each installer of any type of product (not just the products for which VOC restrictions are specified) to certify that either 1) no adhesives, joint sealants, paints, coatings, or composite wood or agrifiber products have been used in the installation of his products, or 2) that such products used comply with these requirements.

PART 2 PRODUCTS

2.01 MATERIALS

- A. All Products: Comply with the most stringent of federal, State, and local requirements, or these specifications.
- B. Adhesives and Joint Sealants: Provide only products having volatile organic compound (VOC) content not greater than required by South Coast Air Quality Management District Rule No.1168.

1. Definition: This provision applies to gunnable, trowelable, and liquid-applied adhesives, sealants, and sealant primers used anywhere on the interior of the building inside the weather barrier, including duct sealers and fire stopping.
2. ~~LEED~~: Not Used
3. Certification: Require each installer to certify compliance and submit product data showing product content.
 - a. Evidence of Compliance: Acceptable types of evidence are:
 - 1) Report of laboratory testing performed in accordance with requirements.
 - 2) Published product data showing compliance with requirements.
 - 3) Certification by manufacturer that product complies with requirements.
 - 4) SCAQMD limits for specific product categories:
 - a) Architectural Applications VOC Limit g/L less water
 1. Indoor Carpet Adhesives 50
 2. Carpet Pad Adhesives 50
 3. Outdoor Carpet Adhesives 150
 4. Wood Flooring Adhesive 100
 5. Rubber Floor Adhesives 60
 6. Subfloor Adhesives 50
 7. Ceramic Tile Adhesives 65
 8. VCT and Asphalt Tile Adhesives 50
 9. Dry Wall and Panel Adhesives 50
 10. Cove Base Adhesives 50
 11. Multipurpose Construction Adhesives 70
 12. Structural Glazing Adhesives 100
 13. Single Ply Roof Membrane Adhesives 250
 - b) Specialty Applications VOC Limits g/L less water
 1. PVC Welding 510
 2. CPVC Welding 490

3. ABS Welding 325
4. Plastic Cement Welding 250
5. Adhesive Primer for Plastic 550
6. Computer Diskette Manufacturing 350
7. Contact Adhesive 80
8. Special Purpose Contact Adhesive 250
9. Tire Retread 100
10. Adhesive Primer for Traffic Marking Tape 150
11. Structural Wood Member Adhesive 140
12. Sheet Applied Rubber Lining Operations 850
13. Top and Trim Adhesive 250
- c) Substrate Specific Applications VOC Limit g/L less water
 1. Metal to Metal 30
 2. Plastic Foams 50
 3. Porous Material (except wood) 50
 4. Wood 30
 5. Fiberglass 80
- d) Sealants VOC Limit g/L less water
 1. Architectural 250
 2. Marine Deck 760
 3. Nonmembrane Roof 300
 4. Roadway 250
 5. Single-Ply Roof Membrane 450
 6. Other 420
- e) Sealant Primers VOC Limit g/L less water
 1. Architectural Non Porous 250
 2. Architectural Porous 775
 3. Modified Bituminous 500

4. Marine Deck 760
 5. Other 750
- C. Aerosol Adhesives: Provide only products having volatile organic compound (VOC) content not greater than required by GreenSeal GS-36.
 1. ~~LEED~~: Not Used
 2. Certification: Require each installer to certify compliance and submit product data showing product content.
 - a. Evidence of Compliance: Acceptable types of evidence are:
 - 1) Current GreenSeal Certification.
 - 2) Report of laboratory testing performed in accordance with GreenSeal GS-36 requirements.
 - 3) Published product data showing compliance with requirements.
 3. GreenSeal limits for specific product categories:
 - a. Aerosol Adhesives VOC Weight g/L minus water
 - 1) General purpose mist spray 65% VOCs by weight
 - 2) General purpose web spray 55% VOCs by weight
 - 3) Special purpose aerosol adhesives (all types) 70% VOCs by weight
- D. Paints and Coatings:
 1. Definition: This provision applies to paints and coatings used anywhere on the interior of the building inside the weather barrier, including all primers and sealers.
 2. Provide coatings that comply with the most stringent requirements specified in the following:
 - a. Architectural Paints and Coatings: Do not exceed VOC content limits established in GreenSeal GS-11.
 - b. Anti-Corrosive and Anti-Rust Paints: Do not exceed VOC content limits established in GreenSeal GS-03.
 - c. Clear Wood Finishes, Floor Coatings, Stains, Primers and Shellacs: Do not exceed the VOC content limits established in SCAQMD Rule No. 1113.
 3. Determination of VOC Content: Testing and calculation in accordance with 40 CFR 59, Subpart D (EPA Method 24), exclusive of colorants added to a tint base and water added at project site; or other method acceptable to authorities having jurisdiction.

4. This provision is applicable to LEED Credit EQ 4.1; submit LEED Prohibited Content Installer Certification Forms and all support material per section 01 35 16.07.
5. Certification: Require each installer to certify compliance and submit product data showing product content.
 - a. Evidence of Compliance: Acceptable types of evidence are:
 - 1) Report of laboratory testing performed in accordance with requirements.
 - 2) Published product data showing compliance with requirements.
6. Limits for specific product categories:
 - a. Architectural paints, coatings and primers applied to interior walls and ceilings per GreenSeal GS-11
 - 1) Flats: 50 g/L
 - 2) Non-Flats: 150 g/L
 - 3) Primers: 50 g/L
 - b. Interior Anti-Corrosive and Anti-rust paints, coatings and primers per GreenSeal GS-03, Anti-Corrosive Paints
 - 1) 250 g/L
 - c. All other coatings, paints and sealers per SCAQMD Rule #1113, Architectural Coatings
 - 1) Coating CategoryVOC Limit g/L
 - (a) Bond Breakers 350
 - (b) Clear Wood Finishes 275
 - (c) Varnish 275
 - (d) Sanding Sealers 275
 - (e) Lacquer 275
 - (f) Clear Brushing Lacquer 275
 - (g) Concrete-Curing Compounds 100
 - (h) Concrete-Curing Compounds For Roadways and Bridges 350
 - (i) Dry-Fog Coatings 150
 - (j) Fire-Proofing Exterior Coatings 350

- (k) Fire-Retardant Coatings Clear 650
- (l) Fire-Retardant Coatings Pigmented 350
- (m) Flats 50
- (n) Floor Coatings 50
- (o) Graphic Arts (Sign) Coatings 500
- (p) Industrial Maintenance (IM) Coatings 100
- (q) High Temperature IM Coatings 420
- (r) Zinc-Rich IM Primers 100
- (s) Japans/Faux Finishing Coatings 350
- (t) Magnesite Cement Coatings 450
- (u) Mastic Coatings 300
- (v) Metallic Pigmented Coatings 500
- (w) Multi-Color Coatings 250
- (x) Nonflat Coatings 50
- (y) Nonflat High Gloss 50
- (z) Pigmented Lacquer 275
- (aa) Pre-Treatment Wash Primers 420
- (ab) Primers, Sealers, and Undercoaters 100
- (ac) Quick-Dry Enamels 50
- (ad) Quick-Dry Primers, Sealers, and Undercoaters 100
- (ae) Recycled Coatings 250
- (af) Roof Coatings 50
- (ag) Roof Coatings, Aluminum 100
- (ah) Roof Primers, Bituminous 350
- (ai) Rust Preventative Coatings 100
- (aj) Shellac Clear 730
- (ak) Shellac Pigmented 550
- (al) Specialty Primers 100

- (am) Stains 100
 - (an) Stains, Interior 250
 - (ao) Swimming Pool Coatings Repair 340
 - (ap) Swimming Pool Coatings Other 340
 - (aq) Traffic Coatings 100
 - (ar) Waterproofing Sealers 100
 - (as) Waterproofing Concrete/Masonry Sealers 100
 - (at) Wood Preservatives Below-Ground 350
 - (au) Wood Preservatives- Other 350
 - (av) Low-Solids Coating 120
- E. Carpet and Adhesive: Provide products having VOC content not greater than that required for CRI Green Label Plus certification.
- 1. Evidence of Compliance: Acceptable types of evidence are:
 - a. Current Green Label Plus Certification.
 - b. Report of laboratory testing performed in accordance with requirements.
- F. Carpet Tile and Adhesive: Provide products having VOC content not greater than that required for CRI Green Label Plus certification.
- 1. Evidence of Compliance: Acceptable types of evidence are:
 - a. Current Green Label Plus Certification.
 - b. Report of laboratory testing performed in accordance with requirements.
- G. Composite Wood and Agrifiber Products and Adhesives Used for Laminating Them: Provide products having no added urea-formaldehyde resins.
- 1. Evidence of Compliance: Acceptable types of evidence are:
 - a. Current SCS "No Added Urea Formaldehyde" certification;
www.scscertified.com.
 - b. Published product data showing compliance with requirements.
- H. Other Product Categories: Comply with limitations specified elsewhere.

PART 3 EXECUTION

3.01 FIELD QUALITY CONTROL

- A. Owner reserves the right to reject non-compliant products, whether installed or not, and require their removal and replacement with compliant products at no extra cost to Owner.
- B. Additional costs to restore indoor air quality due to installation of non-compliant products will be borne by Contractor.

END OF SECTION

PART 1 GENERAL**1.01 SECTION INCLUDES**

- A. Examination, preparation, and general installation procedures.
- B. Requirements for alterations work, including selective demolition, except removal, disposal, and/or remediation of hazardous materials and toxic substances.
- C. Requirements for forming openings in existing construction for all work including mechanical and electrical work.
- D. Pre-installation meetings.
- E. Cutting and patching.
- F. Surveying for laying out the work.
- G. Cleaning and protection.
- H. Starting of systems and equipment.
- I. Demonstration and instruction of Owner personnel.
- J. Closeout procedures, including Contractor's Correction Punch List, except payment procedures.
- K. General requirements for maintenance service.
- L. Substantial completion
- M. Final Completion
- N. Additional fees for delays in completing work

1.02 RELATED REQUIREMENTS

- A. Section 01 1000 - Summary: Limitations on working in existing building; continued occupancy; work sequence; identification of salvaged and relocated materials.
- B. Section 01 3000 - Administrative Requirements: Submittals procedures, Electronic document submittal service.
- C. Section 01 4000 - Quality Requirements: Testing and inspection procedures.
- D. Section 01 5000 - Temporary Facilities and Controls: Temporary exterior enclosures.
- E. Section 01 5000 - Temporary Facilities and Controls: Temporary interior partitions.
- F. Section 01 5100 - Temporary Utilities: Temporary heating, cooling, and ventilating facilities.
- G. Section 01 7419 - Construction Waste Management and Disposal: Additional procedures for trash/waste removal, recycling, salvage, and reuse.

- H. Section 01 7800 - Closeout Submittals: Project record documents, operation and maintenance data, warranties and bonds.

1.03 REFERENCE STANDARDS

- A. NFPA 241 - Standard for Safeguarding Construction, Alteration, and Demolition Operations; 2013.

1.04 SUBMITTALS

- A. See Section 01 3000 - Administrative Requirements, for submittal procedures.
- B. Survey work: Submit name, address, and telephone number of Surveyor before starting survey work.
1. On request, submit documentation verifying accuracy of survey work.
 2. Submit a copy of site drawing signed by the Land Surveyor, that the elevations and locations of the work are in conformance with Contract Documents.
 3. Submit surveys and survey logs for the project record.
- C. Cutting and Patching: Submit written request in advance of cutting or alteration that affects:
1. Structural integrity of any element of Project.
 2. Integrity of weather exposed or moisture resistant element.
 3. Efficiency, maintenance, or safety of any operational element.
 4. Visual qualities of sight exposed elements.
 5. Work of Owner or separate Contractor.
 6. Include in request:
 - a. Identification of Project.
 - b. Location and description of affected work.
 - c. Necessity for cutting or alteration.
 - d. Description of proposed work and products to be used.
 - e. Effect on work of Owner or separate Contractor.
 - f. Written permission of affected separate Contractor.
 - g. Date and time work will be executed.
- D. Project Record Documents: Accurately record actual locations of capped and active utilities.

1.05 QUALIFICATIONS

- A. For survey work, employ a land surveyor registered in the State in which the Project is located and acceptable to Architect. Submit evidence of Surveyor's Errors and Omissions insurance coverage in the form of an Insurance Certificate.

1.06 PROJECT CONDITIONS

- A. Use of explosives is not permitted.
- B. Grade site to drain. Maintain excavations free of water. Provide, operate, and maintain pumping equipment.
- C. Protect site from puddling or running water. Provide water barriers as required to protect site from soil erosion.
- D. Ventilate enclosed areas to assist cure of materials, to dissipate humidity, and to prevent accumulation of dust, fumes, vapors, or gases.
- E. Dust Control: Execute work by methods to minimize raising dust from construction operations. Provide positive means to prevent air-borne dust from dispersing into atmosphere and over adjacent property.
 - 1. Provide dust-proof enclosures to prevent entry of dust generated outdoors.
- F. Erosion and Sediment Control: Plan and execute work by methods to control surface drainage from cuts and fills, from borrow and waste disposal areas. Prevent erosion and sedimentation.
 - 1. Minimize amount of bare soil exposed at one time.
 - 2. Provide temporary measures such as berms, dikes, and drains, to prevent water flow.
 - 3. Construct fill and waste areas by selective placement to avoid erosive surface silts or clays.
 - 4. Periodically inspect earthwork to detect evidence of erosion and sedimentation; promptly apply corrective measures.
- G. Noise Control: Provide methods, means, and facilities to minimize noise produced by construction operations.
 - 1. At All Times: Excessively noisy tools and operations will not be tolerated inside the building at any time of day; excessively noisy includes jackhammers.
 - 2. Outdoors: Limit conduct of especially noisy exterior work to the hours of 8 am to 5 pm.
 - 3. Indoors: Limit conduct of especially noisy interior work to the hours of 6 pm to 7 am.
- H. Pest and Rodent Control: Provide methods, means, and facilities to prevent pests and insects from damaging the work.

- I. Pollution Control: Provide methods, means, and facilities to prevent contamination of soil, water, and atmosphere from discharge of noxious, toxic substances, and pollutants produced by construction operations. Comply with federal, state, and local regulations.

1.07 COORDINATION

- A. Coordinate work of alterations and renovations to expedite completion sequentially and to accommodate occupancy requirements.
- B. Coordinate scheduling, submittals, and work of the various sections of the Project Manual to ensure efficient and orderly sequence of installation of interdependent construction elements, with provisions for accommodating items installed later.
- C. Notify affected utility companies and comply with their requirements.
- D. Verify that utility requirements and characteristics of new operating equipment are compatible with building utilities. Coordinate work of various sections having interdependent responsibilities for installing, connecting to, and placing in service, such equipment.
- E. Coordinate space requirements, supports, and installation of mechanical and electrical work that are indicated diagrammatically on Drawings. Follow routing shown for pipes, ducts, and conduit, as closely as practicable; place runs parallel with lines of building. Utilize spaces efficiently to maximize accessibility for other installations, for maintenance, and for repairs.
- F. In finished areas except as otherwise indicated, conceal pipes, ducts, and wiring within the construction. Coordinate locations of fixtures and outlets with finish elements.
- G. Coordinate completion and clean-up of work of separate sections.
- H. After Owner occupancy of premises, coordinate access to site for correction of defective work and work not in accordance with Contract Documents, to minimize disruption of Owner's activities.

1.08 CONTRACTOR'S FULL TIME SUPERVISION OF THE WORK

- A. Contractor shall provide an on-site project superintendent to be present full time whenever work is occurring on site.
- B. Contractor's Superintendent shall maintain a Daily Log of work activities at the site during construction.
 - 1. Submit copies of the Daily Logs to the Owner on a weekly basis.

PART 2 PRODUCTS

2.01 PATCHING MATERIALS

- A. New Materials: As specified in product sections; match existing products and work for patching and extending work.

- B. Type and Quality of Existing Products: Determine by inspecting and testing products where necessary, referring to existing work as a standard.
- C. Product Substitution: For any proposed change in materials, submit request for substitution described in Section 01 6000 - Product Requirements.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that existing site conditions and substrate surfaces are acceptable for subsequent work. Start of work means acceptance of existing conditions.
- B. Verify that existing substrate is capable of structural support or attachment of new work being applied or attached.
- C. Examine and verify specific conditions described in individual specification sections.
- D. Take field measurements before confirming product orders or beginning fabrication, to minimize waste due to over-ordering or misfabrication.
- E. Verify that utility services are available, of the correct characteristics, and in the correct locations.
- F. Prior to Cutting: Examine existing conditions prior to commencing work, including elements subject to damage or movement during cutting and patching. After uncovering existing work, assess conditions affecting performance of work. Beginning of cutting or patching means acceptance of existing conditions.

3.02 PREPARATION

- A. Clean substrate surfaces prior to applying next material or substance.
- B. Seal cracks or openings of substrate prior to applying next material or substance.
- C. Apply manufacturer required or recommended substrate primer, sealer, or conditioner prior to applying any new material or substance in contact or bond.

3.03 PREINSTALLATION MEETINGS

- A. When required in individual specification sections, convene a preinstallation meeting at the site prior to commencing work of the section.
- B. Require attendance of parties directly affecting, or affected by, work of the specific section.
- C. Notify Architect seven days in advance of meeting date.
- D. Prepare agenda and preside at meeting:
 - 1. Review conditions of examination, preparation and installation procedures.
 - 2. Review coordination with related work.

- E. Record minutes and distribute copies within two days after meeting to participants, with two copies to Architect, Owner, participants, and those affected by decisions made.

3.04 LAYING OUT THE WORK

- A. Verify locations of survey control points prior to starting work.
- B. Promptly notify Architect of any discrepancies discovered.
- C. Protect survey control points prior to starting site work; preserve permanent reference points during construction.
- D. Promptly report to Architect the loss or destruction of any reference point or relocation required because of changes in grades or other reasons.
- E. Replace dislocated survey control points based on original survey control. Make no changes without prior written notice to Architect.
- F. Utilize recognized engineering survey practices.
- G. Establish elevations, lines and levels. Locate and lay out by instrumentation and similar appropriate means:
 - 1. Site improvements including pavements; stakes for grading, fill and topsoil placement; utility locations, slopes, and invert elevations.
 - 2. Grid or axis for structures.
 - 3. Building foundation, column locations, ground floor elevations.
- H. Periodically verify layouts by same means.
- I. Maintain a complete and accurate log of control and survey work as it progresses.

3.05 GENERAL INSTALLATION REQUIREMENTS

- A. Install products as specified in individual sections, in accordance with manufacturer's instructions and recommendations, and so as to avoid waste due to necessity for replacement.
- B. Make vertical elements plumb and horizontal elements level, unless otherwise indicated.
- C. Install equipment and fittings plumb and level, neatly aligned with adjacent vertical and horizontal lines, unless otherwise indicated.
- D. Make consistent texture on surfaces, with seamless transitions, unless otherwise indicated.
- E. Make neat transitions between different surfaces, maintaining texture and appearance.

3.06 ALTERATIONS

- A. The stability and integrity of the existing structure during demolition and selective demolition shall be maintained at levels generally acceptable within the construction industry by the use of temporary bracing, shoring, and underpinning until the proposed

structure modifications are completed. In no case shall the existing structure be allowed to become unsafe during construction.

- B. The design, installation, and removal of shoring and bracing systems required to provide temporary support of the existing structure during construction shall be the responsibility of the Contractor and shall be designed to support the dead, live, soil, earthquake, and wind loads that may be imposed on the structure during construction in accordance with industry standards and generally accepted engineering principals. Provide the services of a registered professional engineer to design these systems when required by Oregon State Statute and the building code.
- C. Drawings showing existing construction and utilities are based on casual field observation and existing record documents only.
 - 1. Verify that construction and utility arrangements are as shown.
 - 2. Report discrepancies to Architect before disturbing existing installation.
 - 3. Beginning of alterations work constitutes acceptance of existing conditions.
- D. Keep areas in which alterations are being conducted separated from other areas that are still occupied.
 - 1. Provide, erect, and maintain temporary dustproof partitions of construction specified in Section 01 5000 in locations indicated on drawings.
 - 2. Provide appropriate temporary signage including signage for exit or building egress.
- E. Maintain weatherproof exterior building enclosure except for interruptions required for replacement or modifications; take care to prevent water and humidity damage.
 - 1. Where openings in exterior enclosure exist, provide construction to make exterior enclosure weatherproof.
 - 2. Insulate existing ducts or pipes that are exposed to outdoor ambient temperatures by alterations work.
- F. Comply with regulatory requirements for Alteration Work:
 - 1. Conform to applicable code for demolition work, dust control, products requiring electrical disconnection and re-connection.
 - 2. Obtain required permits from authorities.
 - 3. Do not close or obstruct egress from any building exit or site exit.
 - 4. Do not disable or disrupt building fire or life safety systems without 3 days' prior written notice to Owner.

5. Conform to applicable regulatory procedures when hazardous or contaminated materials are discovered. Stop all work in the area and notify the Owner's representative.
 - a. Owner will provide verification, abatement, and removal as required to complete the Work.
- G. Remove existing work as indicated and as required to accomplish new work.
 1. Remove items indicated on drawings.
 2. Relocate items indicated on drawings.
 3. Where new surface finishes are to be applied to existing work, perform removals, patch, and prepare existing surfaces as required to receive new finish; remove existing finish if necessary for successful application of new finish.
 4. Where new surface finishes are not specified or indicated, patch holes and damaged surfaces to match adjacent finished surfaces as closely as possible
- H. Services (Including but not limited to HVAC, Plumbing, Fire Protection, Electrical, and Telecommunications): Remove, relocate, and extend existing systems to accommodate new construction.
 1. Notify affected utility companies before starting work and comply with their requirements.
 2. Mark location and termination of utilities.
 3. Maintain existing active systems that are to remain in operation; maintain access to equipment and operational components; if necessary, modify installation to allow access or provide access panel.
 4. Do not interrupt existing utilities serving occupied or used facilities, except when authorized in writing by the Owner. Provide temporary services during interruption of existing utilities, as acceptable to the Owner
 5. Where existing systems or equipment are not active and Contract Documents require reactivation, put back into operational condition; repair supply, distribution, and equipment as required.
 6. Where existing active systems serve occupied facilities but are to be replaced with new services, maintain existing systems in service until new systems are complete and ready for service.
 - a. Disable existing systems only to make switchovers and connections; minimize duration of outages.
 - b. Provide temporary connections as required to maintain existing systems in service.
 7. Verify that abandoned services serve only abandoned facilities.

8. Remove abandoned pipe, ducts, conduits, and equipment, including those above accessible ceilings; remove back to source of supply where possible, otherwise cap stub and tag with identification; patch holes left by removal using materials specified for new construction.
- I. Protect existing work to remain.
 1. Prevent movement of structure; provide shoring and bracing if necessary.
 2. Perform cutting to accomplish removals neatly and as specified for cutting new work.
 3. Repair adjacent construction and finishes damaged during removal work.
 4. Cover finish floors to remain.
 5. Use only rubber tired vehicles for conveying materials in building.
- J. Adapt existing work to fit new work: Make as neat and smooth transition as possible.
 1. When existing finished surfaces are cut so that a smooth transition with new work is not possible, terminate existing surface along a straight line at a natural line of division and make recommendation to Architect.
 2. Where removal of partitions or walls results in adjacent spaces becoming one, rework floors, walls, and ceilings to a smooth plane without breaks, steps, or bulkheads.
 3. Where a change of plane of 1/4 inch or more occurs in existing work, submit recommendation for providing a smooth transition for Architect review and request instructions.
 4. Trim existing wood doors as necessary to clear new floor finish. Refinish trim as required.
- K. Patching: Where the existing surface is not indicated to be refinished, patch to match the surface finish that existed prior to cutting. Where the surface is indicated to be refinished, patch so that the substrate is ready for the new finish.
- L. Refinish existing surfaces as indicated:
 1. Where rooms or spaces are indicated to be refinished, refinish all visible existing surfaces to remain to the specified condition for each material, with a neat transition to adjacent finishes.
 2. If mechanical or electrical work is exposed accidentally during the work, re-cover and refinish to match.
- M. Clean existing systems and equipment.
- N. Remove demolition debris and abandoned items from alterations areas and dispose of off-site; do not burn or bury.

- O. Clean remaining structure, equipment and facilities of all dirt, dust, and debris caused by demolition work. Return areas to conditions existing prior to the start of the work.
- P. Do not begin new construction in alterations areas before demolition is complete.
- Q. Comply with all other applicable requirements of this section.

3.07 CUTTING AND PATCHING

- A. Whenever possible, execute the work by methods that avoid cutting or patching.
- B. See Alterations article above for additional requirements.
- C. Perform whatever cutting and patching is necessary to:
 - 1. Complete the work.
 - 2. Fit products together to integrate with other work.
 - 3. Provide openings for penetration of mechanical, electrical, and other services.
 - 4. Match work that has been cut to adjacent work.
 - 5. Repair areas adjacent to cuts to required condition.
 - 6. Repair new work damaged by subsequent work.
 - 7. Remove samples of installed work for testing when requested.
 - 8. Remove and replace defective and non-conforming work.
- D. Execute work by methods that avoid damage to other work and that will provide appropriate surfaces to receive patching and finishing. In existing work, minimize damage and restore to original condition.
- E. Employ original installer to perform cutting for weather exposed and moisture resistant elements, and sight exposed surfaces.
- F. Cut rigid materials using masonry saw or core drill. Pneumatic tools not allowed without prior approval.
- G. Restore work with new products in accordance with requirements of Contract Documents.
- H. Fit work air tight to pipes, sleeves, ducts, conduit, and other penetrations through surfaces.
- I. At penetrations of fire rated walls, partitions, ceiling, or floor construction, completely seal voids with fire rated material in accordance with Section 07 8400, to full thickness of the penetrated element.
- J. Sawcutting:
 - 1. Employ experienced sawcutting contractor to make all holes, or slab and pavement cutting shown in drawings for architectural, structural, mechanical and electrical work.

2. Do not use water saws in occupied areas, unless otherwise approved.
 3. Cut openings square and plumb with sharp edges. Minimize overcutting at corners.
 4. Verify location of existing utilities in work area and make proper precautions to protect, disconnect and relocate, or terminate services as directed.
- K. Patching:
1. Finish patched surfaces to match finish that existed prior to patching. On continuous surfaces, refinish to nearest intersection or natural break. For an assembly, refinish entire unit.
 2. Match color, texture, and appearance.
 3. Repair patched surfaces that are damaged, lifted, discolored, or showing other imperfections due to patching work. If defects are due to condition of substrate, repair substrate prior to repairing finish.
- L. Maintain adequate Temporary Support necessary to assure structural integrity of affected Work.
- M. Protect other portions of Project Work against damage and discoloration.
- N. Protect Work exposed by cutting against damage and discoloration.
- O. Refinish surfaces to match adjacent finish. For continuous surfaces, refinish to nearest intersection or natural break. For an assembly, refinish entire unit.
- P. Make neat transitions. Patch work to match adjacent work in texture and appearance. Where new work abuts or aligns with existing, perform a smooth and even transition.
- Q. Patch or replace surfaces that are damaged, lifted, discolored, or showing other imperfections due to patching work. Repair substrate prior to patching finish. Finish patches to produce uniform finish and texture over entire area. When finish cannot be matched, refinish entire surface to nearest intersections.

3.08 PROGRESS CLEANING

- A. Maintain areas free of waste materials, debris, and rubbish. Maintain site in a clean and orderly condition.
- B. Remove debris and rubbish from pipe chases, plenums, attics, crawl spaces, and other closed or remote spaces, prior to enclosing the space.
- C. Broom and vacuum clean interior areas prior to start of surface finishing, and continue cleaning to eliminate dust.
- D. Collect and remove waste materials, debris, and trash/rubbish from site periodically and dispose off-site; do not burn or bury.

3.09 PROTECTION OF INSTALLED WORK

- A. Protect installed work from damage by construction operations.

- B. Provide special protection where specified in individual specification sections.
- C. Provide temporary and removable protection for installed products. Control activity in immediate work area to prevent damage.
- D. Provide protective coverings at walls, projections, jambs, sills, and soffits of openings.
- E. Protect finished floors, stairs, and other surfaces from traffic, dirt, wear, damage, or movement of heavy objects, by protecting with durable sheet materials.
- F. Prohibit traffic or storage upon waterproofed or roofed surfaces. If traffic or activity is necessary, obtain recommendations for protection from waterproofing or roofing material manufacturer.
- G. Prohibit traffic from landscaped areas.
- H. Remove protective coverings when no longer needed; reuse or recycle plastic coverings if possible.

3.10 SYSTEM STARTUP

- A. Coordinate schedule for start-up of various equipment and systems.
- B. Notify Architect and owner seven days prior to start-up of each item.
- C. Verify that each piece of equipment or system has been checked for proper lubrication, drive rotation, belt tension, control sequence, and for conditions that may cause damage.
- D. Verify tests, meter readings, and specified electrical characteristics agree with those required by the equipment or system manufacturer.
- E. Verify that wiring and support components for equipment are complete and tested.
- F. Execute start-up under supervision of applicable Contractor personnel and manufacturer's representative in accordance with manufacturers' instructions.
- G. When specified in individual specification Sections, require manufacturer to provide authorized representative to be present at site to inspect, check, and approve equipment or system installation prior to start-up, and to supervise placing equipment or system in operation.
- H. Submit a written report that equipment or system has been properly installed and is functioning correctly.

3.11 DEMONSTRATION AND INSTRUCTION

- A. Demonstrate operation and maintenance of products to Owner's personnel two weeks prior to date of Substantial Completion.
- B. Demonstrate start-up, operation, control, adjustment, trouble-shooting, servicing, maintenance, and shutdown of each item of equipment at scheduled time, at equipment location.

- C. For equipment or systems requiring seasonal operation, perform demonstration for other season within six months.
- D. Provide a qualified person who is knowledgeable about the Project to perform demonstration and instruction of owner personnel.
- E. Utilize operation and maintenance manuals as basis for instruction. Review contents of manual with Owner's personnel in detail to explain all aspects of operation and maintenance.
- F. Prepare and insert additional data in operations and maintenance manuals when need for additional data becomes apparent during instruction.
- G. The amount of time required for instruction on each item of equipment and system is that specified in individual sections.

3.12 ADJUSTING

- A. Adjust operating products and equipment to ensure smooth and unhindered operation.

3.13 FINAL CLEANING

- A. Use cleaning materials that are nonhazardous.
- B. Clean interior and exterior glass, surfaces exposed to view; remove temporary labels, stains and foreign substances, polish transparent and glossy surfaces, vacuum carpeted and soft surfaces.
- C. Remove all labels that are not permanent. Do not paint or otherwise cover fire test labels or nameplates on mechanical and electrical equipment.
- D. Clean equipment and fixtures to a sanitary condition with cleaning materials appropriate to the surface and material being cleaned.
- E. Clean interior floors in accordance with flooring manufacturer instructions.
- F. Clean filters of operating equipment.
- G. Clean debris from roofs, gutters, downspouts, scuppers, overflow drains, area drains, and drainage systems.
- H. Clean site; sweep paved areas, rake clean landscaped surfaces.
- I. Remove waste, surplus materials, trash/rubbish, and construction facilities from the site; dispose of in legal manner; do not burn or bury.

3.14 CLOSEOUT PROCEDURES

- A. Make submittals that are required by governing or other authorities.

- B. Accompany Project Coordinator on preliminary inspection to determine items to be listed for completion or correction in the Contractor's Correction Punch List for Contractor's Notice of Substantial Completion.
- C. Notify Architect when work is considered ready for Architect's Substantial Completion inspection.
- D. Conduct Substantial Completion inspection and create Final Correction Punch List containing Architect's and Contractor's comprehensive list of items identified to be completed or corrected and submit to Architect.

3.15 SUBSTANTIAL COMPLETION

- A. Submit written certification that Contract Documents have been reviewed, work has been inspected, and that work is complete in accordance with Contract Documents and ready for Architect's review.
- B. Complete all required maintenance work prior to the date of substantial completion.
- C. When Contractor considers Work substantially complete, as defined in General Conditions, submit to the Architect:
 - 1. Written notice that Work, or designated portion thereof, is substantially complete.
 - 2. List of Items to be completed or corrected.
 - 3. Copy of Final or Temporary Occupancy Permit.
- D. Architect will, as soon as possible thereafter, make an observation visit to the site to determine completion status.
- E. Should Architect determine that Work is not substantially complete:
 - 1. Architect will promptly notify Contractor in writing, giving reasons therefore.
 - 2. Contractor shall remedy Work deficiencies, and send second notice of substantial completion to Architect.
 - 3. Architect will review the corrected work.
- F. When Architect concurs that Work is substantially complete, Architect will:
 - 1. Prepare Certificate of Substantial Completion, accompanied by Contractor's list of items to be completed or corrected, as verified and amended by Architect.
 - 2. Submit Certificate to Owner and Contractor for their written acceptance of the responsibilities assigned to them in the Certificate.
- G. Correct items of work listed in executed Certificates of Substantial Completion and comply with requirements for access to Owner-occupied areas.
- H. Notify Architect when work is considered finally complete.
- I. Complete items of work determined by Architect's final inspection.

- J. See: ***General Conditions of the Contract for Construction*** for additional requirements.

3.16 FINAL ACCEPTANCE

- A. When Contractor considers Work complete, submit written certification that:
1. Contract Documents have been reviewed.
 2. Contractor has inspected Work for compliance with Contract Documents.
 3. Work has been completed in accordance with Contract Documents.
 4. Equipment and Systems have been tested in presence of Owner's Representative and are operational.
 5. Work is complete and ready for final inspection.
- B. Architect will, as soon as possible thereafter, make an observation visit to the site to determine completion status.
- C. Should Architect consider Work incomplete or defective:
1. Architect will promptly notify Contractor in writing, listing incomplete or defective Work.
 2. Contractor shall immediately remedy deficiencies, and send second written certification to Architect that Work is complete.
 3. Architect will review the corrected Work.
- D. When Architect finds Work acceptable under Contract Documents, Architect will request Contractor to make closeout submittals.
- E. See: ***General Conditions of the Contract for Construction*** for additional requirements.

3.17 ADDITIONAL FEES FOR DELAYS IN COMPLETING THE WORK

- A. Architect will make 2 visits to the project site, one at Substantial Completion and one at Final Completion.
- B. Should Architect be required to make more than the stated 2 final site visits due to Contractor's failure to correct specified deficiencies:
1. Owner will compensate Architect for additional services.
 2. Owner will deduct Architect's compensation amount from Contractor's final payment as follows:
 - a. Principal's time at their contracted hourly rate.
 - b. Employees' time at their contracted hourly rate.
 - c. Consultant employees and Others at 1.1 times the direct cost incurred.

- d. Charges will be made for necessary travel time, commercial air fare, auto expense computed at current allowable IRS mileage rate, room and board, and all other expenses incurred in making inspections.

END OF SECTION

PART 1 GENERAL**1.01 WASTE MANAGEMENT REQUIREMENTS**

- A. Owner requires that this project generate the least amount of trash and waste possible.
- B. Employ processes that ensure the generation of as little waste as possible due to error, poor planning, breakage, mishandling, contamination, or other factors.
- C. Minimize trash/waste disposal in landfills; reuse, salvage, or recycle as much waste as economically feasible.
- D. Required Recycling, Salvage, and Reuse: The following may not be disposed of in landfills or by incineration:
 - 1. Aluminum and plastic beverage containers.
 - 2. Corrugated cardboard.
 - 3. Wood pallets.
 - 4. Clean dimensional wood: May be used as blocking or furring.
 - 5. Land clearing debris, including brush, branches, logs, and stumps; see Section 31 1000 - Site Clearing for use options.
 - 6. Metals, including packaging banding, metal studs, sheet metal, structural steel, piping, reinforcing bars, door frames, and other items made of steel, iron, galvanized steel, stainless steel, aluminum, copper, zinc, lead, brass, and bronze.
 - 7. Fluorescent lamps (light bulbs).
- E. Contractor shall submit periodic Waste Disposal Reports; all landfill disposal, recycling, salvage, and reuse must be reported regardless of to whom the cost or savings accrues; use the same units of measure on all reports.
- F. Contractor shall develop and follow a Waste Management Plan designed to implement these requirements.
- G. Methods of trash/waste disposal that are not acceptable are:
 - 1. Burning on the project site.
 - 2. Burying on the project site.
 - 3. Dumping or burying on other property, public or private.
 - 4. Other illegal dumping or burying.
 - 5. Incineration, either on- or off-site.
 - 6. Use of Owner's trash receptacles.

- H. Regulatory Requirements: Contractor is responsible for knowing and complying with regulatory requirements, including but not limited to Federal, state and local requirements, pertaining to legal disposal of all construction and demolition waste materials.

1.02 RELATED REQUIREMENTS

- A. Section 01 3000 - Administrative Requirements: Additional requirements for project meetings, reports, submittal procedures, and project documentation.
- B. Section 01 5000 - Temporary Facilities and Controls: Additional requirements related to trash/waste collection and removal facilities and services.
- C. Section 01 6000 - Product Requirements: Waste prevention requirements related to delivery, storage, and handling.
- D. Section 01 7000 - Execution and Closeout Requirements: Trash/waste prevention procedures related to demolition, cutting and patching, installation, protection, and cleaning.

1.03 DEFINITIONS

- A. Clean: Untreated and unpainted; not contaminated with oils, solvents, caulk, or the like.
- B. Construction and Demolition Waste: Solid wastes typically including building materials, packaging, trash, debris, and rubble resulting from construction, remodeling, repair and demolition operations.
- C. Hazardous: Exhibiting the characteristics of hazardous substances, i.e., ignitibility, corrosivity, toxicity or reactivity.
- D. Nonhazardous: Exhibiting none of the characteristics of hazardous substances, i.e., ignitibility, corrosivity, toxicity, or reactivity.
- E. Nontoxic: Neither immediately poisonous to humans nor poisonous after a long period of exposure.
- F. Recyclable: The ability of a product or material to be recovered at the end of its life cycle and remanufactured into a new product for reuse by others.
- G. Recycle: To remove a waste material from the project site to another site for remanufacture into a new product for reuse by others.
- H. Recycling: The process of sorting, cleansing, treating and reconstituting solid waste and other discarded materials for the purpose of using the altered form. Recycling does not include burning, incinerating, or thermally destroying waste.
- I. Return: To give back reusable items or unused products to vendors for credit.
- J. Reuse: To reuse a construction waste material in some manner on the project site.
- K. Salvage: To remove a waste material from the project site to another site for resale or reuse by others.

- L. Sediment: Soil and other debris that has been eroded and transported by storm or well production run-off water.
- M. Source Separation: The act of keeping different types of waste materials separate beginning from the first time they become waste.
- N. Toxic: Poisonous to humans either immediately or after a long period of exposure.
- O. Trash: Any product or material unable to be reused, returned, recycled, or salvaged.
- P. Waste: Extra material or material that has reached the end of its useful life in its intended use. Waste includes salvageable, returnable, recyclable, and reusable material.

1.04 SUBMITTALS

- A. See Section 01 3000 - Administrative Requirements, for submittal procedures.
- B. Submit Waste Management Plan within 10 calendar days after receipt of Notice of Award of Bid, or prior to any trash or waste removal, whichever occurs sooner; submit projection of all trash and waste that will require disposal and alternatives to landfilling.
- C. Waste Management Plan: Include the following information:
 - 1. Analysis of the trash and waste projected to be generated during the entire project construction cycle, including types and quantities.
 - 2. Landfill Options: The name, address, and telephone number of the landfill(s) where trash/waste will be disposed of, the applicable landfill tipping fee(s), and the projected cost of disposing of all project trash/waste in the landfill(s).
 - 3. Landfill Alternatives: List all waste materials that will be diverted from landfills by reuse, salvage, or recycling.
- D. Waste Disposal Reports: Submit at specified intervals, with details of quantities of trash and waste, means of disposal or reuse, and costs; show both totals to date and since last report.
 - 1. Submit updated Report with each Application for Progress Payment; failure to submit Report will delay payment.
 - 2. Submit Report on a form acceptable to Owner.
 - 3. Landfill Disposal: Include the following information:
 - a. Identification of material.
 - b. Amount, in tons or cubic yards, of trash/waste material from the project disposed of in landfills.
 - c. State the identity of landfills, total amount of tipping fees paid to landfill, and total disposal cost.
 - d. Include manifests, weight tickets, receipts, and invoices as evidence of quantity and cost.

4. Recycled and Salvaged Materials: Include the following information for each:
 - a. Identification of material, including those retrieved by installer for use on other projects.
 - b. Amount, in tons or cubic yards, date removed from the project site, and receiving party.
 - c. Transportation cost, amount paid or received for the material, and the net total cost or savings of salvage or recycling each material.
 - d. Include manifests, weight tickets, receipts, and invoices as evidence of quantity and cost.
 - e. Certification by receiving party that materials will not be disposed of in landfills or by incineration.
5. Material Reused on Project: Include the following information for each:
 - a. Identification of material and how it was used in the project.
 - b. Amount, in tons or cubic yards.
 - c. Include weight tickets as evidence of quantity.
6. Other Disposal Methods: Include information similar to that described above, as appropriate to disposal method.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION

3.01 WASTE MANAGEMENT PLAN IMPLEMENTATION

- A. Manager: Designate an on-site person or persons responsible for instructing workers and overseeing and documenting results of the Waste Management Plan.
- B. Spill Response Planning - Establish spill prevention and cleanup procedures. Identify all potential spill areas and develop procedures for avoiding and responding to spills should they occur.
- C. Communication: Distribute copies of the Waste Management Plan to job site foreman, each subcontractor, Owner, and Architect.
- D. Instruction: Provide on-site instruction of appropriate separation, handling, and recycling, salvage, reuse, and return methods to be used by all parties at the appropriate stages of the project.
- E. Meetings: Discuss trash/waste management goals and issues at project meetings.
 1. Pre-bid meeting.
 2. Pre-construction meeting.

- 3. Regular job-site meetings.
- F. Facilities: Provide specific facilities for separation and storage of materials for recycling, salvage, reuse, return, and trash disposal, for use by all contractors and installers.
 - 1. Provide containers as required.
 - 2. Provide adequate space for pick-up and delivery and convenience to subcontractors.
 - 3. If an enclosed area is not provided, clearly lay out and label a specific area on-site.
 - 4. Keep recycling and trash/waste bin areas neat and clean and clearly marked in order to avoid contamination of materials.
- G. Hazardous Wastes: Separate, store, and dispose of hazardous wastes according to applicable regulations.
- H. Recycling: Separate, store, protect, and handle at the site identified recyclable waste products in order to prevent contamination of materials and to maximize recyclability of identified materials. Arrange for timely pickups from the site or deliveries to recycling facility in order to prevent contamination of recyclable materials.
- I. Reuse of Materials On-Site: Set aside, sort, and protect separated products in preparation for reuse.
- J. Salvage: Set aside, sort, and protect products to be salvaged for reuse off-site.

END OF SECTION

PART 1 GENERAL**1.01 SECTION INCLUDES**

- A. Project Record Documents.
- B. Operation and Maintenance Data.
- C. Warranties and bonds.

1.02 RELATED REQUIREMENTS

- A. **Section 00 6000 General Conditions of Construction Contract** for additional requirements.
- B. Section 01 3000 - Administrative Requirements: Submittals procedures, shop drawings, product data, and samples.
- C. Section 01 7000 - Execution and Closeout Requirements: Contract closeout procedures.
- D. Individual Product Sections: Specific requirements for operation and maintenance data.
- E. Individual Product Sections: Warranties required for specific products or Work.

1.03 SUBMITTALS

- A. Substantial Completion will not commence before the Operations and Maintenance Manuals, Warranties, and the Record Drawings are submitted in accordance with Section 01 7000.
- B. Project Record Documents: Submit documents to Consultant Prior to Substantial Completion.
- C. Operation and Maintenance Data:
 - 1. Submit one paper copy of preliminary draft or proposed formats and outlines of contents before start of Work. Consultant will review draft and return the one copy with comments.
 - 2. For equipment, or component parts of equipment put into service during construction and operated by Owner, submit completed documents within ten days after acceptance.
 - 3. Submit one copy of completed documents 30 days prior to scheduled date of substantial completion.. This copy will be reviewed and returned, with Consultant comments. Revise content of all document sets as required prior to final submission.
 - 4. Submit three digital copy in PDF file format on CD or DVD discs, and three paper sets of revised final documents in final form prior to date of Substantial Completion.
 - 5. Either the draft copy or the final copy of the O&M manuals must be on the project site during any of the operator training scheduled for the project.

- D. Warranties and Bonds:
1. For equipment or component parts of equipment put into service during construction with Owner's permission, submit documents within 10 days after acceptance.
 2. Make other submittals within 10 days after Date of Substantial Completion, prior to final Application for Payment.
 3. For items of Work for which acceptance is delayed beyond Date of Substantial Completion, submit within 10 days after acceptance, listing the date of acceptance as the beginning of the warranty period.
 4. Submit three digital copies in PDF file format on CD or DVD discs, and [three] paper sets of final documents prior to date of Substantial Completion.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION

3.01 PROJECT RECORD DOCUMENTS

- A. Maintain on site one set of the following record documents; record actual revisions to the Work:
1. Drawings.
 2. Specifications.
 3. Addenda.
 4. Change Orders and other modifications to the Contract.
- B. Maintenance of documents and samples.
1. Store in Contractor's Field Office apart from Documents used for Construction.
 2. Provide Files, Shelving and Cabinets necessary to safely and securely store Documents and Samples.
 3. Maintain Documents in a clean, dry, legible, and good order.
 4. Do not use Record Documents for Construction Purposes.
 5. Make Documents available at all time for Consultant's inspection
- C. Ensure entries are complete and accurate, enabling future reference by Owner.
- D. Store record documents separate from documents used for construction.
- E. Record information concurrent with construction progress.
- F. Specifications: Legibly mark and record at each product section description of actual products installed, including the following:

1. Manufacturer's name and product model and number.
 2. Product substitutions or alternates utilized.
 3. Changes made by Addenda and modifications.
- G. Record Drawings: Legibly mark each item to record actual construction including:
1. Measured depths of foundations in relation to finish first floor datum.
 2. Measured horizontal and vertical locations of underground utilities and appurtenances, referenced to permanent surface improvements.
 3. Measured locations of internal utilities and appurtenances concealed in construction, referenced to visible and accessible features of the Work.
 4. Field changes of dimension and detail.
 5. Details not on original Contract drawings.

3.02 OPERATION AND MAINTENANCE DATA

- A. Source Data: For each product or system, list names, addresses and telephone numbers of Subcontractors and suppliers, including local source of supplies and replacement parts.
- B. Product Data: Mark each sheet to clearly identify specific products and component parts, and data applicable to installation. Delete inapplicable information.
- C. Drawings: Supplement product data to illustrate relations of component parts of equipment and systems, to show control and flow diagrams. Do not use Project Record Documents as maintenance drawings.
- D. Typed Text: As required to supplement product data. Provide logical sequence of instructions for each procedure, incorporating manufacturer's instructions.

3.03 OPERATION AND MAINTENANCE DATA FOR MATERIALS AND FINISHES

- A. For Each Product, Applied Material, and Finish:
 1. Product data, with catalog number, size, composition, and color and texture designations.
 2. Information for re-ordering custom manufactured products.
- B. Instructions for Care and Maintenance: Manufacturer's recommendations for cleaning agents and methods, precautions against detrimental cleaning agents and methods, and recommended schedule for cleaning and maintenance.
- C. Moisture protection and weather-exposed products: Include product data listing applicable reference standards, chemical composition, and details of installation. Provide recommendations for inspections, maintenance, and repair.
- D. Additional information as specified in individual product specification sections.

- E. Where additional instructions are required, beyond the manufacturer's standard printed instructions, have instructions prepared by personnel experienced in the operation and maintenance of the specific products.
- F. Provide a listing in Table of Contents for design data, with tabbed fly sheet and space for insertion of data.

3.04 OPERATION AND MAINTENANCE DATA FOR EQUIPMENT AND SYSTEMS

- A. In addition to requirements called for in other sections of this manual, provide the following:
- B. For Each Item of Equipment and Each System:
 - 1. Description of unit or system, and component parts.
 - 2. Identify function, normal operating characteristics, and limiting conditions.
 - 3. Include performance curves, with engineering data and tests.
 - 4. Complete nomenclature and model number of replaceable parts.
- C. Where additional instructions are required, beyond the manufacturer's standard printed instructions, have instructions prepared by personnel experienced in the operation and maintenance of the specific products.
- D. Panelboard Circuit Directories: Provide electrical service characteristics, controls, and communications; typed.
- E. Include color coded wiring diagrams as installed.
- F. Operating Procedures: Include start-up, break-in, and routine normal operating instructions and sequences. Include regulation, control, stopping, shut-down, and emergency instructions. Include summer, winter, and any special operating instructions.
- G. Maintenance Requirements: Include routine procedures and guide for preventative maintenance and trouble shooting; disassembly, repair, and reassembly instructions; and alignment, adjusting, balancing, and checking instructions.
- H. Provide servicing and lubrication schedule, and list of lubricants required.
- I. Include manufacturer's printed operation and maintenance instructions.
- J. Include sequence of operation by controls manufacturer.
- K. Provide original manufacturer's parts list, illustrations, assembly drawings, and diagrams required for maintenance.
- L. Provide control diagrams by controls manufacturer as installed.
- M. Provide Contractor's coordination drawings, with color coded piping diagrams as installed.
- N. Provide charts of valve tag numbers, with location and function of each valve, keyed to flow and control diagrams.

- O. Provide list of original manufacturer's spare parts, current prices, and recommended quantities to be maintained in storage.
- P. Include test and balancing reports.

3.05 ASSEMBLY OF OPERATION AND MAINTENANCE MANUALS

- A. Assemble operation and maintenance data into durable manuals for Owner's personnel use, with data arranged in the same sequence as, and identified by, the specification sections.
- B. Where systems involve more than one specification section, provide separate tabbed divider for each system.
- C. Prepare instructions and data by personnel experienced in maintenance and operation of described products.
- D. Prepare data in the form of an instructional manual.
- E. Digital O&M Manuals: In addition to binders described below, prepare manuals as PDF documents organized similar to the printed manuals. Copy to one or more properly labeled CD or DVD discs.
 - 1. Searchable PDF files are preferred when possible. Table of Contents and any divider pages in these PDF files must be searchable.
 - 2. Digital copies of O&M Manuals must be organized by section.
- F. Paper & 3 Ring Binder O&M Manuals: Binders to be BINDERTEK Heavy-Duty Round 3-Ring Archival Binder, 3" Spine or equivalent, as approved by the Owner. Minimum ring size 1". When multiple binders are used, correlate data into related consistent groupings. Do not overfill binders.
- G. Cover: Identify each binder with typed or printed title OPERATION AND MAINTENANCE INSTRUCTIONS; identify title of Project; identify subject matter of contents.
- H. Project Directory: Title and address of Project; names, addresses, and telephone numbers of Consultant, Consultants, Contractor and subcontractors, with names of responsible parties.
- I. Tables of Contents: List every item separated by a divider, using the same identification as on the divider tab; where multiple volumes are required, include all volumes Tables of Contents in each volume, with the current volume clearly identified.
- J. Dividers: Provide tabbed dividers for each separate product and system; identify the contents on the divider tab; immediately following the divider tab include a description of product and major component parts of equipment.
- K. Text: Manufacturer's printed data, or typewritten data on 24 pound paper.
- L. Drawings: Provide with reinforced punched binder tab. Bind in with text; fold larger drawings to size of text pages.

- M. Arrangement of Contents: Organize each volume in parts as follows:
1. Project Directory.
 2. Table of Contents, of all volumes, and of this volume.
 3. Operation and Maintenance Data: Arranged by system, then by product category.
 - a. Source data.
 - b. Operation and maintenance data.
 - c. Field quality control data.
 - d. Original warranties and bonds.

3.06 WARRANTIES AND BONDS

- A. Obtain warranties and bonds, executed in duplicate by responsible Subcontractors, suppliers, and manufacturers, within 10 days after completion of the applicable item of work. Except for items put into use with Owner's permission, leave date of beginning of time of warranty until Date of Substantial completion is determined.
- B. Verify that documents are in proper form, contain full information, and when required have been are notarized.
- C. Co-execute submittals when required.
- D. Retain warranties and bonds until time specified for submittal.
- E. Manual: Binders to be BINDERTEK Heavy-Duty Round 3-Ring Archival Binder or equivalent, as approved by the Owner. Minimum ring size 1". Do not overfill binders.
- F. Cover: Identify each binder with typed or printed title WARRANTIES AND BONDS, with title of Project; name, address and telephone number of Contractor and equipment supplier; and name of responsible company principal.
- G. Table of Contents: Neatly typed, in the sequence of the Table of Contents of the Project Manual, with each item identified with the number and title of the specification section in which specified, and the name of product or work item.
- H. Separate each warranty or bond with index tab sheets keyed to the Table of Contents listing. Provide full information, using separate typed sheets as necessary. List Subcontractor, supplier, and manufacturer, with name, address, and telephone number of responsible principal.

3.07 EVIDENCE OF PAYMENTS & RELEASE OF LIENS

- A. Contractor shall submit the following:
1. Contractor's Affidavit of Payment of Debts and Claims or equivalent form.
 2. Contractor's Affidavit of Release of Liens or equivalent form, including the following:

- a. Consent of Contractor's Surety to Final Payment equivalent form.
 - b. Contractor's Release or Waiver of Liens.
 - c. Separate releases or waivers of lien for Subcontractors, Suppliers, and others with lien rights against Owner's Property, together with list of those parties.
3. Duly sign and execute all Submittals, before delivery to Consultant.

3.08 CONTRACTOR'S CLOSEOUT SUBMITTALS TO CONSULTANT

- A. Wage Certification: Section 00 7343 and 01 2000.
- B. Building Official's Certificate of Mechanical & Electrical Inspections.
- C. Building Official's Certificate of Occupancy.

3.09 SPARE PART & MAINTENANCE MATERIAL SUBMITTALS TO OWNER

- A. All spare parts and extra material are to be delivered to the owner prior to the date of substantial completion. Provide written confirmation of delivery, noting quantity and description as well as storage location. Obtain written acceptance from Owner for receipt of stored items.
- B. Specific Requirements: See Specifications Sections.
- C. Products: Identical to those included in Project Work.
- D. Storage Location: Where directed by Owner.
- E. Required Submittals: See Specification Sections.

3.10 FINAL ADJUSTMENT OF ACCOUNTS

- A. Submit final statement of accounting to Consultant, including the following:
 1. Original Contract Sum.
 2. Additions and deductions resulting from:
 - a. Previous Change Orders.
 - b. Adjustments to Cash Allowances
 - c. Other adjustments.
 - d. Deductions for uncompleted Work.
 - e. Deductions for Reinspection Payments.
 3. Total Contract Sum, as adjusted.
 4. Previous Payments.
 5. Sum remaining due.

- B. Consultant will prepare and issue final Change Order, reflecting approved adjustments to Contract Sum not previously made by Change Orders.

3.11 FINAL APPLICATION FOR PAYMENT

- A. Follow procedures specified in Section 01 2000.

END OF SECTION

Project Manual - Roof Rehabilitation

LBCC | Benton Center



Linn-Benton Community College

c/o Mr. Paul Chamberlin

HMK Company Program Manager, Willamette Valley

363 State Street

Salem, Oregon 97301

SECTION 01 1013 - SCOPE OF REPAIR

PRIMARY SCOPE ELEMENTS

1.1 THE PRIMARY REPAIR ELEMENTS OUTLINED WITHIN THE SCOPE OF REPAIR INCLUDE:

- A. Removal and disposal of existing roof membrane and associated layers. Removal of existing roof access doors should be incorporated to ensure continuous water barrier detailing of the door opening with the new roof system termination.
- B. Removal and replacement of non-compliant sheathing at the interior plane of the parapet condition, if it occurs.
- C. Review and abatement of mold and other organic growth found during the work outlined herein. The drying out of existing framing elements should also be captured during this work.
- D. Installation of high-density closed-cell spray foam into the lower portion of the framed parapets prior to closure.
- E. Installation of new roofing layers at the south roof zone; self-adhered roof air and vapor barrier membrane, polyisocyanurate insulation boards (flat and tapered) to achieve slope to direct drainage to the existing scupper openings, factory-primed roofing-grade gypsum sheathing, and new 2-ply SBS roof membrane system in a fully adhered fashion. A liquid-applied roofing grade flashing (PMMA) accessory will also be utilized to flash penetrations, terminations at roof curbs, and door opening sills.
- F. Implementation of self-adhered membrane transition flashing to counter-flash the roof termination and to transition the water barrier coverage to the existing weather-resistive barrier. The transition will be concealed utilizing a 24-gauge prefinished sheet metal flashing.
- G. Installation of liquid-applied membrane restoration coating over the north roof zone.

This scope does not currently address unforeseen structural deficiencies, mechanical systems, or other building systems not directly impacted by the proposed repairs to the walkway and stair assemblies.

1.2 GENERAL REQUIREMENTS

- A. The terms "work" and "scope of repair" shall be used interchangeably within this document and are not mutually exclusive. The word "contractor" shall be inclusive of the general contractor, sub-contractors, delegated design entities, materials vendors acting on behalf of these stated parties, and parties thereto.
- B. The contractor shall include pricing for full-time supervision, project management, office services, material storing and staging, inclement weather protection at work areas, and access.
- C. The contractor shall provide and delineate monetary values for overhead costs, profit, and insurance as part of the owner's estimate. Contractor estimates shall be in a

tabulated format, using Construction Specifications Institute (CSI) "Schedule of Values" formatting.

- D. Provide necessary staging and weather protection to perform the work within the base cost. Ensure safe and alternate access is provided to accommodate the general public.
- E. The contractor shall supply dumpsters and disposal fees necessary to complete the project. The contractor shall keep work areas clean during construction.
- F. The contractor shall not restrict access to and from the main entrance at any time during the work. The contractor shall maintain the means of egress to the public way according to the governing building Code and Fire Marshall requirements. The building address shall remain unobstructed.
- G. The contractor shall establish secure exterior access to the roof. The exterior access shall not be accessible by the general public at any time during the construction.
- H. The contractor shall have a dedicated point of contact capable of liaising with the on-site community management personnel.
- I. The contractor shall take reasonable steps to control smells while installing waterproofing membranes, primers, sealants, and other odorous construction products from impacting the residents within the units during the installation of these products. Use low-VOC products whenever possible. Take additional precautions if otherwise.
- J. The contractor will be responsible for keeping the entire job site safe and clean during this construction. Clean daily throughout the construction period.
- K. Maintain full access to the building entrances during the repairs.
- L. All metal fasteners and connectors shall have sufficient corrosion resistance to match the expected service life of the materials, components, and assemblies they are to affix. Metal fasteners shall have a minimum of hot-dipped galvanized, stainless steel, or otherwise coated to pass a minimum of 1000-hour salt spray when tested per ASTM B117.
- M. Construct all sheet metal flashings from 24-gauge bonderized sheet steel unless noted otherwise. For standard flashing profiles, provide 4-inch up-legs and 1-inch down-legs with an additional 1/2-inch drip edge bent at a 45° angle. Ensure all sheet-metal flashing has a minimum 15° slope and permanently watertight joints and terminations that meet the minimum SMACNA requirements. Typical end dams are to be folded up 1/2-inch high.
- N. Where terminated at interfacing walls or other similar transitions, provide kickers or diverters as needed to deflect water. All exposed edges of the exterior of the cladding are to be hemmed unless otherwise specified. Secure all flashing with corrosion-resistant fasteners. All flashing associated with the roofing systems is to be pre-finished.
- O. Adhered sheet and liquid-applied membranes shall achieve complete adhesion to which the substrates to which they are bonded. Use a manufacturer-approved primer as needed to achieve sufficient and permanent adhesion. Apply the membrane free of distortions, always working to a line. For adhered sheet membranes, use a roller to

provide mechanical pressure over the entire surface immediately after application; wrinkles and air pockets will not be accepted.

- P. Clean all construction-related residues and debris from the buildings and surrounding grounds upon completion of the work. Clean daily throughout the construction period.
- Q. Assemblies and all areas of the scope outlined in the construction documents will be verified and approved for construction in the field during in-situ field mock-ups performed by the Contractor and their subcontractors. The Contractor is to ensure this is accommodated within the Construction Schedule.
- R. Coordinate all work outlined herein to minimize disruptions, re-work, and conflicts between scopes of various involved subcontractors.

1.3 DEMOLITION - SOUTH ROOF

- A. Remove existing roof membrane layers down to the existing structural roof deck.
- B. Remove existing sheet metal coping caps and metal panels from parapets to fully expose the existing building wrap and roof membrane upturns. Remove the roof membrane upturns to expose the underlying substrate. Existing building wraps at the building exterior shall be protected for tie-ins with work outlined herein.
- C. Remove existing panel sheathing from parapets to fully expose the framing cavity. Remove nails associated with strapping where present and protect strapping for re-attachment. Inspect cavities for mold with an Industrial Hygienist and perform abatement work as appropriate. Leave the cavity open and allow it to air dry. Confirm with a moisture meter to ensure a moisture content of 17% or lower is achieved before covering.
- D. Temporarily prop up HVAC split units and exterior breaker boxes to allow for the removal of existing sheet metal curb caps and existing roof membrane terminations. Coordinate this work with subsequent parapet/partition wall work and roofing work.
- E. At the base of vertical enclosure walls where interfacing roofing, remove and retain metal panel siding from the base of the enclosure to expose an 18-inch base of wall area. Take care not to damage the existing building wrap and maintain a minimum 16-inch tail for a tie-in with the parapet/partition wall work and roofing work.
- F. Remove existing door frames from rough openings and remove existing membrane flashings from rough openings.
- G. Review the existing structural roof deck to remain for moisture damage, organic growth/mold, and perform abatement work with an Industrial hygienist as appropriate. Leave exposed structural roof deck to air dry and protect from precipitation. Confirm with a moisture meter to ensure the moisture content of the roof deck is 17% or lower prior to covering.

1.4 ROOFING - SOUTH ROOF

- A. Confirm substrates are dry utilizing a moisture meter such as Delmhorst BD-10. Probe the wood members and measure. The target maximum moisture content is 17%.

- B. Install a continuous self-adhering air/vapor barrier membrane / temporary roof over the roof deck. Provide a minimum of 3-inch laps and adhere to the membrane flat, without wrinkles or fish mouths. Detail roofing penetrations with a compatible sealant recommended by the membrane manufacturer.
- C. Use the manufacturer-recommended primer over the roof deck if adhesion cannot be achieved. Do not leave the membrane exposed to standing water.
- D. Install flat and tapered profiles of Roof Insulation. Insulation buildup is to achieve both code-required R-30 and the desired slope to direct drainage towards the existing drains and scuppers. Survey the field of the roof and take the measurements necessary to achieve a minimum 2% slope to drain without conflicting with door openings, handrail attachments, and drainage openings.
- E. Insulation boards shall be tightly abutted (no greater than 1/8-inch gap), staggering edges a minimum of 12 inches between courses.
- F. Adhere roof insulation layers utilizing Insulation Adhesive, applying constant pressure above each insulation panel following adhesive foam expansion. Insulation corners shall be installed flush.
- G. Install Coverboard over the insulation layer to receive the roof membrane. Apply over insulation layers with Insulation Adhesive following the same protocol as that performed for the Roof Insulation in the preceding steps.
- H. Install SBS Roof Membrane over the roof grade sheathing utilizing Membrane Adhesive. Install Base and Cap Sheets in strict accordance with manufacturer requirements for membrane side and end laps, staggering of Base and Cap sheet edges, and counter-lapping of Base and Cap Sheets at horizontal to vertical transitions.
- I. Install Base and Cap Sheet Flashing Plies from the Coverboard installed at the base of adjacent vertical framing elements. Adhere the membrane to the substrate utilizing Membrane Adhesive. Mechanically secure the sky-facing edge of the flashing plies with a termination bar and fastener supplied by the Roof Manufacturer.
- J. Terminate the roof membrane beneath door opening sills, extending the coverage a minimum of 8 inches at the jambs, measured from the sill of the opening. Flash the roof membrane at the door rough opening sill-jamb condition with Liquid Roof Flashing. Extend the Liquid Roof Flashing into the rough opening, the full depth of the access door, and lapping over the new Roof Membranes as required by the Roof Membrane manufacturer. Let the Liquid Roof Flashing fully cure.
- K. Integrate the roofing detail at the rough opening using FFSAM to transition water barrier coverage to the existing building wrap. Use Silicone Sealant where necessary to terminate the building wrap onto FFSAM (e.g., at the opening head). Set the door back into the rough opening, applying a backer rod and Silicone Sealant joint at its interior plane, bonding between the door frame and rough opening membranes.
- L. Install Liquid Roof Flashing to HVAC equipment penetrations and integrate with the Roof Membrane.

- M. At parapet conditions, extend the flashing ply to the edge of the parapet framing. Using a hot trowel, embed granules of the granulated cap sheet to establish a positive bonding surface for subsequent membranes. Then cover the application utilizing FFSAM to achieve continuity with the existing building wrap, as well as to provide a self-sealing membrane layer for coping cap fastener penetrations.
- N. Lay out pathways for foot traffic and adhere Walking Mats to the Cap Sheet in accordance with manufacturer requirements.

1.5 ROOFING RESTORATION - NORTH ROOF

- A. Remove existing sheet metal coping caps at parapets to allow access to underlying roof counter flashing.
- B. Remove existing sheet metal flashings at parapets, roof curbs, and building base of walls to expose existing roof membrane terminations.
- C. Remove pitch pockets and expose the penetration.
- D. Remove existing liquid-applied flashing membranes from existing roof membrane cap sheet, scuppers, and edge metals and dispose. It is expected that some moisture is present between the liquid-applied flashing membrane and cap sheet so take necessary steps to purge residual moisture. Use of a torch to evaporate surface moisture is acceptable.
- E. Scupper surface and other metal surfaces shall be cleaned to "bright metal" in preparation for roof membrane application.
- F. Probe all roof membrane cap sheet seams for discontinuities. In the event a discontinuity is identified, continue removal of non-bonded membrane until adhesion is confirmed. It is expected that some moisture is present between the roof membrane cap sheet and underlying roofing base ply so take necessary steps to purge residual moisture and subsequently heat weld the non-bonded membrane laps utilizing a torch, trowel, and roofing cane, as necessary.
- G. Probe the field of roof membrane cap sheet for any blisters and pockets. These pockets may exist adjacent to discontinuous seams or may exist between edges of the roof membrane.
- H. Cut open the blister in a cross (+) using a hook blade to fully expose the underlying roofing base ply. Take care not to cut into the roofing base ply and anticipate presence of trapped moisture. Take necessary steps to purge moisture from blisters where they occur, and subsequently heat weld the cap sheet over base ply lap utilizing a torch, trowel, and roofing cane, as necessary.
- I. Prepare the roof for power washing. Provide temporary moisture protection to exposed construction such as parapets, roof curbs, and wall assemblies.

- J. Power wash the roof membrane surfaces using equipment with a minimum pressure of 2,000 psi. Power washer nozzle must utilize a fan tip nozzle with a minimum 25-degree angle. Do not wash the roof surface using nozzles with angles less than 25 degrees to not damage or penetrate the roof membranes. Remove resultant loose material from the surface of the roof in its entirety. Utilize a broom in tandem with power washer to clear debris from the surface of the roof. Coordinate with building management to control all instances of runoff.
 - K. Upon completion of power washing, allow the roof surface to completely dry. Use a contact moisture meter such as a Tramex Moisture Encounter Plus to confirm surface dryness prior to proceeding.
 - L. If surface is dry and moisture meter identifies a moisture anomaly, immediately notify consultant for further review of conditions.
 - M. Upon full dry-out of the roof surface, prepare all seams of the existing roof membrane, including those made during the selective demolition and cleaning phase of the work.
 - N. Apply Primer over various substrates with the corresponding primer product.
 - O. Apply base coat and lay up saturated reinforcing fabric at various transitions, penetrations, existing membrane seams, changes of plane, and as recommended by coating manufacturer.
 - P. Apply top coat to encapsulate reinforcing fabric and base coat.
 - Q. Upon completion of topcoat application, identify designated walking paths over the roof. Demarcate the walking path with painters' tape. Clean the surface of top coat of debris and reprime the top coat surface with primer and subsequently apply a tack-coat of Top Coat and backroll silica sand to establish a non-skid finish along dedicated pathways of foot travel.
- 1.6 PARAPETS AND BASE OF WALLS
- A. Confirm substrates are dry utilizing a moisture meter such as Delmhorst BD-10. Probe the wood members and measure. The target maximum moisture content is 17%.
 - B. Install nominal 1/2-inch thick CDX plywood sheathing to the exposed cavity framing, utilizing hot-dipped galvanized nails as required in the record drawings. Install the first panel to half the height of the framed cavity. Reattach strapping where present using hot-dipped galvanized nails as required in the record drawings.
 - C. Apply Spray Foam, to the base of the framing cavity. Apply a minimum of 3 inches and ensure spray foam establishes a bond to substrates at each cavity. Subsequently, apply additional lifts as needed to achieve a minimum of R-36.
 - D. Install 1/2-inch plywood to conceal the cavity framing, utilizing hot-dipped galvanized nails as required in the record drawings. Subsequently, install Coverboard over the plywood with hot-dipped galvanized fasteners to receive the new Roof Membrane.

- E. Install ripped, 2x blocking to rest above the vertical framing. Achieve a 2% slope back to the roof deck. Secure using hot-dipped galvanized nails at 12 inches on-center. At partition walls, rip blocking is used to provide a ridge along the centerline of the partition wall.
- F. Counterflash the Roof Membrane termination after embedding Cap Sheet granules at the lap zone, using FFSAM. Integrate sheet metal counterflashing with FFSAM and existing building wrap to establish continuous water barrier detailing. Use Silicone Sealant as necessary to bond the existing building wrap to new flashing elements.
- G. Install FFSAM over the vertical framing, capturing the existing building wrap along the exterior wall, over the sloped blocking, and Roof Membrane termination. Achieve a minimum 4-inch lap to adjacent membranes and 6-inch laps along its run. Install to ensure full adhesion to underlying substrates, free of wrinkles and air pockets.
- H. At the base of vertical framing, coordinate work with Roof Membrane upturns, embed granules of the Cap Sheet, then install a transition strip of FFSAM to counterflash the Roof Membrane termination.
- I. At intersections with building walls or changes in parapet height, utilize FFSAM to form saddles, detailing any exposed lap edges with Silicone Sealant.
- J. Install a prefinished sheet metal counterflashing outboard of the transition strip, secured to the framing with hot-dipped galvanized fasteners at 12 inches on-center. Counterflashing to form a "Z" profile, with a 2-inch upper vertical leg to receive fasteners and weather-resistive barrier termination, a 3/4-inch web, with a 2% slope to drain, and a 6-inch down leg with a 1/2-inch hem to conceal the roof membrane upturn.
- K. Terminate the building wrap with Silicone Sealant and tape-terminate over the sheet metal counter flashing.
- L. Install Parapet Caps over the FFSAM applied atop the parapet framing in accordance with manufacturer requirements.

END OF SECTION 01 1013

SECTION 01 1100 - SUMMARY OF WORK

PART 1 - GENERAL

1.1 SUMMARY

A. This Section includes the following:

1. Work covered by the Contract Documents
2. Type of the Contract
3. Use of premises
4. Owner's occupancy requirements
5. Work restrictions
6. Specification formats and conventions

B. Related Documents:

1. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 WORK COVERED BY CONTRACT DOCUMENTS

A. Project Identification:

LBCC | Benton Center Roof Rehabilitation Project
CBS Project Number OR25-064

B. Project Location:

757 NW Polk Avenue
Corvallis, OR 97330

C. Client:

Linn-Benton Community College

D. Client Representative:

HMK Company
c/o Paul Chamberlin
363 State Street,
Salem, OR 97301

E. Consultant:

Certa Building Solutions
2715 Southeast 8th Avenue, Suite 100
Portland, OR, 97202

1. In Project Manual and Contract Documents, the terms “Architect”, “Consultant” and “Building Science Consultant”, or “Building Envelope Consultant” are synonymous.

F. The Work generally consists of, but is not limited to, the following:

1. Reroofing the south roof zone with two-ply SBS modified bitumen roof membrane system composed of adhered sheet air and vapor barrier, flat and tapered insulation, and coverboard in a fully adhered assembly. Roof assemblies will be subject to conformance with current Oregon Energy Efficiency Specialty Code (OEESC) requirements.
2. Provide a liquid-applied roof restoration overlay membrane over the north roof zone.

1.3 WORK NOT COVERED IN CONTRACT PRICE (EXCLUSIONS)

A. The following is excluded from the contract price:

1. Removal and reinstallation of interior fixtures beyond areas affected by repair work
2. Interior electrical repairs beyond areas affected by repair work
3. Interior finishes beyond areas affected by repair work

1.4 TYPE OF CONTRACT

- A. Project will be constructed under a single prime contract between Owner and Contractor.
- B. Contract shall incorporate the Certa Building Solutions Project Manual and Envelope Drawings as contract documents.

1. Conflicts or discrepancies among the Contract Documents shall be resolved in the following order of priority: (1) Change Orders, with Change Orders of a later date taking precedence over those of an earlier date; (2) Amendments and revisions of a later date take precedence over those of an earlier date; (3) The Agreement; (4) Drawings, Specifications, and Project Manual; Drawings govern Specifications for quantity and location, Specifications govern drawings for quality and performance; (5) figured dimensions govern scale dimensions and large scale Drawings govern

small scale drawings; (6) the General Conditions of the Contract. Submittals are not Contract Documents.

C. Contract Forms:

2. General Conditions of the Construction Contract:

a. As negotiated with the Owner.

3. Agreement: Contract Between Owner and Contractor:

b. As negotiated with the Owner.

1.5 OWNER'S OCCUPANCY REQUIREMENTS

- A. Occupancy: Facilities are expected to remain occupied during entire construction period. Cooperate with Owner and Owner's management during construction operations to minimize conflicts with adjacent property usage. Perform the Work so as not to interfere with tenants' day-to-day activities.

1.6 WORK RESTRICTIONS

- A. On-Site Work Hours: Work shall be generally performed inside and around the existing building during normal business hours of 8:00 a.m. to 5:00 p.m., Monday through Friday. Prior approval will be required for work on Saturday and Sunday. Contractor may stage work 30 minutes prior to the agreed start time, but may not conduct noise-generating activities until commencement of work hours.
1. Weekend Hours: As negotiated with the Owner.
 2. Early Morning Hours: As negotiated with the Owner.
 3. Hours for Utility Shutdowns: As negotiated with the Owner.
 4. Driveways and Entrances: Keep driveways and entrances serving adjacent site clear and available to individuals and emergency vehicles at all times. Do not use these areas for parking or storage of materials.
 - a. Schedule deliveries to minimize use of driveways and entrances.
 - b. Schedule deliveries to minimize space and time requirements for storage of materials and equipment on site.
- B. Smoking at the worksite is allowed in designated smoking areas only. At no time is smoking permitted on the project scaffolding, at the roof, within 30 feet of an egress door, or building interior.
- C. No pets shall be brought to the workplace by employees or personnel associated with the Contractor or project subcontractors.
- D. No use or possession of alcohol or controlled substances shall be allowed at project site.
- E. Use of entertainment equipment for producing loud music or radio/TV programs shall not be allowed on the project site.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 01 1100

SECTION 01 2100 - ALLOWANCES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Section includes administrative and procedural requirements governing allowances. 1. Certain items are specified in the Contract Documents by allowances. Allowances have been established in lieu of additional requirements and to defer selection of actual materials and equipment to a later date when direction will be provided to Contractor. If necessary, additional requirements will be issued by Change Order.
- B. Types of allowances include the following:
 - 1. Lump-sum allowances.
 - 2. Unit-cost allowances.
 - 3. Quantity allowances.
 - 4. Contingency allowances.
 - 5. Testing and inspecting allowances.
- C. Related Requirements:
 - 1. Section 014000 "Quality Requirements" for procedures governing the use of allowances for testing and inspecting.

1.3 SELECTION AND PURCHASE

- A. At the earliest practical date after award of the Contract, advise Consultant of the date when final selection and purchase of each product or system described by an allowance must be completed to avoid delaying the Work.
- B. At Consultant's request, obtain proposals for each allowance for use in making final selections. Include recommendations that are relevant to performing the Work.
- C. Purchase products and systems selected by Consultant from the designated supplier.

1.4 ACTION SUBMITTALS

- A. Submit proposals for purchase of products or systems included in allowances, in the form specified for Change Orders.
- B. Submit invoices or delivery slips to show actual quantities of materials delivered to the site for use in fulfillment of each allowance.
- C. Submit time sheets and other documentation to show labor time and cost for installation of allowance items that include installation as part of the allowance.
- D. Coordinate and process submittals for allowance items in same manner as for other portions of the Work.

1.5 COORDINATION

- A. Coordinate allowance items with other portions of the Work.
- B. Furnish templates as required to coordinate installation.

1.6 ALLOWANCES

- A. Allowance shall include cost to Contractor of specific products and materials ordered by Owner or selected by Consultant under allowance and shall include delivery to the project site.
- B. Unless otherwise indicated, Contractor's costs for receiving and handling at Project site, labor, installation, overhead and profit, and similar costs related to products and materials ordered by Owner or selected by Consultant under allowance shall be included as part of the Contract Sum and not part of the allowance.
- C. Unused Materials: Return unused materials purchased under an allowance to manufacturer or supplier for credit to Owner, after installation has been completed and accepted.
 - 1. If requested by Consultant, retain and prepare unused material for storage by Owner. Deliver unused material to Owner's storage space as directed.

1.7 CONTINGENCY ALLOWANCES

- A. Use the contingency allowance only as directed by Consultant for Owner's purposes and only by Change Orders that indicate amounts to be charged to the allowance.
- B. Change Orders authorizing use of funds from the contingency allowance will include Contractor's related costs and reasonable overhead and profit margins.
- C. At Project closeout, credit unused amounts remaining in the contingency allowance to Owner by Change Order.

1.8 TESTING AND INSPECTING ALLOWANCES

- A. Testing and inspecting allowances include the cost of engaging testing agencies, actual tests and inspections, and reporting results.
- B. The allowance does not include incidental labor required to assist the testing agency or costs for retesting if previous tests and inspections result in failure. The cost for incidental labor to assist the testing agency shall be included in the Contract Sum.
- C. Costs of services not required by the Contract Documents are not included in the allowance.
- D. At Project closeout, credit unused amounts remaining in the testing and inspecting allowance to Owner by Change Order.

1.9 ADJUSTMENT OF ALLOWANCES

- A. Allowance Adjustment: To adjust allowance amounts, prepare a Change Order proposal based on the difference between purchase amount and the allowance, multiplied by final measurement of work-in-place where applicable. If applicable, include reasonable

allowances for cutting losses, tolerances, mixing wastes, normal product imperfections, and similar margins.

1. Include installation costs in purchase amount only where indicated as part of the allowance.
 2. If requested, prepare explanation and documentation to substantiate distribution of overhead costs and other margins claimed.
 3. Submit substantiation of a change in scope of work, if any, claimed in Change Orders related to unit-cost allowances.
 4. Owner reserves the right to establish the quantity of work-in-place by independent quantity survey, measure, or count.
- B. Submit claims for increased costs because of a change in scope or nature of the allowance described in the Contract Documents, whether for the purchase order amount or Contractor's handling, labor, installation, overhead, and profit.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 SCHEDULE OF ALLOWANCES

- A. Allowance No. 1: Roof Sheathing
1. Provide an allowance to replace up to \$1,500 of damaged roof deck sheathing with new. Assume that the new sheathing will be 3/4-in. CDX Plywood.

3.2 EXAMINATION

- A. Examine products covered by an allowance promptly on delivery for damage or defects. Return damaged or defective products to manufacturer for replacement.

3.3 PREPARATION

- A. Coordinate materials and their installation for each allowance with related materials and installations to ensure that each allowance item is completely integrated and interfaced with related work.

END OF SECTION 01 2100

SECTION 02 4119 - SELECTIVE DEMOLITION

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Removal of selected portions of building or structure for replacement.
2. Salvage of existing items to be reused.

1.2 DEFINITIONS

A. See Drawing Notes.

1.3 SUBMITTALS

A. Informational Submittals. The following submittals are to be provided upon request from the Consultant, or as required by the authority having jurisdiction.

1. Schedule of Selective Demolition Activities, indicating the following:
 - a. Detailed sequence of selective demolition and removal work, with starting and ending dates for each activity.
 - b. Interruption of utility services.
 - c. Coordination for shutoff, capping, and continuation of utility services.
 - d. Coordination of homeowner's access and continuing occupancy of buildings.
2. Inventory: After selective demolition is complete, maintain a list of items that have been removed, stored, protected and scheduled for reinstallation.
3. Pre-demolition Documentation: Maintain photographic or video evidence of conditions of adjoining construction, including finish surfaces that might be misconstrued as damage caused by selective demolition operations.

1.4 QUALITY ASSURANCE

A. Regulatory Requirements: Comply with governing EPA notification regulations before beginning selective demolition. Comply with hauling and disposal regulations of authorities having jurisdiction.

B. Standards: Comply with the following:

1. ANSI A10.6 "Safety Requirements for Demolition Operations"
2. NFPA 241 "Standard for Safeguarding Construction, Alteration, and Demolition Operations"

1.5 PROJECT CONDITIONS

A. Take over structures and materials to be demolished based on their condition on the date that the bid is accepted.

1. Conditions existing at time of inspection for bidding purpose will be maintained by Owner as far as practical.
 - B. Hazardous Materials:
 1. If hazardous material is encountered in the course of demolition work, stop work and notify Consultant immediately. Do not proceed until written instructions have been received from the Consultant.
 2. Mold may be present in construction to be selectively demolished.
 - a. Refer to 02 8500 - Mold Remediation Procedures.
- 1.6 SEQUENCING AND SCHEDULING:
- A. Sequence selective demolition with sequence of rehabilitation work to maintain facility in dry, watertight condition.
 - B. Coordinate roof work so that removals do not exceed what can be replaced with new roofing work in same day to maintain unit in dry, watertight condition.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 PREPARATION

- A. Comply with requirements of Section 01 3516 - Alteration Project Procedures.
- B. Temporary Shoring: Provide and maintain shoring, bracing, and structural supports as required to preserve stability and prevent movement, settlement, or collapse of construction and finishes to remain, and to prevent unexpected or uncontrolled movement or collapse of construction being demolished.
 1. When requested by Consultant or required by Authorities Having Jurisdiction, provide engineering design of temporary shoring stamped by a licensed professional engineer.
 2. Strengthen or add new supports when required during progress of selective demolition.
 3. In the event that the safety of any structure appears to be endangered, cease demolition operations and notify Consultant immediately.

3.2 EXAMINATION

- A. Review Project Record Documents of existing construction provided by Owner. Owner does not guarantee that existing conditions are same as those indicated in Project Record Documents.
- B. Verify that power has been shut-off before starting the demolition operations that affect exterior electrical fixtures (such as light fixtures, weatherproof receptacles, etc.). Post warning signs on electrical lines and equipment which must remain energized to serve other properties or other areas of Project during period of demolition.

- C. Inventory and Record the Existing Conditions:
 - 1. Inventory and record the condition of items to be removed and salvaged.
 - 2. Inventory and record the condition of interior surfaces of exterior walls.
 - 3. Inventory and record the condition of interior standing and running trim at windows and doors scheduled for removal, reinstallation, and replacement.
 - 4. Record using photographic or video documentation, existing conditions that might be misconstrued as damage caused by salvage and demolition operations.
- D. When unanticipated mechanical, electrical, or structural elements that conflict with intended function or design are encountered, investigate and measure the nature and extent of conflict. Promptly submit a written report to Consultant.

3.3 EXAMINATION OF MOISTURE DAMAGED WOOD FRAMING

- A. Visually examine existing wood members for moisture damage. Darker wood, staining, and wide-spread streaking will indicate prior wetting. Some members may exhibit section loss.
- B. Probe suspect wood members with a sharp tool to check for decay. If necessary, separate stacked or bundled members to expose all surfaces. If a structural member appears damaged, stained, or organic growth exists, evaluate as follows:
 - 1. Organic growth: remove with a stiff bristle brush, by scraping or by sanding then coat with preservative treatment.
 - 2. Stains may penetrate the wood and cannot be removed by mechanical means. The early stages of decay are accompanied by the discoloration of wood as in the appearance of water-soaked wood. Later stages of decay produce more obvious signs of decay such as change in color, texture, and wood volume (i.e., hollow). If decay of this type is present:
 - a. Shore existing structure as necessary prior to removal or reduction of any member.
 - b. If structural members are determined to be damaged no more than 1/4-in. into the member, remove the decayed material and treat member with preservative treatment. Sister in a new member to the decayed one. Use lumber of the same grade and size. Secure as required per Structural Engineer and AHJ.
 - c. If non-structural members are determined to be decayed no more than 1/4-in. into the member, treat member with preservative treatment. Sister in a new member to the decayed, or replace the member in its entirety if practical. Use lumber of the same size and grade. Secure with fasteners of size and spacing as required by AHJ.

- d. For lumber with damage greater than 1/4-in. on any side, remove and replace with the member, or remove the portion of the member that is damaged, mechanically clean the adjacent wood, coat the cleaned wood with preservative treatment, and sister a new member of the same grade and size as the existing member. Secure with fasteners of size and spacing as required per Structural Engineer and AHJ.

3.4 SELECTIVE DEMOLITION

- A. General: Demolish and remove existing construction to the extent required for installation of new materials and as indicated. Use methods required to complete the Work within limitations of governing regulations.
 1. Cut out and remove all those assemblies, materials, and items indicated as being removed or discarded on the drawings and promptly remove from site.
- B. Comply with applicable codes and regulations for demolition operations and safety of adjacent structures and the public.
 1. Obtain required permits.
 2. Use of explosives is not permitted.
 3. Take precautions to prevent catastrophic or uncontrolled collapse of structures to be removed; do not allow worker or public access within range of potential collapse of unstable structures.
 4. Provide, erect, and maintain temporary barriers and security devices.
 5. Use physical barriers to prevent access to areas that could be hazardous to workers or the public with specific safeguards used to minimize access by young children.
 6. Conduct operations to minimize effects on and interference with adjacent structures and occupants.
 7. Do not close or obstruct public roadways or sidewalks without permit.
 8. Conduct operations to minimize obstruction of public and private entrances and exits; do not obstruct required exits at any time; protect persons using entrances and exits from removal operations.
 9. Obtain written permission from owners of adjacent properties when demolition equipment will traverse, infringe upon or limit access to their property.
- C. Do not begin removal until receipt of notification to proceed from Owner.
- D. Do not begin removal until vegetation to be relocated has been removed and specified measures have been taken to protect vegetation to remain.
 1. Coordinate removal and relocation of vegetation with Owner prior to beginning Work in the area.

- E. Protect existing structures and other elements that are not to be removed.
 - 1. Provide bracing and shoring where necessary.
 - 2. Prevent movement or settlement of adjacent structures.
 - 3. Stop work immediately if adjacent structures appear to be in danger.
- F. Maintain weatherproof exterior building enclosure except for interruptions required for replacement or modifications; take care to prevent water and humidity damage.
- G. Hazardous Materials: Comply with 29 CFR 1926 and state and local regulations.
- H. Perform demolition in a manner that maximizes salvage and recycling of materials.
 - 1. Set aside reusable, recyclable, and salvageable materials; store and deliver to collection point or point of reuse.
 - 2. When required by Authorities Having Jurisdiction, work with Owner and Consultant to provide engineering design of temporary shoring stamped by a licensed professional engineer for locations not already identified in the Drawings.
- I. Mold may be present in construction to be selectively demolished.
 - 1. Refer to 02 8500 - Mold Remediation Procedures.
- J. Removed and Reinstalled Items. Comply with the following:
 - 1. Removal of material, component, assembly or item indicated for reinstallation shall be completed by a trade which normally provides or installs such an item.
 - a. Record locations from which item removed.
 - b. Pack or crate items. Identify contents of containers.
 - c. Protect items from damage.
 - d. Reinstall items in original locations. Comply with the installation requirements for new materials and equipment. Provide connections, supports, and miscellaneous materials necessary to make item functional for use indicated.
- K. Existing Items to Remain: Protect construction indicated to remain against damage and soiling during selective demolition. When permitted by Consultant, items may be removed to a suitable, protected storage location during selective demolition, cleaned and reinstalled in their original locations after selective demolition operations are complete. Repair adjacent work that becomes damage to its pre-demolition condition.
- L. Services (Including but not limited to HVAC, Plumbing, Fire Protection, Electrical, and Telecommunications): Remove existing systems and equipment as indicated.
 - 1. Maintain existing active systems that are to remain in operation; maintain access to equipment and operational components.

2. Where existing active systems serve occupied facilities but are to be replaced with new services, maintain existing systems in service until new systems are complete and ready for service.
 3. Verify that abandoned services serve only abandoned facilities before removal.
 4. Remove abandoned pipe, ducts, conduits, and equipment, including those above accessible ceilings; remove back to source of supply where possible, otherwise cap stub and tag with identification.
- M. Perform cutting to accomplish removals neatly and as specified for cutting new work.
- N. Repair adjacent construction and finishes damaged during removal work.
- O. Patch as specified for patching new work.
- P. Marking of Utilities to remain under cover:
- Q. Where subsequent new Work will cover existing utilities to remain, and where new Work will be installed in a manner that could potentially damage the existing utility, provide clear and consistent markings identifying the utility location.
- R. Assist in coordination of subsequent Work so as existing utilities are not damaged.
- S. Where utilities are installed too close to the edge of building materials, the face of stud as an example, and could be impacted by new Work, provide appropriate protective materials to eliminate the potential for damage.

3.5 DEBRIS AND DISPOSAL

- A. General: Except for items or materials indicated to be reused, salvaged, reinstalled, or otherwise indicated to remain Owner's property, remove demolished materials from Project site and legally dispose.
1. Do not allow demolished materials to accumulate on-site or create unsanitary conditions.
 2. Remove and transport debris in a manner that will prevent spillage on adjacent surfaces and areas.
- B. Remove debris from elevated portions of building by chute, hoist, or other device that will convey debris to grade level in a controlled descent.
- C. Remove debris, junk, and trash from site except for items or materials indicated to be reused, salvaged, reinstalled, or otherwise indicated to remain Owner's property. Remove demolished materials from Project site and legally dispose.
- D. Remove debris from elevated portions of building by chute, hoist, or other device that will convey debris to grade level in a controlled descent.
- E. Leave site in clean condition, ready for subsequent work.
- F. Clean up spillage and wind-blown debris from public and private lands.

END OF SECTION 02 4119

SECTION 06 0100 - ROUGH CARPENTRY, CARPENTRY REHABILITATION

PART 1 - GENERAL

1.1 SUMMARY

- A. This Section outlines the requirements for the replacement of deteriorated sheathing and framing and for the installation of wood blocking, furring and nailing strips.
- B. Related Sections include the following:
 - 1. Section 02 8500 - Mold Remediation Procedures
 - 2. Section 07 5216 - SBS Modified-Bitumen Membrane Roof

1.2 DEFINITIONS

- A. Lumber grading agencies, and the abbreviations used to reference them, include the following:
 - 1. WCLIB: West Coast Lumber Inspection Bureau
 - 2. WWPA: Western Wood Products Association

1.3 SUBMITTALS

- A. Submit the following:
 - 1. Product Data: for wood-preservative treatment from chemical treatment manufacturer. Indicate type of preservative used and net amount of preservative retained. For products receiving a waterborne treatment, include statement that moisture content of treated materials was reduced to levels specified before shipment to Project site.
 - 2. Certification by treating plant that treated materials comply with requirements.
 - 3. Copies of warranties from chemical treatment manufacturers for each type of treatment.
 - 4. Provide product information for all fasteners used in the attachment of structural framing, decking, furring, and furring.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. Dimension Lumber
 - 1. DOC PS 20 and applicable rules of grading agencies indicated. If no grading agency is indicated, provide lumber that complies with the applicable rules of any rules-writing agency certified by the ALSC Board of Review. Provide lumber graded by an agency certified by the ALSC Board of Review to inspect and grade lumber under the rules indicated.
 - a. Factory mark each piece of lumber with grade stamp of grading agency.

- b. Where nominal sizes are indicated, provide actual sizes required by DOC PS 20 for moisture content specified. Where actual sizes are indicated, they are minimum dressed sizes for dry lumber.
 - c. Provide dressed lumber, S4S, unless otherwise indicated.
 - 2. Maximum Moisture Content: 19 percent at time of covering with panel sheathing.
 - 3. Framing: Construction or No. 2 grade and any of the following species:
 - a. Douglas Fir
 - b. Hem-fir
- B. Wall Panel Products
 - 1. Plywood: DOC PS 1.
 - 2. OSB is not allowed.
 - 3. Factory mark panels to indicate compliance with applicable standard.
 - 4. Wall Plywood Sheathing:
 - a. APA Bond Classification: Exposure 1 or Exterior/CDX
 - b. Span Rating: Unless otherwise noted, per minimum recommendations outlined in APA's Engineered Wood Construction Guide, based on spans of existing framing members.
 - c. Nominal Thickness: Not less than existing.
 - d. Maximum moisture content shall be the lesser of 19 percent at time of installing Weather Barrier, or maximum moisture content recommended by manufacturers of membrane to be installed over plywood.
 - 5. Roof Sheathing
 - a. APA Bond Classification: Exterior/ACX
 - b. Span Rating: Unless otherwise noted, per minimum recommendations outlined in APA's Engineered Wood Construction Guide, based on spans of existing framing members.
 - c. Nominal Thickness: Not less than existing.
 - d. Edge Profile: Tongue and Groove
 - e. Maximum moisture content shall be lesser of 19 percent at time of installing Roofing, or maximum moisture content recommended by manufacturers of membrane to be installed over plywood.
- C. Blocking, Furring and Nailers
 - 1. Provide lumber stamped kiln-dried that has a 19 percent maximum moisture content at time of covering and any of the following species and grades:

2. Furring strips shall be cut from ½ inch, Inorganic boron (SBX) treated plywood to a width of 2 in. and spaced 16 inches o.c. to align with wall studs unless otherwise noted. Plywood to match thickness as indicated in the drawings.
3. Provide non-corrosive and non-reactive mesh insect screen where depicted on drawings.

D. Wood Preservative Treated Materials

1. Preservative Treatment by Pressure Process: AWPAC U1 for lumber.
 - a. Components above ground and exposed to intermittent wetting: Use Category UC3B
 - b. Components in contact with soil or ground: Use Category UC4A
 - c. Components above ground and are critical or difficult to replace: Use Category UC4A
 - d. Components for fire protection: Use Categories UCFA or UCFB as required by codes
 - e. Preservative Chemicals: Acceptable to authorities having jurisdiction and containing no arsenic or chromium.
 - 1) Inorganic boron (SBX) for wood not in contact with the ground and not directly exposed to wind driven rain.
 - a) Retention Rate: 0.17 pcf.
 - f. End Cut Preservative: Acceptable to manufacturer of preservative.
 - g. Field-Applied Preservative: Borate based, to be applied to existing wood members that are to remain.
 - 1) Sansin Boracol 20-2.
2. Stamped kiln-dry wood after treatment to a maximum moisture content of 19 percent after treatment. Do not use material that is warped or does not comply with requirements for untreated material.
3. Mark wood with treatment quality mark of an inspection agency approved by the ALSC Board of Review.
4. Application: Treat items indicated on Drawings with abbreviation P.T.
 - a. Wood to be pressure treated shall include, but not be limited to:
 - 1) Wood directly exposed to exterior rainwater
 - 2) Wood in contact with the ground or exterior concrete slab on grade
 - 3) Blocking, shims and miscellaneous lumber installed exterior of the Weather Resistive Barrier.

E. Gypsum Board Exterior Wall Sheathing

1. Glass-Mat Gypsum Wall Sheathing: ASTM C 1177/1177M and ASTM C 1396 requirements for water resistance.
2. Acceptable Product: Subject to compliance with requirements, provide the following:
 - a. Dens-Glass Sheathing by Georgia Pacific Corporation.
 - 1) One hour rated systems when tested in accordance with ASTM E119, UL Classified.
 - 2) Or other approved alternate product.
3. Type and Thickness:
 - a. 5/8 inch minimum at rated assemblies.
4. Flame Spread: ASTM E84: 0 maximum.
5. Smoke developed: ASTM E84: 0 maximum.
6. Size: 48 by 96 inches.
7. Type X as required to meet fire resistance of assembly.

F. Gypsum Board Roof Sheathing

1. Primed, Roofing Gypsum Coverboard: A fiberglass mat faced gypsum roof board for application directly under adhered roof membrane meeting ASTM C 1177/1177M and ASTM C 1396 requirements for water resistance.
2. Acceptable Product: Subject to compliance with requirements, provide the following:
 - a. DensDeck Prime Roof Boards by Georgia Pacific Corporation.
3. Thickness:
 - a. 1/4 in. thick
4. Flame Spread: ASTM E84: 0 maximum.
5. Smoke developed: ASTM E84: 0 maximum.
6. Size: 48 by 96 inches

G. Fasteners

1. General: Provide fasteners of size and type indicated that comply with requirements specified in this Article for material and manufacture.
 - a. Borate preservative treated carpentry, carpentry in area of high relative humidity, or located exterior of the weather restive barrier, provide fasteners with double complying with ASTM A 153 (minimum coating G185), or Type 304 stainless steel.

- b. ACQ or similar pressure-preservative treated carpentry: Type 304 stainless steel.
 - c. Any fasteners directly exposed to weather: Type 316 stainless steel.
- 2. Nails: ASTM F1667
 - a. For double hot dipped galvanized nails, use Maze Nail STORMGUARD or approved alternate.
- 3. Lag Bolts: ASME B18.2.1
- 4. Bolts: Steel bolts complying with ASTM A 307, Grade A (ASTM F 568M, Property Class 4.6); with ASTM A 563 (ASTM A 563M) hex nuts and, where indicated, flat washers.
- 5. Screws for Fastening Gypsum Sheathing to Wood Framing: Steel drill screws, in length recommended by gypsum sheathing manufacturer for thickness of sheathing board to be attached, with organic-polymer or other corrosion-protective coating having a salt-spray resistance of more than 800 hours according to ASTM B 117.
 - a. Acceptable Product: screws with Grabbergard coating by Grabber Construction Products.
- 6. Adhesives for Field Gluing Wood Panels to Framing: Formulation complying with ASTM D 3498 that is approved for use with type of construction panel indicated by manufacturers of both adhesives and panels.

PART 3 - EXECUTION

3.1 EXAMINATION OF MOISTURE DAMAGED WOOD FRAMING

- A. Visually examine existing wood members for moisture damage. Darker wood, staining, and wide-spread streaking will indicate prior wetting. Some members may exhibit section loss.
- B. Probe suspect wood members with a sharp tool to check for decay. If necessary, separate stacked or bundled members to expose all surfaces. If a structural member appears damaged, stained, or organic growth exists, evaluate as follows:
 - 1. Organic growth: remove with a stiff bristle brush, by scraping or by sanding then coat with preservative treatment.
 - 2. Stains may penetrate the wood and cannot be removed by mechanical means. The early stages of decay are accompanied by the discoloration of wood as in the appearance of water-soaked wood. Later stages of decay produce more obvious signs of decay such as change in color, texture, and wood volume (i.e., hollow). If decay of this type is present:
 - a. Shore existing structure as necessary prior to removal or reduction of any member.

- b. If structural members are determined to be damaged no more than 1/4-in. into the member, remove the decayed material and treat member with preservative treatment. Sister in a new member to the decayed one. Use lumber of the same grade and size. Secure as required per Structural Engineer and AHJ.
 - c. If non-structural members are determined to be decayed no more than 1/4-in. into the member, treat member with preservative treatment. Sister in a new member to the decayed, or replace the member in its entirety if practical. Use lumber of the same size and grade. Secure with fasteners of size and spacing as required by AHJ.
 - d. For lumber with damage greater than 1/4-in. on any side, remove and replace with the member, or remove the portion of the member that is damaged, mechanically clean the adjacent wood, coat the cleaned wood with preservative treatment, and sister a new member of the same grade and size as the existing member. Secure with fasteners of size and spacing as required per Structural Engineer and AHJ.
3. All structural repairs are to be per the requirements outlined by the Structural Engineer and verified by the Building Enclosure Consultant

3.2 INSTALLATION

A. General

- 1. Set carpentry to required levels and lines, with members plumb, true to line, cut, and fitted. Fit carpentry to other construction; scribe and cope as needed for accurate fit. Locate furring/strapping, nailers, blocking, and similar supports to comply with requirements for attaching other construction.
- 2. Framing Standard: Comply with AF&PA's "Details for Conventional Wood Frame Construction," unless otherwise indicated.
- 3. Do not splice structural members between supports, unless otherwise indicated.
- 4. Provide replacement framing, furring, and blocking as indicated and as required to support facing materials
- 5. Sort and select lumber so that natural characteristics will not interfere with installation or with fastening other materials to lumber. Do not use materials with defects that interfere with function of member or pieces that are too small to use with minimum number of joints or optimum joint arrangement.
- 6. Comply with AWPA M4 for applying field treatment to field cut surfaces, notches, and drilled holes in preservative-treated lumber or plywood.
- 7. Securely attach carpentry work to substrate by anchoring and fastening as indicated, complying with the following:
 - a. NES NER-272 for power-driven fasteners.
 - b. Table 2304.9.1, "Fastening Schedule," in ICC's International Building Code.

8. Use common wire nails, unless otherwise indicated. Make tight connections between members. Install fasteners without splitting wood; do not countersink nail heads, unless otherwise indicated.
- B. Replacement Of Deteriorated Dimension Lumber Framing
1. Where directed by Consultant, replace existing damaged dimension lumber framing with new dimension lumber to match size and grade of existing element.
 2. Comply with wood frame construction requirements of applicable local codes.
 3. Replace entire length of damaged member. No splicing or scabbing to existing elements allowed without prior approval from Consultant.
 4. Frame, anchor, fasten, tie and brace members to provide necessary strength and rigidity.
 5. Countersink bolts where necessary to provide clearance for other work.
 6. Wood blocking and nailer installation:
 - a. Install where indicated and where required for attaching other work. Form to shapes indicated and cut as required for true line and level of attached work. Coordinate locations with other work involved.
 - b. Attach items to substrates to support applied loading.
- C. Panel Sheathing Installation
1. Comply with applicable recommendations in APA Form No. E30S, "Engineered Wood Construction Guide," for types of structural-use panels and applications indicated.
 2. Orient the panel as recommended by the manufacturer.
 3. Provide edge support necessary to maintain rigidity and structural integrity of the panel product under anticipated construction and in-service loads.
 4. Fasten panels as indicated below:
 - a. Wall and Roof Sheathing:
 - 1) Nail to framing.
 - 2) Space panels 1/8 inch apart at edges and ends.
- D. Wood Furring/Strapping Installation
1. Install vertical furring members to create a drainage space between the weather barrier and back of the exterior cladding. Thickness of furring strips as indicated in drawings.
 2. Install level and plumb at edges and openings. Shim with wood as required for tolerance of finish work.
 3. Align furring vertically centered over studs.

4. Do not fasten strapping directly to gypsum board sheathing without solid wood sheathing or similar backing behind.
5. Align and plumb faces of furring/strapping to tolerance of 1/16-inch in 24-inches.
6. Cope and trim furring to accommodate build-up of substrate materials
7. Space fasteners for furring at maximum 12-inches o.c. vertically. Fasteners shall penetrate minimum 1 ½-inches into stud.

3.3 PROTECTION

- A. Protect rough carpentry from weather. If, despite protection, rough carpentry becomes wet, apply EPA-registered borate treatment upon direction by the Consultant. Allow wood to dry prior to covering with panel sheathing.

END OF SECTION 06 0100

SECTION 07 5216 - SBS MODIFIED-BITUMEN MEMBRANE ROOFING

PART 1 - GENERAL

1.1 SUMMARY

- A. Remove and dispose of the existing built-up roofing system at the locations depicted on the drawings. Removal includes aggregate surfacing, membrane, and insulation to completely expose the existing wood deck and sheathing at the interior plane of the parapets and curbs.
 - 1. Remove and dispose of existing sheet metal copings.
 - 2. Temporarily remove and retain existing skylights for reinstallation.
 - 3. Salvage for reinstallation existing HVAC shrouds, photovoltaic panels, and electrical service conduits.
 - 4. Replace existing wood sheathing found to be damaged in like-kind per consultant on Allowance.
- B. Furnish and install a conventionally-insulated, roofing system at the locations depicted on the drawings. Assembly consists of a two-ply, SBS modified-bitumen membrane over coverboard, insulation, and self-adhered air/vapor barrier membrane. Membrane shall slope a minimum of 1/4:12 to drain. Roof assembly layers are to be fully adhered except at metal roof deck conditions, only the substrate board layer are to be mechanically attached.
- C. Work shall include new framing members as shown on the details to elevate the height of curbs, supports, and perimeter parapets and edge conditions to compensate for the height of the new insulation above the structural roof deck.
- D. Provide new sheet metal scuppers and retrofit roof drains as part of the base bid. Contractor shall coordinate all necessary permits and sub-contractors required to conduct the work.

1.2 RELATED SECTIONS

- A. Section 06 0100 - Rough Carpentry, Carpentry Rehabilitation
- B. Section 07 6200 - Sheet Metal Flashing and Trim

1.3 REFERENCES

- A. ASTM International:
 - 1. ASTM D5147 - Standard Test Methods for Sampling and Testing Modified Bituminous Sheet Material.
 - 2. ASTM D5849 - Standard Test Method for Evaluating Resistance of Modified Bituminous Roofing Membrane to Cyclic Fatigue (Joint Displacement).
 - 3. ASTM D6162 - Standard Specification for Styrene Butadiene Styrene (SBS) Modified Bituminous Sheet Materials Using a Combination of Polyester and Glass Fiber Reinforcements.

4. ASTM D6163 - Standard Specification for Styrene Butadiene Styrene (SBS) Modified Bituminous Sheet Materials Using Glass Fiber Reinforcements.
 5. ASTM D6164 - Standard Specification for Styrene Butadiene Styrene (SBS) Modified Bituminous Sheet Materials Using Polyester Reinforcements.
 6. ASTM D6298 - Standard Specification for Fiberglass Reinforced Styrene-Butadiene-Styrene (SBS) Modified Bituminous Sheets with a Factory Applied Metal Surface.
 7. ASTM D7379 - Standard Test Methods for Strength of Modified Bitumen Sheet Material Laps Using Cold Process Adhesive.
 8. ASTM E108 - Standard Test Methods for Fire Tests of Roof Coverings.
 9. ASTM E1980 - Standard Practice for Calculating Solar Reflectance Index of Horizontal and Low-Sloped Opaque Surfaces.
- B. National Roofing Contractors Association:
1. NRCA ML 104 - The NRCA Roofing and Waterproofing Manual; National Roofing Contractors Association
- C. Underwriters Laboratories:
1. UL (RMSD) - Roofing Materials and Systems Directory; Underwriters Laboratories Inc.
 2. UL (FRD) - Fire Resistance Directory; Underwriters Laboratories Inc.
- 1.4 SUBMITTALS
- A. Action Submittals:
1. Product Data: For each type of product indicated.
 2. Shop Drawings: For bituminous roofing. Include plans, elevations, sections, details, and attachments to other work.
 - a. Base flashings and bituminous terminations.
 - b. Tapered insulation, including slopes.
 - c. Crickets, saddles, and tapered edge strips, including slopes.
 - d. Insulation fastening patterns for the corner, perimeter, and field-of-roof locations.
- B. Information Submittals:
1. Qualification Data: For qualified Installer and manufacturer.
 - a. Installer Certificates: Signed by roofing system manufacturer certifying that Installer is approved, authorized, or licensed by the manufacturer to install specified roofing system and is eligible to receive standard roofing manufacturer's warranty.

- b. Include lists of completed projects with project names and addresses, names and addresses of architects and owners, and other information specified.
 2. Certified Installer: Submit a letter on roof membrane manufacturer's corporate letterhead signifying that the installer is an approved applicator capable of providing a warrantable installation.
 3. Manufacturer's Field Reports: Indicate procedures followed, ambient temperatures, humidity, wind velocity during the application, and supplementary instructions are given.
 - a. The manufacturer must submit a field report after each visit to site.
 4. Product Test Reports: Based on evaluation of comprehensive tests performed by the manufacturer and witnessed by a qualified testing agency, for components of bituminous roofing.
 5. Maintenance Data: maintenance manuals for roofing system specified.
 6. Notice of Intent to Warrant Letter: Submit a letter on roof membrane manufacturer's corporate letterhead identifying the roof assembly layers submitted for the project will qualify for the specified system warranty.
 7. Warranty: Sample copy of standard roofing manufacturer's warranty stating obligations, remedies, limitations, and exclusions of warranty.
- C. Closeout Submittals:

Maintenance Data: Include operations and maintenance information for the submitted roofing system to Owner.

1.5 QUALITY ASSURANCE

- A. Manufacturer Qualifications:
 1. Manufacturer's Field Supervision: A representative of the roof system manufacturer must be present (3) days per week during the roof system installation.
 2. Source Limitations: Obtain all waterproofing components of roof system from a single manufacturer. Secondary products that are required shall be recommended and approved in writing by the roofing system Manufacturer. Upon request of the Architect or Owner, submit Manufacturer's written approval of secondary components in list form, signed by an authorized agent of the Manufacturer.
 3. Demonstrated performance history of producing SBS roof membranes no less, in the duration of years, than the warranty duration specified.
 4. Manufactured by membrane supplier and not private-labeled.
 5. Minimum of five years' experience recycling membranes at the end of their service life back into new membrane products. Provide a minimum of five reference projects.

- B. Installer Qualifications:
 - 1. A qualified firm that is authorized by the manufacturer to furnish and install materials and components pertaining to the product manufacturer's roof system and that is eligible to receive a manufacturer's warranty.
 - C. Preinstallation Roofing Conference: Conduct conference at the project site. Attendees shall include the following:
 - 1. Manufacturers technical representative
 - 2. Designer of record
 - 3. Roofing installer
 - D. Review methods and procedures related to roofing installation, including the manufacturer's most current requirements.
 - E. Review base flashings, special roofing details and transitions, roof drainage, roof penetrations, equipment curbs, and condition of other construction that affects the roofing system.
 - F. Review governing regulations and requirements for insurance and certificates.
 - G. Review temporary protection requirements for roofing system during and after installation.
 - H. Deviations from the project specifications or the approved shop drawings are not permitted without prior written approval by the consultant, manufacturer, and owner.
 - I. Perform work in accordance with the manufacturer's published installation instructions, project documents, and other such pertinent information.
 - J. Furnish products by or approved by the manufacturer for entirety of installed roofing system.
 - K. Installer Qualifications: A qualified firm that is approved, authorized or licensed by bituminous roofing manufacturer to install manufacturer's product and that is eligible to receive manufacturer's special warranty.
 - L. Source Limitations: Obtain components, including fasteners and sealants from a single source.
- 1.6 PRECONSTRUCTION MEETING
- A. Conduct meeting at the project site, with Consultant, general contractor, manufacturer's representative, and installer present.
 - B. Review methods and procedures related to roofing installation, including manufacturer's written instructions.
 - C. Review and finalize construction schedule and verify availability of materials, Installer's personnel, equipment, and facilities needed to make progress and avoid delays.
 - D. Examine deck substrate conditions and finishes for compliance with requirements, including flatness and fastening.

- E. Review base flashings, special roofing details, roof drainage, roof penetrations, equipment curbs, and condition of other construction that will affect roofing.
- F. Review governing regulations and requirements for insurance and certificates if applicable.
- G. Review temporary protection requirements for roofing during and after installation.
- H. Review roof observation and repair procedures after roofing installation.
- I. Manufacturer Technical Representative Field Review
 - 1. Manufacturer's technical representative to review product installation a minimum of three times during installation at each structure, not three times total for all three.
 - 2. The technical representative shall issue a report to Consultant and general contractor for each review.
 - 3. Contractor to permit and facilitate access to site and roof, at all times, by above-mentioned manufacturer's representative.

1.7 PERFORMANCE REQUIREMENTS

- A. Fire: Underwriters Laboratories, Inc., Class A
- B. Wind Design: System shall meet minimum requirements in accordance with ASCE 7 per code jurisdiction.
 - 1. Roofing manufacturer shall showcase intended fastening and adhesive ribbon patterns for field, perimeter, and corner conditions of the coverboard and insulation.
 - 2. Edge securement of roofing terminations and edge metal, ANSI-SPRI ES-1.
 - 3. Design Pressures:
 - a. Central Field of Roof (Zone 1'): -21.34 psf
 - b. Field of Roof Zone (Zone 1): -37.15 psf
 - c. Roof Perimeter (Zone 2): -50.98 psf
 - d. Roof Corners (Zone 3): -66.79 psf

1.8 MOCKUPS

- A. Contractor shall provide a mockup of system components for review. Consultant shall approve mockups in successive order prior to initiation of next phase. Purpose of mock-up is to review and confirm transitions, details, interfacing sequence, and substrate preparation:
 - 1. Substrate Board (over steel pan deck), Mechanically-Fastened
 - 2. Air/Vapor Barrier Membrane, Adhered
 - 3. Insulation and Coverboard, Adhered
 - 4. SBS Modified Bituminous Base Field and Flashing Plies, Adhered

5. SBS Modified Bituminous Cap Field and Flashing Plies, Adhered

1.9 ENVIRONMENTAL CONDITIONS

- A. Weather Limitations: Proceed with installation only when existing and forecasted weather conditions permit the roofing system to be installed according to the manufacturer's most current requirements and warranty requirements.
- B. Material Compatibility: Roofing materials shall be compatible with one another and adjacent materials under conditions of service and application required and confirmed by the roofing manufacturer.
- C. Coordinate Work with the installation of associated flashings and counter-flashings installed by other sections as work of this section proceeds.
- D. Weather Limitations: Proceed with installation only when existing and forecasted weather conditions permit roofing to be installed according to manufacturer's written instructions and warranty requirements.
- E. Provide tarps or plastic sheeting to adequately protect opened roofs and flashings and to prevent entrance of moisture or rainwater into structure until new materials have been applied and roof is in a watertight condition.
- F. Do not start the installation of any more roof surface at one time than can be adequately covered and protected in event of sudden unexpected rainfall.
- G. Provide waterproof canvas or plastic sheeting handy in case of emergency.
- H. If water penetrates through the assembly due to inadequate protection, Contractor to cut and inspect damages, remove, replace and re-install all materials at own cost, to eliminate all traces of water in the assembly.

1.10 DELIVERY, STORAGE, AND HANDLING

- A. Deliver roofing materials to Project site in original containers with seals unbroken and labeled with manufacturer's name, product brand name and type, date of manufacture, approval or listing agency markings, and directions for storing and mixing with other components.
 - 1. Store roofing materials in a dry, well-ventilated, weather-tight location to ensure no significant moisture pickup and maintain at a temperature consistent with roofing system manufacturer's written instructions.
 - 2. Store underlayment rolls and other sheet materials on end on pallets or other raised surfaces.
 - 3. Do not double-stack rolls.
- B. Store liquid materials in their original undamaged containers in a clean, dry, protected location and within the temperature range required by the roofing manufacturer. Protect stored liquid material from direct sunlight.
 - 1. Discard and legally dispose of liquid material that cannot be applied within its stated shelf life.

- C. Handle and store roofing materials and place equipment in a manner to avoid permanent deflection of the deck.
- D. Keep all flammable materials away from open flames or other possible igniting conditions.
- E. Do not leave materials on the roof overnight or when roofing work is not in progress unless protected from weather and moisture and unless maintained at a temperature exceeding 50 deg. F.

1.11 FIRE PROTECTION

- A. Lap seams at base and cap plies shall be fused with hot air welders. Torch-applied applications shall not be permitted. Contractor shall be CERTA qualified by the NRCA.
 - 1. Fire Extinguishers: maintain one cartridge operated type with a shut-off nozzle, ULC labeled for A, B, and C class protection. Size 5 lb. on roof per torch applicator, within 30 feet of torch applicator.
 - 2. After completion of hot work, contractor shall provide dedicated personnel to watch for fires at areas where work has occurred. Continue overwatch for two hours.
- B. Protect adjacent surfaces from any damage that may result from the work of this section including temporary protection of the membrane as required to prevent mechanical damage or damage from spillage of oil or solvents. If required, the contractor shall make good any deterioration resulting from his work in progress.
- C. Protect complete perimeter of the roof and an opening in the roof with guards or guardrails to prevent the possibility of accidents.
- D. Any damage to the interior conduit or equipment caused by roofing work shall be repaired at no additional cost to the Owner.

1.12 WARRANTY

- A. Manufacturer's Warranty: Upon completion of the work, provide the Manufacturer's written and signed Warranty, warranting that, if a leak develops in the roof during the term of this warranty, due to defective material or workmanship, the manufacturer shall provide the Owner, at the Manufacturer's expense, with the labor and material necessary to return the defective area to a watertight condition, in accordance with the terms of the Manufacturer's warranty, warranty requirements and limitations.
 - 1. Warranty Period: 30 years from date of acceptance (in accordance with manufacturer's applicable warranty).
- B. Installer's Warranty: The Roofing Contractor shall provide a written Installer Warranty guaranteeing that all roofing work has been performed in accordance with the Contract Documents, manufacturer requirements, and industry standards. The Installer Warranty shall cover defects in workmanship and shall be issued on the Contractor's letterhead, signed by an officer of the company authorized to bind the firm.
 - 1. Warranty Period: 24 months after the date of Substantial Completion.
 - 2. Warranty period begins only after:

- a. All punch-list items have been corrected.
- b. The roofing system has received final acceptance by the Owner and Manufacturer.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Manufacturer must meet or exceed the performance metrics, standards, testing, warranty, and quality assurance requirements as specified.
- B. Requests for substitutions will be considered in accordance with provisions of Section 01 60 00.
- C. The Products specified are intended and the Standard of Quality for the products required for this project. If no manufacturer and products are listed, the bid may be accepted only with the use of products specified.
 1. Bidder will not be allowed to change materials after the bid opening date.
 2. If alternate products are included in the bid, the products must be equal to or exceed the products specified. Supporting technical data shall be submitted to the Architect/ Owner for approval prior to acceptance.
 3. In making a request for substitution, the Bidder/Roofing Contractor represents that it has:
 - a. Personally investigated the proposed product or method and determined that it is equal or superior in all respects to that specified.
 - b. Will provide the same guarantee for substitution as for the product and method specified.
 4. Will coordinate installation of accepted substitution in work, making such changes as may be required for work to be completed in all respects.
 5. Will waive all claims for additional cost related to substitution, which consequently become apparent.
 6. Cost data is complete and includes all related cost under his/her contract or other contracts, which may be affected by the substitution.
 7. Will reimburse the Owner for all redesign cost by the Architect for accommodation of the substitution.
- D. Architect/ Owner reserves the right to act as the final authority on the acceptance or rejection of any or all bids, proposed alternate roofing systems or materials that have met ALL specified requirement criteria.

2.2 COLD APPLIED 2-PLY ROOF SYSTEM

- A. Base (Ply) Sheet: 80 mil SBS (Styrene-Butadiene-Styrene) rubber modified roofing base sheet reinforced with a fiberglass scrim. ASTM D 6163, Type I.
 1. Tensile Strength, ASTM D 6163
 - a. 0.08 in/min. @ 0 +/-3.6 deg. F MD 140 lbf/in XD 100 lbf/in
 - b. 2 mm/min. @ -18 +/- -3 deg. C MD 24.5 kN/m XD 17.5 kN/m
 2. Tear Strength, ASTM D 6163

- a. 0.08 in/min. @ 0 +/- 3.6 deg. F MD 130 lbf XD 100 lbf
 - b. 2 mm/min. @ -18 +/- 3 deg. C MD 578 N XD 444 N
 3. Elongation at Maximum Tensile, ASTM D 6163
 - a. 0.08 in/min. @ 0 +/- 3.6 deg. F MD 4 % XD 4 %
 - b. 2 mm/min. @ -18 +/- 3 deg. C MD 4 % XD 4 %
 4. Low Temperature Flexibility, ASTM D 6163, Passes -40 deg. F (-40 deg. C)
- B. Modified Cap (Ply) Sheet: 155 mil SBS (Styrene-Butadiene-Styrene) mineral surfaced, rubber modified roofing membrane reinforced with a fiberglass and polyester composite scrim. ASTM D 6162, Type III Grade G
 1. Tensile Strength, ASTM D 5147
 - a. 2 in/min. @ 73.4 +/- 3.6 deg. F MD 310 lbf/in XD 310 lbf/in
 - b. 50 mm/min. @ 23 +/- 2 deg. C MD 54.25 kN/m XD 54.25 kN/m
 2. Tear Strength, ASTM D 5147
 - a. 2 in/min. @ 73.4 +/- 3.6 deg. F MD 500 lbf XD 500 lbf
 - b. 50 mm/min. @ 23 +/- 2 deg. C MD 2224 N XD 2224 N
 3. Elongation at Maximum Tensile, ASTM D 5147
 - a. 2 in/min. @ 73.4 +/- 3.6 deg. F MD 8% XD 8%
 - b. 50 mm/min. @ 23 +/- 2 deg. C MD 8% XD 8%
 4. Low Temperature Flexibility, ASTM D 5147, Passes -30 deg. F (-34.44 deg. C)
- C. Interply Adhesive: (Field): Rubberized, polymer modified cold process asphalt roofing bitumen V.O.C. compliant ASTM D 3019. Performance Requirements:
 1. Non-Volatile Content ASTM D 4479 78%
 2. Density ASTM D1475 8.9 lbs./gal.
 3. Viscosity Stormer ASTM D562 400-500 grams
 4. Flash Point ASTM D 93 100 deg. F min. (37 deg. C)
- D. Flashing Adhesive: (Vertical Surfaces): Brush grade flashing adhesive.
 1. Non-Volatile Content ASTM D 4479 70% min.
 2. Density ASTM D 1475 8.6 lbs./gal. (1kg/l)
 3. Flash Point ASTM D 93 100 deg. F (37 deg. C)
- E. Flashing Base Ply: 80 mil SBS (Styrene-Butadiene-Styrene) rubber modified roofing base sheet reinforced with a fiberglass scrim. ASTM D 6163, Type I.
 1. Tensile Strength, ASTM D 6163
 - a. 0.08 in/min. @ 0 +/-3.6 deg. F MD 140 lbf/in XD 100 lbf/in
 - b. 2 mm/min. @ -18 +/- -3 deg. C MD 24.5 kN/m XD 17.5 kN/m
 2. Tear Strength, ASTM D 6163
 - a. 0.08 in/min. @ 0 +/- 3.6 deg. F MD 130 lbf XD 100 lbf

- b. 2 mm/min. @ -18 +/- 3 deg. C MD 578 N XD 444 N
 3. Elongation at Maximum Tensile, ASTM D 6163
 - a. 0.08 in/min. @ 0 +/- 3.6 deg. F MD 4 % XD 4 %
 - b. 2 mm/min. @ -18 +/- 3 deg. C MD 4 % XD 4 %
 4. Low Temperature Flexibility, ASTM D 6163, Passes -40 deg. F (-40 deg. C)
 - F. Flashing Cap (Ply) Sheet: 155 mil SBS (Styrene-Butadiene-Styrene) mineral surfaced, rubber modified roofing membrane reinforced with a fiberglass and polyester composite scrim. ASTM D 6162, Type III Grade G
 1. Tensile Strength, ASTM D 5147
 2. 2 in/min. @ 73.4 +/- 3.6 deg. F MD 310 lbf/in XD 310 lbf/in
 3. 50 mm/min. @ 23 +/- 2 deg. C MD 54.25 kN/m XD 54.25 kN/m
 - G. Tear Strength, ASTM D 5147
 1. 2 in/min. @ 73.4 +/- 3.6 deg. F MD 500 lbf XD 500 lbf
 2. 50 mm/min. @ 23 +/- 2 deg. C MD 2224 N XD 2224 N
 - H. Elongation at Maximum Tensile, ASTM D 5147
 1. 2 in/min. @ 73.4 +/- 3.6 deg. F MD 8% XD 8%
 2. 50 mm/min. @ 23 +/- 2 deg. C MD 8% XD 8%
 - I. Low Temperature Flexibility, ASTM D 5147, Passes -30 deg. F (-34.44 deg. C)
- 2.3 ACCESSORIES:
- A. Vapor Barrier: SBS modified, self-adhering membrane with woven polypropylene film and split release film on backside. Install one layer of the self-adhering membrane to a properly prepared, primed (as required), clean and dry substrate in accordance with manufacturer's application instructions. Shingle in direction of slope or roof to shed water on each area of roof.
 1. Tensile Strength, ASTM D5147.
 - a. MD 125 lbf./in (21.89 kN/m).
 - b. XD 90 lbf./in. (15.76 kN/m).
 2. Tear Strength, ASTM D 4073.
 - a. MD 175 lbf. (778 N).
 - b. XD 120 lbf. (534 N).
 3. Thickness, ASTM D5147.
 - a. 45 mils (1.14 mm).
 4. Lap Adhesion, ASTM D1876.
 - a. 20 pli.
 5. Water Permeance, ASTM E 96, Method B.
 - a. 0 perm (ng/Pa.s.m²).

6. Air Permeability, ASTM E 2178.

- a. $< 0.025 \text{ L/s}\cdot\text{m}^2$.

- B. Roofing Membrane Assembly: A roof membrane assembly consisting of two plies of a prefabricated, reinforced, homogeneous Styrene-Butadiene-Styrene (SBS) block copolymer modified asphalt membrane, applied over a prepared substrate. The assembly shall possess waterproofing capability, such that a phased roof application, with only the modified bitumen base ply in place, can be achieved for prolonged periods of time without detriment to the watertight integrity of the entire roof system.

2.4 PERFORMANCE

- A. General Performance: Installed bituminous roofing and base flashings shall withstand specified uplift pressures, thermally induced movement, and exposure to weather without failure due to defective manufacture, fabrication, installation, or other defects in construction. Bituminous roofing and base flashings shall remain watertight.
- B. Material Compatibility: Provide roofing materials that are compatible with one another under conditions of service and application required, as demonstrated by bituminous roofing manufacturer based on testing and field experience.
- C. Metal Flashing Sheet: Metal flashing sheet is specified in Section 07 6200 - Sheet Metal Flashing and Trim.
- D. Ceramic Granules: No. 11 grade specification ceramic granules of color scheme matching the granule surfacing of the finish ply.
- E. Miscellaneous Accessories: Provide primers, mastics, sealants and other miscellaneous accessories recommended by the roofing manufacturer.

2.5 FASTENERS

- A. Standard-duty roofing screws with pre-assembled plates for use to secure base ply.
1. As recommended by manufacturer for application and substrate

2.6 RIGID COVERBOARD AND SUBSTRATE BOARD

- A. Factory-primed, rigid gypsum roofing coverboard.
1. Basis of Design: 1/4-inch Georgia-Pacific Dens-Deck Prime
- a. Or approved equal.

2.7 RIGID INSULATION

- A. Flat and tapered Polyisocyanurate Insulation: Rigid polyisocyanurate tapered insulation with glass mat facer meeting the definition of ASTM C1289, Type II, Class 1, Grade 2.
1. Provide two layers of 2.6-inch thick insulation boards with staggered joints for an overall thickness of not less than 5.25 inches, achieving a thermal resistance of R30.

2.8 INSULATION CANT STRIP

- A. High density, mineral wool, bitumen coated cant strips.

2.9 BOARD ADHESIVE

- A. Two-component, polyurethane foam insulation adhesive, applied in ribbons from cartridges or two-component bulk packaging with pump-driven delivery system.
 - 1. Ribbon size: 1/2 in to 3/4 in wide.
 - 2. Ribbon spacing: As required to meet specified wind uplift resistance performance
- B. Basis of Design: OlyBond 500 r approved equal.

2.10 EXPANSION JOINT COVER

- A. Monolithic expansion joint made of EPDM base synthetic rubber consisting of two flanges coated on the surface and underface with a woven oxidized and stabilized polyacrolonitrile with an expandable core.
- B. Include the joint cover in the membrane manufacturer's specified single source warranty

2.11 DRAINS

- A. Retrofit drain with cast iron bowl, stainless steel screws, and circular clamping ring. Drain shall have a stainless steel flange and removable dome strainer. Provide manufacturer's tandem option at conditions where main and overflow are side-by-side.
 - 1. JR Smith Tandem Drain with flanges

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Applicator shall verify that the work done under related sections meets the following conditions:
 - 1. Roof curbs, nailers, equipment supports, vents and other roof penetrations are properly secured and prepared to receive new roofing materials.
 - 2. Surfaces are smooth and free of dirt, debris and incompatible materials.
 - 3. Proceed with installation only after unsatisfactory conditions have been corrected. Commencement of roofing system installation signifies that the applicator has deemed the substrate suitable to receive a warrantable installation.

3.2 REPLACEMENT OF DAMAGED SHEATHING

- A. Where existing sheathing associated with the low slope roof deck is found to be damaged, replace on an allowance at the direction of the consultant.

3.3 PREPARATION

- A. Clean substrate of dust, debris, moisture, and other substances detrimental to roofing installation according to roofing system manufacturer's most current requirements. Remove sharp projections.

- B. Prevent materials from entering and clogging roof drains and flashings and from spilling or migrating onto surfaces of other construction. Remove roof drain plugs when no work is taking place or when rain is forecast.

3.4 AIR/VAPOR BARRIER MEMBRANE

- A. Prime existing wood deck with manufacturer's primer.
- B. Roll out the membrane and firmly engage to the underlying substrate for installation free of ripples, bubbles, or fishmouths.
- C. Seal edges of the membrane at upstands and penetrations to provide an air-tight installation across the entire plane of the structural roof deck.
- D. Only install a membrane in areas that can be completely covered by the entire roofing assembly in the same day's operations.

3.5 RIGID INSULATION

- A. Ensure the surface of the air/vapor barrier membrane is clean, dry, and free of damage.
- B. Installation involves the placement of two separate layers of 2.6-inch-thick panels.
 - 1. Insulation boards may be temporarily set into foaming adhesive prior to installation of the mechanically-fastened coverboard.
- C. Cut insulation tight to penetrations and upstands.
- D. Only install insulation to areas that can be completely covered by the entire roofing assembly in the same day's operations.
- E. Protect from damage until subsequent layers of the assembly are installed.

3.6 RIGID COVERBOARD

- A. Lay coverboard tight to upper layer of insulation.
- B. Fasten coverboard with screws to engage with the wood deck a minimum of 1/2-inch beyond the underside of the plywood.
- C. Wind Uplift Resistance: Fasten in strict conformance with the submitted fastener patterns in field, perimeter, and corner conditions.
- D. Only install coverboard to areas that can be completely covered by the entire roofing assembly in the same day's operations.

3.7 SYSTEM INSTALLATION

- A. Tapered Insulation (at areas confirmed to require additional slope) and Coverboard: Install tapered insulation board with long joints in continuous straight lines, set into a continuous bed of ribbon adhesive at intervals per the manufacturer. Tightly butt boards together.
- B. Roofing Installation, General:
 - 1. Install roofing membrane according to roofing manufacturer's written instructions, details, and the project documents.

2. Commencement of roofing system installation signifies that the contractor has deemed the substrate and environmental conditions suitable for a warrantable roofing installation per the manufacturer.
 3. Coordinate installation of roofing so components of bituminous roofing subjected to precipitation or left uncovered at the end of the workday or when rain is forecast.
 - a. Provide tie-offs at end of each day's work to cover exposed bituminous roofing sheets with a course of coated felt set in roofing cement with joints and edges sealed.
 - b. Complete terminations and base flashings and provide temporary seals to prevent water from entering completed sections of roofing.
 - c. Remove and discard temporary seals before beginning work on adjoining roofing.
 4. Substrate-Joint Penetrations: Prevent roofing asphalt and adhesives from penetrating substrate joints, entering the building, or damaging bituminous roofing components or adjacent building construction.
 5. Aesthetic Considerations: Construction of an aesthetically pleasing overall appearance of the finished roof application is a standard requirement for this project. Make necessary preparations, utilize recommended application techniques, apply the specified materials including granules, and exercise care in ensuring that the finished application is acceptable to the Owner.
 6. Water Cut-Off: At the end of day's work, or when precipitation is imminent, construct a water cut-off at all open edges. Cut-offs can be built using asphalt or plastic cement and roofing felts, constructed to withstand protracted periods of service. Cut-offs must be completely removed prior to the resumption of roofing.
- C. SBS Field Base Sheet Membrane Installation:
1. Before installation, unroll membrane onto the roof surface and allow to relax.
 2. Apply free of wrinkles, creases or fishmouths. Exert sufficient pressure on the roll during application to ensure prevention of air pockets.
 3. Apply layers of roofing perpendicular to the slope of the deck.
 4. Install sheets starting at the low point of the roofing. Align ply sheets without stretching. Shingle side laps of ply sheets uniformly to achieve required number of plies throughout thickness of roofing membrane. Shingle in direction to shed water.
 - a. Embed each ply sheet in a solid mopping of cold fluid-applied adhesive applied at the rate required by roofing manufacturer, to form a uniform membrane without ply sheets touching.

5. Fully bond the base ply to the prepared substrate, utilizing a minimum 3-inch side and end laps. Apply each sheet directly behind cold adhesive applicator. Cut a dog ear angle at the end laps on overlapping selvage edges.
 - a. Using a clean trowel, apply top pressure to top seal T-laps immediately following sheet application. Stagger end laps a minimum of 3 feet.
 6. Adhere laps, ensuring a minimum of 1/4-inch bleed-out.
 7. Cut a 45-degree “dog ear” relief at selvage edge of T-joints.
 8. With a hot air welder, heat weld side and end laps of the modified bitumen plies during each day’s application in areas where standing water accumulates.
- D. SBS Base Flashing Ply:
1. Install base flashing over sloping and vertical surfaces, at roof edges, and at penetrations through roof, and secure to substrates according to bituminous roofing manufacturer's written instructions and as follows:
 - a. Prime substrates with asphalt primer as required by the bituminous roofing manufacturer.
 - b. Flashing Sheet Application: Adhere flashing sheet to substrate in the cold-applied adhesive at rate required by roofing manufacturer.
 2. Extend base flashing up walls or parapets a minimum of 8 inches (200 mm) above bituminous roofing and 4 inches (100 mm) onto the field of bituminous roofing.
 3. Mechanically fasten the top of base flashing securely at terminations and perimeter of roofing.
- E. SBS Field Cap Sheet Installation:
1. Install lapped granulated cap sheet starting at the low point of the roofing. Offset laps from laps of preceding ply sheets and align cap sheet without stretching. Lap in direction to shed water. Extend cap sheet over and terminate beyond cants.
 - a. Embed cap sheet in a solid mopping of fluid applied adhesive applied at the rate required by bituminous roofing manufacturer.
 2. With a hot air welder, heat weld side and end laps of the modified bitumen cap ply. Do not seal lap seams in the cap sheet with cold adhesive only.
 3. Fully bond the finish ply to the base ply, utilizing minimum 3-inch side and end laps. Stagger end laps of the finish ply a minimum 3 feet. Cut a dog ear angle at the end laps on overlapping selvage edges.
 - a. Using a clean trowel, apply top pressure to top seal T-laps immediately following sheet application.
 4. Stagger side laps of the finish ply a minimum 12 inches from side laps in the underlying base ply.

5. Stagger end laps of the finish ply a minimum 3 feet from end laps in the underlying base ply.

F. SBS Cap Flashing Ply:

1. Install cap flashing over previously installed SBS base sheet to substrates according to bituminous roofing manufacturer's written instructions and as follows:
 - a. Prime substrates with asphalt primer as required by the bituminous roofing manufacturer.
 - b. Flashing Sheet Application: Adhere flashing sheet to substrate in the cold-applied adhesive at rate required by roofing manufacturer.
2. With a hot air welder, heat weld side and end laps of the modified bitumen cap ply. Do not seal lap seams in the cap sheet with cold adhesive only.
3. Extend base flashing up walls or parapets a minimum of 8 inches (200 mm) above bituminous roofing and 4 inches (100 mm) onto the field of bituminous roofing.
4. Mechanically fasten the top of base flashing securely at terminations and perimeter of roofing.

3.8 PROTECTION AND CLEANING

- A. Protect bituminous roofing from damage and wear during the remainder of construction period. When remaining construction will not affect or endanger roofing, inspect roofing for deterioration and damage, describing its nature and extent in a written report, with copies to Architect and Owner.
- B. Correct deficiencies in or remove bituminous roofing that does not comply with requirements, repair substrates, and repair or reinstall roofing to a condition free of damage and deterioration at time of Substantial Completion and according to warranty requirements.

3.9 FIELD QUALITY CONTROL

- A. Site Condition: Leave areas around job site free of debris, roofing materials, equipment, and related items after completion of job.
- B. Final Inspection/Post-Installation Meeting: Hold a meeting at the completion of the project, attended by all parties that were present at the pre-job conference. A punch list of items required for completion shall be compiled by the Contractor and the manufacturer's representative. Complete, sign, and mail the punch list form to the manufacturer's headquarters.

END OF SECTION 07 5216

SECTION 07 5400 - THERMOPLASTIC MEMBRANE ROOFING - ALTERNATE 2 - ADHERED

PART 1 - GENERAL

1.1 SECTION INCLUDES

- A. Scope is provided as an alternate for pricing in lieu of Section 07 5216 - SBS Modified-Bitumen Roofing.
- B. Remove and dispose of the existing built-up roofing system at the locations depicted on the drawings. Removal includes aggregate surfacing, membrane, and insulation to completely expose the existing structural roof deck and associated sheathing at the interior plane of the parapets and curbs.
 - 1. Remove and dispose of existing sheet metal copings.
 - 2. Temporarily remove and retain existing skylights for reinstallation.
 - 3. Salvage for reinstallation existing HVAC shrouds, photovoltaic panels, and electrical service conduits.
 - 4. Replace existing wood sheathing found to be damaged in like-kind per consultant on Allowance.
- C. Furnish and install a conventionally-insulated, roofing system at the locations depicted on the drawings. Assembly consists of single-ply, fleece-backed membrane over coverboard, insulation, and self-adhered air/vapor barrier membrane. Membrane shall slope a minimum of 1/4:12 to drain. Roof assembly layers are to be fully adhered except at metal roof deck conditions, only the substrate board layer are to be mechanically attached.
- D. Work shall include new framing members as shown on the details to elevate the height of curbs, supports, and perimeter parapets and edge conditions to compensate for the height of the new insulation above the structural roof deck.
- E. Provide new sheet metal scuppers and retrofit roof drains as part of the base bid. Contractor shall coordinate all necessary permits and sub-contractors required to conduct the work.

1.2 RELATED SECTIONS

- A. Section 06 0100 - Rough Carpentry, Carpentry Rehabilitation
- B. Section 07 6200 - Sheet Metal Flashing and Trim

1.3 REFERENCES

- A. ASTM International:
 - 1. ASTM D4434 - Standard Specification for Polyvinyl Chloride Sheet Roofing
 - 2. ASTM D6878 - Standard Specification for Liquid-Applied Acrylic Coating Used in Roofing.
 - 3. ASTM D6754 - Standard Specification for Ketone Ethylene Ester Based Sheet Roofing.

- B. National Roofing Contractors AssociationL
 - 1. NRCA (RM) - The NRCA Roofing Manual.

- C. Underwriters Laboratories:
 - 1. UL (RMSD) - Roofing Materials and Systems Directory.
 - 2. UL (FRD) - Fire Resistance Directory.

1.4 SUBMITTALS

- A. Action Submittals:
 - 1. Product Data: For each type of product indicated.
 - 2. Shop Drawings: For membrane roofing. Include plans, elevations, sections, details, and attachments to other work.
 - a. Base flashings and terminations.
 - b. Tapered insulation, including slopes.
 - c. Crickets, saddles, and tapered edge strips, including slopes.
 - d. Insulation fastening patterns for the corner, perimeter, and field-of-roof locations.
- B. Information Submittals:
 - 1. Qualification Data: For qualified Installer and manufacturer.
 - a. Installer Certificates: Signed by roofing system manufacturer certifying that Installer is approved, authorized, or licensed by the manufacturer to install specified roofing system and is eligible to receive standard roofing manufacturer's warranty.
 - b. Include lists of completed projects with project names and addresses, names and addresses of architects and owners, and other information specified.
 - 2. Certified Installer: Submit a letter on roof membrane manufacturer's corporate letterhead signifying that the installer is an approved applicator capable of providing a warrantable installation.
 - 3. Manufacturer's Field Reports: Indicate procedures followed, ambient temperatures, humidity, wind velocity during the application, and supplementary instructions are given.
 - a. The manufacturer must submit a field report after each visit to site.
 - 4. Product Test Reports: Based on evaluation of comprehensive tests performed by the manufacturer and witnessed by a qualified testing agency, for components of bituminous roofing.
 - 5. Maintenance Data: maintenance manuals for roofing system specified.

6. Notice of Intent to Warrant Letter: Submit a letter on roof membrane manufacturer's corporate letterhead identifying the roof assembly layers submitted for the project will qualify for the specified system warranty.
7. Warranty: Sample copy of standard roofing manufacturer's warranty stating obligations, remedies, limitations, and exclusions of warranty.

C. Closeout Submittals:

1. Maintenance Data: Include operations and maintenance information for the submitted roofing system to Owner.

1.5 QUALITY ASSURANCE

A. Manufacturer Qualifications:

1. Demonstrated performance history of producing SBS roof membranes no less, in the duration of years, than the warranty duration specified.
2. Manufactured by membrane supplier and not private-labeled.

Minimum of five years' experience recycling membranes at the end of their service life back into new membrane products. Provide a minimum of five reference projects.

B. Installer Qualifications:

1. A qualified firm that is authorized by the manufacturer to furnish and install materials and components pertaining to the product manufacturer's roof system and that is eligible to receive a manufacturer's warranty.

C. Preinstallation Roofing Conference: Conduct conference at the project site. Attendees shall include the following:

1. Manufacturers technical representative
2. Designer of record
3. Roofing installer

D. Review methods and procedures related to roofing installation, including the manufacturer's most current requirements.

E. Review base flashings, special roofing details and transitions, roof drainage, roof penetrations, equipment curbs, and condition of other construction that affects the roofing system.

F. Review governing regulations and requirements for insurance and certificates.

G. Review temporary protection requirements for roofing system during and after installation.

H. Deviations from the project specifications or the approved shop drawings are not permitted without prior written approval by the consultant, manufacturer, and owner.

I. Perform work in accordance with the manufacturer's published installation instructions, project documents, and other such pertinent information.

- J. Furnish products by or approved by the manufacturer for entirety of installed roofing system.
- K. Installer Qualifications: A qualified firm that is approved, authorized or licensed by bituminous roofing manufacturer to install manufacturer's product and that is eligible to receive manufacturer's special warranty.
- L. Source Limitations: Obtain components, including fasteners and sealants from a single source.

1.6 PRECONSTRUCTION MEETING

- A. Conduct meeting at the project site, with Consultant, general contractor, manufacturer's representative, and installer present.
- B. Review methods and procedures related to roofing installation, including manufacturer's written instructions.
- C. Review and finalize construction schedule and verify availability of materials, Installer's personnel, equipment, and facilities needed to make progress and avoid delays.
- D. Examine deck substrate conditions and finishes for compliance with requirements, including flatness and fastening.
- E. Review base flashings, special roofing details, roof drainage, roof penetrations, equipment curbs, and condition of other construction that will affect roofing.
- F. Review governing regulations and requirements for insurance and certificates if applicable.
- G. Review temporary protection requirements for roofing during and after installation.
- H. Review roof observation and repair procedures after roofing installation.
- I. Manufacturer Technical Representative Field Review
 - 1. Manufacturer's technical representative to review product installation a minimum of three times during installation at each structure, not three times total for all three.
 - 2. The technical representative shall issue a report to Consultant and general contractor for each review.
 - 3. Contractor to permit and facilitate access to site and roof, at all times, by above-mentioned manufacturer's representative.

1.7 PERFORMANCE REQUIREMENTS

- A. Fire: Underwriters Laboratories, Inc., Class A
- B. Wind Design: System shall meet minimum requirements in accordance with ASCE 7 per code jurisdiction.
 - 1. Roofing manufacturer shall showcase intended fastening and adhesive ribbon patterns for field, perimeter, and corner conditions of the coverboard and insulation.
 - 2. Edge securement of roofing terminations and edge metal, ANSI-SPRI ES-1

3. Design Pressures:
 - a. Central Field of Roof (Zone 1'): -21.34 psf
 - b. Field of Roof Zone (Zone 1): -37.15 psf
 - c. Roof Perimeter (Zone 2): -50.98 psf
 - d. Roof Corners (Zone 3): -66.79 psf

1.8 MOCKUPS

- A. Contractor shall provide a mockup of system components for review. Consultant shall approve mockups in successive order prior to initiation of next phase. Purpose of mock-up is to review and confirm transitions, details, interfacing sequence, and substrate preparation:
 1. Substrate Board (over steel pan deck), Mechanically-Fastened
 2. Air/Vapor Barrier Membrane, Adhered
 3. Insulation and Coverboard, Adhered
 4. Thermoplastic Membrane Base Field and Flashing Plies, Adhered
 5. Penetration flashing details
 6. Membrane termination and counterflashings.

1.9 ENVIRONMENTAL CONDITIONS

- A. Weather Limitations: Proceed with installation only when existing and forecasted weather conditions permit the roofing system to be installed according to the manufacturer's most current requirements and warranty requirements.
- B. Material Compatibility: Roofing materials shall be compatible with one another and adjacent materials under conditions of service and application required and confirmed by the roofing manufacturer.
- C. Coordinate Work with the installation of associated flashings and counter-flashings installed by other sections as work of this section proceeds.
- D. Weather Limitations: Proceed with installation only when existing and forecasted weather conditions permit roofing to be installed according to manufacturer's written instructions and warranty requirements.
- E. Provide tarps or plastic sheeting to adequately protect opened roofs and flashings and to prevent entrance of moisture or rainwater into structure until new materials have been applied and roof is in a watertight condition.
- F. Do not start the installation of any more roof surface at one time than can be adequately covered and protected in event of sudden unexpected rainfall.
- G. Provide waterproof canvas or plastic sheeting handy in case of emergency.
- H. If water penetrates through the assembly due to inadequate protection, Contractor to cut and inspect damages, remove, replace and re-install all materials at own cost, to eliminate all traces of water in the assembly.

1.10 DELIVERY, STORAGE, AND HANDLING

- A. Deliver roofing materials to Project site in original containers with seals unbroken and labeled with manufacturer's name, product brand name and type, date of manufacture, approval or listing agency markings, and directions for storing and mixing with other components.
 - 1. Store roofing materials in a dry, well-ventilated, weather-tight location to ensure no significant moisture pickup and maintain at a temperature consistent with roofing system manufacturer's written instructions.
 - 2. Store underlayment rolls and other sheet materials on end on pallets or other raised surfaces.
 - 3. Do not double-stack rolls.
- B. Store liquid materials in their original undamaged containers in a clean, dry, protected location and within the temperature range required by the roofing manufacturer. Protect stored liquid material from direct sunlight.
 - 1. Discard and legally dispose of liquid material that cannot be applied within its stated shelf life.
- C. Handle and store roofing materials and place equipment in a manner to avoid permanent deflection of the deck.
- D. Keep all flammable materials away from open flames or other possible igniting conditions.
- E. Do not leave materials on the roof overnight or when roofing work is not in progress unless protected from weather and moisture and unless maintained at a temperature exceeding 50 deg. F.

1.11 WARRANTY

- A. The manufacturer shall provide to owner 20-year, NDL (No Dollar Limit) or "water-tight warranty" guaranteeing installation of roofing system, including accessories, will resist water ingress into interior locations of building structure. In the event of water ingress, manufacturer shall remove and replace damaged materials, including that of the roofing system, without monetary limitation.
 - 1. Manufacturer's Warranty Period: 20 years from the date of Substantial Completion.
 - 2. Installer's Warranty Period: 2 years from the date of Substantial Completion

PART 2 - PRODUCTS

2.1 MATERIALS

- A. Roofing materials recommended by roofing system manufacturer for the intended use and compatible with components of existing membrane roofing system.

2.2 THERMOPLASTIC MEMBRANE

- A. Provide new fully adhered single-ply polyvinyl chloride (PVC) thermoplastic membrane roofing:
 - 1. Basis of Design: 60-mil fleece-back PVC
 - a. Nominal thickness (ASTM D751): 60 mil (0.060 in.).
 - b. Felt weight: 9 oz/yd².
 - c. Breaking strength (Grab method, ASTM D751): 440 lbf (MD); 390 lbf. (CD)
 - d. Elongation at break (ASTM D 751): 250% (MD); 220% (CD)
 - e. Tear strength (ASTM D 1004): 17.5 lbf (MD); 10 lbf (CD)
 - f. Accelerated weathering (ASTM G 154, min. 5000h): Pass
 - g. Color: As selected by Owner.
 - h. Sika Sarnafil G410-60 Fleece Back
 - 1) Or approved equal.

2.3 RELATED PRODUCTS

- A. Roof Air and Vapor Barrier Membrane: A self-adhered air and vapor barrier membrane and temporary roof deck cover.
 - 1. Sika Vapor Retarder SA 31
 - 2. Or Approved equal.
 - 3. Furnish manufacturer recommended low VOC substrate primer.
- B. Primed, Roofing Gypsum Coverboard and Substrateboard: A fiberglass mat faced gypsum roof board for application directly under thermoplastic roof membrane, 1/4 in. thick
 - 1. DensDeck Prime Roof Boards - GP Gypsum
 - 2. Or approved equal.
- C. Membrane Adhesive: A low VOC, synthetic polymer based, quick high-tack bonding adhesive.
 - 1. Sika Sarnacol AD Felt Back Adhesive
 - 2. Or approved equal.
- D. Insulation: Flat and tapered polyisocyanurate insulation. Provide thicknesses necessary to achieve continuous R-30 over the roof deck and slope to drains.
 - 1. Sika Sarnatherm ISO
 - 2. Or approved equal.
- E. Board Adhesive: A low VOC, two-component foamable polyurethane adhesive.
 - 1. Sika Sarnacol OM Board Adhesive

2. Or approved equal.
- F. Plates and Fasteners: Heavy gauge alloy steel fastener with corrosion resistant coating to secure field sheets against base of vertical construction.
 1. As recommended by manufacturer.
- G. Thermoplastic Membrane Accessories: Furnish cleaners, sealants, termination bar, fasteners, accessory materials, and flashing membranes as required by the manufacturer to complete a watertight, fully warrantable system. This includes, but is not limited to:
 1. Detailing Membrane
 2. Inside Corner Membrane
 3. Wall and Curb Flashing Membrane
 4. Split Pipe Boots
 5. Tube Wrap - round and square
 6. T-Joint Patch
 7. Cut Edge Sealant
 8. Roofing Sealant
 9. Membrane Cleaner
 10. Walkway Rolls
 11. Termination Bars
- H. Coated Sheet Metal:
 1. Form through-parapet scuppers as indicated on the drawings.
 2. Basis of Design: Sika Sarnaclad.
 3. Exterior escutcheon: Utilize sheet metal flashing profile as indicated on the drawings. See Section 07 6200 for material.
- I. Mushroom Vents:
 1. Supply passive mushroom vents to meet ventilation requirements of the attic space beneath the new roof membrane cover.
 2. Supply mushroom vent product compatible and acceptable to the roof membrane systems manufacturer for integration as a heat-weldable element or can be flashed utilizing liquid-applied flashing membrane.
- J. Liquid-Applied Flashing Membrane: Fleece-reinforced polymethyl methacrylate (PMMA) catalyzed resin flashing for use as indicated on the drawings.
 1. Basis of Design: Sika Liquid Flashing PMMA.
 2. Provide manufacturer's recommended primer, reinforcing fleece, catalyst and substrate cleaner to complete installation.

- K. Pressure Treated Wood: Fire retardant treated (FRT) dimensional lumber for use as roof perimeter nailers, parapet coping support, and miscellaneous blocking applications as denoted in the drawings.
 - 1. Fasteners: Hot-dipped galvanized according to ASTM A153/A153M.
- L. FALL SAFETY ANCHORS
 - 1. Stanchion style, hot dipped galvanized fall safety anchors meeting OSHA 1926.501 anchored to the roof structure.
 - 2. Basis of Design: Guardian Fall Protection Model # 00645
 - 3. Secure with hot dipped galvanized or stainless steel connectors specified by the fall safety anchor manufacturer
 - 4. Coordinate with manufacturer to provide inspection tags on permanent rings. Do not apply inspection stickers to shaft of anchor so as to not conflict with penetration flashing.

PART 3 - EXECUTION

3.1 PREPARATION

- A. Remove all existing roofing down to the roof deck.
- B. Verify that the deck is dry, sound, clean and smooth. It shall be free of any depressions, waves, and projections.
- C. Cover with sheet metal, all substrate imperfections over 1 inch (25mm) in diameter, cracks over 1/2 inch (12mm) in width, loose knots and excessively resinous areas.
- D. Clean deck surfaces thoroughly prior to installation.

3.2 EXAMINATION

- A. Examine existing roof penetrations to remain; such as conduits, mechanical equipment, ducts, curbs, and notify Building Enclosure Consultant of conditions which will prohibit execution of the Work.
- B. Examine existing structural steel decking, prepare for installation of new roofing materials and notify Building Enclosure Consultant of conditions which will prohibit execution of the Work.

3.3 SUBSTRATE PREPARATION

- A. Clear the substrate of debris and foreign material.
- B. Thoroughly dry the substrate. Expel any instances of moisture.

3.4 PREPARATION - WOOD DECKS

- A. Where existing sheathing associated with the low slope roof deck is found to be damaged, replace on an allowance at the direction of the consultant. Replace members in like kind.
- B. Clean surfaces and maintain dry conditions over the prepared wood deck in preparation for roof air and vapor barrier membrane installation.

3.5 AIR/VAPOR BARRIER MEMBRANE

- A. Prime existing wood deck with manufacturer's primer.
- B. Roll out the membrane and firmly engage to the underlying substrate for installation free of ripples, bubbles, or fishmouths.
- C. Seal edges of the membrane at upstands and penetrations to provide an air-tight installation across the entire plane of the structural roof deck.
- D. Only install a membrane to areas that can be completely covered by the entire roofing assembly in the same day's operations.

3.6 RIGID INSULATION

- A. Ensure the surface of the air/vapor barrier membrane is clean, dry, and free of damage.
- B. Installation involves the placement of layers of polyisocyanurate insulation panels to meet continuous R-30 coverage over the roof deck.
 - 1. Set the underside of the first insulation board into low-rise foam adhesive over the upper surface of the bonded air/vapor barrier. Ribbons shall be set at 6-in. on-center or as specified by the roof systems manufacturer to meet wind uplift requirements.
 - 2. Set the upper insulation board over the lower insulation board into low-rise foam adhesive ribbons, 6-in. on-center or as specified by the roof systems manufacturer to meet wind uplift requirements.
 - a. Stagger joints in the insulation assembly (two boards) a minimum of 12 inches.
 - b. Maintain tightly abutting insulation board joints.
 - c. Fill board joints in excess of 1/8-inch with additional wedges of insulation or low-rise foam.
- C. Cut insulation tight to penetrations and upstands. Fill voids with additional wedges of insulation or low-rise foam.
- D. Contractor shall use weights at the corners and center of each board prior to set-up of adhesive ribbons.
- E. Only install insulation to areas that can be completely covered by the entire roofing assembly in the same day's operations.
- F. Protect from damage until subsequent layers of the assembly are installed.

3.7 RIGID COVERBOARD

- A. Lay coverboard tight to upper layer of insulation.
 - 1. Set the coverboard over the upper insulation board into low-rise foam adhesive ribbons, 6-in. on-center.
 - 2. Maintain tightly abutting insulation board joints.

3. Fill board joints in excess of 1/8-inch with additional wedges of coverboard or low-rise foam
- B. Only install coverboard to areas that can be completely covered by the entire roofing assembly in the same day's operations.
- C. Contractor shall use weights at the corners and center of each board prior to set-up of adhesive ribbons.

3.8 SYSTEM INSTALLATION

- A. Tapered Insulation (at areas confirmed to require additional slope) and Coverboard: Install tapered insulation board with long joints in continuous straight lines, set into a continuous bed of ribbon adhesive at intervals per the manufacturer. Tightly butt boards together.
- B. Roofing Installation, General:
 1. Install roofing membrane according to roofing manufacturer's written instructions, details, and the project documents.
 2. Commencement of roofing system installation signifies that the contractor has deemed the substrate and environmental conditions suitable for a warrantable roofing installation per the manufacturer.
 3. Coordinate installation of roofing so components of bituminous roofing subjected to precipitation or left uncovered at the end of the workday or when rain is forecast.
 - a. Provide tie-offs at end of each day's work to cover exposed bituminous roofing sheets with a course of coated felt set in roofing cement with joints and edges sealed.
 - b. Complete terminations and base flashings and provide temporary seals to prevent water from entering completed sections of roofing.
 - c. Remove and discard temporary seals before beginning work on adjoining roofing.
 4. Substrate-Joint Penetrations: Prevent roofing asphalt and adhesives from penetrating substrate joints, entering the building, or damaging bituminous roofing components or adjacent building construction.
 5. Aesthetic Considerations: Construction of an aesthetically pleasing overall appearance of the finished roof application is a standard requirement for this project. Make necessary preparations, utilize recommended application techniques, apply the specified materials including granules, and exercise care in ensuring that the finished application is acceptable to the Owner.
 6. Water Cut-Off: At the end of day's work, or when precipitation is imminent, construct a water cut-off at all open edges. Cut-offs can be built using asphalt or plastic cement and roofing felts, constructed to withstand protracted periods of service. Cut-offs must be completely removed prior to the resumption of roofing.

C. Thermoplastic Membrane Roofing:

1. Position the thermoplastic membrane where it is ready to be installed and then roll the membrane into the specified foam adhesive. Ensure that adhesive is not applied to any side laps or areas where the membrane is to be welded.
2. Broom in the thermoplastic flashing membrane immediately after install to ensure even continuous contact between the fleece backing and the adhesive immediately followed by a weighted roller to ensure contact with the adhesive and push out any air pockets.
3. When installing, start at the low point of the roof with an appropriate roll width to offset side laps from the underlying modified base sheet a minimum of eighteen (18) inches. Work with manageable lengths for proper handling. Position the thermoplastic membrane with the salvage edge at low side of the roof. Install in shingle fashion, with no laps against the flow of water. Once the membrane has had a chance to bond, utilize a seam probe to check all of the laps and joints for full adhesion. Any areas not properly bonded require welding, or, if necessary, the application of a utility patch to seal any un-bonded areas that exist.
4. All field seams must be clean and dry prior to initiating any field welding. Remove foreign materials from the seams (dirt, oils, etc.) with acetone or authorized alternative. Use clean lint free cloths and allow approximately five minutes for solvents to dissipate before initiating the automatic welder. Do not use denim or synthetic rags for cleaning. Contaminated areas within a membrane seam will inhibit proper welding and will require a membrane patch or strip.
5. All welding shall be performed only by qualified personnel to ensure the quality and continuity of the weld. The lap or seam area of the membrane may be intermittently tack welded to hold the membrane in place. Heat weld all seams with a Leister Variant or approved heat welding machine. All seams exceeding 10 feet in length shall be welded with an approved automatic welder. The back interior edge of the membrane shall be welded first, with a thin, continuous weld to concentrate heat along the exterior edge of the lap during the final welding pass. Hand weld T joints, inside corner pieces and outside corner pieces along with hard to reach areas. Membrane without selvedge edge are to be butted together and sealed with a heat welded utility roll. Refer to Leister equipment manual for proper heat welding instructions.
6. Hand weld T joints, inside corner pieces and outside corner pieces along with hard to reach areas. Membrane without selvedge edge are to be butted together and sealed with a heat welded utility roll. Refer to Leister equipment manual for proper heat welding instructions. Refer to local code requirements for electric supply, grounding and surge protection. The use of a dedicated, portable generator is highly recommended to ensure a consistent electrical supply, without fluctuations that can interfere with weld consistency. Properly welded seams shall utilize a 1.5 inch wide nozzle, to create a homogeneous weld, a minimum of 1.5 inches in width.
7. Aesthetics will be a punch list item. The roof must match the owner's standards for appearance.

8. Install thermoplastic flashing ply to all perimeter and projection details in the specified flashing adhesive. Install the adhesive per specification and heat weld seams in the same manner.

D. Membrane Welding:

1. Set welder to temperature specified by the manufacturer for the ambient temperature conditions at the time of welding.
2. Calibrate welder with a test coupon. Retain test coupons with date and time of test. Submit to Consultant and Owner when requested. Failure to produce a test coupon will result in construction stoppage with costs borne by the contractor.
3. Clean the membrane lap zone with the recommended membrane cleaner using a dry, clean rag. Discard rags upon use. Reuse of used rags are not allowed.
4. Weld horizontal seams first whenever possible. When utilizing an automatic welder, follow device manufacturer's instructions for running the welder.
5. Use hand welders where automatic welders are not possible. This includes detailing work and vertical plane work.

3.9 ROOF FLASHING INSTALLATION

- A. General: Install sheet metal flashing and trim to comply with performance requirements and SMACNA's "Building Enclosure Consultantural Sheet Metal Manual." Provide concealed fasteners where possible, set units true to line, and level as indicated. Install work with laps, joints, and seams that will be permanently watertight and weather resistant.
- B. Coordinate roof accessories, miscellaneous sheet metal accessory items, including piping vents and other devices with the roofing system work as specified in other sections.
- C. Flash all penetrations as specified below and per the project documents. If specific detail is not shown in drawings or specified below, flash detail in accordance with the manufacturer's specifications to comply with the specified warranty.
- D. Exhaust Fan/Passive Vent/Air Intake:
 1. Minimum curb height is eight (8) inches off the finished roof surface. As required, raise existing curbs to the required height. Prime vertical curb surface at a rate of one hundred (100) square feet per gallon and allow to dry.
 2. Set cant in roofing sealant. Run base roofing ply over cant a minimum of two (2) inches.
 3. Install base flashing ply in the specified adhesive covering curb with six (6) inches on to field base ply of the roof.
 4. Install thermoplastic cap field ply run over the base flashing ply in foam adhesive.
 5. Install the thermoplastic flashing ply in adhesive nine (9) inches on to the field of the roof

6. Install passive vent/air intake over the wood nailers and flashing to act as counter-flashing. Fasten per manufactures recommendations.

E. Plumbing/Soil Stack:

1. Minimum stack height is to be twelve (12) inches.
2. Run roof base ply over the entire surface of the roof. Seal the base of the stack with elastomeric sealant.
3. Prime flange of new lead sleeve. Install properly sized lead sleeve set in ¼ inch bed of roof cement.
4. Install base flashing ply in the specified adhesive.
5. Install thermoplastic membrane in the specified flashing adhesive.
6. Caulk the intersection of the membrane with elastomeric sealant.
7. Turn sleeve a minimum of one (1) inch down inside of stack.

F. Heat Stack:

1. Minimum stack height is twelve (12) inches.
2. Run roof system over the base plies of the entire surface of the roof. Seal the base of the stack with elastomeric asphaltic sealant or roof cement.
3. Prime flange of new sleeve. Install properly sized sleeves set in ¼ inch bed of roof cement.
4. Install base flashing ply in the specified flashing adhesive.
5. Install thermoplastic membrane in the specified flashing adhesive.
6. Caulk the intersection of the membrane with roof cement.
7. Install new collar over cape. Weld collar or install stainless steel draw band.

G. Pre-Manufactured Curb for Equipment Support:

1. Secure curb to roof deck. Minimum flashing height of curb shall be eight (8) inches above finished roof. Prime vertical at a rate of one hundred (100) square feet per gallon and allow to dry.
2. Run all base field plies to the top edge of cant strip and seal with asphalt mastic to a watertight condition.
3. Install base flashing ply in the specified adhesive covering pre-manufactured curb with six (6) inches on to field base ply of the roof.
4. Install thermoplastic membrane field ply over the base flashing ply in the specified foam adhesive.
5. Install the thermoplastic flashing ply in the specified flashing adhesive over the base flashing ply, nine (9) inches on to field of the roof.
6. Terminate the flashing system at the top of the curb and fasten with cap nails at eight (8) inches on center. Install a 0.040" aluminum slip flashing under the

equipment support cover and fasten to the curb at eight (8) inches on center with neoprene gasketed screws. The slip flashing shall cover the top of the flashing system three (3) inches minimum.

H. Skylight/Roof Hatch:

1. Minimum curb height is eight (8) inches. Prime vertical at a rate of one hundred (100) square feet per gallon and allow to dry.
2. Set cant in bitumen. Run all field base plies over cant a minimum of three (3) inches.
3. Install base flashing ply covering curb in the specified adhesive with six (6) inches on to field base ply of the roof.
4. Install thermoplastic membrane field ply over the base flashing ply in the specified foam adhesive.
5. Install the thermoplastic flashing ply in the specified flashing adhesive over the base flashing ply, nine (9) inches on to field of the roof.
6. Install pre-manufactured lens and fasten flashing sides at eight (8) inches o.c. with fasteners and neoprene washers.
7. Install 0.040" aluminum counterflashing and fasten at eight (8) inches o.c. with fasteners and neoprene washers.

I. Curb Detail/Air Handling Station:

1. Minimum curb height is eight (8) inches. Prime vertical at a rate of one hundred (100) square feet per gallon and allow to dry.
2. Set cant in bitumen. Run all field base plies to the top edge of cant strip and seal with asphalt mastic to a watertight condition.
3. Install base flashing ply in the specified adhesive covering curb with six (6) inches on to field of the roof.
4. Install thermoplastic membrane field ply over the base flashing ply in the specified foam adhesive.
5. Install the thermoplastic flashing ply in the specified flashing adhesive over the base flashing ply, nine (9) inches on to field of the roof.

J. Surface Mounted Counterflashing:

1. The new surface mounted counter shall be installed to provide a minimum of eight (8) inches of flashing height from the top of roof to the termination bar securing the roof flashing system.
2. Maximum flashing height is twenty-four (24) inches. Prime vertical wall at a rate of one hundred (100) square feet per gallon and allow to dry.
3. Set cant in bitumen. Run all field base plies to the top edge of cant strip and seal with asphalt mastic to a watertight condition.

4. Install base flashing ply in the specified adhesive covering wall with six (6) inches on to field of the roof.
 5. Install thermoplastic membrane field ply over the base flashing ply in the specified foam adhesive.
 6. Install the thermoplastic flashing ply in the specified flashing adhesive over the base flashing ply, nine (9) inches on to field of the roof.
 7. Install the specified termination bar even with the top of the flashing, and secure the termination bar through flashing and into wall every six (6) inches on center. Seal top of termination bar and flashing system with specified elastomeric asphaltic sealant or a three-course application of specified mastic and mesh.
 8. Install the new surface mounted counterflashing on the wall and secure with neoprene gasketed screws at 8" on center. End joints shall be interlocking and overlapping not less than 3". Corners shall be mitered and welded to a watertight condition. The bottom of the cap flashing insert shall project 1/4" from the face of the wall with a down turned drip edge (provide a down turned hem in areas subject to human contact). The new counterflashing shall extend down over the roof flashing system a minimum of four (4) inches below the termination bar.
- K. Roof-Penetration Flashing: Coordinate installation of roof-penetration flashing with the installation of roofing and other items penetrating roof such as scuppers, drains, and utility penetrations.
1. Delineate an 8-inch diameter perimeter surrounding the penetration and clean membrane surface.
 2. Apply catalyzed PMMA primer following manufacture requirements.
 3. Apply catalyzed PMMA base coat and lay up reinforcing fleece. Fleece edges shall be held back no more or less than 1/8 inch from the edge of the coating. Lap fleece a minimum of 2 inches where necessary. Fleece shall be fully saturated with catalyzed coating and worked to eliminate air pockets or blisters.
 4. Apply catalyzed PMMA top coat and let cure.
- L. Fastener Sizes: Use fasteners of sizes that will penetrate back up structure not less than 1-1/4 inches for nails and not less than 3/4 inch for screws.
- M. Seal joints as shown in the drawings and as required for watertight construction.
- 3.10 FIELD QUALITY CONTROL
- A. Roofing Inspector: Owner will engage a qualified roofing inspector to perform roof tests and inspections and to prepare test reports.
 - B. Installer must keep daily records of membrane weld test coupons each time the automatic and hand welders are turned on. Installers must furnish records at the request of the Owner, Building Enclosure Consultant, and Inspector.
 - C. Arrange for additional inspections, at Contractor's expense, to verify compliance of replaced or additional work with specified requirements.

- D. Arrange for periodic roof membrane system manufacturer inspections at Contractor's expense.

3.11 PROTECTING AND CLEANING

- A. Protect roofing system from damage and wear during remainder of construction period.
- B. Correct deficiencies in or remove coating that does not comply with requirements, repair substrates, and reapply coating.
- C. Clean overspray and spillage from adjacent construction using cleaning agents and procedures recommended by manufacturer of affected construction.

END OF SECTION 07 5400

SECTION 07 5400 - THERMOPLASTIC MEMBRANE ROOFING - ALTERNATE 3 - INDUCTION WELDED

PART 1 - GENERAL

1.1 SECTION INCLUDES

- A. Scope is provided as an alternate for pricing in lieu of Section 07 5216 - SBS Modified-Bitumen Roofing.
- B. Remove and dispose of the existing built-up roofing system at the locations depicted on the drawings. Removal includes aggregate surfacing, membrane, and insulation to completely expose the existing structural roof deck and associated sheathing at the interior plane of the parapets and curbs.
 - 1. Remove and dispose of existing sheet metal copings.
 - 2. Temporarily remove and retain existing skylights for reinstallation.
 - 3. Salvage for reinstallation existing HVAC shrouds, photovoltaic panels, and electrical service conduits.
 - 4. Replace existing wood sheathing found to be damaged in like-kind per consultant on Allowance.
- C. Furnish and install a conventionally-insulated, roofing system at the locations depicted on the drawings. Assembly consists of single-ply membrane over coverboard, insulation, and self-adhered air/vapor barrier membrane. Membrane shall slope a minimum of 1/4:12 to drain. Roof assembly layers are to mechanically attached utilizing the induction welding plates and fasteners.
- D. Work shall include new framing members as shown on the details to elevate the height of curbs, supports, and perimeter parapets and edge conditions to compensate for the height of the new insulation above the structural roof deck.
- E. Provide new sheet metal scuppers and retrofit roof drains as part of the base bid. Contractor shall coordinate all necessary permits and sub-contractors required to conduct the work.

1.2 RELATED SECTIONS

- A. Section 06 0100 - Rough Carpentry, Carpentry Rehabilitation
- B. Section 07 6200 - Sheet Metal Flashing and Trim

1.3 REFERENCES

- A. ASTM International:
 - 1. ASTM D4434 - Standard Specification for Polyvinyl Chloride Sheet Roofing
 - 2. ASTM D6878 - Standard Specification for Liquid-Applied Acrylic Coating Used in Roofing.
 - 3. ASTM D6754 - Standard Specification for Ketone Ethylene Ester Based Sheet Roofing.

B. National Roofing Contractors Association:

1. NRCA (RM) - The NRCA Roofing Manual.

C. Underwriters Laboratories:

1. UL (RMSD) - Roofing Materials and Systems Directory.
2. UL (FRD) - Fire Resistance Directory.

1.4 SUBMITTALS

A. Action Submittals:

1. Product Data: For each type of product indicated.
2. Shop Drawings: For membrane roofing. Include plans, elevations, sections, details, and attachments to other work.
 - a. Base flashings and terminations.
 - b. Tapered insulation, including slopes.
 - c. Crickets, saddles, and tapered edge strips, including slopes.
 - d. Insulation fastening patterns for the corner, perimeter, and field-of-roof locations.

B. Information Submittals:

1. Qualification Data: For qualified Installer and manufacturer.
 - a. Installer Certificates: Signed by roofing system manufacturer certifying that Installer is approved, authorized, or licensed by the manufacturer to install specified roofing system and is eligible to receive standard roofing manufacturer's warranty.
 - b. Include lists of completed projects with project names and addresses, names and addresses of architects and owners, and other information specified.
2. Certified Installer: Submit a letter on roof membrane manufacturer's corporate letterhead signifying that the installer is an approved applicator capable of providing a warrantable installation.
3. Manufacturer's Field Reports: Indicate procedures followed, ambient temperatures, humidity, wind velocity during the application, and supplementary instructions are given.
 - a. The manufacturer must submit a field report after each visit to site.
4. Product Test Reports: Based on evaluation of comprehensive tests performed by the manufacturer and witnessed by a qualified testing agency, for components of bituminous roofing.
5. Maintenance Data: maintenance manuals for roofing system specified.

6. Notice of Intent to Warrant Letter: Submit a letter on roof membrane manufacturer's corporate letterhead identifying the roof assembly layers submitted for the project will qualify for the specified system warranty.
7. Warranty: Sample copy of standard roofing manufacturer's warranty stating obligations, remedies, limitations, and exclusions of warranty.

C. Closeout Submittals:

1. Maintenance Data: Include operations and maintenance information for the submitted roofing system to Owner.

1.5 QUALITY ASSURANCE

A. Manufacturer Qualifications:

1. Demonstrated performance history of producing SBS roof membranes no less, in the duration of years, than the warranty duration specified.
2. Manufactured by membrane supplier and not private-labeled.

Minimum of five years' experience recycling membranes at the end of their service life back into new membrane products. Provide a minimum of five reference projects.

B. Installer Qualifications:

1. A qualified firm that is authorized by the manufacturer to furnish and install materials and components pertaining to the product manufacturer's roof system and that is eligible to receive a manufacturer's warranty.

C. Preinstallation Roofing Conference: Conduct conference at the project site. Attendees shall include the following:

1. Manufacturers technical representative
2. Designer of record
3. Roofing installer

D. Review methods and procedures related to roofing installation, including the manufacturer's most current requirements.

E. Review base flashings, special roofing details and transitions, roof drainage, roof penetrations, equipment curbs, and condition of other construction that affects the roofing system.

F. Review governing regulations and requirements for insurance and certificates.

G. Review temporary protection requirements for roofing system during and after installation.

H. Deviations from the project specifications or the approved shop drawings are not permitted without prior written approval by the consultant, manufacturer, and owner.

I. Perform work in accordance with the manufacturer's published installation instructions, project documents, and other such pertinent information.

- J. Furnish products by or approved by the manufacturer for entirety of installed roofing system.
- K. Installer Qualifications: A qualified firm that is approved, authorized or licensed by bituminous roofing manufacturer to install manufacturer's product and that is eligible to receive manufacturer's special warranty.
- L. Source Limitations: Obtain components, including fasteners and sealants from a single source.

1.6 PRECONSTRUCTION MEETING

- A. Conduct meeting at the project site, with Consultant, general contractor, manufacturer's representative, and installer present.
- B. Review methods and procedures related to roofing installation, including manufacturer's written instructions.
- C. Review and finalize construction schedule and verify availability of materials, Installer's personnel, equipment, and facilities needed to make progress and avoid delays.
- D. Examine deck substrate conditions and finishes for compliance with requirements, including flatness and fastening.
- E. Review base flashings, special roofing details, roof drainage, roof penetrations, equipment curbs, and condition of other construction that will affect roofing.
- F. Review governing regulations and requirements for insurance and certificates if applicable.
- G. Review temporary protection requirements for roofing during and after installation.
- H. Review roof observation and repair procedures after roofing installation.
- I. Manufacturer Technical Representative Field Review
 - 1. Manufacturer's technical representative to review product installation a minimum of three times during installation at each structure, not three times total for all three.
 - 2. The technical representative shall issue a report to Consultant and general contractor for each review.
 - 3. Contractor to permit and facilitate access to site and roof, at all times, by above-mentioned manufacturer's representative.

1.7 PERFORMANCE REQUIREMENTS

- A. Fire: Underwriters Laboratories, Inc., Class A
- B. Wind Design: System shall meet minimum requirements in accordance with ASCE 7 per code jurisdiction.
 - 1. Roofing manufacturer shall showcase intended fastening and adhesive ribbon patterns for field, perimeter, and corner conditions of the coverboard and insulation.
 - 2. Edge securement of roofing terminations and edge metal, ANSI-SPRI ES-1

3. Design Pressures:
 - a. Central Field of Roof (Zone 1'): -21.34 psf
 - b. Field of Roof Zone (Zone 1): -37.15 psf
 - c. Roof Perimeter (Zone 2): -50.98 psf
 - d. Roof Corners (Zone 3): -66.79 psf

1.8 MOCKUPS

- A. Contractor shall provide a mockup of system components for review. Consultant shall approve mockups in successive order prior to initiation of next phase. Purpose of mock-up is to review and confirm transitions, details, interfacing sequence, and substrate preparation:
 1. Substrate Board (over steel pan deck), Mechanically-Fastened
 2. Air/Vapor Barrier Membrane, Adhered
 3. Insulation and Coverboard, Adhered
 4. Thermoplastic Membrane Base Field and Flashing Plies, Adhered
 5. Penetration flashing details
 6. Membrane termination and counterflashings.

1.9 ENVIRONMENTAL CONDITIONS

- A. Weather Limitations: Proceed with installation only when existing and forecasted weather conditions permit the roofing system to be installed according to the manufacturer's most current requirements and warranty requirements.
- B. Material Compatibility: Roofing materials shall be compatible with one another and adjacent materials under conditions of service and application required and confirmed by the roofing manufacturer.
- C. Coordinate Work with the installation of associated flashings and counter-flashings installed by other sections as work of this section proceeds.
- D. Weather Limitations: Proceed with installation only when existing and forecasted weather conditions permit roofing to be installed according to manufacturer's written instructions and warranty requirements.
- E. Provide tarps or plastic sheeting to adequately protect opened roofs and flashings and to prevent entrance of moisture or rainwater into structure until new materials have been applied and roof is in a watertight condition.
- F. Do not start the installation of any more roof surface at one time than can be adequately covered and protected in event of sudden unexpected rainfall.
- G. Provide waterproof canvas or plastic sheeting handy in case of emergency.
- H. If water penetrates through the assembly due to inadequate protection, Contractor to cut and inspect damages, remove, replace and re-install all materials at own cost, to eliminate all traces of water in the assembly.

1.10 DELIVERY, STORAGE, AND HANDLING

- A. Deliver roofing materials to Project site in original containers with seals unbroken and labeled with manufacturer's name, product brand name and type, date of manufacture, approval or listing agency markings, and directions for storing and mixing with other components.
 - 1. Store roofing materials in a dry, well-ventilated, weather-tight location to ensure no significant moisture pickup and maintain at a temperature consistent with roofing system manufacturer's written instructions.
 - 2. Store underlayment rolls and other sheet materials on end on pallets or other raised surfaces.
 - 3. Do not double-stack rolls.
- B. Store liquid materials in their original undamaged containers in a clean, dry, protected location and within the temperature range required by the roofing manufacturer. Protect stored liquid material from direct sunlight.
 - 1. Discard and legally dispose of liquid material that cannot be applied within its stated shelf life.
- C. Handle and store roofing materials and place equipment in a manner to avoid permanent deflection of the deck.
- D. Keep all flammable materials away from open flames or other possible igniting conditions.
- E. Do not leave materials on the roof overnight or when roofing work is not in progress unless protected from weather and moisture and unless maintained at a temperature exceeding 50 deg. F.

1.11 WARRANTY

- A. The manufacturer shall provide to owner 20-year, NDL (No Dollar Limit) or "water-tight warranty" guaranteeing installation of roofing system, including accessories, will resist water ingress into interior locations of building structure. In the event of water ingress, manufacturer shall remove and replace damaged materials, including that of the roofing system, without monetary limitation.
 - 1. Manufacturer's Warranty Period: 20 years from the date of Substantial Completion.
 - 2. Installer's Warranty Period: 2 years from the date of Substantial Completion

PART 2 - PRODUCTS

2.1 MATERIALS

- A. Roofing materials recommended by roofing system manufacturer for the intended use and compatible with components of existing membrane roofing system.

2.2 THERMOPLASTIC MEMBRANE

- A. Provide new fully adhered single-ply polyvinyl chloride (PVC) thermoplastic membrane roofing:
 - 1. Basis of Design: 60-mil internal scrim reinforced PVC
 - a. Nominal thickness (ASTM D751): 60 mil (0.060 in.).
 - b. Tensile strength (ASTM D751): 303 lbf (MD)
 - c. Elongation at break (ASTM D 751): 20% (MD); 20% (CD)
 - d. Tear strength (ASTM D 1004): 45 lbf
 - e. Accelerated weathering (ASTM G 154, min. 5000h): Pass
 - f. Color: As selected by Owner.
 - g. Sika SikaPlan 60-mil
 - 1) Or approved equal.

2.3 RELATED PRODUCTS

- A. Roof Air and Vapor Barrier Membrane: A self-adhered air and vapor barrier membrane and temporary roof deck cover.
 - 1. Sika Vapor Retarder SA 31
 - 2. Or Approved equal.
 - 3. Furnish manufacturer recommended low VOC substrate primer.
- B. Primed, Roofing Gypsum Coverboard and Substrateboard: A fiberglass mat faced gypsum roof board for application directly under thermoplastic roof membrane, 1/4 in. thick
 - 1. DensDeck Prime Roof Boards - GP Gypsum
 - 2. Or approved equal.
- C. Induction Welding Plates: Round polymer-coated steel plate to secure board products to roof deck and to attach membrane via the induction welding method.
 - 1. Sika Sarnadisc RhinoBond.
 - 2. Or approved equal.
- D. Fasteners: Corrosion resistant fastener of sufficient length and pull-out strength to secure roof assembly layers to roof deck with induction welding plates.
 - 1. Sika Sarnafastener
 - 2. Or approved equal.

- E. Insulation: Flat and tapered polyisocyanurate insulation. Provide thicknesses necessary to achieve continuous R-30 over the roof deck and slope to drains.
 - 1. Sika Sarnatherm ISO
 - 2. Or approved equal.
- F. Thermoplastic Membrane Accessories: Furnish cleaners, adhesives, sealants, termination bar, fasteners, accessory materials, and flashing membranes as required by the manufacturer to complete a watertight, fully warrantable system. This includes, but is not limited to:
 - 1. Detailing Membrane
 - 2. Inside Corner Membrane
 - 3. Wall and Curb Flashing Membrane
 - 4. Split Pipe Boots
 - 5. Tube Wrap - round and square
 - 6. T-Joint Patch
 - 7. Cut Edge Sealant
 - 8. Roofing Sealant
 - 9. Membrane Cleaner
 - 10. Walkway Rolls
 - 11. Termination Bars
- G. Coated Sheet Metal:
 - 1. Form through-parapet scuppers as indicated on the drawings.
 - 2. Basis of Design: Sika Sarnaclad.
 - 3. Exterior escutcheon: Utilize sheet metal flashing profile as indicated on the drawings. See Section 07 6200 for material.
- H. Mushroom Vents:
 - 1. Supply passive mushroom vents to meet ventilation requirements of the attic space beneath the new roof membrane cover.
 - 2. Supply mushroom vent product compatible and acceptable to the roof membrane systems manufacturer for integration as a heat-weldable element or can be flashed utilizing liquid-applied flashing membrane.
- I. Liquid-Applied Flashing Membrane: Fleece-reinforced polymethyl methacrylate (PMMA) catalyzed resin flashing for use as indicated on the drawings.
 - 1. Basis of Design: Sika Liquid Flashing PMMA.
 - 2. Provide manufacturer's recommended primer, reinforcing fleece, catalyst and substrate cleaner to complete installation.

- J. Pressure Treated Wood: Fire retardant treated (FRT) dimensional lumber for use as roof perimeter nailers, parapet coping support, and miscellaneous blocking applications as denoted in the drawings.
 - 1. Fasteners: Hot-dipped galvanized according to ASTM A153/A153M.
- K. FALL SAFETY ANCHORS
 - 1. Stanchion style, hot dipped galvanized fall safety anchors meeting OSHA 1926.501 anchored to the roof structure.
 - 2. Basis of Design: Guardian Fall Protection Model # 00645
 - 3. Secure with hot dipped galvanized or stainless steel connectors specified by the fall safety anchor manufacturer
 - 4. Coordinate with manufacturer to provide inspection tags on permanent rings. Do not apply inspection stickers to shaft of anchor so as to not conflict with penetration flashing.

PART 3 - EXECUTION

3.1 PREPARATION

- A. Remove all existing roofing down to the roof deck.
- B. Verify that the deck is dry, sound, clean and smooth. It shall be free of any depressions, waves, and projections.
- C. Cover with sheet metal, all substrate imperfections over 1 inch (25mm) in diameter, cracks over 1/2 inch (12mm) in width, loose knots and excessively resinous areas.
- D. Clean deck surfaces thoroughly prior to installation.

3.2 EXAMINATION

- A. Examine existing roof penetrations to remain; such as conduits, mechanical equipment, ducts, curbs, and notify Building Enclosure Consultant of conditions which will prohibit execution of the Work.
- B. Examine existing structural steel decking, prepare for installation of new roofing materials and notify Building Enclosure Consultant of conditions which will prohibit execution of the Work.

3.3 SUBSTRATE PREPARATION

- A. Clear the substrate of debris and foreign material.
- B. Thoroughly dry the substrate. Expel any instances of moisture.

3.4 PREPARATION - WOOD DECKS

- A. Where existing sheathing associated with the low slope roof deck is found to be damaged, replace on an allowance at the direction of the consultant. Replace members in like kind.
- B. Clean surfaces and maintain dry conditions over the prepared wood deck in preparation for roof air and vapor barrier membrane installation.

3.5 AIR/VAPOR BARRIER MEMBRANE

- A. Prime existing wood deck with manufacturer's primer.
- B. Roll out the membrane and firmly engage to the underlying substrate for installation free of ripples, bubbles, or fishmouths.
- C. Seal edges of the membrane at upstands and penetrations to provide an air-tight installation across the entire plane of the structural roof deck.
- D. Only install a membrane to areas that can be completely covered by the entire roofing assembly in the same day's operations.

3.6 RIGID INSULATION

- A. Ensure the surface of the air/vapor barrier membrane is clean, dry, and free of damage.
- B. Installation involves the placement of layers of polyisocyanurate insulation panels to meet continuous R-30 coverage over the roof deck.
 - 1. Set the underside of the first insulation board into low-rise foam adhesive over the upper surface of the bonded air/vapor barrier.
 - 2. Set the upper insulation board over the lower insulation board.
 - a. Stagger joints in the insulation assembly (two boards) a minimum of 12 inches.
 - b. Maintain tightly abutting insulation board joints.
 - c. Fill board joints in excess of 1/8-inch with additional wedges of insulation or low-rise foam.
- C. Cut insulation tight to penetrations and upstands. Fill voids with additional wedges of insulation or low-rise foam.
- D. Contractor shall use weights at the corners and center of each board prior to set-up of adhesive ribbons.
- E. Only install insulation to areas that can be completely covered by the entire roofing assembly in the same day's operations.
- F. Protect from damage until subsequent layers of the assembly are installed.

3.7 RIGID COVERBOARD

- A. Lay coverboard tight to upper layer of insulation.
 - 1. Maintain tightly abutting insulation board joints.
 - 2. Fill board joints in excess of 1/8-inch with additional wedges of coverboard or low-rise foam
- B. Only install coverboard to areas that can be completely covered by the entire roofing assembly in the same day's operations.
- C. Contractor shall use weights at the corners and center of each board prior to set-up of adhesive ribbons.

3.8 SYSTEM INSTALLATION

A. Roofing Installation, General:

1. Install roofing membrane according to roofing manufacturer's written instructions, details, and the project documents.
2. Commencement of roofing system installation signifies that the contractor has deemed the substrate and environmental conditions suitable for a warrantable roofing installation per the manufacturer.
3. Coordinate installation of roofing so components of bituminous roofing subjected to precipitation or left uncovered at the end of the workday or when rain is forecast.
 - a. Provide tie-offs at end of each day's work to cover exposed bituminous roofing sheets with a course of coated felt set in roofing cement with joints and edges sealed.
 - b. Complete terminations and base flashings and provide temporary seals to prevent water from entering completed sections of roofing.
 - c. Remove and discard temporary seals before beginning work on adjoining roofing.
4. Substrate-Joint Penetrations: Prevent roofing asphalt and adhesives from penetrating substrate joints, entering the building, or damaging bituminous roofing components or adjacent building construction.
5. Aesthetic Considerations: Construction of an aesthetically pleasing overall appearance of the finished roof application is a standard requirement for this project. Make necessary preparations, utilize recommended application techniques, apply the specified materials including granules, and exercise care in ensuring that the finished application is acceptable to the Owner.
6. Water Cut-Off: At the end of day's work, or when precipitation is imminent, construct a water cut-off at all open edges. Cut-offs can be built using asphalt or plastic cement and roofing felts, constructed to withstand protracted periods of service. Cut-offs must be completely removed prior to the resumption of roofing.

B. Thermoplastic Membrane Roofing:

1. Position the thermoplastic membrane where it is ready to be installed allow the membrane to relax out of the roll. Position membranes to establish consistent overlaps along its length.
2. Roll back membrane and lay out induction fastening plates at spacing established by the manufacturer for the wind uplift requirements. Secure plates through coverboard and insulation layers down to the roof deck with manufacturer recommended fasteners.
3. When installing, start at the low point of the roof with an appropriate roll width to offset side laps from the underlying modified base sheet a minimum of eighteen (18) inches. Work with manageable lengths for proper handling. Position the thermoplastic membrane with the salvage edge at low side of the roof. Install in

shingle fashion, with no laps against the flow of water. Once the membrane has had a chance to bond, utilize a seam probe to check all of the laps and joints for full adhesion. Any areas not properly bonded require welding, or, if necessary, the application of a utility patch to seal any un-bonded areas that exist.

4. All field seams must be clean and dry prior to initiating any field welding. Remove foreign materials from the seams (dirt, oils, etc.) with acetone or authorized alternative. Use clean lint free cloths and allow approximately five minutes for solvents to dissipate before initiating the automatic welder. Do not use denim or synthetic rags for cleaning. Contaminated areas within a membrane seam will inhibit proper welding and will require a membrane patch or strip.
5. All welding shall be performed only by qualified personnel to ensure the quality and continuity of the weld. The lap or seam area of the membrane may be intermittently tack welded to hold the membrane in place. Heat weld all seams with a Leister Variant or approved heat welding machine. All seams exceeding 10 feet in length shall be welded with an approved automatic welder. The back interior edge of the membrane shall be welded first, with a thin, continuous weld to concentrate heat along the exterior edge of the lap during the final welding pass. Hand weld T joints, inside corner pieces and outside corner pieces along with hard to reach areas. Membrane without selvedge edge are to be butted together and sealed with a heat welded utility roll. Refer to Leister equipment manual for proper heat welding instructions.
6. Hand weld T joints, inside corner pieces and outside corner pieces along with hard to reach areas. Membrane without selvedge edge are to be butted together and sealed with a heat welded utility roll. Refer to Leister equipment manual for proper heat welding instructions. Refer to local code requirements for electric supply, grounding and surge protection. The use of a dedicated, portable generator is highly recommended to ensure a consistent electrical supply, without fluctuations that can interfere with weld consistency. Properly welded seams shall utilize a 1.5 inch wide nozzle, to create a homogeneous weld, a minimum of 1.5 inches in width.
7. Aesthetics will be a punch list item. The roof must match the owner's standards for appearance.
8. Install thermoplastic flashing ply to all perimeter and projection details in the specified flashing adhesive. Install the adhesive per specification and heat weld seams in the same manner.

C. Membrane Welding:

1. Set welder to temperature specified by the manufacturer for the ambient temperature conditions at the time of welding.
2. Calibrate welder with a test coupon. Retain test coupons with date and time of test. Submit to Consultant and Owner when requested. Failure to produce a test coupon will result in construction stoppage with costs borne by the contractor.
3. Clean the membrane lap zone with the recommended membrane cleaner using a dry, clean rag. Discard rags upon use. Reuse of used rags are not allowed.

4. Weld horizontal seams first whenever possible. When utilizing an automatic welder, follow device manufacturer's instructions for running the welder.
5. Use hand welders where automatic welders are not possible. This includes detailing work and vertical plane work.

3.9 ROOF FLASHING INSTALLATION

- A. General: Install sheet metal flashing and trim to comply with performance requirements and SMACNA's "Building Enclosure Consultantural Sheet Metal Manual." Provide concealed fasteners where possible, set units true to line, and level as indicated. Install work with laps, joints, and seams that will be permanently watertight and weather resistant.
- B. Coordinate roof accessories, miscellaneous sheet metal accessory items, including piping vents and other devices with the roofing system work as specified in other sections.
- C. Flash all penetrations as specified below and per the project documents. If specific detail is not shown in drawings or specified below, flash detail in accordance with the manufacturer's specifications to comply with the specified warranty.
- D. Exhaust Fan/Passive Vent/Air Intake:
 1. Minimum curb height is eight (8) inches off the finished roof surface. As required, raise existing curbs to the required height. Prime vertical curb surface at a rate of one hundred (100) square feet per gallon and allow to dry.
 2. Set cant in roofing sealant. Run base roofing ply over cant a minimum of two (2) inches.
 3. Install base flashing ply in the specified adhesive covering curb with six (6) inches on to field base ply of the roof.
 4. Install thermoplastic cap field ply run over the base flashing ply in foam adhesive.
 5. Install the thermoplastic flashing ply in adhesive nine (9) inches on to the field of the roof
 6. Install passive vent/air intake over the wood nailers and flashing to act as counter-flashing. Fasten per manufactures recommendations.
- E. Plumbing/Soil Stack:
 1. Minimum stack height is to be twelve (12) inches.
 2. Run roof base ply over the entire surface of the roof. Seal the base of the stack with elastomeric sealant.
 3. Prime flange of new lead sleeve. Install properly sized lead sleeve set in ¼ inch bed of roof cement.
 4. Install base flashing ply in the specified adhesive.
 5. Install thermoplastic membrane in the specified flashing adhesive.
 6. Caulk the intersection of the membrane with elastomeric sealant.

7. Turn sleeve a minimum of one (1) inch down inside of stack.

F. Heat Stack:

1. Minimum stack height is twelve (12) inches.
2. Run roof system over the base plies of the entire surface of the roof. Seal the base of the stack with elastomeric asphaltic sealant or roof cement.
3. Prime flange of new sleeve. Install properly sized sleeves set in ¼ inch bed of roof cement.
4. Install base flashing ply in the specified flashing adhesive.
5. Install thermoplastic membrane in the specified flashing adhesive.
6. Caulk the intersection of the membrane with roof cement.
7. Install new collar over cape. Weld collar or install stainless steel draw band.

G. Pre-Manufactured Curb for Equipment Support:

1. Secure curb to roof deck. Minimum flashing height of curb shall be eight (8) inches above finished roof. Prime vertical at a rate of one hundred (100) square feet per gallon and allow to dry.
2. Run all base field plies to the top edge of cant strip and seal with asphalt mastic to a watertight condition.
3. Install base flashing ply in the specified adhesive covering pre-manufactured curb with six (6) inches on to field base ply of the roof.
4. Install thermoplastic membrane field ply over the base flashing ply in the specified foam adhesive.
5. Install the thermoplastic flashing ply in the specified flashing adhesive over the base flashing ply, nine (9) inches on to field of the roof.
6. Terminate the flashing system at the top of the curb and fasten with cap nails at eight (8) inches on center. Install a 0.040" aluminum slip flashing under the equipment support cover and fasten to the curb at eight (8) inches on center with neoprene gasketed screws. The slip flashing shall cover the top of the flashing system three (3) inches minimum.

H. Skylight/Roof Hatch:

1. Minimum curb height is eight (8) inches. Prime vertical at a rate of one hundred (100) square feet per gallon and allow to dry.
2. Set cant in bitumen. Run all field base plies over cant a minimum of three (3) inches.
3. Install base flashing ply covering curb in the specified adhesive with six (6) inches on to field base ply of the roof.
4. Install thermoplastic membrane field ply over the base flashing ply in the specified foam adhesive.

5. Install the thermoplastic flashing ply in the specified flashing adhesive over the base flashing ply, nine (9) inches on to field of the roof.
 6. Install pre-manufactured lens and fasten flashing sides at eight (8) inches o.c. with fasteners and neoprene washers.
 7. Install 0.040" aluminum counterflashing and fasten at eight (8) inches o.c. with fasteners and neoprene washers.
- I. Curb Detail/Air Handling Station:
1. Minimum curb height is eight (8) inches. Prime vertical at a rate of one hundred (100) square feet per gallon and allow to dry.
 2. Set cant in bitumen. Run all field base plies to the top edge of cant strip and seal with asphalt mastic to a watertight condition.
 3. Install base flashing ply in the specified adhesive covering curb with six (6) inches on to field of the roof.
 4. Install thermoplastic membrane field ply over the base flashing ply in the specified foam adhesive.
 5. Install the thermoplastic flashing ply in the specified flashing adhesive over the base flashing ply, nine (9) inches on to field of the roof.
- J. Surface Mounted Counterflashing:
1. The new surface mounted counter shall be installed to provide a minimum of eight (8) inches of flashing height from the top of roof to the termination bar securing the roof flashing system.
 2. Maximum flashing height is twenty-four (24) inches. Prime vertical wall at a rate of one hundred (100) square feet per gallon and allow to dry.
 3. Set cant in bitumen. Run all field base plies to the top edge of cant strip and seal with asphalt mastic to a watertight condition.
 4. Install base flashing ply in the specified adhesive covering wall with six (6) inches on to field of the roof.
 5. Install thermoplastic membrane field ply over the base flashing ply in the specified foam adhesive.
 6. Install the thermoplastic flashing ply in the specified flashing adhesive over the base flashing ply, nine (9) inches on to field of the roof.
 7. Install the specified termination bar even with the top of the flashing, and secure the termination bar through flashing and into wall every six (6) inches on center. Seal top of termination bar and flashing system with specified elastomeric asphaltic sealant or a three-course application of specified mastic and mesh.
 8. Install the new surface mounted counterflashing on the wall and secure with neoprene gasketed screws at 8" on center. End joints shall be interlocking and overlapping not less than 3". Corners shall be mitered and welded to a watertight condition. The bottom of the cap flashing insert shall project ¼" from the face of

the wall with a down turned drip edge (provide a down turned hem in areas subject to human contact). The new counterflashing shall extend down over the roof flashing system a minimum of four (4) inches below the termination bar.

- K. Roof-Penetration Flashing: Coordinate installation of roof-penetration flashing with the installation of roofing and other items penetrating roof such as scuppers, drains, and utility penetrations.
 - 1. Delineate an 8-inch diameter perimeter surrounding the penetration and clean membrane surface.
 - 2. Apply catalyzed PMMA primer following manufacture requirements.
 - 3. Apply catalyzed PMMA base coat and lay up reinforcing fleece. Fleece edges shall be held back no more or less than 1/8 inch from the edge of the coating. Lap fleece a minimum of 2 inches where necessary. Fleece shall be fully saturated with catalyzed coating and worked to eliminate air pockets or blisters.
 - 4. Apply catalyzed PMMA top coat and let cure.
- L. Fastener Sizes: Use fasteners of sizes that will penetrate back up structure not less than 1-1/4 inches for nails and not less than 3/4 inch for screws.
- M. Seal joints as shown in the drawings and as required for watertight construction.

3.10 FIELD QUALITY CONTROL

- A. Roofing Inspector: Owner will engage a qualified roofing inspector to perform roof tests and inspections and to prepare test reports.
- B. Installer must keep daily records of membrane weld test coupons each time the automatic and hand welders are turned on. Installers must furnish records at the request of the Owner, Building Enclosure Consultant, and Inspector.
- C. Arrange for additional inspections, at Contractor's expense, to verify compliance of replaced or additional work with specified requirements.
- D. Arrange for periodic roof membrane system manufacturer inspections at Contractor's expense.

3.11 PROTECTING AND CLEANING

- A. Protect roofing system from damage and wear during remainder of construction period.
- B. Correct deficiencies in or remove coating that does not comply with requirements, repair substrates, and reapply coating.
- C. Clean overspray and spillage from adjacent construction using cleaning agents and procedures recommended by manufacturer of affected construction.

END OF SECTION 07 5400

SECTION 07 56 00 - FLUID APPLIED ROOFING RESTORATION - ALTERNATE 1

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Add-Alt scope to provide a liquid-applied roof restoration overcoat at the North Roof.
- B. Membrane Roof Restoration
- C. Accessories
- D. Edge Treatment and Roof Penetration Flashings

1.2 SUBMITTALS

- A. Product Data: Manufacturer's data sheets on each product to be used, including:
 - 1. Preparation instructions and recommendations.
 - 2. Storage and handling requirements and recommendations.
 - 3. Installation methods.
- B. Shop Drawings: Submit shop drawings including installation details of fluid applied roofing and flashing prior to job start.
- C. Verification Samples: For each product specified, two samples, minimum size 6 inches (150 mm) square, representing actual product, and color.
- D. Manufacturer's Certificates: Certify products meet or exceed specified requirements.
- E. Closeout Submittals: Provide manufacturer's maintenance instructions that include recommendations for periodic inspection and maintenance of all completed roofing work. Provide product warranty executed by the manufacturer. Assist Owner in preparation and submittal of roof installation acceptance certification as may be necessary in connection with fire and extended coverage insurance on roofing and associated work.

1.3 QUALITY ASSURANCE

- A. Perform Work in accordance with manufacturer's current Application and Installation Guidelines and the NRCA Roofing and Waterproofing Manual.
- B. Manufacturer Qualifications: Manufacturer: Company specializing in manufacturing products specified in this section with documented certification and minimum twelve years and experience.
- C. Installer Qualifications: Company specializing in performing Work of this section with minimum five years documented experience and a manufacturer certified approved applicator.
- D. Installer's Field Supervision: Maintain a full-time Supervisor/Foreman on job site during all phases of roofing work while roofing work is in progress.
- E. Product Certification: Provide manufacturer's certification that materials conform to requirements specified herein, are chemically and physically compatible with each other, and are suitable for inclusion within the total roof system specified herein.

- F. Source Limitations: Obtain all components of roof system from a single manufacturer. Secondary products that are required shall be recommended and approved in writing by the roofing system Manufacturer. Upon request of the Architect or Owner, submit Manufacturer's written approval of secondary components in list form, signed by an authorized agent of the Manufacturer.

1.4 PRE-INSTALLATION CONFERENCE

- A. Convene a pre-roofing conference approximately two weeks before scheduled commencement of roofing system installation and associated work.
- B. Require attendance of installers of deck or substrate construction to receive roofing, installers of rooftop units and other work in and around roofing which must precede or follow roofing work including mechanical work, Architect, Owner, roofing system manufacturer's representative.
- C. Objectives include:
 - 1. Review foreseeable methods and procedures related to roofing work, including set up and mobilization areas for stored material and work area.
 - 2. Tour representative areas of roofing substrates, inspect and discuss condition of substrate, roof drains, curbs, penetrations and other preparatory work.
 - 3. Review structural loading limitations of deck and inspect deck for loss of flatness and for required attachment.
 - 4. Review roofing system requirements, Drawings, Specifications and other Contract Documents.
 - 5. Review and finalize schedule related to roofing work and verify availability of materials, installer's personnel, equipment and facilities needed to make progress and avoid delays.
 - 6. Review required inspection, testing, certifying procedures.
 - 7. Review weather and forecasted weather conditions and procedures for coping with unfavorable conditions, including possibility of temporary roofing.
 - 8. Record conference including decisions and agreements reached. Furnish a copy of records to each party attending.

1.5 DELIVERY, STORAGE, AND HANDLING

- A. Deliver and store products in manufacturer's unopened packaging with labels intact until ready for installation.
- B. Store all roofing materials in a dry place, on pallets or raised platforms, out of direct exposure to the elements until time of application. Store materials at least 4 inches above ground level and covered with "breathable" tarpaulins.
- C. Stored in accordance with the instructions of the manufacturer prior to their application or installation. Store roll goods on end on a clean flat surface. No wet or damaged materials will be used in the application.

- D. Storage temperatures should be between 60 degrees F to 80 degrees F (15.6 degrees to 26.7 degrees C). Indoor ventilated storage is recommended. Ensure jobsite storage is in a shaded and ventilated area. Do not store in direct sunlight. Keep materials away from open flame or welding sparks.
- E. Avoid stockpiling materials on roofs without first obtaining acceptance from the Architect/Engineer.

1.6 PROJECT CONDITIONS

- A. Maintain environmental conditions (temperature, humidity, and ventilation) within limits recommended by manufacturer for optimum results. Do not install products under environmental conditions outside the manufacturer's absolute limits.
- B. Weather Condition Limitations: Product application must not be done when rain or other conditions such as fog or heavy dew are possible within a 24 hour period. Roof surface must be at least 6 Fahrenheit degrees or 3 Celsius degrees above the dew point and rising.
- C. Proceed with roofing work only when existing and forecasted weather conditions will permit unit of work to be installed in accordance with manufacturer's recommendations and warranty requirements.
- D. Do not expose materials vulnerable to water or sun damage in quantities greater than can be weatherproofed during same day.
- E. When applying materials with spray equipment, take precautions to prevent over spray from damaging or defacing surrounding walls, building surfaces, vehicles or other property. Care should be taken to do the following:
 - 1. Close air intakes into the building.
 - 2. Have a dry chemical fire extinguisher available at the jobsite.
 - 3. Post and enforce "No Smoking" signs.
- F. Avoid inhaling spray mist; take precautions to ensure adequate ventilation.
- G. Protect completed roof sections from foot traffic for a period of at least 48 hours at 75 degrees F (24 degrees C) and 50 percent relative humidity or until fully cured.
- H. Take precautions to ensure that materials do not freeze.
- I. The minimum temperature for application for most products is 40 degrees F (4 degrees C) and rising for solvent based materials and 50 degrees F (10 degrees C) and rising for water based.

1.7 WARRANTY

- A. Warranty Period: 10 years.
 - 1. Upon completion of the work, provide the Manufacturer's written and signed limited labor and materials Warranty, warranting that, if a leak develops in the roof during the term of this warranty, due either to defective material or defective workmanship by the installing contractor, the manufacturer shall provide the Owner, at the Manufacturer's expense, with the labor and material

necessary to return the defective area to a watertight condition.

- B. Warranty Period: Installer is to guarantee all work against defects in materials and workmanship for a period indicated following final acceptance of the Work.
 - 1. Warranty Period:
 - a. 2 years from date of acceptance.

PART 2 PRODUCTS

2.1 MEMBRANE ROOF RESTORATION

- A. Provide a full, integrally reinforced liquid-applied system for use as indicated on the drawings with the following parameters:
 - 1. Number of parts: Two
 - 2. Volume Solids (ASTM D2694): 100%
 - 3. Density (ASTM D2939): 9.6 lbs/gal
 - 4. Tear Resistance (ASTM D624): 449 lb/in.
 - 5. Low Temperature Flexibility (ASTM D522): -60 degrees F.
 - 6. Tensile Strength (ASTM D412): >2500 psi.
 - 7. Basis of design: Garland LiquiTec
 - a. Or approved equal.

2.2 ACCESSORIES

- A. Primers: Primers appropriate for substrates.
 - 1. Metal: Garland Metal Roof Primer
 - 2. Existing Membrane Surface: as recommended by systems manufacturer.
 - 3. Or approved equal.
- B. Reinforcing Fabric: UV stable, high temperature resistant polyester fabric.
 - 1. Tensile Strength (ASTM D3788): 75.3 lbs
 - 2. Elongation (ASTM D3786): 44.25%
 - 3. Mullen Burst (ASTM D3786) 139 lbs.
 - 4. Garland UniBond ST
 - a. Or approved equal.
- C. Sealant: 100% solids, single-component gun grade sealant.
 - 1. Hardness Shore A (ASTM C661): 24 +/- 3
 - 2. Elongation: 550%
 - 3. Service Temperature: -40 degrees F to 200 degrees F
 - 4. Class: 50

- 5. Garland Green-Lock XL
 - a. Or approved equal.
- D. Cleaning Solution: Mild, non-solvent based liquid detergent recommended by membrane system manufacturer.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Do not begin installation until substrates have been properly prepared.
- B. Verify that work penetrating the roof deck, or which may otherwise affect the roofing, has been properly completed.
- C. If substrate preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.

3.2 ROOF PREPARATION AND REPAIR

- A. General: All necessary field and flashing repairs must be done according to good construction practices, including the removal of all wet insulation and defective materials as identified through a moisture detection survey such as an infrared scan and replacement with like-materials.
 - 1. Remove damaged roof flashings from curbs and parapet walls down to the surface of the roof. Remove damaged existing flashings at roof drains and roof penetrations.
 - 2. Existing roof surfaces shall be primed as necessary and allowed to dry prior to installing the roofing system.
- B. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.
- C. Repair all defects such as deteriorated roof decks, saturated materials, loose or brittle membrane or membrane flashings, etc. Verify that existing conditions meet the following requirements:
 - 1. Existing membrane is either fully adhered or that the membranes mechanical fasteners are secured and functional.
 - 2. Application of roofing materials over a brittle, damaged or poor condition roof membrane is not permitted.
- D. Remove all loose dirt and foreign debris from the roof surface. Do not damage roof membrane in cleaning process.
- E. Clean and seal all parapet walls, gutters and coping caps, and repair any damaged metal where necessary. Seal watertight all fasteners, pipes, drains, vents, joints and penetrations where water could enter the building envelope.
- F. Confirm local water run-off ordinances and restrictions prior to cleaning roof. Clean the entire roof surface by removing all dirt, algae, mold, moss, paint, oil, talc, rust or other foreign substance. Use a bio-degradable cleaner like Simple Green Oxy Solve

when necessary and warm water. Scrub heavily soiled areas with a brush. Power wash roof thoroughly with an industrial surface cleaner equipped with one piece balanced spray rotating jets for streak free close contact cleaning. Rinse with fresh water to completely remove all residuals. Allow roof to dry thoroughly before continuing.

- G. Repair existing roof membrane as necessary to provide a sound substrate for the liquid membrane. All surface defects must be repaired/renovated and be made watertight. Any repairs must be with be only with materials compatible with the fluid-applied roofing restoration system.
- H. Power washing of metal roof surfaces to remove all loose rust or scale is mandatory before application. Use a high volume air broom or compressed air to remove residual dust rust perforations, etc. Deteriorated metal roof decks must be repaired or replaced prior to the application of the coating system.

3.3 INSTALLATION

A. General Installation Requirements:

1. Install in accordance with manufacturer's current Application and Installation Guidelines and the NRCA Roofing and Waterproofing Manual.
2. Adequate coating thickness is essential to performance. If the applicator is unfamiliar in gauging application rates, we suggest that a controllable area be measured and the specified material be applied. In all cases, all minimum specified material must be applied and proper minimum dry film thicknesses must be achieved. Care must be taken to ensure that all areas completed including all flashings, roof penetrations, etc. are coated sufficiently to ensure a watertight seal.
3. Cooperate with manufacturer, inspection and test agencies engaged or required to perform services in connection with installing the roof system.
4. Insurance/Code Compliance: Where required by code, install and test the roofing system to comply with governing regulation and specified insurance requirements.
5. Protect work from spillage of roofing materials and prevent materials from entering or clogging drains and conductors. Replace or restore adjacent work damaged by installation of the roofing system.
6. All primers must be top coated within 24 hours after application, preferably immediately after drying. Clean and re-prime if more time passes after priming.
7. Coordinate counter flashing, cap flashings, expansion joints and similar work with work specified in other Sections under Related Work.
8. Coordinate roof accessories and miscellaneous sheet metal accessory items, including piping vents and other devices with work specified in other Sections under Related Work.

B. Membrane Roof Restoration work includes:

1. Surface Preparation: Remove loose flaking rust, dust, dirt, debris, secure all gaped panels and replace all loose fasteners with next size larger.
 - a. Remove loose membrane materials or tightly secure to establish full adhesion. Repair damaged seams.
 - b. Remove blisters, holes, cuts, cracks, splits or other surface defects.
 - c. Remove rust by the most rigorous method suitable for the particular project and as approved by the manufacturer.
 - d. Tighten all fasteners and verify that neoprene washers are in place.
 - e. Replace missing fasteners using oversize fasteners as necessary.
 - f. Completely remove existing seam coatings, mastics and sealants.
 - g. Ensure skylights, scuppers, gutters, penetrations and structures are firmly secured, watertight and in good working condition.
 - h. Where necessary, install water deflecting crickets behind rooftop mechanical units.
 - i. All roof areas must promote positive drainage.
2. Flashing: Repair/Replace metal flashings, pitch pockets, etc.
3. Primer: Apply primers over surfaces as recommended by manufacturer.
4. Reinforcement: Treatment of field seams and around penetrations:
 - a. Application of seam tape with seam sealer on metal panel end laps, flashings and around penetrations.
 - 1) Verify that the surface to be coated is properly prepared.
 - 2) Remove the clear release liner from the back in workable sections
 - 3) Center 6 inch wide reinforcing over the middle of the lap.
 - 4) Use care to install the tape uniformly. Do not stretch or cause air pockets, wrinkles or fishmouths.
 - 5) Apply pressure to tape starting at the center and work toward outside edge with a steel roller to activate the bonding process.
 - 6) Inspect the tape to ensure that it is properly installed. Verify edges are tightly fixed to surface. If any discrepancies are present, repair before the coating is applied.
 - 7) Saturate the tape with seam sealer.
 - b. Application of base coat:
 - 1) Verify that the surface to be coated is properly prepared.
 - 2) Restore the surface to a suitable condition if roof surface becomes contaminated with dirt, dust or other materials that will interfere

with adhesion of the coatings.

- 3) Apply materials at specified dry film thickness.
 - 4) Apply base coat at minimum 6 inch wide stripes over all seams, flashings and around penetrations at 2.0 gallons per 100 SF.
 - 5) Use fabric reinforcement when panels are gapped and cannot be drawn tightly together.
 - 6) Allow to dry for a minimum of 24 hours before applying finish coats.
 - 7) On vertical surfaces to achieve proper application rate cut your application into two coats to avoid sagging.
5. Coating: Ensure the fluid-applied coverage rates are obtained throughout the entire roof surface.
- a. Material: Apply top coat in a uniform manner at 1.5 gallons per 100 SF over the entire roof surface. Allow to cure thoroughly, but no more than 72 hours. Apply a top coating over base coat at 1.5 gallons per 100 SF.
 - b. Use special attention to coating flashings and other critical areas to build adequate membrane thickness.
 - c. Use multiple coats on verticals or steep slopes to prevent sagging.
 - d. Apply to minimum recommended membrane thickness over the entire roof surface.

3.4 REPAIR OF EDGE TREATMENT AND ROOF PENETRATION FLASHING

A. General

1. Repair flashing in accordance with the requirements/recommendations of the Membrane manufacturer and as indicated on the manufacturer's standard drawings. Provide system with base flashing, edge flashing, penetration flashing, counter flashing, and all other flashings required for a complete watertight system.
2. Install and repair flashings concurrently with the roofing as the job progresses.
3. Terminate flashings as required by the membrane manufacturer.

3.5 CLEANING

- A. Clean-up and remove daily from the site all wrappings, empty containers, paper, loose particles and other debris resulting from these operations.
- B. Remove coating markings from finished surfaces.
- C. Repair or replace defaced or disfigured finishes caused by Work of this section.

3.6 PROTECTION

- A. Provide traffic ways, erect barriers, fences, guards, rails, enclosures, chutes and the like to protect personnel, roofs and structures, vehicles and utilities.

- B. Protect exposed surfaces of finished walls with tarps to prevent damage.
- C. Plywood for traffic ways required for material movement over existing roofs shall be not less than 5/8 inch (16 mm) thick.
- D. In addition to the plywood listed above, an underlayment of minimum 1/2 inch (13 mm) recover board is required on new roofing.
- E. Special permission shall be obtained from the Manufacturer before any traffic shall be permitted over new roofing.

3.7 FIELD QUALITY CONTROL

- A. Require attendance of roofing materials manufacturers' representatives at site during installation of the roofing system.
- B. Perform field inspection and [and testing] as required under provisions of Section 01 400 - Quality Requirements.
- C. Correct defects or irregularities discovered during field inspection.

3.8 FINAL INSPECTION

- A. At completion of roofing installation and associated work, meet with Contractor, Architect, installer, installer of associated work, roofing system manufacturer's representative and others directly concerned with performance of roofing system.
- B. Walk roof surface areas, inspect perimeter building edges as well as flashing of roof penetrations, walls, curbs and other equipment. Identify all items requiring correction or completion and furnish copy of list to each party in attendance.
- C. If core cuts verify the presence of damp or wet materials, the installer shall be required to replace the damaged areas at his own expense.
- D. Repair or replace deteriorated or defective work found at time above inspection as required to produce an installation that is free of damage and deterioration at time of Substantial Completion and according to warranty requirements.
- E. Notify Architect upon completion of corrections.
- F. Following the final inspection, provide written notice of acceptance of the installation from the roofing system manufacturer.

END OF SECTION 07 5600

SECTION 07 6200 - SHEET METAL FLASHING AND TRIM

PART 1 - GENERAL

1.1 SUMMARY

- A. This Section outlines the requirements for the installation of metal flashings, metal corners, and metal vents.

1.2 PERFORMANCE REQUIREMENTS

- A. General: Install sheet metal flashing and trim to withstand wind loads, structural movement, thermally induced movement, and exposure to weather without failing, rattling, leaking, and fastener disengagement.
- B. Thermal Movements: Provide sheet metal flashing and trim that allow for thermal movements resulting from the following maximum change (range) in ambient and surface temperatures by preventing buckling, opening of joints, hole elongation, overstressing of components, failure of joint sealants, failure of connections, and other detrimental effects.
 - 1. Temperature Change (Range): 120 deg F, ambient; 180 deg F, material surfaces.

1.3 SUBMITTALS

- A. Submit the following:
 - 1. Product Data: For each type finish applied on sheet metal.
 - 2. Shop Drawings: Include construction details, material descriptions, dimensions of individual components and profiles, and finishes for each manufactured product and accessory.
 - 3. Samples: For each type of exposed finish required, prepare samples of size indicated below:
 - a. Sheet Metal Flashing: 12 inches long by actual width of unit, including finished seam and required profile. Include fasteners, cleats, clips, closures, and other attachments.
 - 4. Maintenance Data: For sheet metal flashing, trim, and vents.
 - 5. Warranty: As specified in this Section.

1.4 QUALITY ASSURANCE

- A. Fabricator Qualifications: Shop that employs skilled workers who custom fabricate sheet metal flashing and trim similar to that required for this Project and whose products have a record of successful in-service performance.
- B. Sheet Metal Flashing and Trim Standard: Comply with SMACNA's "Architectural Sheet Metal Manual." Conform to dimensions and profiles shown unless more stringent requirements are indicated.
- C. Mock-ups: Mock-ups of sheet metal flashing and trim shall be provided as indicated in other specification sections.

- D. Preinstallation Conference: Conduct conference at Project site to comply with requirements in Section 01 3100 - Project Management and Coordination.

1.5 DELIVERY, STORAGE, AND HANDLING

- A. Deliver sheet metal flashing and trim materials undamaged. Protect sheet metal flashing and trim materials during transportation and handling.
- B. Unload, store, and install sheet metal flashing and trim materials in a manner to prevent bending, warping, twisting, and surface damage.
- C. Do not store sheet metal flashing and trim materials in contact with other materials that might cause staining, denting, or other surface damage.

1.6 COORDINATION

- A. Coordinate installation of sheet metal flashing and trim with interfacing and adjoining construction to provide a leakproof, secure, and noncorrosive installation.

1.7 WARRANTY

- A. Special Warranty on Finishes: Manufacturer's standard form in which manufacturer agrees to repair finish or replace sheet metal flashing and trim that shows evidence of deterioration of factory-applied finishes within specified warranty period.
 - 1. Exposed Panel Finish: Deterioration includes, but is not limited to, the following:
 - a. Color fading more than 5 Hunter units when tested according to ASTM D 2244.
 - b. Chalking in excess of a No. 8 rating when tested according to ASTM D 4214.
 - c. Cracking, checking, peeling, or failure of paint to adhere to bare metal.
 - 2. Finish Warranty Period: 10 years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. General:
 - 1. All sheet metal not otherwise called for to be minimum gauges/referenced in SMACNA Manual for comparable construction. Use heavier gauges if called for on drawings or specifications and where required by conditions of installation.
 - 2. All sheet metal flashing for roofs and walls to be 24 gauge unless other wised specified.
 - 3. Include strippable protective plastic film on exposed prefinished faces of sheet metal. Film to be removed during installation.
- B. Stainless Steel Sheet Steel:
 - 1. ASTM A666 Type 316 alloy Soft Temper.
 - 2. Smooth No. 4 - Brushed finish.
- C. Zinc-Coated (Galvanized) Sheet Steel:

1. Restricted flatness steel sheet, metallic coated by the hot-dip process and prepainted by the coil-coating process to comply with ASTM A 755/A 755M
 2. Conforming to ASTM A653/A653M, G90 (1.25 oz. per square foot) coating designation, structural quality. Material to withstand flat bending on itself at any direction at room temperature without flaking.
 3. Finish: Two-Coat Fluoropolymer per AAMA 621. Fluoropolymer finish containing not less than 70 percent PVDF resin by weight in color coat. Prepare, pretreat, and apply coating to exposed metal surfaces to comply with coating and resin manufacturers' written instructions.
 4. Uses:
 - a. All sheet metal flashing and trim unless otherwise noted.
 - b. Roofing applications, form fully soldered profiles.
- D. Bonderized G-90 Sheet Steel:
1. Restricted flatness steel sheet, metallic coated by the hot-dip process, then given a phosphate bath and pre-primed with chromate.
 2. Conforming to ASTM A653/A653M, G90 (1.25 oz. per square foot) coating designation, structural quality. Material to withstand flat bending on itself at any direction at room temperature without flaking.
 3. Finish: Phosphate bath and Chromate coating.
 4. Uses:
 - a. Areas to be painted with fiber cement siding.
- E. High-Temperature Rated Self-Adhered Underlayment: HDPE faced, butyl or SBS adhesive backed self-adhered membrane capable of withstanding in-service temperatures no less than 260F.
1. See Section 07 2500 - Sheet-Applied Weather-Resistive Air Barriers.
- F. Fiber Cement Fascia Trim: Allura Trim, Smooth, 5/4.
- G. Fasteners:
1. Nails: Same metal as sheet metal flashing or other non-corrosive metal as recommended by sheet metal manufacturer. Match finish of exposed heads with material being fastened.
 2. Screws: Neoprene gasketed, hex head type, or incorporate a washer with a laminated neoprene gasket. Exposed screws to have pre-finished heads of color matching the metal being fastened
- H. Solder:
1. For galvanized steel used in roofing applications, ASTM B 32, Grade Sn50, 50 percent tin and 50 percent lead or Grade Sn60, 60 percent tin and 40 percent lead

2. For Stainless Steel: Conform to ASTM B32, Grade Sn60, with acid flux of type recommended by stainless steel sheet manufacturer.
 - I. Miscellaneous: Provide metal clips, straps, anchoring devices, and similar accessory as required for proper installation of sheet metal flashing and trim.
 - J. Sealant:
 1. As specified in Section 07 9200 - Joint Sealants.
- 2.2 FABRICATION
- A. General: Custom fabricate sheet metal flashing and trim to comply with recommendations in SMACNA's "Architectural Sheet Metal Manual" that apply to design, dimensions, geometry, metal thickness, and other characteristics of item indicated. Fabricate items at the shop to greatest extent possible.
 1. Fabricate sheet metal flashing and trim in thickness or weight needed to comply with performance requirements, but not less than that indicated for each application and metal.
 - a. Unless otherwise indicated, sheet metal shall be 24-gauge.
 2. Obtain field measurements for accurate fit before shop fabrication.
 3. Form sheet metal flashing and trim without excessive oil canning, buckling, and tool marks and true to line and levels indicated, with exposed edges folded back to form hems.
 4. Conceal fasteners and expansion provisions where possible. Exposed fasteners are not allowed on faces exposed to view, unless specifically detailed or approved by Consultant.
 5. Form flashing with minimum 15-degree slope to drain, or as indicated in Drawings.
 6. Terminate flashings with upward folded end dams, as indicated in drawings. Ensure flashing terminations redirect water away from wall drainage cavity.
 - B. Gutters and Downspouts:
 1. Gutters to be 26ga. baked enamel, 6" K-style installed directly to fascia boards, and will be continuous in length up to 70' (except at corners); gutter lengths exceeding 70' will be spliced and sealed with expansion seam; all joints to be screwed with standard zip screws and sealed with industrial gutter sealer.
 2. Downspouts to be 26ga. baked enamel, 4"x5" plain square style and will be installed at existing downspout locations (spacing may exceed 20'). Provide accessories needed to transition to storm drain system.
 - C. Sealed Joints: Form non-expansion but movable joints in metal to accommodate elastomeric sealant.
 - D. Fabricate cleats and attachment devices from same material as accessory being anchored or from compatible, noncorrosive metal.

1. Fabricate cleats and attachment devices of sizes as recommended by SMACNA's "Architectural Sheet Metal Manual" for application, but not less than thickness of metal being secured
- E. Seams in sheet metal: Fabricate seams in sheet metal flashing and trim using S-lock or standing seams, unless otherwise indicated.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine substrates, areas, and conditions, with Installer present, to verify actual locations, dimensions and other conditions affecting performance of the Work.
 1. Verify compliance with requirements for installation tolerances of substrates.
 2. Verify that substrate is sound, dry, smooth, clean, sloped for drainage, and securely anchored.
- B. For the record, prepare written report, endorsed by Installer, listing conditions detrimental to performance of the Work.
- C. Proceed with installation only after unsatisfactory conditions have been corrected. Beginning work constitutes acceptance of conditions as satisfactory

3.2 INSTALLATION

- A. Follow Manufacturer's directions and referenced SMACNA Manual:
 1. Where more than one Figure, illustration, or method of construction is shown in SMACNA Manual, and not specifically indicated in Contract Documents, use SMACNA system most nearly matching applicable Contract Document situation, subject to review of Consultant.
- B. General: Anchor sheet metal flashing and trim and other components of the Work securely in place, with provisions for thermal and structural movement. Use fasteners, protective coatings, separators, sealants, and other miscellaneous items as required to complete sheet metal flashing and trim system.
 1. Install sheet metal flashing and trim true to line and levels indicated. Provide uniform, neat seams with minimum exposure of sealant.
 2. Install sheet metal flashing and trim to fit substrates and to result in water resistant performance. Verify shapes and dimensions of surfaces to be covered before fabricating sheet metal.
 3. Space cleats not more than 12 inches apart. Anchor each cleat with two fasteners. Bend tabs over fasteners.
 4. Install exposed sheet metal flashing and trim without oil canning, buckling, and tool marks.
 5. Torch cutting of sheet metal flashing and trim is not permitted.
 6. Do not use graphite pencils to mark metal surfaces.

- C. Metal Protection: Where dissimilar metals will contact each other or corrosive substrates, protect against galvanic action by painting contact surfaces with bituminous coating or by other permanent separation as recommended by SMACNA.
- D. Fastener Sizes: Use fasteners of sizes that will penetrate wood sheathing or framing not less than 1-1/4 inches for nails and not less than 3/4 inch for wood screws.
 - 1. Use concealed fasteners unless otherwise indicated.
- E. Flashing joints: Provide for thermal expansion of exposed flashing and trim. Space movement joints at a maximum of 10 feet with no movement joints allowed within 24 inches of corner or intersection. All joints to be installed in a permanently weather-tight manner.
 - 1. Lap joints in wall flashing shall be 6-inch minimum as shown on drawings, sealed with two beads of sealant at each lap or S-lock
 - 2. Corner joints in wall flashing shall be standing seam, S-lock, or shall be soldered prior to pre-finishing.
 - 3. Joints in metal coping at roof curbs and parapets shall be standing seam.
 - 4. Joints in metal coping at curbs at balconies and decks shall be s-lock.
- F. Sealant: Install where indicated or where required to make weathertight.
- G. Installation Tolerances: Shim and align sheet metal flashing and trim within installed tolerance of 1/4 inch in 20 feet on slope and location as indicated and within 1/8-inch offset of adjoining faces and of alignment of matching profiles.
- H. Gutters and Downspouts:
 - 1. Slope gutters to provide positive drainage to downspouts. Provide minimum 1/8" per foot (1%) slope, unless otherwise indicated.
 - 2. Maximum gutter run distance to downspout shall be 20-feet unless approved by the Consultant.
 - 3. Seal joints to provide watertight installation
 - 4. Provide strainers, miscellaneous connectors, clips, elbows, and other accessories as indicated or as required for complete installation.
 - 5. Secure gutters using concealed fasteners or clips.
 - 6. Secure downspouts to match existing or as indicated

3.3 CLEANING AND PROTECTION

- A. Clean exposed metal surfaces of substances that interfere with uniform oxidation and weathering.
- B. Clean off excess sealants.
- C. Remove temporary protective coverings and strippable films as sheet metal flashing and trim are installed unless otherwise indicated in manufacturer's written installation

instructions. On completion of installation, remove unused materials and clean finished surfaces. Maintain in a clean condition during construction.

- D. Replace sheet metal flashing and trim that have been damaged or that have deteriorated beyond successful repair by finish touchup or similar minor repair procedures.

END OF SECTION 07 6200

SECTION 07 9200 - JOINT SEALANTS

PART 1 - GENERAL

1.1 SUMMARY

1. This Section includes joint sealants, including those specified by reference to this Section and those required in the drawings.

1.2 PERFORMANCE REQUIREMENTS

- A. Provide joint sealants for applications indicated that establish and maintain airtight and/or water-resistant continuous joint seals without staining or deteriorating joint substrates.

1.3 SUBMITTALS

- A. Submit the following:

1. For each product used, provide product data indicating type of sealant, chemical characteristics, performance criteria, limitations, color availability, manufacturer's primer and installation recommendations.
2. Manufacturer's color charts consisting of strips of cured sealants showing the full range of colors available for each product exposed to view.
3. Compatibility and Adhesion Test Reports: Indicating the following:
 - a. Materials forming joint substrates and joint-sealant backings have been tested for compatibility and adhesion with joint sealants.
 - b. Interpretation of test results and written recommendations for primers and substrate preparation needed for adhesion.
4. Preconstruction Field Test Reports indicating which sealants and joint preparation methods resulted in optimum adhesion to joint substrates based on preconstruction testing specified in section 01 4000 Quality Requirements.
5. Letter of Compatibility from sealant manufacturer indicating that they have reviewed and approved conditions, substrates, and backings indicated and specified for this project.

1.4 QUALITY ASSURANCE

- A. Installer Qualifications: Company specializing in work of this Section with minimum 5 years continuous documented experience for sealant work comparable to Project Scope.
- B. Manufacturer: Make tests determining compatibility of exterior sealants with substrates and other sealants as necessary to conform to manufacturer's Warranty provisions and project requirements.
- C. Source Limitations: Obtain each type of joint sealant through one source from a single manufacturer.
- D. Preconstruction Field-Adhesion Testing: Before installing elastomeric sealants, field test their adhesion to Project joint substrates as follows:

1. Locate test joints where indicated on Drawings or, if not indicated, as directed by Consultant.
 2. Conduct field tests for each type of elastomeric sealant and joint substrate indicated.
 3. Notify Consultant seven days in advance of dates and times when joints will be tested.
 4. Arrange for tests to take place with joint-sealant manufacturer's technical representative present. Consultant shall also be present for the testing.
 - a. Test Method: Test joint sealants according to Method A, Field-Applied Sealant Joint Hand Pull Tab, in Appendix X1 in ASTM C 1193.
 - 1) For joints with dissimilar substrates, verify adhesion to each substrate separately; extend cut along one side, verifying adhesion to opposite side. Repeat procedure for opposite side.
 5. Report whether sealant in joint connected to pulled-out portion failed to adhere to joint substrates or tore cohesively. Include data on pull distance used to test each type of product and joint substrate. For sealants that fail adhesively, repair and retest until satisfactory adhesion is obtained.
 6. Evaluation of Preconstruction Field-Adhesion-Test Results: Sealants not evidencing adhesive failure from testing, in absence of other indications of noncompliance with requirements, will be considered satisfactory. Do not use sealants that fail to adhere to joint substrates during testing.
 7. Sealant manufacturer or their technical representative shall provide written report confirming results of the field testing, including acceptance of the sealant performance and any recommendations for corrective action in case of failures.
- E. Mockups: Build mockups incorporating each type of sealant joints to demonstrate aesthetic effects and set quality standards for materials and execution:
- 1.5 DELIVERY, STORAGE AND HANDLING
- A. Comply with manufacturer's instructions.
- 1.6 PROJECT CONDITIONS
- A. Do not proceed with installation of joint sealants under the following conditions:
1. When ambient and substrate temperature conditions are outside limits permitted by joint-sealant manufacturer or are below 40 deg F.
 2. When joint substrates are wet.
 3. Where joint widths are less than or greater than those allowed by joint-sealant manufacturer for applications indicated.
 4. Contaminants capable of interfering with adhesion have not yet been removed from joint substrates.

1.7 WARRANTY

- A. Special Installer's Warranty: Installer's standard form in which Installer agrees to repair or replace elastomeric joint sealants that do not comply with performance and other requirements specified in this Section within specified warranty period.
 - 1. Warranty Period: Two years from date of Substantial Completion.
- B. Special Manufacturer's Warranty: Manufacturer's standard form in which elastomeric sealant manufacturer agrees to furnish elastomeric joint sealants to repair or replace those that do not comply with performance and other requirements specified in this Section within specified warranty period.
 - 1. Warranty Period: 10 years from date of Substantial Completion.
- C. Special warranties specified in this Article exclude deterioration or failure of elastomeric joint sealants from the following:
 - 1. Movement of the structure resulting in stresses on the sealant exceeding sealant manufacturer's written specifications for sealant elongation and compression caused by structural settlement.
 - 2. Disintegration of joint substrates from natural causes exceeding design specifications.
 - 3. Mechanical damage caused by individuals, tools, or other outside agents.
 - 4. Changes in sealant appearance caused by accumulation of dirt or other atmospheric contaminants.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Products: Subject to compliance with requirements, provide one of the products listed in other Part 2 articles.

2.2 MATERIALS, GENERAL

- A. Compatibility: Provide joint sealants, backings, and other related materials that are compatible with one another and with joint substrates under conditions of service and application, as demonstrated by sealant manufacturer, based on testing and field experience.
- B. Colors of Exposed Joint Sealants: Match color of adjacent siding or flashing or other finish material. Owner shall provide final selection and approval of colors.

2.3 ELASTOMERIC JOINT SEALANTS

- A. Elastomeric Sealants: Comply with ASTM C 920 and other requirements indicated for each liquid-applied chemically curing and moisture curing sealant specified, including those referencing ASTM C 920 classifications for type, grade, class, and uses related to exposure and joint substrates.

- B. Stain-Test-Response Characteristics: Where elastomeric sealants are specified to be nonstaining to porous substrates, provide products that have undergone testing according to ASTM C 1248 and have not stained porous joint substrates indicated for Project.
 - 1. Any sealant that remains exposed or will be in direct contact with porous materials that will remain exposed upon project completion shall be non-staining.
- C. Silyl-modified polymer sealant General Use Exterior Sealant, Paintable
 - 1. Acceptable materials:
 - a. Basis of Design: Sika Sikaflex HY150
 - b. Tremco: Dymonic FC
 - 2. Type and Grade: S (single component) and NS (nonsag).
 - 3. Class: 50.
 - 4. Uses Related to Exposure: NT (nontraffic).
 - 5. Uses Related to Joint Substrates: M, A, and, O as applicable to joint substrates indicated.
- D. Silicone, One Part, Medium Modulus, Non-Sag Sealant (Air Barrier Sealant):
 - 1. Acceptable materials:
 - a. Dow Corning 758 Silicone Weather Barrier Sealant.
 - b. Tremco Spectrem I.
 - 2. Type and Grade: S (single component) and NS (nonsag).
 - 3. Class: 25.
 - 4. Uses Related to Exposure: NT (nontraffic).
 - a. Sealing window to rough opening flashing membranes
 - b. Sealing seams of air and weather-resistive barriers
 - c. Targeted detailing of air and weather-resistive barriers and accessory membranes.
- E. Silicone, One Part, Medium Modulus, Non-Sag Sealant between factory finished substrates:
 - 1. Acceptable materials:
 - a. Dow Corning 795 Silicone Building Sealant.
 - b. Tremco Spectrem III.
 - 2. Type and Grade: S (single component) and NS (nonsag).
 - 3. Class: 50.
 - 4. Uses Related to Exposure: NT (nontraffic).

5. Uses Related to Joint Substrates: G, A, and as applicable to joint substrates indicated, O.

- F. Primer for Silicone Sealant: Provide manufacturer recommended primer for substrates as determined through preconstruction testing:

1. DowSil Primer P
2. DowSil Primer 1200 OS

2.4 JOINT-SEALANT BACKING

- A. General: Provide sealant backings of material and type that are nonstaining; are compatible with joint substrates, sealants, primers, and other joint fillers; and are approved for applications indicated by sealant manufacturer based on field experience and laboratory testing.
- B. Bond-Breaker Tape: Polyethylene tape or other plastic tape recommended by sealant manufacturer, applied to sealant contact surfaces where bond to substrate or backer rod must be avoided for proper performance of sealant. Provide self-adhesive tape.
- C. Backer Rods: Provide non-adhering type as recommended by sealant manufacturer and complying with the following:
 1. All joints; bi-cellular polyethylene or polyolefin foam rod.
 2. Acceptable manufacturers:
 - a. Namaco: SOF Bi-Cellular Backer Rod.
 3. Diameter: 1/3 greater than width of joint where it is to be installed, or as recommended by manufacturer of joint backing.
 4. Polystyrene foam and 'non-skinned' open cell rods are not acceptable

2.5 MISCELLANEOUS MATERIALS

- A. Cleaner: Products acceptable to manufacturers of sealants and sealant backing and substrate materials, free of oily residues or other substances capable of staining or harming joint substrates and adjacent surfaces in any way, and formulated to promote optimum adhesion of sealants to joint substrates.
- B. Masking Tape: Non-staining, non-absorbent material compatible with joint sealants and surfaces adjacent to joints.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine joints indicated to receive joint sealants, with Installer present, for compliance with requirements for joint configuration, installation tolerances, and other conditions affecting joint-sealant performance.
- B. Proceed with installation only after unsatisfactory conditions have been corrected. Application of sealant constitutes acceptance from the Installer of acceptable substrate conditions.

3.2 PREPARATION

- A. Surface Cleaning of Joints: Clean out joints immediately before installing joint sealants to comply with joint-sealant manufacturer's written instructions and the following requirements:
1. Remove all foreign material from joint substrates that could interfere with adhesion of joint sealant, including dust, paints (except for permanent, protective coatings tested and approved for sealant adhesion and compatibility by sealant manufacturer), oil, grease, water, surface dirt, and frost.

Clean porous joint substrate surfaces by brushing, grinding, blast cleaning, mechanical abrading, or a combination of these methods to produce a clean, sound substrate capable of developing optimum bond with joint sealants. Remove loose particles remaining after cleaning operations above by vacuuming or blowing out joints with oil-free compressed air. Typical porous joint substrates include but are not limited to Wood, Fiber Cement Siding, Stucco, Concrete, and Masonry
 2. Clean nonporous surfaces with chemical cleaners or other means that do not stain, harm substrates, or leave residues capable of interfering with adhesion of joint sealants. Typical nonporous joint substrates include but are not limited to Metal, Plastic, and Glass
- B. Joint Priming: Prime joint substrates based on preconstruction joint-sealant-substrate tests or prior testing or experience, as recommended by the manufacturer. Primer to be used for all joint substrates, unless recommended otherwise in writing by sealant manufacturer based on prior or pre-construction testing. Apply primer to comply with joint-sealant manufacturer's written instructions. Confine primers to areas of joint-sealant bond; do not allow spillage or migration onto adjoining surfaces.
- C. Masking Tape: Use masking tape where required to prevent contact of sealant with adjoining surfaces that otherwise would be permanently stained or damaged by such contact or by cleaning methods required to remove sealant smears. Remove tape immediately after tooling without disturbing joint seal.
- D. Remove existing joint sealant materials. Clean joints and remove joint sealant residue. Repair deteriorated or damaged substrates as recommended by sealant manufacturer to provide suitable substrate. Allow patching materials to cure.

3.3 INSTALLATION OF JOINT SEALANTS

- A. General: Comply with joint-sealant manufacturer's written installation instructions for products and applications indicated, unless more stringent requirements apply.
- B. Sealant Installation Standard: Comply with recommendations in ASTM C 1193 for use of joint sealants as applicable to materials, applications, and conditions indicated.
- C. Install sealant backings of type indicated to support sealants during application and at position required to produce cross-sectional shapes and depths of installed sealants relative to joint widths that allow optimum sealant movement capability.
1. Do not leave gaps between ends of sealant backings.

2. Do not stretch, twist, puncture, or tear sealant backings.
 3. At corners, miter backer rod or in some other way assure that the rod is not pinched or deformed in such a way as to lessen or increase its depth or cause variation in the sealant depth
 4. Remove absorbent sealant backings that have become wet before sealant application and replace them with dry materials.
 - D. Install bond-breaker tape behind sealants where backer rods cannot be used between sealants and backs of joints.
 - E. Install sealants using proven techniques that comply with the following and at the same time backings are installed:
 1. Place sealants so they directly contact and fully wet joint substrates.
 2. Completely fill recesses in each joint configuration.
 3. Produce uniform, cross-sectional shapes and depths relative to joint widths that allow optimum sealant movement capability.
 - F. Tooling of Nonsag Sealants: Immediately after sealant application and before skinning or curing begins, tool sealants according to requirements specified below to form smooth, uniform beads of configuration indicated; to eliminate air pockets; and to ensure contact and adhesion of sealant with sides of joint.
 1. Remove excess sealant from surfaces adjacent to joints.
 2. Use tooling agents that are approved in writing by sealant manufacturer and that do not discolor sealants or adjacent surfaces.
 3. Provide concave joint configuration per Figure 8A in ASTM C 1193, unless otherwise indicated.
 4. Provide recessed joint configuration of recess depth and at locations indicated per Figure 8C in ASTM C 1193.
 - a. Use masking tape to protect surfaces adjacent to recessed tooled joints.
- ### 3.4 FIELD TESTING
- A. Quality Control Testing:
1. Contractor shall perform adhesion tests in accordance with manufacturer's instructions and ASTM C1193, Method A, Field-Applied Sealant Joint Hand-Pull Tab.
 2. For each type of joint sealant, perform 5 tests for first 1,000 linear feet of applied sealant and 1 test for each 1,000 feet of sealant thereafter or perform 2 tests per building elevation minimum.
 3. For sealants applied between dissimilar materials, test both sides of joint.
 4. Sealants failing adhesion test shall be removed, substrates cleaned, seals re-installed, and re-testing performed.

5. Maintain test log and submit report to Consultant indicating tests, locations, dates, results, and remedial actions.
- B. Quality Assurance Testing:
 1. Consultant shall undertake selective field-cut testing.
 2. Consultant shall determine the number of tests based on field observations. At a minimum, no less than three tests will be performed at randomly selected areas.
 3. Contractor shall repair sealant test cuts at no additional cost to Owner.
 4. Should field testing reveal sealants with improper installation or adhesion, additional test cuts shall be undertaken at the Consultants discretion to verify further sealant application. Repairs to correct test cuts and improperly applied sealant shall be undertaken by the Contractor at no additional expense to the Owner.
- 3.5 REPAIR
 - A. Examine installation carefully. Repair areas where sealant is not properly adhered due to bubbles, foreign matter, or other defects. All sealant repairs must be completed in accordance with the manufacturers recommendations.
- 3.6 CLEANING
 - A. Clean off excess sealant or sealant smears adjacent to joints as the Work progresses by methods and with cleaning materials approved in writing by manufacturers of joint sealants and of products in which joints occur.
- 3.7 PROTECTION
 - A. Protect joint sealants during and after curing period from contact with contaminating substances, including but not limited to dust, moisture, and other harmful substances, and from damage resulting from construction operations or other causes so sealants are without deterioration or damage at time of Substantial Completion. If, despite such protection, damage or deterioration occurs, cut out and remove damaged or deteriorated joint sealants immediately so installations with repaired areas are indistinguishable from original work.

END OF SECTION 07 9200

LBCC BENTON CENTER - ROOF RENEWAL

757 NW POLK AVE, CORVALLIS, OR 97330

ISSUED ON: 2026-02-06

SCOPE OF REPAIR SUMMARY

SEE SECTION 01 1013 - SCOPE OF REPAIR IN THE PROJECT MANUAL. SHOULD THERE BE DISCREPANCIES BETWEEN THIS SCOPE OF REPAIR SUMMARY AND SECTION 01 1013 OF THE PROJECT MANUAL, SECTION 01 1013 SHALL GOVERN.

GENERAL REQUIREMENTS:

- THE TERMS "WORK" AND "SCOPE OF REPAIR" SHALL BE USED INTERCHANGEABLY WITHIN THIS DOCUMENT AND ARE NOT MUTUALLY EXCLUSIVE. THE WORD "CONTRACTOR" SHALL BE INCLUSIVE OF THE GENERAL CONTRACTOR, SUB-CONTRACTORS, DELEGATED DESIGN ENTITIES, MATERIALS VENDORS ACTING ON BEHALF OF THESE STATED PARTIES, AND PARTIES THERE TO.
- THE CONTRACTOR SHALL INCLUDE PRICING FOR FULL-TIME SUPERVISION, PROJECT MANAGEMENT, OFFICE SERVICES, MATERIAL, STORING AND STAGING, INCIDENT WEATHER PROTECTION AT WORK AREAS, AND ACCESS.
- THE CONTRACTOR SHALL PROVIDE AND DELINEATE MONETARY VALUES FOR OVERHEAD COSTS, PROFIT, MARKUP, AND INSURANCE AS PART OF THE OWNER'S ESTIMATE. CONTRACTOR ESTIMATES SHALL BE IN A TABULATED FORMAT, USING CONSTRUCTION SPECIFICATIONS INSTITUTE (CSI) "SCHEDULE OF VALUES" FORMATTING.
- PROVIDE NECESSARY STAGING AND WEATHER PROTECTION TO PERFORM THE WORK WITHIN THE BASE COST. ENSURE SAFE AND ALTERNATE ACCESS IS PROVIDED TO ACCOMMODATE THE GENERAL PUBLIC.
- THE CONTRACTOR SHALL SUPPLY DUMPSTERS AND DISPOSAL FEES NECESSARY TO COMPLETE THE PROJECT. THE CONTRACTOR SHALL KEEP WORK AREAS CLEAN DURING CONSTRUCTION.
- THE CONTRACTOR SHALL NOT RESTRICT ACCESS TO AND FROM THE MAIN ENTRANCE AT ANY TIME DURING THE WORK. THE CONTRACTOR SHALL MAINTAIN THE MEANS OF EGRESS TO THE PUBLIC WAY ACCORDING TO THE GOVERNING BUILDING CODE AND FIRE MARSHAL REQUIREMENTS. THE BUILDING ADDRESS SHALL REMAIN UNOBSSTRUCTED.
- THE CONTRACTOR SHALL HAVE A DEDICATED POINT OF CONTACT CAPABLE OF LIAISING WITH THE ON-SITE COMMUNITY MANAGEMENT PERSONNEL.
- THE CONTRACTOR SHALL TAKE REASONABLE STEPS TO CONTROL SMELLS WHILE INSTALLING WATERPROOFING MEMBRANES, PRIMERS, SEALANTS, AND OTHER ODOROUS CONSTRUCTION PRODUCTS FROM IMPACTING THE RESIDENTS WITHIN THE UNITS DURING THE INSTALLATION OF THESE PRODUCTS. USE LOW-VOC PRODUCTS WHENEVER POSSIBLE. TAKE ADDITIONAL PRECAUTIONS IF OTHERWISE.
- THE CONTRACTOR WILL BE RESPONSIBLE FOR KEEPING THE ENTIRE JOB SITE SAFE AND CLEAN DURING THIS CONSTRUCTION. CLEAN DAILY THROUGHOUT THE CONSTRUCTION PERIOD.
- PROVIDE ALL NECESSARY PREPARATIONS, SAFETY PRECAUTIONS, AND SITE MOBILIZATION COSTS TO PERFORM THE WORK WITHIN THE BASE COST. AS PART OF THE PROPOSAL, SUBMIT PROOF OF LIABILITY INSURANCE (NOT LESS THAN \$2 MILLION IN AGGREGATE COVERAGE) AND SUFFICIENT BONDING CAPACITY TO COVER THE PROJECT.
- MAINTAIN FULL ACCESS TO THE BUILDING ENTRANCES DURING THE REPAIRS.
- ALL METAL FASTENERS AND CONNECTORS SHALL HAVE SUFFICIENT CORROSION RESISTANCE TO MATCH THE EXPECTED SERVICE LIFE OF THE MATERIALS, COMPONENTS, AND ASSEMBLIES THEY ARE TO AFFIX. METAL FASTENERS SHALL HAVE A MINIMUM OF HOT-DIPPED GALVANIZED, STAINLESS STEEL, OR OTHERWISE COATED TO PASS A MINIMUM OF 1000-HOUR SALT SPRAY WHEN TESTED PER ASTM B117.
- CONSTRUCT ALL SHEET METAL FLASHINGS FROM 24-GAUGE SHEET STEEL UNLESS NOTED OTHERWISE. FOR STANDARD FLASHING PROFILES, PROVIDE 4-INCH UP-LEGS AND 1-INCH DOWN-LEGS WITH AN ADDITIONAL 1/2-INCH DRIP EDGE BENT AT A 45° ANGLE. ENSURE ALL SHEET-METAL FLASHING HAS A MINIMUM 15° SLOPE AND PERMANENTLY WATER-TIGHT JOINTS AND TERMINATIONS THAT MEET THE MINIMUM SMACNA REQUIREMENTS. TYPICAL END DAMS ARE TO BE FOLDED UP 12-INCH HIGH.
- WHERE TERMINATED AT INTERFACING WALLS OR OTHER SIMILAR TRANSITIONS, PROVIDE KICKERS OR DIVERTERS AS NEEDED TO DEFLECT WATER. ALL EXPOSED EDGES OF THE EXTERIOR OF THE CLADDING ARE TO BE HERMED UNLESS OTHERWISE SPECIFIED. SECURE ALL FLASHING WITH CORROSION-RESISTANT FASTENERS. ALL FLASHING ASSOCIATED WITH THE ROOFING SYSTEM IS TO BE PRE-FINISHED.
- ADHERED SHEET AND LIQUID-APPLIED MEMBRANES SHALL ACHIEVE COMPLETE ADHESION TO WHICH THE SUBSTRATES TO WHICH THEY ARE BONDED. USE A MANUFACTURER-APPROVED PRIMER AS NEEDED TO ACHIEVE SUFFICIENT AND PERMANENT ADHESION. APPLY THE MEMBRANE FREE OF DISTURBANCES, ALWAYS WORKING TO A LINE. FOR ADHERED SHEET MEMBRANES, USE A ROLLER TO PROVIDE MECHANICAL PRESSURE OVER THE ENTIRE SURFACE IMMEDIATELY AFTER APPLICATION; WRINKLES AND AIR POCKETS WILL NOT BE ACCEPTED.
- CLEAN ALL CONSTRUCTION-RELATED RESIDUES AND DEBRIS FROM THE BUILDINGS AND SURROUNDING GROUNDS UPON COMPLETION OF THE WORK. CLEAN DAILY THROUGHOUT THE CONSTRUCTION PERIOD.
- ASSEMBLIES AND ALL AREAS OF THE SCOPE OUTLINED IN THE CONSTRUCTION DOCUMENTS WILL BE VERIFIED AND APPROVED FOR CONSTRUCTION IN THE FIELD DURING IN-SITU FIELD MOCK-UPS PERFORMED BY THE CONTRACTOR AND THEIR SUBCONTRACTORS. THE CONTRACTOR IS TO ENSURE THIS IS ACCOMMODATED WITHIN THE CONSTRUCTION SCHEDULE.

ALLOWANCES:

- ALLOWANCE 1: REPLACEMENT OF PLYWOOD ROOF DECK SHEATHING**
PROVIDE A SUITABLE ALLOWANCE FOR THE REPLACEMENT OF DAMAGED PLYWOOD DECK SHEATHING PRIOR TO THE INSTALLATION OF THE NEW ROOFING SYSTEM.
- UNIT COST PER 4' X 8' SHEET OF PLYWOOD (3/4" CDX) REPLACED (TIME AND MATERIALS INCLUDED) SHALL BE \$100.
 - CONTRACTOR SHALL ASSUME A MINIMUM OF 15 SHEETS SHALL NEED REPLACEMENT PER INDIVIDUAL SCHOOL PROJECT AS PART OF THE BASE COST, OR \$1,500.

ALTERNATES:

- ALTERNATE F: NORTH ROOF RESTORATIVE COATING**
PROVIDE A SUITABLE ADDITIONAL ALTERNATE FOR RE-COATING THE NORTH ROOF AS NOTED ON THE DRAWINGS

GENERAL CONDITIONS:

- PROJECT MOBILIZATION SHALL INCLUDE ALL CONTRACTOR AND SUBCONTRACTOR MOBILIZATION COSTS.
- PROJECT GENERAL REQUIREMENTS AND ALL MISCELLANEOUS COSTS ASSOCIATED WITH THE COMPLETION OF THE WORK SHALL INCLUDE, BUT NOT BE LIMITED TO, DEMOLITION AND DISPOSAL, WATER DAMAGE REMEDIATION, CLADDING REHABILITATION OR REPLACEMENT AS APPLICABLE, WINDOW REHABILITATION AS APPLICABLE, ROOF REHABILITATION, AND PROJECT CLEAN-UP.
- CARRY PRICING FOR APPROPRIATE SITE SUPERVISION, PROJECT MANAGEMENT, OFFICE SERVICES, ON-SITE TEMPORARY OFFICE, MATERIAL STORING AND STAGING, FULL-TIME WEATHER PROTECTION, SCAFFOLDING, STAGING AND ACCESS, TEMPORARY SHORING, TEMPORARY FENCING, SAFEGUARDS, PEDESTRIAN PROTECTION, WORK FACILITIES, CONSTRUCTION OFFICES, UTILITY COST, SECURITY SUBMITTALS, RFIs, MOCK-UPS, PROJECT PROGRESS MEETINGS, RECORD DRAWINGS, ETC.
- CONTRACTOR SHALL PROVIDE AN ORGANIZATIONAL CHART WITH THE PROPOSAL FOR STAFFING THE PROJECT. STAFFING MUST INCLUDE A PROJECT MANAGER, A SITE SUPERINTENDENT, AND AT LEAST ONE FULL-TIME QUALITY CONTROL INSPECTOR.
- CARRY ALLOWANCES FOR APPLICABLE TRADE PERMITS AND CGI INSURANCE.
- LIMITED TRADE WORK WILL REQUIRE PERMITS. ALL SUCH WORK SHALL BE DONE UNDER PERMITS AS REQUIRED BY THE CITY OF CORVALLIS. INCLUDE ALL COST NECESSARY FOR SUBMISSION DOCUMENTS REQUIRED TO PERMIT AND COMPLETE THIS PROJECT INCLUDING ALL NECESSARY AS-BUILTS, SHORING AND SURVEYS. PERMITS ARE EXPECTED TO BE REQUIRED FOR EACH INDIVIDUAL BUILDING (AS OPPOSED TO A SINGLE PERMIT FOR THE ENTIRE PROJECT) AND COSTS ARE TO BE CARRIED AS SUCH.
- CONTRACTOR SHALL MAINTAIN ALL INSURANCE COVERAGES IDENTIFIED IN THE CONTRACT.
- IT WILL BE THE CONTRACTOR'S RESPONSIBILITY TO KEEP THE ENTIRE JOBSITE SAFE AND CLEAN DURING THIS CONSTRUCTION. DAILY CLEAN-UP WILL BE REQUIRED THROUGHOUT THE CONSTRUCTION PERIOD.
- CONTRACTOR TO SUPPLY ALL DUMPSTERS AND DUMP FEES NECESSARY TO COMPLETE PROJECT.
- ALL SUBCONTRACTOR CONTRACTS MUST BE SIGNED AND IN EFFECT PRIOR TO THE START OF CONSTRUCTION. PROOF OF EXECUTED SUBCONTRACTOR AGREEMENTS SHALL BE PRESENTED BY THE CONTRACTOR TO THE OWNER PRIOR TO ANY CONSTRUCTION OR STAGING TAKING PLACE.
- UPON REINSTATEMENT OF PERMANENT STRUCTURAL LOAD SYSTEMS, REMOVE AND DISPOSE OF ANY TEMPORARY SHORING MATERIALS IN PLACE PRIOR TO OR USED DURING THE COURSE OF CONSTRUCTION PER LOCAL REQUIREMENTS.
- PROVIDE ALL NECESSARY STAGING, HOARDING, AND WEATHER PROTECTION TO PERFORM THE WORK WITHIN THE BASE COST.
- CONTRACTOR TO ENSURE THAT CONSTRUCTION ACCESS TO THE ROOF IS NOT ACCESSIBLE TO THE GENERAL PUBLIC, THROUGH LOCKING MEANS, REMOVAL OF GROUND LEVEL ACCESS AT THE END OF THE WORK DAY, OR OTHER MEANS OF ACCESS PREVENTION.
- PROVIDE ALL NECESSARY PREPARATIONS TO PERFORM THE WORK WITHIN THE BASE COST.
- WATER AND WEATHER ENTRY INTO THE BUILDING THROUGHOUT THE DURATION OF CONSTRUCTION IS NOT TO OCCUR. CONTRACTOR SHALL BEAR ALL ASSOCIATED REPAIR COSTS SHOULD THIS OCCUR.

SCOPE REQUIREMENTS - SOUTH ROOF ZONE - NEW LOW-SLOPE ASSEMBLY

- TEMPORARILY REMOVE AND STORE ALL MISCELLANEOUS COMPONENTS AFFIXED OR SET ON THE BUILDING ROOF THAT MAY BE IMPACTED BY THE WORK. STORE FOR REINSTALLATION UNLESS SCHEDULED FOR REPLACEMENT.
- REMOVE AND DISPOSE OF ALL EXHAUST VENTS COVERS (ROOF VENTS AND DRYER VENTS) AND REPLACE WITH NEW IN ACCORDANCE WITH THE DESIGN DOCUMENTS.
- REMOVE DOWNSPOUTS IN THE AREA OF WORK OR PREPARE FOR RE-CONNECTION TO REVISED DRAINAGE SYSTEMS.
- REMOVE AND PROPERLY DISPOSE OF FLASHINGS, EDGE METALS AND ASSOCIATED COMPONENTS IMPACTED BY THE WORK AND AS NEEDED FOR PROPER INSTALLATION OF THE NEW ROOFING AND DRAINAGE SYSTEMS.
- CONSTRUCT ALL SHEET-METAL FLASHING FROM 24-GAUGE PRE-FINISHED SHEET-METAL FLASHING. ENSURE ALL SHEET-METAL FLASHING HAS A MINIMUM 15° SLOPE AND PERMANENTLY WATER-TIGHT JOINTS THAT MEET THE MINIMUM SMACNA REQUIREMENTS. SECURE ALL FLASHING WITH 304 STAINLESS-STEEL FASTENERS OR HOT-DIPPED GALVANIZED FASTENERS. PLATED FASTENERS ARE NOT TO BE USED.
- INSTALL SELF-ADHERED MEMBRANE, PRE-MANUFACTURED FLASHINGS, AND SHEET-METAL FLASHING AS NEEDED TO FLASH THE VARIOUS SMALL PENETRATIONS (I.E., PIPES, EXHAUST VENTS, ROOF SCUPPER SLEEVES AND OVERFLOWS, ETC.) AS PER THE DESIGN DOCUMENTS.

DESIGN INTENT

THE GENERAL DESIGN INTENT IS TO COMPLETELY DEMOLISH LOW-SLOPE ROOFING SYSTEMS WHERE INDICATED ON THE ROOF PLANS AND PROVIDE NEW A NEW LOW-SLOPE ROOFING SYSTEM PER THE DRAWINGS AND SPECIFICATIONS. WORK SHALL INCLUDE THE INTEGRATION OF LOW-SLOPE ROOFS TO ADJACENT WALLS, COPINGS, AND APERTURANCES AS INDICATED ON THE DETAILS.

INCLUDED IN THIS WORK ARE REVISIONS OF CROCKETING TO ACHIEVE PROPER SLOPES, AS OTHER MISCELLANEOUS ITEMS IDENTIFIED IN THE DOCUMENTS. WHERE NOTED, EXISTING ELEMENTS SUCH AS MECHANICAL UNITS, SHROUDS, SERVICE CONDUITS, AND HVAC COMPONENTS ARE TO BE REMOVED AND REINSTALLED OR WATERPROOFED IN PLACE. WHERE LOW-SLOPE ROOFING SYSTEMS ARE REPLACED, SKYLIGHTS SHALL BE REPLACED AS WELL PER THE SPECIFICATIONS.

ABBREVIATIONS:

AL	ALUMINUM
APPROX	APPROXIMATE
ARCH.	ARCHITECTURAL
BLDG.	BUILDING
BOT.	BOTTOM
COL.	COLUMN
C.M.U.	CONCRETE MASONRY UNIT
CONC.	CONCRETE
CONT.	CONTINUOUS
CONSTR.	CONSTRUCTION
CM	COMPLETE WITH
DIAM.	DIAMETER
DIM.	DIMENSION
DWG.	DRAWING
D.S.	DOWNSPOUT
EA.	EACH
EL.	ELEVATION
ELEC.	ELECTRICAL
EQU.	EQUAL
EQUIP.	EQUIPMENT
EXIST.	EXISTING
EXT.	EXTERIOR
F.C.	FIBER CEMENT
F.D.	FLOOR DRAIN
FIN.	FINISH
F.R.T.W.	FIRE-RETARDANT TREATED WOOD
FUR.	FURRING OR FURRED
GA.	GAUGE
GALV.	GALVANIZED
GYP.	GYPSUM
GYPSUM	GYPSUM WALL BOARD
HORIZ.	HORIZONTAL
INT.	INTERIOR
INSUL.	INSULATION
INSUL.	INSULATION
MAX.	MAXIMUM
MEMB.	MEMBRANE
MIN.	MINIMUM
MISC.	MISCELLANEOUS
N.I.C.	NOT IN CONTRACT
N.T.S.	NOT TO SCALE
O.C.	ON CENTER
P.L.V.	PLYWOOD
OSB	ORIENTED STRAND BOARD
P.T.	PRESSURE TREATED
POL.Y.	POLYETHYLENE
R.	RADIUS
REF.	REFERENCE
REINF.	REINFORCED
REQD.	REQUIRED
REV.	REVERSED
R.O.D.	ROOF DRAIN
R.W.A.	RAINWATER LEADER
S.A.M.	SELF ADHERED MEMBRANE
SEAL.	SEALANT
SECT.	SECTION
SIMILAR	SIMILAR
SPEC.	SPECIFICATION
S.O.G.	SLAB-ON-GRADE
SST	STAINLESS STEEL
STRUC.	STRUCTURAL
T&G	TONGUE AND GROOVE
T.B.A.	TO BE CONFIRMED
TEMP.	TEMPERATURE
T.O.W.	TOP OF WALL
TYP.	TYPICAL
U.N.O.	UNLESS NOTED OTHERWISE
VERT.	VERTICAL
V.I.F.	VERIFY IN FIELD
W/O	WITHOUT
W.R.B.	WEATHER-RESISTIVE BARRIER
@	AT
#	NUMBER / POUNDS
±	PLUS OR MINUS
L	ANGLE

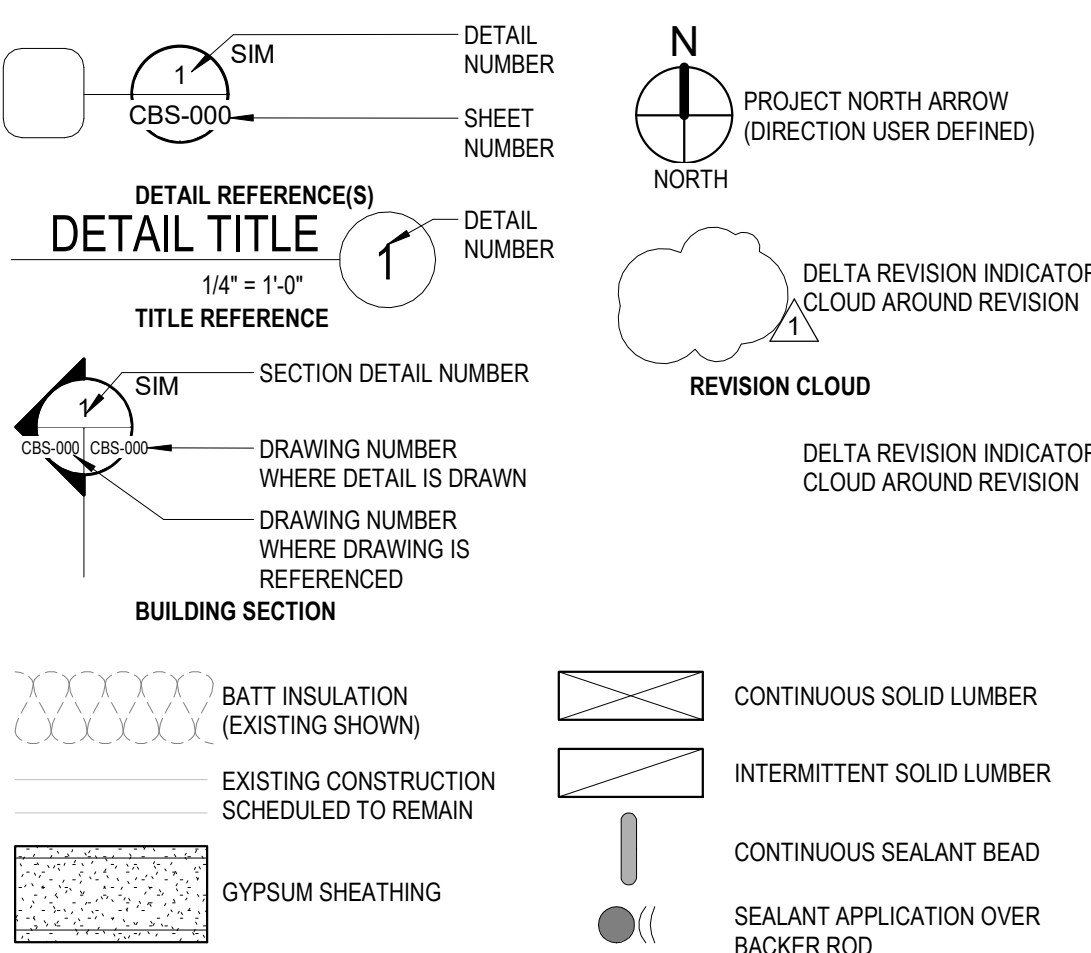
GENERAL NOTES - SHEAR AND FIRE WALLS

- SHEAR WALLS (WHERE OCCUR) FOUND THROUGH THE COURSE OF CONSTRUCTION WILL BE IDENTIFIED TO THE ARCHITECT. AS REQUIRED, REVISED PLANS AND DETAILS IDENTIFYING HOW THE EXISTING CONDITION(S) WILL BE REMEDIATED TO MAINTAIN THE INTEGRITY OF THE SHEAR WALL(S) IN QUESTION WILL BE SUBMITTED TO THE AHJ FOR REVIEW AND APPROVAL PER SECTION 1072.1.
- UNIDENTIFIED FIRE-RESISTANT RATED WALLS FOUND THROUGH THE COURSE OF CONSTRUCTION WILL BE IDENTIFIED TO THE ARCHITECT. AS REQUIRED, REVISED PLANS AND DETAILS IDENTIFYING HOW THE EXISTING CONDITION(S) WILL BE REMEDIATED TO MAINTAIN THE INTEGRITY OF THE FIRE-RESISTANT RATED CONSTRUCTION IN QUESTION WILL BE SUBMITTED TO THE AHJ FOR REVIEW AND APPROVAL PER SECTION 1072.1.
- WHERE EXTERIOR WALLS (SHEAR, FIRE OR GENERAL USE) WALLS ARE FOUND TO HAVE DAMAGE THAT CANNOT BE TRACED TO A DEFINITIVE LEAKAGE SOURCE, THE AREA IS TO BE REVIEWED WITH THE ARCHITECT/CONSULTANT PRIOR TO DAMAGED SHEATHING REMOVAL. DO NOT PROCEED WITHOUT WRITTEN APPROVAL FROM THE ARCHITECT/CONSULTANT.

AHJ REVIEW OF REPLACED SHEATHING/FRAMING

- REPLACED SHEATHING IS TO BE NAILED PER THE FRAMING AND SHEATHING NOTES IN THESE DOCUMENTS OR PER THE ORIGINAL CONSTRUCTION DRAWINGS, WHICHEVER IS MORE STRINGENT. NOTIFY CONSULTANT IF AREAS OF FRAMING REPAIR FOUND THAT REQUIRE ENGINEERED TEMPORARY SHORING. WALL SHEATHING IS TO BE MAINTAINED UNTIL REPLACED WITH PLYWOOD WITH MINIMAL WALL AREA EXPOSED TO FRAMING AT A GIVEN TIME.
- REVIEW REPLACED SHEATHING AND FRAMING WITH THE BUILDING INSPECTOR AS REQUIRED BY THE AHJ PRIOR TO COVER.
- SHEAR WALLS FOUND THROUGH THE COURSE OF CONSTRUCTION THAT REQUIRE REPAIR WILL BE IDENTIFIED, AND REVISED PLANS AND DETAILS SHOWCASING HOW THE EXISTING CONDITIONS WILL BE REMEDIATED TO MAINTAIN THE INTEGRITY OF THE SHEAR WALL(S) IN QUESTION WILL BE RECORDED ON RECORD DOCUMENTS AND PROVIDED TO THE AHJ UPON COMPLETION OF THE PROJECT AS PART OF THE CLOSE-OUT PROCESS.

REFERENCE SYMBOLS / LEGEND



DRAWING TERMS:

- DEMOLISH: COMPLETELY REMOVE AND LEGALLY DISPOSE OF OFF-SITE.
- NEW (ITEM): A TERM USED ON DRAWINGS TO INDICATE THAT AN ITEM IS PROVIDED AS NEW WORK. ASSUME ALL WORK NOT NOTED AS EXISTING IS NEW UNLESS ADDRESSED BY ALLOWANCES AND/OR ALTERNATES.
- PROTECT (ITEM): A TERM USED ON DRAWINGS TO INDICATE AN ITEM REQUIRES PROTECTION FROM THE WORK.
- REMOVE (ITEM): A TERM USED ON DRAWINGS TO INDICATE A SPECIFIC ITEM TO BE DETACHED FROM EXISTING CONSTRUCTION AND LEGALLY DISPOSED OF OFF-SITE, UNLESS INDICATED OTHERWISE TO BE REMOVED, SALVAGED, AND REINSTALLED.
- REMOVE AND REINSTALL (ITEM): A TERM USED ON DRAWINGS TO INDICATE A SPECIFIC ITEM TO BE DETACHED FROM EXISTING CONSTRUCTION, PREPARED FOR REUSE, AND REINSTALLED BACK IN ITS EXISTING LOCATION.
- RELOCATE (ITEM): A TERM USED ON DRAWINGS TO INDICATE AN EXISTING ITEM THAT HAS BEEN REMOVED, AND TO BE REINSTALLED IN A NEW LOCATION.
- SALVAGE (ITEM): CAREFULLY DETACH FROM EXISTING CONSTRUCTION, IN A MANNER TO PREVENT DAMAGE READY FOR REUSE. INCLUDE FASTENERS OR BRACKETS NEEDED FOR REATTACHMENT IN ORIGINAL LOCATION OR ELSEWHERE.
- EXISTING TO REMAIN (ITEM): A TERM USED ON DRAWINGS TO INDICATE EXISTING ITEMS OF CONSTRUCTION THAT ARE NOT TO BE REMOVED AND THAT ARE NOT OTHERWISE INDICATED TO BE REMOVED, SALVAGED, OR REMOVED AND REINSTALLED. EXISTING TO REMAIN IS INDICATED BY GRAPHIC LINE/TYPE SYMBOL.

ENCLOSURE COMPONENT GENERAL NOTES:

- MEMBRANE INSTALLATION:**
- CLEAN AND PREPARE SURFACE PRIOR TO INSTALLATION OF ALL MEMBRANES IN ACCORDANCE TO MANUFACTURERS' RECOMMENDATIONS OR AS DIRECTED BY CONSULTANT. APPLY PRIMERS TO ACHIEVE FULL ADHESION.
 - PROVIDE SADDLE FLASHING AT INTERSECTIONS AT BALCONY/ROOF PARAPET AND WALL; BALCONY EDGE TO WALL AND ALL SIMILAR TYPE TRANSITIONS THAT MAY OCCUR WITHIN THE BUILDING ENVELOPE ASSEMBLIES.

METAL FLASHING:

- FORM JOINTS ARE TO BE S-LOCK OR STANDING SEAMS UNLESS OTHERWISE APPROVED; FORM INTERNAL & EXTERNAL CORNERS IN METAL FLASHINGS WITH JOINT ASSEMBLY SHOWN IN DRAWINGS.
- TERMINATE METAL FLASHINGS WITH UPFOLDED 12 IN. HIGH END DAMS OR KICKERS.
- INSTALL METAL HEAD FLASHINGS WITH UPFOLDED END DAMS OVER WINDOWS AND DOORS. EXTEND FLASHING AS DETERMINED BY CONSULTANT. CONTRACTOR TO FIELD VERIFY THAT METAL HEAD FLASHING DOES NOT INTERFERE WITH OPERATION OF WINDOWS, DOORS OR ACCESS PANELS.
- FORM FLASHINGS WITH 15° SLOPE TO DRAIN U.N.O.

EXTERIOR OPENINGS AND PENETRATIONS:

- NO CONCERTED EFFORT HAS BEEN MADE BY CONSULTANT TO QUANTIFY THE EXTERIOR FIXTURES, SUCH AS LIGHT FIXTURES, CONVENIENCE RECEPTACLES, EXHAUST VENTS, PIPE PENETRATIONS, HOSE BIBS, ELECTRICAL OR METERS, ETC. CONTRACTOR SHALL PERFORM OWN QUANTITY SURVEY.
- INSTALL SEALANT JOINT WITH BACKER ROD AROUND INTERIOR PERIMETER OF OPENINGS FOR AIR BARRIER CONTINUITY.
- FORM EXTERIOR PERIMETER SEALANT JOINTS 3/8 IN. WIDE WITH CLOSED CELL BACKER ROD U.N.O. MAINTAIN JOINT WIDTH:DEPTH RATIO OF 2:1.

CODE SUMMARY

GOVERNING CODES:	
BUILDING: 2022 OREGON STRUCTURAL SPECIALTY CODE (OSSC) 2021 OREGON EXISTING BUILDING CODE (OEOB) ENERGY: 2021 OREGON ZERO ENERGY READY COMMERCIAL ENERGY CODE (OEEEC) ELECTRICAL: 2023 OREGON ELECTRICAL CODE (OEC) MECHANICAL: 2022 OREGON MECHANICAL SPECIALTY CODE (OMSC) PLUMBING: 2022 OREGON PLUMBING CODE (OPC)	
CONSTRUCTION TYPE: TYPE IIA, PER 2022 OSSC TABLE 601 STRUCTURES ARE ASSUMED TO BE CONSTRUCTED ORIGINALLY IN 1950 UNDER THE 1950 UNIFORM BUILDING CODE - TYPE IHR	
OCCUPANCY CLASSIFICATION: E - EDUCATIONAL, PER 2022 OSSC SECTION 305.1 BUILDING TO REMAIN OCCUPIED DURING CONSTRUCTION - NO CHANGE IN OCCUPANCY	
FIRE DETECTION AND SUPPRESSION: EXISTING SMOKE DETECTION AND FIRE ALARM SYSTEMS TO REMAIN IN-SERVICE. NO SPRINKLER SYSTEM	
EGRESS: EXISTING PATHWAYS TO THE PUBLIC WAY TO REMAIN IN-SERVICE AND UNOBSSTRUCTED THROUGHOUT THE COURSE OF THE WORK.	
PARKING: NO CHANGE	
BUILDING FOOTPRINT: NO CHANGE	

GENERAL NOTES - ENERGY CONSERVATION

APPLICABLE ENERGY CODE:	2025 OREGON ENERGY EFFICIENCY SPECIALTY CODE (ASHRAE 90.1-2022)
CLIMATE ZONE (TABLE C301.1):	4C
OCCUPANCY TYPE(S) (IBC 302.1):	E - EDUCATIONAL

THIS DESIGN IS IN CONFORMANCE WITH THE PRESCRIPTIVE BUILDING ENVELOPE REQUIREMENTS OF OEEEC TABLE 5.4, AND AS NOTED BELOW FOR EACH BUILDING COMPONENT AND / OR PORTION OF THE BUILDING.

BUILDING ELEMENTS (PER TABLE 5.5-5)

CONSTRUCTION COMPONENT	REQUIRED (ALL OTHER)	PROVIDED (ALL OTHER)
ROOF ASSEMBLIES		
INSULATION ENTIRELY ABOVE DECK	R-30a	R-30a

GENERAL INSULATION AND ENERGY CODE NOTES:

- EXPOSED INSULATION MATERIALS, INCLUDING FACINGS AND VAPOR BARRIERS, SHALL HAVE A FLAME SPREAD INDEX NOT TO EXCEED 25 AND A SMOKE DENSITY NOT TO EXCEED 450, AND SHALL BE IN SUBSTANTIAL CONTACT WITH THE WALL OR CEILING SURFACE.
- ALL INSULATION SHALL STRICTLY CONFORM TO THE REQUIREMENTS OF UL LISTING WHERE USED IN UL RATED ASSEMBLIES.

PROJECT DATA

OWNER: LINN-BENTON COMMUNITY COLLEGE
OWNER CONTACT: PETE ZERR, pzerr@linnbenton.edu
CERTA PROJECT MANAGER: DAN RUNDLE, drundle@certasolutions.com
PROJECT ADDRESS: 757 NW POLK AVE, CORVALLIS, OR 97330
PROPERTY ID: 115358001
ZONING: Urban Growth Boundary
JURISDICTION: CITY OF CORVALLIS

LEGAL DESCRIPTION

TAX LOT NO: 11535800101
OVERLAY: CORVALLIS URBAN GROWTH BOUNDARY
ZONING MAP: 1153580

PROJECT TEAM

OWNER

LBCC BENTON CENTER

6500 PACIFIC BLVD. SW
ALBANY, OR 97321
PHONE: 541-974-4331
EMAIL: FLORIAN@LINNBENTON.EDU
CONTACT: SHELDON FLOM

OWNER'S REP

HMK COMPANY

363 STATE ST
SALEM, OR 97301
PHONE: 503-949-5569
EMAIL: CHAMBERLIN@HMKCO.ORG
CONTACT: PAUL CHAMBERLIN

ARCHITECT

CERTA BUILDING SOLUTIONS

2715 SE 8TH AVE, SUITE 100
PORTLAND, OR 97202
PHONE: 888-862-3787
EMAIL: DRUNDLE@CERTASOLUTIONS.COM
CONTACT: DAN RUNDLE
ARCHITECT: DAN RUNDLE

GENERAL NOTES - PROJECT

- ALL WORK IS TO COMPLY WITH CODES LISTED IN THE CODE SUMMARY TABLE ON THIS SHEET
 - RE-ROOFING - LEVEL 1 ALTERATION
- THE CONTRACTOR IS RESPONSIBLE TO CHECK THE PLANS AND IS TO NOTIFY THE ARCHITECT OF ANY DISCREPANCIES OR INCONSISTENCIES DISCOVERED PRIOR TO COMMENCING WORK.
- WRITTEN DIMENSIONS HAVE PRECEDENCE OVER SCALED DIMENSIONS. DO NOT SCALE THE DRAWINGS. WHERE DIMENSIONS IN DRAWINGS DIFFER FROM EXISTING CONDITIONS, NOTIFY ARCHITECT FOR CLARIFICATION AND ADJUSTMENT FROM PROCESSING WITH WORK.
- HANDRAILS ARE REQUIRED ON ALL INTERIOR OR EXTERIOR STAIRS, UNO.
- COLUMN DIMENSIONS ARE AS FOLLOWS:
 - CLEAN AND PREPARE SURFACE PRIOR TO INSTALLATION OF ALL MEMBRANES IN ACCORDANCE TO MANUFACTURERS' RECOMMENDATIONS OR AS DIRECTED BY CONSULTANT. APPLY PRIMERS TO ACHIEVE FULL ADHESION.
 - WOOD WALLS: FACE OF FRAMING UNLESS NOTED OTHERWISE
 - CONCRETE: FACE OF FINISHED CONCRETE
 - STEEL: EXPOSED SURFACE (ELEVATION FEE)
- READ DRAWINGS IN CONJUNCTION WITH PROJECT MANUAL (SPECIFICATIONS).
- DO NOT SCALE DRAWINGS. VERIFY DIMENSIONS ON SITE.
- DRAWINGS HAVE BEEN PREPARED FROM AVAILABLE RECORD DOCUMENTS AND LIMITED FIELD OBSERVATION. CONTRACTOR TO BRING DISCREPANCIES BETWEEN CERTA DOCUMENTS AND ACTUAL PROJECT CONDITIONS TO THE IMMEDIATE ATTENTION OF THE ARCHITECT / CONSULTANT AND NOTIFY ARCHITECT PRIOR TO COMMENCING WORK.
- EXECUTION OF THE CONTRACT BY THE CONTRACTOR IS A REPRESENTATION THAT THE CONTRACTOR HAS VISITED THE SITE, BECOME GENERALLY FAMILIAR WITH THE LOCAL CONDITIONS UNDER WHICH THE SITE AFFECTING IT. THESE OBSERVATIONS ARE FOR THE PURPOSE OF FACILITATING CONSTRUCTION BY THE CONTRACTOR AND NOT FOR THE PURPOSE OF DISCOVERING ERRORS, OMISSIONS, OR INCONSISTENCIES IN THE CONTRACT DOCUMENTS. HOWEVER, REPORT ERRORS, OMISSIONS, OR INCONSISTENCIES DISCOVERED BY THE CONTRACTOR PROMPTLY TO THE CONSULTANT AS A REQUEST FOR INTERPRETATION IN THE FORM PROVIDED IN THE PROJECT MANUAL.
- REPETITIVE FEATURES, REGARDLESS OF ORIENTATION, NOT SHOWN ON DRAWINGS SHALL BE COMPLETELY PROVIDED AS IF DRAWN IN FULL.
- REPORT DISCREPANCIES IN CONTRACT DOCUMENTS TO ARCHITECT / CONSULTANT FOR CLARIFICATION PRIOR TO COMMENCING WORK.
- IMMEDIATELY NOTIFY ARCHITECT / CONSULTANT UPON DISCOVERY OF ADDITIONAL UNFORESEEN DAMAGE TO EXISTING CONSTRUCTION SCHEDULED TO REMAIN AND THAT IS OUTSIDE THE CONTRACT. REQUEST A REVIEW. DO NOT COMMENCE RELATED WORK TO NEARBY WORK WITHOUT CONSULTANT APPROVAL.
- TRADE CONTRACTORS ARE RESPONSIBLE FOR THE LAYOUT OF THEIR OWN WORK, AND TO SEE THAT THEIR WORK COMES TOGETHER WITH THAT OF OTHERS WITH THE DESIGN INTENT IDENTIFIED IN THE DOCUMENTS. REPORT DISCREPANCIES ON DRAWINGS TO CONSULTANT FOR DECISIONS.
- TRADE CONTRACTORS MUST ASSURE THEMSELVES THAT THEY HAVE THE LATEST DRAWINGS ISSUED FOR CONSTRUCTION. THE GENERAL CONTRACTOR IS TO MAINTAIN A WORKING SET IN THE PROJECT OFFICE AND MAKE IT AVAILABLE FOR SUB-CONTRACTOR USE.
- EMPLOY ORIGINAL JOURNEYMAN TRADESMAN OR ORIGINAL INSTALLERS OF NEW WORK TO PERFORM CUTTING AND PATCHING OF NEW WORK, IF APPLICABLE.
- ALL RECONSTRUCTED WALLS TO MATCH EXISTING STUD FRAMING SIZING, SPACING, AND ANCHORING PATTERNS. VERIFY EACH IS CONSISTENT WITH THE ORIGINAL DESIGN DOCUMENTS.
- ALL REPAIRED, EXPOSED INSULATION IS TO HAVE A FLAME SPREAD RATING OF LESS THAN 25 AND A SMOKE DENSITY RATING OF LESS THAN 450.
- HANDRAILS ARE REQUIRED ON ALL INTERIOR OR EXTERIOR STAIRS, U.N.O. NOTIFY CONSULTANT IF FOUND TO BE MISSING.
- EXISTING BUILDING HEIGHT AND AREAS ARE NOT TO BE CHANGED.
- EXISTING EMERGENCY LIGHTING AND EXIT PATHS TO BE MAINTAINED.

MEMBRANE INSTALLATION:

- CLEAN AND PREPARE SURFACE PRIOR TO INSTALLATION OF ALL MEMBRANES IN ACCORDANCE TO MANUFACTURERS' RECOMMENDATIONS OR AS DIRECTED BY CONSULTANT.
- PROVIDE SADDLE FLASHING AT INTERSECTIONS AT BALCONY/ROOF PARAPET AND WALL, BALCONY EDGE TO WALL AND ALL SIMILAR TYPE TRANSITIONS THAT MAY OCCUR WITHIN THE BUILDING ENVELOPE ASSEMBLIES.

METAL FLASHING:

- FORM JOINTS ARE TO BE S-LOCK OR STANDING SEAMS UNLESS OTHERWISE APPROVED; FORM INTERNAL & EXTERNAL CORNERS IN METAL FLASHINGS WITH JOINT ASSEMBLY SHOWN IN DRAWINGS.
- TERMINATE METAL FLASHINGS WITH UPFOLDED 12 IN. HIGH END DAMS OR KICKERS.
- INSTALL METAL HEAD FLASHINGS WITH END DAMS OVER WINDOWS AND DOORS. EXTEND FLASHING AS DETERMINED BY CONSULTANT. CONTRACTOR TO FIELD VERIFY THAT METAL HEAD FLASHING DOES NOT INTERFERE WITH OPERATION OF WINDOW.
- FORM FLASHINGS WITH 15° SLOPE TO DRAIN U.N.O.

EXTERIOR OPENINGS AND PENETRATIONS:

- NO CONCERTED EFFORT HAS BEEN MADE BY CONSULTANT TO QUANTIFY THE EXTERIOR FIXTURES, SUCH AS LIGHT FIXTURES, CONVENIENCE RECEPTACLES, EXHAUST VENTS, PIPE PENETRATIONS, HOSE BIBS, ELECTRICAL OR METERS, ETC. CONTRACTOR SHALL PERFORM OWN QUANTITY SURVEY.
- INSTALL SEALANT JOINT WITH BACKER ROD AROUND INTERIOR PERIMETER OF OPENINGS FOR AIR BARRIER CONTINUITY.
- FORM EXTERIOR PERIMETER SEALANT JOINTS 3/8 IN. WIDE WITH CLOSED CELL BACKER ROD U.N.O. MAINTAIN JOINT WIDTH:DEPTH RATIO OF 2:1.

DRAWING INDEX

SHEET NUMBER	SHEET NAME
01 - GENERAL	
G000	COVER SHEET
02 - ARCHITECTURAL	
A100	ROOF PLAN
03 - BUILDING ENVELOPE	
B070	ROOF DETAILS - LIQUID APPLIED COATING
B0701	ROOF DETAILS - SBS MEMBRANE
B0702	DOOR INTEGRATION DETAILS

LBCC BENTON CENTER - ROOF RENEWAL
757 NW POLK AVE, CORVALLIS, OR 97330

REVISIONS

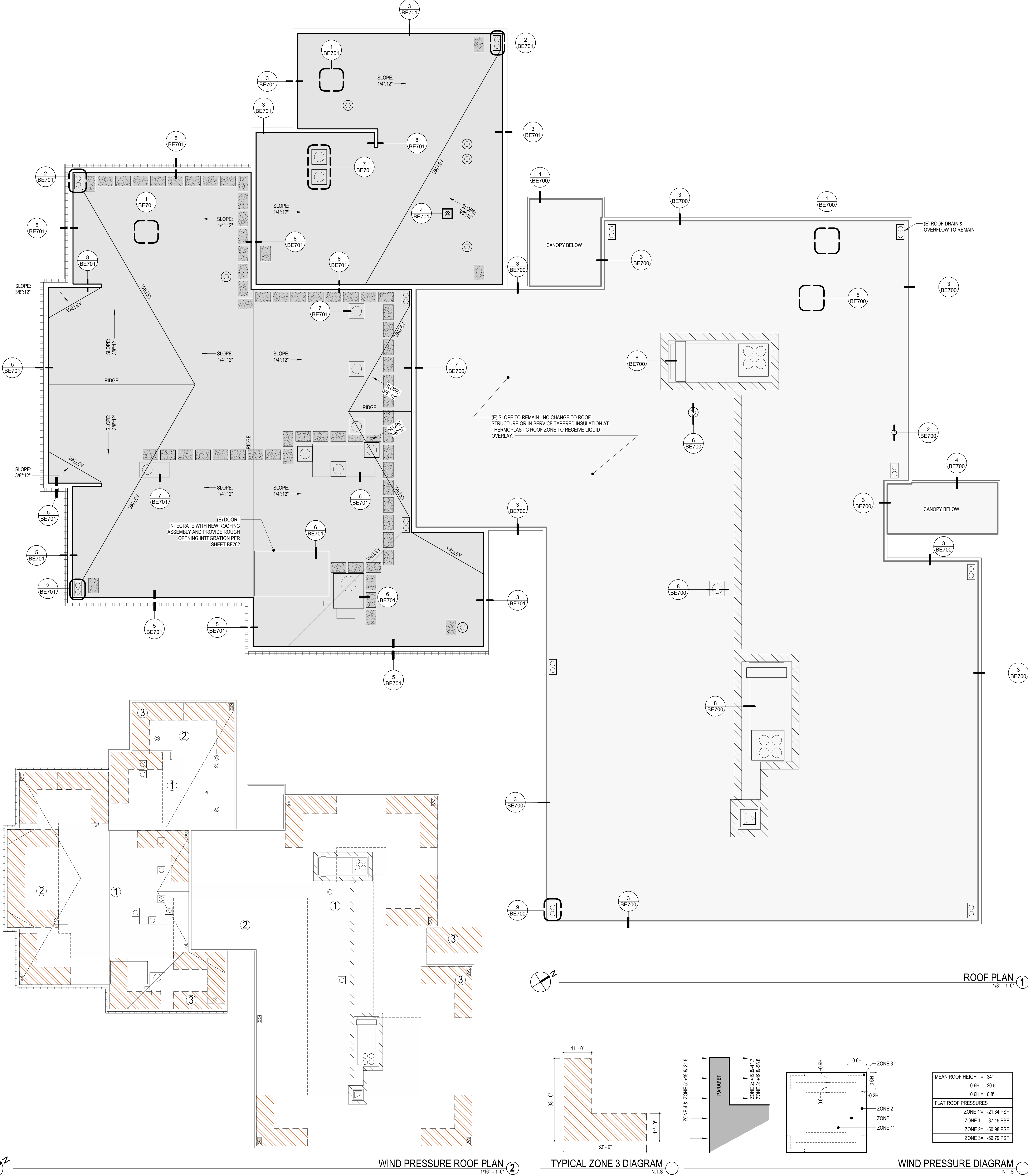
FOR BID -
NOT FOR
CONSTRUCTION

CHECKED BY: DJR
ISSUE DATE: 2026-02-06
PROJECT NO.: OR25-064

COVER SHEET

G000

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BASE BID - NEW LOW-SLOPE ASSEMBLY AT SOUTH ROOF ZONE

- SHADED REGIONS ON ROOF PLANS DENOTE ROOF ZONES TO RECEIVE NEW LOW SLOPE ROOFING SYSTEM PER THE DRAWINGS AND SPECIFICATIONS.
- CONTRACTOR SHALL FIELD-VERIFY ALL ZONES TO BE RE-ROOFED, AND PUT BACK THE SAME ELEMENTS ENCOUNTERED, UNLESS DIRECTED OTHERWISE BY CONSULTANT.
- CONTRACTOR SHALL MAINTAIN A RECORD OR "AS-BUILT" SET OF DRAWINGS, CLEARLY IDENTIFYING SUCH DISCREPANCIES BETWEEN THE DRAWINGS AND THE AS-CONSTRUCTED CONDITIONS.
- ALL AREAS OF NEW ROOFING SHALL HAVE A MINIMUM OF 1/4:12 SLOPE, INCLUDING VALLEYS, TO DRAINS AND SCUPPERS.
- PROVIDE NEW DRAINS AND SCUPPERS AT AREAS TO BE RE-ROOFED PER THE PROJECT DOCUMENTS.
- ROOF DRAINS SHALL BE SET INTO SUMP, 48-INCHES SQUARE, CENTERED ON THE DRAIN. DRAINS SHALL BE RETROFIT IN TYPE, WITH CLAMPING RING, STAINLESS STEEL BOLTS, AND GASKET TO INTERIOR DIAMETER OF THE EXISTING RAINWATER LEADER BELOW.
- NEW DRAINS SHALL HAVE A FULLY REINFORCED PMMA RESIN FLASHING PROVIDING CLOSURE INTO THE DRAIN BOWL, PER THE DETAILS.
- PROVIDE NEW CLEAN-OUTS AT EACH EXISTING RAINWATER LEADER WHERE THE EXISTING PLUMBING SERVICE MEETS GRADE, PER THE DETAILS. AS PART OF THE BASE BID, CONTRACTOR SHALL SURVEY EACH RAINWATER LEADER SERVICING ROOF DRAINS AND PRICE NEW CLEAN-OUTS AT CONDITIONS WHERE THEY ARE NOT FOUND TO BE PRESENT. CONTRACTOR SHALL COORDINATE WORK PERFORMED BY A LICENSED PLUMBER AS PART OF THE BASE BID, INCLUDING PERMITS.
- SCUPPERS SHALL BE CONSTRUCTED OF FULLY SOLDERED 22 GAUGE STAINLESS STEEL AND PROVIDED WITH FULLY REINFORCED PMMA RESIN FLASHING PER THE DETAILS.
- CURBS AND PERIMETERS SHALL BE BUILT-UP WITH SOLID FRAMING PER THE DETAILS AT LOCATIONS REQUIRED TO ELEVATE EXISTING COMPONENTS ABOVE THE SURFACE OF THE NEW ROOF. A MINIMUM OF 8-INCHES SHALL BE MAINTAINED FROM THE HORIZONTAL PLANE OF THE ROOF MEMBRANE TO ALL VERTICAL TERMINATIONS OF THE NEW ROOF.
- HVAC EQUIPMENT SHALL BE SHUT DOWN, DISCONNECTED, AND LIFTED OUT OF THE WORK ZONE UNTIL THE NEW ROOFING SYSTEM IS COMPLETE AT SERVICE CURBS.
- AS PART OF THE WORK, CONTRACTOR SHALL PROVIDE THE NECESSARY SUB-CONTRACTORS (ELECTRICAL, MECHANICAL, PLUMBING) TO COMPLETE THE RELATED WORK.
- THE COST FOR PERMITS ASSOCIATED WITH MECHANICAL, ELECTRICAL, AND PLUMBING WORK SHALL BE COORDINATED AND PAID FOR BY THE CONTRACTOR.
- CURBS AT PAST MECHANICAL LOCATIONS THAT HAVE BEEN ABANDONED SHALL BE REMOVED AS PART OF THE NEW WORK PRIOR TO THE INSTALLATION OF THE AIR/VAPOR BARRIER MEMBRANE AND INSULATION.
- PROVIDE 24 GAUGE COIL COATED (PREFINISHED) SHEET STEEL COPINGS WITH 22 GAUGE CONTINUOUS G90 GALVANIZED CLEATS, INTERLOCKING, PER THE DETAILS AND SPECIFICATIONS.
- ALL EDGE TERMINATIONS RELATED TO THE PERFORMANCE OF THE LOW SLOPE ROOFING SYSTEM SHALL BE ANCHORED PER ANSIPRI ES-1.
- SALVAGE HVAC SHROUDS AT EXISTING CURBS FOR REINSTALLATION AFTER COMPLETION OF THE NEW ROOF.
- SKYLIGHTS SHALL BE REPLACED PER THE SPECIFICATIONS, INCLUDING ZONES WHERE EXISTING SKYLIGHTS HAVE BEEN ABANDONED ATOP EXISTING CURBS.
- PROVIDE NEW ROOF HATCHES PER THE SPECIFICATIONS. MATCH THE SAME SIZES BEING REPLACED.
- SHEET METAL COMPONENTS DIRECTLY RELATED TO THE NEW ROOFING SYSTEM SHALL BE REPLACED PER THE DETAILS AND SPECIFICATIONS. SHEET METAL WORK ASSOCIATED WITH THE RE-ROOF ZONES NOT INCLUDED IN THE DRAWINGS AND SPECIFICATIONS SHALL BE PROVIDED IN-KIND AS PART OF THE BID.
- PROVIDE NEW WALK PADS AT LOCATIONS SHOWN ON THE ROOF PLANS.
- PROVIDE NEW ROOFTOP CONDUIT SUPPORTS WITH INTEGRAL STRUT PER SPECIFICATIONS.

ALTERNATE #1: COLD FLUID-APPLIED OVERLAY

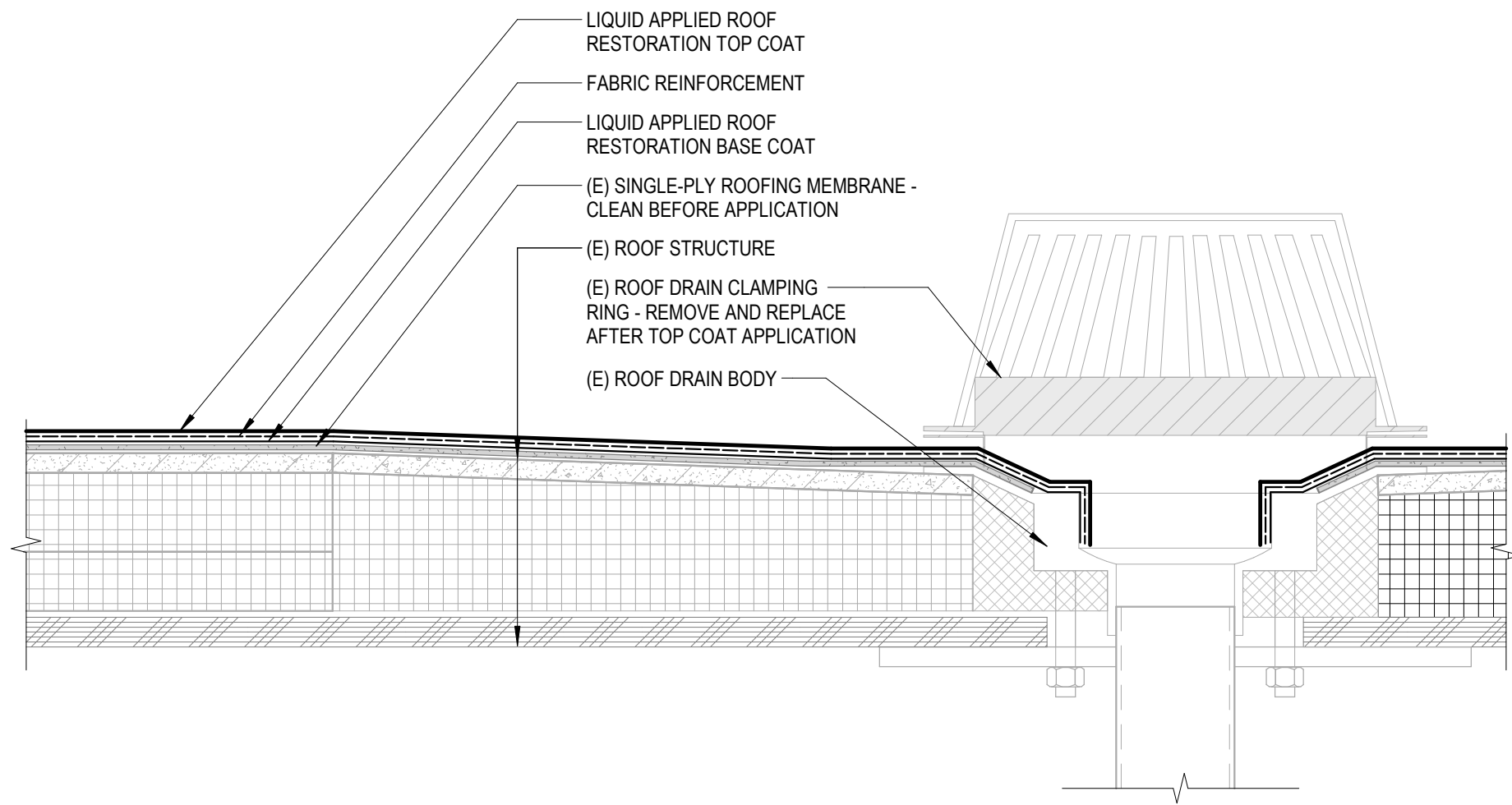
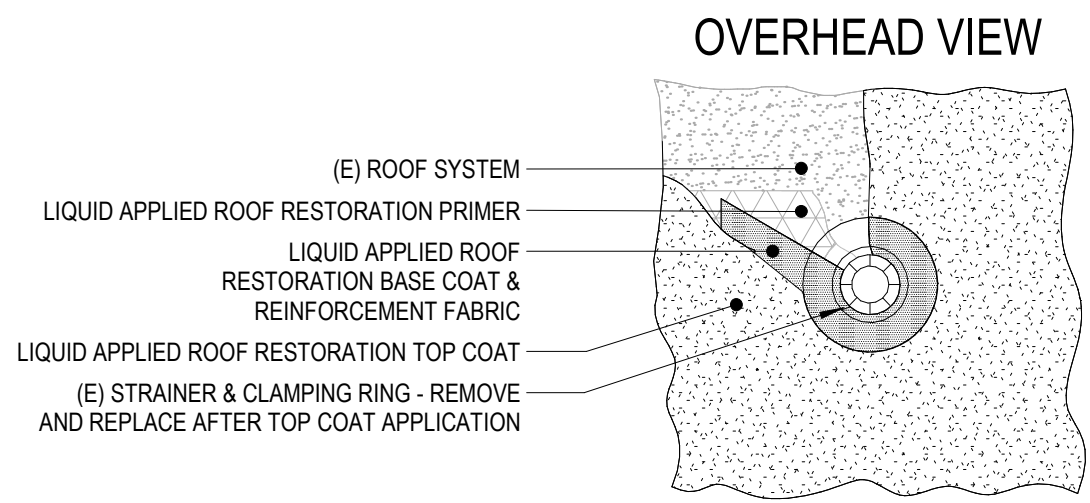
- CLEANING AND PREPARATION:**
- THE CONTRACTOR SHALL SURVEY THE EXISTING ROOF AND NOTE AREAS OF PONDING OR POOR DRAINAGE. THESE AREAS WILL BE PROVIDED WITH ADDITIONAL LIQUID ROOFING TO PROMOTE DRAINAGE.
 - THE CONTRACTOR SHALL SURVEY THE ROOFING ZONES AND MAKE NOTE OF THE LOCATION AND EXTEND OF WALKPADS FOR REAPPLICATION.
 - CAREFULLY PROTECT (WITH A PLASTIC SHEET) ADJACENT ASSEMBLIES AND ROOFTOP STRUCTURES THAT WILL NOT BE COATED WITH NEW MATERIALS.
 - COORDINATE WITH FACILITIES TO SHUT DOWN AIR INTAKE EQUIPMENT BEFORE THE START OF THE WORK.
 - PROVIDE PROTECTION (SACRIFICIAL FOAM INSULATION, ETC.) AT AREAS OF THE EXISTING ROOF DEEMED SUITABLE FOR MATERIAL STORAGE AND STAGING. LIMIT TRAFFIC ACROSS AREAS OF THE ROOF SURFACE THAT HAVE BEEN PROTECTED.
 - MAINTAIN DRAINAGE AT EXISTING ROOF DRAINS AT THE END OF EACH WORKDAY.
 - BROOM CLEAN EXISTING SUBSTRATE WITH WATER AND A MILD DETERGENT. CLEAN SUBSTRATE OF CONTAMINANTS SUCH AS DIRT, DEBRIS, OIL, AND GREASE THAT CAN AFFECT THE ADHESION OF FLUID-APPLIED MEMBRANE BY POWER WASHING AT A MINIMUM OF 2,000 PSI.
 - REMOVE EXISTING COATINGS AND SEALANTS AT PENETRATIONS AND UPTURNS.
 - ALLOW EXPOSED SURFACES TO RECEIVE THE OVERLAY TO DRY. VERIFY THAT THE EXISTING SUBSTRATE IS DRY BEFORE PROCEEDING WITH THE APPLICATION OF FLUID-APPLIED ROOFING. IF NECESSARY, SPOT-CHECK SUBSTRATES WITH AN ELECTRICAL CAPACITANCE MOISTURE-DETECTION METER.
- APPLICATION:**
- REMOVE EXISTING SHEET METAL COPING CAPS AT PARAPETS TO ALLOW ACCESS TO UNDERLYING ROOF COUNTER FLASHING.
 - REMOVE EXISTING SHEET METAL FLASHINGS AT PARAPETS, ROOF CURBS, AND BUILDING BASE OF WALLS TO EXPOSE EXISTING ROOF MEMBRANE TERMINATIONS.
 - REMOVE PITCH POCKETS AND EXPOSE THE PENETRATION.
 - REMOVE EXISTING LIQUID-APPLIED FLASHING MEMBRANES FROM EXISTING ROOF MEMBRANE CAP SHEET, SCUPPERS, AND EDGE METALS AND DISPOSE. IT IS EXPECTED THAT SOME MOISTURE IS PRESENT BETWEEN THE LIQUID-APPLIED FLASHING MEMBRANE AND CAP SHEET SO TAKE NECESSARY STEPS TO PURGE RESIDUAL MOISTURE. USE OF A TORCH TO EVAPORATE SURFACE MOISTURE IS ACCEPTABLE.
 - SCUPPER SURFACE AND OTHER METAL SURFACES SHALL BE CLEANED TO "BRIGHT METAL" IN PREPARATION FOR ROOF MEMBRANE APPLICATION.
 - PROBE ALL ROOF MEMBRANE CAP SHEET SEAMS FOR DISCONTINUITIES. IN THE EVENT A DISCONTINUITY IS IDENTIFIED, CONTINUE REMOVAL OF NON-BONDED MEMBRANE UNTIL ADHESION IS CONFIRMED. IT IS EXPECTED THAT SOME MOISTURE IS PRESENT BETWEEN THE ROOF MEMBRANE CAP SHEET AND UNDERLYING ROOFING BASE PLY SO TAKE NECESSARY STEPS TO PURGE RESIDUAL MOISTURE AND SUBSEQUENTLY HEAT WELD THE NON-BONDED MEMBRANE LAPS UTILIZING A TORCH, TROWEL, AND ROOFING CANE, AS NECESSARY.
 - PROBE THE FIELD OF ROOF MEMBRANE CAP SHEET FOR ANY BLISTERS AND POCKETS. THESE POCKETS MAY EXIST ADJACENT TO DISCONTINUOUS SEAMS OR MAY EXIST BETWEEN EDGES OF THE ROOF MEMBRANE.
 - CUT OPEN THE BLISTER IN A CROSS (+) USING A HOOK BLADE TO FULLY EXPOSE THE UNDERLYING ROOFING BASE PLY. TAKE CARE NOT TO CUT INTO THE ROOFING BASE PLY AND ANTICIPATE PRESENCE OF TRAPPED MOISTURE. TAKE NECESSARY STEPS TO PURGE MOISTURE FROM BLISTERS WHERE THEY OCCUR, AND SUBSEQUENTLY HEAT WELD THE CAP SHEET OVER BASE PLY LAP UTILIZING A TORCH, TROWEL, AND ROOFING CANE, AS NECESSARY.
 - PREPARE THE ROOF FOR POWER WASHING. PROVIDE TEMPORARY MOISTURE PROTECTION TO EXPOSED CONSTRUCTION SUCH AS PARAPETS, ROOF CURBS, AND WALL ASSEMBLIES.
 - POWER WASH THE ROOF MEMBRANE SURFACES USING EQUIPMENT WITH A MINIMUM PRESSURE OF 2,000 PSI. POWER WASHER NOZZLE MUST UTILIZE A FAN TIP NOZZLE WITH A MINIMUM 25-DEGREE ANGLE. DO NOT WASH THE ROOF SURFACE USING NOZZLES WITH ANGLES LESS THAN 25 DEGREES TO NOT DAMAGE OR PENETRATE THE ROOF MEMBRANES. REMOVE RESULTANT LOOSE MATERIAL FROM THE SURFACE OF THE ROOF IN ITS ENTIRETY. UTILIZE A BROOM IN TANDEM WITH POWER WASHER TO CLEAR DEBRIS FROM THE SURFACE OF THE ROOF. COORDINATE WITH BUILDING MANAGEMENT TO CONTROL ALL INSTANCES OF RUNOFF.
 - UPON COMPLETION OF POWER WASHING, ALLOW THE ROOF SURFACE TO COMPLETELY DRY. USE A CONTACT MOISTURE METER SUCH AS A TRAMEX MOISTURE ENCOUNTER PLUS TO CONFIRM SURFACE DRYNESS PRIOR TO PROCEEDING.
 - IF SURFACE IS DRY AND MOISTURE METER IDENTIFIES A MOISTURE ANOMALY, IMMEDIATELY NOTIFY CONSULTANT FOR FURTHER REVIEW OF CONDITIONS.
 - UPON FULL DRY-OUT OF THE ROOF SURFACE, PREPARE ALL SEAMS OF THE EXISTING ROOF MEMBRANE, INCLUDING THOSE MADE DURING THE SELECTIVE DEMOLITION AND CLEANING PHASE OF THE WORK.
 - APPLY PRIMER OVER VARIOUS SUBSTRATES WITH THE CORRESPONDING PRIMER PRODUCT.
 - APPLY BASE COAT AND LAY UP SATURATED REINFORCING FABRIC AT VARIOUS TRANSITIONS, PENETRATIONS, EXISTING MEMBRANE SEAMS, CHANGES OF PLANE, AND AS RECOMMENDED BY COATING MANUFACTURER.
 - APPLY TOP COAT TO ENCAPSULATE REINFORCING FABRIC AND BASE COAT.
 - UPON COMPLETION OF TOPCOAT APPLICATION, IDENTIFY DESIGNATED WALKING PATHS OVER THE ROOF. DEMARCATHE THE WALKING PATH WITH PAINTERS' TAPE. CLEAN THE SURFACE OF TOP COAT OF DEBRIS AND REPRIME THE TOP COAT SURFACE WITH PRIMER AND SUBSEQUENTLY APPLY A TACK-COAT OF TOP COAT AND BACKROLL SILICA SAND TO ESTABLISH A NON-SKID FINISH ALONG DESIGNATED PATHWAYS OF FOOT TRAVEL.

ROOF LEGEND

(N) 2-PLY SBS ROOF	2' X 4' OPENING INTO ATTIC SPACE FOR MECHANICAL WORK
(E) ROOF - (N) LIQUID APPLIED ROOF RESTORATION TOPCOAT	(E) WALKWAY PAD
(E) MECHANICAL UNIT	NEW WALKWAY PAD
(E) DRAIN WITH OVERFLOW DRAIN	ROOF HATCH - PROVIDE NEW PER SPECIFICATIONS
(E) VENT PENETRATION	(E) SCUPPER LOCATIONS - PROVIDE NEW PER DETAILS
ROOF CRICKET	(E) PIPE PENETRATION - INTEGRATE PER DETAILS
	FALL PROTECTION DAVIT
	FALL PROTECTION CABLE

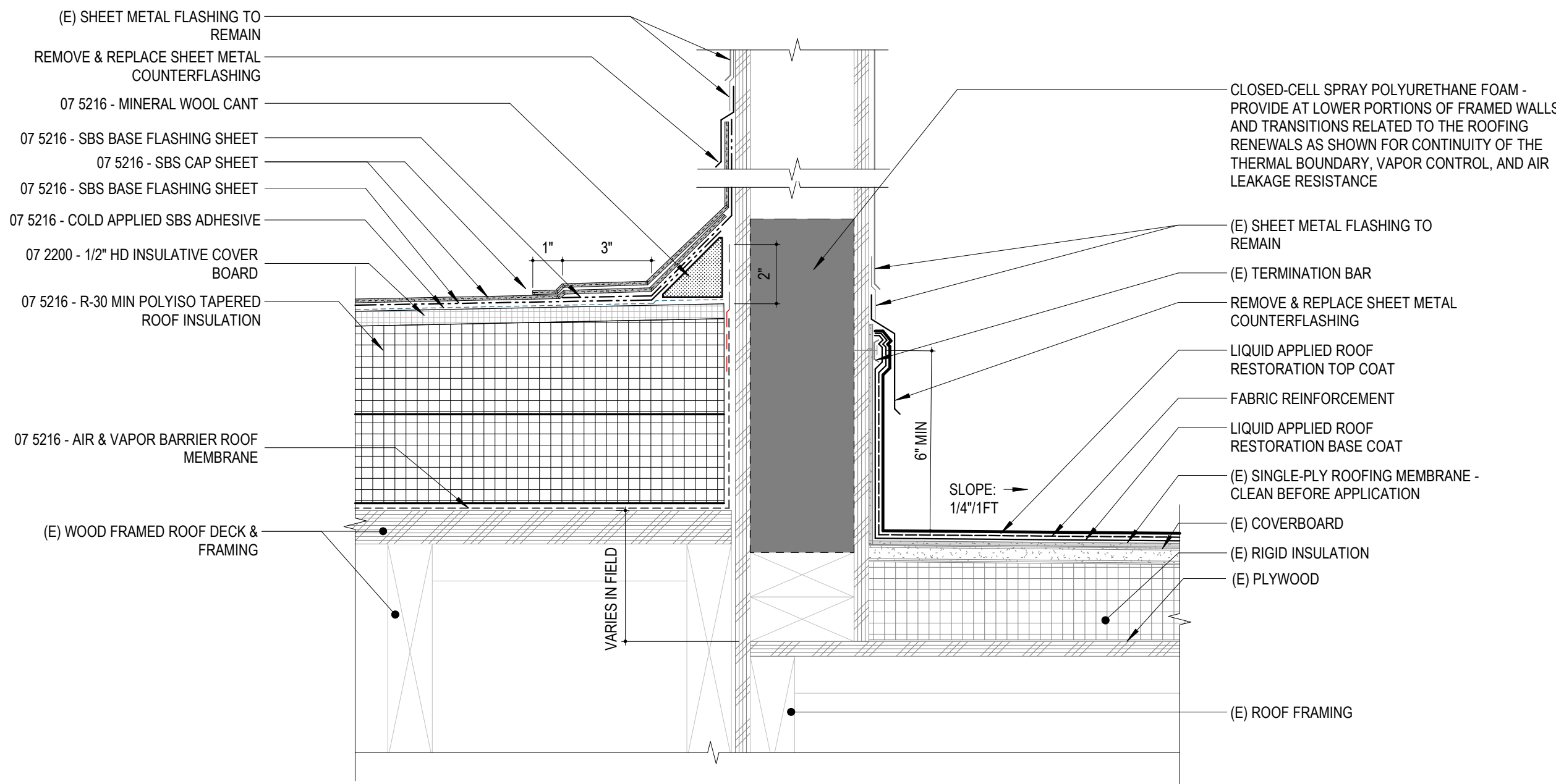
GENERAL NOTES

- ROOF PLANS HAVE BEEN DEVELOPED BASED ON THE AVAILABLE INFORMATION. CONTRACTOR SHALL REVIEW EXISTING CONDITIONS IN THE FIELD AND MEASURE AREAS TO RECEIVE NEW ROOFING MATERIALS.
- ROOF PLANS DO NOT PURPORT TO SHOW ALL EXISTING CONDITIONS. CONTRACTOR SHALL FIELD VERIFY LOCATIONS PRIOR TO BID. CONTRACTOR SHALL NOTIFY CONSULTANT OF DISCREPANCIES ENCOUNTERED DURING FIELD VERIFICATION, IF ANY.
- NEW ROOF ZONES SHALL HAVE A MINIMUM OF 1/4:12 SLOPE TO DRAIN TO NEW SUMPED DRAINS AND SCUPPERS. THE REQUIREMENT FOR 1/4:12 SLOPE IS INCLUSIVE TO VALLEY CONDITIONS AT CRICKETED LOCATIONS.

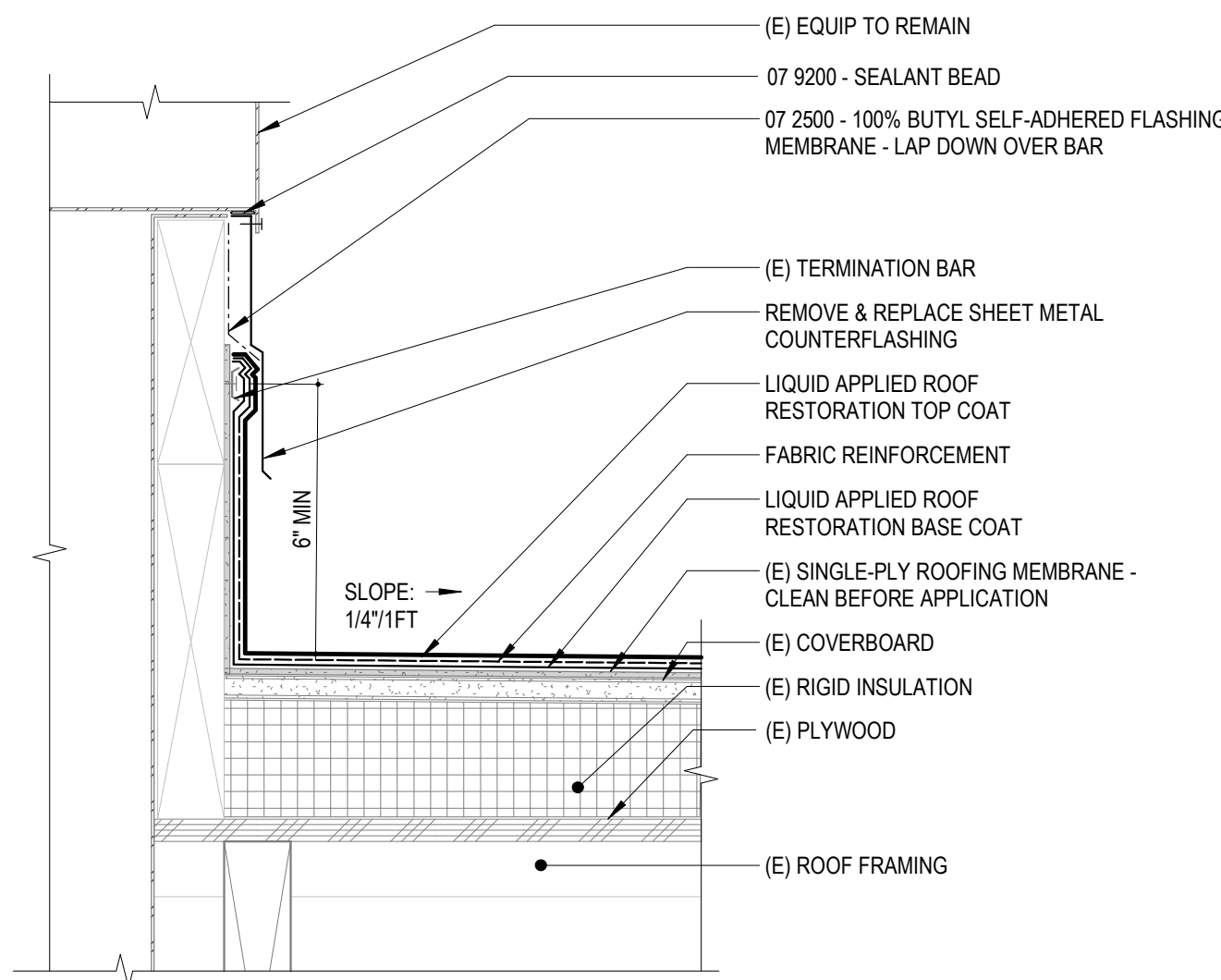


LIQUID-APPLIED MEMRANE @ (E) ROOF DRAIN 3" = 1'-0" 9

NOTE(S):
1. (E) STANDING SEAM METAL PARAPET CAP TO REMAIN.

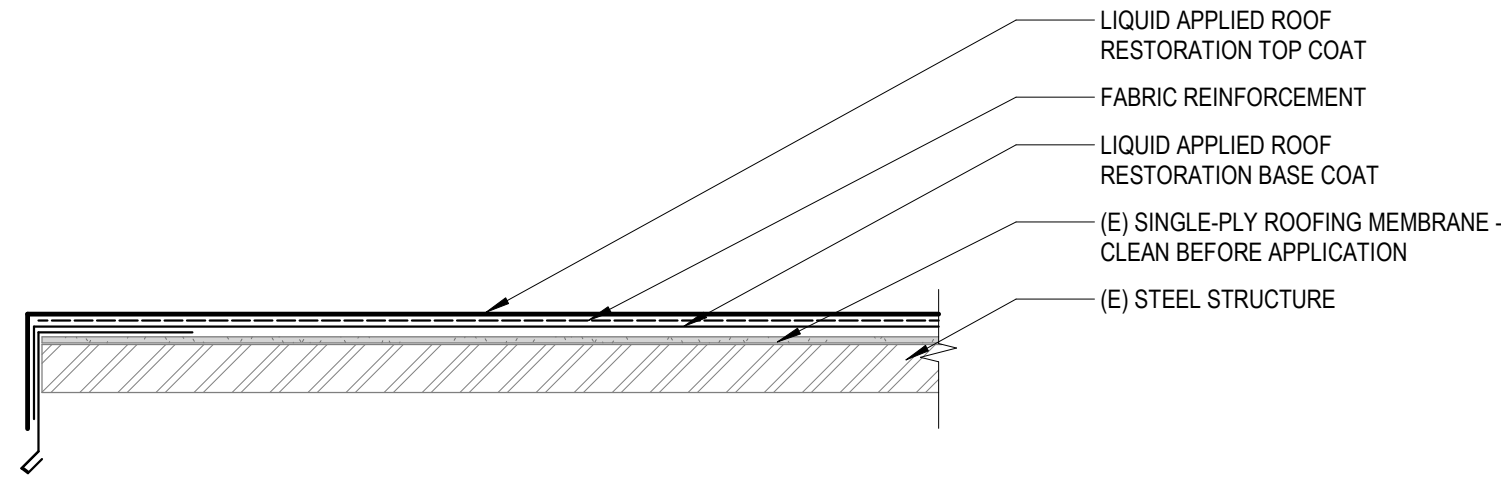


CHANGE AT ROOF ELEVATIONS AT PARAPET WALL 3" = 1'-0" 7



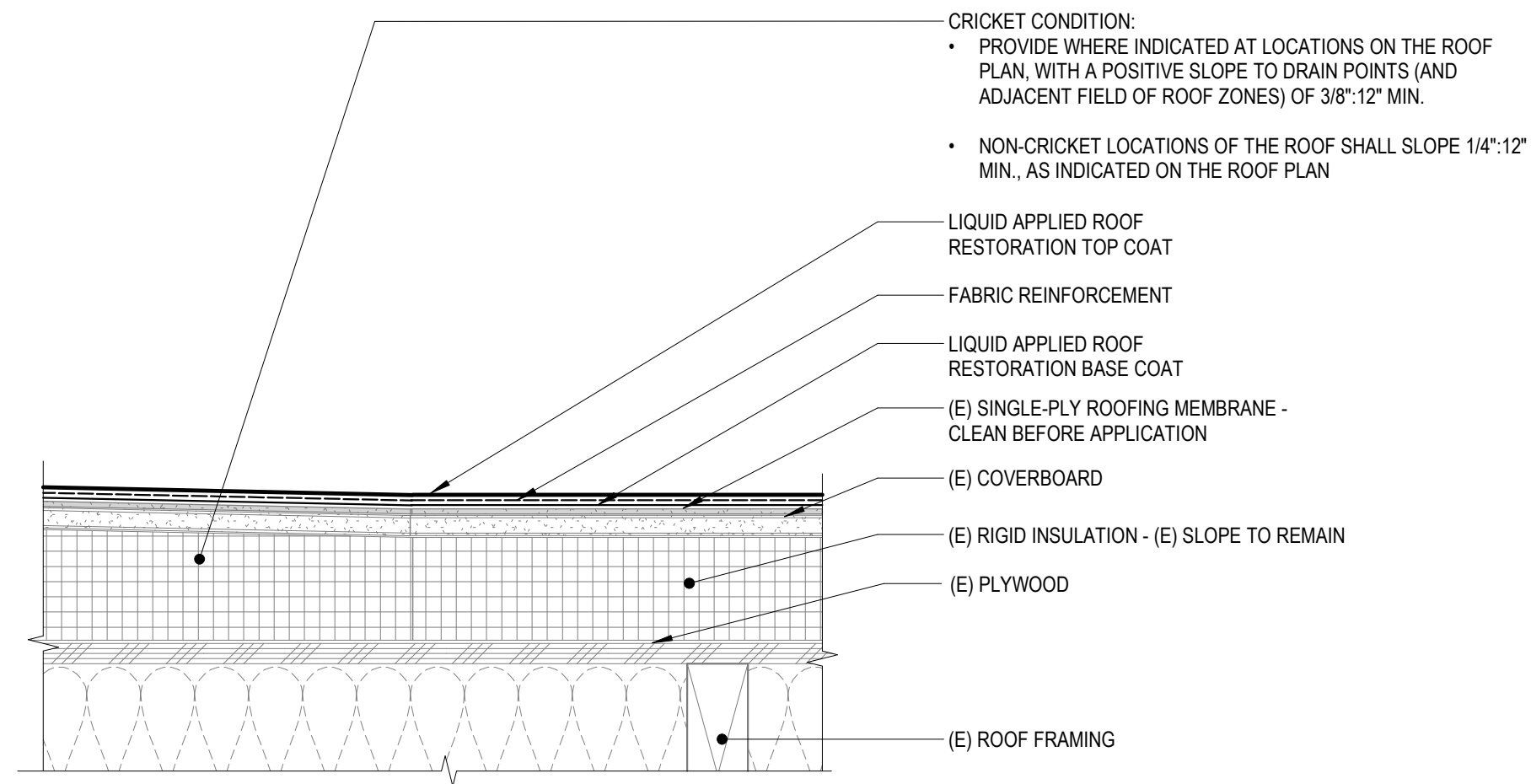
TYPICAL MECHANICAL CURB 3" = 1'-0" 8

NOTE(S):
1. THIS DETAIL IS CONCEPTUAL AND DESCRIBES DESIGN INTENT. IT DOES NOT PURPORT TO SHOW ALL CONDITIONS.
2. PREPARE ROOF SUBSTRATES FOR NEW ROOFING AS DESCRIBED IN SCOPE OF WORK.
3. REMOVE EXISTING METAL EDGE FLASHING AND REPLACE.



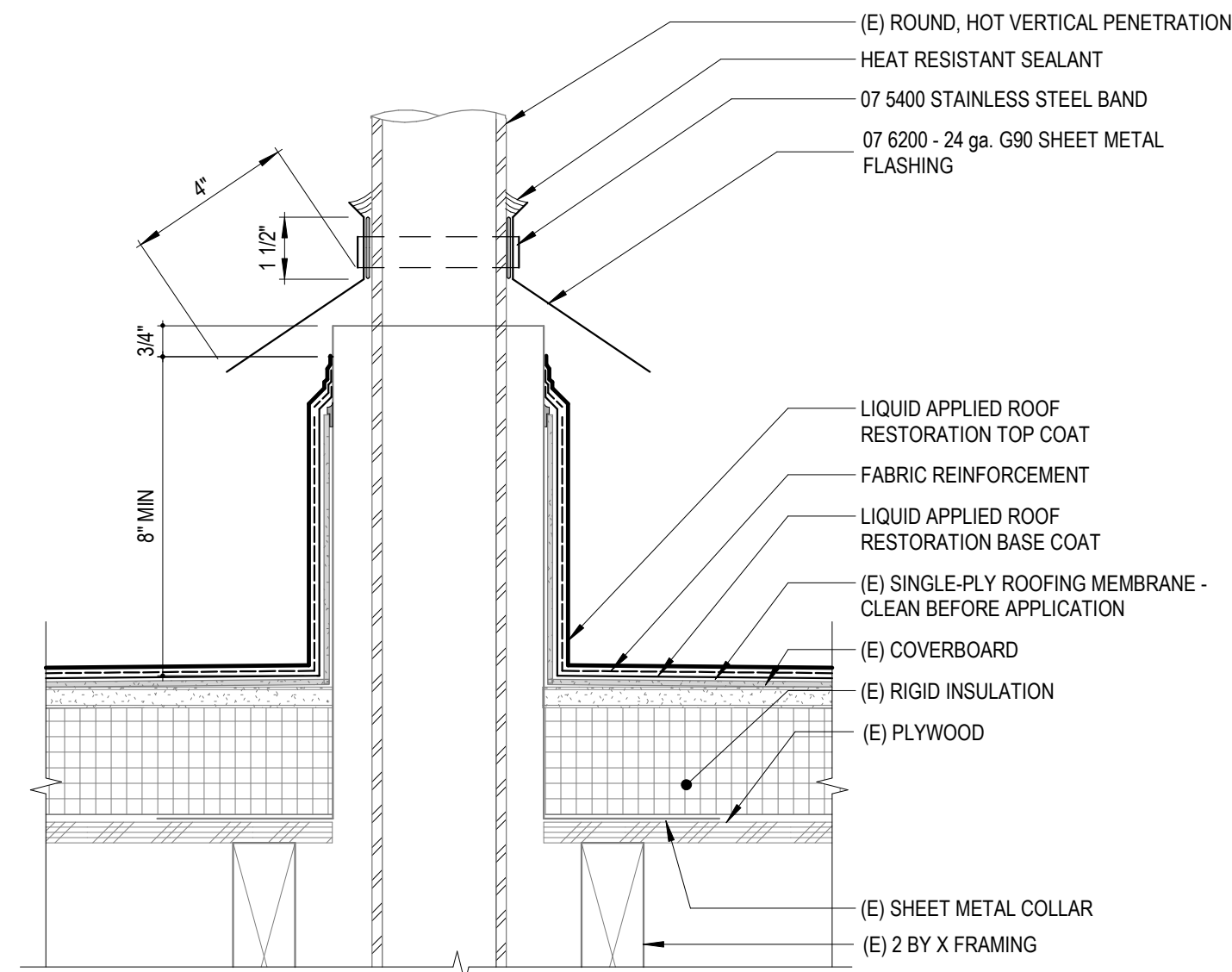
LOWER CANOPY ROOF EDGE 3" = 1'-0" 4

NOTE(S):
1. THIS DETAIL IS CONCEPTUAL AND DESCRIBES DESIGN INTENT. IT DOES NOT PURPORT TO SHOW ALL CONDITIONS.
2. PREPARE ROOF SUBSTRATES FOR NEW ROOFING AS DESCRIBED IN SCOPE OF WORK.



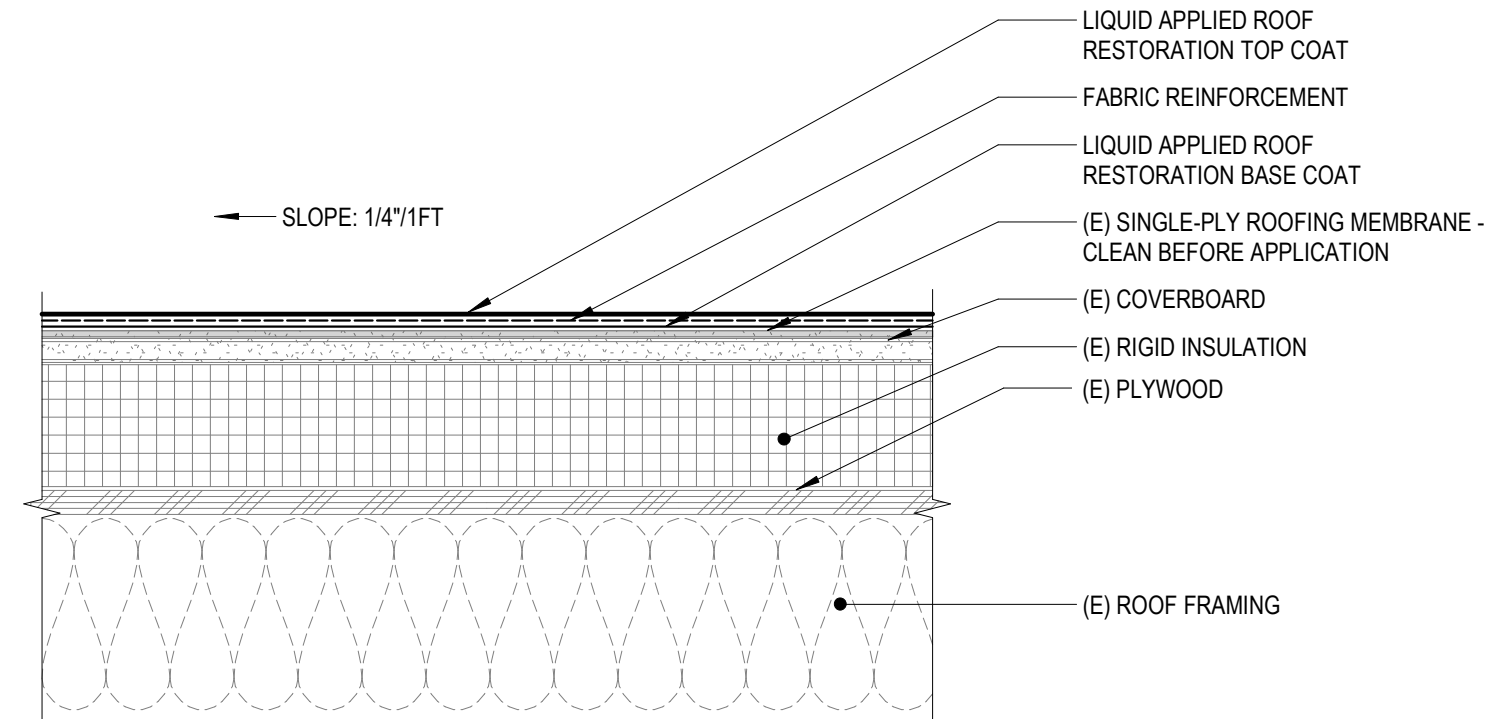
LOW SLOPE VALLEY AT CRICKET - LIQUID APPLIED COATING 3" = 1'-0" 5

NOTE(S):
1. DRAWING IS EXPANDED TO SHOW COMPONENTS CLEARLY.
2. CONTRACTOR TO MAINTAIN ALL FIRE RATED ASSEMBLIES.
3. CLEAN AND PRIME ALL EXISTING MATERIALS TO PROVIDE SUITABLE SUBSTRATE FOR NEW MATERIALS.
4. FIELD WELD ALL MEMBRANE CONNECTIONS TO FROM WATER TIGHT SEALS.

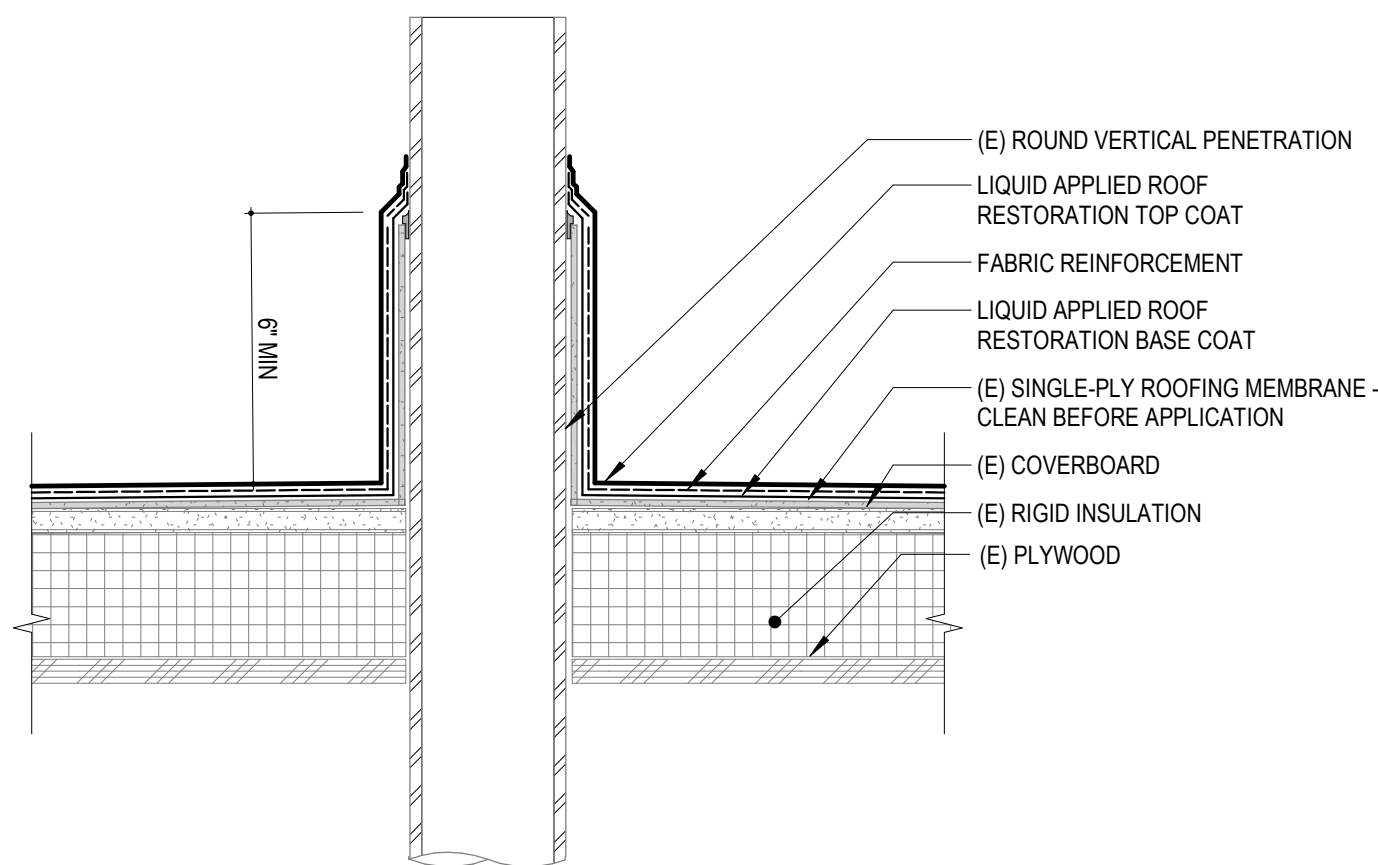


HOT STACK LOW-SLOPE ROOF PENETRATION 3" = 1'-0" 6

NOTE(S):
1. THIS DETAIL IS CONCEPTUAL AND DESCRIBES DESIGN INTENT. IT DOES NOT PURPORT TO SHOW ALL CONDITIONS.
2. PREPARE ROOF SUBSTRATES FOR NEW ROOFING AS DESCRIBED IN SCOPE OF WORK.

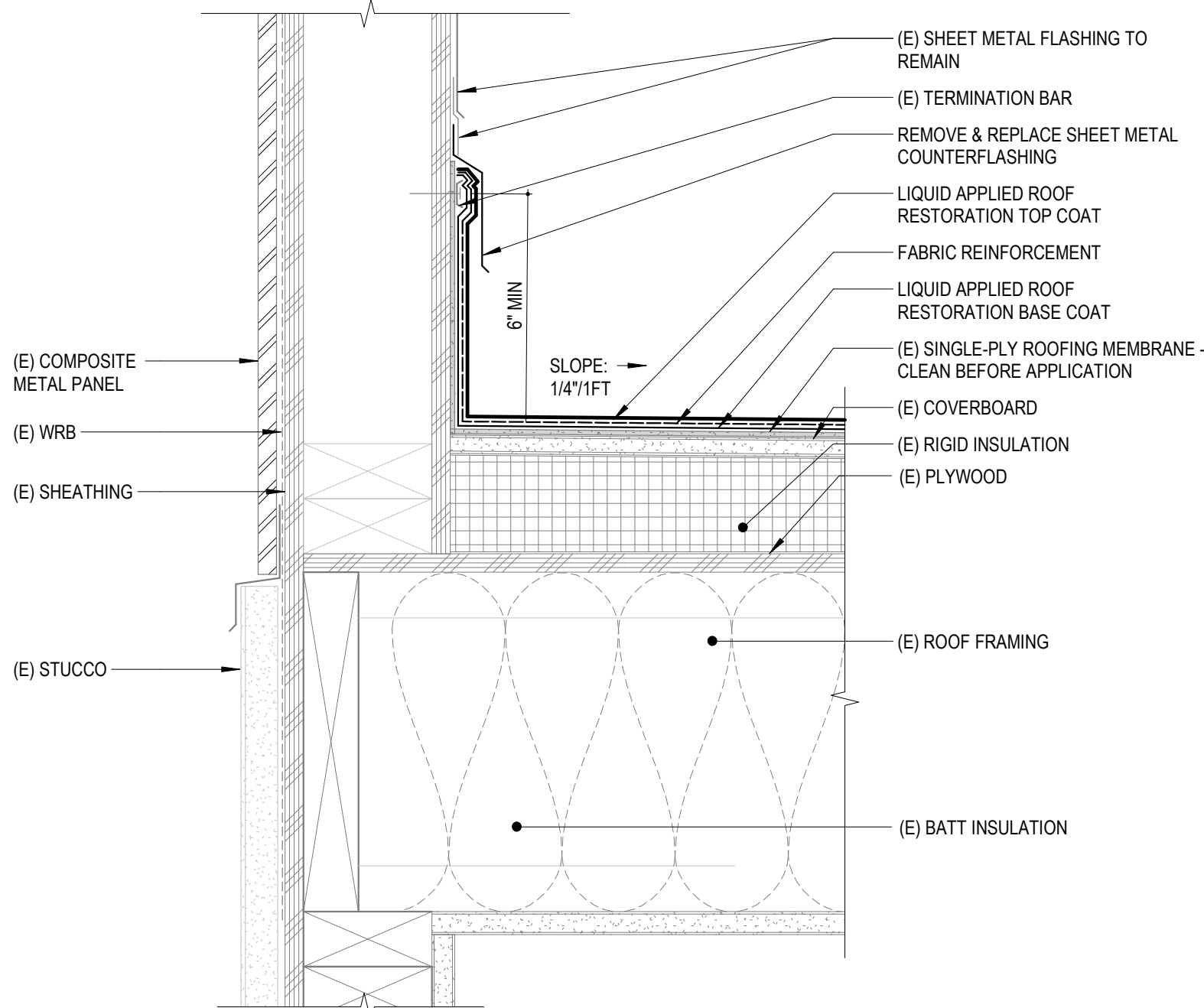


TYP FULLY-REINFORCED LIQUID-APPLIED RESTORATION COATING @ (E) SINGLE-PLY ROOF 3" = 1'-0" 1

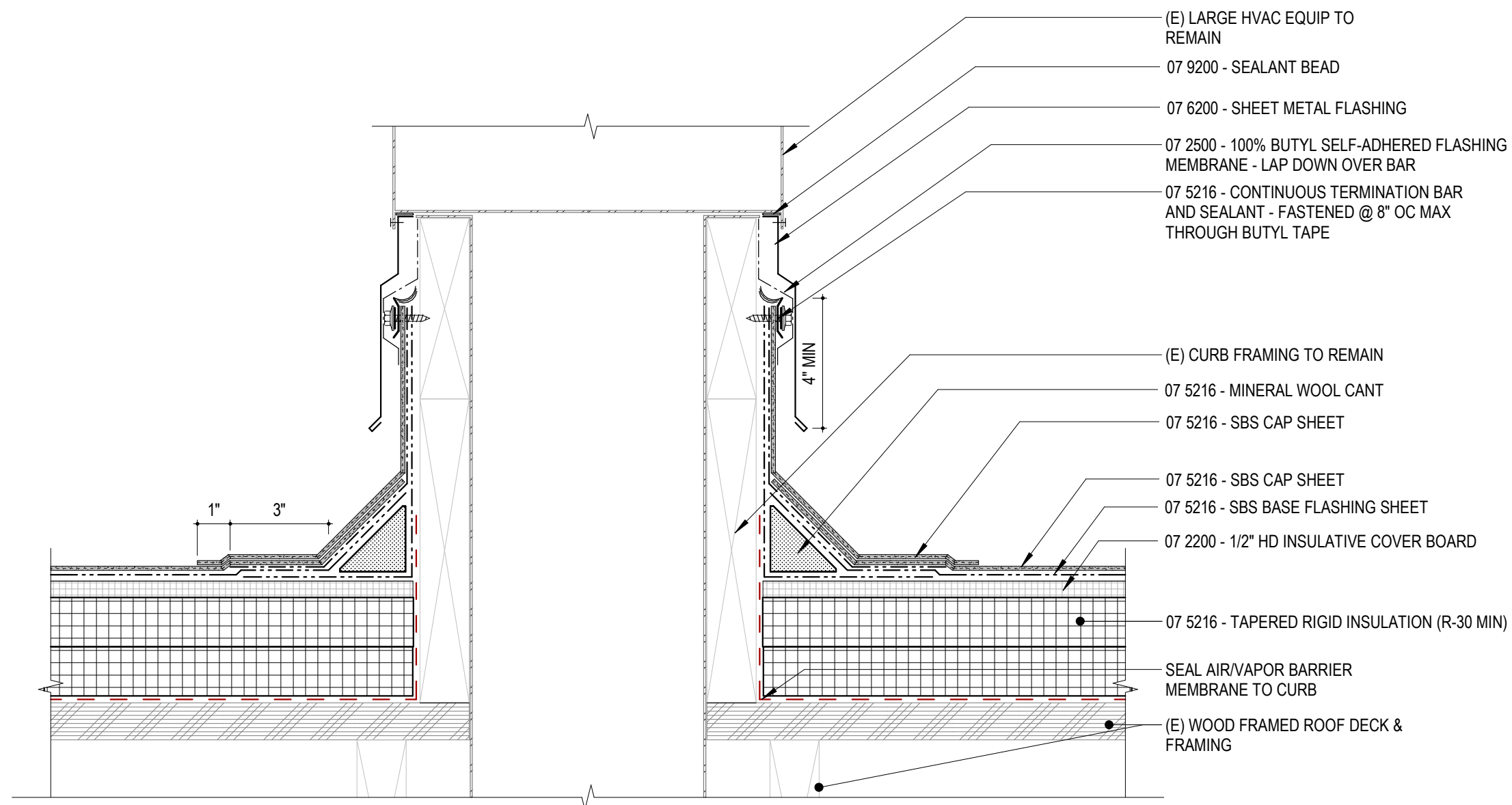


TYP PIPE PENETRATION AT LOW SLOPE ROOF 3" = 1'-0" 2

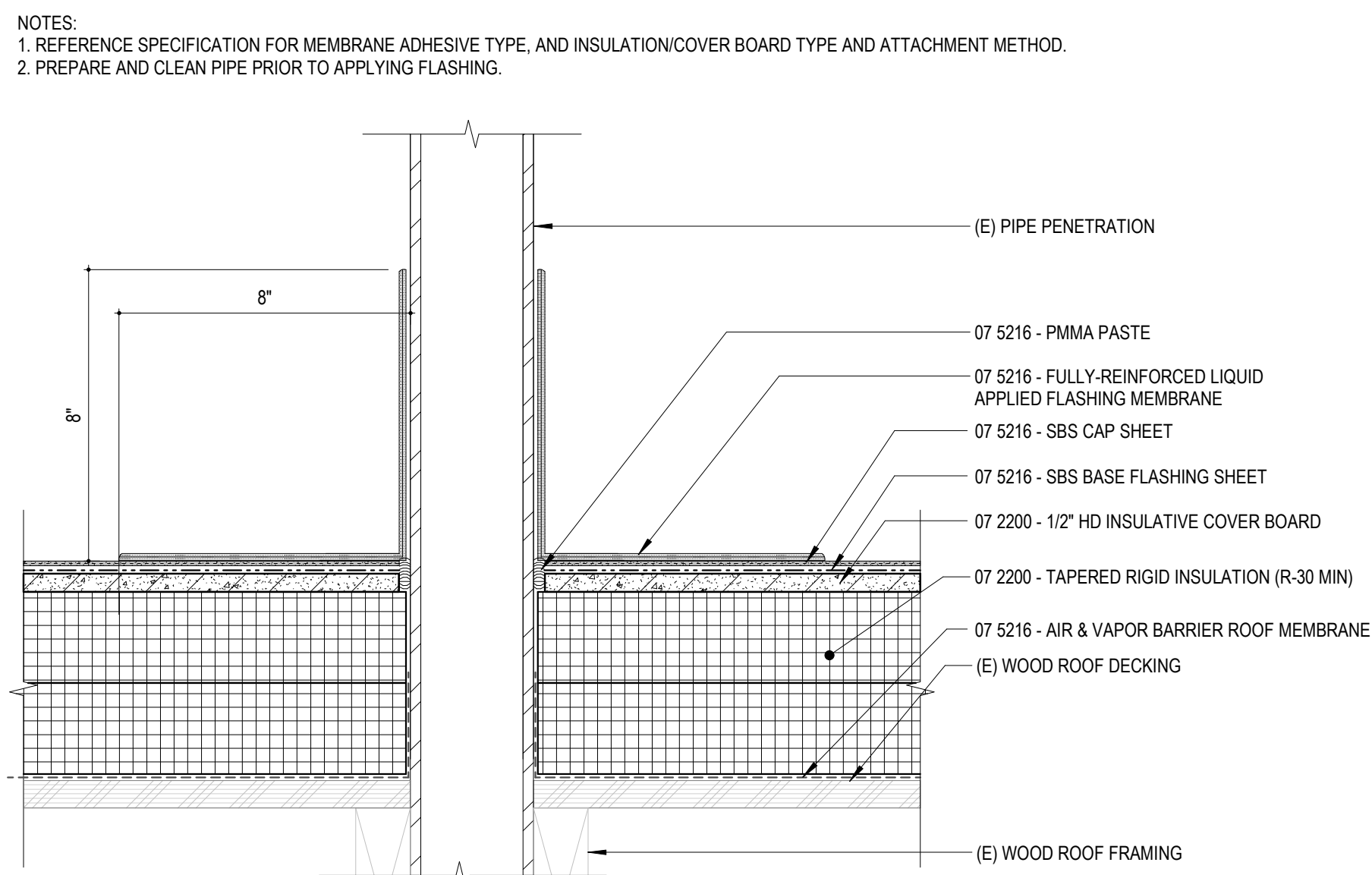
NOTE(S):
1. (E) STANDING SEAM METAL PARAPET CAP TO REMAIN.



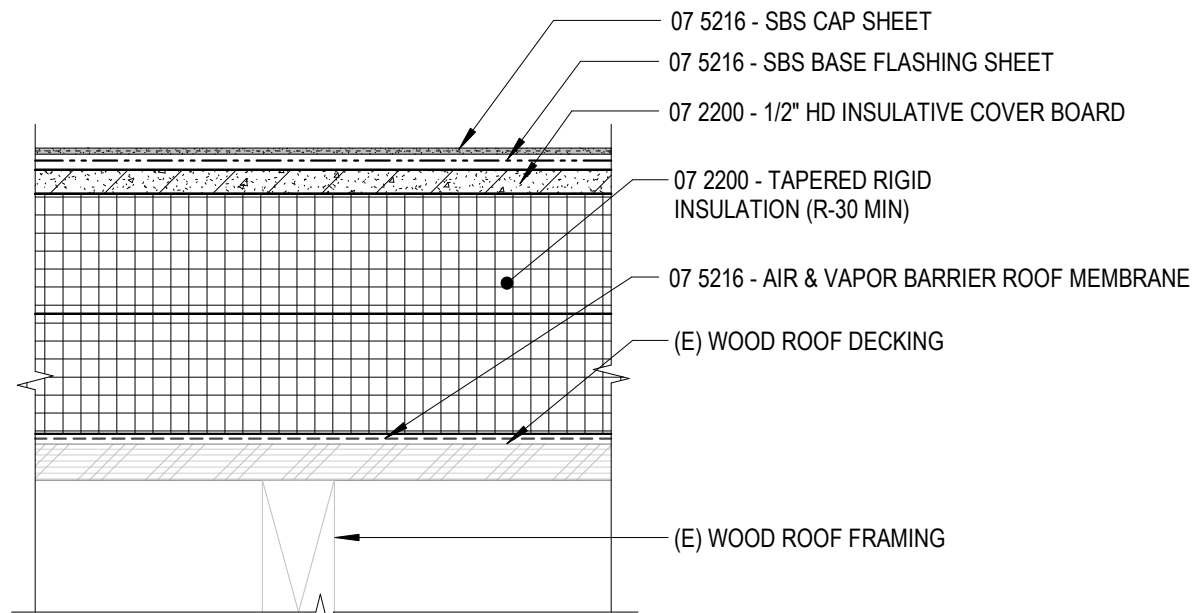
UPSLOPE PERIMETER EDGE AT LOW SLOPE ROOF 3" = 1'-0" 3



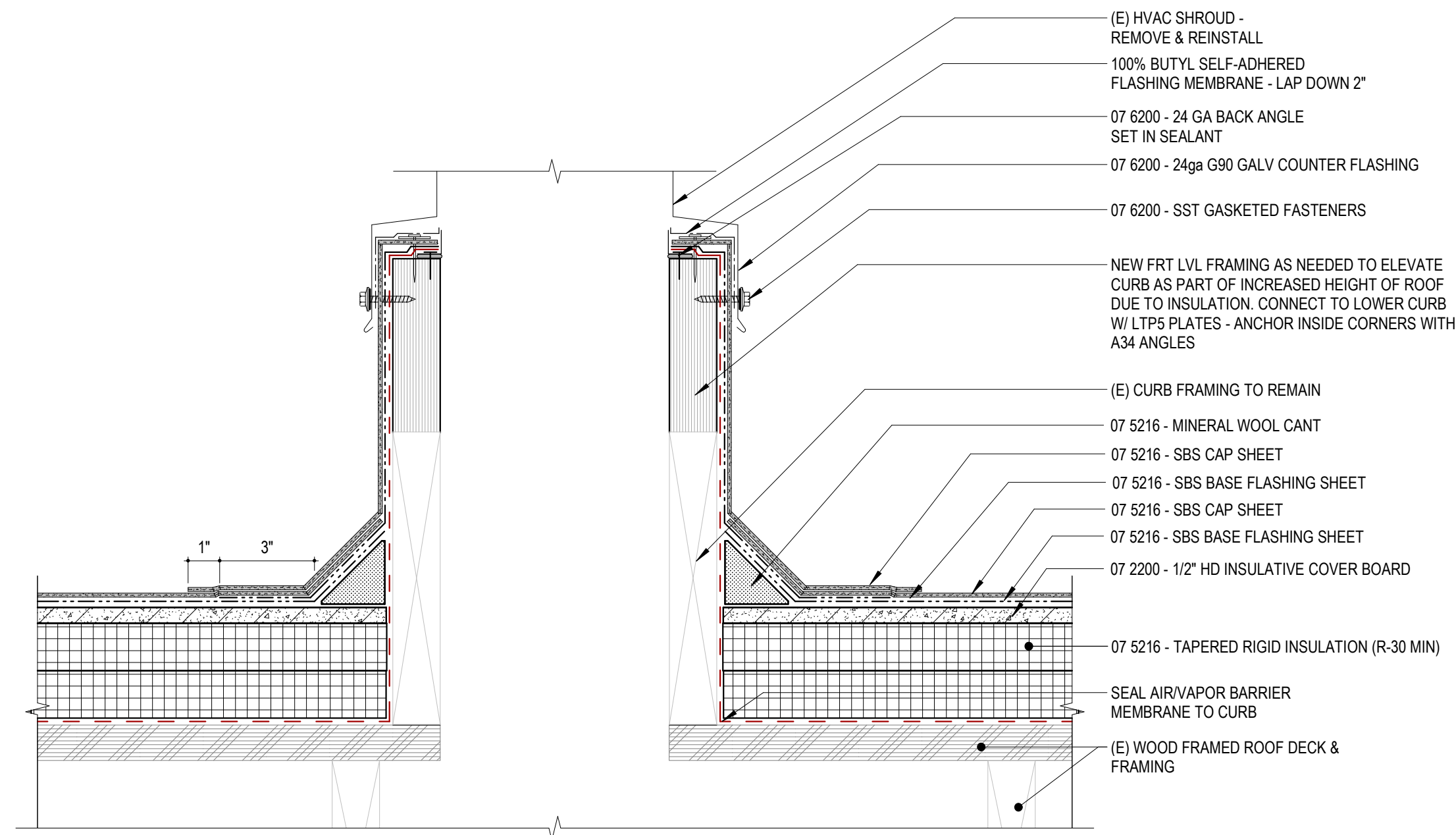
2-PLY SBS MEMBRANE - LARGE MECH EQUIP CURB - WOOD ⑥
3" = 1'-0"



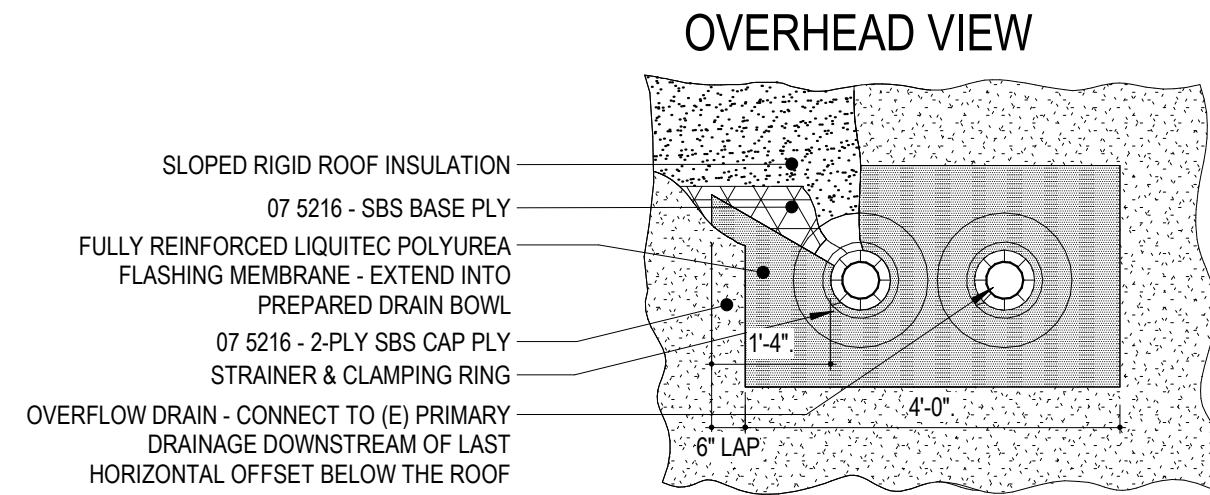
PLUMBING STACK PENETRATION - WOOD ④
3" = 1'-0"



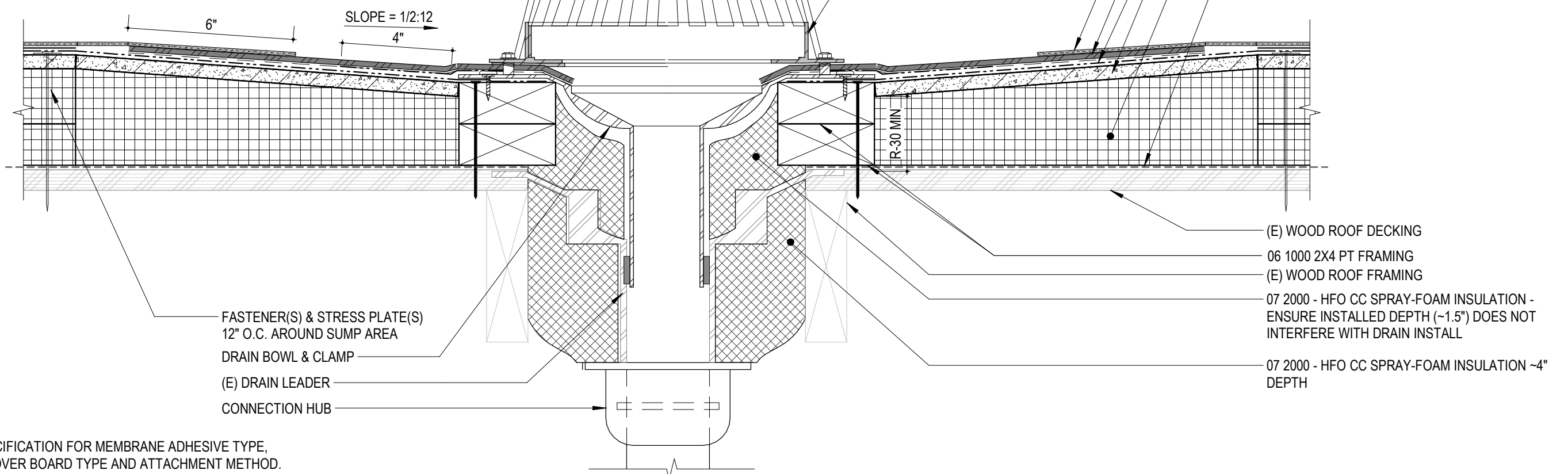
2-PLY SBS MEMBRANE - TYPICAL ROOF ASSEMBLY - WOOD ①
3" = 1'-0"



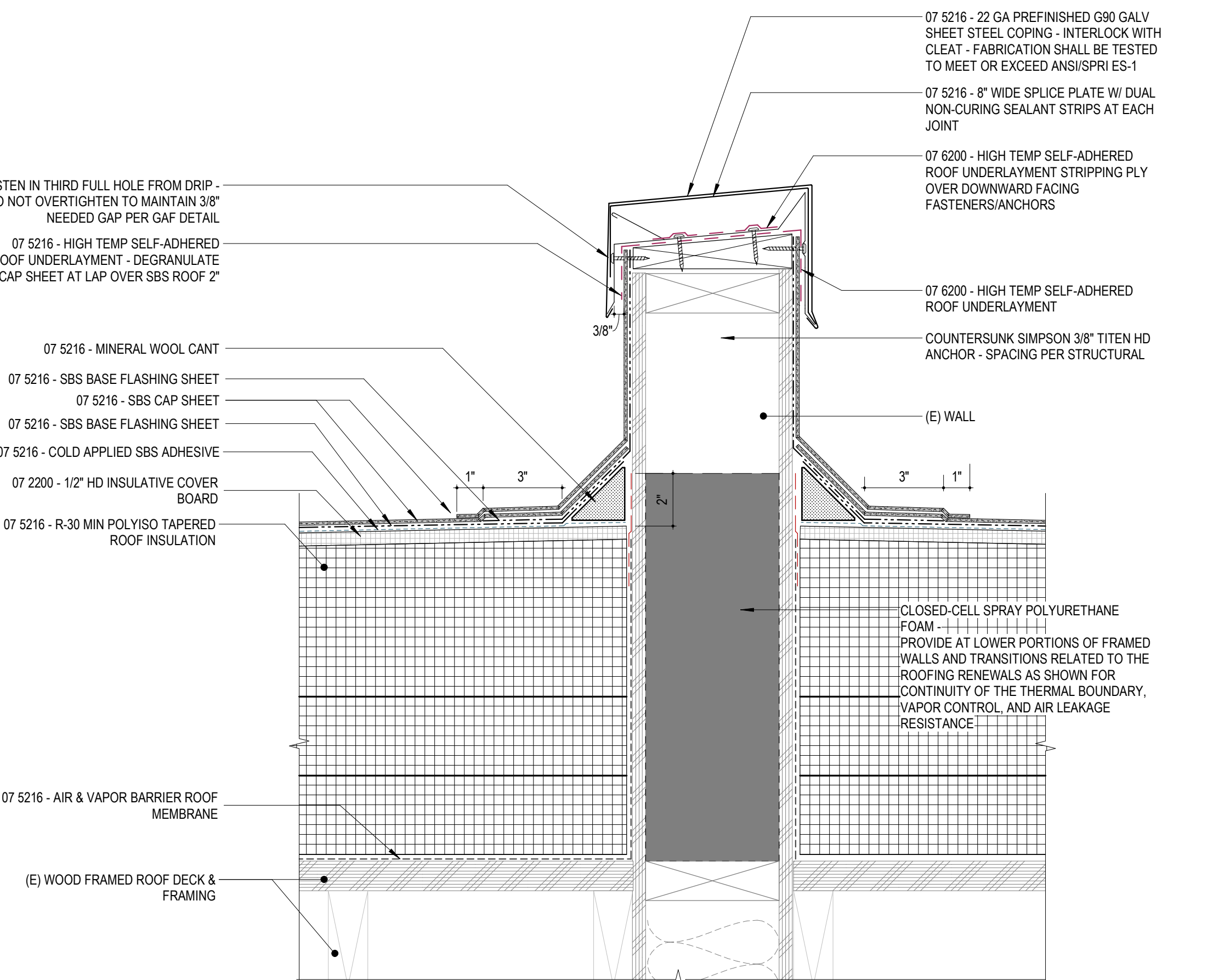
2-PLY SBS MEMBRANE - TYPICAL MECH CURB - WOOD ⑦
3" = 1'-0"



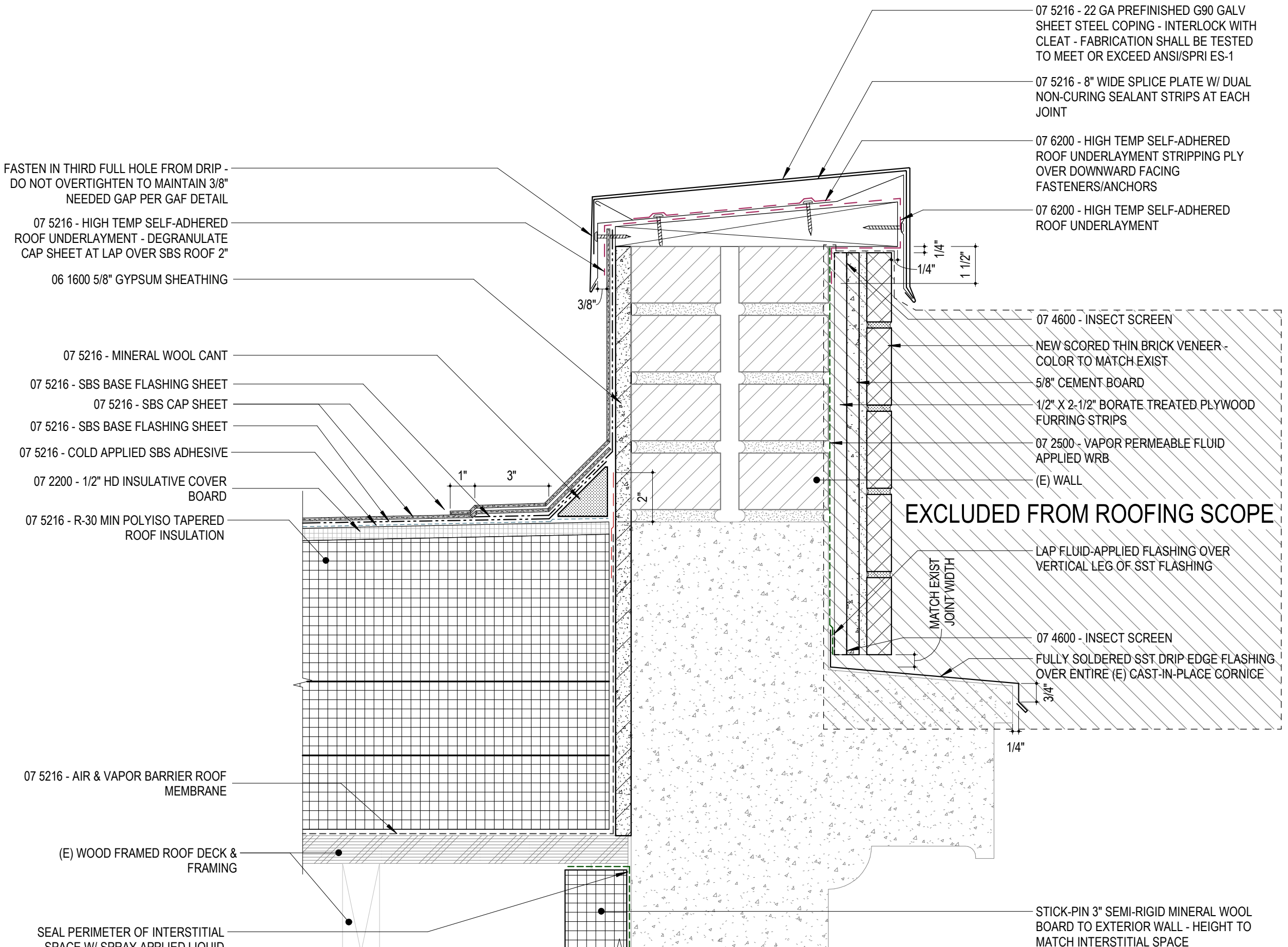
NOTES:
1. REFERENCE SPECIFICATION FOR MEMBRANE ADHESIVE TYPE, AND INSULATION/COVER BOARD TYPE AND ATTACHMENT METHOD.



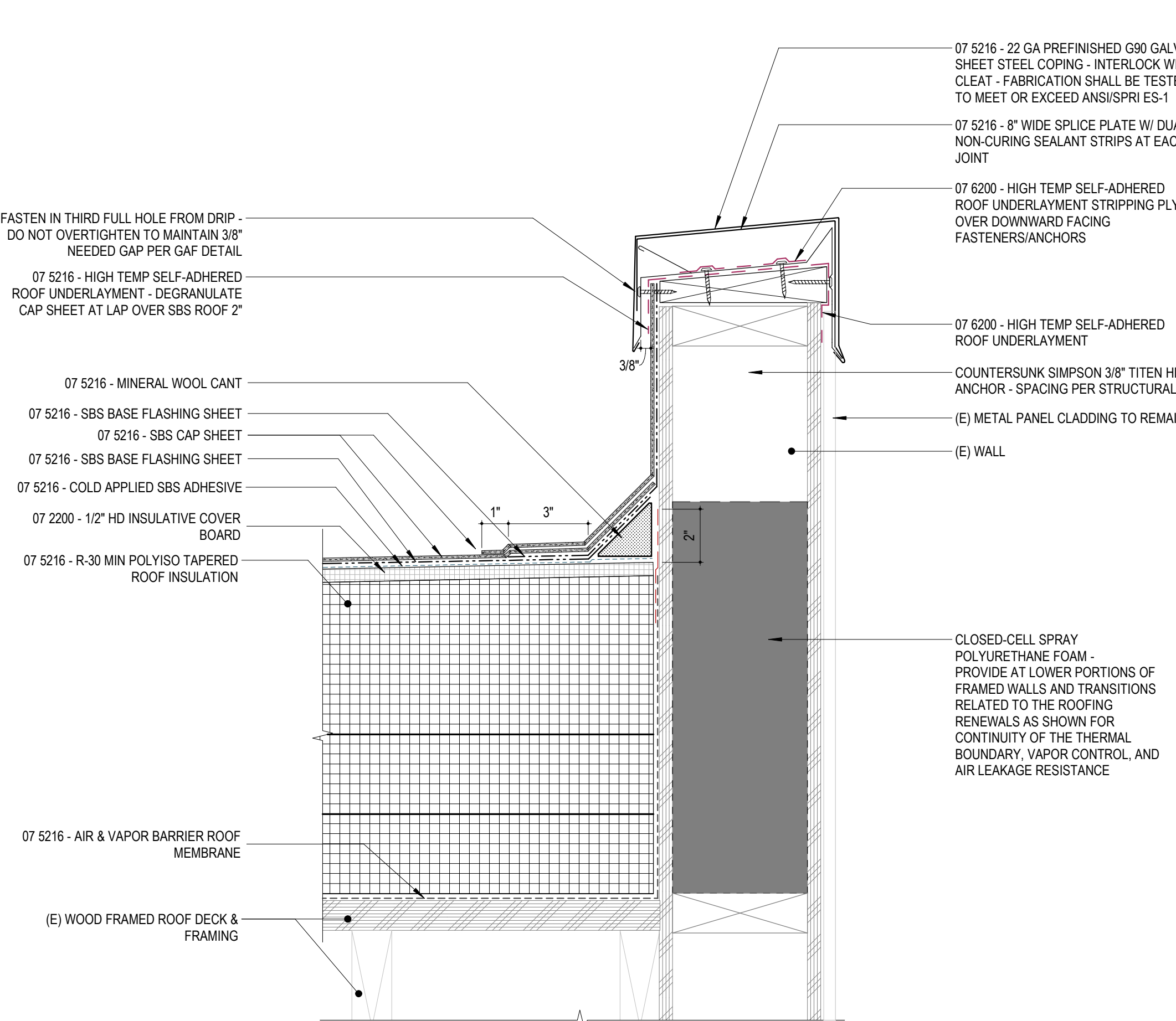
2-PLY SBS MEMBRANE - ROOF DRAIN - WOOD ②
3" = 1'-0"



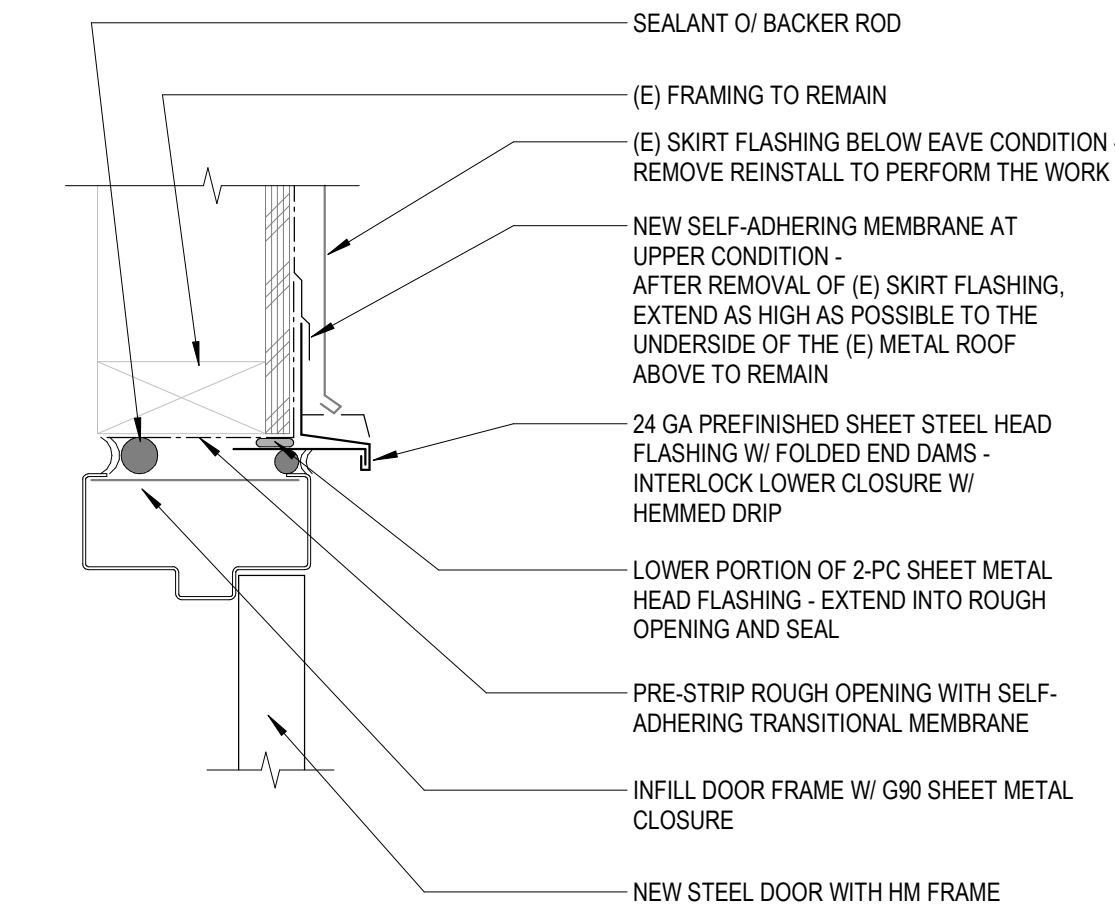
2-PLY SBS MEMBRANE - PARTY WALL PARAPET W/ NEW COPING ⑧
3" = 1'-0"



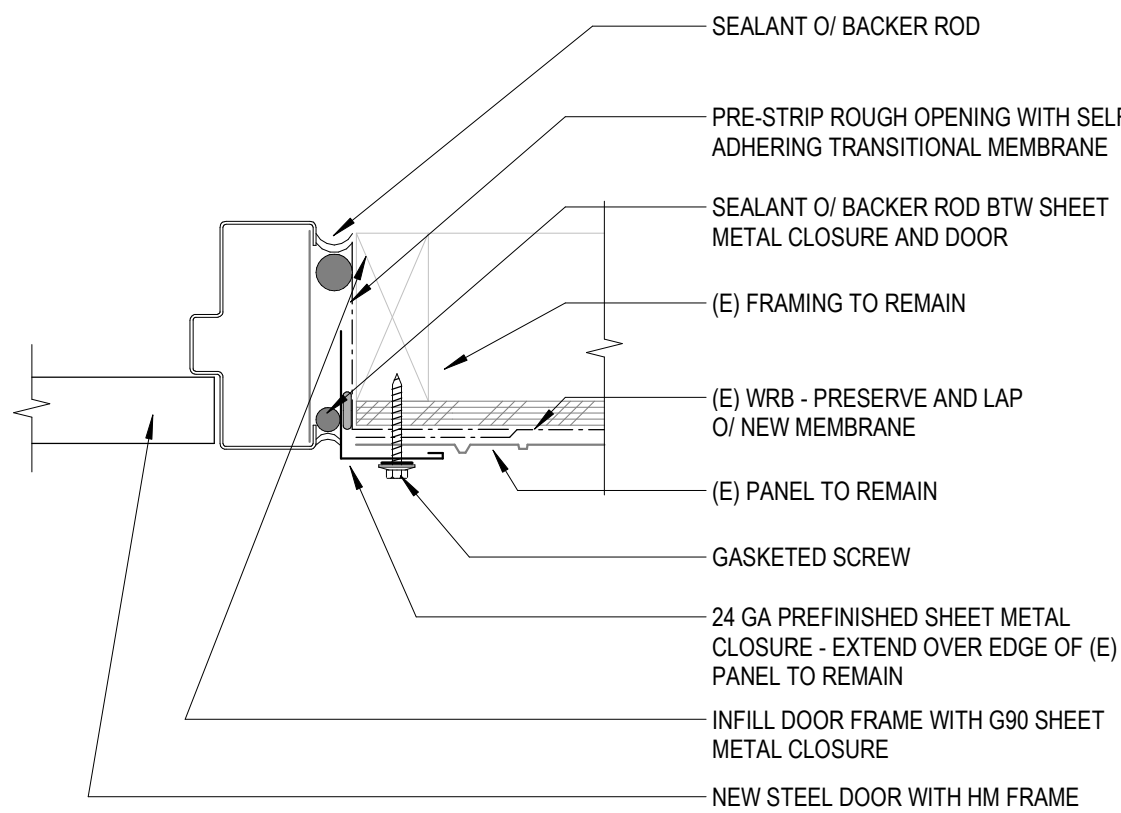
2-PLY SBS MEMBRANE - PARAPET W/ NEW COPING AT (E) WALL W/ BRICK VENEER ⑤
3" = 1'-0"



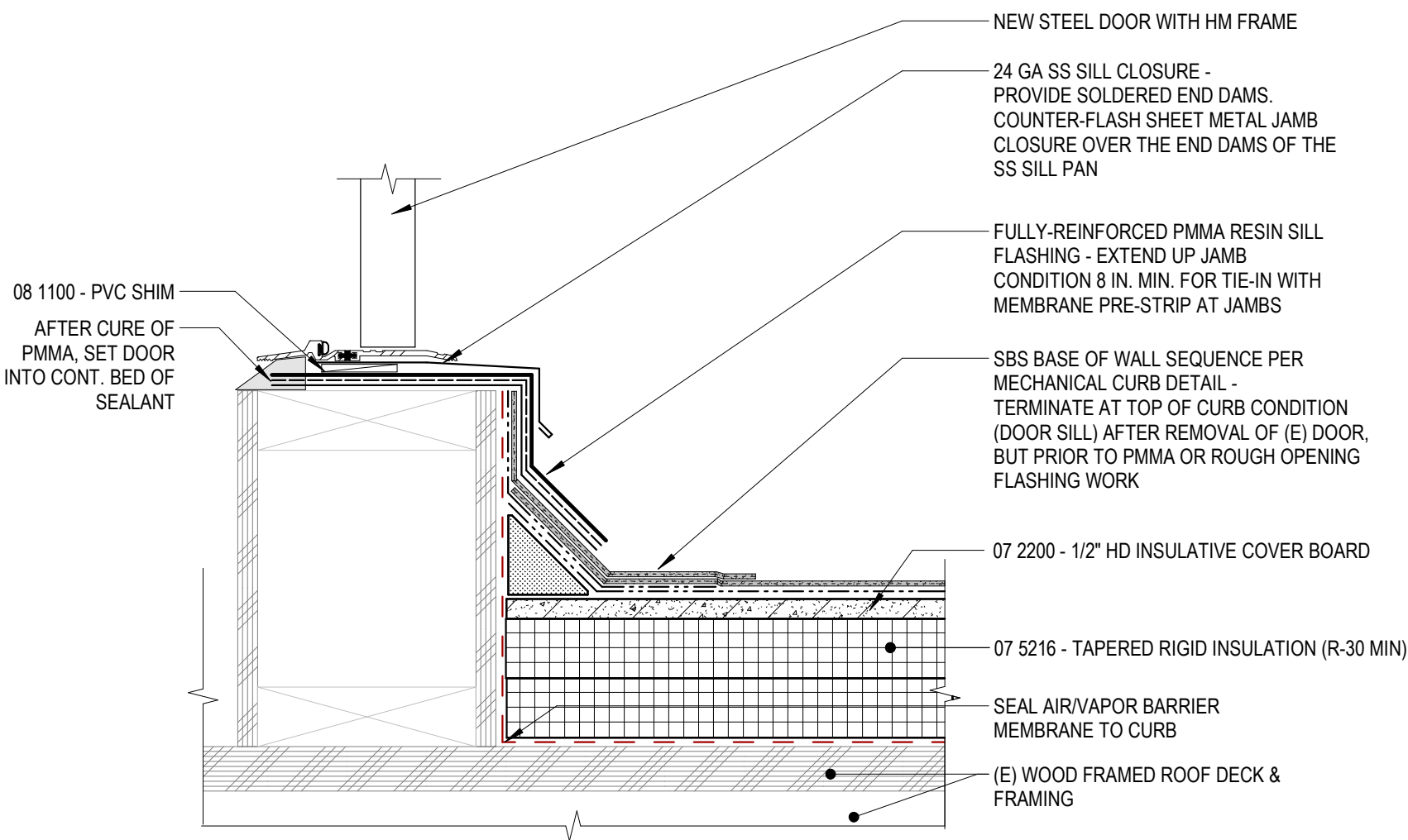
2-PLY SBS MEMBRANE - PARAPET W/ NEW COPING AT (E) WOOD FRAMED WALL AND WOOD DECK ③
3" = 1'-0"



(E) SWING DOOR HEAD ①
3" = 1'-0"



(E) SWING DOOR JAMB ②
3" = 1'-0"



(E) SWING DOOR SILL ③
3" = 1'-0"



consultants

Asbestos Abatement

(Addendum To Roofing Scope Of Work)

Purpose: Renovation

Client:

**Linn-Benton Community College
6500 Pacific Boulevard SW
Albany, Oregon 97321**

Project:

**Benton Center - Addendum to Roofing Scope of Work
757 NW Polk Avenue
Corvallis, Oregon 97330**

G2 Project #: G26-032

Revised: January 29, 2026

Prepared By:

G2 Consultants
7312 SW Durham Road
Portland, Oregon 97224
888-998-4224
www.g2ci.com

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Appendix A: Asbestos Abatement Drawings

DIVISION 2

SECTION 20100 **ASBESTOS ABATEMENT**

Section 1.0 Scope of Work

1.1 Project Details:

- A. This project involves an addendum to the roofing scope of work for the removal and disposal of asbestos containing materials as specified under Work ~~Subwork~~ ^{Subwork} located at the Benton Center building located at 757 NW Polk Avenue, Corvallis, Oregon. The contractor shall submit a work plan.
- B. The asbestos abatement contractor (the Contractor) shall supply all labor, material services, insurance, permits and equipment necessary to carry out the work.
- C. A mandatory bid walk will be conducted on: N/A
- D. Bids for this project are due on: Include in overall roofing replacement bid
- E. Questions regarding the specifications and scope of work to Paul Chamberlin of HMK company at: phone: 503-949-5569 or email: paul.chamberlin@hmkco.org
- F. Work plan shall be submitted to HMK Company describing certifications, licensing and methods and means for removal, disposal and replacement. Work plan to be submitted via email and should be addressed as follows:
paul.chamberlin@hmkco.org
Subject: Benton Center Building - Abatement Work Plan
- G. Work hours shall be between 7:00am - 7:00pm Monday through Friday. A representative of G2 will be on site for the duration of the abatement to provide access, address any questions/concerns and provide IH services.
- H. Water and power shall be provided by Owner. Restrooms may not be available in the building. Parking and staging may be available, but must be arranged through HMK.
- I. The contractor is encouraged to field verify quantities for the abatement ^{submitting a} number for asbestos abatement as part of the overall roofing replacement bid.

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DIVISION 2

SECTION 20100 ASBESTOS ABATEMENT

1.2 Work Summary

A. Addendum to Roofing Scope of Work

Asbestos

Roof

Sealant, Black, behind Metal Parapet Coverings

Removal and replacement of approximately 1,500 square feet of metal parapet coverings. AC black sealant on underlying brick and mortar will not be intentionally removed; however, any three-dimensional AC that is significantly damaged, loose, or dislodged during removal of the metal parapet coverings shall be removed and disposed of, provided such removal does not damage or compromise the integrity of the underlying brick or mortar parapets.

1.3 Sequence of Work: The Contractor shall adhere to the following sequence of tasks:

- A. Construction of decontamination systems as required.
- B. Work area preparation for asbestos abatement as required.
- C. Removal and replacement of all metal parapet coverings from proposed work areas. Occupational Health and Safety Administration (OSHA) personal monitoring during this removal is required.
- D. Final clean-up and load out of any ACM that is damaged, loose, or dislodged during removal of the metal parapet coverings.
- E. Transportation of ACM to an approved landfill.
- F. Final clean up (non-ACM) and removal of equipment and materials (non-ACM)

1.4 Special Conditions

- A. The Contractor shall provide labor, materials and equipment to complete the work as defined by the Contract Documents, including but not limited to the following:
 - 1. The filing of all required notifications and variances, including the payment of all fees charged by all regulatory agencies.
 - 2. Work area preparation.
 - 3. General protection.
 - 4. Engineering controls construction.
 - 5. Installation of personnel and waste decontamination facilities.

DIVISION 2

**SECTION 20100
ASBESTOS ABATEMENT**

6. Removal of all ACM in accordance with the scope, asbestos contaminated building components and decontamination of all surfaces.
 7. Transportation and disposal of asbestos waste.
 8. Re-establishment of all building systems disrupted by the work of this contract.
 9. Conduct daily inspections of all adjacent spaces and clean up as required.
- B. If the Contractor has any questions as to possible errors or omissions in the Specifications, they shall immediately bring the discrepancy or other question to G2's attention in writing and obtain a written decision as to the methods and materials to be used, before the submission of the bid. Failure to obtain clarification in writing shall not relieve the Contractor of performing the normal good practice of the industry.
- C. All waste generated by the Contractor shall be disposed of as asbestos waste to a licensed landfill.
- D. The Contractor shall provide all required plumbing and electrical work, including temporary connections. The Abatement Contractor shall provide a temporary electric panel for his equipment and, where required, shall provide temporary lighting in accordance with all applicable codes and standards, unless other arrangements are made with the owner prior to the start of the project. The specifics shall be included in the work plan and coordinated with the Owner(s) or Owner's Representative.
- E. Bidders should visit the premises prior to the time of submitting proposals for the work described herein, and thoroughly inspect the conditions under which the contract is to be executed. The Contractor is responsible for field verification of all locations and quantities and determining all varying field conditions prior to the submission of their bid. Bids should include the removal of all ACM identified in the specifications and asbestos abatement drawings. Quantities provided herein are estimates and are meant to include all ACM depicted or described on the drawing.
- F. All temporary water connections shall be turned off and all water hoses disconnected at the end of the work shift. All wastewater from the abatement activities shall be pre-filtered, stored in barrels and re-used as amended water or disposed of as contaminated waste.
- G. The Contractor agrees to defend and hold the Owner, HMK Company and G2 Consultants LLC harmless from any and all fines, levies or penalties. This includes the cost to defend penalties issued by any jurisdictional authorities as a result of actions or work procedures used by the Contractor or his sub-Contractors or any persons or organizations assisting or employed directly or indirectly by the Contractor.

DIVISION 2

SECTION 20100
ASBESTOS ABATEMENT

- H. No consideration or allowance will be granted for any misunderstanding or discrepancies of work practices or materials used without written permission from the Owner.

Section 2.0 General Conditions

2.1 Requirements

- A. All work under this contract shall be done in strict accordance with applicable Federal, State and Local regulations, standards and codes governing asbestos abatement.
- B. The most recent edition of applicable regulations, standards, documents or codes shall be in effect. Where conflict among the requirements or with these specifications exists, the most stringent requirements shall be utilized.
- C. Copies of all standards, regulations, codes and other applicable documents, including this Specification shall be made available at all times by the Contractor at the work site in the clean change area of the worker decontamination system.
- D. The Contractor shall be required to complete all work within a time frame stipulated by the Owner(s).
- E. Abatement for all phases of work should occur during hours agreed upon by the owner and the contractor. Outdoor abatement for all phases of work may occur during daytime hours. Any other performance of work outside of these hours, including weekends and legal holidays will be permitted only upon receipt of permission, in writing, from the Owner.
- F. The Contractor shall, at the time of delivery, unconditionally own all materials delivered to the job site. The Contractor may not assign any money due, or to become due under this contract, without having received written consent from the Owner(s).
- G. The Contractor may not assign or sub-contract any of the work to be performed under this contract without having first received written permission from the Owner(s) for all such assignment and/or subcontracting.
- H. The Contractor shall guarantee all workmanship and materials free-from-fault or defect for a period of one year from job closeout.
- I. The Contractor will be expected to execute a construction contract provided by HMK Co.

DIVISION 2

SECTION 20100 ASBESTOS ABATEMENT

- J. When available, storage areas will be assigned to the Contractor for equipment, tools and materials. Parking of automobiles or trucks will be determined by the Owner.
- K. The Contractor may interrupt no building services without prior written permission from Owner(s).
- L. Applicable Federal, State and Local rules and regulations governing asbestos abatement work training requirements, and the disposal of asbestos materials are not completely documented in this Specification. The Contractor and his personnel are required to have read and familiarized themselves with such rules and regulations. Copies of these regulatory documents must be kept on the job site until completion of the work.

2.2 Definitions

Abatement: Procedures to control fiber release from ACM including removal, encapsulation, enclosure and repair.

Abatement Activities: all activities from the initiation of work area preparation through successful clearance air monitoring to be performed at the conclusion of an asbestos project or minor project.

Aggressive Sampling: A sampling method in which the air sampling technician agitates and makes airborne any settled dust and residual asbestos fibers through the use of mechanical equipment to stir up settled dust during the sampling period, thus simulating activity in that area of the building.

AIHA: The American Industrial Hygiene Association, 475 Wolf Ledges Parkway, Akron, Ohio 44311

Air Lock: A system for permitting entrance and exit while restricting air movement between a contaminated area and an uncontaminated area. It consists of two (2) curtained doorways separated by a distance of at least three (3) feet such that one (1) passes through one doorway into the air lock, allowing the doorway sheeting to overlap and close off the opening before proceeding through the second doorway, thereby preventing flow-through contamination.

Air Sampling: The process of measuring the fiber content of a known volume of air collected during a specific period of time. The procedure utilized for asbestos follows the NIOSH Standard Analytical Method 7400 or the provisional method developed by the United States Environmental Protection Agency (USEPA), which are utilized for lower detectability and specific fiber identification.

Ambient Air Monitoring: Measurement or determination of airborne asbestos fiber concentrations outside of, but in the general vicinity of the work site.

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Amended Water: Water to which a surfactant has been added.

ANSI: The American National Standards Institute, 1430 Broadway, New York, New York 10018

Area Air Sampling: Any form of air sampling or monitoring where the sampling device is placed at a stationary location.

Asbestos: Any hydrated mineral silicate separable into commercially usable fiber, including but not limited to Chrysotile (serpentine), Amosite (cummingtonite-grunerite), Crocidolite (riebeckite), Tremolite, Anthrophyllite, and Actinolite.

Asbestos Containing Material (ACM): Pure asbestos or any material containing more than one percent asbestos by weight.

Asbestos Project: Any form of work performed in connection with the alteration, renovation, modification or demolition of a building or structure which will create friable ACM.

ASTM: The American Society for Testing and Materials, 1916 Race Street, Philadelphia, Pennsylvania. 19103

Background Level Monitoring: A method used to determine airborne asbestos fiber concentrations inside and outside the work areas of a building prior to the start of abatement activities.

Clean Room: An uncontaminated area or room that is part of the worker decontamination enclosure with provisions for storage of workers' street clothes and protective equipment.

Clearance Air Monitoring: The employment of aggressive sampling techniques using the volume of air collected to determine the airborne concentrations of residual fibers. It is to be performed as the final abatement activity.

Contractor: The State, any political sub-division of the State, a public authority or any other governmental agency or instrumentality thereof, self employed person, company, unincorporated association, firm, partnership or corporation and any owner or operator thereof, which engages in an asbestos abatement project.

Decontamination Enclosure System (DES): A series of connected rooms, separated from the work area and from each other by air locks and used for the decontamination of workers, materials and equipment.

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Demolition: The dismantling or razing of a building, including all operations incidental thereto.

Disturb: To alter or change, such as but not limited to the removal, encapsulation, enclosure or repair of ACM.

Encapsulant (sealant) or Encapsulating Agent: A liquid material which can be applied to an ACM and which temporarily controls the possible release of asbestos fibers from the material by creating a membrane over the surface (bridging encapsulation) or by penetrating into the material and binding its components together (penetrating encapsulant).

Enclosure: The construction of air tight walls and a ceiling between the asbestos material and the facility environment, or around surfaces coated with asbestos materials, or any appropriate and approved procedure that prevents the release of asbestos materials.

Equipment Room: A contaminated area or room that is part of the worker DES with provisions for the storage of contamination clothing and equipment.

Fiber: An acicular single crystal or a similarly elongated polycrystalline aggregate that displays some resemblance to organic fibers by having such properties as flexibility, high aspect ratio, silky luster, axial lineation and others, and that has attained its shape primarily through growth rather than cleavage.

Friable Asbestos Material: Any material applied onto ceilings, walls, structural members, piping, duct work or any other part of the building structure that when dry may be crumbled, pulverized or reduced to powder by hand or other mechanical pressure.

Glove bag Technique: A method for removing friable ACM from heating, ventilation, and air conditioning (HVAC) ducts, short piping runs, valves joints, elbows and other non-planar surfaces in a non-contained work area. The glovebag is constructed of 10-mil transparent plastic, two inward-projecting water-wand sleeves, an internal tool pouch and an attached, labeled receptacle for asbestos waste.

Glovebag: Constructed and installed in such a manner that it surrounds the object or area to be decontaminated and contains all asbestos fibers released during the removal process.

HEPA Filter: A high efficiency particulate air filter capable of trapping and retaining 99.97 percent of particles (asbestos fibers) greater than 0.3 micrometers mass median aerodynamic equivalent diameter.

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Incidental Exposure: Any occupational exposure to asbestos fibers caused by disturbing ACM during the performance of one's job other than during asbestos abatement activities.

Industrial Hygienist: The professional contracted or employed by the Building Owner(s) and or Tenant to supervise and/or conduct air monitoring and analysis, perform inspections and act as the Owner/Tenant Representative.

NESHAPS: The National Emission Standards for Hazardous Air Pollutants (40 CFR Part 61)

NIOSH: The National Institute for Occupational Safety and Health CDCNIOSH, Building J - N.E., Room 3007, Atlanta, Georgia 30333

OSHA: The Occupational Safety and Health Administration

Phase Contrast Microscopy (PCM): The measurement protocol for the assessment of the fiber content of air. (NIOSH Method 7400)

Personal Air Monitoring: A method used to determine employee's exposure to airborne fibers. Samples are collected outside the respirator in the workers' breathing zone as OSHA asbestos standards (29 CFR 1926.58).

Personal Protective Equipment: Appropriate clothing, headgear, eye protection, footwear and MSHA/NIOSH approved respiratory protection.

Wet Cleaning: The removal of asbestos fibers from building surfaces and objects by using cloths, mops or other cleaning tools that have been dampened with water.

Work Area: Designated rooms, spaces or areas of the project where asbestos abatement activities take place.

Work Site: Premises where asbestos abatement activity is taking place and that may be comprised of one or more work areas.

2.3 Regulatory Reference Standards

All work under this contract shall be done in strict accordance with all applicable Federal, State and Local regulations, standards and codes governing asbestos abatement.

The Contractor shall comply with all applicable Federal, State and Local regulations and guidelines of asbestos removal, including, but are not limited to, the following:

- A. Code of Federal Regulations (CFR) Publications:
 - 1. 29 CFR 1910.1001 Asbestos, Tremolite, Anthophyllite, Actinolite
 - 2. 29 CFR 1910.134 Respiratory Protection
 - 3. 29 CFR 1926 All Sections

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4. 29 CFR 1910 All Sections
5. 40 CFR Part 61, Subparts A and M - NESHAPs
6. 40 CFR Part 763, Subpart E - AHERA
- B. Oregon Administrative Rules:
 1. Chapter 340 Division 25, Department of Environmental Quality
 2. Chapter 340 Division 33, License and Certification Requirements
 3. Chapter 437 Division 2, General Occupational Safety and Health Rules
 4. Chapter 437 Division 3, Construction

2.4 Work Procedures

- A. General Abatement Techniques
 1. ACM must be wetted down thoroughly and as often as necessary to prevent the emission of fibers. The ACM removal shall begin within areas closest to the decon unit, if applicable, and proceed towards the HEPA filtration units.
 2. Wet ACM shall be disposed of in appropriately lined, lockable dumpsters marked with warning signs. Waste bags and containers shall be properly labeled.
 3. ACM shall not be dropped or thrown from heights exceeding fifteen (15) feet above the floor. At heights above 15 feet, ACM shall be dropped into incline chutes, dropped onto scaffolding, or containerized at that height for later disposal. At heights above forty (40) feet, a dust tight chute shall be employed. Contractor shall be aware of any State or Local requirements that may supersede these requirements.
 4. Visible remaining ACM shall be removed with nylon brushes or an equivalent method. During this phase, surfaces being cleaned are to be kept wet. All disposable materials and equipment shall be packaged for disposal.
 5. All equipment shall be decontaminated within or near the structure prior to removal. All free water in contaminated areas shall be collected and added to ACM waste and/or placed in plastic lined, leak proof containers, solidified or filtered appropriately in accordance with all applicable regulations.
 6. The area between the building and the dumpsters used shall be kept reasonably free of debris during shifts, and thoroughly cleaned at the end of each shift to remove ALL visible debris.
- B. Materials to Be Utilized:
 1. 6-mil, fire retardant polyethylene sheeting and 6-mil bags shall be utilized to begin the initial work site preparation such as the erection of critical barriers, pre-cleaning of debris, etc.
 2. High quality duct tape, spray-on adhesives, glues and other barrier securing materials shall be available on-site to facilitate work area preparation
 3. A proper surfactant or removal encapsulant shall be employed as a wetting agent

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4. Tools such as wire-cutters, utility knives, scrub brushes, scrapers, etc., shall be used to aid in abatement
5. Mops, rags and HEPA vacuums shall also be employed during any abatement.
6. Asbestos Hazard Tape shall be used to cordon off the restricted areas at the base of any scaffolding utilized for abatement.

C. Isolation of Work Areas:

1. Critical barriers shall be placed on all and openings in the work area into the building. These shall be sealed and remain in place until final visual inspection has been completed.
2. Negative air filtration equipment is not required in the work area, but is required in the decon facility, if utilized.

D. Decontamination Chamber Construction/Maintenance:

No local decontamination chamber is required for exterior work. If a remote decontamination chamber is utilized, it must be constructed and maintained according to all Federal, State and local regulations.

E. Final Clean-Up of Work Area:

1. All surfaces in the work area shall be cleaned using HEPA vacuums and wet wiping as necessary.
2. No visible dust or debris shall be observed within the work areas, and around the perimeter of the structure.
3. After completion of clean-up operations, the Contractor shall notify the Consultant that the containment is ready for post-abatement visual inspection. No air clearance testing is required for this project.

2.5 Personnel Qualifications and Requirements

- A. All Contractor personnel involved with asbestos work must be trained and tested prior to any work, and shall be thoroughly familiar with the Contractor's standard operating procedure for the asbestos abatement work. All personnel shall undergo the specific medical examinations required by OSHA. The superintendent and the foreman shall be thoroughly familiar with all applicable regulations and practices for asbestos work and shall have participated in at least two abatement projects of similar size and scope within the past two years. All personnel shall be in possession of valid respirator fit test paperwork. Anyone without the above qualifications shall not be allowed to work during the abatement phase at any time.

Superintendent and supervisor qualifications shall consist of:

1. Training and knowledge of applicable regulations and expertise in safety and environmental protection as evidenced by the participation in successful

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- completion of, and certification by a training course offered by an EPA accredited Asbestos Supervisor's course.
2. Experience with abatement work as evidenced through participation in at least two asbestos abatement projects, similar in size and scope to this project.
3. Fluency in English and the languages spoken by all employees, or a designated interpreter for each language shall be available on each shift. A list of designated interpreters and their work schedules shall be provided for the Owner(s).
- B. The superintendent or supervisor shall maintain a permanently bound project logbook that will:
 1. Identify the facility, Owner(s), Agent, Contractors and project.
 2. Define each work area.
 3. Record completely all pertinent facts relating to the project.
 4. Record date, time and name after each entry.
 5. Have a daily sign-in for each and every individual entering into the work area. They must provide, in legible print, name (first and last), worker license number, the time and date entered and exited and proof of approved visitor status.
 6. Dates of inspections and documentation of pass/fail of inspections.
 7. A summary of work accomplished at the end of each shift.
 8. Notes and comments.
- C. The project supervisor shall also be responsible for the following tasks:
 1. Assuring that the decontamination chambers are kept clean.
 2. Surveying the work area a minimum of two times per shift for proper housekeeping, safety precautions, barrier integrity and integrity of any air hoses. The supervisor shall record objective observations.
 3. Ensure that each worker is wearing proper personal protective equipment and is trained in its use.
 4. Ensure that all workers are certified and licensed.
 5. Take precautions to prevent over stressing workers.
 6. Ensure worker qualifications consist of the following:
 - a. Training, as evidenced by the participation in, successful completion of, and certification by an approved asbestos abatement worker's course.
 - b. Familiarization with the standard operating procedures for asbestos abatement work.
- D. There shall be a sufficient number of trained and qualified workers, foremen and superintendents to accomplish the work in accordance with the required schedule. Since general work cannot start prior to the successful decontamination of the work area, it is imperative that a sufficient number of trained personnel be engaged

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throughout the abatement process. No untrained, unqualified or unapproved person shall be employed to hasten completion of the abatement work.

2.6 Owner Responsibilities

- A. The Owner(s) shall provide the utilities needed by the Contractor to complete the abatement project. Said utilities shall include electric current to supply negative air units, vacuums and other equipment needed within the work area or decon and a water source.
- B. The Owner(s) shall provide to the Contractor a list of all daily and emergency phone numbers needed during the course of the project including but not limited to fire, police, ambulance and other emergency services.

2.7 Consultant Responsibilities

- A. The Consultant shall be hired by the Owner(s) and be independent of the Contractor on the job.
- B. All air monitoring specified in the Air Monitoring Section of this Specification shall be adhered to by the Consultant.
- C. The technician on site will make inspections after each stage of the work is completed to assure proper completion before the next stage begins. Inspections will take place after plastic enclosure is set up (prior to removal) and after clean up phase.
- D. The Consultant is responsible for daily inspections during all phases of the removal project to ensure the work is being done properly with no outside work area contamination.
- E. The Consultant has the authority to stop work due to lack of cooperation by the Contractor, contamination of areas outside the work area, or any violations of the Specifications, or Federal, State and Local regulations.
- F. If any inspection fails, the Consultant shall notify the Contractor stating the reason for the failure. The Contractor shall correct the problem and the Consultant shall perform another inspection. This process shall be repeated until the Contractor's work has passed inspection. The Contractor shall be responsible for additional air monitoring and stand-by costs.
- G. Not Used
- H. Not Used

Section 3.0 Execution

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3.1 Standard Operating Procedures

A written description of Contractor's standard operating procedures for completing the work shall be submitted to ensure maximum protection and safeguard from asbestos exposure to workers, visitors, employees and the environment. The standard operating procedure shall consist of:

- A. Methods to maintain security to prevent unauthorized entry into the work space.
- B. Maintenance of an entry log record that ensures that the Contractors' personnel are in accordance with applicable regulations.
- C. Proper protective clothing and respiratory protection use prior to entering the work area.
- D. Safe practices to prevent accidents in the work space, especially from electrical shocks, slippery surfaces and entanglements in loose hoses and equipment.
- E. A survey of the work areas at a minimum of once per work shift to ensure that the workers, personal protective equipment is not ripped or torn and that respiratory protection is worn at all times and that engineering systems used minimize exposure to fibers in the work space are in place.
- F. Safe work practices including, provisions for inter-room communications and the exclusion of eating, drinking, smoking and any activity that may break a respiratory protection seal.
- G. Proper exit procedures from the work space to the outside through the decontamination facility.
- H. Methods for packaging, labeling, loading, transporting, and disposing contaminated material in a way that minimizes exposure and contamination.
- I. Emergency evacuation procedures for medical or safety reasons (i.e. fire and smoke) so that exposure to ACM shall be minimized.
- J. Provisions for effective supervision, including personal air monitoring and any general area air monitoring during the work.

3.2 Notifications and Permits

- A. Notifications: The Contractor shall provide required notification to regional, state and local authorities having jurisdiction on the project. The Contractor shall also secure all permits required for the work, including disposal of asbestos in an approved landfill.
- B. Variances: The Contractor shall be responsible for obtaining any variances to perform the abatement work. The variance request shall be submitted to the

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Owner's Consultant for approval prior to submission to the regulatory agencies. Payment of fees for the processing of any variance request; shall be made by the Contractor.

3.3 Warning Signs and Labels

- A. The Contractor shall erect warning signs around the work space and at every point of potential entry from the outside. Signs should be in accordance with OSHA standard 29 CFR 1910.1001. The warning signs shall be a bright color so that they will be easily noticeable. The size of the sign and the size of the lettering shall conform to the OSHA requirements.
- B. The contractor shall provide the OSHA and NESHAPS required labels for all plastic bags and all drums utilized to transport asbestos contaminated material to the landfill.
- C. The contractor shall provide any other signs, labels, warning and posted instructions that are necessary to protect, inform and warn people of the hazard from asbestos exposure these shall be posted in a prominent and convenient place for the workers.

3.4 Emergency Precautions

- A. The work area is to be restricted only to authorized, trained, and protected personnel. These may include the Contractor's employees, employees of Sub-Contractors, Client's employees and representatives, State and Local inspectors and any other designated individuals. A list of authorized personnel shall be established prior to job start and posted in the clean room of the worker decontamination facility.
- B. A logbook shall be maintained in the clean room area of the worker decon system. Anyone who enters the work area must record his name, affiliation, time in and time out for each entry.
- C. Entry into the work area by unauthorized individuals shall be reported immediately to the Client by the Contractor. These events should be clearly detailed in the site logbook.
- D. Access to the work area shall be through a single worker decon system located at a designated location of the work site. All other means of access (doors, windows, hallway, etc.) shall be blocked or locked to the prevent entry to or exit from the work area. The only exceptions for this rule are the waste pass-out air lock that shall be sealed except during the removal of containerized asbestos waste from the work area and emergency exits for use in case of fire and/or accident. Emergency exits shall be sealed with fire retardant polyethylene sheeting and tape until needed.

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These emergency exits shall be clearly marked in English and the language of a majority of the workers.

- E. The Contractor should have control of site security during all operations whenever possible, in order to protect work efforts and equipment.
- F. The Contractor shall have the Client's or Owner's assistance in notifying building occupants of impending activity and enforcement of restricted access by all employees.

Section 4.0 Personal Protective Equipment

4.1 Respiratory Protection

- A. Respiratory protection shall be worn by all individuals inside the work area from the initiation of the asbestos project until all areas have successfully passed clearance air monitoring.
 - 1. All respiratory protection shall be MSHA/NIOSH approved in accordance with the provisions of 30 CFR Part 11. All respiratory protection shall be provided by the Contractor and used by workers in conjunction with the written respiratory protection program.
 - 2. The Contractor shall provide all workers, foreman, superintendents, authorized visitors and inspectors personally issued and marked respiratory equipment approved by NIOSH and MSHA. When using respirators with disposable filters, the Contractor shall supply replacements as needed.
 - 3. Workers shall be provided with personally issued and individually marked respirators. Respirators shall not be marked with any instrument that will alter the fit of the respirator in any way. Only waterproof identification markers will be used.
 - 4. The Contractor shall ensure that the workers are qualitatively or quantitatively fit tested for any negative pressure respirator by an Industrial Hygienist initially and every six months thereafter with the type of respirator to be used. Qualitative fit testing may only be used for half-mask respirators.
 - 5. Whenever the respirator design permits, workers shall perform the positive and negative air pressure fit test each time a respirator is worn. Powered air-purifying respirators shall be tested for adequate flow as specified by the manufacturer.
 - 6. No facial hair (beards) shall be permitted to be worn when wearing respiratory protection that requires a mask to face seal.
 - 7. Contact lenses shall not be worn in conjunction with respiratory protection on asbestos projects.
 - 8. If a worker wears glasses, a spectacle kit to fit their respirator shall be provided by the Contractor at the Contractor's expense.

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9. Respiratory protection maintenance and decontamination procedures shall meet the following requirements:
 - a. Respiratory protection shall be inspected and decontaminated on a daily basis in accordance with OSHA 29 CFR 1910.134(b).
 - b. HEPA filters for negative pressure respirators shall be changed after each shower, or sealed properly.
 - c. Respiratory protection shall be the last piece of worker protection equipment to be removed. Workers must wear respirators in the shower when going through decontamination procedures.
 - d. Air-line respirators with HEPA-filtered disconnect shall be disconnected in the equipment room and worn into the shower. Powered air-purifying respirator face pieces shall be worn into the shower. Filtered/power pack assemblies shall be decontaminated in accordance with manufacturer's recommendations.
 - e. Respirators shall be stored in a dry place and in such a manner that the face piece and exhalation valves are not distorted.
 - f. Organic solvents shall not be used for washing of respirators.
 8. Authorized visitors shall be provided with suitable respirators and instruction on the proper use of respirators whenever entering the work area. Fit testing shall be done to ensure proper fit of respirator.
- B. The minimum respiratory requirements for this project are as follows:
1. Half-mask or full face air-purifying respirators with HEPA filters shall be worn during the preparation of the work area, performance of repairs (e.g. using glovebag techniques), during removal techniques and final cleanup procedures provided airborne fiber concentrations inside the work area are less than 0.1 f/cc.
 2. Full face piece powered air-purifying respirators (PAPR) equipped with HEPA filters shall be worn during the removal, encapsulation, enclosure, repair and/or other disturbance of friable ACM whenever airborne fiber concentrations inside the work areas are equal to or greater than 0.1 f/cc and less than 2.0 f/cc. A supply of charged replacement batteries, HEPA filters and flow test meter shall be available in the clean room for use with powered air-purifying respirators. HEPA filters shall be changed daily or as flow testing indicates change is necessary. Any type C supplied-air respirator operated in continuous flow may be substituted for a powered air-purifying respirator.
 3. Full face piece type C supplied-air respirators operated in pressure demand mode equipped with an auxiliary positive pressure self-contained breathing apparatus shall be worn during gross removal, demolition, renovation and/or other disturbance of ACM whenever airborne fiber concentrations inside the work area are equal to or greater than 10.0 f/cc.
 4. Full face piece type C supplied-air respirators operated in pressure demand mode with HEPA filter disconnect protection shall be worn during gross

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removal, demolition, renovation and/or other disturbance of ACM whenever airborne fiber concentrations inside the work area are equal to or greater than 2.0 f/cc and less than 10.0 f/cc.

5. Use of single use dust respirators is prohibited for the above respiratory program.

4.2 Additional Personal Protective Equipment

- A. The Contractor shall provide to all workers, foremen, superintendents and authorized visitors and inspectors, protective disposable clothing consisting of full body coveralls and head covers.
- B. The Contractor shall provide eye protection (contact lenses shall not be worn and spectacle kits which fit each personal respirator shall be issued), hard hats and safety shoes as required by job conditions and safety regulations. Safety shoes and hard hats shall be approved in accordance with ANSI Z89.1 1969 and ANSI Z41.1 1967.
- C. Reusable footwear, hard hats and eye protection shall be left in the "Contaminated Equipment Room" until the end of the asbestos abatement work.
- D. All disposable protective clothing shall be discarded and disposed of as asbestos waste every time the wearer exits the work area to the outside area through the decontamination facilities.
- E. If it is absolutely necessary that non-disposable clothing be worn for the asbestos project, laundering services shall be conducted in accordance with 29 CFR 1926.58.

Section 5.0 Containment and Preparation

5.1 No Containment Required for Roofing Abatement

5.3 Engineering Controls

- A. The Contractor shall maintain the entire structure and surrounding areas as a regulated area throughout the project.
- B. If samples collected outside of the work area during abatement activities indicate airborne fiber concentrations greater than 0.01 f/cc or pre-measured background levels, work shall immediately stop for inspection and procedures review. Cleanup of surfaces outside of the work area, using HEPA vacuums or wet cleaning techniques, may be necessary.

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- C. Disposal shall be at an approved landfill, transfer at a licensed transfer station and a manifest form will be signed by the landfill owner documenting receipt and acceptance of the ACW.
- D. All materials subject to damage shall be stored off of the ground, away from wet or damp surfaces, and under a protective cover to prevent damage or contamination.
- E. Airtight and watertight containers shall be provided to receive and retain any asbestos-containing or contaminated materials for storage until disposal at a disposal site. The containers shall be labeled in accordance with OSHA Regulations 29 CFR 1926.58. Containers (dumpsters) are to be locked between shifts.
- F. Adequate HEPA filter equipped ventilation units, including HEPA filter replacements, shall be provided by the contractor.
- G. The contractor shall provide tools, respirators, and filter replacements necessary.
- H. The Contractor shall provide the necessary water filtration units to filter wastewater through a 0.5 micron final filter.
- I. The Contractor shall have available ladders and/or scaffolds of sufficient dimension and quantity so that all work surfaces can be easily and safely reached by inspectors. Scaffold joints and ends shall be sealed with tape to prevent incursion of asbestos fibers. Scaffolding shall comply with the OSHA requirements.

5.4 Preparation

- A. General
 - 1. Critical Barriers: All asbestos abatement work involving friable ACM and nonfriable ACM shall require the installation of critical barriers at all penetrations to the work area.
 - 2. All electrical equipment used by Contractor in the work area must be protected by GFI circuits. The electrical supply to the work area must be located outside the containment, where feasible.

Section 6.0 Removal

6.1 Materials

- A. Contractor must furnish all labor, materials, equipment, and subcontractors necessary for removal and disposal of ACM in a manner consistent with these specifications. These materials include but are not limited to:
 - 1. Fire-retardant polyethylene sheeting (6 mil minimum thickness)
 - 2. Staples, nails, and tape capable of sealing joints and securing polyethylene to all necessary surfaces
 - 3. Surfactant mixed in recommended proportions
 - 4. Containers to receive and retain ACM with appropriate labels

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5. Warning signs and labels
6. Glove bags
7. Encapsulants
8. Other Materials: All necessary materials for removal and disposal of asbestos in compliance with all applicable codes and regulations, and these specifications.

6.2 Equipment

- A. Provide suitable tools for asbestos removal, including but not limited to scrapers, brushes, razor knives, wrenches, tools for constructing containment and decontamination units, brooms, carts, and safety equipment.
- B. Provide suitable air moving and exhaust equipment, including but not limited to:
 1. A method for maintaining pressure differential of 0.02 inches of water column inside decon from outside.
 2. HEPA-filtered vacuums
 3. Recording manometers for monitoring the pressure inside decon relative to outside
- C. No equipment shall cause suspension of ACM within work area or discharge of asbestos fibers outside of work area.

6.3 Asbestos Removal

This section is intended to be used as a general specification for asbestos removal in work area for any particular asbestos abatement project for Owner. Consult the Scope of Work for each individual project for more specific asbestos removal requirements.

- A. Asbestos Removal, Friable Materials
 1. Prepare site as per section 5.4. I
 - 2.. Spray asbestos material with amended water using spray equipment capable of providing a water application to reduce the release of fibers. Saturate friable material sufficiently to wet the debris and prevent ALL visible emissions.
 3. Spray the asbestos material repeatedly during removal process to maintain wet condition and minimize asbestos fiber dispersion. The spraying must not be used as a technique to remove or dislodge ACM.
 4. Remove saturated asbestos material in small sections. As it is removed pack the material in sealable 6 mil polyethylene bags and place in appropriately labeled (29 CFR 1926.1101(k)(8)(iii)) container for transport. Material must be placed in containers in a prompt manner consistent with 29 CFR 1926.1101(g)(1)(iii).
 5. Waste Load-out Procedure
 - a. Seal bags or containers. Clean external surfaces of containers thoroughly by wet cleaning in the designated part of work area that is part of equipment decontamination unit.

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- b. Move containers to dirty transport staging area, wet-clean each container thoroughly, and move to a clean transport staging area pending removal from the property. All waste water from these activities must be collected and filtered.
 - c. When disposal bags are used, the bagged material must be placed within a second bag in equipment decontamination unit. The second, outer bag must be labeled with all applicable warnings, including D.O.T. labeling.
 - d. When larger pieces of material are to be disposed of, the material must be wrapped in 2 layers of fire-retardant polyethylene sheeting and properly labeled in equipment decontamination unit.
- 6. Secondary Removal
 - a. After completion of gross removal work, all surfaces from which asbestos has been removed must be wet-brushed with a wire brush and/or wet-cleaned by an equivalent method to remove all visible material. During this work the surfaces being cleaned must be kept wet.
 - b. Consultant will individually approve each area of encapsulation verbally or in writing prior to commencement of encapsulation.
 - c. Encapsulant usage is not necessary for this project.

6.4 Final Cleaning

A. Cleanup

- 1. Remove visible accumulations of asbestos material and debris. Wet-clean all surfaces within work area.
- 2. Sealed containers and all equipment in use in work area must be included in the cleanup and must be removed from work area via equipment decontamination unit, at an appropriate time in the cleaning sequence.

6.5 Inspections after Removal

A. Inspections after Removal (see also Section 8.3)

- 1. If Consultant finds visible accumulations of asbestos debris in work area after the completion of the visual inspection, Contractor shall repeat wet-cleaning until work area is in compliance, at Contractor's expense.
- 2. When an inspection by Consultant in the presence of Contractor determines that the area is free of accumulations of dust and visible asbestos debris and the final air clearance has been met, decontamination unit shall be removed, the area thoroughly wet-cleaned, and materials from equipment room and shower room disposed of as contaminated waste.
- 3. A final inspection will be carried out by Consultant in the presence of Contractor to ensure that no dust or debris remains on surfaces as a result of dismantling operations.

6.6 Special Removal Procedures

A. Reserved

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Section 7.0 Waste Disposal

7.1 Waste Containers and Labeling

- A. Disposal
 - 1. Preparation and Security of Waste Holding Areas
 - a. Prepare enclosed transport vehicles and/or enclosed dumpsters with at least 2 layers of 6 mil fire-retardant polyethylene sheeting.
 - b. Secure transport vehicles and dumpsters with padlocks. Dumpsters and waste transport vehicles must be locked at all times while engaged in asbestos disposal on Owner's property, except when waste materials are being loaded into these items.
 - 2. Storage and Disposal of Containers
 - a. Containers of ACM shall not be stored in uncontaminated areas, but must be moved directly from work area to an enclosed dumpster in enclosed carts.
 - b. ACM must be disposed of at the selected and approved disposal site in accordance with requirements of all applicable disposal authorities.
 - c. Disposal documents and receipts must be submitted to Consultant as part of the close-out documentation.
 - d. The contractor must disclose the intended use of a dumpster on site as part of the work plan.
- B. Discharge of Waste Water
 - 1. All waste water must be filtered through a medium that is capable of removing all suspended particles of a diameter greater than or equal to 5 microns.
 - 2. All filtered waste water must be discharged into public sanitary sewer systems. Discharge of filtered water onto surface soil, asphalt, concrete, or any other porous surface shall not be permitted.

Section 8.0 Consultant Project Oversight

8.1 Project Air Monitoring

- A. Prior to the commencement of large project abatement activities the work area may be pre-tested to determine ambient airborne asbestos levels. Representative samples, determined by the Consultant, inside the work area and outside the work area shall be collected throughout the proposed work area during normal occupancy activities and circumstances.
- B. The following is an example of air samples that may be collected on a daily basis at a large project work site:

DIVISION 2

SECTION 20100 ASBESTOS ABATEMENT

1. One sample from each side of the structure within 10 feet of isolation barriers.
 2. One sample inside the uncontaminated entrances of each worker and waste decontamination unit, or representative samples at the discretion of the Consultant.
 3. It is also highly recommended that exterior samples be taken to document outside air fiber levels if conditions permit.
 4. Minimum volume required to be drawn on area samples should be 1,200 liters.
- C. Personal air sample results shall be considered representative of the workers inside the work area containment. Personal samples to be collected by the contractor.
- D. Air sampling equipment shall not be placed in corners or near any obstructions such as furniture or air handling systems that may unduly affect airflow.
- E. All samples shall have a chain of custody to record who collected, transported, received and analyzed samples.
- F. Air sample analysis, other than AHERA clearance samples, shall be carried out in accordance the NIOSH 7400 Method (Revised) utilizing counting Method "A".
- G. All applicable requirements for quality assurance and quality control in the laboratory must be in place in order to ensure the accuracy of the analysis results.
- H. All samples shall be read onsite in a clean area provided by the school. Sample results shall be available approximately two (2) hours following the completion of each sample. TEM results for AHERA clearances will be available by the end of the next business day, if the samples are collected prior to noon. If after noon, the results will be available two business days later.

8.2 Personnel Air Monitoring

- A. At the end of the project the Contractor shall provide complete documentation of the OSHA required monitoring of on-site personnel that was conducted during the abatement activities. This information will document the worker exposure on this particular project.
- B. The Consultant may conduct additional personnel monitoring for the purpose of verifying effective work practices. The results of the samples can be made available to the contractor upon request. This additional monitoring does not relieve the contractor of the responsibility to conduct OSHA required monitoring.

8.3 Final Clearance Monitoring

No Clearance Required

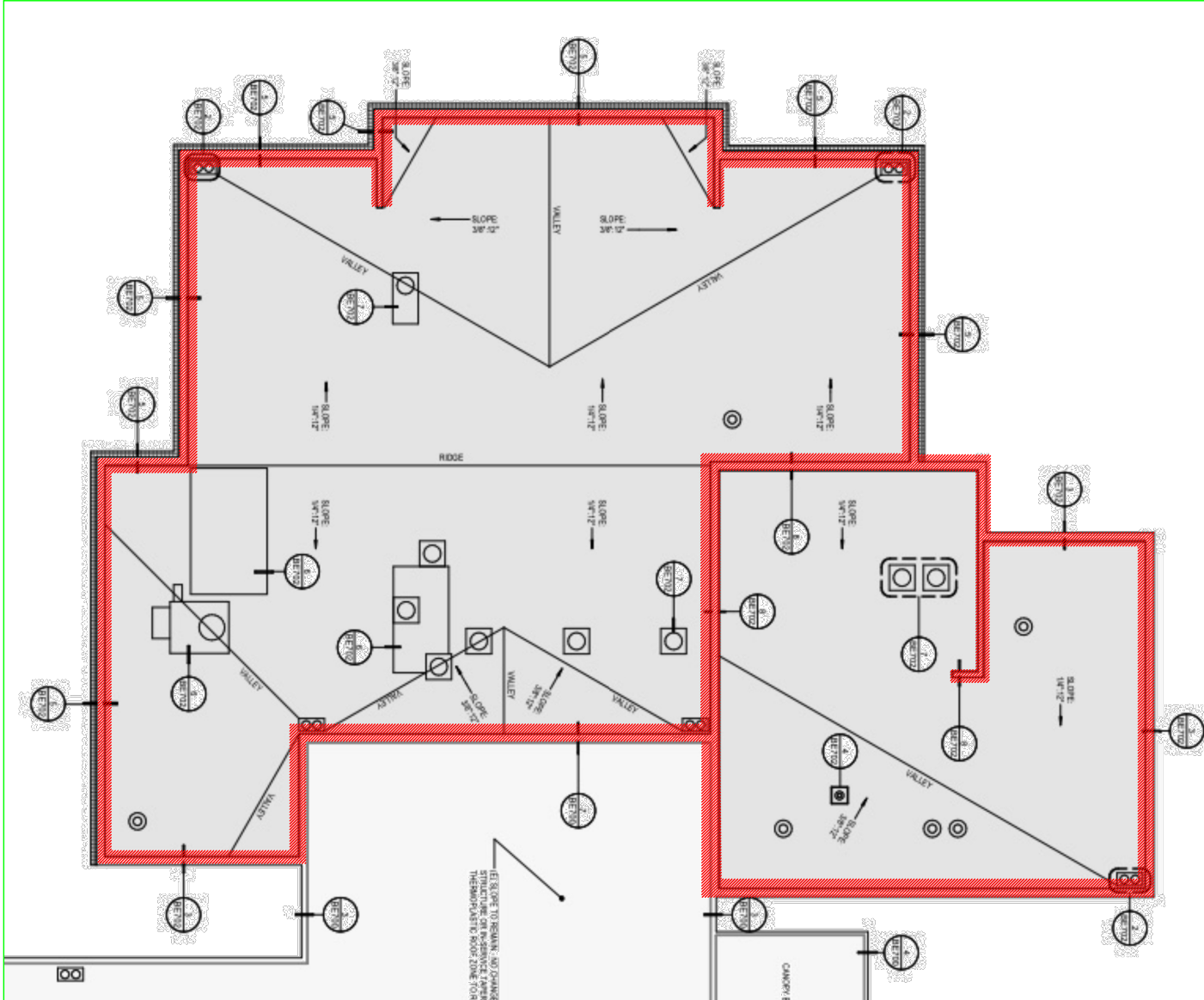
DIVISION 2

SECTION 20100
ASBESTOS ABATEMENT

8.4 Close-out Documentation

- A. After final inspections and final air testing are complete and the results known, the Contractor is to provide all close-out documentation to the Consultant within 15 days of the final day on site.

- END OF SECTION -



Removal and Replacement of all Metal Parapet Wall Coverings

Notes:

This is a design drawing and is not to be used for construction. It is the property of G2C Consulting, Inc. and is not to be reproduced, stored, or used in any way without written permission from G2C Consulting.

Client: Linn Benton Community College
Project: Benton Center Roofing Replacement
Location: 757 NW Polk Avenue
Corvallis, OR 97330

G2 Project #: G26-032

Building: Linn Benton Community College
Floor: Benton Center - Roofing Project
Dwg Type: ACM Abatement Locations



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Report North

1-29-26

SGS

1/1

Attachment A

PREVAILING WAGE RATES

for

Public Works Contracts in Oregon

Oregon Bureau of Labor and Industries

Prevailing Wage Rates for Public Works Contracts



Christina E. Stephenson
Labor Commissioner
Rates Effective January 5, 2026



CHRISTINA E. STEPHENSON
Labor Commissioner

In this rate book are the new prevailing wage rates for Oregon non-residential public works projects, effective January 5, 2026.

Prevailing wage rates are the minimum hourly wages that must be paid to all workers employed on all public works projects. Thank you for your engagement in the process and commitment to Oregon law.

Our team is ready to help support you with any questions you have. We also offer regular, free, informational seminars and webinars for contractors and public agencies. Contact us at PWR.Email@boli.oregon.gov or (971) 245-3844.

A handwritten signature in blue ink, appearing to read "C. Stephenson".

Christina E. Stephenson
Labor Commissioner

More information about prevailing wage rates:

The Oregon Bureau of Labor & Industries publishes the prevailing wage rates (PWR) that are required to be paid to workers on non-residential public works projects in Oregon.

Separate documents, [Definitions of Covered Occupations for Public Works Contracts in Oregon](#), provide occupational definitions used to classify the duties performed on public works projects. These definitions are used to find the correct prevailing wage rate.

The rate book and definition publications are available online at <https://www.oregon.gov/boli>, as well as additional information, supporting documents, and forms.

Please contact us at PWR.Email@boli.oregon.gov or (971) 245-3844, for additional information such as:

- Applicable prevailing wage rates for projects (Generally, the rates in effect at the time the bid specifications are first advertised are those that apply for the duration of the project.)
- Federal Davis-Bacon rates (In cases where projects are subject to both state PWR and federal Davis-Bacon rates, the higher wage must be paid.)
- Required PWR provisions for specifications and contracts
- Apprentice rates



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JANUARY 5, 2026

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Finding the Correct Prevailing Wage Rate.....	3
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Forms necessary to comply with ORS 279C.800 through ORS 279C.870 can be found on our website at <https://www.oregon.gov/boli/employers/Pages/prevailing-wage.aspx>. Contractors are encouraged to use and keep on file the forms provided as master copies for use on future prevailing wage rate projects.

All of the information in this booklet can be accessed and printed from the Internet at: www.oregon.gov/BOLI

Pursuant to ORS 279C.800 to ORS 279C.870, the prevailing wage rates contained in this booklet have been adopted for use on public works contracts in Oregon.

Required Postings for Prevailing Wage Contractors and Subcontractors

PREVAILING WAGE RATES

Every contractor and subcontractor engaged in work on a public works must post the applicable prevailing wage rates for that project in an obvious place on the worksite, so workers have ready access to the information.

DETAILS OF FRINGE BENEFIT PROGRAMS

When a contractor or subcontractor provides or contributes to a health and welfare plan or a pension plan, or both, for employees who are working on a public works project, the details of all fringe benefit plans or programs must be posted on the worksite.

The posting must include a description of the plan or plans, information about how and where claims can be made and where to obtain more information. The notice must be posted in an obvious place on the work site in the same location as the prevailing wage rates.

WORK SCHEDULE

Contractors and subcontractors must give workers their regular work schedule (days of the week and number of hours per day) in writing before beginning work on the project.

Contractors and subcontractors may provide the schedule at the time of hire, prior to starting work on the contract, or by posting the schedule in a location frequented by employees, along with the prevailing wage rate information and any fringe benefit information.

If an employer fails to give written notice of the worker's schedule, the work schedule will be presumed to be a five-day schedule. The schedule may only be changed if the change is intended to be permanent and is not designed to evade the PWR overtime requirements.

*ORS 279C.840(4); OAR 839-025-0033(1). ORS 279C.840(5); OAR 839-025-0033(2).
ORS 279C.540(2); OAR 839-025-0034.*

PUBLIC WORKS BONDS

Every contractor and subcontractor who works on public works projects subject to the prevailing wage rate (PWR) law is required to file a \$30,000 **"PUBLIC WORKS BOND"** with the Construction Contractors' Board (CCB). This includes flagging and landscaping companies, temporary employment agencies, and sometimes sole proprietors.

The key elements of ORS 279C.830(2) and ORS 279C.836 specify that:

- Specifications for every contract for public works must contain language stating that the contractor and every subcontractor must have a public works bond filed with the CCB before starting work on the project, unless otherwise exempt.
- Every contract awarded by a contracting agency must contain language requiring the contractor:
 - To have a public works bond filed with the CCB before starting work on the project, unless otherwise exempt; and
 - To include in every subcontract a provision requiring the subcontractor to have a public works bond filed with the CCB before starting work on the project unless otherwise exempt
- Every subcontract that a contractor or subcontractor awards in connection with a public works contract between a contractor and a public agency must require any subcontractor to have a public works bond filed with the CCB before starting work on the public works project, unless otherwise exempt.
- Before permitting a subcontractor to start work on a public works project, contractors must first verify their subcontractors either have filed the bond or have elected not to file a public works bond due to a bona fide exemption.
- The PWR bond is to be used exclusively for unpaid wages determined to be due by the Bureau of Labor & Industries.
- The bond is in effect continuously (you do not have to have one per project).
- A public works bond is in addition to any other required bond the contractor or subcontractor is required to obtain.

Exemptions:

- Allowed for a disadvantaged business enterprise, a minority-owned business, woman-owned business, a business that a service-disabled veteran owns, or an emerging small business certified under ORS 200.055, for the first FOUR years of certification;
 - Exempt contractor must still file written verification of certification with the CCB and give the CCB written notice that they elect not to file a bond.
 - The prime contractor must give written notice to the public agency that they elect not to file a public works bond.
 - Subcontractors must give written notice to the prime contractor that they elect not to file a public works bond.
- For projects with a total project cost of \$100,000 or less, a public works bond is not required. (Note this is the total project cost, not an individual contract amount.)
- Emergency projects, as defined in ORS 279A.010(f).

PREVAILING WAGE RATES

FINDING THE CORRECT PREVAILING WAGE RATE

To find the correct rate(s) required on your public works project, you will need:

- the date the project was first advertised for bid
- the county your project is in
- the duties of workers on the job

Generally, the rate you should look for is based on the date the project was first advertised for bid. (See OAR 839-025-0020(8) for information about projects that contract through a CM/GC, or contract manager/general contractor.)

The Labor Commissioner must establish the prevailing rate of wage for each region as defined in law. (See ORS 279C.800.) A map of these regions can be found on [BOLI's website](#).

To find the correct rate in this rate book:

1. *Determine the duties that are being performed by each worker.* Use the booklet *Definitions of Covered Occupations* to find the definition that most closely matches the actual work performed by the worker. You can find this publication online at <https://www.oregon.gov/boli/employers/Pages/occupational-definitions.aspx>.
2. *Find the correct occupation in the "Prevailing Wage Rate for Public Works Contracts" below.* The prevailing wage rate is made up of an hourly base rate and an hourly fringe rate. The combination of these two amounts must be paid to each worker. Watch for possible zone differential, shift differential, and/or hazard pay. If the occupation lists different rates for different Areas of the state, locate the Area that includes the county where the project is located.

Apprentices must be paid consistent with their registered apprenticeship program standard. You can find apprenticeship rates on our website at <https://www.oregon.gov/boli/employers/Pages/prevailing-wage-rates.aspx>. You may also contact the agency to confirm the correct apprenticeship rate.

The "Prevailing Wage Rate Laws" handbook provides specific information and answers questions regarding prevailing wage laws and is available on our website at <https://www.oregon.gov/boli/employers/Documents/2024%20PWR%20Law%20book%20-%20FINAL.pdf>.

If you have any questions about any of this information, please contact the Bureau of Labor & Industries at PWR.Email@boli.oregon.gov or (971) 245-3844.

Prevailing Wage Rates by Occupations—Table of Contents

Using the booklet, [Definitions of Covered Occupations](#), find the definition and group number, if applicable, that most closely matches the actual work being performed by the worker.

<u>Asbestos Worker/Insulator</u>	<u>5</u>
<u>Boilermaker</u>	<u>5</u>
<u>Bricklayer/Stonemason</u>	<u>5</u>
<u>Bridge and Highway Carpenter (See Carpenter Group 5)</u>	<u>5</u>
<u>Carpenter</u>	<u>5</u>
<u>Cement Mason</u>	<u>6</u>
<u>Diver</u>	<u>7</u>
<u>Diver Tender</u>	<u>7</u>
<u>Dredger</u>	<u>7</u>
<u>Drywall, Lather, Acoustical Carpenter & Ceiling Installer</u>	<u>8</u>
<u>Drywall Taper (See Painter & Drywall Taper)</u>	<u>17</u>
<u>Electrician</u>	<u>9</u>
<u>Elevator Constructor, Installer and Mechanic</u>	<u>13</u>
<u>Fence Constructor (Non-Metal)</u>	<u>13</u>
<u>Fence Erector (Metal)</u>	<u>13</u>
<u>Flagger (Laborer Group 1)</u>	<u>14</u>
<u>Glazier</u>	<u>13</u>
<u>Hazardous Materials Handler</u>	<u>13</u>
<u>Highway/Parking Striper</u>	<u>13</u>
<u>Ironworker</u>	<u>14</u>
<u>Laborer</u>	<u>14</u>
<u>Landscape Laborer/Technician</u>	<u>15</u>
<u>Limited Energy Electrician</u>	<u>15</u>
<u>Line Constructor</u>	<u>17</u>
<u>Marble Setter</u>	<u>17</u>
<u>Millwright Group 1 (See Carpenter Group 3)</u>	<u>5</u>
<u>Painter & Drywall Taper</u>	<u>18</u>
<u>Piledriver (See Carpenter Group 6)</u>	<u>5</u>
<u>Plasterer and Stucco Mason</u>	<u>18</u>
<u>Plumber/Pipefitter/Steamfitter</u>	<u>18</u>
<u>Power Equipment Operator</u>	<u>19</u>
<u>Roofer</u>	<u>21</u>
<u>Sheet Metal Worker</u>	<u>22</u>
<u>Soft Floor Layer</u>	<u>24</u>
<u>Sprinkler Fitter</u>	<u>24</u>
<u>Tender to Mason Trades (Brick and Stonemason, Mortar Mixer, Hod Carrier)</u>	<u>24</u>
<u>Tender to Plasterer and Stucco Mason</u>	<u>25</u>
<u>Testing and Balancing (TAB) Technician</u>	<u>25</u>
<u>Tile Setter/Terrazzo Worker: Hard Tile Setter</u>	<u>25</u>
<u>Tile, Terrazzo, and Marble Finisher</u>	<u>25</u>
<u>Truck Driver</u>	<u>26</u>

ASBESTOS WORKER/INSULATOR

62.02 25.42

Firestop Containment

48.74 18.89

BOILERMAKER

45.33 32.22

BRICKLAYER/STONEMASON

49.60 25.92

This trade is tended by "Tenders to Mason Trades."

Add \$1.00 per hour to base rate for refractory repair work.

CARPENTERZone A (Base Rate)

Group 1 54.69 16.81

Group 2 54.86 16.81

Group 3 (Millwrights) 61.57 22.38

Group 4 Eliminated

Group 5 (Bridge & Highway) 56.06 16.81

Group 6 (Piledrivers) 56.06 16.81

Zone Differential for Carpenters - Add to Zone A Base Rate

Zone B 1.25 per hour
 Zone C 1.70 per hour
 Zone D 2.00 per hour
 Zone E 3.00 per hour
 Zone F 5.00 per hour
 Zone G 10.00 per hour

Zone A: Projects located within 30 miles of the respective city hall of the cities listed.

Zone B: More than 30 miles but less than 40 miles.

Zone C: More than 40 miles but less than 50 miles.

Zone D: More than 50 miles but less than 60 miles.

Zone E: More than 60 miles but less than 70 miles.

Zone F: More than 70 miles but less than 100 miles.

Zone G: More than 100 miles.

Reference Cities for Group 1 and 2 Carpenters

Albany	Coos Bay	Klamath Falls	Newport	Roseburg
Astoria	Eugene	La Grande	Ontario	Salem
Baker City	Goldendale	Lakeview	Pendleton	The Dalles
Bend	Grants Pass	Longview	Portland	Tillamook
Brookings	Hermiston	Madras	Port Orford	Vancouver
Burns	Hood River	Medford	Reedsport	

See more information on Reference Cities for Zone Differential and Premium Pays on page 6.

CARPENTER (continued)Reference Cities for Group 3 Carpenters

Eugene	Medford	Portland	Vancouver
Longview	North Bend	The Dalles	

Reference Cities for Group 5 and 6 Carpenters

Bend	Longview	North Bend
Eugene	Medford	Portland

Note: All job or project locations shall be computed (determined) on the basis of road miles and in the following manner. A mileage measurement will start at the entrance to the respective city hall, facing the project (if possible), and shall proceed by the normal route (shortest time--best road via Google Maps) to the geographical center on the highway, railroad, and street construction projects (end of measurement). On all project contracts, the geographical center where the major portion of the construction is located, shall be considered the center of the project (end measurement).

Group 1, 2, 5, and 6:

Welders shall receive a 5% premium per hour based on their Group's journeyman wage rate, with an 8-hour minimum.

Group 1, 2, and 3:

When working with toxic treated wood, workers shall receive \$.25/hour premium pay for minimum of eight (8) hours.

Group 5 and 6:

When working with creosote and other toxic treated wood, workers shall receive \$.25/hour premium pay for minimum of eight (8) hours.

Group 6:

When working in sheet pile coffer dams or cells up to the external water level, workers shall receive \$.15/hour premium pay for minimum of eight (8) hours.

CEMENT MASON

This trade is tended by "Concrete Laborer."

Group 1	46.13	22.31
Group 2	47.09	22.31
Group 3	47.09	22.31
Group 4	48.05	22.31

Zone Differential for Cement Mason - Add to Basic Hourly Rate

Zone A: **3.00** per hour

Zone B: **5.00** per hour

Zone C: **10.00** per hour

Zone A: Projects located 60-79 miles of the respective city hall of the Reference Cities listed below .

Zone B: Projects located 80-99 miles of the respective city hall of the Reference Cities listed below.

Zone C: Projects located 100 or more miles of the respective city hall of the Reference Cities listed below.

See more information on Reference Cities for Zone Differential on page 7.

CEMENT MASON (continued)Reference Cities for Cement Mason

Bend	Eugene	Pendleton	Salem	Vancouver
Corvallis	Medford	Portland	The Dalles	

When a contractor takes employees to a project that is located more than 59 miles from the city hall of the Reference City that is closest to the contractor's place of business, Zone Pay is to be paid for the distance between the city hall of the identified Reference City and the project site.

Note: All miles are to be determined on the basis of road miles using the normal route (shortest time – best road), from the city hall of the Reference City closest to the contractor's place of business and the project.

DIVER & DIVER TENDERZone 1 (Base Rate)

DIVER	108.33	20.40
DIVER TENDER	64.32	20.40

Any Diver or Diver's Tender working on a project more than 50 miles from Portland, OR city hall shall receive forty dollars (\$40.00) per day in addition to their regular pay. Miles are calculated via the "shortest route" filter using Google Maps from Portland, OR city hall or the employee's primary residence; whichever one is closer

Diver Depth Pay:

Depth Below Water Surface (FSW)	Daily Depth Pay
50-100 ft.	2.00 per foot over 50 feet
101-150 ft.	3.00 per foot over 100 feet
151-220 ft.	4.00 per foot over 150 feet
Over 220 ft.	5.00 per foot over 220 feet

The actual depth in FSW shall be used in determining depth premium.

Diver Enclosure Pay (working without vertical escape):

Distance Traveled in the Enclosure	Daily Enclosure Pay
0 – 25ft.	N/C
25 – 300 ft.	1.00 per foot from the entrance
300 – 600 ft.	1.50 per foot beginning at 300 ft.
Over 600 ft.	2.00 per foot beginning at 600 ft.

DREDGERZone A (Base Rate)

Leverman (Hydraulic & Clamshell)	58.75	16.95
Assistant Engineer (Watch Engineer, Mechanic Machinist)	55.59	16.95
Tenderman (Boatman Attending Dredge Plant), Fireman	54.10	16.95
Fill Equipment Operator	52.93	16.95
Assistant Mate	50.23	16.95

See more information on Zone Differential on page 8.

DREDGER (continued)Zone Differential for Dredgers – Add to Zone A Base RateZone B: **3.00** per hourZone C: **6.00** per hour**Zone mileage based on road miles:**Zone A: Center of jobsite to no more than 30 miles from the **City Hall of Portland**.

Zone B: More than 30 miles but not more than 60 miles.

Zone C: Over 60 miles.

DRYWALL, LATHER, ACOUSTICAL CARPENTER & CEILING INSTALLER1. **DRYWALL INSTALLER** **54.49** **17.01**2. **LATHER, ACOUSTICAL CARPENTER & CEILING INSTALLER** **54.49** **17.01**Zone Differential for Lather, Acoustical Carpenter & Ceiling Installer**Zone mileage based on road miles:**Zone B 61-80 miles **6.00** per hourZone C 81-100 miles **9.00** per hourZone D 101 or more **12.00** per hour

The correct transportation allowance shall be based on AAA road mileage from the City Hall of the transportation reference cities listed herein.

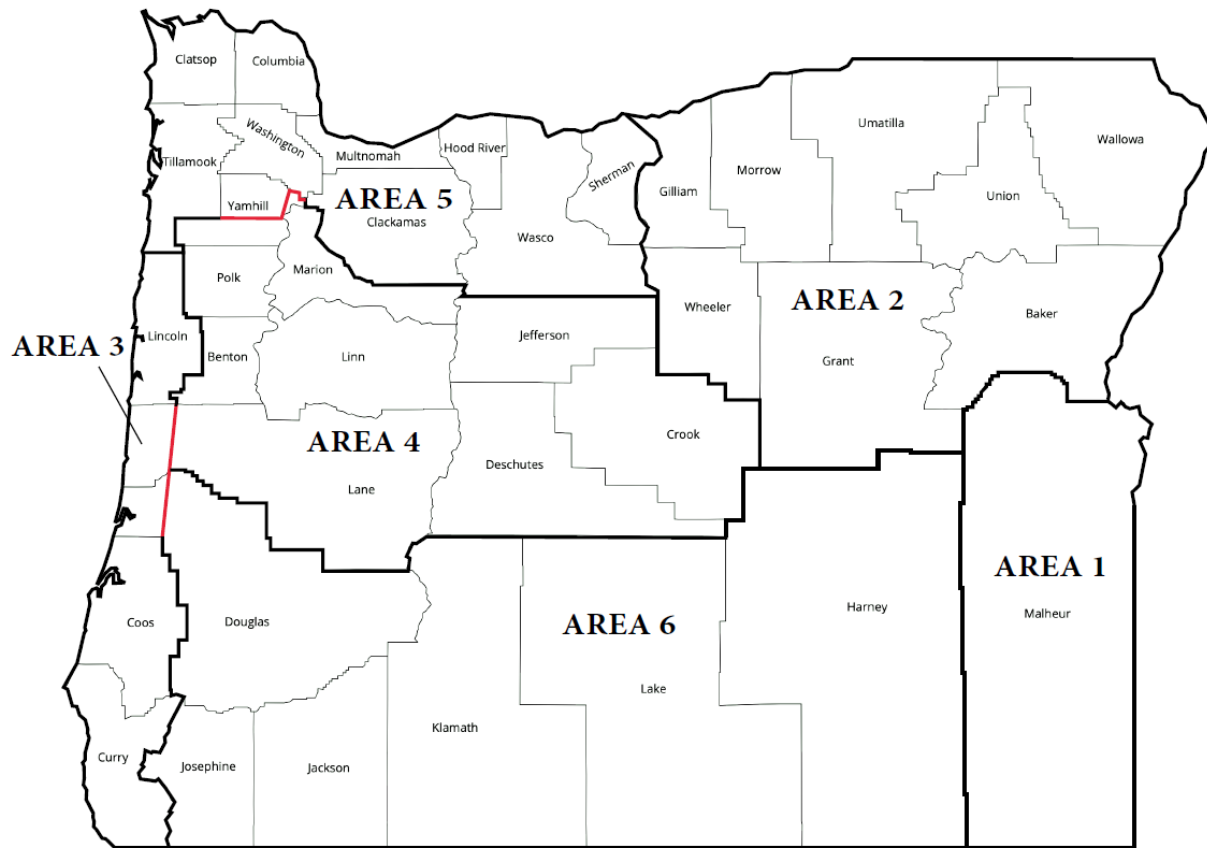
Reference Cities for Drywall, Lather, Acoustical Carpenter & Ceiling Installer

Albany	Bend	Grants Pass	Medford	Portland	Seaside
Astoria	Brookings	Hermiston	Newport	Reedsport	The Dalles
Baker	Coquille	Klamath Falls	North Bend	Roseburg	Tillamook
Bandon	Eugene	Kelso-Longview	Pendleton	Salem	Vancouver

Certified welders shall receive 5% over the base wage rate, with an eight (8) hour minimum.

ELECTRICIAN

Electrician/Limited Energy Electrician Area Map



Note: If you are unable to determine the area of a project located on or near the cross-county boundaries marked in red on the map, call or email the BOLI Prevailing Wage Rate Coordinator at (971) 245-3844 or PWR.email@boli.oregon.gov.

Area 1

Electrician

45.33

20.41

Wireman Welder/Cable Splicer

49.86

20.66

Reference County

Malheur

Shift Differential*

1st Shift "day": Between the hours of 8:00am and 4:30pm — 8 hours pay for 8 hours work

2nd Shift "swing": Between the hours of 4:30pm and 1:00am — 8 hours pay for 8 hours work plus 10% for all hours worked

3rd Shift "graveyard": Between the hours of 12:30am and 9:00am — 8 hours pay for 8 hours work plus 15% for all hours worked.

* The Employer shall be permitted to adjust the starting hours of the shift by up to two (2) hours.

Work will be paid at time and one half the regular rate: (1) When workmen are under compressed air or where gas masks are required; (2) When working tunnels or shafts where danger of falling rocks or other debris exists; and (3) When working from suspended or swinging scaffolds or boson's chairs.

ELECTRICIAN (continued)**Area 2**

Electrician	60.00	27.78
Cable Splicer	63.00	27.87
Certified Welder	75.00	28.23
Material Handler	36.00	20.76

Reference Counties

Baker	Grant	Umatilla	Wallowa
Gilliam	Morrow	Union	Wheeler

Add 50% of the base rate when workers are required to work under the following conditions:

- 1) Under compressed air with atmospheric pressure exceeding normal pressure by at least 10%.
- 2) From trusses, swing scaffolds, bosun's chairs, open platforms, unguarded scaffolds, open ladders, frames, tanks, stacks, silos and towers where the workman is subject to a direct fall of (a) more than 60 feet or (b) into turbulent water under bridges, powerhouses or spillway faces of dams.

Area 3

Electrician	53.20	29.01

Reference Counties

Coos	Douglas (a)	Lincoln
Curry	Lane (a)	

(a) Those portions of Lane and Douglas counties lying **west** of the red line on the Electrician Area Map posted above.

Shift Differential*

1 st Shift "day":	Between the hours of 8:00am and 4:30pm	– 8 hours pay for 8 hours work
2 nd Shift "swing":	Between the hours of 4:30pm and 1:00am	– 8 hours pay for 8 hours work plus 17% for all hours worked
3 rd Shift "graveyard":	Between the hours of 12:30am and 9:00am	– 8 hours pay for 8 hours work plus 31% for all hours worked.

* The Employer shall be permitted to adjust the starting hours of the shift by up to two (2) hours.

When workers are required to work under compressed air or where gas masks are required, or to work from trusses, all scaffolds including mobile elevated platforms, any temporary structure, bosun's chair or on frames, stacks, towers, tanks, within 15' of the leading edges of any building at a distance of:

50 – 75 feet to the ground	Add 1 ½ x the base rate
75+ feet to the ground	Add 2 x the base rate

High Time is not required to be paid on any permanent structure with permanent adequate safeguards (handrails, mid-rails, and toe guards). Any vehicle equipped with outriggers are exempted from this section.

ELECTRICIAN (continued)**Area 4**

Electrician	59.34	26.17
Cable Splicer	65.27	26.35
Lighting Maintenance/Material Handler	31.60	11.45

Reference Counties for Area 4

Benton	Jefferson	Marion
Crook	Lane (b)	Polk
Deschutes	Linn	Yamhill (c)

(b) Those portions of Lane and Douglas counties lying **east** of the red line on the Electrician Area Map posted above.

(c) The portion of Yamhill county lying **south** of the red line on the Electrician Area Map posted above.

Shift Differential*

1 st Shift "day"	Between the hours of 8:00am and 4:30pm	– 8 hours pay for 8 hours work
2 nd Shift "swing"	Between the hours of 4:30pm and 1:00am	– 8 hours pay for 8 hours work plus 17% for all hours worked
3 rd Shift "graveyard"	Between the hours of 12:30am and 9:00am	– 8 hours pay for 8 hours work plus 31.4% for all hours worked.

* The Employer shall be permitted to adjust the starting hours of the shift by up to two (2) hours.

Area 5

Electrician	65.50	34.04
Electrical Welder	72.05	34.23
Material Handler/Lighting Maintenance	37.34	24.08

Reference Counties

Clackamas	Hood River	Tillamook	Yamhill (d)
Clatsop	Multnomah	Wasco	
Columbia	Sherman	Washington	

(d) The portion of Yamhill County lying **north** of the red line on the Electrician Area Map posted above.

Shift Differential*

1 st Shift "day"	Between the hours of 7:00am and 5:30pm	– 8 hours pay for 8 hours work
2 nd Shift "swing"	Between the hours of 4:30pm and 3:00am	– 8 hours pay for 8 hours work plus 17.3% for all hours worked
3 rd Shift "graveyard"	Between the hours of 12:30am and 11:00am	– 8 hours pay for 8 hours work plus 31.4% for all hours worked.

* The Employer shall be permitted to adjust the starting hours of the shift by up to two (2) hours.

See more information about Zone Pay on page 12.

ELECTRICIAN (continued)

Zone Pay for Area 5 – Electrician and Electrical Welder – Add to Basic Hourly Rate

Zone mileage based on air miles:

Zone 1: 31-50 miles – **1.50** per hour
 Zone 2: 51-70 miles – **3.50** per hour
 Zone 3: 71-90 miles – **5.50** per hour
 Zone 4: Beyond 90 – **9.00** per hour

There shall be a 30-mile free zone from downtown Portland City Hall and a similar 15-mile free zone around the following cities:

Astoria	Seaside	Tillamook
Hood River	The Dalles	

Further, the free zone at the Oregon coast shall extend along Hwy 101 west to the ocean Hwy 101 east 10 miles if not already covered by the above 15-mile free zone.

When workers are performing electrical work on a structure at or above the 90 ft. level directly above the ground, floor, roadway, roof or water where scaffolding or special safety devices which have not been approved by the Occupational Safety and Health Administration are used, the wage rate for such work shall be double the straight time hourly rate.

Area 6

Electrician	47.04	21.84
Lighting Maintenance and Material Handler	23.53	11.21

Reference Counties

Douglas (e)	Jackson	Klamath
Harney	Josephine	Lake

(e) The portion of Douglas county lying **east** of the red line on the Electrician Area Map posted above.

Shift Differential*

1 st Shift "day"	Between the hours of 8:00am and 4:30pm	– 8 hours pay for 8 hours work
2 nd Shift "swing"	Between the hours of 4:30pm and 1:00am	– 8 hours pay for 8 hours work plus 7.5% for all hours worked
3 rd Shift "graveyard"	Between the hours of 12:30am and 9:00am	– 8 hours pay for 8 hours work plus 15% for all hours worked.

* The Employer shall be permitted to adjust the starting hours of the shift by up to two (2) hours.

When workers are required to work under compressed air or to work from trusses, scaffolds, swinging scaffolds, bosun's chair or on building frames, stacks or towers at a distance, the following should be added to base rate.

50 – 90 feet to the ground:	Add 1 ½ x the base rate
90+ feet to the ground:	Add 2 x the base rate

When such work is performed outside of the regularly scheduled working hours, workmen shall be paid three (3) times the regular rate of pay. An assignment of work referred to in this Section shall entitle the workman to the premium rate for a period of at least two (2) hours.

ELEVATOR CONSTRUCTOR, INSTALLER AND MECHANIC**Area 1**

Mechanic	70.47	44.62

Reference Counties

Baker	Union	Wallowa

Umatilla – **See Area 2 rate****Area 2**

Mechanic	70.76	44.65

Reference Counties

Benton	Deschutes	Jefferson	Malheur	Umatilla
Clackamas	Douglas	Josephine	Marion	Wasco
Clatsop	Gilliam	Klamath	Morrow	Washington
Columbia	Grant	Lake	Multnomah	Wheeler
Coos	Harney	Lane	Polk	Yamhill
Crook	Hood River	Lincoln	Sherman	
Curry	Jackson	Linn	Tillamook	

<u>FENCE CONSTRUCTOR (NON-METAL)</u>	41.10	18.30

<u>FENCE ERECTOR (METAL)</u>	41.10	18.30

<u>GLAZIER</u>	53.15	23.31

Add \$1.00 to base rate when employee works from a swing stage, scaffold, suspended contrivance or mechanical apparatus from the third floor up or thirty feet of free fall (whichever is less), and employee is required to wear a safety belt.

Add twenty percent (20%) to base rate when employee works from a bosun chair (non-motorized single-man apparatus), regardless of height.

Certified welders shall receive twenty percent (20%) above the base rate for actual time spent performing welding duties.

<u>HAZARDOUS MATERIALS HANDLER</u>	31.03	18.18

<u>HIGHWAY/PARKING STRIPER</u>	71.89	19.50

IRONWORKER

Zone 1 (Base Rate): **49.80** **34.98**

Zone Differential for Ironworker – Add to Basic Hourly Rate

Zone 2: **8.13/hr.** or \$65.00 maximum per day

Zone 3: **11.25/hr.** or \$90.00 maximum per day

Zone 4: **16.25/hr.** or \$130.00 maximum per day

Zone 1: Projects located within 45 miles of city hall in the reference cities listed below.

Zone 2: More than 46 miles, but less than 60 miles.

Zone 3: More than 61 miles, but less than 100 miles.

Zone 4: More than 100 miles.

Note: Zone pay for Ironworkers shall be determined using the quickest route per Google Maps and computed from the city hall or dispatch center of the reference cities listed below **or** the residence of the employee, whichever is nearer to the project.

Reference Cities and Dispatch Center

Portland

LABORER

Zone A (Base Rate):

Group 1 (Includes Flagger) **41.10** **18.30**

Group 2 **42.47** **18.30**

Group 3 **43.00** **18.30**

Group 4 **36.13** **18.30**

Group 5 (Landscape Laborer) **29.42** **18.30**

Zone Differential for Laborers Add to Zone A Base Rate

Zone B: **.85** per hour

Zone C: **1.25** per hour

Zone D: **2.00** per hour

Zone E: **4.00** per hour

Zone F: **5.00** per hour

Zone A: Projects located within 30 miles of city hall in the reference cities listed.

Zone B: More than 30 miles but less than 40 miles.

Zone C: More than 40 miles but less than 50 miles.

Zone D: More than 50 miles but less than 80 miles.

Zone E: More than 80 miles but less than 100 miles.

Zone F: More than 100 miles.

Reference Cities for Laborer

Albany	Burns	Hermiston	Roseburg
Astoria	Coos Bay	Klamath Falls	Salem
Baker City	Eugene	Medford	The Dalles
Bend	Grants Pass	Portland	

See more information on Zone Differential and Live Sewer Pay on page 15.

LABORER (Continued)

Note: All job or project locations shall be computed (determined) on the basis of road miles and in the following manner. A mileage measurement will start at the entrance to the respective city hall, facing the project (if possible), and shall proceed by the normal route (shortest time, best road) to the geographical center on the highway, railroad, and street construction projects (end of measurement). On all other project contracts, the geographical center where the major portion of the construction is located, shall be considered the center of the project (end measurement).

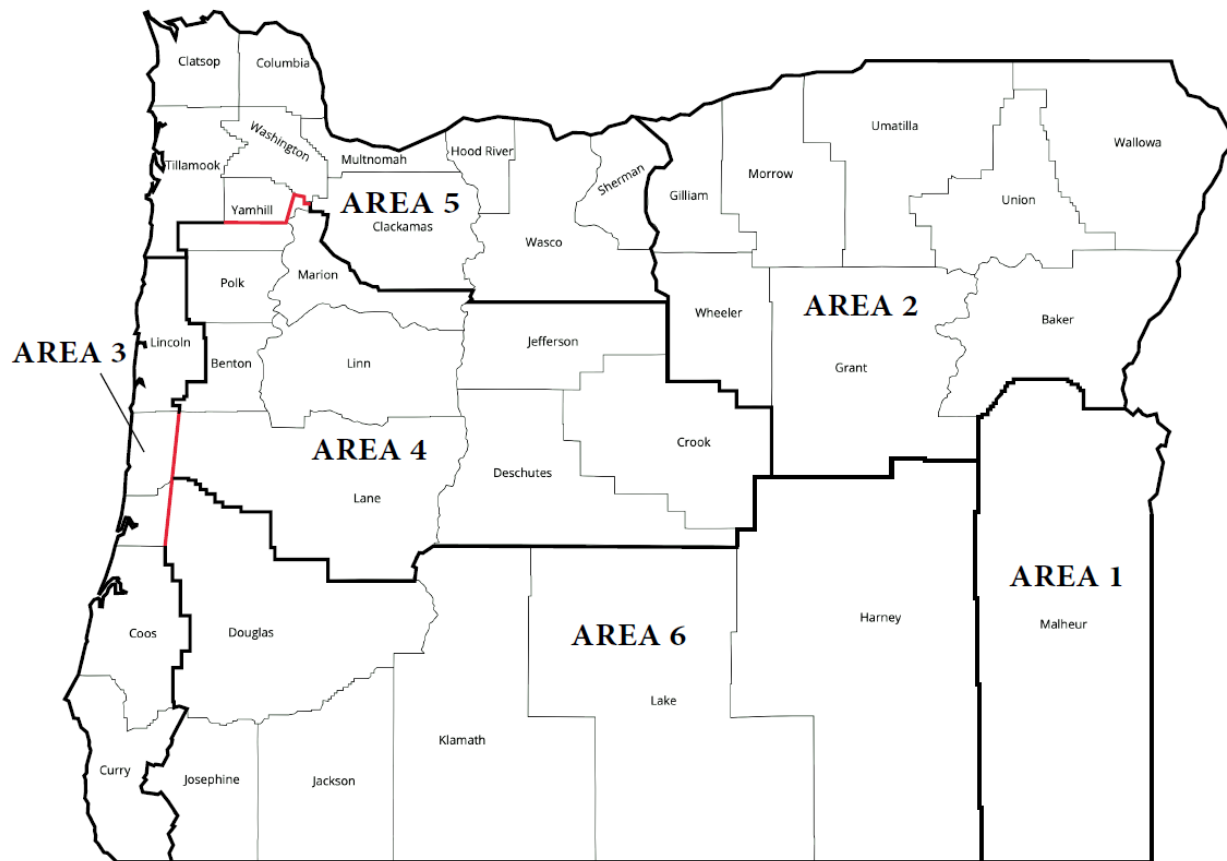
Any Laborer working in Live Sewers shall receive forty dollars (\$40) per day in addition to their regular pay.

LANDSCAPE LABORER/TECHNICIAN (Laborer Group 5)

See Laborer Group 5 Rate

LIMITED ENERGY ELECTRICIAN

Electrician/Limited Energy Electrician Area Map



Note: If you are unable to determine the area of a project located on or near the cross-county boundaries marked in red on the map, call or email the BOLI Prevailing Wage Rate Coordinator at (971) 245-3844 or PWR.email@boli.oregon.gov.

Area 1

37.90

18.10

Reference County

Malheur

LIMITED ENERGY ELECTRICIAN (continued)**Area 2****40.47****18.76**Reference Counties

Baker	Grant	Umatilla	Wallowa
Gilliam	Morrow	Union	Wheeler

Area 3**43.11****26.08**Reference Counties

Coos	Douglas (a)	Lincoln
Curry	Lane (a)	

(a) Those portions of Lane and Douglas counties lying **west** of the red line on the Electrician Area Map posted above

Area 4**44.79****20.39**Reference Counties

Benton	Jefferson	Marion
Crook	Lane (b)	Polk
Deschutes	Linn	Yamhill (c)

(b) Those portions of Lane and Douglas counties lying **east** of the red line on the Electrician Area Map posted above.

(c) The portion of Yamhill county lying **south** of the red line on the Electrician Area Map posted above.

Area 5**54.50****28.76**Reference Counties

Clackamas	Hood River	Tillamook	Yamhill (d)
Clatsop	Multnomah	Wasco	
Columbia	Sherman	Washington	

(d) The portion of Yamhill county lying **north** of the red line on the Electrician Area Map posted above.

Area 6**36.58****19.00**Reference Counties

Douglas (e)	Jackson	Klamath
Harney	Josephine	Lake

(e) The portion of Douglas county lying **east** of the red line on the Electrician Area Map posted above.

LINE CONSTRUCTOR**Area 1 (All Regions)**

Group 1	75.47	27.15
Group 2	67.38	26.78
Group 3	41.12	17.94
Group 4	57.95	23.16
Group 5	50.54	19.42
Group 6	40.43	18.97
Group 7	22.84	14.16

Reference Counties

All counties

Pursuant to ORS 279C.815(2)(b), the Line Constructor Area 1 rate is the highest rate of wage among the collective bargaining agreements for Line Constructor Area 1 and Area 2.

MARBLE SETTER

50.60 25.92

This trade is tendered by "Tile, Terrazzo, & Marble Finishers." Add \$1.00 per hour to base rate for refractory repair work.

PAINTER & DRYWALL TAPER

COMMERCIAL PAINTING	37.74	16.82
INDUSTRIAL PAINTING	39.94	16.82
BRIDGE PAINTING	46.83	16.82

Shift Differential for Painter

Add \$2.00/hour to base rate for entire shift if any hours are worked outside of 5:00 a.m. to 5:00 p.m.

DRYWALL TAPER

<u>Zone A (Base Rate)</u>	48.02	21.53

Zone Differential for Drywall Taper – Add to Zone A Base Rate

Zone B: **6.00** per hour
 Zone C: **9.00** per hour
 Zone D: **12.00** per hour

Zone A: Projects located less than 61 miles from the respective city hall of the dispatch cities listed.
 Zone B: Projects located 61 miles to 80 miles.
 Zone C: Projects located 81 miles to 100 miles.
 Zone D: Projects located 101 miles or more.

See more information on Dispatch Cities for Zone Differential on page 18.

PAINTER & DRYWALL TAPER (continued)Dispatch Cities for Drywall Taper

Albany	Bend	Grants Pass	Medford	Portland	Seaside
Astoria	Brookings	Hermiston	Newport	Reedsport	The Dalles
Baker	Coquille	Klamath Falls	North Bend	Roseburg	Tillamook
Bandon	Eugene	Kelso-Longview	Pendleton	Salem	Vancouver

Note: Zone pay is based on AAA Road Mileage.

PLASTERER AND STUCCO MASON

This trade is tended by "Tenders to Plasterers."

<u>Zone A</u> (Base Rate)	46.56	19.83

Zone Differential for Plasterer and Stucco Mason – Add to Zone A Base Rate

Zone B: **6.00** per hour
 Zone C: **9.00** per hour
 Zone D: **12.00** per hour

Zone A: Projects located less than 61 miles from the respective city hall of the reference cities listed below.
 Zone B: Projects located 61 miles to 80 miles.
 Zone C: Projects located 81 miles to 100 miles.
 Zone D: Projects located 101 miles or more.

Reference Cities for Plasterer & Stucco Mason

Bend	Eugene	Medford	Portland	Seaside
Coos Bay	La Grande	Newport	Salem	The Dalles

Add \$1.00 to base rate for swinging scaffold work.

Add \$2.00 to base rate for nozzle technicians on plastering machines.

PLUMBER/PIPEFITTER/STEAMFITTER

<u>Area 1</u>	-----	-----

Reference Counties

Harney – **See Area 3 rates** Malheur – **See Area 3 rates**
 Baker – **See Area 2 rates**

<u>Area 2</u>	65.20	34.91

Reference Counties

Baker	Morrow	Wallowa
Gilliam	Union	Wheeler
Grant	Umatilla	

See more information about Zone Pay on page 19

PLUMBER/PIPEFITTER/STEAMFITTER (continued)Zone Differential for Area 2 – Add to Base RateZone 2: **10.62/hr.** not to exceed \$80.00 day.**Zone mileage based on road miles:**

Zone 2: Eighty (80) miles or more from City Hall in Pasco, Washington.

Add \$1.00 to base rate in one-hour minimum increments if it is possible for worker to fall 35 ft. or more.

Add \$1.00 to base rate in one-hour minimum increments if worker is required to wear a mask in hazardous areas.

Area 3**60.77****37.10**Reference Counties

Benton	Deschutes	Klamath	Multnomah
Clackamas	Douglas	Lake	Polk
Clatsop	Harney	Lane	Sherman
Columbia	Hood River	Lincoln	Tillamook
Coos	Jackson	Linn	Wasco
Crook	Jefferson	Malheur	Washington
Curry	Josephine	Marion	Yamhill

Gilliam – **See Area 2 rates** Grant – **See Area 2 rates** Morrow – **See Area 2 rates**Umatilla – **See Area 2 rates** Wheeler – **See Area 2 rates****POWER EQUIPMENT OPERATOR****POWER EQUIPMENT OPERATOR MAP**

POWER EQUIPMENT OPERATOR (continued)Zone 1 (Base Rate)

Group 1	58.94	17.15
Group 1A	61.10	17.15
Group 1B	63.26	17.15
Group 2	57.03	17.15
Group 3	55.88	17.15
Group 4	52.55	17.15
Group 5	51.31	17.15
Group 6	48.09	17.15

Zone Pay Differential for Power Equipment Operator – Add to Zone 1 Base Rate

Zone 2: 3.00 per hour

Zone 3: 6.00 per hour

For projects in the following metropolitan counties:

Clackamas Marion Washington
Columbia Multnomah Yamhill

- (A) All jobs or projects located in Multnomah, Clackamas and Marion counties, West of the western boundary of Mt. Hood National Forest and West of Mile Post 30 on Interstate 84 and West of Mile Post 30 on State Hwy 26 and West of Mile Post 30 on Hwy 22 and all jobs located in Yamhill County, Washington County and Columbia County shall receive Zone 1 pay for all classifications.
- (B) All jobs or projects located in the area outside the *identified boundary* above, but less than 50 miles from Portland City Hall shall receive Zone 2 pay for all classifications.
- (C) All jobs or projects located more than 50 miles from Portland City Hall, but outside the identified border above, shall receive Zone 3 pay for all classifications.

Reference cities for projects in all remaining counties:

Albany Coos Bay Grants Pass Medford
Bend Eugene Klamath Falls Roseburg

- (A) All jobs or projects located within 30 miles of the respective city hall of the above mentioned cities shall receive Zone 1 pay for all classifications.
- (B) All jobs or projects located more than 30 miles and less than 50 miles from the respective city hall of the above mentioned cities shall receive Zone 2 for all classifications.
- (C) All jobs or projects located more than 50 miles from the respective city hall of the above mentioned cities shall receive Zone 3 pay for all classifications.

Note: All job or project locations shall be computed (determined) on the basis of road miles and in the following manner. A mileage measurement will start at the entrance to the respective city hall, facing the project (if possible), and shall proceed by the normal route (shortest time-best road) to the geographical center on the highway, railroad, and street construction projects (end of measurement). On all other project contracts, the geographical center where the major portion of the construction is located, shall be considered the center of the project (end measurement).

See more information on Hazard Pay and Shift Differential calculation on page 21.

POWER EQUIPMENT OPERATOR (continued)

Add \$10.00/hour hyperbaric pay for Group 4 Tunnel Boring Machine Mechanic.

Add \$0.40 to the base rate for any and all work performed underground, including operating, servicing and repairing of equipment.

Add \$0.50 to the base rate per hour for any employee who works suspended by a rope or cable.

Add \$0.50 to the base rate for employees who do "pioneer" work (break open a cut, build road, etc.) more than one hundred fifty (150) feet above grade elevation.

Note: A Hazardous Waste Removal Differential must be added to the base rate if work is performed inside the boundary of a Federally Designated Waste Site. For information on this differential, call the Prevailing Wage Rate Coordinator at (971) 245-3844.

Shift Differential**Two-Shift Operations:**

On a two-shift operation, when the second shift starts after 4:30 p.m., second-shift workers shall be paid the base hourly wage rate plus 5% for all hours worked.

When the second shift starts at 8:00 p.m. or later, the second-shift workers shall be paid at the base hourly wage rate plus 10% for all hours worked.

Three-Shift Operations:

On a three-shift operation, the base hourly wage rate plus five percent (5%) shall be paid to all second-shift workers for all hours worked, and the base hourly wage rate plus ten percent (10%) shall be paid to all third shift workers for all hours worked.

ROOFER**Area 1****44.51****22.70****Reference Counties**

Baker	Deschutes	Morrow	Union
Clackamas	Gilliam	Multnomah	Wasco
Clatsop	Grant	Sherman	Wallowa
Columbia	Hood River	Tillamook	Washington
Crook	Jefferson	Umatilla	Wheeler

Add 10% to the base rate for handling coal tar pitch or coal tar-based materials.

Add 10% to the base rate for handling fiberglass insulation.

ROOFER (continued)**Area 2****40.15****18.97**Reference Counties

Benton	Harney	Lake	Malheur
Coos	Jackson	Lane	Marion
Curry	Josephine	Lincoln	Polk
Douglas	Klamath	Linn	Yamhill

Crook – **See Area 1 rates**Deschutes – **See Area 1 rates**

Application, spudding and cutting or removal of coal tar products 10% over basic wage scale.

Application, spudding and cutting fiberglass insulation add a 10% over the basic wage scale.

Area 4**44.51****22.70**Reference County

Umatilla	Union	Wallowa

Add 10% to the base rate for handling coal tar pitch or coal tar-based materials.

Add 10% to the base rate for handling fiberglass insulation.

*Pursuant to ORS 279C.815(2)(b), the Roofer Area 1 rate is the highest rate of wage among the collective bargaining agreements for Roofer Areas 1, 4 and 5.***Area 5****44.51****22.70**Reference County

Morrow

Add 10% to the base rate for handling coal tar pitch or coal tar-based materials. Add 10% to the base rate for handling fiberglass insulation.

*Pursuant to ORS 279C.815(2)(b), the Roofer Area 1 rate is the highest rate of wage among the collective bargaining agreements for Roofer Areas 1, 4 and 5.***SHEET METAL WORKER****Area 1****56.24****32.77**Reference Counties

Benton	Deschutes	Lincoln	Polk	Washington
Clackamas	Gilliam	Linn	Sherman	Wheeler
Clatsop	Grant	Marion	Tillamook	Yamhill
Columbia	Hood River	Morrow	Umatilla	
Crook	Jefferson	Multnomah	Wasco	

See more information on Shift Differential calculation and Hazard Pay on page 23.

SHEET METAL WORKER (Continued)**Swing Shift Operations:**

When a second (or "swing") shift starts between 2:00pm -7:00pm, second-shift workers shall be paid the base hourly wage rate plus \$8.25 for all hours worked.

Graveyard Shift Operations:

When the second (or "graveyard") shift starts between 7:00pm – 1:00am, second-shift workers shall be paid the base hourly wage rate plus \$12.65 for all hours worked.

Add 10% to base rate for work performed on any swinging platform, swinging chair or swinging ladder.

Add 10% to base rate for work where a worker is exposed to resins, chemicals, or acid.

Area 2Reference Counties

Baker – **See Area 3 rate** Malheur – **See Area 4 rate**

Area 3**50.00****28.37**Reference Counties

Baker Union Wallowa

Morrow – **See Area 1 rate** Umatilla – **See Area 1 rate**

Add \$.45 to base rate for work performed on any swinging stage, swinging scaffold or boson chair in excess of thirty (30) feet above the ground.

Add \$1.00 to base rate for work where it is necessary to wear a chemically activated type face mask.

Area 4**45.14****30.45**Reference Counties

Douglas Jackson Klamath Lane
Harney Josephine Lake Malheur

Coos – **See Area 5 rate** Curry – **See Area 5 rate**

Swing Shift Operations:

When a second (or "swing") shift starts between 2:00pm -7:00pm, second-shift workers shall be paid the base hourly wage rate plus \$6.76 for all hours worked.

Graveyard Shift Operations:

When the second (or "graveyard") shift starts between 7:00pm – 1:00am, second-shift workers shall be paid the base hourly wage rate plus \$10.37 for all hours worked.

Add 10% to base rate for work performed on any swinging platform, swinging chair or swinging ladder.

Add 10% to base rate for work where a worker is exposed to resins, chemicals, or acid.

SHEET METAL WORKER (Continued)**Area 5****45.45****31.54**Reference Counties

Coos Curry

Swing Shift Operations:

When a second (or “swing”) shift starts between 2:00pm -7:00pm, second-shift workers shall be paid the base hourly wage rate plus \$6.81 for all hours worked.

Graveyard Shift Operations:

When the second (or “graveyard”) shift starts between 7:00pm – 1:00am, second-shift workers shall be paid the base hourly wage rate plus \$10.44 for all hours worked.

Add 10% to base rate for work performed on any swinging platform, swinging chair or swinging ladder. Add 10% to base rate for work where a worker is exposed to resins, chemicals, or acid.

SOFT FLOOR LAYER**44.28****19.17****SPRINKLER FITTER****Area 1****51.65****28.87**Reference Counties

Benton	Deschutes	Jefferson	Malheur	Umatilla
Clackamas	Douglas	Josephine	Marion	Wasco
Clatsop	Gilliam	Klamath	Morrow	Washington
Columbia	Grant	Lake	Multnomah	Wheeler
Coos	Harney	Lane	Polk	Yamhill
Crook	Hood River	Lincoln	Sherman	
Curry	Jackson	Linn	Tillamook	

Area 2**44.40****28.86**Reference Counties

Baker Union Wallowa

Gilliam – See Area 1 rate	Malheur – See Area 1 rate	Umatilla – See Area 1 rate
Grant – See Area 1 rate	Morrow – See Area 1 rate	

TENDER TO MASON TRADES (Brick and Stonemason, Mortar Mixer, Hod Carrier)**45.79****17.80**

Add \$0.50 to base rate for refractory repair work.

TENDER TO PLASTERER AND STUCCO MASONZone A (Base Rate)**44.79****18.30**Zone Differential for Tender to Plasterer and Stucco Mason – Add to Zone A Base RateZone B: **6.00** per hourZone C: **9.00** per hourZone D: **12.00** per hour

Zone A: Projects located within 60 miles of city hall in the reference cities listed.

Zone B: More than 61 miles but less than 80 miles.

Zone C: More than 81 miles but less than 100 miles.

Zone D: More than 101 miles

Reference Cities

Bend	Eugene	Medford	Portland	Seaside
Coos Bay	La Grande	Newport	Salem	The Dalles

Add \$0.50 to base rate for refractory repair work.

TESTING AND BALANCING (TAB) TECHNICIANFor work performed under the [Sheet Metal](#) classification, including Air-Handling Equipment, Ductwork**See [SHEET METAL WORKER RATE](#)**For work performed under the [Plumber/Pipefitter/Steamfitter](#) classification, including Water Distribution Systems**See [PLUMBER/PIPEFITTER/STEAMFITTER RATE](#)****TILE SETTER/TERRAZZO WORKER: Hard Tile Setter****43.93****22.51**

This trade is tended by "Tile, Terrazzo, & Marble Finisher." Add \$2.00 when performing terrazzo work.

Add \$1.00 when working with epoxy, furnane, or alkor acetylene.

TILE, TERRAZZO, AND MARBLE FINISHER**1. TILE, TERRAZZO FINISHER****32.68****16.93**

Add \$2.00 when performing terrazzo work.

Add \$1.00 when working with epoxy, furnane, or alkor acetylene.

2. BRICK & MARBLE FINISHER**32.68****17.06**

Add \$1.00 per hour to base rate for refractory repair work.

TRUCK DRIVER**Zone A (Base Rate)**

Group 1	35.41	18.30
Group 2	35.57	18.30
Group 3	35.74	18.30
Group 4	36.08	18.30
Group 5	36.35	18.30
Group 6	36.57	18.30
Group 7	36.82	18.30

Zone Differential for Truck Drivers – Add to Zone A Base Rate

Zone B: **.65** per hour
 Zone C: **1.15** per hour
 Zone D: **1.70** per hour
 Zone E: **2.75** per hour

Zone A: Projects within 30 miles of the cities listed.
 Zone B: More than 30 miles but less than 40 miles.
 Zone C: More than 40 miles but less than 50 miles.
 Zone D: More than 50 miles but less than 80 miles.
 Zone E: More than 80 miles.

Reference Cities

Albany	Burns	Hermiston	Madras	Pendleton	The Dalles
Astoria	Coos Bay	Hood River	Medford	Portland	Tillamook
Baker	Corvallis	Klamath Falls	McMinnville	Port Orford	Vancouver
Bend	Eugene	La Grande	Newport	Reedsport	
Bingen	Goldendale	Lakeview	Ontario	Roseburg	
Brookings	Grants Pass	Longview	Oregon City	Salem	

Note: All job or project locations shall be computed (determined) on the basis of road miles and in the following manner. A mileage measurement will start at the entrance to the respective city hall, facing the project (if possible), and shall proceed by the normal route (shortest time-best road) to the geographical center on the highway, railroad, and street construction projects (end of measurement). On all other project contracts, the geographical center where the major portion of the construction is located, shall be considered the center of the project (end measurement).

**LIST OF CONTRACTORS INELIGIBLE
TO RECEIVE PUBLIC WORKS CONTRACTS
PUBLICATION DATE: JANUARY 5, 2026**

To: All Oregon Contracting Agencies

Pursuant to ORS 279C.860, contractors on this list are ineligible to receive public works contracts subject to the Prevailing Wage Rate Law. These contractors and subcontractors, as well as any firm, corporation, partnership or association in which the contractor or subcontractor has a financial interest are ineligible to receive public works contracts until removed from this list. You can find the most current and up to date list of contractors ineligible to receive public works contracts on our website at <https://www.oregon.gov/boli/employers/Pages/pwr-ineligible-contractors.aspx>.

If you have questions regarding the list or for the most current information regarding persons ineligible to receive prevailing wage contracts, please contact the Prevailing Wage Rate Coordinator in Portland at (971) 245-3844.

Contractor	Address	Date placed	Removal date
A1 Dumptruck Services LLC	703 N Hayden Meadows Dr., #206 Portland, OR 97213 731 N Hayden Meadows Dr., #206 Portland, OR 97217 2408 NE 164th Avenue Vancouver, WA 98684	2/24/2020	2/23/2027
Cameron Creations, Steven Cameron, Nancy Cameron *	PO Box 2 Lowell, OR 97452	5/25/2000	
David Miller *	731 NW Naito Parkway, #215 Portland, OR 97209	6/17/2020	
Eugene Graeme	169 SE Cody Lane Madras, OR 97741	7/3/2017	7/2/2027
Lisa Hoang aka Kim Lien Hoang aka Lien Kim Hoang aka Kim Hope aka Lisa K Ryan aka Ryan Lien Hoang aka Kim L Hoang aka Lien Hoang Ryan aka Lien K Hoang-Ryan aka Hoang K Lien aka Lisa Hall aka Lisa Kim Ryan aka Lien Ryan aka Lien Hoang Ryan aka Kim Hoang Lien aka K Lisa Hoang	703 N Hayden Meadows Dr., #206 Portland, OR 97213 731 N Hayden Meadows Dr., #206 Portland, OR 97217 2408 NE 164th Avenue Vancouver, WA 98684	2/24/2020	2/23/2027
NW Flagging LLC	703 N Hayden Meadows Dr., #206 Portland, OR 97213 731 N Hayden Meadows Dr., #206 Portland, OR 97217 2408 NE 164th Avenue Vancouver, WA 98684	2/24/2020	2/23/2027

**LIST OF CONTRACTORS INELIGIBLE
TO RECEIVE PUBLIC WORKS CONTRACTS
PUBLICATION DATE: JANUARY 5, 2026**

Contractor	Address	Date placed	Removal date
Oregon Building & Landscaping Services LLC	703 N Hayden Meadows Dr., #206 Portland, OR 97213 731 N Hayden Meadows Dr., #206 Portland, OR 97217 2408 NE 164th Avenue Vancouver, WA 98684	2/24/2020	2/23/2027
Pacific NW Drywall & Acoustics LLC aka Pacific NW Drywall& Acoustics LLC*	731 NW Natio Parkway #215 Portland, OR 97209	6/17/2020	
Regional Traffic Management LLC	703 N Hayden Meadows Dr., #206 Portland, OR 97213 731 N Hayden Meadows Dr., #206 Portland, OR 97217 2408 NE 164th Avenue Vancouver, WA 98684	2/24/2020	2/23/2027
Sang In Nam dba Cornerstone Janitorial Services*	130 NE Danbury Ave Hillsboro, OR 97124	9/20/2016	
WCI Construction LLC	169 SE Cody Lane Madras, OR 97741	7/3/2017	7/2/2027

* Not to be removed from debarment.

Prevailing Wage Rate Laws Handbook

The 2024 edition of the ***Prevailing Wage Rate Laws Handbook*** is now available on our website at <https://www.oregon.gov/boli/employers/Pages/prevailing-wage.aspx>.

In addition to providing this and other PWR publications, Oregon BOLI Labor & Industries' PWR Unit regularly offers free, informational seminars for both public agencies and contractors. The current schedule is available online at <https://www.oregon.gov/boli/employers/Pages/prevailing-wage-seminars.aspx>.

If you are interested in being included on our mailing lists for future seminar notifications, please contact us at PWR.Email@boli.oregon.gov or (971) 245-3844.