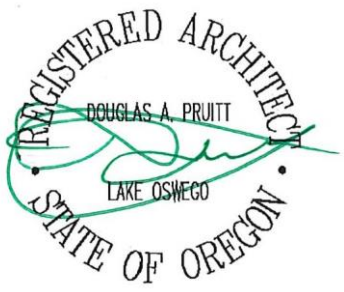
PROJECT MANUAL

for

LANE ESD
WESTMORELAND CAMPUS SCHOOL
VOLUNTARY SEISMIC STRENGTHENING

1717 City View Street
Eugene, Oregon

Date: April 2, 2021
Bid/Permit Set



STRUCTURAL ENGINEER
WRK Engineers
215 W 12th Street 202
Vancouver, WA 98660
(360) 695-9731

ARCHITECTS
BBL Architects
200 North State Street
Lake Oswego, Oregon 97034
(503) 635-4425

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NOTE: Division and Section numbers listed in the Table of Contents and items of work included in each Section conform in general to CSI's MasterFormat, 2010 Upgrade Edition. Section numbers listed are merely for identification and may not be consecutive. Users of this Project Manual shall check the specification with the Table of Contents to be sure each Section is included and shall check each Section to be sure each consecutively numbered pages within each Section is included. The last page of each Section has the statement "END OF SECTION".

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ATTACHMENT A-BID SUBMITTAL FORM

The undersigned hereby proposes to furnish all necessary materials, superintendence, labor, plant, equipment, tools, and accessories to perform and complete the renovation project WESTMORELAND CAMPUS SCHOOL SEISMIC REHABILITATION AT 1717 City View Street, Eugene Oregon in all respects and in full conformity with Contract Documents as prepared by WRK Engineers, 215 W 12th Street 202, Vancouver, WA 98660 (360) 695-9731.

Per the Contract Documents associated with this project, the District reserves the right to award contracts, or to reject all bids as may be determined to be in the best interest of the District.

Total Base Bid $ _____ Dollars

_____

Alternate #1 Removal of existing roofing system and sheet metal flashing at Roof F covered walkway roof and installation of new PVC roofing system over roof underlayment to existing plywood roof deck and installation of new sheet metal flashing. See Sheet D1.1 & A1.1 for detailed location.
Alternate#1 $ _____ Dollars

_____

Alternate #2 Removal of existing roofing system and sheet metal flashing at Roof Gym, G & H covered walkway roof and installation of new PVC roofing system over roof underlayment to existing plywood roof deck and installation of new sheet metal flashing. See Sheet D1.1 & A1.1 for detailed location.
Alternate#2 $ _____ Dollars

_____

Bidder's Name: _____

The undersigned has attached the required 10% Bid Security to this Bid.

If awarded the Contract, the undersigned agrees to be bound by the Agreement with the Owner, to present the required performance and payment bonds within 15 days of Notification to Proceed and to substantially complete the work within the time stipulated in Section 01 11 00, Summary of Work.

Addenda: Receipt is hereby acknowledged of Addendum _____ through _____.

The Undersigned certifies that: (1) This Bid has been arrived at independently and is being submitted without collusion with and without any agreement, understanding, or planned common course of action with any other vendor of materials, supplies, equipment or services described in the invitation to bid designed to limit independent bidding or competition; and (2) The contents of the Bid have not been communicated by the Undersigned or its employees or agents to any person not an employee or agent of the Undersigned or its surety on any Bond furnished with the Bid and will not be communicated to such person prior to the official opening of the Bid.

ATTACHMENT A-BID SUBMITTAL FORM

Insurance: Is your insurance equal to or greater than required?

Liability & Property Damage	_____ Yes	_____ No	Company: _____
Vehicle Liability	_____ Yes	_____ No	Company: _____
Worker's Compensation	_____ Yes	_____ No	Company: _____

Representations and Certifications:

1. It is understood that the Bidder, before signing his/her proposal, has made a careful examination of the plans, specifications, and character of work required; that he/she has made a careful examination of the location and condition of the work, verified all measurements at the job site, and sources of supply of materials.

2. Oregon Business Registration: To transact business in the State of Oregon, a Bidder must be registered with the State of Oregon Corporations Division. Please indicate your business' current registration type with an "X" in the appropriate space:

   Corporate Registration _____

   Assumed Business Name Registration _____

3. Oregon Reciprocal Preference Law (ORS 279.029): In compliance with ORS 279.029, each Bidder must state in its proposal whether it is a resident or non-resident bidder. **Bids that fail to provide this information will be considered nonresponsive and will be rejected.**

   DEFINITION - RESIDENT BIDDER: A bidder that has paid unemployment taxes or income taxes in this state during the 12 calendar months immediately preceding submission of the bid, has a business address in this state and has stated in the bid whether the bidder is a "resident bidder."

   DEFINITION – NON-RESIDENT BIDDER: A bidder who is not a resident bidder as defined above.

   Indicate by an "X" in the appropriate space whether you are an Oregon resident bidder or non-resident bidder:

   Oregon Resident Bidder _____ Non-Resident Bidder _____

4. The Undersigned agrees to be bound by and will comply with the provisions of ORS 279C.838 and 279C.840 pertaining to the payment of the prevailing rates of wage.

5. The Undersigned's CCB registration number is _____. If applicable, the Undersigned's State Landscape Contractors Board licensed number is _____. As a condition to submitting a bid, a Contractor must be registered with the Oregon Construction Contractors Board in accordance with ORS 701.035 to 701.055 and/or the State Landscape Contractors Board licensed number, and disclose the appropriate numbers. Failure to register and disclose the numbers, as applicable, will make the bid unresponsive and it will be rejected.

6. The Undersigned hereby certifies that all subcontractors who will perform construction work as described in ORS 701.005 are or will be registered with the Construction Contractors Board in accordance with ORS 701.035 to 701.055 or State Landscape Contractors Board, as applicable, at the time the subcontractor(s) made a bid to work under the contract.

7. The Undersigned certifies that it has not discriminated against minority, women, or emerging small businesses in obtaining any subcontracts for this project as required by ORS 279A.110(4).

ATTACHMENT A-BID SUBMITTAL FORM

By signature below, Contractor agrees to be bound by this Bid.

NAME OF FIRM _____

ADDRESS _____

FEDERAL TAX ID _____

TELEPHONE NO. _____

FAX NO. _____

SIGNATURE 1) _____
Sole Individual – Signature

2) _____
Sole Individual – Printed Name

or 2) _____
Partner

or 3) _____
Authorized Officer of Corporation – Signature

_____
Authorized Officer of Corporation – Printed Name

(SEAL)

_____
Attested: Secretary of Corporation

Payment information will be reported to the IRS under the name and taxpayer ID # provided above. Information not matching IRS records could subject Contractor to 31 percent backup withholding.

Required Attachments:

1-Bid Security
2-Power of Attorney as required
3-Emplyee Criminal Background Check and Drug / Alcohol Testing Programs / Policies

END OF BID PROPOSAL

ATTACHMENT B-OWNER-CONTRACTOR AGREEMENT

The "AIA Document A101-Standard Form of Agreement between Owner and Contractor" will be used in executing this Contract.

A sample of this contract has been herein attached to these Specifications as follows.

END OF SECTION

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AIA® Document A101™ – 2017

Standard Form of Agreement Between Owner and Contractor

where the basis of payment is a Stipulated Sum

AGREEMENT made as of the _____ day of _____ in the year two thousand twenty one (In words, indicate day, month and year.)

BETWEEN the Owner:
Lane Education Services District
1200 Hwy 99 North
Eugene, OR 97402

and the Contractor:
(Name, legal status, address and other information)

for the following Project:
Westmoreland Campus School Seismic Rehabilitation
1717 City View Street
Eugene, OR 97402

The Engineer:
WRK Engineers
215 W 12th St
Suite 202
Vancouver, WA 98660
(360) 695-9731

The Owner and Contractor agree as follows.

ADDITIONS AND DELETIONS: The author of this document has added information needed for its completion. The author may also have revised the text of the original AIA standard form. An *Additions and Deletions Report* that notes added information as well as revisions to the standard form text is available from the author and should be reviewed.

This document has important legal consequences. Consultation with an attorney is encouraged with respect to its completion or modification.

The parties should complete A101™–2017, Exhibit A, Insurance and Bonds, contemporaneously with this Agreement. AIA Document A201™–2017, General Conditions of the Contract for Construction, is adopted in this document by reference. Do not use with other general conditions unless this document is modified.

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TABLE OF ARTICLES

ARTICLE 1 THE CONTRACT DOCUMENTS

The Contract Documents consist of this Agreement, Conditions of the Contract (General, Supplementary, and 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, all of which form the Contract, and are as fully a part of the Contract as if attached to this Agreement or repeated herein. The Contract represents the entire and integrated agreement between the parties hereto and supersedes prior negotiations, representations, or agreements, either written or oral. An enumeration of the Contract Documents, other than a Modification, appears in Article 9.

ARTICLE 2 THE WORK OF THIS CONTRACT

The Contractor shall fully execute the Work described in the Contract Documents, except as 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:
(Check one of the following boxes.)

[« X »] The date of this Agreement.

[« »] A date set forth in a notice to proceed issued by the Owner.

[« »] Established as follows:
(Insert a date or a means to determine the date of commencement of the Work.)

« »

If a date of commencement of the Work is not selected, then the date of commencement shall be the date of this Agreement.

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

§ 3.3 Substantial Completion

§ 3.3.1 Subject to adjustments of the Contract Time as provided in the Contract Documents, the Contractor shall achieve Substantial Completion of the entire Work:
(Check one of the following boxes and complete the necessary information.)

[« »] Not later than « » (« ») calendar days from the date of commencement of the Work.

[« X »] By the following date: « 11 September 2020 »

§ 3.3.2 Subject to adjustments of the Contract Time as provided in the Contract Documents, if portions of the Work are to be completed prior to Substantial Completion of the entire Work, the Contractor shall achieve Substantial Completion of such portions by the following dates:

Portion of Work	Substantial Completion Date
None	

§ 3.3.3 If the Contractor fails to achieve Substantial Completion as provided in this Section 3.3, liquidated damages, if any, shall be assessed as set forth in Section 4.5.

ARTICLE 4 CONTRACT SUM

§ 4.1 The Owner shall pay the Contractor the Contract Sum in current funds for the Contractor's performance of the Contract. The Contract Sum shall be « » ($ « »), subject to additions and deductions as provided in the Contract Documents.

§ 4.2 Alternates

§ 4.2.1 Alternates, if any, included in the Contract Sum:

Item	Price
Alternate #1	$

§ 4.2.2 Subject to the conditions noted below, the following alternates may be accepted by the Owner following execution of this Agreement. Upon acceptance, the Owner shall issue a Modification to this Agreement.
(Insert below each alternate and the conditions that must be met for the Owner to accept the alternate.)

Item	Price	Conditions for Acceptance
Alternate #2	$	

§ 4.3 Allowances, if any, included in the Contract Sum:
(Identify each allowance.)

Item	Price
none	

§ 4.4 Unit prices, if any:
(Identify the item and state the unit price and quantity limitations, if any, to which the unit price will be applicable.)

Item	Units and Limitations	Price per Unit ($0.00)
none		

§ 4.5 Liquidated damages, if any:
(Insert terms and conditions for liquidated damages, if any.)

« none »

§ 4.6 Other:
(Insert provisions for bonus or other incentives, if any, that might result in a change to the Contract Sum.)

« none »

ARTICLE 5 PAYMENTS

§ 5.1 Progress Payments

§ 5.1.1 Based upon Applications for Payment submitted to the Engineer by the Contractor and Certificates for Payment issued by the Engineer, 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 is received by the Engineer not later than the « 5th » day of a month, the Owner shall make payment of the amount certified to the Contractor not later than the « » day of the « same » month. If an Application for Payment is received by the Engineer after the application date fixed above, payment of the amount certified shall be made by the Owner not later than « » (« ») days after the Engineer receives the Application for Payment.
(Federal, state or local laws may require payment within a certain period of time.)

§ 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 Engineer may require. This schedule of values shall be used as a basis for reviewing the Contractor's Applications for Payment.

§ 5.1.5 Applications for Payment shall show 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 In accordance with AIA Document A201™–2017, General Conditions of the Contract for Construction, and subject to other provisions of the Contract Documents, the amount of each progress payment shall be computed as follows:

§ 5.1.6.1 The amount of each progress payment shall first include:

- **.1** That portion of the Contract Sum properly allocable to completed Work;
- **.2** 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; and
- **.3** That portion of Construction Change Directives that the Engineer determines, in the Engineer's professional judgment, to be reasonably justified.

§ 5.1.6.2 The amount of each progress payment shall then be reduced by:

- **.1** The aggregate of any amounts previously paid by the Owner;
- **.2** The amount, if any, for Work that remains uncorrected and for which the Engineer has previously withheld a Certificate for Payment as provided in Article 9 of AIA Document A201–2017;
- **.3** Any amount for which the Contractor does not intend to pay a Subcontractor or material supplier, unless the Work has been performed by others the Contractor intends to pay;
- **.4** For Work performed or defects discovered since the last payment application, any amount for which the Engineer may withhold payment, or nullify a Certificate of Payment in whole or in part, as provided in Article 9 of AIA Document A201–2017; and
- **.5** Retainage withheld pursuant to Section 5.1.7.

§ 5.1.7 Retainage

§ 5.1.7.1 For each progress payment made prior to Substantial Completion of the Work, the Owner may withhold the following amount, as retainage, from the payment otherwise due:
(Insert a percentage or amount to be withheld as retainage from each Application for Payment. The amount of retainage may be limited by governing law.)

« five percent (5%) »

§ 5.1.7.1.1 The following items are not subject to retainage:
(Insert any items not subject to the withholding of retainage, such as general conditions, insurance, etc.)

« None »

§ 5.1.7.2 Reduction or limitation of retainage, if any, shall be as follows:
(If the retainage established in Section 5.1.7.1 is to be modified prior to Substantial Completion of the entire Work, including modifications for Substantial Completion of portions of the Work as provided in Section 3.3.2, insert provisions for such modifications.)

« None »

§ 5.1.7.3 Except as set forth in this Section 5.1.7.3, upon Substantial Completion of the Work, the Contractor may submit an Application for Payment that includes the retainage withheld from prior Applications for Payment pursuant to this Section 5.1.7. The Application for Payment submitted at Substantial Completion shall not include retainage as follows:
(Insert any other conditions for release of retainage upon Substantial Completion.)

« Submit the application for release of retainage separate from the 100% complete application for payment. »

§ 5.1.8 If final completion of the Work is materially delayed through no fault of the Contractor, the Owner shall pay the Contractor any additional amounts in accordance with Article 9 of AIA Document A201–2017.

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

§ 5.2 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 the Contractor has fully performed the Contract except for the Contractor's responsibility to correct Work as provided in Article 12 of AIA Document A201–2017, and to satisfy other requirements, if any, which extend beyond final payment; and

.2 a final Certificate for Payment has been issued by the Engineer.

§ 5.2.2 The Owner's final payment to the Contractor shall be made no later than 30 days after the issuance of the Engineer's final Certificate for Payment, or as follows:

« »

§ 5.3 Interest

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.
(Insert rate of interest agreed upon, if any.)

« » % « »

ARTICLE 6 DISPUTE RESOLUTION

§ 6.1 Initial Decision Maker

The Engineer will serve as the Initial Decision Maker pursuant to Article 15 of AIA Document A201–2017, unless the parties appoint below another individual, not a party to this Agreement, to serve as the Initial Decision Maker.
(If the parties mutually agree, insert the name, address and other contact information of the Initial Decision Maker, if other than the Engineer.)

« »
« »
« »
« »

§ 6.2 Binding Dispute Resolution

For any Claim subject to, but not resolved by, mediation pursuant to Article 15 of AIA Document A201–2017, the method of binding dispute resolution shall be as follows:
(Check the appropriate box.)

[« X »] Arbitration pursuant to Section 15.4 of AIA Document A201–2017

[« »] Litigation in a court of competent jurisdiction

[« »] Other *(Specify)*

« »

If the Owner and Contractor do not select a method of binding dispute resolution, or do not subsequently agree in writing to a binding dispute resolution method other than litigation, Claims will be resolved by litigation in a court of competent jurisdiction.

ARTICLE 7 TERMINATION OR SUSPENSION

§ 7.1 The Contract may be terminated by the Owner or the Contractor as provided in Article 14 of AIA Document A201–2017.

§ 7.1.1 If the Contract is terminated for the Owner's convenience in accordance with Article 14 of AIA Document A201–2017, then the Owner shall pay the Contractor a termination fee as follows:
(Insert the amount of, or method for determining, the fee, if any, payable to the Contractor following a termination for the Owner's convenience.)

« »

§ 7.2 The Work may be suspended by the Owner as provided in Article 14 of AIA Document A201–2017.

ARTICLE 8 MISCELLANEOUS PROVISIONS

§ 8.1 Where reference is made in this Agreement to a provision of AIA Document A201–2017 or another Contract Document, the reference refers to that provision as amended or supplemented by other provisions of the Contract Documents.

§ 8.2 The Owner's representative:
Name:
Address:

§ 8.3 The Contractor's representative:
(Name, address, email address, and other information)

« »
« »
« »
« »
« »
« »

§ 8.4 Neither the Owner's nor the Contractor's representative shall be changed without ten days' prior notice to the other party.

§ 8.5 Insurance and Bonds

§ 8.5.1 The Owner and the Contractor shall purchase and maintain insurance as set forth in AIA Document A101™–2017, Standard Form of Agreement Between Owner and Contractor where the basis of payment is a Stipulated Sum, Exhibit A, Insurance and Bonds, and elsewhere in the Contract Documents.

§ 8.5.2 The Contractor shall provide bonds as set forth in AIA Document A101™–2017 Exhibit A, and elsewhere in the Contract Documents.

~~**§ 8.6** Notice in electronic format, pursuant to Article 1 of AIA Document A201–2017, may be given in accordance with AIA Document E203™–2013, Building Information Modeling and Digital Data Exhibit, if completed, or as otherwise set forth below:~~
~~*(If other than in accordance with AIA Document E203–2013, insert requirements for delivering notice in electronic format such as name, title, and email address of the recipient and whether and how the system will be required to generate a read receipt for the transmission.)*~~

« »

§ 8.7 Other provisions:

« »

ARTICLE 9 ENUMERATION OF CONTRACT DOCUMENTS

§ 9.1 This Agreement is comprised of the following documents:

.1 AIA Document A101™–2017, Standard Form of Agreement Between Owner and Contractor

.2 AIA Document A101™–2017, Exhibit A, Insurance and Bonds

.3 AIA Document A201™–2017, General Conditions of the Contract for Construction

.4 ~~AIA Document E203™–2013, Building Information Modeling and Digital Data Exhibit, dated as indicated below:~~
~~*(Insert the date of the E203–2013 incorporated into this Agreement.)*~~

« »

.5 Drawings

Number	Title	Date

.6 Specifications

Section	Title	Date	Pages
DIV 00:	COVER		

.7 Addenda, if any:

Number	Date	Pages

Portions of Addenda relating to bidding or proposal requirements are not part of the Contract Documents unless the bidding or proposal requirements are also enumerated in this Article 9.

.8 Other Exhibits:
(Check all boxes that apply and include appropriate information identifying the exhibit where required.)

[« »] AIA Document E204™–2017, Sustainable Projects Exhibit, dated as indicated below:
(Insert the date of the E204-2017 incorporated into this Agreement.)

« »

[« »] The Sustainability Plan:

Title	Date	Pages

[« »] Supplementary and other Conditions of the Contract:

Document	Title	Date	Pages

.9 Other documents, if any, listed below:
(List here any additional documents that are intended to form part of the Contract Documents. AIA Document A201™–2017 provides that the advertisement or invitation to bid, Instructions to Bidders, sample forms, the Contractor's bid or proposal, portions of Addenda relating to bidding or proposal requirements, and other information furnished by the Owner in anticipation of receiving bids or proposals, are not part of the Contract Documents unless enumerated in this Agreement. Any such documents should be listed here only if intended to be part of the Contract Documents.)

« »

This Agreement entered into as of the day and year first written above.

OWNER *(Signature)*	**CONTRACTOR** *(Signature)*
« »« »	« »« »
(Printed name and title)	*(Printed name and title)*

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AIA® Document A101™ – 2017 Exhibit A

Insurance and Bonds

This Insurance and Bonds Exhibit is part of the Agreement, between the Owner and the Contractor, dated the _____ day of _____ in the year two thousand twenty-one
(In words, indicate day, month and year.)

for the following **PROJECT**:
(Name and location or address)

Westmoreland Campus School Seismic Rehabilitation
1717 City View Street
Eugene, OR 97402

THE OWNER:
(Name, legal status and address)

Lane Education Services District
1200 Hwy 99 North
Eugene, OR 97402

THE CONTRACTOR:
(Name, legal status and address)

TABLE OF ARTICLES

ARTICLE A.1 GENERAL

The Owner and Contractor shall purchase and maintain insurance, and provide bonds, as set forth in this Exhibit. As used in this Exhibit, the term General Conditions refers to AIA Document A201™–2017, General Conditions of the Contract for Construction.

ARTICLE A.2 OWNER'S INSURANCE

NOT USED

ARTICLE A.3 CONTRACTOR'S INSURANCE AND BONDS

§ A.3.1 General

§ A.3.1.1 Certificates of Insurance. The Contractor shall provide certificates of insurance acceptable to the Owner evidencing compliance with the requirements in this Article A.3 at the following times: (1) prior to commencement of the Work; (2) upon renewal or replacement of each required policy of insurance; and (3) upon the Owner's written request. An additional certificate evidencing continuation of commercial liability coverage, including coverage for completed operations, shall be submitted with the final Application for Payment and thereafter upon renewal or replacement of such coverage

ADDITIONS AND DELETIONS: The author of this document has added information needed for its completion. The author may also have revised the text of the original AIA standard form. An *Additions and Deletions Report* that notes added information as well as revisions to the standard form text is available from the author and should be reviewed.

This document has important legal consequences. Consultation with an attorney is encouraged with respect to its completion or modification.

This document is intended to be used in conjunction with AIA Document A201™–2017, General Conditions of the Contract for Construction. Article 11 of A201™–2017 contains additional insurance provisions.

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until the expiration of the periods required by Section A.3.2.1 and Section A.3.3.1. The certificates will show the Owner as an additional insured on the Contractor's Commercial General Liability and excess or umbrella liability policy or policies.

§ A.3.1.2 Deductibles and Self-Insured Retentions. The Contractor shall disclose to the Owner any deductible or self-insured retentions applicable to any insurance required to be provided by the Contractor.

§ A.3.1.3 Additional Insured Obligations. To the fullest extent permitted by law, the Contractor shall cause the commercial general liability coverage to include (1) the Owner, the Engineer, and the Engineer's consultants as additional insureds for claims caused in whole or in part by the Contractor's negligent acts or omissions during the Contractor's operations; and (2) the Owner as an additional insured for claims caused in whole or in part by the Contractor's negligent acts or omissions for which loss occurs during completed operations. The additional insured coverage shall be primary and non-contributory to any of the Owner's general liability insurance policies and shall apply to both ongoing and completed operations. To the extent commercially available, the additional insured coverage shall be no less than that provided by Insurance Services Office, Inc. (ISO) forms CG 20 10 07 04, CG 20 37 07 04, and, with respect to the Engineer and the Engineer's consultants, CG 20 32 07 04.

§ A.3.2 Contractor's Required Insurance Coverage

§ A.3.2.1 The Contractor shall purchase and maintain the following types and limits of insurance from an insurance company or insurance companies lawfully authorized to issue insurance in the jurisdiction where the Project is located. The Contractor shall maintain the required insurance until the expiration of the period for correction of Work as set forth in Section 12.2.2 of the General Conditions, unless a different duration is stated below:
(If the Contractor is required to maintain insurance for a duration other than the expiration of the period for correction of Work, state the duration.)

« »

§ A.3.2.2 Commercial General Liability

§ A.3.2.2.1 Commercial General Liability insurance for the Project written on an occurrence form with policy limits of not less than two million dollars ($ 2,000,000) each occurrence, three million dollars ($ 3,000,000) general aggregate, and three million dollars ($ 3,000,000) aggregate for products-completed operations hazard, providing coverage for claims including

- **.1** damages because of bodily injury, sickness or disease, including occupational sickness or disease, and death of any person;
- **.2** personal injury and advertising injury;
- **.3** damages because of physical damage to or destruction of tangible property, including the loss of use of such property;
- **.4** bodily injury or property damage arising out of completed operations; and
- **.5** the Contractor's indemnity obligations under Section 3.18 of the General Conditions.

§ A.3.2.2.2 The Contractor's Commercial General Liability policy under this Section A.3.2.2 shall not contain an exclusion or restriction of coverage for the following:

- **.1** Claims by one insured against another insured, if the exclusion or restriction is based solely on the fact that the claimant is an insured, and there would otherwise be coverage for the claim.
- **.2** Claims for property damage to the Contractor's Work arising out of the products-completed operations hazard where the damaged Work or the Work out of which the damage arises was performed by a Subcontractor.
- **.3** Claims for bodily injury other than to employees of the insured.
- **.4** Claims for indemnity under Section 3.18 of the General Conditions arising out of injury to employees of the insured.
- **.5** Claims or loss excluded under a prior work endorsement or other similar exclusionary language.
- **.6** Claims or loss due to physical damage under a prior injury endorsement or similar exclusionary language.
- **.7** Claims related to residential, multi-family, or other habitational projects, if the Work is to be performed on such a project.
- **.8** Claims related to roofing, if the Work involves roofing.

.9 Claims related to exterior insulation finish systems (EIFS), synthetic stucco or similar exterior coatings or surfaces, if the Work involves such coatings or surfaces.

.10 Claims related to earth subsidence or movement, where the Work involves such hazards.

.11 Claims related to explosion, collapse and underground hazards, where the Work involves such hazards.

§ A.3.2.3 Automobile Liability covering vehicles owned, and non-owned vehicles used, by the Contractor, with policy limits of not less than three million ($ 3,000,000) per accident, for bodily injury, death of any person, and property damage arising out of the ownership, maintenance and use of those motor vehicles along with any other statutorily required automobile coverage.

§ A.3.2.4 The Contractor may achieve the required limits and coverage for Commercial General Liability and Automobile Liability through a combination of primary and excess or umbrella liability insurance, provided such primary and excess or umbrella insurance policies result in the same or greater coverage as the coverages required under Section A.3.2.2 and A.3.2.3, and in no event shall any excess or umbrella liability insurance provide narrower coverage than the primary policy. The excess policy shall not require the exhaustion of the underlying limits only through the actual payment by the underlying insurers.

§ A.3.2.5 Workers' Compensation at statutory limits.

§ A.3.2.6 Employers' Liability with policy limits not less than one million dollars ($ 1,000,000) each accident, one million dollars ($ 1,000,000) each employee, and one million dollars ($ 1,000,000) policy limit.

§ A.3.2.7 If the Contractor is required to furnish professional services as part of the Work, the Contractor shall procure Professional Liability insurance covering performance of the professional services, with policy limits of not less than two million dollars ($ 2,000,000) per claim and three million dollars ($3,000,000) in the aggregate.

§ A.3.2.8 If the Work involves the transport, dissemination, use, or release of pollutants, the Contractor shall procure Pollution Liability insurance, with policy limits of not less than one millions dollars ($ 1,000,000) per claim one millions dollars ($ 1,000,000) in the aggregate.

§ A.3.2.9 Insurance for the use or operation of manned or unmanned aircraft, if the Work requires such activities, with policy limits of not less than one millions dollars ($ 1,000,000) per claim one millions dollars ($ 1,000,000) in the aggregate.

§ A.3.3 Contractor's Other Insurance Coverage

§ A.3.3.1 Insurance selected and described in this Section A.3.3 shall be purchased from an insurance company or insurance companies lawfully authorized to issue insurance in the jurisdiction where the Project is located. The Contractor shall maintain the required insurance until the expiration of the period for correction of Work as set forth in Section 12.2.2 of the General Conditions, unless a different duration is stated below:
(If the Contractor is required to maintain any of the types of insurance selected below for a duration other than the expiration of the period for correction of Work, state the duration.)

§ A.3.3.2 The Contractor shall purchase and maintain the following types and limits of insurance in accordance with Section A.3.3.1.
(Select the types of insurance the Contractor is required to purchase and maintain by placing an X in the box(es) next to the description(s) of selected insurance. Where policy limits are provided, include the policy limit in the appropriate fill point.)

[ ] **§ A.3.3.2.1** Property insurance of the same type and scope satisfying the requirements identified in Section A.2.3, which, if selected in this section A.3.3.2.1, relieves the Owner of the responsibility to purchase and maintain such insurance except insurance required by Section A.2.3.1.3 and Section A.2.3.3. The Contractor shall comply with all obligations of the Owner under Section A.2.3 except to

the extent provided below. The Contractor shall disclose to the Owner the amount of any deductible, and the Owner shall be responsible for losses within the deductible. Upon request, the Contractor shall provide the Owner with a copy of the property insurance policy or policies required. The Owner shall adjust and settle the loss with the insurer and be the trustee of the proceeds of the property insurance in accordance with Article 11 of the General Conditions unless otherwise set forth below:
(Where the Contractor's obligation to provide property insurance differs from the Owner's obligations as described under Section A.2.3, indicate such differences in the space below. Additionally, if a party other than the Owner will be responsible for adjusting and settling a loss with the insurer and acting as the trustee of the proceeds of property insurance in accordance with Article 11 of the General Conditions, indicate the responsible party below.)

[X] **§ A.3.3.2.2 Asbestos Abatement Liability Insurance**, with policy limits of not less than two million dollars ($ 2,000,000) per claim and three million dollars ($ 3,000,000) in the aggregate, for liability arising from the encapsulation, removal, handling, storage, transportation, and disposal of asbestos-containing materials.

[X] **§ A.3.3.2.3** Insurance for physical damage to property while it is in storage and in transit to the construction site on an "all-risks" completed value form.

[X] **§ A.3.3.2.4** Property insurance on an "all-risks" completed value form, covering property owned by the Contractor and used on the Project, including scaffolding and other equipment.

[ ] **§ A.3.3.2.5 Other Insurance**
(List below any other insurance coverage to be provided by the Contractor and any applicable limits.)

Coverage	Limits

§ A.3.4 Performance Bond and Payment Bond

The Contractor shall provide surety bonds, from a company or companies lawfully authorized to issue surety bonds in the jurisdiction where the Project is located, as follows:
(Specify type and penal sum of bonds.)

Type	Penal Sum ($0.00)
Payment Bond	$ 2,000,000
Performance Bond	$ 2,000,000

Payment and Performance Bonds shall be AIA Document A312™, Payment Bond and Performance Bond, or contain provisions identical to AIA Document A312™, current as of the date of this Agreement.

ARTICLE A.4 SPECIAL TERMS AND CONDITIONS

Special terms and conditions that modify this Insurance and Bonds Exhibit, if any, are as follows:

1. When Work Is Performed in or on School Sites, Contractor Shall Comply With the Following:

a. No Unsupervised Contact with Students. Unsupervised contact with students means contact with students that provide the person opportunity and probability for personal communication or touch when not under direct supervision. Contractor will ensure that Contractor, any subcontractors, and their officers, agents and employees will have no direct unsupervised contact with students while on District property. Contractor will work with the District to ensure compliance with this requirement. If Contractor is unable to ensure through a security plan that none of its officers, agents or employees will have direct, unsupervised, contract with students in a particular circumstance or circumstances, Contractor shall so notify the District prior to beginning any Work that could result is such contact. Contractor authorizes District to obtain information about Contractor and Contractor's history and to conduct a criminal background check, including

fingerprinting, of any officer, agent or employee of Contractor that will have unsupervised contact with students. Contractor also agrees to cause Contractor's employees and/or subcontractors, if any, to authorize District to conduct such background checks. Contractor shall pay all fees assessed by Oregon Department of Education for processing the background check. District may deduct the cost of such fees from a progress or final payment to the Contractor under this contract, unless the Contractor elects to pay such fees directly.

ATTACHMENT C-GENERAL CONDITIONS

The Standard Terms and Conditions portion of the "AIA Document A201-General Conditions of the Contract for Construction", will be made a part of this Contract.

A sample of these conditions has been herein attached to these Specifications.

END OF SECTION

DRAFT

AIA® Document A201™ – 2017

General Conditions of the Contract for Construction

for the following PROJECT:
(Name and location or address)

« »
« »

THE OWNER:
(Name, legal status and address)

« »« »
« »

THE ENGINEER:
(Name, legal status and address)

« »« »
« »

TABLE OF ARTICLES

ADDITIONS AND DELETIONS: The author of this document has added information needed for its completion. The author may also have revised the text of the original AIA standard form. An *Additions and Deletions Report* that notes added information as well as revisions to the standard form text is available from the author and should be reviewed.

This document has important legal consequences. Consultation with an attorney is encouraged with respect to its completion or modification.

For guidance in modifying this document to include supplementary conditions, see AIA Document A503™, Guide for Supplementary Conditions.

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INDEX
(Topics and numbers in bold are Section headings.)

ARTICLE 1 GENERAL PROVISIONS

§ 1.1 Basic Definitions

§ 1.1.1 The Contract Documents

The Contract Documents are enumerated in the Agreement between the Owner and Contractor (hereinafter the Agreement) and consist of the Agreement, Conditions of the Contract (General, Supplementary and other Conditions), Drawings, Specifications, 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 Engineer. Unless specifically enumerated in the Agreement, the Contract Documents do not include the advertisement or invitation to bid, Instructions to Bidders, sample forms, other information furnished by the Owner in anticipation of receiving bids or proposals, the Contractor's bid or proposal, or portions of Addenda relating to bidding or proposal requirements.

§ 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 Contractor and the Engineer or the Engineer's consultants, (2) between the Owner and a Subcontractor or a Sub-subcontractor, (3) between the Owner and the Engineer or the Engineer's consultants, or (4) between any persons or entities other than the Owner and the Contractor. The Engineer shall, however, be entitled to performance and enforcement of obligations under the Contract intended to facilitate performance of the Engineer'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 all other labor, materials, equipment, and services provided or to be provided by the Contractor to fulfill the Contractor's obligations. 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 and 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 Instruments of Service

Instruments of Service are representations, in any medium of expression now known or later developed, of the tangible and intangible creative work performed by the Engineer and the Engineer's consultants under their respective professional services agreements. Instruments of Service may include, without limitation, studies, surveys, models, sketches, drawings, specifications, and other similar materials.

§ 1.1.8 Initial Decision Maker

The Initial Decision Maker is the person identified in the Agreement to render initial decisions on Claims in accordance with Section 15.2. The Initial Decision Maker shall not show partiality to the Owner or Contractor and shall not be liable for results of interpretations or decisions rendered in good faith.

§ 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.

§ 1.2.1.1 The invalidity of any provision of the Contract Documents shall not invalidate the Contract or its remaining provisions. If it is determined that any provision of the Contract Documents violates any law, or is otherwise invalid or unenforceable, then that provision shall be revised to the extent necessary to make that provision legal and enforceable. In such case the Contract Documents shall be construed, to the fullest extent permitted by law, to give effect to the parties' intentions and purposes in executing the Contract.

§ 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 that have well-known technical or construction industry meanings are used in the Contract Documents in accordance with such recognized meanings.

§ 1.3 Capitalization

Terms capitalized in these General Conditions include those that are (1) specifically defined, (2) the titles of numbered articles, or (3) the titles of other documents published by the American Institute of Architects.

§ 1.4 Interpretation

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 Ownership and Use of Drawings, Specifications, and Other Instruments of Service

§ 1.5.1 The Engineer and the Engineer's consultants shall be deemed the authors and owners of their respective Instruments of Service, including the Drawings and Specifications, and retain all common law, statutory, and other reserved rights in their Instruments of Service, including copyrights. The Contractor, Subcontractors, Sub-subcontractors, and suppliers shall not own or claim a copyright in the Instruments of Service. Submittal or distribution to meet official regulatory requirements or for other purposes in connection with the Project is not to be construed as publication in derogation of the Engineer's or Engineer's consultants' reserved rights.

§ 1.5.2 The Contractor, Subcontractors, Sub-subcontractors, and suppliers are authorized to use and reproduce the Instruments of Service provided to them, subject to any protocols established pursuant to Sections 1.7 and 1.8, solely and exclusively for execution of the Work. All copies made under this authorization shall bear the copyright notice, if any, shown on the Instruments of Service. The Contractor, Subcontractors, Sub-subcontractors, and suppliers may not use the Instruments of Service on other projects or for additions to the Project outside the scope of the Work without the specific written consent of the Owner, Engineer, and the Engineer's consultants.

§ 1.6 Notice

§ 1.6.1 Except as otherwise provided in Section 1.6.2, where the Contract Documents require one party to notify or give notice to the other party, such notice shall be provided in writing to the designated representative of the party to whom the notice is addressed and shall be deemed to have been duly served if delivered in person, by mail, by courier, or by electronic transmission if a method for electronic transmission is set forth in the Agreement.

§ 1.6.2 Notice of Claims as provided in Section 15.1.3 shall be provided in writing and shall be deemed to have been duly served only if delivered to the designated representative of the party to whom the notice is addressed by certified or registered mail, or by courier providing proof of delivery.

§ 1.7 Digital Data Use and Transmission

The parties shall agree upon protocols governing the transmission and use of Instruments of Service or any other information or documentation in digital form. The parties will use AIA Document E203™–2013, Building Information Modeling and Digital Data Exhibit, to establish the protocols for the development, use, transmission, and exchange of digital data.

§ 1.8 Building Information Models Use and Reliance

Any use of, or reliance on, all or a portion of a building information model without agreement to protocols governing the use of, and reliance on, the information contained in the model and without having those protocols set forth in AIA Document E203™–2013, Building Information Modeling and Digital Data Exhibit, and the requisite AIA Document G202™–2013, Project Building Information Modeling Protocol Form, shall be at the using or

relying party's sole risk and without liability to the other party and its contractors or consultants, the authors of, or contributors to, the building information model, and each of their agents and employees.

ARTICLE 2 OWNER

§ 2.1 General

§ 2.1.1 The Owner 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 Owner shall designate in writing a representative who 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 Section 4.2.1, the Engineer does not have such authority. The term "Owner" means the Owner or the Owner's authorized representative.

§ 2.1.2 The Owner shall furnish to the Contractor, within fifteen days after receipt of a written request, information necessary and relevant for the Contractor to evaluate, give notice of, or enforce mechanic's lien rights. Such information shall include a correct statement of the record legal title to the property on which the Project is located, usually referred to as the site, and the Owner's interest therein.

§ 2.2 Evidence of the Owner's Financial Arrangements

§ 2.2.1 Prior to commencement of the Work and upon written request by the Contractor, the Owner shall furnish to the Contractor reasonable evidence that the Owner has made financial arrangements to fulfill the Owner's obligations under the Contract. The Contractor shall have no obligation to commence the Work until the Owner provides such evidence. If commencement of the Work is delayed under this Section 2.2.1, the Contract Time shall be extended appropriately.

§ 2.2.2 Following commencement of the Work and upon written request by the Contractor, the Owner shall furnish to the Contractor reasonable evidence that the Owner has made financial arrangements to fulfill the Owner's obligations under the Contract only if (1) the Owner fails to make payments to the Contractor as the Contract Documents require; (2) the Contractor identifies in writing a reasonable concern regarding the Owner's ability to make payment when due; or (3) a change in the Work materially changes the Contract Sum. If the Owner fails to provide such evidence, as required, within fourteen days of the Contractor's request, the Contractor may immediately stop the Work and, in that event, shall notify the Owner that the Work has stopped. However, if the request is made because a change in the Work materially changes the Contract Sum under (3) above, the Contractor may immediately stop only that portion of the Work affected by the change until reasonable evidence is provided. If the Work is stopped under this Section 2.2.2, the Contract Time shall be extended appropriately and the Contract Sum shall be increased by the amount of the Contractor's reasonable costs of shutdown, delay and start-up, plus interest as provided in the Contract Documents.

§ 2.2.3 After the Owner furnishes evidence of financial arrangements under this Section 2.2, the Owner shall not materially vary such financial arrangements without prior notice to the Contractor.

§ 2.2.4 Where the Owner has designated information furnished under this Section 2.2 as "confidential," the Contractor shall keep the information confidential and shall not disclose it to any other person. However, the Contractor may disclose "confidential" information, after seven (7) days' notice to the Owner, where disclosure is required by law, including a subpoena or other form of compulsory legal process issued by a court or governmental entity, or by court or arbitrator(s) order. The Contractor may also disclose "confidential" information to its employees, consultants, sureties, Subcontractors and their employees, Sub-subcontractors, and others who need to know the content of such information solely and exclusively for the Project and who agree to maintain the confidentiality of such information.

§ 2.3 Information and Services Required of the Owner

§ 2.3.1 Except for permits and fees that are the responsibility of the Contractor under the Contract Documents, including those required under Section 3.7.1, 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.

§ 2.3.2 The Owner shall retain an Engineer lawfully licensed to practice Engineering, or an entity lawfully practicing Engineering, in the jurisdiction where the Project is located. That person or entity is identified as the Engineer in the Agreement and is referred to throughout the Contract Documents as if singular in number.

§ 2.3.3 If the employment of the Engineer terminates, the Owner shall employ a successor to whom the Contractor has no reasonable objection and whose status under the Contract Documents shall be that of the Engineer.

§ 2.3.4 The Owner shall furnish surveys describing physical characteristics, legal limitations and utility locations for the site of the Project, and a legal description of the site. The Contractor shall be entitled to rely on the accuracy of information furnished by the Owner but shall exercise proper precautions relating to the safe performance of the Work.

§ 2.3.5 The Owner shall furnish information or services required of the Owner by the Contract Documents with reasonable promptness. The Owner shall also furnish any other information or services under the Owner's control and relevant to the Contractor's performance of the Work with reasonable promptness after receiving the Contractor's written request for such information or services.

§ 2.3.6 Unless otherwise provided in the Contract Documents, the Owner shall furnish to the Contractor one copy of the Contract Documents for purposes of making reproductions pursuant to Section 1.5.2.

§ 2.4 Owner's Right to Stop the Work

If the Contractor fails to correct Work that is not in accordance with the requirements of the Contract Documents as required by Section 12.2 or repeatedly 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, except to the extent required by Section 6.1.3.

§ 2.5 Owner's Right to Carry Out the Work

If the Contractor defaults or neglects to carry out the Work in accordance with the Contract Documents and fails within a ten-day period after receipt of notice from the Owner to commence and continue correction of such default or neglect with diligence and promptness, the Owner may, without prejudice to other remedies the Owner may have, correct such default or neglect. Such action by the Owner and amounts charged to the Contractor are both subject to prior approval of the Engineer and the Engineer may, pursuant to Section 9.5.1, withhold or nullify a Certificate for Payment in whole or in part, to the extent reasonably necessary to reimburse the Owner for the reasonable cost of correcting such deficiencies, including Owner's expenses and compensation for the Engineer's additional services made necessary by such default, neglect, or failure. If current and future payments are not sufficient to cover such amounts, the Contractor shall pay the difference to the Owner. If the Contractor disagrees with the actions of the Owner or the Engineer, or the amounts claimed as costs to the Owner, the Contractor may file a Claim pursuant to Article 15.

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 Contractor shall be lawfully licensed, if required in the jurisdiction where the Project is located. The Contractor shall designate in writing a representative who shall have express authority to bind the Contractor with respect to all matters under this Contract. The term "Contractor" means the Contractor or the Contractor's authorized representative.

§ 3.1.2 The Contractor shall perform the Work in accordance with the Contract Documents.

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

§ 3.2 Review of Contract Documents and Field Conditions by Contractor

§ 3.2.1 Execution of the Contract by the Contractor is a representation that the Contractor has visited the site, become generally familiar with local conditions under which the Work is to be performed, and correlated personal observations with requirements of the Contract Documents.

§ 3.2.2 Because the Contract Documents are complementary, the Contractor shall, before starting each portion of the Work, carefully study and compare the various Contract Documents relative to that portion of the Work, as well as

the information furnished by the Owner pursuant to Section 2.3.4, shall take field measurements of any existing conditions related to that portion of the Work, and shall observe any conditions at the site affecting it. These obligations are for the purpose of facilitating coordination and construction by the Contractor and are not for the purpose of discovering errors, omissions, or inconsistencies in the Contract Documents; however, the Contractor shall promptly report to the Engineer any errors, inconsistencies or omissions discovered by or made known to the Contractor as a request for information in such form as the Engineer may require. 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.

§ 3.2.3 The Contractor is not required to ascertain that the Contract Documents are in accordance with applicable laws, statutes, ordinances, codes, rules and regulations, or lawful orders of public authorities, but the Contractor shall promptly report to the Engineer any nonconformity discovered by or made known to the Contractor as a request for information in such form as the Engineer may require.

§ 3.2.4 If the Contractor believes that additional cost or time is involved because of clarifications or instructions the Engineer issues in response to the Contractor's notices or requests for information pursuant to Sections 3.2.2 or 3.2.3, the Contractor shall submit Claims as provided in Article 15. If the Contractor fails to perform the obligations of Sections 3.2.2 or 3.2.3, the Contractor shall pay such costs and damages to the Owner, subject to Section 15.1.7, as would have been avoided if the Contractor had performed such obligations. If the Contractor performs those obligations, the Contractor shall not be liable to the Owner or Engineer for damages resulting from errors, inconsistencies or omissions in the Contract Documents, for differences between field measurements or conditions and the Contract Documents, or for nonconformities of the Contract Documents to applicable laws, statutes, ordinances, codes, rules and regulations, and lawful orders of public authorities.

§ 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. If the Contract Documents give specific instructions concerning construction means, methods, techniques, sequences, or procedures, the Contractor shall evaluate the jobsite safety thereof and shall be solely responsible for the jobsite safety of such means, methods, techniques, sequences, or procedures. If the Contractor determines that such means, methods, techniques, sequences or procedures may not be safe, the Contractor shall give timely notice to the Owner and Engineer, and shall propose alternative means, methods, techniques, sequences, or procedures. The Engineer shall evaluate the proposed alternative solely for conformance with the design intent for the completed construction. Unless the Engineer objects to the Contractor's proposed alternative, the Contractor shall perform the Work using its alternative means, methods, techniques, sequences, or procedures.

§ 3.3.2 The Contractor shall be responsible to the Owner for acts and omissions of the Contractor's employees, Subcontractors and their agents and employees, and other persons or entities performing portions of the Work for, or on behalf of, the Contractor or any of its Subcontractors.

§ 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.

§ 3.4 Labor and Materials

§ 3.4.1 Unless otherwise provided in the Contract Documents, the Contractor shall provide and pay for labor, materials, equipment, tools, 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 Except in the case of minor changes in the Work approved by the Engineer in accordance with Section 3.12.8 or ordered by the Engineer in accordance with Section 7.4, the Contractor may make substitutions only with the consent of the Owner, after evaluation by the Engineer and in accordance with a Change Order or Construction Change Directive.

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

§ 3.5 Warranty

§ 3.5.1 The Contractor warrants to the Owner and Engineer that materials and equipment furnished under the Contract will be of good quality and new unless the Contract Documents require or permit otherwise. The Contractor further warrants that the Work will conform to the requirements of the Contract Documents and will be free from defects, except for those inherent in the quality of the Work the Contract Documents require or permit. Work, materials, or equipment not conforming to these requirements may be considered defective. The Contractor's warranty excludes remedy for damage or defect caused by abuse, alterations to the Work not executed by the Contractor, improper or insufficient maintenance, improper operation, or normal wear and tear and normal usage. If required by the Engineer, the Contractor shall furnish satisfactory evidence as to the kind and quality of materials and equipment.

§ 3.5.2 All material, equipment, or other special warranties required by the Contract Documents shall be issued in the name of the Owner, or shall be transferable to the Owner, and shall commence in accordance with Section 9.8.4.

§ 3.6 Taxes

The Contractor shall pay sales, consumer, use and similar taxes for the Work provided by the Contractor that are legally enacted when bids are received or negotiations concluded, whether or not yet effective or merely scheduled to go into effect.

§ 3.7 Permits, Fees, Notices and Compliance with Laws

§ 3.7.1 Unless otherwise provided in the Contract Documents, the Contractor shall secure and pay for the building permit as well as for other permits, fees, licenses, and inspections by government agencies necessary for proper execution and completion of the Work that are customarily secured after execution of the Contract and legally required at the time bids are received or negotiations concluded.

§ 3.7.2 The Contractor shall comply with and give notices required by applicable laws, statutes, ordinances, codes, rules and regulations, and lawful orders of public authorities applicable to performance of the Work.

§ 3.7.3 If the Contractor performs Work knowing it to be contrary to applicable laws, statutes, ordinances, codes, rules and regulations, or lawful orders of public authorities, the Contractor shall assume appropriate responsibility for such Work and shall bear the costs attributable to correction.

§ 3.7.4 Concealed or Unknown Conditions

If the Contractor encounters conditions at the site that are (1) subsurface or otherwise concealed physical conditions that differ materially from those indicated in the Contract Documents or (2) unknown physical conditions of an unusual nature that 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 promptly provide notice to the Owner and the Engineer before conditions are disturbed and in no event later than 14 days after first observance of the conditions. The Engineer will promptly investigate such conditions and, if the Engineer determines that 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 that an equitable adjustment be made in the Contract Sum or Contract Time, or both. If the Engineer 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 Engineer shall promptly notify the Owner and Contractor, stating the reasons. If either party disputes the Engineer's determination or recommendation, that party may submit a Claim as provided in Article 15.

§ 3.7.5 If, in the course of the Work, the Contractor encounters human remains or recognizes the existence of burial markers, archaeological sites or wetlands not indicated in the Contract Documents, the Contractor shall immediately suspend any operations that would affect them and shall notify the Owner and Engineer. Upon receipt of such notice, the Owner shall promptly take any action necessary to obtain governmental authorization required to resume the operations. The Contractor shall continue to suspend such operations until otherwise instructed by the Owner but shall continue with all other operations that do not affect those remains or features. Requests for adjustments in the Contract Sum and Contract Time arising from the existence of such remains or features may be made as provided in Article 15.

§ 3.8 Allowances

§ 3.8.1 The Contractor shall include in the Contract Sum 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; and
- **.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 Section 3.8.2.1 and (2) changes in Contractor's costs under Section 3.8.2.2.

§ 3.8.3 Materials and equipment under an allowance shall be selected by the Owner with reasonable promptness.

§ 3.9 Superintendent

§ 3.9.1 The Contractor shall employ a competent superintendent and necessary assistants who shall be in attendance at the Project site during performance of the Work. The superintendent shall represent the Contractor, and communications given to the superintendent shall be as binding as if given to the Contractor.

§ 3.9.2 The Contractor, as soon as practicable after award of the Contract, shall notify the Owner and Engineer of the name and qualifications of a proposed superintendent. Within 14 days of receipt of the information, the Engineer may notify the Contractor, stating whether the Owner or the Engineer (1) has reasonable objection to the proposed superintendent or (2) requires additional time for review. Failure of the Engineer to provide notice within the 14-day period shall constitute notice of no reasonable objection.

§ 3.9.3 The Contractor shall not employ a proposed superintendent to whom the Owner or Engineer has made reasonable and timely objection. The Contractor shall not change the superintendent without the Owner's consent, which shall not unreasonably be withheld or delayed.

§ 3.10 Contractor's Construction and Submittal Schedules

§ 3.10.1 The Contractor, promptly after being awarded the Contract, shall submit for the Owner's and Engineer's information a Contractor's construction schedule for the Work. The schedule shall contain detail appropriate for the Project, including (1) the date of commencement of the Work, interim schedule milestone dates, and the date of Substantial Completion; (2) an apportionment of the Work by construction activity; and (3) the time required for completion of each portion of the Work. The schedule shall provide for the orderly progression of the Work to completion and shall not exceed time limits current under the Contract Documents. The schedule shall be revised at appropriate intervals as required by the conditions of the Work and Project.

§ 3.10.2 The Contractor, promptly after being awarded the Contract and thereafter as necessary to maintain a current submittal schedule, shall submit a submittal schedule for the Engineer's approval. The Engineer's approval shall not be unreasonably delayed or withheld. The submittal schedule shall (1) be coordinated with the Contractor's construction schedule, and (2) allow the Engineer reasonable time to review submittals. If the Contractor fails to submit a submittal schedule, or fails to provide submittals in accordance with the approved submittal schedule, the Contractor shall not be entitled to any increase in Contract Sum or extension of Contract Time based on the time required for review of submittals.

§ 3.10.3 The Contractor shall perform the Work in general accordance with the most recent schedules submitted to the Owner and Engineer.

§ 3.11 Documents and Samples at the Site

The Contractor shall make available, at the Project site, the Contract Documents, including Change Orders, Construction Change Directives, and other Modifications, in good order and marked currently to indicate field changes and selections made during construction, and the approved Shop Drawings, Product Data, Samples, and

similar required submittals. These shall be in electronic form or paper copy, available to the Engineer and Owner, and delivered to the Engineer for submittal to the Owner upon completion of the Work as a record of the Work as constructed.

§ 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 that 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. Their purpose is to demonstrate how the Contractor proposes to conform to the information given and the design concept expressed in the Contract Documents for those portions of the Work for which the Contract Documents require submittals. Review by the Engineer is subject to the limitations of Section 4.2.7. Informational submittals upon which the Engineer is not expected to take responsive action may be so identified in the Contract Documents. Submittals that are not required by the Contract Documents may be returned by the Engineer without action.

§ 3.12.5 The Contractor shall review for compliance with the Contract Documents, approve, and submit to the Engineer, Shop Drawings, Product Data, Samples, and similar submittals required by the Contract Documents, in accordance with the submittal schedule approved by the Engineer or, in the absence of an approved submittal schedule, 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.

§ 3.12.6 By submitting Shop Drawings, Product Data, Samples, and similar submittals, the Contractor represents to the Owner and Engineer that the Contractor has (1) reviewed and approved them, (2) determined and verified materials, field measurements and field construction criteria related thereto, or will do so, and (3) 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 Engineer.

§ 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 the requirements of the Contract Documents by the Engineer's approval of Shop Drawings, Product Data, Samples, or similar submittals, unless the Contractor has specifically notified the Engineer of such deviation at the time of submittal and (1) the Engineer has given 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 Engineer'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 Engineer on previous submittals. In the absence of such notice, the Engineer's approval of a resubmission shall not apply to such revisions.

§ 3.12.10 The Contractor shall not be required to provide professional services that constitute the practice of Engineerure 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.

§ 3.12.10.1 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 Engineer will

specify all performance and design criteria that such services must satisfy. The Contractor shall be entitled to rely upon the adequacy and accuracy of the performance and design criteria provided in the Contract Documents. The Contractor shall cause such services or certifications to be provided by an appropriately 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 Engineer. The Owner and the Engineer shall be entitled to rely upon the adequacy and accuracy of the services, certifications, and approvals performed or provided by such design professionals, provided the Owner and Engineer have specified to the Contractor the performance and design criteria that such services must satisfy. Pursuant to this Section 3.12.10, the Engineer will review and 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.

§ 3.12.10.2 If the Contract Documents require the Contractor's design professional to certify that the Work has been performed in accordance with the design criteria, the Contractor shall furnish such certifications to the Engineer at the time and in the form specified by the Engineer.

§ 3.13 Use of Site

The Contractor shall confine operations at the site to areas permitted by applicable laws, statutes, ordinances, codes, rules and regulations, lawful orders of public authorities, and the Contract Documents and shall not unreasonably encumber the site with materials or equipment.

§ 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. All areas requiring cutting, fitting, or patching shall be restored to the condition existing prior to the cutting, fitting, or patching, unless otherwise required by the Contract Documents.

§ 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 construction by the Owner or a Separate Contractor except with written consent of the Owner and of the Separate Contractor. Consent shall not be unreasonably withheld. The Contractor shall not unreasonably withhold, from the Owner or a Separate Contractor, its consent to cutting or otherwise altering the Work.

§ 3.15 Cleaning Up

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

§ 3.15.2 If the Contractor fails to clean up as provided in the Contract Documents, the Owner may do so and the Owner shall be entitled to reimbursement from the Contractor.

§ 3.16 Access to Work

The Contractor shall provide the Owner and Engineer with access to the Work in preparation and progress wherever located.

§ 3.17 Royalties, Patents and Copyrights

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 Engineer harmless from loss on account thereof, but shall not be responsible for 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 Engineer. However, if an infringement of a copyright or patent is discovered by, or made known to, the Contractor, the Contractor shall be responsible for the loss unless the information is promptly furnished to the Engineer.

§ 3.18 Indemnification

§ 3.18.1 To the fullest extent permitted by law, the Contractor shall indemnify and hold harmless the Owner, Engineer, Engineer'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, a 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 that would otherwise exist as to a party or person described in this Section 3.18.

§ 3.18.2 In claims against any person or entity indemnified under this Section 3.18 by an employee of the Contractor, a Subcontractor, anyone directly or indirectly employed by them, or anyone for whose acts they may be liable, the indemnification obligation under Section 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 ENGINEER

§ 4.1 General

§ 4.1.1 The Engineer is the person or entity retained by the Owner pursuant to Section 2.3.2 and identified as such in the Agreement.

§ 4.1.2 Duties, responsibilities, and limitations of authority of the Engineer as set forth in the Contract Documents shall not be restricted, modified, or extended without written consent of the Owner, Contractor, and Engineer. Consent shall not be unreasonably withheld.

§ 4.2 Administration of the Contract

§ 4.2.1 The Engineer will provide administration of the Contract as described in the Contract Documents and will be an Owner's representative during construction until the date the Engineer issues the final Certificate for Payment. The Engineer will have authority to act on behalf of the Owner only to the extent provided in the Contract Documents.

§ 4.2.2 The Engineer will visit the site at intervals appropriate to the stage of construction, or as otherwise agreed with the Owner, to become generally familiar with the progress and quality of the portion of the Work completed, and to determine in general if the Work observed is being performed in a manner indicating that the Work, when fully completed, will be in accordance with the Contract Documents. However, the Engineer will not be required to make exhaustive or continuous on-site inspections to check the quality or quantity of the Work. The Engineer will not have control over, charge of, or responsibility 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.

§ 4.2.3 On the basis of the site visits, the Engineer will keep the Owner reasonably informed about the progress and quality of the portion of the Work completed, and promptly report to the Owner (1) known deviations from the Contract Documents, (2) known deviations from the most recent construction schedule submitted by the Contractor, and (3) defects and deficiencies observed in the Work. The Engineer will not be responsible for the Contractor's failure to perform the Work in accordance with the requirements of the Contract Documents. The Engineer will not have control over or charge of, and will not be responsible for acts or omissions of, the Contractor, Subcontractors, or their agents or employees, or any other persons or entities performing portions of the Work.

§ 4.2.4 Communications

The Owner and Contractor shall include the Engineer in all communications that relate to or affect the Engineer's services or professional responsibilities. The Owner shall promptly notify the Engineer of the substance of any direct communications between the Owner and the Contractor otherwise relating to the Project. Communications by and with the Engineer's consultants shall be through the Engineer. Communications by and with Subcontractors and suppliers shall be through the Contractor. Communications by and with Separate Contractors shall be through the Owner. The Contract Documents may specify other communication protocols.

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

§ 4.2.6 The Engineer has authority to reject Work that does not conform to the Contract Documents. Whenever the Engineer considers it necessary or advisable, the Engineer will have authority to require inspection or testing of the Work in accordance with Sections 13.4.2 and 13.4.3, whether or not the Work is fabricated, installed or completed. However, neither this authority of the Engineer 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 Engineer to the Contractor, Subcontractors, suppliers, their agents or employees, or other persons or entities performing portions of the Work.

§ 4.2.7 The Engineer 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 Engineer's action will be taken in accordance with the submittal schedule approved by the Engineer or, in the absence of an approved submittal schedule, with reasonable promptness while allowing sufficient time in the Engineer'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 Engineer's review of the Contractor's submittals shall not relieve the Contractor of the obligations under Sections 3.3, 3.5, and 3.12. The Engineer's review shall not constitute approval of safety precautions or of any construction means, methods, techniques, sequences, or procedures. The Engineer's approval of a specific item shall not indicate approval of an assembly of which the item is a component.

§ 4.2.8 The Engineer will prepare Change Orders and Construction Change Directives, and may order minor changes in the Work as provided in Section 7.4. The Engineer will investigate and make determinations and recommendations regarding concealed and unknown conditions as provided in Section 3.7.4.

§ 4.2.9 The Engineer will conduct inspections to determine the date or dates of Substantial Completion and the date of final completion; issue Certificates of Substantial Completion pursuant to Section 9.8; 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 pursuant to Section 9.10; and issue a final Certificate for Payment pursuant to Section 9.10.

§ 4.2.10 If the Owner and Engineer agree, the Engineer will provide one or more Project representatives to assist in carrying out the Engineer's responsibilities at the site. The Owner shall notify the Contractor of any change in the duties, responsibilities and limitations of authority of the Project representatives.

§ 4.2.11 The Engineer will interpret and decide matters concerning performance under, and requirements of, the Contract Documents on written request of either the Owner or Contractor. The Engineer's response to such requests will be made in writing within any time limits agreed upon or otherwise with reasonable promptness.

§ 4.2.12 Interpretations and decisions of the Engineer 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 decisions, the Engineer 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 rendered in good faith.

§ 4.2.13 The Engineer's decisions on matters relating to aesthetic effect will be final if consistent with the intent expressed in the Contract Documents.

§ 4.2.14 The Engineer will review and respond to requests for information about the Contract Documents. The Engineer's response to such requests will be made in writing within any time limits agreed upon or otherwise with reasonable promptness. If appropriate, the Engineer will prepare and issue supplemental Drawings and Specifications in response to the requests for information.

ARTICLE 5 SUBCONTRACTORS

§ 5.1 Definitions

§ 5.1.1 A Subcontractor is a person or entity who has a direct contract with the Contractor to perform a portion of the Work at the site. 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 the subcontractors of a Separate Contractor.

§ 5.1.2 A Sub-subcontractor is a person or entity who has a direct or indirect contract with a Subcontractor to perform a portion of the Work at the site. The term "Sub-subcontractor" is referred to throughout the Contract Documents as if singular in number and means a Sub-subcontractor or an authorized representative of the Sub-subcontractor.

§ 5.2 Award of Subcontracts and Other Contracts for Portions of the Work

§ 5.2.1 Unless otherwise stated in the Contract Documents, the Contractor, as soon as practicable after award of the Contract, shall notify the Owner and Engineer of the persons or entities proposed for each principal portion of the Work, including those who are to furnish materials or equipment fabricated to a special design. Within 14 days of receipt of the information, the Engineer may notify the Contractor whether the Owner or the Engineer (1) has reasonable objection to any such proposed person or entity or (2) requires additional time for review. Failure of the Engineer to provide notice within the 14-day period shall constitute notice of no reasonable objection.

§ 5.2.2 The Contractor shall not contract with a proposed person or entity to whom the Owner or Engineer has made reasonable and timely objection. The Contractor shall not be required to contract with anyone to whom the Contractor has made reasonable objection.

§ 5.2.3 If the Owner or Engineer has reasonable objection to a person or entity proposed by the Contractor, the Contractor shall propose another to whom the Owner or Engineer has no reasonable objection. If the proposed but rejected Subcontractor was reasonably capable of performing the Work, the Contract Sum and Contract Time shall be increased or decreased by the difference, if any, occasioned by such change, and an appropriate Change Order shall be issued before commencement of the substitute Subcontractor's Work. However, no increase in the Contract Sum or Contract Time shall be allowed for such change unless the Contractor has acted promptly and responsively in submitting names as required.

§ 5.2.4 The Contractor shall not substitute a Subcontractor, person, or entity for one previously selected if the Owner or Engineer makes reasonable objection to such substitution.

§ 5.3 Subcontractual Relations

By appropriate written agreement, 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 that the Contractor, by these Contract Documents, assumes toward the Owner and Engineer. Each subcontract agreement shall preserve and protect the rights of the Owner and Engineer under the Contract Documents with respect to the Work to be performed by the Subcontractor so that subcontracting thereof will not prejudice such rights, and shall allow to the Subcontractor, unless specifically provided otherwise in the subcontract agreement, the benefit of all rights, remedies, and redress against the Contractor that the Contractor, by the Contract Documents, has against the Owner. Where appropriate, the Contractor shall require each Subcontractor to enter into similar agreements with Sub-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 that 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, provided that

.1 assignment is effective only after termination of the Contract by the Owner for cause pursuant to Section 14.2 and only for those subcontract agreements that the Owner accepts by notifying the Subcontractor and Contractor; and

.2 assignment is subject to the prior rights of the surety, if any, obligated under bond relating to the Contract.

When the Owner accepts the assignment of a subcontract agreement, the Owner assumes the Contractor's rights and obligations under the subcontract.

§ 5.4.2 Upon such assignment, if the Work has been suspended for more than 30 days, the Subcontractor's compensation shall be equitably adjusted for increases in cost resulting from the suspension.

§ 5.4.3 Upon assignment to the Owner under this Section 5.4, the Owner may further assign the subcontract to a successor contractor or other entity. If the Owner assigns the subcontract to a successor contractor or other entity, the Owner shall nevertheless remain legally responsible for all of the successor contractor's obligations under the subcontract.

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 term "Separate Contractor(s)" shall mean other contractors retained by the Owner under separate agreements. The Owner reserves the right to perform construction or operations related to the Project with the Owner's own forces, and with Separate Contractors retained under Conditions of the Contract substantially similar to those of this Contract, including those provisions of the Conditions of the Contract related to insurance and waiver of subrogation.

§ 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 any Separate Contractors and the Owner in reviewing their construction schedules. The Contractor shall make any revisions to its 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 or with Separate Contractors, the Owner or its Separate Contractors shall have the same obligations and rights that the Contractor has 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 notify the Engineer of apparent discrepancies or defects in the construction or operations by the Owner or Separate Contractor that would render it unsuitable for proper execution and results of the Contractor's Work. Failure of the Contractor to notify the Engineer of apparent discrepancies or defects prior to proceeding with the Work 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. The Contractor shall not be responsible for discrepancies or defects in the construction or operations by the Owner or Separate Contractor that are not apparent.

§ 6.2.3 The Contractor shall reimburse the Owner for costs the Owner incurs that are payable to a Separate Contractor because of the Contractor's delays, improperly timed activities or defective construction. The Owner shall be responsible to the Contractor for costs the Contractor incurs because of a Separate Contractor's delays, improperly timed activities, damage to the Work or defective construction.

§ 6.2.4 The Contractor shall promptly remedy damage that the Contractor wrongfully causes to completed or partially completed construction or to property of the Owner or Separate Contractor as provided in Section 10.2.5.

§ 6.2.5 The Owner and each Separate Contractor shall have the same responsibilities for cutting and patching as are described for the Contractor in Section 3.14.

§ 6.3 Owner's Right to Clean Up

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 Engineer will 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, 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 Engineer. A Construction Change Directive requires agreement by the Owner and Engineer 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 Engineer alone.

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

§ 7.2 Change Orders

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

.1 The 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.

§ 7.3 Construction Change Directives

§ 7.3.1 A Construction Change Directive is a written order prepared by the Engineer and signed by the Owner and Engineer, 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 and a mutually acceptable fixed or percentage fee; or
.4 As provided in Section 7.3.4.

§ 7.3.4 If the Contractor does not respond promptly or disagrees with the method for adjustment in the Contract Sum, the Engineer shall determine the adjustment on the basis of reasonable expenditures and savings of those performing the Work attributable to the change, including, in case of an increase in the Contract Sum, an amount for overhead and profit as set forth in the Agreement, or if no such amount is set forth in the Agreement, a reasonable amount. In such case, and also under Section 7.3.3.3, the Contractor shall keep and present, in such form as the Engineer may prescribe, an itemized accounting together with appropriate supporting data. Unless otherwise provided in the Contract Documents, costs for the purposes of this Section 7.3.4 shall be limited to the following:

.1 Costs of labor, including applicable payroll taxes, fringe benefits required by agreement or custom, workers' compensation insurance, and other employee costs approved by the Engineer;

.2 Costs of materials, supplies, and equipment, including cost of transportation, whether incorporated or consumed;

.3 Rental costs of machinery and equipment, exclusive of hand tools, whether rented from the Contractor or others;

.4 Costs of premiums for all bonds and insurance, permit fees, and sales, use, or similar taxes, directly related to the change; and

.5 Costs of supervision and field office personnel directly attributable to the change.

§ 7.3.5 If the Contractor disagrees with the adjustment in the Contract Time, the Contractor may make a Claim in accordance with applicable provisions of Article 15.

§ 7.3.6 Upon receipt of a Construction Change Directive, the Contractor shall promptly proceed with the change in the Work involved and advise the Engineer of the Contractor's agreement or disagreement with the method, if any, provided in the Construction Change Directive for determining the proposed adjustment in the Contract Sum or Contract Time.

§ 7.3.7 A Construction Change Directive signed by the Contractor indicates the Contractor's agreement therewith, including adjustment in Contract Sum and Contract Time or the method for determining them. Such agreement shall be effective immediately and shall be recorded as a Change Order.

§ 7.3.8 The amount of credit to be allowed by the Contractor to the Owner for a deletion or change that results in a net decrease in the Contract Sum shall be actual net cost as confirmed by the Engineer. 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.

§ 7.3.9 Pending final determination of the total cost of a Construction Change Directive to the Owner, the Contractor may request payment for Work completed under the Construction Change Directive in Applications for Payment. The Engineer will make an interim determination for purposes of monthly certification for payment for those costs and certify for payment the amount that the Engineer determines, in the Engineer's professional judgment, to be reasonably justified. The Engineer's interim determination of cost shall adjust the Contract Sum on the same basis as a Change Order, subject to the right of either party to disagree and assert a Claim in accordance with Article 15.

§ 7.3.10 When the Owner and Contractor agree with a determination made by the Engineer concerning the adjustments in the Contract Sum and Contract Time, or otherwise reach agreement upon the adjustments, such agreement shall be effective immediately and the Engineer will prepare a Change Order. Change Orders may be issued for all or any part of a Construction Change Directive.

§ 7.4 Minor Changes in the Work

The Engineer may order minor changes in the Work that are consistent with the intent of the Contract Documents and do not involve an adjustment in the Contract Sum or an extension of the Contract Time. The Engineer's order for minor changes shall be in writing. If the Contractor believes that the proposed minor change in the Work will affect the Contract Sum or Contract Time, the Contractor shall notify the Engineer and shall not proceed to implement the change in the Work. If the Contractor performs the Work set forth in the Engineer's order for a minor change without prior notice to the Engineer that such change will affect the Contract Sum or Contract Time, the Contractor waives any adjustment to the Contract Sum or extension of the Contract Time.

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 Engineer in accordance with Section 9.8.

§ 8.1.4 The term "day" as used in the Contract Documents shall mean calendar day unless otherwise specifically defined.

§ 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, commence the Work prior to the effective date of insurance required to be furnished by the Contractor and Owner.

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

§ 8.3 Delays and Extensions of Time

§ 8.3.1 If the Contractor is delayed at any time in the commencement or progress of the Work by (1) an act or neglect of the Owner or Engineer, of an employee of either, or of a Separate Contractor; (2) by changes ordered in the Work; (3) by labor disputes, fire, unusual delay in deliveries, unavoidable casualties, adverse weather conditions documented in accordance with Section 15.1.6.2, or other causes beyond the Contractor's control; (4) by delay authorized by the Owner pending mediation and binding dispute resolution; or (5) by other causes that the Contractor asserts, and the Engineer determines, justify delay, then the Contract Time shall be extended for such reasonable time as the Engineer may determine.

§ 8.3.2 Claims relating to time shall be made in accordance with applicable provisions of Article 15.

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

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.

§ 9.1.2 If unit prices are stated in the Contract Documents or subsequently agreed upon, and if quantities originally contemplated are materially changed so that application of such unit prices to the actual quantities causes substantial inequity to the Owner or Contractor, the applicable unit prices shall be equitably adjusted.

§ 9.2 Schedule of Values

Where the Contract is based on a stipulated sum or Guaranteed Maximum Price, the Contractor shall submit a schedule of values to the Engineer before the first Application for Payment, allocating the entire Contract Sum to the various portions of the Work. The schedule of values shall be prepared in the form, and supported by the data to substantiate its accuracy, required by the Engineer. This schedule, unless objected to by the Engineer, shall be used as a basis for reviewing the Contractor's Applications for Payment. Any changes to the schedule of values shall be submitted to the Engineer and supported by such data to substantiate its accuracy as the Engineer may require, and unless objected to by the Engineer, shall be used as a basis for reviewing the Contractor's subsequent 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 Engineer an itemized Application for Payment prepared in accordance with the schedule of values, if required under Section 9.2, for completed portions of the Work. The application shall be notarized, if required, and supported by all data substantiating the Contractor's right to payment that the Owner or Engineer require, such as copies of requisitions, and releases and waivers of liens from Subcontractors and suppliers, and shall reflect retainage if provided for in the Contract Documents.

§ 9.3.1.1 As provided in Section 7.3.9, such applications may include requests for payment on account of changes in the Work that have been properly authorized by Construction Change Directives, or by interim determinations of the Engineer, but not yet included in Change Orders.

§ 9.3.1.2 Applications for Payment shall not include requests for payment for portions of the Work for which the Contractor does not intend to pay a Subcontractor or supplier, unless such Work has been performed by others whom the Contractor intends to pay.

§ 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 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, to the best of the Contractor's knowledge, information, and belief, be free and clear of liens, claims, security interests, or encumbrances, in favor of the Contractor, Subcontractors, suppliers, or other persons or entities that provided labor, materials, and equipment relating to the Work.

§ 9.4 Certificates for Payment

§ 9.4.1 The Engineer will, within seven days after receipt of the Contractor's Application for Payment, either (1) issue to the Owner a Certificate for Payment in the full amount of the Application for Payment, with a copy to the Contractor; or (2) issue to the Owner a Certificate for Payment for such amount as the Engineer determines is properly due, and notify the Contractor and Owner of the Engineer's reasons for withholding certification in part as provided in Section 9.5.1; or (3) withhold certification of the entire Application for Payment, and notify the Contractor and Owner of the Engineer's reason for withholding certification in whole as provided in Section 9.5.1.

§ 9.4.2 The issuance of a Certificate for Payment will constitute a representation by the Engineer to the Owner, based on the Engineer's evaluation of the Work and the data in the Application for Payment, that, to the best of the Engineer's knowledge, information, and belief, the Work has progressed to the point indicated, the quality of the Work is in accordance with the Contract Documents, and that the Contractor is entitled to payment in the amount certified. 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 Engineer. However, the issuance of a Certificate for Payment will not be a representation that the Engineer 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 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 Engineer may withhold a Certificate for Payment in whole or in part, to the extent reasonably necessary to protect the Owner, if in the Engineer's opinion the representations to the Owner required by Section 9.4.2 cannot be made. If the Engineer is unable to certify payment in the amount of the Application, the Engineer will notify the Contractor and Owner as provided in Section 9.4.1. If the Contractor and Engineer cannot agree on a revised amount, the Engineer will promptly issue a Certificate for Payment for the amount for which the Engineer is able to make such representations to the Owner. The Engineer 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 Engineer's opinion to protect the Owner from loss for which the Contractor is responsible, including loss resulting from acts and omissions described in Section 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 acceptable to the Owner is provided by the Contractor;
- **.3** failure of the Contractor to make payments properly to Subcontractors or suppliers 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 a Separate 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 repeated failure to carry out the Work in accordance with the Contract Documents.

§ 9.5.2 When either party disputes the Engineer's decision regarding a Certificate for Payment under Section 9.5.1, in whole or in part, that party may submit a Claim in accordance with Article 15.

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

§ 9.5.4 If the Engineer withholds certification for payment under Section 9.5.1.3, the Owner may, at its sole option, issue joint checks to the Contractor and to any Subcontractor or supplier to whom the Contractor failed to make payment for Work properly performed or material or equipment suitably delivered. If the Owner makes payments by joint check, the Owner shall notify the Engineer and the Contractor shall reflect such payment on its next Application for Payment.

§ 9.6 Progress Payments

§ 9.6.1 After the Engineer has issued a Certificate for Payment, the Owner shall make payment in the manner and within the time provided in the Contract Documents, and shall so notify the Engineer.

§ 9.6.2 The Contractor shall pay each Subcontractor, no later than seven days after receipt of payment from the Owner, the amount to which the Subcontractor is entitled, reflecting percentages actually retained from payments to the Contractor on account of the 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 Engineer will, on request, furnish to a Subcontractor, if practicable, information regarding percentages of completion or amounts applied for by the Contractor and action taken thereon by the Engineer and Owner on account of portions of the Work done by such Subcontractor.

§ 9.6.4 The Owner has the right to request written evidence from the Contractor that the Contractor has properly paid Subcontractors and suppliers amounts paid by the Owner to the Contractor for subcontracted Work. If the Contractor fails to furnish such evidence within seven days, the Owner shall have the right to contact Subcontractors and suppliers to ascertain whether they have been properly paid. Neither the Owner nor Engineer shall have an obligation to pay, or to see to the payment of money to, a Subcontractor or supplier, except as may otherwise be required by law.

§ 9.6.5 The Contractor's payments to suppliers shall be treated in a manner similar to that provided in Sections 9.6.2, 9.6.3 and 9.6.4.

§ 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 Unless the Contractor provides the Owner with a payment bond in the full penal sum of the Contract Sum, payments received by the Contractor for Work properly performed by Subcontractors or provided by 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, create any fiduciary liability or tort liability on the part of the Contractor for breach of trust, or entitle any person or entity to an award of punitive damages against the Contractor for breach of the requirements of this provision.

§ 9.6.8 Provided the Owner has fulfilled its payment obligations under the Contract Documents, the Contractor shall defend and indemnify the Owner from all loss, liability, damage or expense, including reasonable attorney's fees and litigation expenses, arising out of any lien claim or other claim for payment by any Subcontractor or supplier of any tier. Upon receipt of notice of a lien claim or other claim for payment, the Owner shall notify the Contractor. If approved by the applicable court, when required, the Contractor may substitute a surety bond for the property against which the lien or other claim for payment has been asserted.

§ 9.7 Failure of Payment

If the Engineer 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 Engineer or awarded by binding dispute resolution, then the Contractor may, upon seven additional days' notice to the Owner and Engineer, 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 shutdown, 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 when the Work or designated portion thereof is sufficiently complete in accordance with the Contract Documents so that the Owner can occupy or utilize the Work for its intended use.

§ 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 Engineer a comprehensive list of items to be completed or corrected prior to final payment. 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 Engineer will make an inspection to determine whether the Work or designated portion thereof is substantially complete. If the Engineer'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 or 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 Engineer. In such case, the Contractor shall then submit a request for another inspection by the Engineer to determine Substantial Completion.

§ 9.8.4 When the Work or designated portion thereof is substantially complete, the Engineer will prepare a Certificate of Substantial Completion that shall establish the date of Substantial Completion; establish responsibilities of the Owner and Contractor for security, maintenance, heat, utilities, damage to the Work and insurance; and 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.

§ 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 the Certificate. Upon such acceptance, and consent of surety if any, the Owner shall make payment of retainage applying to the Work or designated portion thereof. Such payment shall be adjusted for Work that is incomplete or not in accordance with the requirements of the Contract Documents.

§ 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 and authorized by public authorities having jurisdiction over the Project. 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 Engineer as provided under Section 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 Engineer.

§ 9.9.2 Immediately prior to such partial occupancy or use, the Owner, Contractor, and Engineer shall jointly inspect the area to be occupied or portion of the Work to be used in order to determine and record the condition of the Work.

§ 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 Upon receipt of the Contractor's notice that the Work is ready for final inspection and acceptance and upon receipt of a final Application for Payment, the Engineer will promptly make such inspection. When the Engineer finds the Work acceptable under the Contract Documents and the Contract fully performed, the Engineer will promptly issue a final Certificate for Payment stating that to the best of the Engineer's knowledge, information and belief, and on the basis of the Engineer's on-site visits and inspections, the Work has been completed in accordance with the Contract Documents and that the entire balance found to be due the Contractor and noted in the final Certificate is due and payable. The Engineer's final Certificate for Payment will constitute a further representation that conditions listed in Section 9.10.2 as precedent to the Contractor's being entitled to final payment have been fulfilled.

§ 9.10.2 Neither final payment nor any remaining retained percentage shall become due until the Contractor submits to the Engineer (1) an affidavit that payrolls, bills for materials and equipment, and other indebtedness connected with the Work for which the Owner or the Owner's property might be responsible or encumbered (less amounts withheld by Owner) have been paid or otherwise satisfied, (2) a certificate evidencing that insurance required by the Contract Documents to remain in force after final payment is currently in effect, (3) a written statement that the Contractor knows of no 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) documentation of any special warranties, such as manufacturers' warranties or specific Subcontractor warranties, and (6) if required by the Owner, other data establishing payment or satisfaction of obligations, such as receipts and releases and waivers of liens, claims, security interests, or encumbrances arising out of the Contract, to the extent and in such form as may be designated by the Owner. If a Subcontractor refuses to furnish a release or waiver required by the Owner, the Contractor may furnish a bond satisfactory to the Owner to indemnify the Owner against such lien, claim, security interest, or encumbrance. If a lien, claim, security interest, or encumbrance 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 the lien, claim, security interest, or encumbrance, including all costs and reasonable attorneys' fees.

§ 9.10.3 If, after Substantial Completion of the Work, final completion thereof is materially delayed through no fault of the Contractor or by issuance of Change Orders affecting final completion, and the Engineer so confirms, the Owner shall, upon application by the Contractor and certification by the Engineer, and without terminating the Contract, make payment of the balance due for that portion of the Work fully completed, corrected, and accepted. 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 the 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 Engineer 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 The making of final payment shall constitute a waiver of Claims by the Owner except those arising from

- **.1** liens, Claims, security interests, or encumbrances arising out of the Contract and unsettled;
- **.2** failure of the Work to comply with the requirements of the Contract Documents;
- **.3** terms of special warranties required by the Contract Documents; or
- **.4** audits performed by the Owner, if permitted by the Contract Documents, after final payment.

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

ARTICLE 10 PROTECTION OF PERSONS AND PROPERTY

§ 10.1 Safety Precautions and Programs

The Contractor 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 take reasonable precautions for safety of, and shall provide reasonable 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, a Subcontractor, or a Sub-subcontractor; 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 comply with, and give notices required by applicable laws, statutes, ordinances, codes, rules and 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 implement, erect, and maintain, as required by existing conditions and performance of the Contract, reasonable safeguards for safety and protection, including posting danger signs and other warnings against hazards; promulgating safety regulations; and notifying the owners and users of adjacent sites and utilities of the safeguards.

§ 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.

§ 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 Sections 10.2.1.2 and 10.2.1.3 caused in whole or in part by the Contractor, a Subcontractor, 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 Sections 10.2.1.2 and 10.2.1.3. The Contractor may make a Claim for the cost to remedy the damage or loss to the extent such damage or loss is attributable to acts or omissions of the Owner or Engineer 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 Section 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 Engineer.

§ 10.2.7 The Contractor shall not permit any part of the construction or site to be loaded so as to cause damage or create an unsafe condition.

§ 10.2.8 Injury or Damage to Person or Property

If either party 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, notice of the 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.

§ 10.3 Hazardous Materials and Substances

§ 10.3.1 The Contractor is responsible for compliance with any requirements included in the Contract Documents regarding hazardous materials or substances. If the Contractor encounters a hazardous material or substance not addressed in the Contract Documents and 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 or polychlorinated biphenyl (PCB), encountered on the site by the Contractor, the Contractor shall, upon recognizing the condition, immediately stop Work in the affected area and notify the Owner and Engineer of the condition.

§ 10.3.2 Upon receipt of the Contractor's notice, 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 cause it to be rendered harmless. Unless otherwise required by the Contract Documents, the Owner shall furnish in writing to the Contractor and Engineer the names and qualifications of persons or entities who are to perform tests verifying the presence or absence of the material or substance or who are to perform the task of removal or safe containment of the material or substance. The Contractor and the Engineer 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 Engineer has an objection to a person or entity proposed

by the Owner, the Owner shall propose another to whom the Contractor and the Engineer 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. By Change Order, the Contract Time shall be extended appropriately and the Contract Sum shall be increased by the amount of the Contractor's reasonable additional costs of shutdown, delay, and start-up.

§ 10.3.3 To the fullest extent permitted by law, the Owner shall indemnify and hold harmless the Contractor, Subcontractors, Engineer, Engineer'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 in the affected area if in fact the material or substance presents the risk of bodily injury or death as described in Section 10.3.1 and has not been rendered harmless, 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), except to the extent that such damage, loss, or expense is due to the fault or negligence of the party seeking indemnity.

§ 10.3.4 The Owner shall not be responsible under this Section 10.3 for hazardous materials or substances the Contractor brings to the site unless such materials or substances are required by the Contract Documents. The Owner shall be responsible for hazardous materials or substances required by the Contract Documents, except to the extent of the Contractor's fault or negligence in the use and handling of such materials or substances.

§ 10.3.5 The Contractor shall reimburse the Owner for the cost and expense the Owner incurs (1) for remediation of hazardous materials or substances the Contractor brings to the site and negligently handles, or (2) where the Contractor fails to perform its obligations under Section 10.3.1, except to the extent that the cost and expense are due to the Owner's fault or negligence.

§ 10.3.6 If, without negligence on the part of the Contractor, the Contractor is held liable by a government agency for the cost of remediation of a hazardous material or substance solely by reason of performing Work as required by the Contract Documents, the Owner shall reimburse the Contractor for all cost and expense thereby incurred.

§ 10.4 Emergencies

In an emergency affecting safety of persons or property, the Contractor shall act, at the Contractor's 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 Article 15 and Article 7.

ARTICLE 11 INSURANCE AND BONDS

§ 11.1 Contractor's Insurance and Bonds

§ 11.1.1 The Contractor shall purchase and maintain insurance of the types and limits of liability, containing the endorsements, and subject to the terms and conditions, as described in the Agreement or elsewhere in the Contract Documents. The Contractor shall purchase and maintain the required insurance from an insurance company or insurance companies lawfully authorized to issue insurance in the jurisdiction where the Project is located. The Owner, Engineer, and Engineer's consultants shall be named as additional insureds under the Contractor's commercial general liability policy or as otherwise described in the Contract Documents.

§ 11.1.2 The Contractor shall provide surety bonds of the types, for such penal sums, and subject to such terms and conditions as required by the Contract Documents. The Contractor shall purchase and maintain the required bonds from a company or companies lawfully authorized to issue surety bonds in the jurisdiction where the Project is located.

§ 11.1.3 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 authorize a copy to be furnished.

§ 11.1.4 Notice of Cancellation or Expiration of Contractor's Required Insurance. Within three (3) business days of the date the Contractor becomes aware of an impending or actual cancellation or expiration of any insurance required by the Contract Documents, the Contractor shall provide notice to the Owner of such impending or actual cancellation or expiration. Upon receipt of notice from the Contractor, the Owner shall, unless the lapse in coverage arises from an act or omission of the Owner, have the right to stop the Work until the lapse in coverage has been cured by the

procurement of replacement coverage by the Contractor. The furnishing of notice by the Contractor shall not relieve the Contractor of any contractual obligation to provide any required coverage.

§ 11.2 Owner's Insurance

§ 11.2.1 The Owner shall purchase and maintain insurance of the types and limits of liability, containing the endorsements, and subject to the terms and conditions, as described in the Agreement or elsewhere in the Contract Documents. The Owner shall purchase and maintain the required insurance from an insurance company or insurance companies lawfully authorized to issue insurance in the jurisdiction where the Project is located.

§ 11.2.2 Failure to Purchase Required Property Insurance. If the Owner fails to purchase and maintain the required property insurance, with all of the coverages and in the amounts described in the Agreement or elsewhere in the Contract Documents, the Owner shall inform the Contractor in writing prior to commencement of the Work. Upon receipt of notice from the Owner, the Contractor may delay commencement of the Work and may obtain insurance that will protect the interests of the Contractor, Subcontractors, and Sub-Subcontractors in the Work. When the failure to provide coverage has been cured or resolved, the Contract Sum and Contract Time shall be equitably adjusted. In the event the Owner fails to procure coverage, the Owner waives all rights against the Contractor, Subcontractors, and Sub-subcontractors to the extent the loss to the Owner would have been covered by the insurance to have been procured by the Owner. The cost of the insurance shall be charged to the Owner by a Change Order. If the Owner does not provide written notice, and the Contractor is damaged by the failure or neglect of the Owner to purchase or maintain the required insurance, the Owner shall reimburse the Contractor for all reasonable costs and damages attributable thereto.

§ 11.2.3 Notice of Cancellation or Expiration of Owner's Required Property Insurance. Within three (3) business days of the date the Owner becomes aware of an impending or actual cancellation or expiration of any property insurance required by the Contract Documents, the Owner shall provide notice to the Contractor of such impending or actual cancellation or expiration. Unless the lapse in coverage arises from an act or omission of the Contractor: (1) the Contractor, upon receipt of notice from the Owner, shall have the right to stop the Work until the lapse in coverage has been cured by the procurement of replacement coverage by either the Owner or the Contractor; (2) the Contract Time and Contract Sum shall be equitably adjusted; and (3) the Owner waives all rights against the Contractor, Subcontractors, and Sub-subcontractors to the extent any loss to the Owner would have been covered by the insurance had it not expired or been cancelled. If the Contractor purchases replacement coverage, the cost of the insurance shall be charged to the Owner by an appropriate Change Order. The furnishing of notice by the Owner shall not relieve the Owner of any contractual obligation to provide required insurance.

§ 11.3 Waivers of Subrogation

§ 11.3.1 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; (2) the Engineer and Engineer's consultants; and (3) Separate Contractors, 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 those losses are covered by property insurance required by the Agreement or other property insurance applicable to the Project, except such rights as they have to proceeds of such insurance. The Owner or Contractor, as appropriate, shall require similar written waivers in favor of the individuals and entities identified above from the Engineer, Engineer's consultants, Separate Contractors, subcontractors, and sub-subcontractors. The policies of insurance purchased and maintained by each person or entity agreeing to waive claims pursuant to this section 11.3.1 shall not prohibit this waiver of subrogation. This waiver of subrogation shall be effective as to a person or entity (1) even though that person or entity would otherwise have a duty of indemnification, contractual or otherwise, (2) even though that person or entity did not pay the insurance premium directly or indirectly, or (3) whether or not the person or entity had an insurable interest in the damaged property.

§ 11.3.2 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, to the extent permissible by such policies, the Owner waives all rights in accordance with the terms of Section 11.3.1 for damages caused by fire or other causes of loss covered by this separate property insurance.

§ 11.4 Loss of Use, Business Interruption, and Delay in Completion Insurance

The Owner, at the Owner's option, may purchase and maintain insurance that will protect the Owner against loss of use of the Owner's property, or the inability to conduct normal operations, due to fire or other causes of loss. The Owner waives all rights of action against the Contractor and Engineer for loss of use of the Owner's property, due to fire or other hazards however caused.

§11.5 Adjustment and Settlement of Insured Loss

§ 11.5.1 A loss insured under the property insurance required by the Agreement 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 Section 11.5.2. The Owner shall pay the Engineer and Contractor their just shares of insurance proceeds received by the Owner, and by appropriate agreements the Engineer and Contractor shall make payments to their consultants and Subcontractors in similar manner.

§ 11.5.2 Prior to settlement of an insured loss, the Owner shall notify the Contractor of the terms of the proposed settlement as well as the proposed allocation of the insurance proceeds. The Contractor shall have 14 days from receipt of notice to object to the proposed settlement or allocation of the proceeds. If the Contractor does not object, the Owner shall settle the loss and the Contractor shall be bound by the settlement and allocation. Upon receipt, the Owner shall deposit the insurance proceeds in a separate account and make the appropriate distributions. Thereafter, if no other agreement is made or the Owner does not terminate the Contract for convenience, the Owner and Contractor shall execute a Change Order for reconstruction of the damaged or destroyed Work in the amount allocated for that purpose. If the Contractor timely objects to either the terms of the proposed settlement or the allocation of the proceeds, the Owner may proceed to settle the insured loss, and any dispute between the Owner and Contractor arising out of the settlement or allocation of the proceeds shall be resolved pursuant to Article 15. Pending resolution of any dispute, the Owner may issue a Construction Change Directive for the reconstruction of the damaged or destroyed Work.

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 Engineer's request or to requirements specifically expressed in the Contract Documents, it must, if requested in writing by the Engineer, be uncovered for the Engineer's 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 that the Engineer has not specifically requested to examine prior to its being covered, the Engineer may request to see such Work and it shall be uncovered by the Contractor. If such Work is in accordance with the Contract Documents, the Contractor shall be entitled to an equitable adjustment to the Contract Sum and Contract Time as may be appropriate. If such Work is not in accordance with the Contract Documents, the costs of uncovering the Work, and the cost of correction, shall be at the Contractor's expense.

§ 12.2 Correction of Work

§ 12.2.1 Before Substantial Completion

The Contractor shall promptly correct Work rejected by the Engineer or failing to conform to the requirements of the Contract Documents, discovered before Substantial Completion and whether or not fabricated, installed or completed. Costs of correcting such rejected Work, including additional testing and inspections, the cost of uncovering and replacement, and compensation for the Engineer's services and expenses made necessary thereby, shall be at the Contractor's expense.

§ 12.2.2 After Substantial Completion

§ 12.2.2.1 In addition to the Contractor's obligations under Section 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 Section 9.9.1, or by terms of any 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 after receipt of notice from the Owner to do so, unless the Owner has previously given the Contractor a 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 within a reasonable time during that period after receipt of notice from the Owner or Engineer, the Owner may correct it in accordance with Section 2.5.

§ 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 completion of that portion of the Work.

§ 12.2.2.3 The one-year period for correction of Work shall not be extended by corrective Work performed by the Contractor pursuant to this Section 12.2.

§ 12.2.3 The Contractor shall remove from the site portions of the Work that 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 cost of correcting destroyed or damaged construction of the Owner or Separate Contractors, whether completed or partially completed, caused by the Contractor's correction or removal of Work that is not in accordance with the requirements of the Contract Documents.

§ 12.2.5 Nothing contained in this Section 12.2 shall be construed to establish a period of limitation with respect to other obligations the Contractor has under the Contract Documents. Establishment of the one-year period for correction of Work as described in Section 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

If the Owner prefers to accept Work that 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

The Contract shall be governed by the law of the place where the Project is located, excluding that jurisdiction's choice of law rules. If the parties have selected arbitration as the method of binding dispute resolution, the Federal Arbitration Act shall govern Section 15.4.

§ 13.2 Successors and Assigns

§ 13.2.1 The Owner and Contractor respectively bind themselves, their partners, successors, assigns, and legal representatives to covenants, agreements, and obligations contained in the Contract Documents. Except as provided in Section 13.2.2, neither party to the Contract shall assign the Contract as a whole without written consent of the other. If either party attempts to make an assignment without such consent, that party shall nevertheless remain legally responsible for all obligations under the Contract.

§ 13.2.2 The Owner may, without consent of the Contractor, assign the Contract to a lender providing construction financing for the Project, if the lender assumes the Owner's rights and obligations under the Contract Documents. The Contractor shall execute all consents reasonably required to facilitate the assignment.

§ 13.3 Rights and Remedies

§ 13.3.1 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.

§ 13.3.2 No action or failure to act by the Owner, Engineer, 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 upon in writing.

§ 13.4 Tests and Inspections

§ 13.4.1 Tests, inspections, and approvals of portions of the Work shall be made as required by the Contract Documents and by applicable laws, statutes, ordinances, codes, rules, and regulations or lawful orders of public authorities. Unless otherwise provided, the Contractor shall make arrangements for such tests, inspections, and approvals with an independent testing laboratory or entity acceptable to the Owner, or with the appropriate public authority, and shall bear all related costs of tests, inspections, and approvals. The Contractor shall give the Engineer

timely notice of when and where tests and inspections are to be made so that the Engineer may be present for such procedures. The Owner shall bear costs of tests, inspections, or approvals that do not become requirements until after bids are received or negotiations concluded. The Owner shall directly arrange and pay for tests, inspections, or approvals where building codes or applicable laws or regulations so require.

§ 13.4.2 If the Engineer, Owner, or public authorities having jurisdiction determine that portions of the Work require additional testing, inspection, or approval not included under Section 13.4.1, the Engineer will, 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 Engineer of when and where tests and inspections are to be made so that the Engineer may be present for such procedures. Such costs, except as provided in Section 13.4.3, shall be at the Owner's expense.

§ 13.4.3 If procedures for testing, inspection, or approval under Sections 13.4.1 and 13.4.2 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 Engineer's services and expenses, shall be at the Contractor's expense.

§ 13.4.4 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 Engineer.

§ 13.4.5 If the Engineer is to observe tests, inspections, or approvals required by the Contract Documents, the Engineer will do so promptly and, where practicable, at the normal place of testing.

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

§ 13.5 Interest

Payments due and unpaid under the Contract Documents shall bear interest from the date payment is due at the rate the parties 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.

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, a Subcontractor, a Sub-subcontractor, their agents or employees, or any other persons or entities performing portions of the Work, for any of the following reasons:

- **.1** Issuance of an order of a court or other public authority having jurisdiction that requires all Work to be stopped;
- **.2** An act of government, such as a declaration of national emergency, that requires all Work to be stopped;
- **.3** Because the Engineer has not issued a Certificate for Payment and has not notified the Contractor of the reason for withholding certification as provided in Section 9.4.1, or because the Owner has not made payment on a Certificate for Payment within the time stated in the Contract Documents; or
- **.4** The Owner has failed to furnish to the Contractor reasonable evidence as required by Section 2.2.

§ 14.1.2 The Contractor may terminate the Contract if, through no act or fault of the Contractor, a Subcontractor, a Sub-subcontractor, their agents or employees, or any other persons or entities performing portions of the Work, repeated suspensions, delays, or interruptions of the entire Work by the Owner as described in Section 14.3, constitute in the aggregate more than 100 percent of the total number of days scheduled for completion, or 120 days in any 365-day period, whichever is less.

§ 14.1.3 If one of the reasons described in Section 14.1.1 or 14.1.2 exists, the Contractor may, upon seven days' notice to the Owner and Engineer, terminate the Contract and recover from the Owner payment for Work executed, as well as reasonable overhead and profit on Work not executed, and costs incurred by reason of such termination.

§ 14.1.4 If the Work is stopped for a period of 60 consecutive days through no act or fault of the Contractor, a Subcontractor, a Sub-subcontractor, or their agents or employees or any other persons or entities performing portions of the Work because the Owner has repeatedly failed to fulfill the Owner's obligations under the Contract

Documents with respect to matters important to the progress of the Work, the Contractor may, upon seven additional days' notice to the Owner and the Engineer, terminate the Contract and recover from the Owner as provided in Section 14.1.3.

§ 14.2 Termination by the Owner for Cause

§ 14.2.1 The Owner may terminate the Contract if the Contractor

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

§ 14.2.2 When any of the reasons described in Section 14.2.1 exist, and upon certification by the Engineer that sufficient cause exists to justify such action, the Owner 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' notice, terminate employment of the Contractor and may, subject to any prior rights of the surety:

- **.1** Exclude the Contractor from the site and take possession of all materials, equipment, tools, and construction equipment and machinery thereon owned by the Contractor;
- **.2** Accept assignment of subcontracts pursuant to Section 5.4; and
- **.3** Finish the Work by whatever reasonable method the Owner may deem expedient. Upon written 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 Section 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 Engineer'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 Initial Decision Maker, upon application, and this obligation for payment shall survive termination of the Contract.

§ 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 under Section 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 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 Owner shall pay the Contractor for Work

properly executed; costs incurred by reason of the termination, including costs attributable to termination of Subcontracts; and the termination fee, if any, set forth in the Agreement.

ARTICLE 15 CLAIMS AND DISPUTES

§ 15.1 Claims

§ 15.1.1 Definition

A Claim is a demand or assertion by one of the parties seeking, as a matter of right, payment of money, a change in the Contract 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. The responsibility to substantiate Claims shall rest with the party making the Claim. This Section 15.1.1 does not require the Owner to file a Claim in order to impose liquidated damages in accordance with the Contract Documents.

§ 15.1.2 Time Limits on Claims

The Owner and Contractor shall commence all Claims and causes of action against the other and arising out of or related to the Contract, whether in contract, tort, breach of warranty or otherwise, in accordance with the requirements of the binding dispute resolution method selected in the Agreement and within the period specified by applicable law, but in any case not more than 10 years after the date of Substantial Completion of the Work. The Owner and Contractor waive all Claims and causes of action not commenced in accordance with this Section 15.1.2.

§ 15.1.3 Notice of Claims

§ 15.1.3.1 Claims by either the Owner or Contractor, where the condition giving rise to the Claim is first discovered prior to expiration of the period for correction of the Work set forth in Section 12.2.2, shall be initiated by notice to the other party and to the Initial Decision Maker with a copy sent to the Engineer, if the Engineer is not serving as the Initial Decision Maker. Claims by either party under this Section 15.1.3.1 shall 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.

§ 15.1.3.2 Claims by either the Owner or Contractor, where the condition giving rise to the Claim is first discovered after expiration of the period for correction of the Work set forth in Section 12.2.2, shall be initiated by notice to the other party. In such event, no decision by the Initial Decision Maker is required.

§ 15.1.4 Continuing Contract Performance

§ 15.1.4.1 Pending final resolution of a Claim, except as otherwise agreed in writing or as provided in Section 9.7 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.

§ 15.1.4.2 The Contract Sum and Contract Time shall be adjusted in accordance with the Initial Decision Maker's decision, subject to the right of either party to proceed in accordance with this Article 15. The Engineer will issue Certificates for Payment in accordance with the decision of the Initial Decision Maker.

§ 15.1.5 Claims for Additional Cost

If the Contractor wishes to make a Claim for an increase in the Contract Sum, notice as provided in Section 15.1.3 shall be given before proceeding to execute the portion of the Work that is the subject of the Claim. Prior notice is not required for Claims relating to an emergency endangering life or property arising under Section 10.4.

§ 15.1.6 Claims for Additional Time

§ 15.1.6.1 If the Contractor wishes to make a Claim for an increase in the Contract Time, notice as provided in Section 15.1.3 shall be given. The Contractor's Claim shall include an estimate of cost and of probable effect of delay on progress of the Work. In the case of a continuing delay, only one Claim is necessary.

§ 15.1.6.2 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.

§ 15.1.7 Waiver of Claims for Consequential Damages

The Contractor and Owner waive Claims against each other for consequential damages arising out of or relating to this Contract. This mutual waiver includes

.1 damages incurred by the Owner for rental expenses, for losses of use, income, profit, financing, business and reputation, and for loss of management or employee productivity or of the services of such persons; and

.2 damages incurred by the Contractor for principal office expenses including the compensation of personnel stationed there, for losses of financing, business and reputation, and for loss of profit, except anticipated profit arising directly from the Work.

This mutual waiver is applicable, without limitation, to all consequential damages due to either party's termination in accordance with Article 14. Nothing contained in this Section 15.1.7 shall be deemed to preclude assessment of liquidated damages, when applicable, in accordance with the requirements of the Contract Documents.

§ 15.2 Initial Decision

§ 15.2.1 Claims, excluding those where the condition giving rise to the Claim is first discovered after expiration of the period for correction of the Work set forth in Section 12.2.2 or arising under Sections 10.3, 10.4, and 11.5, shall be referred to the Initial Decision Maker for initial decision. The Engineer will serve as the Initial Decision Maker, unless otherwise indicated in the Agreement. Except for those Claims excluded by this Section 15.2.1, an initial decision shall be required as a condition precedent to mediation of any Claim. If an initial decision has not been rendered within 30 days after the Claim has been referred to the Initial Decision Maker, the party asserting the Claim may demand mediation and binding dispute resolution without a decision having been rendered. Unless the Initial Decision Maker and all affected parties agree, the Initial Decision Maker will not decide disputes between the Contractor and persons or entities other than the Owner.

§ 15.2.2 The Initial Decision Maker will review Claims and within ten days of the receipt of a Claim take one or more of the following actions: (1) request additional supporting data from the claimant or a response with supporting data from the other party, (2) reject the Claim in whole or in part, (3) approve the Claim, (4) suggest a compromise, or (5) advise the parties that the Initial Decision Maker is unable to resolve the Claim if the Initial Decision Maker lacks sufficient information to evaluate the merits of the Claim or if the Initial Decision Maker concludes that, in the Initial Decision Maker's sole discretion, it would be inappropriate for the Initial Decision Maker to resolve the Claim.

§ 15.2.3 In evaluating Claims, the Initial Decision Maker may, but shall not be obligated to, consult with or seek information from either party or from persons with special knowledge or expertise who may assist the Initial Decision Maker in rendering a decision. The Initial Decision Maker may request the Owner to authorize retention of such persons at the Owner's expense.

§ 15.2.4 If the Initial Decision Maker requests a party to provide a response to a Claim or to furnish additional supporting data, such party shall respond, within ten days after receipt of the request, and shall either (1) provide a response on the requested supporting data, (2) advise the Initial Decision Maker when the response or supporting data will be furnished, or (3) advise the Initial Decision Maker that no supporting data will be furnished. Upon receipt of the response or supporting data, if any, the Initial Decision Maker will either reject or approve the Claim in whole or in part.

§ 15.2.5 The Initial Decision Maker will render an initial decision approving or rejecting the Claim, or indicating that the Initial Decision Maker is unable to resolve the Claim. This initial decision shall (1) be in writing; (2) state the reasons therefor; and (3) notify the parties and the Engineer, if the Engineer is not serving as the Initial Decision Maker, of any change in the Contract Sum or Contract Time or both. The initial decision shall be final and binding on the parties but subject to mediation and, if the parties fail to resolve their dispute through mediation, to binding dispute resolution.

§ 15.2.6 Either party may file for mediation of an initial decision at any time, subject to the terms of Section 15.2.6.1.

§ 15.2.6.1 Either party may, within 30 days from the date of receipt of an initial decision, demand in writing that the other party file for mediation. If such a demand is made and the party receiving the demand fails to file for mediation within 30 days after receipt thereof, then both parties waive their rights to mediate or pursue binding dispute resolution proceedings with respect to the initial decision.

§ 15.2.7 In the event of a Claim against the Contractor, 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 Owner may, but is not obligated to, notify the surety and request the surety's assistance in resolving the controversy.

§ 15.2.8 If a Claim relates to or is the subject of a mechanic's lien, the party asserting such Claim may proceed in accordance with applicable law to comply with the lien notice or filing deadlines.

§ 15.3 Mediation

§ 15.3.1 Claims, disputes, or other matters in controversy arising out of or related to the Contract, except those waived as provided for in Sections 9.10.4, 9.10.5, and 15.1.7, shall be subject to mediation as a condition precedent to binding dispute resolution.

§ 15.3.2 The parties shall endeavor to resolve their Claims by mediation which, unless the parties mutually agree otherwise, shall be administered by the American Arbitration Association in accordance with its Construction Industry Mediation Procedures in effect on the date of the Agreement. A request for mediation shall be made in writing, delivered to the other party to the Contract, and filed with the person or entity administering the mediation. The request may be made concurrently with the filing of binding dispute resolution proceedings but, in such event, mediation shall proceed in advance of binding dispute resolution proceedings, which shall be stayed pending mediation for a period of 60 days from the date of filing, unless stayed for a longer period by agreement of the parties or court order. If an arbitration is stayed pursuant to this Section 15.3.2, the parties may nonetheless proceed to the selection of the arbitrator(s) and agree upon a schedule for later proceedings.

§ 15.3.3 Either party may, within 30 days from the date that mediation has been concluded without resolution of the dispute or 60 days after mediation has been demanded without resolution of the dispute, demand in writing that the other party file for binding dispute resolution. If such a demand is made and the party receiving the demand fails to file for binding dispute resolution within 60 days after receipt thereof, then both parties waive their rights to binding dispute resolution proceedings with respect to the initial decision.

§ 15.3.4 The parties 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.

§ 15.4 Arbitration

§ 15.4.1 If the parties have selected arbitration as the method for binding dispute resolution in the Agreement, any Claim subject to, but not resolved by, mediation shall be subject to arbitration which, unless the parties mutually agree otherwise, shall be administered by the American Arbitration Association in accordance with its Construction Industry Arbitration Rules in effect on the date of the Agreement. The Arbitration shall be conducted in the place where the Project is located, unless another location is mutually agreed upon. A demand for arbitration shall be made in writing, delivered to the other party to the Contract, and filed with the person or entity administering the arbitration. The party filing a notice of demand for arbitration must assert in the demand all Claims then known to that party on which arbitration is permitted to be demanded.

§ 15.4.1.1 A demand for arbitration shall be made no earlier than concurrently with the filing of a request for mediation, but in no event shall it be made after the date when the institution of legal or equitable proceedings based on the Claim would be barred by the applicable statute of limitations. For statute of limitations purposes, receipt of a written demand for arbitration by the person or entity administering the arbitration shall constitute the institution of legal or equitable proceedings based on the Claim.

§ 15.4.2 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.

§ 15.4.3 The foregoing agreement to arbitrate and other agreements to arbitrate with an additional person or entity duly consented to by parties to the Agreement, shall be specifically enforceable under applicable law in any court having jurisdiction thereof.

§ 15.4.4 Consolidation or Joinder

§ 15.4.4.1 Subject to the rules of the American Arbitration Association or other applicable arbitration rules, either party may consolidate an arbitration conducted under this Agreement with any other arbitration to which it is a party

provided that (1) the arbitration agreement governing the other arbitration permits consolidation, (2) the arbitrations to be consolidated substantially involve common questions of law or fact, and (3) the arbitrations employ materially similar procedural rules and methods for selecting arbitrator(s).

§ 15.4.4.2 Subject to the rules of the American Arbitration Association or other applicable arbitration rules, either party may include by joinder persons or entities substantially involved in a common question of law or fact whose presence is required if complete relief is to be accorded in arbitration, provided that the party sought to be joined consents in writing to such joinder. Consent to arbitration involving an additional person or entity shall not constitute consent to arbitration of any claim, dispute or other matter in question not described in the written consent.

§ 15.4.4.3 The Owner and Contractor grant to any person or entity made a party to an arbitration conducted under this Section 15.4, whether by joinder or consolidation, the same rights of joinder and consolidation as those of the Owner and Contractor under this Agreement.

SUMMARY OF WORK

PART 1 - GENERAL

1.1 WORK COVERED BY CONTRACT DOCUMENTS

A. The Work of the Contract consists of Construction of seismic upgrades at Westmoreland Campus of Lane ESD as indicated on Contract Documents prepared by WRK Engineers & BBL ARCHITECTS. The Drawings and Specifications are dated 25 March 2021.

B. Contract Documents: Requirements of the work are contained in the contract documents, and include cross-references to published information, which is not necessarily bound within the documents.

1.2 CONTRACTS

A. Construct the Work under a Stipulated Sum Contract, furnished by the Owner.

1.3 WORK SEQUENCE

A. Coordinate the construction schedule and operations with the Owner's Designated Representative.

B. Staging of materials and locating of job trailer can start on June 14th, 2021.

C. Work on the classrooms and roof can begin on June 21, 2021.

D. All Work shall be substantially complete on or before August 27, 2021.

1.4 CONTRACTOR USE OF PREMISES

A. General: Owner will occupy portions of the building during the construction period. Do not interfere with the Owner's operations. Coordinate use of premises under the direction of the Owner.

B. Use of the Site:
1. Assume full responsibility for the protection and safekeeping of Products under this Contract, stored on the Site.
2. Confine operations at the site to the areas permitted. Portions of the site beyond areas on which work is indicated are not to be disturbed.
3. Move any stored Products, under Contractor's control, which interfere with operations of Owner or separate contractors.
4. Keep existing driveways and entrances serving the premises clear and available at all times. Do not use for parking for storage of materials.
5. Maintain continuity of utility services to existing building.
6. Lock automotive type vehicles and other mechanized or motorized construction equipment, when parked and unattended. Do not leave vehicles or equipment unattended with the motor running or ignition key in place.
7. Do not encumber the site with materials or equipment. Confine stockpiling of materials and location of storage sheds to the areas indicated.
8. Additional storage or Work areas needed for operations shall be made available at . Verify exact area with Owner.

C. Contractor's Use of the Existing Building:
1. Maintain the existing building in a safe and weathertight condition throughout the construction period. Repair damage caused by construction operations. Take all precautions necessary to protect the building and its occupants during the construction period.

2. Keep public areas such as hallways, stairs, elevator lobbies and toilet rooms free from accumulation of waste material, rubbish, or construction debris.
3. Smoking or open fires will not be permitted within the building enclosure or on the premises.

D. Contractor's Site Conduct:
1. Identifying name tags will be worn at all times.
   a. No loitering in the school buildings.
   b. The site is a tobacco-free site. This means no smoking or chewing on the property.
   c. Beyond courtesy, there should be no interaction between staff and faculty.
   d. Keep the project free of pop cans, lunch wrappers, etc.
   e. The supervisor will review the scheduling of any work that is excessively noisy.
   f. Be considerate of the client, the students, and faculty at the site.
   g. Always consider prior to an act, the safety of students, faculty, and other co-workers.
   h. Profanity is not acceptable.
   i. The wearing of clothing with logos displaying alcohol, tobacco, illegal substances, or suggestive themes are not acceptable attire.
   j. Photographing students or faculty members is not allowed.
   k. Finally, take pride in all work.

1.5 OWNER OCCUPANCY

A. Partial Owner Occupancy:
1. The Owner reserves the right to place and install equipment in completed areas of the building and to occupy completed areas prior to substantial completion, provided that occupancy does not interfere with completion of the Work.
2. Placing of equipment and partial occupancy shall not constitute acceptance of the Work or any part of the Work.

B. Scheduling Requirements:
1. Contractor shall organize and coordinate work in a manner that does not interfere with the normal operations of areas of the facility being occupied and used by the Owner.
2. Contractor shall maintain safe and convenient public access to the toilet rooms at all times that the facility is normally open to the public.
3. Contractor shall continuously maintain public entry to the portions of the building being used by the Owner. The Contractor shall also continuously maintain safe, direct and legal exiting routes from all areas of the building to the outside.
4. Contractor may usually perform work in the building during evening hours. However, the Contractor shall be bound by the local, State and Federal regulations pertaining to such overtime work as required by the Contract Documents. Make necessary arrangements for such evening access with the Owner’s representative. Cooperate with the Owner so as not to interfere with the Owner's use of building areas being occupied by the public.

PART 2 – PRODUCTS (Not used)

PART 3 - EXECUTION (Not Used)

END OF SECTION

ALTERNATES

PART 1 - GENERAL

1.1 GENERAL REQUIREMENTS

A. Description: Alternates indicated Bid Proposal, include changes in Work as described by the Alternates listed in this Section. Alternates may be either additive or deductive to the Base Bid. The alternate amount will either be added to or deducted from the Base Bid amount if the Owner decides to accept a corresponding change in either scope of work or in products, materials, equipment, systems, or installation methods described in the Contract Documents.

B. Coordination: Coordinate related Work and modify or adjust surrounding Work that is affected by each accepted alternate and insure that work is complete and fully integrated as required to complete the Project under each alternate.

C. Note that the Information for Bidders requires that bidders bid upon all Alternates that may be indicated on the Bid Proposal. Bid the Alternate as Lump Sums which will be considered independently of each other.

D. The Owner's electing to exercise any Alternate does not relieve the Contractor of timely completion of the project, within the periods indicated.

E. Evaluation of Alternate Prices: Bid evaluation will be based on lowest total of base bid modified by Owner accepted alternates.

F. Notification: Immediately following award of Contract, prepare and distribute to each party involved, notification of the status of each alternate. Indicate whether alternates have been accepted, rejected, or deferred for consideration at a later date.

G. Schedule:
1. A "Schedule of Alternates" is included at the end of this section.
2. Specification Sections that may be referenced in each Alternate contain pertinent requirements for materials and installation to achieve the Work described by each Alternate.
3. Include as part of each Alternate, miscellaneous devices, appurtenances and similar items incidental to or required for a complete installation whether or not mentioned as part of the Alternate.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 SCHEDULE OF ALTERNATES

A. Additive Bid Alternate No. 1 - Removal of existing roofing system and sheet metal flashing at Roof F covered walkway roof and installation of new PVC roofing system over roof underlayment to existing plywood roof deck and installation of new sheet metal flashing. See Sheet D1.1 & A1.1 for detailed location.

B. Additive Bid Alternate No. 2 - Removal of existing roofing system and sheet metal flashing at Roof Gym, G & H covered walkway roof and installation of new PVC roofing system over roof underlayment to existing plywood roof deck and installation of new sheet metal flashing. See Sheet D1.1 & A1.1 for detailed location.

END OF SECTION

CONTRACTOR'S REQUEST FOR INFORMATION

PART 1 - GENERAL

1.1 DESCRIPTION

A. This Section covers the general requirements for Contractor's Request for Information (RFI) and pertains to all portions of the Contract Documents.

1.2 DEFINITION

A. Request for Information: A request from the Contractor or one of its subcontractors, to the Engineer, seeking an interpretation or a clarification of some requirement of the contract documents. The Contractor shall clearly and concisely set forth the issue for which it seeks clarification or interpretation and why a response is needed from the Engineer. The Contractor shall, in the written request, set forth its interpretation or understanding of the contract's requirements along with reasons why it has reached such an understanding. Responses from the Engineer will not change any requirements of the contract documents.

B. Drawing Clarification: An answer from the Engineer, in response to an inquiry from the Contractor, intended to make some requirements of the Drawings clearly understood. Drawing Clarifications may be sketches, drawings, or in narrative form and will not change any requirements of the Drawings. Responses to Contractor inquiries shall be as outlined in "Request for Information".

1.3 CONTRACTOR'S REQUESTS FOR INFORMATION

A. When field conditions or contents of the contract documents require clarification or verification by the Engineer, the following procedure is required.
   1. Present item or items requiring clarification/verification at Project Meeting for discussion. (Critical or emergency items contact Engineer at once.)
   2. If it is determined that item or items do not require RFI submittals, the Engineer shall include the determination of the clarification/verification within the Project Meeting Report.
   3. If it is determined that item or items do require written RFI submittal, prepare each RFI on a copy of form bound at end of this Section. Design Clarification/Variation Request (DCVR) or other forms are unacceptable.
   4. Number RFI's sequentially from the number 1. The Engineer will make the RFI form available upon request.
   5. Record each RFI in a log, identifying each RFI-#, subject, date submitted, date of response, and disposition.

B. The Contractor shall endeavor to keep the number of RFI's to a minimum. In the event that the process becomes unwieldy, in the opinion of the Engineer, because of the number and frequency of RFI's submitted, the Engineer may require the Contractor to abandon the process and submit all requests as either submittals, substitutions or requests for change.

C. RFI's shall be submitted on a copy of the form provided at the end of this section. Forms shall be completely filled in, and if prepared by hand, shall be fully legible after copying by xerographic process. Each page of attachments to RFI's shall bear the RFI number in the upper left corner.

D. The Contractor shall endeavor to answer all RFI's from its subcontractors. Only RFI's the Contractor cannot answer shall be submitted through, reviewed by, numbered sequentially by and signed by the Contractor prior to submittal to the Engineer.

E. The Contractor shall carefully study the Contract Documents to assure that the requested information is not available therein. RFI's that request information that is available in the Contract Documents, will not be answered by the Engineer.

F. In all cases where RFI's are issued to request clarification or coordination or coordination issues, for example, pipe and duct routing, clearances, specific locations of work shown diagrammatically, and similar items, the Contractor shall fully lay out a suggested solution using drawings or sketches drawn to scale and submit same with the RFI. RFI's that fail to include a suggested solution will not be answered.

G. RFI's shall not be used for the following purposes:
1. To request approval of submittals.
2. To request approval of substitutes.
3. To request changes which entail additional cost or credit.
4. To request different methods of performing work than those drawn and specified.

H. In the event the Contractor believes that the clarification by the Engineer results in additional cost, the Contractor shall not proceed with the work indicated by the RFI until a Construction Change Directive or Change Order is prepared and approved. **ANSWERED RFI'S SHALL NOT BE CONSTRUED AS APPROVAL TO PERFORM EXTRA WORK.**

I. Unanswered RFI's will be returned with a stamp or notation: Not Reviewed.

J. The Contractor shall prepare and maintain a log of RFI's, and at any time requested by the Engineer, the Contractor shall furnish copies of the log showing all outstanding RFI's. The Contractor shall note all unanswered RFI's in the log.

K. The Contractor shall allow for 14-days review and response time for RFI's.

1.4 REQUEST FOR INFORMATION LOG

A. Maintain and update, as required, a log of all Requests for information. Include the number and date of the request, the date information was returned by the Engineer, and actions taken or required. Submit the Request for Information Log to the Engineer and Owner for review at each Project Meeting.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION

TITLE

REQUEST FOR INFORMATION

RFI No.: Architect's Job No.: Date:

Project Name:

Contractor: Architect:

Initiated By: Spec Section: Dwg./Detail:
Title:

Signature:

1. QUESTION

Potential Cost Impact: Potential Time Impact:
Response Needed within days

2. RESPONSE

Signature: Date:
Title:

PROJECT COORDINATION

PART 1 – GENERAL

1.1 WORK INCLUDED

A. Coordinate various elements of the work and entities engaged to perform work.

B. Coordinate the work with existing facilities/conditions, and with work by separate contractors (if any) and by the Owner.

C. fixture, outlet, grille, louver, or ventilator locations prior to rough-in work with no additional cost.

1.2 INSTALLER INSPECTIONS

A. Require installer of each major unit of work to inspect substrate and conditions for installation and to report unsatisfactory conditions in writing.

B. Correct unsatisfactory conditions before proceeding with installation.

C. Inspect each product immediately before installation.

D. Do not install damaged or defective products, materials or equipment.

E. Start of installation shall be understood as acceptance of substrate conditions by the installer.

1.3 CLEARANCES

A. Verify physical dimensions of equipment and its available space. Check access routes through concealed or existing spaces for installation of systems or equipment.

B. Review the Construction Documents for possible conflicts prior to rough-in. Contractor is responsible for verification that equipment will fit in the space provided. Resolve conflicts with the Engineer prior to rough-in work.

1.4 CUTTING AND PATCHING FOR MODIFICATION OF EXISTING AND NEW WORK

A. Execute cutting, fitting, or patching of work required to remove and replace defective Work or Work not conforming to Contract Documents.

B. Inspect existing conditions of work, including elements subject to movement or damage during cutting and patching.

C. Provide shoring, bracing, and support as required to maintain structural integrity of the Project.

D. Execute cutting, product removal, and patching by methods which will prevent damage to other work, will provide proper surfaces to receive installation of repairs, and comply with specified tolerances and finishes.

E. Fill openings cut oversized to install equipment systems or sleeves until finished surface is tight against the equipment, system, or sleeve installed in the opening.

F. Repair surfaces adjacent to cut areas to match the adjacent finish.

PROJECT COORDINATION

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 PREPARATION

A. Pre-Installation Conference:
1. Prior to starting installation of each major component of the work, hold a pre-installation conference attended by each entity involved or affected by planned installation.
2. Include technical representatives of product manufacturers and others recognized as expert or otherwise capable of influencing success of the installation.
3. Review significant aspects of requirements for the work. Record discussion and distribute as plan of action.
4. Pre-installation conferences are specifically required for (but not limited to) the following installations:
   a. Section 02 41 13, Selective Structure Demolition: Pre-Roofing Conference.
   b. Section 07 54 19, PVC Roofing: Pre-Roofing Conference.
   c. Section 07 92 00, Joint Sealants: Pre-Installation Conferences.

3.2 INSTALLATION

A. Comply with manufacturer's instructions and recommendations to the extent printed information is more detailed or stringent than requirements contained directly in the contract documents.

B. Timing: Install work during time and under conditions which will ensure best possible results, coordinated with required inspection and testing.

C. Anchor work securely in place, properly located by measured line and level, organized for best possible uniformity, visual effect, operational efficiency, durability, and similar benefit to Owner's use. Sufficiently isolate non-compatible materials from contact to prevent deterioration.

D. Mount individual units of work at industry-recognized mounting heights, if not otherwise indicated. Refer uncertainties to Engineer before proceeding.

3.3 CLEANING AND PROTECTION

A. Clean each element of work at time of installation.

B. Provide sufficient maintenance and protection during construction to ensure freedom from damage and deterioration at time of Substantial Completion.

END OF SECTION

PROJECT MEETINGS

PART 1 - GENERAL

1.1 PRE-CONSTRUCTION CONFERENCE

A. Purpose:

1. To discuss items of interest in such detail that the Contractor shall have a clear understanding of the Owner's requirements, Contract Documents, and conditions affecting the Work. Items to be discussed include, but are not limited to:
   a. Roles of Engineer, Owner, Contractor, and Inspectors.
   b. Procedures for handling change orders, requests for payment, and other administrative details.
   c. Procedures for handling shop drawing, substitutions, inspections, etc.
   d. Scheduling of the work.
   e. Contractor's comments on any inaccuracies or ambiguities found in the Contract Documents.
   f. To discuss any and all questions by the Contractor to make sure that the Contractor is aware of all conditions affecting the work prior to the awarding of the Contract.
2. For the General Contractor to discuss with the Owner, Engineer, subcontractors, and other interested parties the design, methods, organization, schedule of the work, contract requirements, mutual understandings relative to the Contract Documents, and procedures of the Administration of the Contract. Items to be discussed include, but are not limited to:
   a. Construction Schedule.
   b. Project Coordination: Designation of responsible personnel.
   c. Procedures and processing of submittals, pay requests, change orders.
   d. Record Document maintenance.
   e. Hazardous materials.
   f. Review of existing building conditions.

B. Date of Conference: Before actual construction begins, when scheduled by the Engineer.

C. Attendance: The Owner, Engineer, Contractor, and his superintendent shall attend as well as subcontractors and suppliers designated by the Owner, Engineer, or Contractor.

D. Place: To be designated by the Engineer.

1.2 PROGRESS MEETINGS

A. Purpose: Project meetings will be held each week, from beginning of construction to final acceptance, to discuss items of mutual interest regarding coordination and progress of the work.

B. Day of Week: To be mutually determined by the Engineer, Owner, and the Contractor.

C. Attendance: The Owner, Engineer, Contractor, and his superintendent shall attend, or their representatives. Other subcontractors, suppliers, or manufacturer's representatives shall attend when requested by the Contractor, Owner, or Engineer

D. Place: Project site or as otherwise designated by the Engineer.

E. Chairman: The Engineer shall chair the meeting.

F. Meeting Date Changes: Only the Engineer can change the meeting date after 24 hour notice. The Engineer will set the new date.

G. Meeting Report: The Engineer will later issue a meeting report to the Contractor and Owner.

PROJECT MEETINGS

H. The Contractor shall be responsible for notifying subcontractors and other representatives of scheduled construction meetings where their attendance is requested.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION

SUBMITTAL PROCEDURES

PART 1 - GENERAL

1.1 WORK INCLUDED

A. Submit overall construction schedule, 3-week work schedule, shop drawings, product data, samples, schedule of values, record documents, and products list as specified.
   1. Submit to Engineer only through Contractor.

1.2 QUALITY ASSURANCE

A. Within 15 days of the Award of Contract, submit schedules of values, list of principal subcontractors and suppliers, progress schedule, copies of building permits, and similar start-up authorization.

PART 2 – PRODUCTS

2.1 CONSTRUCTION SCHEDULE

A. Content: Within 15 days of the award of contract, submit a comprehensive progress schedule indicating a time bar for each significant category of work to be performed. Show product and installation dates for major products. Show dates for each construction activity, Substantial Completion and punch list preparation, Final Completion, and Occupancy.

B. Designate in the Construction Schedule, the dates for submission and review of Shop Drawings, product data and samples that are needed for the product. Show critical submittal dates or prepare a separate coordinated listing of critical submittal dates.

C. Updating: Indicate progress of each activity and show revised completion dates. Provide listing of current and anticipated accelerations and delays. Describe proposed corrective action when required. Revise at intervals matching payment requests and redistribute with each payment request.

2.2 SCHEDULE OF VALUES

A. Submit a Schedule of Values covering various parts of work including quantities aggregating the total sum of the Contract. Show dollar value and percent of total for each unit of work scheduled. This Schedule will be the basis for the Contractor's Application for Payment.

B. Submit on the latest edition of AIA Document G703, Continuation Sheet, within 15 days of Award of Contract and with each payment request. Revise each time schedule is affected by change order or other revision.

C. Upon request by the Engineer, support values given with data that will substantiate their correctness.

2.3 PAYMENT REQUESTS

A. Submit a request each calendar month. Use the latest edition of AIA Document G702, Application and Certificate for Payment, fully completed, notarized, and executed.

2.4 SHOP DRAWINGS, PRODUCT DATA, AND SAMPLES

A. General:
   1. Review, stamp with Contractor's stamp, and sign each submittal to certify Contractor has reviewed submittal for compliance with Contract Documents prior to submitting to the Engineer. Submittals issued without the Contractor's review may be returned to the Contractor without being reviewed by the Engineer.

2. Provide 3" x 4" clear space on each submittal for the Engineer's stamp.
3. Provide additional copies as required by governing authorities.
4. The Engineer will not mark-up more copies than the number established at the Pre-Construction meeting.
5. Submit electronic submittals (pdf's) when possible and practical.

B. Shop Drawings:
1. Submit shop drawings showing connections, details, dimensions, finishes, fasteners, etc.
2. Submit 4 blackline prints. Maintain 1 print as a mark-up copy for the "Record Drawings".
   a. Electronic submittals (pdf's) may be substituted for blackline prints when possible and practical.
3. In the event that the submittal is a partial submittal, identify related shop drawings to be submitted at a later date.

C. Product Data:
1. Submit manufacturer's catalog sheets, brochures, diagrams, schedules, performance charts, illustrations, and other description data on manufactured products and systems.
2. Mark each copy to indicate the actual product to be provided. Show selections from among options in the manufacturer's printed product data.
3. Submit 4 copies to Engineer. Submittal is for information and record purposes only. Maintain 1 copy at the project site for reference purposes.
4. Submit electronic submittals (pdf's) when possible and practical.

D. Office Samples:
1. Submit 3 sets of samples; 2 sets will be returned. Maintain one returned set at the project site for purposes of quality control comparisons.
2. Sample submittals are for Engineer's observation of color, texture, pattern, and "kind".

E. Miscellaneous Submittals: Provide copies of miscellaneous submittals as follows:
1. Warranties: Submit 3 executed copies, plus additional copies as required for maintenance manual.
2. Field Records: Submit 3 copies, including 1 copy that will be returned for inclusion in the submittal of "Record Documents".
3. Maintenance Manuals: Submit 3 bound copies.
4. "Record Drawings": Submit original maintained marked-up prints.
5. Construction Schedule and Schedule of Values: Submit 4 copies to the Architect.
6. In addition, submit electronic submittals (pdf's) of above items.

2.5 3-WEEK WORK SCHEDULE

A. Each week, provide to the Engineer a 3-Week Work Schedule on a form approved by the Engineer. Each 3-Week Work Schedule is to show the description of all phases of the work to be accomplished during the week submitted and the 2 following weeks. The 3-Week Work Schedule is to be updated every week and presented to the Engineer.

PART 3 - EXECUTION

3.1 CONTRACTOR'S SUBMITTAL

A. Review submittals prior to submission and provide stamp of approval signed or initialed by the Contractor indicating the Contractor has inspected the submittals and certifying that they are complete, correct, in compliance with the Contract Documents and suitable for the Project.

B. Verify field measurements and other field construction criteria.

C. Submit submittals required by each Specification Section to the Engineer. Notify the Engineer in writing at time of submission of deviation in submittals from requirements of the Contract Documents.

3.2 ENGINEER'S REVIEW

A. Engineer will review submittals for design concept and conformance with the Contract Documents and return submittals to the Contractor for distribution with corrections noted thereon.

B. Stamp: The Engineer will stamp each submittal to be returned with a uniform, self explanatory action stamp, appropriately marked and executed to indicate the status of the submittal. The stamp indicates and requires the follow action:

1. No Exception Taken: No further action is required.
2. Make Corrections Noted: Make the corrections upon fabrication of the material only.
3. Rejected: The material submitted is not acceptable and another material submission is required.
4. Revise and Resubmit: The material submittal is not acceptable and it is to be elaborated upon or corrected and resubmitted prior to material fabrication.
5. Submit Specified Item: Submittal is rejected and the material specified is to be submitted.
6. Checking is only for general conformance with the design concept of the Project and general compliance with the information given in the Contract Documents. Any action shown is subject to the requirements of the plans and specifications. Contractor is responsible for dimensions which shall be confirmed and correlated at the job site, fabrication processes and techniques of construction, coordination of his work with that of all other trades and the satisfactory performance of his work.

C. Contractor's responsibility for deviations in submittals from requirements of the Contract Documents is not relieved by the Engineer's review of submittals unless the Contractor has made written request for the deviations and the Engineer gives written acceptance of specific deviations requested.

3.3 CORRECTIONS

A. Immediately incorporate all required corrections in the submittals and resubmit for further review, if required.

3.4 TIME SCHEDULE FOR SUBMITTALS

A. Construction Schedule: Submit to the Engineer no later than 5 calendar days after receipt of the Notice to Proceed.

B. Shop Drawings: Submit to the Engineer for review. The Engineer will review within 15 calendar days. Schedule submissions to allow ample time for ordering and delivery of materials after review.

C. Product Data: Submit to the Engineer for review. The Engineer will review within 15 calendar days. Schedule submissions to allow ample time for ordering and delivery of materials after review.

D. Office Samples: Submit to the Engineer for review. The Engineer will review within 15 calendar days. Schedule submissions to allow ample time for ordering and delivery of materials after review.

E. Schedule of Values: Submit to the Engineer no later than 15 calendar days after receipt of the Notice to Proceed.

SUBMITTAL PROCEDURES

3.5 SUBMITTAL SCHEDULE

A. Submittals required by Specifications and the Drawings shall be made regardless of whether or not they are scheduled herein. Each specification section should be reviewed for exact submittal requirements. All submittals must be reviewed by the Architect prior to being used and must be submitted in sufficient time to preclude a delay in meeting the approved Construction Schedule.

SECTION NUMBER	SECTION NAME	REQUIRED SUBMITTAL
01 33 00	Submittal Procedures	Construction Schedule, Schedule of Values, 3 Week Work Schedule
01 45 23	Testing Laboratory Services	Test Reports
01 70 00	Execution and Closeout Requirements	Substantial Completion Notice, Final Completion Notice, Project Record Documents, Closeout Manuals, Release of Liens Documents, Certificate of Occupancy
05 50 00	Metal Fabrications	Product Data, Shop Drawings
06 11 00	Wood Framing	Product Data
07 31 13	Asphalt Shingles	Product Data, Office Samples, Mock-up
07 53 23	PVC Roofing	Product Data, Shop Drawings, Qualification Data, Manufacturer Certificate, Product Test Reports, Research/Evaluation Reports, Inspection reports, Warranty
07 62 00	Flashing and Sheet Metal	Shop Drawings, Samples
07 70 00	Roof Accessories	Product Data, Warranty
07 84 00	Firestopping	Product Data
07 92 00	Joint Sealants	Guarantee
09 29 00	Gypsum Board	Product Data, Site Finish Sample
09 65 13	Resilient Flooring	Office Samples, Design Data
09 91 00	Painting	Product Data, Office Samples

END OF SECTION

SECURITY PROCEDURES

PART 1 - GENERAL

1.1 CONSTRUCTION/MAINTENANCE BUILDING SECURITY RULES

A. The Contractor shall enforce strict discipline and good order among the Contractor's employees, Subcontractors, and other persons carrying out the contract on District property. The District may require that the Contractor immediately remove from the project site and District property any employee or other person carrying out the contract that the District considers objectionable.

B. District Personnel (i.e., Building Administrator, Custodian, or a building monitor etc.) must be present when a contractor is performing work within an existing school facility.

C. Only District Personnel will deactivate the security system upon arriving and reactivate the system when they leave the facility.

1. If the responsible District Personnel for a particular day changes during the day, the District Personnel shall coordinate this change in responsibility and advise the Contractor's superintendent.

D. Contractor personnel will not be furnished District security badges and/or access codes to the Building security system.

E. The Contractor shall have a responsible party such as a superintendent, foreman, or supervisor on site during any work being performed by either their own forces or that of their subcontractors.

F. The superintendent shall check in with the responsible District Personnel upon arrival and advise when all work is complete, contract personnel have left, and the area is secure.

G. The Contractor's superintendent shall be responsible for security in areas where work is being performed as well as ingress and egress to that area.

H. At the Lane School District Representative's discretion, the superintendent may be issued a building key to allow access to area's where work is being performed.

I. The superintendent shall maintain a daily log defining what areas within the building were accessed by Contractor personnel, which personnel from their firm were in the building, and which subcontracting firms were in the building.

J. Each of the Contractor's employees, Subcontractors' employees, and principals/owners involved at the site may, at the option of the District, be subject to a security check, at any time.

K. Contractor shall perform or have performed criminal background checks for every employee on all active campus (i.e., children are present) projects prior to that employee's admittance to the project site. Once an employee passes the criminal background check they will receive an ID badge and a hard hat sticker which they must wear while they are on site at all times. Contractor may be fined up to $500 for every worker working on site without the proper ID badge and hat sticker. The following are the convicted crimes that may not appear on the background check.

CONVICTIONS RENDERING INELIGIBILITY per ORS 342.143

- Aggravated Murder or Murder
- Assault in the First Degree
- Kidnapping in the First Degree
- Rape in the First, Second, or Third Degree
- Sodomy in the First, Second, or Third Degree Second Degree
- Unlawful Sex Penetration in the First or Second Degree
- Arson in the First Degree
- Sexual Abuse in the First, Second, or Third Degree
- Contributing to the Sexual Delinquency of a Minor
- Sexual Misconduct

SECURITY PROCEDURES

- Public Indecency
- Bigamy
- Incest
- Child Neglect in the First Degree
- Endangering the Welfare of a Minor
- Using Child in Display of Sexually Explicit Conduct
- Sale or Exhibition of Visual Reproduction of Sexual Conduct by a Child
- Paying for Viewing of Sexual Conduct Involving a Child
- Encouraging Child Sex Abuse in First, Second or Third Degree
- Possession of Materials Depicting Sexual Explicit Conduct of a Child in the First or Second Degree
- Arson in the First Degree
- Robbery in the First Degree
- Treason
- Abuse of a Corpse in the First Degree
- Prostitution, Promoting Prostitution, or Compelling Prostitution
- Sadomasochistic Abuse or Sexual Conduct in a Live Show
- Furnishing, Sending, or Displaying Obscene Materials to Minors
- Exhibiting an Obscene Performance to a Minor
- Disseminating Obscene Materials
- Publicly Displaying Nudity or Sex for Advertising Purposes
- Distribution of Controlled Substance to Minors
- Manufacture or Delivery of Controlled Substance to Minor or Student within 1000 Feet of a School
- Attempt to Commit Any of the Above-Listed Crimes

L. Smoking and any use of tobacco products is not allowed within 50 feet of the campus property. Contractor may be fined up to $500 for each incident of tobacco use within the area of work by the Contractor or Subcontractors.

M. Firearms are not allowed on campus property. Law enforcement will be contacted if any contractor personnel are in possession of a firearm on site. (This includes firearms locked up in a vehicle.)

N. Abusive, inappropriate, and/or foul language is strictly prohibited on active campus projects. Employees who abuse this rule will be asked to leave the project site.

END OF SECTION

TESTING LABORATORY SERVICES

PART 1 - GENERAL

1.1 WORK INCLUDED

A. The Owner shall employ and pay for services of an independent testing laboratory to perform inspections, sampling, testing, and other services required by the local building code and the Project Manual.

B. Specific quality control requirements are specified in individual Project Manual Sections.

C. Inspection and testing services are intended to determine compliance of the Work with requirements specified.

D. Refer to the General Structural Notes on the Drawings for the special inspection requirements.

1.2 SUBMITTALS

A. Submit a certified written report of each inspection, test, or similar service to the Structural Engineer, Contractor, and the Owner. Include additional copies of each report to governing authorities when so directed.

B. Report Data: Written inspection or test reports shall include:
1. Name of testing agency or test laboratory.
2. Date and location of samples, tests, or inspections.
3. Names of individuals present.
4. Complete inspection or test data.
5. Test results.
6. Interpretations.
7. Recommendations.

1.3 QUALITY ASSURANCE

A. Qualifications for Service Agencies: Engage inspection and test service agencies which are pre-qualified as complying with the "Recommended Requirements for Independent Laboratory Qualification" by the American Council of Independent Laboratories.

PART 2 - PRODUCTS

2.1 SCOPE

A. Nature and Scope of Testing Services: In accordance with the requirements of governing authorities having jurisdiction over the work and as otherwise specified and consistent with reasonable standards of engineering practice.

PART 3 - EXECUTION

3.1 TESTING LABORATORY'S RESPONSIBILITIES

A. Conduct, interpret tests, and report deviations or conditions that may lead to deviations from the Contract Documents to the Engineer immediately by telephone.

B. State in each test report whether or not tests showed conformance with requirements of the Contract Documents and specifically note deviations, if any, from these requirements.

TESTING LABORATORY SERVICES

3.2 CONTRACTOR'S OBLIGATIONS

A. Cooperate with any representative of the Owner or the Testing Laboratory. Furnish tools, materials, equipment, and assistance.

B. Notify the Engineer, Testing Laboratory, and Owner 48-hours prior to each expected placement, installation, or fabrication phase requiring inspection tests as indicated herein.

C. Where tests reveal defects requiring replacement, retest as required under this Contract at no change in Contract amount and reimburse Owner, Engineer, and Consultants costs for preparation and supervision.

D. When the initial tests indicate non-compliance with the Contract Documents, any subsequent retesting occasioned by non-compliance shall be performed by the same agency and the cost also borne by the Contractor.

E. Representatives of the testing agency shall have access to the work at all times. The Contractor shall provide facilities for such access in order that the agency may properly perform its functions.

F. The Contractor shall pay for any testing laboratory stand-by time due to the Contractor's delays.

G. Inspection or testing performed exclusively for the Contractor's convenience shall be the sole responsibility of the Contractor.

3.3 TEST OBSERVATIONS

A. If the Engineer wishes to observe the inspections, tests, or approvals required by this paragraph, he will do so promptly and, where practicable, at the source of supply.

B. Neither the observations of the Engineer in his Administration of the Construction Contract, nor inspections, tests, or approvals by persons other than the Contractor shall relieve the Contractor from his obligations to perform the Work in accordance with the Contract Documents.

3.4 EVALUATION OF TESTS AND INSPECTIONS

A. Results of laboratory or field control tests and inspections shall be the principal basis upon which satisfactory completion of the Work shall be judged.

B. If results of tests and inspections indicate the Work is below requirements of the Contract Documents, that portion of the Work is subject to condemnation.

3.5 ADJUSTMENTS

A. Remove and replace Work so condemned at Contractor's expense including costs of subsequent tests and inspections until the Work meets requirements of the Contract Documents.

3.6 STRUCTURAL OBSERVATION PROGRAM

A. The Structural Engineer of Record (SER) shall perform structural observation based on the requirements of the International Building Code (IBC). Refer to General Structural Notes on Drawings for tabulation of structural observation items and additional requirements. Provide sufficient notice and access to the Structural Engineer of Record (SER) for the SER to perform required observations.

END OF SECTION

TEMPORARY FACILITIES AND CONTROLS

PART 1 - GENERAL

1.1 WORK INCLUDED

A. Provide all temporary job site facilities and services as required for use and listed, but not limited to, the following articles. Superintend and coordinate temporary facilities normally furnished and maintained as part of subcontractor's work.

B. Provide temporary services and facilities ready for use when first needed to avoid delay in the work. Maintain, expand, and modify as needed. Do not remove until no longer needed or replaced by authorized use of permanent facilities.

C. Use Charges: Usage charges for temporary services or facilities are not chargeable to the Owner and are to be provided under the basic cost of the Work.

1.2 PERFORMANCE REQUIREMENTS

A. Temporary facilities shall comply with building codes, ordinances, and regulations of public authorities and local industry standards in the installation and maintenance of temporary services and facilities.

B. Inspect and test each service before placing temporary utilities in use. Arrange for inspections and tests by governing authorities and obtain certifications and permits for use.

PART 2 - PRODUCTS

2.1 MATERIALS AND EQUIPMENT

A. For the purpose of construction, the Owner will furnish reasonable quantities of water and electricity to the Contractor without charge. The Contractor shall be responsible for both temporary utility connections and disconnects, and shall obtain permission of the Owner's Designated Representative prior to accomplishing either.

2.2 SANITARY FACILITIES

A. Workmen will not be permitted to use existing toilet facilities of the existing building. Provide portable facilities as required for workmen. Keep facilities clean and in sanitary condition. Remove from the site upon completion of the Work.

B. Comply with governing regulations including safety and health codes for the type, number, location, operation, and maintenance of fixtures and facilities.

C. Locate so that no one will need to walk more than 2 stories vertically or 200 feet horizontally to reach these facilities.

D. Supply toilet tissue, hand sanitizer, and similar disposable materials as appropriate for each facility. Provide covered waste containers for used material.

2.3 TEMPORARY TELEPHONE

A. Provide a separate business cellular type telephone service throughout the construction period. Post a list of operational and emergency telephone numbers.

2.4 TEMPORARY WATER

A. Existing water services may be used. Make temporary connection, as required. Exercise control over usage to conserve water.

2.5 TEMPORARY ELECTRICAL POWER SERVICE

A. Existing electrical services may be used. Make temporary connection, as required. Exercise control over power usage to conserve energy.

B. Provide temporary lighting throughout construction period as required by governing agencies.

2.6 SEWERS AND DRAINAGE

A. Connect temporary sewers to the municipal sewer system in the manner directed by the sewer department officials.

B. If sewer cannot be used, provide drainage ditches, dry wells, or similar facilities.

C. If neither sewers nor drainage facilities can be used, provide containers for effluent removal and disposal.

D. Before discharge, filter excessive amounts of soil, construction debris, chemicals, and similar contaminants that might clog sewers or pollute waterways.

E. Provide temporary filter beds, settlement tanks, and similar devices to purify effluent to acceptable levels.

F. Maintain temporary sewers and drainage facilities in a clean, sanitary condition ready for maximum use. Following heavy usage, restore normal conditions promptly.

2.7 TEMPORARY CONSTRUCTION AND SUPPORT FACILITIES INSTALLATION

A. Provide a neat and uniform appearance in temporary construction and support facilities acceptable to the Engineer and the Owner.

B. Locate field offices, storage and fabrication sheds, and other support facilities for easy access to the Work.

C. Make the change-over to use of permanent services and facilities at the earliest feasible date to minimize hazards and interferences with performance of the Work.

D. Maintain field offices, storage and fabrication sheds, temporary sanitary facilities, waste collection and disposal systems, recycling bins, and project identification and temporary signs until near Substantial Completion. Immediately prior to Substantial Completion remove these facilities. Personnel remaining at the site after Substantial Completion will be permitted to use permanent facilities, under restricted use conditions.

2.8 TEMPORARY HEAT

A. Provide temporary heat where needed for performance of the Work, for curing or drying of recently installed work, or for protection of work in place from adverse effects of low temperatures or high humidity.

B. Provide UL or FM tested and labeled heating units known to be safe and without adverse effect upon work in place or being installed.

C. Coordinate with ventilation requirements to produce the ambient condition and minimize fuel or energy consumption.

D. Maintain a minimum temperature of 45°F in permanently enclosed portions of the building and areas where finished Work has been installed.

E. Except where use of the permanent heating system is available and authorized, provide properly vented self-contained LP gas or fuel oil heaters with individual space thermostatic control for temporary heat.

F. Do not use open burning or salamander type heating units.

G. Minimum Interior Ventilation: Provide local exhaust ventilation to prevent harmful dispersal of hazardous substances into the atmosphere at all times. Provide ventilation for materials being cured.

2.9 FIELD OFFICES

A. Provide standard prefabricated or mobile units, or the equivalent job-built field offices of sufficient size to accommodate required office personnel at the site. Pay for temporary mobile unit permits as required by the local governing authorities.
   1. Provide insulated, weathertight units with lockable entrances, serviceable finishes, and foundations adequate for normal loading.
   2. Provide resilient floor covering and painted drywall wall and ceiling finishes.
   3. Provide operable windows equipped with adjustable blinds and insect screens.
   4. Provide mobile unit stair or ramp access acceptable to local governing authorities.
   5. Provide mobile unit tie-downs as required by local governing authorities.

B. Provide vented space heater capable of maintaining an indoor temperature of 68°F and an air-conditioning unit capable of maintaining a maximum indoor temperature of 72°F.

C. Provide switch controlled fluorescent light fixtures and 110-120 volt duplex outlets spaced at 12'-0" intervals with a minimum of one per wall in each room.

D. Furnish with a desk, chair, a 4-drawer file cabinet, plan table, plan rack, and a 6-shelf bookcase. Equip with a drinking-water cooler, paper cups, and medicine cabinet unit.

2.10 STORAGE AND FABRICATION SHEDS

A. Install storage and fabrication sheds as required to accommodate the Work. Maintain temperatures and ventilation as required for materials being stored.

B. Sheds may be open shelters or fully enclosed spaces. Where fully enclosed, provide one ABC Type portable fire extinguisher in each shed.

2.11 FIRST AID SUPPLIES

A. Provide required first aid facilities. Comply with governing regulations and recognized recommendations within the construction industry.

2.12 DEWATERING FACILITIES AND DRAINS

A. For temporary drainage and dewatering facilities and operations not directly associated with performance of work included under other sections.

B. Maintain the site, excavations, and construction free of water.

C. Dispose of rainwater in a lawful manner that will not result in flooding of project or adjoining property, nor endangering either permanent work or temporary facilities.

2.13 WASTE RECYCLING

A. Provide a recycling program for the recycling of waste materials that are generated during a construction project. Provide waste recycling bins and containers for metal, glass, cardboard, gypsum, etc. Provide for pick-up on a regular basis so as not to cumbersome the site. Place bins away from any building structures to protect against fires.

2.14 TEMPORARY ENCLOSURE

A. Provide temporary enclosure of materials, equipment, work in progress, and completed portions of the Work to provide protection from exposure, foul weather, other construction operations, and similar activities.

B. Provide enclosures where temporary heat is needed and the permanent building enclosure is not completed, and there is no other provision for containment of heat.

C. Coordinate with ventilating, material drying, or curing requirements to avoid dangerous conditions.

D. Close openings through the floor or roof decks and other horizontal surfaces with substantial load-bearing wood-framed or similar construction.

2.15 COLLECTION AND DISPOSAL OF WASTES

A. Establish a system for daily collection and disposal of waste materials.

B. Enforce requirements strictly.

C. Do not retain collected materials longer than 7 days during normal weather or 3 days when the daily temperature is expected to rise above 80°F.

D. Handle waste materials that are hazardous, dangerous, or unsanitary separately from other waste by containerizing.

E. Dispose of waste material in a lawful manner.

F. Burying or burning of waste materials on the site or washing waste material down sewers will not be permitted.

G. Provide silt bags in catch basins and bio-bags around the basins adjacent to construction work.

H. Off-Site Disposal: Disposal of all waste materials caused by the construction will be off the site and will be the responsibility of the Contractor.

2.16 RODENT AND PEST CONTROL

A. Retain a local exterminator or insect-and-pest control company to perform extermination and control procedures at regular intervals so that the project will be relatively free of pests and their residues at Substantial Completion.

B. Perform control operations in a lawful manner using environmentally safe materials.

2.17 MISCELLANEOUS CONSTRUCTION AIDS, BARRIERS, SERVICES, AND FACILITIES

A. Design, construct, and maintain miscellaneous services and facilities as needed to accommodate performance of the work, including temporary stairs, ramps, ladders, staging, shoring, scaffolding, temporary partitions, waste chutes, and similar items. Construct and maintain to requirements of governing agencies. Furnish for safety of public and construction personnel.

B. Provide barriers to protect materials, equipment, new and existing work, construction personnel, and the public.

C. Provide temporary dust barriers and other appropriate protection, as required, to prevent dust from entering the existing portions of the building.

D. Completely remove temporary materials and equipment upon completion of construction.

E. Repair damage caused by installation of temporary items and restore finishes to specified condition.

2.18 SECURITY AND PROTECTION FACILITIES INSTALLATION

A. Provide a neat and uniform appearance in security and protection facilities acceptable to the Architect and the Owner.

B. Maintain site in a safe, lawful, and publicly acceptable manner.

C. Take necessary measures to prevent erosion.

D. Except for utilization of permanent fire protection facilities, as soon as available, do not change over to use of permanent facilities until Substantial Completion.

2.19 TEMPORARY FIRE PROTECTION

A. Until fire protection needs may be fulfilled by permanent facilities, install and maintain temporary fire protection of the types needed to protect against losses.

B. Comply with recommendations of NFPA Standard 10.

C. Locate fire extinguishers where most effective. Provide not less than one on each floor at or near each stairwell.

D. Provide type "A" fire extinguishers for temporary offices and spaces where there is minimal danger of electrical or flammable liquid fires. Provide type "ABC" dry chemical extinguishers elsewhere.

E. Store combustible materials in containers in fire-safe locations.

F. Review fire prevention and protection needs with local fire department officials and establish procedures to be followed in the event of fire.

G. At temporary water outlets, provide hoses of sufficient length to reach construction areas. Hang hoses with a warning sign indicating that hoses are for fire protection purposes and are not to be removed.

H. At the earliest feasible date, complete installation of the permanent fire protection facility, including connected services, and place into operation and use. Instruct key personnel at the site on how to use facilities that may not be self-explanatory.

2.20 ENCLOSURE FENCE

A. Install an enclosure fence with lockable entrance gates to enclose the entire site or portion sufficient to accommodate the construction operation.

B. Install so as to prevent persons, dogs, and similar animals from entering the site except through the entrance gates.

C. Provide No. 11 gage galvanized open-mesh, chain-link fabric fencing 6 feet high with galvanized barbed wire top strand and galvanized steel pipe posts, 1-1/2" for line posts and 2-1/2" for corner posts.

D. Set posts in precast post blocks.

2.21 SECURITY ENCLOSURE AND LOCKUP

A. Install substantial temporary enclosure of partially completed areas of construction.

B. Provide locking entrances adequate to prevent unauthorized entrance, vandalism, theft, and similar violations of project security.

C. Where materials and equipment must be temporarily stored, and are of substantial value or attractive for possible theft, provide a secure lockup.

D. Enforce strict discipline in connection with the timing of installation, and release of materials to minimize the opportunity for theft and vandalism.

2.22 ENVIRONMENTAL PROTECTION

A. Conduct construction activities, and by methods that comply with environmental regulations, minimize the possibility that air, waterways, and subsoil might be contaminated or polluted, or that other undesirable effects might result from the performance of work at the site.

B. Avoid the use of tools and equipment that produce harmful noise.

C. Restrict the use of noise making tools and equipment to hours of use that will minimize complaints.

2.23 ACCESS, PARKING, AND TRAFFIC

A. Parking area for project visitors and construction personnel shall be at location designated by the Owner's Designated Representative.

B. Provide barricades, warning signs, flagmen, or other traffic regulators that may become necessary for protection of the public, construction personnel, or property.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Use qualified tradesmen for installation.

B. Locate temporary services and facilities where they will serve the project adequately and result in minimum interference with the Work.

C. Temporary Utility Installation:
1. Engage the local utility company to install temporary service or to make connections to existing service.

2. Arrange with the companies and existing users for an acceptable time when service can be interrupted to make connections.
3. Establish a service implementation and termination schedule. As early as possible change to use of permanent service, to enable removal of the temporary utility, and to eliminate any possible interference with completion of the Work.
4. Provide adequate capacity at each stage of construction.
5. Prior to availability at the site, provide trucked-in services for start up of construction operations.
6. Obtain and pay for easements required to bring temporary utilities to the site where the Owner's easement cannot be utilized for that purpose.

3.2 OPERATION, TERMINATION, AND REMOVAL

A. Supervision:
1. Limit availability of temporary services and facilities to essential and intended uses to minimize waste and abuse.
2. Do not permit temporary installations to be abused or endangered.

B. Maintenance:
1. Operate and maintain temporary services and facilities in good operating condition and in a safe and efficient manner until removal is authorized.
2. Do not overload services or facilities.
3. Protect from damage by freezing temperatures and similar elements.
4. Do not allow unsanitary conditions, public nuisances, or hazardous conditions to develop or persist on the site.
5. Maintain operation of temporary enclosures, heating, cooling, humidity control, ventilation, and similar facilities on a 24 hour basis where required to achieve indicated results and avoid the possibility of damage to the Work or to temporary facilities.

3.3 PROTECTION

A. Prevent water filled piping from freezing.

B. Maintain markers for underground lines.

C. Protect from damage during excavation.

3.4 TERMINATION AND REMOVAL

A. Remove each temporary service and facility promptly when need has ended, or when replaced by use of a permanent facility, but no later than Substantial Completion.

B. Complete, or if necessary, restore permanent work delayed because of interference with the temporary service or facility.

C. Repair damaged work, clean exposed surfaces, and replace work that cannot be repaired.

D. At Substantial Completion, clean and renovate permanent services and facilities that have been used to provide temporary services and facilities during the construction period.

END OF SECTION

PROJECT IDENTIFICATION

PART 1 - GENERAL

1.1 WORK INCLUDED

A. Provide one project construction sign as approved by Owner and installed by the Contractor.

B. Ownership: Upon removal of the construction sign, the sign shall become the property of the Owner. Deliver the sign to the Owner's designated storage location.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Signboard: 3/4" plywood, grade B-B high density, exterior, two sides good, conforming to PS-1.
   1. Primed and painted two coats of background color on both sides. Background and letter colors as indicated on the Drawing at the end of this Section.
   2. Lettering: Of type, size, style, and layout as shown on the Drawing at the end of this Section.

B. Support Posts: Treated Douglas Fir posts.

C. Miscellaneous Connectors and Hardware: Provide bolts, washers, and nuts as required to permanently mount the signboard to the support posts.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Install sign before any construction is started. Locate sign as shown on the Drawings and as directed by the Engineer.

3.2 REMOVAL AT END OF PROJECT

A. Remove sign within 10 days of the issuance of a Final Certificate of Payment.
   1. Fill all post holes.
   2. Finish site area as directed by the Engineer.

END OF SECTION

PRODUCT REQUIREMENTS

PART 1 - GENERAL

1.1 MATERIAL AND EQUIPMENT SELECTION

A. Comply with Standards and these Specifications including size, make, type, and quality specified, or as accepted in writing by the Engineer.

B. Manufactured and Fabricated Products:
1. Design, fabricate, and assemble in accordance with the best engineering and shop practices.
2. Manufacture like parts of duplicate units to standard sizes and gauges and to be interchangeable.
3. Two or more items of the same kind shall be considered identical and by the same manufacturer.
4. Provide products suitable for service conditions.
5. Adhere to equipment capacities, sizes, and dimensions shown or specified unless variations are specifically approved in writing.

C. Do not use material or equipment for any purpose other than that for which it is designed or is specified.

D. Fabricate and install equipment to deliver its full rated capacity at the efficiency for which it was designed.

E. Select and install equipment to operate at full capacity without excessive noise or vibration.

F. Provide electrical products with Underwriter's Laboratories Label or as approved by the local inspection authority.

1.2 MANUFACTURER'S INSTRUCTIONS

A. Perform work in accordance with manufacturer's printed installation instructions, obtain and distribute copies of such instructions to parties involved in the installation, including 3 copies to the Engineer.

B. Maintain one set of complete instructions at the job site during installation and until completion.

C. Handle, install, connect, clean, condition, and adjust products in strict accordance with manufacturer's printed instructions and in conformity with specified requirements.
1. Consult with the Engineer for further instructions should job conditions or specified requirements conflict with manufacturer's instructions.
2. Do not proceed with work without clear instructions.

D. Do not omit any preparatory step or installation procedure unless specifically modified or exempted by the Contract Documents.

1.3 TRANSPORTATION AND HANDLING

A. Arrange deliveries of products in accord with construction schedules; coordinate to avoid conflict with work and conditions at the site.
1. Deliver products in undamaged condition and in manufacturer's original containers or packaging with identifying labels intact and legible.
2. Immediately upon delivery, inspect shipments to assure compliance with requirements of the Contract Documents and to assure products are properly protected and undamaged.

B. Provide equipment and personnel to handle products by methods to prevent soiling or damage to products or packaging.

PRODUCT REQUIREMENTS

1.4 STORAGE AND PROTECTION

A. Store products in accordance with manufacturer's instructions with their seals and labels intact and legible.
   1. Store products subject to damage by the elements in weathertight enclosures.
   2. Maintain temperature and humidity within the ranges required by the manufacturer's instructions.
   3. Protect equipment and systems from moisture, chemical, or mechanical damage before and after installation.
   4. Protect shafts and bearing housings from rust.

B. Exterior Storage:
   1. Store fabricated products above the ground on blocking or skids to prevent soiling or staining. Cover products that are subject to deterioration with impervious sheet covering. Provide adequate ventilation to avoid condensation.
   2. Store loose granular materials in a well-drained area on solid surfaces to prevent mixing with foreign matter.

C. Inspection: Arrange storage in a manner to provide easy access for inspection. Make periodic inspections of stored products to assure that products are maintained under specified conditions and free from damage or deterioration.

D. Protection After Installation:
   1. Provide substantial coverings as necessary to protect installed products from damage by traffic or subsequent construction operations.
   2. Plug or cap pipe and conduit openings to prevent the entrance of foreign matter.
   3. Remove when no longer needed.

1.5 PRODUCT OPTIONS

A. Compliance with Standards: Where the specifications require only compliance with an imposed standard, code, or regulation, select any product that complies with specified requirements provided no product names are indicated and meet the specified standard.

B. Single Product Named: For products specified by naming one product or manufacturer and "or accepted substitute", the Contractor must submit a request for substitution for any product or manufacturer not specifically named. Submittal is to be in accordance with this Section.

C. Two or More Products Named: For products specified by naming several products or manufacturers and "or accepted substitute", select any one of the products or manufacturers named, provided the product selected complies with the specifications. If another product or manufacturer not named is to be used, the Contractor must submit a request for substitution for that product or manufacturer in accordance with this Section.

D. No materials or products containing any hazardous materials are to be used in the construction of this Project. If any material or product specified in this Project Manual is known to contain hazardous materials, it shall be brought to the attention of the Engineer before ordering or fabricating that material or product.

1.6 SUBSTITUTION PROCEDURES

A. Format: Substitution requests will be considered only if they are prepared on a copy of the Northwest Chapter Construction Specifications Institute "Substitution Request Form" included at the end of this Section. Additional copies may be obtained from the Engineer.

B. Supporting Data: Submit a separate request for each product, supported with complete data, drawings, and samples as appropriate. Include the following information, as appropriate, with each request for substitution:
   1. Provide complete product documentation, including product data and samples.
   2. Provide detailed performance comparisons and evaluation, including testing laboratory reports where applicable.
   3. Provide coordination information indicating the effect of the substitution on other work and the time schedule.
   4. Provide the Contractor's general certification of the recommended substitution.

1.7 PRE-BID REQUESTS

A. Time Limitation: To obtain acceptance of unspecified products, the bidders shall submit requests at least 10 calendar days prior to opening of proposals.

B. Acceptance: If the bidder complies with the requirements of this Section, and in the Owner's and Engineer's opinion the proposed product is acceptable in lieu of the one or more specified, the Engineer will include it in an addendum which will be issued to all bidders.

C. Last Addendum: The last Addendum will be issued no later than 5 calendar days prior to the bid date. Any questions asked after the last Addendum has been issued will not be answered when it would have an effect on the Bids by giving any advantage to a Bidder. An Addendum may be issued during this 5 day period only for the extension of the Bid date and will be faxed to Plan Centers and the registered General Contractors holding plans.

1.8 AFTER AWARD OF CONTRACT REQUESTS

A. Normally, requests for substitutions after the contract has been signed will not be allowed.

B. Consideration: Requests for substitution of specified products after the construction contract is signed will be considered only when they are reasonable, timely, fully documented, and for any one of the following reasons:
   1. Owner's or Engineer's request.
      a. Reduction in contract time or contract sum.
      b. Specified product is not available from any source.
      c. Specified product would cause significant delay in the Contract time.

C. Submittal: Submit requests on Northwest Chapter Construction Specifications Institute "Substitution Request Form" included at the end of this Section. Additional copies may be obtained from the Engineer.
   1. Include written request for substitution and cite reason(s) for the request.

D. Acceptance: If the Contractor complies with the requirements of this Section, and in the Owner's and Engineer's opinion the proposed product is acceptable in lieu of one or more specified, the Engineer will issue an Engineer's Supplemental Instructions (AIA G710), where contract sum or time is not effected, or a Change Order (AIA G701) or Construction Change Directive (AIA G714), where contract sum or time is affected.

PRODUCT REQUIREMENTS

PART 2 - PRODUCTS

2.1 MATERIAL

A. The Contractor warrants to the Owner that the 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. If required by the Engineer, the Contractor shall furnish satisfactory evidence as to the kind and quality of materials and equipment.

PART 3 - EXECUTION

3.1 NAMEPLATES

A. Except as otherwise indicated for required labels and operation data, do not permanently attach or imprint manufacturer's or producer's nameplates or trademarks on exposed surfaces or products which will be exposed to view either in occupied spaces or on the exterior of the completed project.

END OF SECTION

SUBSTITUTION REQUEST

TO:

PROJECT:

SPECIFIED ITEM:

Section **Page** **Paragraph** **Description**

PROPOSED SUBSTITUTION:

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

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

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

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

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

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

Submitted by:

Name (Printed or typed)	General Contractor (if after award of Contract)
Signature	For use by A/E ☐ Approved ☐ Approved as noted ☐ Not Approved ☐ Received too late
Firm Name	
Address	
City, State, Zip	By
Date	Date
Tel: Fax:	Remarks

SUBSTITUTION REQUEST
THE CONSTRUCTION SPECIFICATIONS INSTITUTE
NORTHWEST REGION

General:

1. Refer to attached Substitution Request, 1997 issue. This form permits hand written, typewritten or computer preparation and covers both Pre-Bid and Post-Bid Substitution Requests.
2. Submit Substitution Request in duplicate. An additional copy of Substitution Request may be submitted directly to Mechanical and Electrical Consultants.
3. Prepare Substitution Request for single item or single system.
4. Failure to place orders for specified products or systems sufficiently in advance of installation scheduled date(s) not considered a valid reason upon which Contractor may base request for Substitutions or for deviations from Contract Documents.
5. Blank Substitution Request forms available at Architect's Office and Plan Centers or may be duplicated from sample in Specifications. Computer disk available from Architect and Plan Centers.
6. Architect is sole judge of acceptability of proposed substitutions. Only accepted substitutions permitted on Contract work. Substitution acceptance does not relieve Contractor from responsibility for proper execution of work and compliance with other Contract requirements.
7. Include in Specifications Items 2, 3, 4, 5, 6, above and following suggested information regarding use of Substitution Request.

Pre-Bid Substitutions:

1. Suggested Location Section 01630 with reference in Instructions to Bidders. Suggested wording:
2. Submit requests for Substitutions on format per attached form. Requests not submitted on attached format unacceptable.
3. Substitution Request must be received by Architect not later than **?** working days before bid opening.
4. An addendum to registered plan holders issued not less than **?** working days before bid opening listing approved Substitutions.

Post-Bid Substitutions and Negotiated Contracts Permitted Only Under Following Conditions:

1. Suggested Location Section 01630. Suggested wording:
2. Submit requests for substitutions on format per attached form. Requests not submitted on attached format unacceptable.
3. Manufacturer ceases operation or approved products or system no longer available. Contact Architect immediately if this occurs.
4. Owner or Architect requests a substitution.
5. If it can be shown that specified product or system is not well suited for proposed application or that another is superior and/or less costly. Attach detailed documentation including cost savings/increase.
6. General Contractor's signature also required at location shown on form.

NOTE: This page is furnished to architects and specifiers listing suggested information for placement in Project Manual.

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EXECUTION AND CLOSEOUT REQUIREMENTS

PART 1 - GENERAL

1.1 WORK INCLUDED

A. Provisions of this Section apply to the procedural requirements for the actual closeout of the Work, not to administrative matters such as Final Payment and the changeover of insurance.

B. Closeout requirements relate to both Substantial and Final Completion of the Work. They also apply to individual portions of completed work as well as the total Work.

C. Specific requirements contained in other Sections have precedence over the general requirements contained in this Section.

1.2 CLOSE OUT AGENDA

A. Required Procedures:

1. Notify the Engineer when project is ready for substantial completion inspection. Also applies to certain areas completed for use by the Owner prior to completion of the entire project. The first review copy of the O&M Manuals must be submitted prior to request for substantial completion inspection.
2. The Engineer will establish the substantial completion inspection date when the Engineer determines that the project, or certain Owner requested areas, is ready for Substantial Completion review.
3. The Engineer, Contractor, and Owner make substantial completion inspection.
4. The Engineer issues written list of items to be completed or corrected. Substantial Completion date is established and noted on prepared form. The contractor is to issue a letter to the Owner confirming that no asbestos products were used in the construction of the facility or addition.
5. The Contractor is normally given adequate time to correct deficiencies shown on correction list.
6. The Contractor returns completed project record documents and final payment request including change order adjustments, and requests final inspection.
7. The Engineer reviews project record documents and schedules final inspection.
8. Final inspection made when required submittals are delivered.
9. Final payment forthcoming when work is completed and submittals have been received and approved.

1.3 SUBSTANTIAL COMPLETION

A. Prerequisites: Comply with the General Conditions and commence the following before requesting Engineer's inspection of the Work, or a designated portion of the Work, for certification of Substantial Completion.

1. Submit executed warranties, workmanship bonds, maintenance agreements, inspection certificates, and similar required documentation for specific units of work enabling Owner's unrestricted occupancy and use.
2. Submit record documentation, maintenance manuals, tools, spare parts, keys, and similar operational items.
3. Commence instruction of Owner's operating personnel and start-up of systems.
4. Commence final cleaning and remove temporary facilities and tools.

B. Submit written notice to the Engineer that Work, or designated portion thereof, is substantially complete. The Engineer and Owner will review the Work within 7 days.

C. If the Engineer determines that Work is not substantially complete, he will promptly notify Contractor in writing. The Contractor shall complete the Work and submit a second written notice of substantial completion to the Engineer. The Engineer will again observe the Work.

D. When the Engineer concurs that the Work is substantially complete, he will prepare a Certificate of Substantial Completion on AIA Form G704 with a tentative list of items to be completed or corrected. The Engineer will submit the Certificate and tentative list to the Contractor for his written acceptance of responsibilities assigned to him in the Certificate.

1.4 FINAL COMPLETION

A. Submit written certificate that Contract Documents have been reviewed, Project has been inspected, Work is completed in accordance with the Contract Documents, equipment and systems have been tested in the presence of the Owner's Designated Representative and are operational, and Work is ready for review. Engineer will review Work within 7 days.

B. Should the Engineer determine that the Work is incomplete or defective, he will notify the Contractor in writing, listing the incomplete or defective Work. The Contractor shall remedy the deficiencies and send a second written certification to the Engineer that the Work is complete. The Engineer will review the Work.

C. When the Engineer finds that the Work is acceptable under the Contract Documents, he will request the Contractor to make closeout submittals.

1.5 REOBSERVATION FEES

A. Should the Engineer perform more than one reobservation due to failure of the Work to comply with the claims of status of completion made by the Contractor,
   1. Owner will compensate the Engineer for such additional services, and
   2. Owner will deduct the amount of such compensation from the final payment to the Contractor.

PART 2 - PRODUCTS

2.1 PROJECT RECORD DOCUMENTS

A. Maintain, at the site, 1 copy of the Bid Documents, Contract Forms, Project Manual, Contract Drawings, Construction Change Directives, Addenda, Change Orders, reviewed Shop Drawings, Office Samples, Field Test Records, Architect's Supplemental Instructions, etc.

B. Store documents and samples in the Contractor's field office separate from documents used for construction.

C. Keep current record of documents and label "Project Record." Record location of concealed items and utility lines, field changes in dimension or detail, and changes in materials furnished on Project Record Documents. Record changes from the Architect's Supplemental Instructions, Change Orders, Construction Change Directives, and Details not on Contract Drawings.

D. Project record documents will be reviewed monthly. The Contractor and his subcontractors are required to update project record documents monthly. The Engineer will review the updated project record documents on a monthly basis at the time of the Contractor's application for payment. Failure to have project record documents updated will delay payment. Deliver the project "Record Documents" to the Engineer at the end of the project with the Closeout Manuals.

2.2 CLOSEOUT MANUALS

A. General:
1. The District shall receive one copy each in hard copy, electronic PDF, and CAD form of all As-Built Drawings, Operation and Maintenance Manuals, and Guarantees/Warranties. Operations and Maintenance Manuals shall be submitted for approval prior to substantial completion. Printed information submitted shall have a minimum 12-pt font size. Facility Operations Director shall sign off on all as-builts as a condition of closeout.
2. The District shall receive one copy each in hard copy, electronic PDF, and CAD form of Approved Shop Drawings. Printed information submitted shall have a minimum 12-pt font size.
3. For hard-copy requirements provided in 1. or 2. above, documents shall be bound in fully-indexed, 3-ring loose leaf binders as applicable. The cover page shall reference the project name, project number, year of construction, name of contractor, and the name of the design firm associated with the element of work. Even in cases which a single Contract includes projects at multiple school locations, there shall be individual documents produced for each School in the Contract, containing only that information pertaining to work at that particular School.

A. Form of Manuals: Provide 3 complete copies of the manual.
1. Prepare data in the form of instructional manuals for use by the Owner. Use 8-1/2" x 11" manual format in 3-ring binder.
2. Include drawings, indexed tabs, and title for the manual.

B. Content of Manuals:
1. List products, equipment, and systems used in the Project. List project installers, maintenance program, and local source of supply for replacement parts.
2. Include product data with specific product clearly identified.
3. Include drawings of control diagrams, flow diagrams, and system relationships.
4. Include a copy of the letter to the Owner confirming at no asbestos products were used in the construction of the facility.

C. Materials and Finishes: Provide the following information for products to be included with the manuals.
1. Include manufacturer's data, catalog number, color, and texture of finishes used.
2. Include instructions for care and maintenance on finishes including cleaning agents, methods, and cleaning and maintenance schedule.

D. Equipment and Systems: Provide the following information for products to be included with the manuals.
1. Include the manufacturer's description, operating characteristics, performance data, testing and balancing data, and printed operating and maintenance instructions.
2. Include the manufacturer's catalog number and replaceable parts list.

E. Warranties and Bonds: Provide the following information for products to be included within the manuals.
1. Assemble warranties, bonds, service and maintenance contracts executed by each manufacturer, supplier, and subcontractor.
2. Include table of contents, beginning date, and duration of warranty, bond, or service contract, and party to contact in case of claim against warranty.

F. Spare Parts and Maintenance Materials: Tabulate list of spare parts and maintenance materials showing product description, paragraph in Project Manual listing product, and quantity delivered to the Engineer and distribute with the manuals.

PART 3 - EXECUTION

3.1 MAINTENANCE MATERIAL HANDLING

A. Label packages and deliver spare parts and maintenance materials to Owner's storage area. Submit quantity specified in each product section.

3.2 PAYMENTS AND RELEASE OF LIENS

A. Submit 2 executed copies of the Contractor's Affidavit of Payment of Debts and Claims, AIA G706.

B. Submit 2 executed copies of the Contractor's Affidavit of Release of Liens, AIA G706A including:
1. "Consent of Surety to Final Payment", AIA G707.
2. Contractor's release or waiver of liens.
3. Subcontractors' and suppliers' release or waiver of liens, as requested by the Engineer.

3.3 SCHEDULE OF CLOSEOUT SUBMITTALS

A. Submit 3 copies in final form of the Closeout Manuals 15 days prior to final review or acceptance.

B. Keys: Submit 2 copies of the keying schedule. Submit keys and key blanks in quantities specified.

C. Obtain and submit the Certificate of Occupancy.

3.4 CLEANING PRIOR TO SUBSTANTIAL COMPLETION INSPECTION

A. At the time of project close out, clean or reclean the Work to the condition expected from a normal, commercial building cleaning and maintenance program.

B. Complete the following cleaning operations before requesting the Engineer's inspection for certification of Substantial Completion.
1. Remove grease, dust, dirt, stains, manufacturer's labels, fingerprints, etc., from sight exposed surfaces.
2. Remove non-permanent protection and labels.
3. Wash and polish all interior and exterior glazing and mirrors.
4. Repair, patch, and touch up marred surfaces.
5. Clean heating and cooling ducts, blowers, coils, fixtures, equipment, piping, and grilles.
6. Replace disposable air filters and clean permanent filters.
7. Remove construction debris.
8. Flush water systems and disinfect domestic water lines. Sanitize plumbing and food service facilities.
9. Broom clean new exterior paved surfaces and walks. Vacuum clean interior carpeted surfaces and wet mop hard floor surfaces.
10. Clean light fixtures and replace burned-out lamps and replace damaged lenses.
11. Police yards and grounds.

C. Final clean is to be of the highest professional standard and to include:
1. Floors, walls, ceilings free of dust, dirt, & marks
2. Cabinet tops, drawers and interiors free of dust and dirt
3. Counter tops cleaned and streak free

4. Windows professionally cleaned and free of dirt, streaks, labels and glues
5. Fixtures cleaned and free of dust, dirt, labels and glues
6. Exterior walks, decks, roofs, lots and driveways cleaned, washed and swept

D. Maintain in cleaned condition until Final Completion or the Owner's occupancy.

END OF SECTION

EXECUTION AND CLOSEOUT REQUIREMENTS

ASBESTOS FREE CERTIFICATION

The Contractor agrees that all products and materials furnished in connection with work of execution of the Work shall be free of any asbestos material as defined by 29CFR 1926.58 (b). This promise shall be binding to Contractor and all Sub-Contractors. Should any such materials be furnished, they shall be removed by Contractor of his successors, at no expense to the Owner, upon discovery.

Whenever and wherever during course of performing any work under this contract, if Contractor discovers the presence of asbestos or suspects that asbestos is present, he/she shall stop the work immediately, secure the area, notify the Owner's Representative and await positive identification of the suspect materials.

NOTICE TO SHORT-TERM WORKERS

Any and all work accomplished by what is termed as a short-term worker (e.g. telephone repair worker, utility worker, exterminator, independent contractor) in a building owned by Central Linn School District will be for-warned that the possibility exists that asbestos containing materials may be used in the construction of these facilities. Any pertinent information concerning this is documented in the District's Asbestos Management Plan, which is located in the District Business Office.

Please refer to this plan when working in any of the District's facilities. If there are any questions about the documented information, please contact the designated person identified in the plan.

CERTIFICATION

_____ certifies that he/she has received the forgoing information, including the public law (Name of Bidder) described in 29CFR 1926.58 (b) regarding the protection of public buildings from asbestos containing materials.

Name of Bidder

Signature

Date

This form must be submitted with the Bid Proposal.

FINAL CLEANING

PART 1 - GENERAL

1.1 WORK INCLUDED

A. Throughout the construction period, maintain building and Site in a standard of cleanliness as herein specified.

B. In addition to standards specified in this Section, comply with all requirements for cleaning as specified in other Specification Sections.

C. In addition to standards for cleaning herein specified, comply with all pertinent requirements of governmental agencies having jurisdiction.

D. Conduct daily inspection to certify that requirements of cleanliness are being met.

E. Product Data: Submit product data and SDS sheets for all cleaning products to be used.

1.3 PROGRESS CLEANING

A. General:
1. Provide all personnel, equipment, and materials to maintain specified standards of cleanliness.
2. Retain all stored items in an orderly arrangement allowing maximum access, not impeding drainage or traffic, and providing the required protection of materials.
3. Do not allow accumulation of scrap, debris, waste material, and other items not required for construction of the Work.
4. At least twice each month, and more often if necessary, completely remove all scrap, debris and waste material from the job site.
5. Provide adequate storage for all items awaiting removal from job site; observing all requirements for fire protection and protection of the ecology.

B. Site:
1. Daily inspect the Site and pick up all scrap, debris and waste material. Remove all such items to the place designated for their storage.
2. Weekly, and more often if necessary, inspect all arrangements of materials stored on Site; Restack, tidy, or otherwise service all arrangement to meet the requirement of subparagraph A above.

FINAL CLEANING

1.4 FINAL CLEANING

A. Building:
1. Exterior: Visually inspect all exterior surfaces and remove all traces of soil, waste material, smudges and other foreign matter. Remove all traces of splashed material from adjacent surfaces. If necessary to achieve a uniform degree of exterior cleanliness, hose down the exterior of the structure. In the event of stubborn stains not removable with water, the Engineer may require light sandblasting or other cleaning a no additional cost to the District.
2. Interior: Visually inspect all interior surfaces and remove all traces of soil, waste material, smudges, and other foreign matter. Remove all traces of splashed materials from adjacent surfaces. Remove all paint droppings, spots, stains, and dirt from finished surfaces.
3. Glass: Clean all glass inside and outside.
4. Polished Surfaces: To all surfaces requiring the routine application of buffed polish, apply the polish recommended by the manufacture of the material being polished.

B. Timing: Schedule final cleaning to enable District to accept a completely clean project on or before October 11, 2020. Coordinate with the Owner's Representative and Engineer.

C. Cleaning during District's Occupancy: Should the District occupy the Work or nay portion thereof prior to its completion by the Contractor and acceptance by the District, responsibility of interim and final cleaning of the occupied spaces shall be as determined by the Owner's Representative in accordance with the other Specifications of the Contract.

PART 2 – PRODUCTS

PART 3 - EXECUTION

3.1 FINAL, DETAILED CLEANING INCLUDES

A. Cleaning all vertical and horizontal surfaces in the areas using damp cloths.

B. Dust ceilings free of debris, dust, and cobwebs.

C. Clean all fixtures, furnishings, accessories, and equipment, and other items (including blinds and bookshelves) in the room using damp towels.

D. Floor Cleaning and Finish:
1. Do not use harsh chemicals to "strip" the floors.
2. Steam clean carpets.

END OF SECTION

SELECTIVE STRUCTURE DEMOLITION

PART 1 - GENERAL

1.1 WORK INCLUDED

A. Provide all selective building demolition necessary and preparatory to construction. Refer to the Drawings for location of existing materials requiring removal. Verify existing conditions at the site of the work and include all work evident by inspection.

B. Provide for the salvage of existing materials for the Owner or for reuse as indicated at the end of this Section.

1.2 REFERENCES

A. Oregon Administrative Rules (OAR), Department of Human Services, Public Health Division: Chapter 333, Division 70 Renovation, Repair and Painting Activities Involving Lead-Based Paint.

B. Code of Federal Regulations: 40 CFR: Protection of the Environment.

1.3 QUALITY ASSURANCE

A. Regulatory Agency Requirements: Comply with applicable codes and ordinances concerning demolition operations and refuse removal.

B. Pre-demolition Meeting: Meet at the Site with the Architect and Owner. Review location of service lines. The Contractor shall be responsible for protection from dust and water damage and flying aggregate. Establish location of interior dust barriers.

1.4 SITE CONDITIONS

A. Traffic Control: Do not close or obstruct public streets, walks, or required exit passageways without written permission from authorities having jurisdiction.

B. Exterior Dust Control: Keep exposed demolition debris damp to control dust.

C. Interior Dust Control: Provide dust control barriers consisting of curtains or doors to limit the spread of demolition dust and debris in construction work. Use all precautions to confine dust to the work area. Maintain throughout the construction process.

D. Existing Conditions:
1. Contractor shall accept premises on “as is” condition.
2. Owner assumes no responsibility for building condition.
3. Damage or loss resulting from any cause to buildings, persons, and/or property shall not relieve Contractor from obligation to complete Work.
4. Removal and storage of historical items to be performed before any demolition work.

PART 2 - PRODUCTS

2.1 EQUIPMENT

A. Sawing Equipment: Use diamond edged saw blades of proper size for depth of cut.

B. Drilling Equipment: Use non-impact rotary tool with diamond core drills.

PART 3 - EXECUTION

3.1 PREPARATION

A. Protection: Provide protection and conduct demolition operations to prevent personal injury or property damage.

B. Service Disconnection: Disconnect existing service lines to be abandoned and cap exposed service lines to be maintained.

C. Interior Demolition:
1. Provide slurry control to protect all existing facilities from water damage during sawing and drilling.
2. Provide dust barriers inside the existing building until completion of demolition work.
3. Install bracing and shoring prior to sawing structural components.
4. All floor materials indicated to be removed are to include the striping of the adhesive to the concrete substrate.

3.2 HAZARDOUS MATERIALS

A. During the course of demolition work, additional hazardous materials may be encountered. If hazardous materials are encountered, this contractor shall immediately notify the School District Representative. A hazardous abatement contractor will be retained to complete any hazardous material removal as necessary. **THE DEMOLITION CONTRACTOR SHALL DO NO HAZARDOUS MATERIAL REMOVAL.**

If any hazardous material is damaged during the course of the demolition work, immediately evacuate non-trained personnel. Clean up of the area and decontamination of personnel shall be at the direction of the Owner's hazardous material abatement consultant.

B. Removal: Any hazardous removal work will be by separate Owner provided contract and not included in the demolition work of this contract. A licensed abatement contractor will remove all accessible hazardous-containing materials prior to the commencement of the building and site demolition work.

C. Copies of the asbestos surveys and abatement specifications will be provided by the School District for reference by the demolition contractor

D. Lead Base Paint: For renovations, repairs and painting (RRP) in "Child-Occupied Facilities" (where kids under the age of 6 regularly spend time and built before 1978), the General Contractor shall follow all Federal, State and local rules (including OSHA and US EPA rules and Oregon Administrative Rules Chapter 333, Division 70) associated with lead-based paints (LBP).
1. The Contractor is responsible for the identification of LBP hazards and providing engineering controls for trigger activities that disturb LBP.
2. Any time painted surfaces are disturbed, the work must be performed by a certified firm with a trained and certified "renovator" in accordance with *40 CFR (including Part 745.82 Lead*).
3. Post the areas of the building that will be affected with appropriate signage warning of the potential hazard.

3.3 DEMOLITION

A. Remove existing materials as indicated on the Drawings.

B. Remove abandoned plumbing and electrical lines to concealed spaces and cap.

C. Sprinkle and dampen debris and rubbish with water to control dust. Remove debris from the site as demolition progresses and do not allow accumulation on the premises.

D. Save and protect existing utilities shown to remain. Notify the Architect at once if unknown utilities are found in the work.

E. Execute the demolition in an orderly and careful manner with due consideration for the Owner and the public. Provide mufflers for compressors and other noisy motors.

F. Provide shoring and bracing as required at saw cutting areas. Do not over cut corners.

G. Mechanical Demolition:
1. Remove and dispose of unused plumbing fixtures and piping, heating piping, and air handling equipment ductwork. Any utilities that serve equipment in operation or that is required for building use are to be kept in operation. Refer to the Mechanical Demolition Drawings for piping and ducts left in service. Exercise care in removing used piping and ducts.
2. Avoid damage to piping and ductwork that will remain installed to keep the fans and other systems in operation.
3. Where existing equipment is to remain for future connection, leave sufficient pipe ends for capping during demolition for protection, removal of cap, and connection of new pipe.
4. Where parts of existing equipment are removed and stored for reinstallation, the Contractor shall record the location of each part as removed on a clean 1/8" scale floor plan. All parts shall be marked with a system corresponding to the plan so that the part can be easily located in its original location when reinstalled.
5. If during demolition, any pipe, duct, or equipment is found that is not noted to remain or to be removed, or may require review by the Architect or the Owner to determine service, the Contractor will immediately notify the Architect. The Owner and the Architect will then review the pipe, duct, or equipment and direct Contractor on its disposition.

H. Electrical Demolition:
1. Remove and dispose of all electrical devices, conduits, and conductors that are not shown as remaining. Refer to the Electrical Demolition Drawings for locations.
2. Take necessary precautions while removing electrical devices, conduits, and conductors so that power, fire alarms, and the communication system are maintained while work is being accomplished.
3. Provide all required temporary lighting during demolition.
4. Do not remove any electrical conduits, conductors, or cabling that penetrates the construction area en route to any other area or floor unless shown on the Drawings.
5. The demolition of all electrical devices including light fixtures, wiring devices, alarm equipment, mechanical, equipment, telephone equipment, wiring, etc., must be performed by a licensed electrician.
6. If during demolition, any electrical items or equipment are found that are not noted to remain or be removed, or may require review by the Architect or the Owner to determine service, the Contractor will immediately notify the Owner. The Owner and the Architect will then review the electrical item or equipment and direct Contractor on its disposition.

3.4 ADJUSTING AND CLEANING

A. Clean-up: Remove all demolition debris, including broken concrete and masonry, from the building as soon as selective demolition has been completed.

B. Disposal:
1. Do not store, sell, or burn demolished or salvaged materials on the Site.

2. Transport debris to an approved and licensed land fill area.
3. Repairs: Repair damage to existing facilities and adjacent property to meet conditions existing prior to demolition operations.

C. Cleaning:
1. Broom clean interior surfaces, exterior slabs, and paving that have been soiled by demolition activities.
2. Vacuum ducts and replace air filters at the end of demolition work.
3. Existing ductwork and piping is required to be commercially cleaned and disinfected after all demolition activities. Protect after cleaning.

END OF SECTION

METAL FABRICATIONS

PART 1 - GENERAL

1.1 SECTION INCLUDES

A. Provide items made from iron and steel shapes, plates, bars, strips, tubes, pipes and castings which are not a part of structural steel or other metal systems specified elsewhere as indicated on the Drawings and as specified herein.

B. Structural Support Steel: Provide steel plates, angles, and channels to provide structural support for the following items:
   1. Miscellaneous framing and supports.

1.2 REFERENCES

A. ASTM International (ASTM):
   1. ASTM A27: Standard Specification for Steel Castings, Carbon, for General Application.
   2. ASTM A36: Standard Specification for Carbon Structural Steel.
   3. ASTM A47: Standard Specification for Ferritic Malleable Iron Castings.
   4. ASTM A48: Standard Specification for Gray Iron Castings.
   5. ASTM A53: Standard Specification for Pipe, Steel, Black and Hot-Dipped, Zinc-Coated Welded and Seamless.
   6. ASTM A123: Standard Specification for Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products.
   7. ASTM A153: Standard Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware.
   8. ASTM A167: Standard Specification for Stainless and Heat-Resisting Chromium-Nickel Steel Plate, Sheet, and Strip.
   9. ASTM A307: Standard Specification for Carbon Steel Bolts and Studs, 60,000-psi Tensile Strength.
   10. ASTM A325: Standard Specification for Structural Bolts, Steel Heat Treated, 120/105-ksi Minimum Tensile Strength.
   11. ASTM A606: Standard Specification for Steel, Sheet and Strip, High-Strength, Low-Alloy, Hot-Rolled and Cold-Rolled, With Improved Atmospheric Corrosion Resistance.
   12. ASTM A780: Standard Practice for Repair of Damaged and Uncoated Areas of Hot-Dip Galvanized Coatings.
   13. ASTM C827: Standard Test Method for Change in Height at Early Ages of Cylindrical Specimens of Cementitious Mixtures.
   14. ASTM C1107: Standard Specification for Packaged Dry, Hydraulic-Cement (Non-Shrink).

B. Army Corps of Engineers: CRD C621 - Post Hardening Volume Adjusting.

1.3 SUBMITTALS

A. Shop Drawings:
   1. Submit shop drawings for fabrication and erection of miscellaneous metal fabrications. Include plans, elevations and details of sections and connections. Show anchorage and accessory items. Provide templates for anchor and bolt installation by others.

1.4 QUALITY ASSURANCE

A. Shop Assembly: Preassemble items in shop to greatest extent possible to minimize field splicing and assembly. Disassemble units only as necessary for shipping and handling limitations. Clearly mark units for reassembly and coordinated installation.

B. Welder Qualifications: Use only AWS certified welders and shielded arc process.

PART 2 - PRODUCTS

2.1 MATERIALS

A. General Metal Surfaces: For fabrication of miscellaneous metal work which will be exposed to view, use only materials which are smooth and free of surface blemishes including pitting, seam marks, roller marks, rolled trade names and roughness.

B. Steel Plates, Shapes and Bars: ASTM A36.

C. Steel Tubing: Round, square and rectangular; cold-rolled, ASTM A500; or hot rolled, ASTM A501.

D. Standard Bolts: ASTM A307, Grade A, regular hexagon head type.

E. Shop Primer: Manufacturer's standard rust inhibitive primer.

F. All exterior metal shall be primed and painted for protection from oxidation and corrosion.

2.2 GENERAL FABRICATION PROCESS

A. Standards: Comply with AWS "Code for Welding in Building Construction", AISC "Specification for the Design, Fabrication, and Erection of Structural Steel for Buildings" and AISC "Specifications for Architecturally Exposed Structural Steel".

B. Workmanship: Use materials of size and thickness indicated or, if not indicated, as required to produce strength and durability in finished product for use intended. Work to dimensions indicated or accepted on shop drawings, using proven details of fabrication and support.

C. Fabricate of welded construction, drill and tap as required to receive hardware and similar items. Include required anchors for building into other works.

D. Form exposed work true to line and level with accurate angles and surfaces and straight sharp edges. Ease exposed edges to a radius of approximately 1/32" unless otherwise indicated. Form bent-metal corners to smallest radius possible without causing grain separation or otherwise impairing work.

E. Welded Joints: Form exposed connections with flush hairline joints. Weld corners and seams continuously with shielded arc process, complying with recommendations by AWS. At exposed connections, grind exposed welds smooth and flush to match and blend with adjoining surfaces. Provide 1/4" minimum fillet welds and full penetration butt welds.

F. Form exposed connection with hairline joints, flush and smooth, using concealed fasteners. Only if necessary, use exposed fasteners of type indicated or, if not indicated, Phillips flat-head (countersunk) screws or bolts.

G. Provide for anchorage of type indicated, coordinated with supporting structure. Fabricate and space anchoring devices to provide adequate support for intended use.

H. Cut, reinforce, drill and tap miscellaneous metal work as indicated to receive finish hardware and similar items.

I. Galvanized Shop Finish: Provide ASTM A153 for iron and steel hardware, or ASTM A123 for fabricated shapes, plates, bars and strip.

J. Fabricate joints that will be exposed to weather in a manner to exclude water and provide weep holes where water may accumulate.

K. Primed Shop Finish: Apply primer at a rate to obtain a dry film thickness of 2.0-mils. Do not prime members or portions of members to be galvanized, embedded in concrete or grout and surfaces to be field welded unless indicated otherwise.

2.3 CUSTOM FABRICATED ITEMS

A. Miscellaneous Framing and Supports:
1. Provide miscellaneous steel framing and supports that are not a part of structural steel framework, as required to complete work.

B. Structural Connectors for Wood Framing: Provide custom fabricated bolts, plates, tie rods, anchors, dowels and other steel shapes for framing, supporting and anchoring wood framing. Provide washers for bolts bearing on wood.

PART 3 - EXECUTION

3.1 PREPARATION

A. Field Measurements: Take field measurements prior to preparation of shop drawings and fabrication, where possible. Allow for trimming and fitting where taking field measurements.

B. Coordinate and furnish anchorages, setting drawings, diagrams, templates, instructions, and directions for installation of anchorages, including, concrete inserts, sleeves, anchor bolts and miscellaneous items having integral anchors, which are to be embedded in concrete or masonry construction.

3.2 GENERAL INSTALLATION

A. Fastening to In-Place Construction: Provide anchorage devices and fasteners where necessary for securing miscellaneous metal fabrications to in-place construction; including threaded fasteners for concrete and masonry inserts, toggle bolts, through-bolts, lag bolts, wood screws and other connectors as required.

B. Cutting, Fitting and Placement: Perform cutting, drilling and fitting required for installation of miscellaneous metal fabrications. Set work accurately in location, alignment and elevation, plumb, level, true and free of rack, measured from established lines and levels. Provide temporary bracing or anchors in formwork for items that are to be built into concrete masonry or similar construction.

C. Fit exposed connections accurately together to form tight hairline joints. Weld connections that are not to be left as exposed joints, but cannot be shop welded because of shipping size limitations. Grind exposed joints smooth and touch-up shop paint coat. Do not weld, cut or abrade the surfaces of exterior units that have been hot-dip galvanized after fabrication, and are intended for bolted or screwed field connections.

D. Field Welding: Comply with AWS Code for procedures of manual shielded metal-arc welding, appearance and quality of welds made, and methods used in correcting welding work.

E. Setting Loose Plates: Clean concrete and masonry bearing surfaces of any bond-reducing materials, and roughen to improve bond to surfaces. Clean bottom surface of bearing plates.

F. Set loose leveling and bearing plates on wedges, or other adjustable devices. After the bearing members have been positioned and plumbed, tighten the anchor bolts. Do not remove wedges or shims, but if protruding, cut-off flush with the edge of the bearing plate before packing with grout. Use metallic non-shrink grout in concealed locations where not exposed to moisture; use non-metallic non-shrink grout in exposed locations, unless otherwise indicated. Pack grout solidly between bearing surfaces and plates to ensure that no voids remain.

G. Steel Framing: Anchor steel framing to building structure with concrete anchors or bolts with strength required to meet structural loads.

3.3 ADJUSTING AND CLEANING

A. Correct or replace defective members and adjust alignment as required. Remove pits, bumps and irregular weld grinds from exposed surfaces.

B. Touch-Up Painting:
1. Immediately after erection, clean field welds, bolted connections, and abraded areas of shop paint, and paint exposed areas with same material as used for shop painting.
2. Apply by brush or spray to provide a minimum dry film thickness of 2.0-mils.

C. Galvanized Surfaces: Clean field welds, bolted connections and abraded areas and apply galvanizing repair paint to comply with ASTM A780. Aervoe #142, Brite Galvanize, (800) 227-0196, or accepted substitute.

3.4 PROTECTION

A. Apply protecting material to face of metal in areas of potential galvanic activity between contacting dissimilar metal materials.

END OF SECTION

ROUGH CARPENTRY

PART 1 - GENERAL

1.1 WORK INCLUDED

A. Provide wood members and plywood where required or detailed on the Drawings and as herein specified.

B. Provide solid blocking or backing in framing for attachment of wall and ceiling mounted finish hardware, specialty items, equipment, or toilet accessories.

1.2 SUBMITTALS

A. Product Data: Submit supplier's information indicating the location where lumber and plywood was milled and where the wood was harvested.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Lumber: Construction Grade, S-dry, Douglas Fir. Moisture content shall conform to WCLIB Rules #16, latest edition, General Grading Provisions, paragraph 3, Seasoning Provisions.

B. Plywood: 5/8" thick, Structural II or B-C, Span Index 32/16, APA rated, Construction and Industrial Softwood Plywood, PS-1, Exposure 1, ICBO NER-108.

C. Fasteners: Types as required.

PART 3 – EXECUTION

3.1 INSTALLATION

A. Blocking:
1. Secure blocking to the building structural frame or to wall studding with appropriate fasteners to support accessory items being mounted to the blocking material.
2. Use templates furnished with accessory items to determine the location of blocking or backing materials.
3. Verify fastening devices furnished with accessory items to determine the appropriate backing material size and shape.
4. Check hardware schedule for locations where wall door bumpers are called for. Do not fasten solely to wall and ceiling finish materials.

END OF SECTION

WOOD FRAMING

PART 1 - GENERAL

1.1 WORK INCLUDED

A. Provide lumber framing and accessories for floor, wall, ceiling, and roof framing systems as indicated on the Drawings and as specified herein.

1.2 REFERENCES

A. U.S. Department of Commerce: PS 20, American Softwood Lumber Standard.

B. ASTM International (ASTM):
1. ASTM A307: Standard Specification for Carbon Steel Bolts and Studs, 60,000-psi Tensile Strength.
2. ASTM D226: Standard Specification for Asphalt-Saturated Organic Felt Used in Roofing and Waterproofing.

C. 2018 International Building Code (IBC) and the Oregon 2019 Structural Specialty Code Amendments.

D. Federal Specification/Standard; General Services Administration Specifications Branch (FS).

E. West Coast Lumber Inspection Bureau (WCLIB): No. 17 Standard Grading Rules.

F. Western Wood Products Association (WWPA).

PART 2 - PRODUCTS

2.1 CONCEALED FRAMING LUMBER

A. Lumber Standard: American Softwood, PS 20.

B. Species and Dressing: Douglas Fir or Douglas Fir-Larch, standard or better quality, smooth four sides (S4S).

C. Minimum Grades and Bending Stress Rating: (WCLB and WWPA).
1. Post and Beams: (5x5 and larger) Select Structural.
2. Structural Framing: (2x6 to 4x14) No. 2 grade.
3. Studs: (2x2 to 4x6) No. 2 grade.
4. Light Framing for Blocking and Bridging: (2x2 to 4x4) Construction Grade.
5. Boards For Furring: (1x2 to 1x4) Construction Grade.

D. Moisture Content: Kiln dry lumber 4x or less to 19% moisture content at time of dressing.

2.2 ACCESSORIES

A. Steel Connectors: Simpson, Bowman, Silver, KC Metals, or accepted substitute. (Numbers indicated on the Drawings are from Simpson Company.)

B. Bolts, Nuts, and Screws:
1. Expansion Shields, Lag Screws, Lag Bolts: FS FF-B-561.
2. Wood screws: FS FF-S-111.
3. Bolts: FS FF-B-575.
4. Nuts: FS FF-N-836.

C. Nails and Staples: FS FF-N-105.
   1. Exterior: Galvanized Common Nails.
   2. Interior: Common Nails.

D. Powder Driven Fasteners: Ramset, Hilti, or accepted substitute.

E. Concrete Anchors: Hilti, ITT Phillips, Ramset, USM Corporation, or accepted substitute.

F. Foundation Anchor Bolts: Per Structural Drawings.

G. Construction Adhesive: Conform to APA AFG-01.

H. Epoxy Grout: Five Star Epoxy Grout by U.S. Grout; Sikadur Grout-Pack, Hi-Mod Systems by Sika; or accepted substitute.

I. Waterproof Anchoring Cement: Pourable, cement base, non-shrinking quick setting hydraulic compound. Fast Setting Cement by Burke; Anchor Tite by Concrete Products; Embeco 153 by Master Builders; Thorogrip by Standard Dry Wall; or accepted substitute.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Steel Framing Connectors: Install with nails or bolts of sizes and type specified by manufacturer of connector. Provide "U" type hangers where joists and beams frame into side of beams or headers.

B. Steel Post Connectors: Provide PC post caps at post to beam connections and PB or EPB post bases at post to footing connections.

C. Fasteners: Minimum fasteners per the 2018 International Building Code (IBC) and the Oregon 2019 Structural Specialty Code Amendments Table 2304.9.1, Fastening Schedule, or as indicated on the Drawings.

D. Bolting: Provide standard plate washers under heads and nuts of bolts bearing on wood. Soap threads of lag bolts prior to installing.

E. Bridging: Provide code-required bridging between structural joists, rafters, and trusses.

F. Framing: Install framing members at not more than 24" on center and at spacing indicated on the Drawings. Double floor joists under parallel partitions. Use standard moisture content framing except where indicated kiln dried.

G. Temporary Support: Adequately brace structure for wind and earthquake forces until roof and wall panels have been secured. Interior gypsum wallboard panels are used for bracing. Continue bracing until interior gypsum wallboard is fully nailed.

3.2 MINIMUM NAILING SCHEDULE FOR FRAMING

A. Minimum Quantity and Size For End Nailing:
   1. Blocking to Joist Each End: 2-10d.
   2. Stud to Sole or Top Plate: 2-16d.

B. Minimum Quantity and Size For Toe Nailing:
   1. Blocking to Plate and Bridging to Joist Each End: 2-10d.
   2. Stud to Sole Plate: 4-10d
   3. Stud to Header: 3-10d.
   4. Joist to Plate or Beam: 2-10d.
   5. Rafter to Plate: 2-10d.

C. Minimum Quantity and Size For Face Nailing:
   1. Double Top Plates Spiked Together: 10d at 8" on center.
   2. Double Header Top and Bottom Edges Staggered: 10d at 8" on center along each edge.
   3. Double Studs: 16d at 16" on center.
   4. Bottom Plate to Joists or Blocking: 10d at 8" on center.
   5. Rafter to Joist: 2-10d.
   6. Double Joist Lapped Over Partition or Beam: 2-10d.
   7. Double Top Plates at Laps and Intersections: 4-10d .
   8. Roof Stripping to Purlins or Joists: 2-8d or 2-10d at 12" on center.

3.3 MINIMUM BOLTING

A. Anchor Bolts, Plates to Foundation: 4'-0" on center maximum.

B. Lag Bolts, Pre-drill Holes:
   1. 5/8" Diameter Bolt: Drill 1/2" diameter hole.
   2. 3/4" Diameter Bolt: Drill 9/16" diameter hole.

END OF SECTION

SHEATHING

PART 1 - GENERAL

1.1 WORK INCLUDED

A. Provide plywood wall sheathing and plywood roof sheathing as indicated on the Drawings and as specified herein.

1.2 REFERENCES

A. ASTM International (ASTM): ASTM C1396, Standard Specification for Gypsum Board.

B. American Plywood Association: PS 1, Construction and Industrial Softwood Plywood, latest edition.

C. APA PRP-108: Performance Standards and Policies for Structural Use Panels, latest edition.

1.3 DELIVERY, STORAGE, AND HANDLING

A. Deliver sheathing with edges protected from bundling strap damage and store above grade, protected from moisture.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Plywood Roof Sheathing: 5/8" thick, Structural II or CDX, T&G Plywood, 48/24 span rating, APA rated, PS 1, Exposure 1.

B. Plywood Wall Sheathing: 1/2" thick, APA rated sheathing, Exposure 1, 24/0 span rating.

C. Nail Fasteners: Per Structural Drawings.

D. Adhesive: APA developed conforming to AFG-01.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Plywood Roof Sheathing:
   1. Install plywood with the face grain perpendicular to supports with end joints staggered.
   2. Provide a 1/8" space between all end joints and 1/8" at all edges. (Use a spacer tool to assure accurate and consistent spacing.)

B. Plywood Wall Sheathing:
   1. Install plywood either horizontal or vertical with panel edges backed per Structural Drawings.
   2. Provide a 1/8” space between all end joints and 1/8” at all edges. (Use a spacer tool to assure accurate and consistent spacing.)

C. Small Pieces: Eliminate pieces less than 24" wide with adjustment in layout. If pieces less than 24" wide are required in any wall segment, layout must be approved prior to placement of any sheathing in that segment.

3.2 MINIMUM FASTENING SCHEDULE

A. Roof Sheathing: Per Structural Drawings.

B. Wall Sheathing: Per Structural Drawings.

END OF SECTION

ARCHITECTURAL WOOD CASEWORK

PART 1 - GENERAL

1.1 WORK INCLUDED

A. Provide custom casework and specified associated accessories where shown on the Drawings and as specified herein.

B. Include shop fabricated cabinets, casework, countertops, cabinet hardware, preparation for utilities, and shelving.

1.2 REFERENCED STANDARDS

A. Quality Standards: Except as herein modified, materials and workmanship grades shall be as defined in Architectural Woodwork Standards, published by the Architectural Woodwork Institute.

1.3 SUBMITTALS

A. Shop Drawings:
1. Show layout, dimensions, profiles, joint details, and other pertinent items.
2. Show connections to adjacent work, and complete assembly whether or not materials are furnished by the cabinet shop.
3. Include the manufacturer's descriptive literature for specialty items.
4. Identify each item as to location, material grade, workmanship grade, wood species, finish, plastic laminate color, and location of casework

1.4 DELIVERY, STORAGE, AND HANDLING

A. Do not deliver products to jobsite until notified by the Contractor that the project is conditioned and prepared to handle and store casework products without damage. Coordinate delivery to comply with job requirements.

B. Protect all casework from damage during shipment, handling, and storage.

1.5 JOB CONDITIONS

A. Temperature and Humidity Requirements: Maintain temperature and relative humidity within 5% of the amounts expected during operation of the building. Maintain materials within these limits for 48 hours prior to and during field finishing of materials.

B. Maintain 50°F minimum in spaces where casework and shelving are being stored.

C. Coordinate with other trades affecting or affected by the work of this Section.

D. Protect other surfaces against damage or discoloration caused by the work of this Section.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Plywood:
1. APA, PS 1 for softwood; PS 51 and Industry Standard, I.S. 1 for hardwood. 5-ply minimum.

B. General Particleboard: 45-pounds per cubic foot minimum density with 8% maximum moisture content. Weyerhaeuser Timblend or Duraflake, Champion Novaply, or accepted substitute.

C. Particleboard at Sinks and Window Sills: 48-pounds per cubic foot minimum density, with 8% maximum moisture content; provide in thicknesses indicated on the Drawings; Medex by Midite Corporation or accepted substitute.

D. Hardboard: Masonite Duolux, tempered, Dark Brown color or accepted substitute.

E. Fiberboard Dividers: Smooth face MDF, 60 pounds density, 1/4" thickness.

F. Low Pressure Laminate: MDL Milamine Overlay, Selply Polyester Overlay, Roseberg Forest Products, or accepted substitute, in color to match existing.

G. High Pressure Laminate:
   1. Manufacturers: Formica, Nevamar, Wilsonart, or accepted substitute.
   2. Thickness and NEMA Type:
      a. Countertops, Splashes, and Countertop Edges: 0.048" (HGS)
      b. Vertical Exposed Surfaces: 0.028" (VGS)
      c. Semi-Concealed Backing: 0.020" (CLS).
      d. Concealed Backing: 0.020" (BKL).
   3. Color: Provide all high pressure laminate in colors to match existing.

H. Plastic Edge Banding: Fabricator's choice of PVC, minimum 0.018" to match the adjacent laminate color. **NO "F" AND "T" MOLDING ALLOWED.**

I. Casework Countertop Edge Profiles: Countertop edge shall have a radius or be finished in a way that eliminates sharp edges.

J. Fasteners: Nails, staples and screws to comply with Section 400 in AWI Quality Standards.

K. Standard Adhesives: Urea, Resorcinol, P.V.A. and Contact adhesives as selected by the cabinet manufacturer, meeting AWI Quality Standards and building code requirements.

2.2 FINISH HARDWARE

A. Adjustable Casework Shelf Supports: Knape & Vogt No. 255 steel standards and No. 256 steel shelf clips with Zinc finish. 32mm line boring system will not be accepted.

B. Drawer Guides and Slides: Full extension, sized for load capacity. Integral metal roller guides with positive front and rear drawer stops preferred. Drawer face should not be used as a drawer stop. Ball bearing guides side mounted. Examples include Knape and Vogt, Accuride. Load capacity for desk drawers 100 lbs per pair. Bins and file drawers-150 lbs per pair. Drawer sides to be ½" plywood. Drawer front and backs ¾" plywood tongue and groove into sides. Front surface to be high pressure laminate to match cabinet construction. Visible interior surface to be laminate to match construction. Bottom to be ¼" tempered hardboard or ½" thick particleboard fitted into sides with a dado joint.

C. Hinges: No concealed (European-style) hinges permitted. Hospital grade overlay hinges required. RPC 374-26D or equal.

1. Heavy Duty Cabinet Door Hinges: 2-3/4", five knuckle hinge, 0.095" steel, hospital tips. Provide in Satellite Chrome color. Rockford Process Control, Inc. #374 (815-966-2000) or accepted substitute. Mount with 5mm EURO screws.

D. Provide low emitting adhesives. All adhesives and sealant installed inside of the weatherproofing system shall meet testing and product requirements of CDPH Standard Method c1.1-2010. Examples include greenguard gold, collaborative for high performance schools and SCS Indoor Advantage Gold. VOC contents wet applied on site must meet applicable chemical content requirements of SCAQMD Rule 1168, July 1, 2005.

E. Pulls: 5/16" diameter by 3-1/2" wire pull at each drawer and door. Color of finish hardware on door is to match the finish hardware of the room that the casework is located within. See Section 08 71 00, Door Hardware.

F. Drawer and Door Locks: Cabinet type lock with removable cylinder similar to Schlage CL-1000. Teachers' personal closets-entrance lock with push button on interior; similar to Schlage AL53PD.

G. Drawer and Door Locks: Corbin 0737, Olympus Model CN, KABA Rim Lock (#230.06.224) by HAFELE, or accepted substitute. Provide with dead bolt and metal strike, rosette and 5-pin minimum tumbler lock. Provide two keys per lock and all locks keyed to a master system per the Owner. Color to match finish hardware specified in Section 08 71 00, Door Hardware.

H. Catches: One heavy duty magnetic catch per cabinet door.

I. Touch Latches: Provide touch latches for doors as indicated on the Drawings. Size latches as required for proper door size operation.

J. Elbow Catches: Ives #2 elbow catches to meet Federal Specification No. 1075 or accepted substitute. Provide elbow catches on inactive doors as required.

K. Clothes Hooks: Ives wall hook, Model No. 572, finish as selected by the Architect from manufacturer's standard finishes, or accepted substitute.

2.3 FABRICATION

A. General:

1. AWI Fabrication Style: Frameless cabinets are approved where matching casework is not required. Door style to be fully overlay.
2. AWS Fabrication Grade: Premium grade.
3. Conform to AWS Section 10 Casework, and Section 11 Countertops except as noted.
4. All shelves adjustable.
5. Verify dimensions of sinks and other items to be built into cases and counters.
6. Assemble at shop where feasible.
7. Conceal end grain in exposed and semi-exposed surfaces.
8. Assemble cases with adhesive.
9. Assemble drawers with dados and adhesive.
10. Use concealed mounting clips to attach casework to the wall.
11. Use concealed screws and bolts where required for strength and rigidity.
12. Install finish hardware specified herein at shop.
13. Install adjustable shelf standards to full height of space where adjustable shelves are shown and recess flush into cabinet sides.
14. Countertop edges and backsplashes are to be sealed to wall surface.
16. No exposed fasteners allowed for attachment to wall surface or to other cabinets without Architect's prior approval.

B. Materials:

1. Exposed Surfaces: High Pressure Plastic Laminate. Includes the outside surfaces and top surfaces of all casework and the inside surfaces of bookcase units.
2. Semi-exposed and Concealed Surfaces: MDL, Selply, or accepted substitute.
3. Countertop Substrate: 3/4" thick general particleboard or INT-DFPA plybase "B-D" grade at countertops without sinks. 3/4" thick Medex particleboard at countertops with sinks or lavatories.
4. Storage and Adjustable Shelving: Minimum 1" thick particleboard with low pressure plastic laminate on both surfaces. All 4 edges of all shelves are to receive PVC edge banding.
5. Casework Components: Sides, tops, bottoms, and fronts to be 3/4" particleboard with overlay as specified. Cabinet backs to be 1/4" MDL, Selply, or accepted substitute.
6. Drawer Box: sides, backs, and sub-fronts to be 1/2" MDL, Selply, or accepted substitute. Drawer bottoms to be 1/4" MDL, Selply, or accepted substitute.
7. Edge Banding: Provide at exposed particleboard edges in accordance with AWI Standards and as specified herein. Edge band all edges of shelving. **No "F" or "T" molding allowed on new casework.**

PART 3 - EXECUTION

3.1 EXISTING CONDITIONS

A. Verify that surfaces to receive casework, countertops, and shelving are straight, plumb, true, rigid, and otherwise properly prepared. Notify Contractor of any defects requiring correction prior to starting work. Do not start work until corrections have been made and are satisfactory.

B. Verify that solid blocking has been properly installed to support casework and accessories.

3.2 FIELD MEASUREMENTS

A. Verify field measurements prior to fabrication. If field measurements differ slightly from drawing dimensions, modify work as required for accurate fit. If any measurement differs substantially, notify the Architect prior to fabrication.

3.3 INSTALLATION

A. Miter corners, bevel-cut, and glue joints.

B. Provide continuous bases under in-line base casework unless otherwise indicated.

C. Secure casework in place plumb, square, true, level, and without distortion. Level where necessary with concealed shims.

D. Anchorage: Secure countertops to grounds, furring, and solid blocking with countersunk fasteners and blind nailing as required. Anchor wall standards for open wall mounted adjustable shelving to solid framing.

E. Shelf Brackets: Secure shelf brackets into solid backing.

F. Install wall hung cabinets on concealed mounting clips. No exposed screw heads or fasteners allowed.

G. Accurately scribe face plates, filler strips, and trim strips to adjacent surface irregularities.

H. Ease sharp external corners prior to finishing.

3.4 ADJUSTMENTS, CLEANING, AND REPAIRING

A. Adjust moving parts to operate satisfactorily at time of project Substantial Completion and during warranty period.

B. Damage Adjustments: Repair damaged or defective work as directed. Touch up finish as required. Remove and refinish damaged areas of finish.

C. Cleaning: Clean exposed and semi-exposed surfaces. Remove labels from exposed plastic laminate finish.

D. Including work of other trades, clean, repair, and touch-up or replace, when directed, any products that have been soiled, discolored, or damaged by work of this Section.

E. Leave surfaces ready for finishing specified in other Sections.

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

G. Provide protective cover on counter tops until project acceptance.

END OF SECTION

WOOD TRIM

PART 1 - GENERAL

1.1 WORK INCLUDED

A. Provide exterior and interior finished solid wood standing and running trim as indicated on the Drawings and as specified herein.

1.2 REFERENCES

A. American Plywood Association: PS 1, Construction and Industrial Softwood Plywood.

B. U.S. Department of Commerce: PS 20, The American Lumber Standard.

C. Architectural Woodwork Institute: AWI Standards, Sections 100, 200 and 300.

D. ASTM International (ASTM): ASTM A153, Standard Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware.

1.3 SUBMITTALS

A. Shop Drawings: Submit three full or half size profile sections of molding and trim items. Provide profile drawing of wood frames and frame corner connection details.

B. Office Samples: Submit three 12" long samples of each wood species and cut of transparent finished wood.

PART 2 - PRODUCTS

2.1 EXTERIOR WOOD MATERIALS

A. Exterior Wood Standing and Running Trim: Western Red Cedar, kiln dried to average 15% moisture content.
1. Grade: Grade B & Better - 1 & 2 Clear, by WWPA.
2. Texture: Smooth surfaces.
3. Kerf the back of all exterior trim.

B. Exterior Wood Soffits: Western Red Cedar, kiln dried to average 15% moisture content.
1. Grade: Grade B & Better - 1 & 2 Clear VG, by WWPA.
2. Size: 1/2" x 4" T&G.
3. Texture: One face saw textured.

C. Pre-prime all exterior finish carpentry. Use of laminated finish boards is not allowed. All rim boards must be pre-primed before installation. Engineered rim board products are not accepted.

2.2 INTERIOR WOOD MATERIALS

A. Hardwood Lumber: Comply with AWI "Quality Standard" for quality of materials, fabrication and with requirements indicated.

B. Interior Wood Standing and Running Trim for Transparent Finish: Rift cut, Custom Grade, Red Oak fabricated to match existing patterns and sizes. The use of pine is prohibited for any finish carpentry.

C. Interior Wood Standing and Running Trim for Opaque Finish: Paint grade Birch, Poplar, or Hemlock fabricated to match existing patterns, sizes, and profiles. Wood materials shall originate in "certified well-managed" forests. The use of pine is prohibited for any interior finish carpentry.

WOOD TRIM

2.3 ACCESSORIES

A. Fasteners and Anchorages: Provide nails, screws, and other anchoring devices of type, size, material, and finish suitable for intended use and required to provide secure attachment; concealed where possible. Stainless steel or hot-dip galvanized fasteners for work exposed to exterior and high humidities to comply with ASTM A153.

B. Screens for Soffit Vents: Wire cloth, 18x14 mesh, 0.13 diameter aluminum wire comply with FS RR-W-365, Type VII, except black anodized "gun metal" coating on wire.

PART 3 - EXECUTION

3.1 PREPARATION

A. Deliver exterior wood to painting subcontractor for the application of shop applied pre-stain and backprime on all surfaces. Provide the delivery back to the job site after shop work is complete.

3.2 INSTALLATION

A. General:
1. Install work plumb, level, true, and straight with no distortions. Shim as required using concealed shims.
2. Scribe and cut items to fit adjoining work.
3. Anchor items securely to supports and substrates, using concealed fasteners and blind nailing where possible. Use fine finishing nails for exposed nailing except as indicated, countersink and fill flush with finished surface.

B. Standing and Running Trim: Install with minimum number of joints possible, using full-length pieces from maximum length of lumber available. Cope at returns and miter at corners to produce tight fitting joints. Use scarf joints for end-to-end joints. Nail wood trim staggered at 12" on center.

END OF SECTION

PREPARATION FOR RE-ROOFING

PART 1 - GENERAL

1.1 WORK INCLUDED

A. Removal of existing roofing materials and sheet metal flashing.
   1. Review of existing roof deck conditions.

B. Removal of sheet metal items being replaced as indicated on Drawings.

1.2 ADMINISTRATIVE REQUIREMENTS

A. Coordinate with affected mechanical and electrical work associated with roof penetrations.

B. Schedule work to coincide with commencement of installation of new roofing system.

1.3 MATERIALS OWNERSHIP

A. Except for items or materials indicated to be reused, reinstalled, or otherwise indicated to remain Owner’s property, demolished materials shall become Contractor’s property and shall be removed from Project Site and recycled.

1.4 DEFINITIONS

A. Roofing Terminology: Refer to ASTM D 1079 and glossary in NRCA's "The NRCA Roofing and Waterproofing Manual" for definition of terms related to roofing work in this Section.

B. Roof Tear-Off: Removal of existing membrane roofing system from deck.

C. Existing Membrane Roofing System: Existing roofing membrane, roof insulation, base flashings, and components and accessories between deck and roofing membrane.

D. Existing Sheet Metal Flashings: Existing copings, wall panels, counter flashing, securement bars, and fasteners and accessories and underlayment over various substrates.

E. Temporary removal: Removal and reinstallation of select building and existing roof system elements as required to perform roofing repairs.

F. Remove: Detach items from existing construction and legally dispose of them off-site unless indicated to be removed and reinstalled.

G. Existing to Remain: Existing items of construction that are not indicated to be removed.

1.5 INFORMATIONAL SUBMITTALS

A. Photographs: Show existing conditions of adjoining construction and site improvements, including exterior and interior finish surfaces that might be misconstrued as having been damaged by reroofing operations. Submit before Work begins.

B. Landfill Records: Indicate receipt and acceptance of demolished materials, including hazardous wastes (such as asbestos-containing material) by a landfill facility licensed to accept hazardous wastes.

C. Recycling Records: Indicate receipt and acceptance of recycled construction materials by a qualified recycling center.

1.6 QUALITY ASSURANCE

A. Installer Qualifications: Installer of new membrane roofing system is approved by warrantor of new roofing system.

B. Roofing Conference: Conduct conference at Project site. Convene one week before starting work of this Section.
   1. Meet with Owner, Architect, Consultant, testing and inspecting agency representative; roofing system manufacturer's representative, roofing Installer including project manager, superintendent and foreman, and installers whose work interfaces with or affects reroofing including installers of roof accessories and roof-mounted equipment.
   2. Review methods and procedures related to roofing system tear-off and replacement including, but not limited to, the following:
      a. Reroofing preparation, including membrane roofing system manufacturer's written instructions.
      b. Temporary protection requirements for existing roofing system that is to remain during and after installation.
      c. Protection requirements for interior spaces, both occupied and unoccupied, of the building.
      d. Existing roof drains and roof drainage during each stage of reroofing, and roof drain plugging and plug removal requirements.
      e. Construction schedule and availability of materials, Installer's personnel, equipment, and facilities needed to make progress and avoid delays.
      f. Condition and acceptance of existing roof deck and base flashing substrate for reuse.
      g. Structural loading limitations of deck during reroofing.
      h. Base flashings, special roofing details, drainage, penetrations, equipment curbs, and condition of other construction that will affect reroofing.
      i. Shutdown of fire-suppression, -protection, and -alarm and -detection systems.
      j. Existing conditions that may require notification of Architect or Consultant before proceeding.

1.7 FIELD CONDITIONS

A. Do not remove existing roofing membrane when weather conditions threaten the integrity of the building contents or intended continued occupancy.

B. Maintain continuous temporary protection prior to and during installation of new roofing system.
   1. Review preparation and installation procedures and coordinating and scheduling required with related work.
      a. Verify items to be removed and items to remain or to be reinstalled.
   2. Meet with Owner, Architect, Owner's, testing and inspecting agency representative, roofing Installer, roofing system manufacturer's representative, and installers whose work interfaces with or affects roofing, including installers of roof accessories and roof-mounted equipment.
   3. Review and finalize construction schedule and verify availability of materials, Installer's personnel, equipment, facilities needed to make progress and avoid delays.
   4. Examine deck substrate conditions and finishes for compliance with requirements, including flatness and fastening.

5. Review structural loading limitations of roof deck.
6. Review temporary protection requirements for roofing system.

C. Protect existing building to be re-roofed, adjacent buildings, interior flooring, walkways, exterior plantings and landscaping from damage or soiling from re-roofing operations.

D. Limit overall roof loads and equipment wheel loads on existing roofing to avoid damage to areas not scheduled for immediate replacement.

E. Weather Limitations: Proceed with roofing preparations only when existing and forecasted weather conditions permit work to proceed without water entering existing roofing system or the building.

F. Owner may occupy portions of building immediately below reroofing area. Conduct reroofing so Owner's operations will not be disrupted. Provide Owner with not less than 48 hours' notice of activities that may affect Owner's operations.
1. Place protective dust or water leakage covers over sensitive equipment or furnishings. Coordinate with Owner the shut down HVAC and fire-alarm or detection equipment if needed, and the evacuation of occupants from below the work area(s) when/if necessary.
2. Before working over structurally impaired areas of deck, if any are discovered, notify Owner to evacuate occupants from below the affected area. Verify that occupants below the work area have been evacuated before proceeding with work over the impaired deck area.

G. Protect building to be reroofed, adjacent buildings, walkways, site improvements, exterior plantings, and landscaping from damage or soiling from reroofing and other scope operations.

H. Maintain access to existing walkways, corridors, and other adjacent occupied or used facilities.

I. Conditions existing at time of inspection for bidding will be maintained by Owner as far as practical.

J. Hazardous Materials: Roof removal will be required to be performed, as a minimum, by a roofing contractor licensed to remove and dispose of non-friable asbestos containing materials. Positive friability tests will trigger the requirement for an asbestos abatement contractor to remove and dispose of the roofing materials.

PART 2 – PRODUCTS

2.1 MATERIALS

A. General: Auxiliary reroofing preparation materials recommended by roofing system manufacturer for intended use and compatible with components of existing and new membrane roofing system.

B. Protection: Provide plastic sheets, tarps, and/or other appropriate products to use as protective coverings at roof repair and replacement locations exposed during work. Provide weights and mechanical attachment to retain sheeting in position.
1. Use protective coverings as necessary as temporary means to prevent moisture intrusion into building interior.
2. Comply with requirements specified in Section 02 41 13 SELECTIVE STRUCTURE DEMOLITION for removal and partial reuse of selected building elements.

PART 3 – EXECUTION

3.1 EXAMINATION

A. Verify that existing roof surface is clear and ready for work of this Section.

B. Inspect existing substrate nailers and sheathing for deterioration and damage. If nailers and/or sheathing has deteriorated, immediately notify Architect.

3.2 PREPARATION

A. Remove the existing roofing materials and sheet metal flashing from the roof decks and review existing deck conditions for water damage. Notify the Architect if unsound conditions are discovered.

B. Existing Roofing Systems Being Removed: Contractor to verify.
   1. Prepare for new roofing system specified in Section 07 54 19 PVC ROOFING.

3.3 MATERIAL REMOVAL - GENERAL

A. Remove only existing roofing materials that can be replaced with new materials the same day.

B. Transport and legally dispose of demolished materials. Do not permit demolished materials to obstruct any rooftop drainage system.

C. Repair existing wood deck surface as necessary to provide smooth substrate.

D. If deck surface is not suitable for new roofing, or if structural integrity of deck is suspect, notify Architect immediately.

3.4 ROOF TEAR-OFF

A. General: Notify Owner each day of extent of roof tear-off proposed for that day.

B. Comply with requirements as specified in Section 02 41 13 "Selective Structure Demolition" for removal and partial reuse of selected building elements.

C. Remove roofing membrane and other membrane roofing system components down to the deck.

D. Sheet Metal Removal: Detach and discard existing sheet metal flashings where new flashings are to be installed, as shown on the Drawings.
   1. Take care to avoid damaging existing sheet metal flashings that are to remain.
   2. Existing flashings or metal elements that will remain and that are damaged beyond acceptable use are to be replaced with new that match.
   3. Immediately offload and transport to remove flashings to location indicated by the Owner as conditions allow until permanent disposal is performed.

3.5 DECK PREPARATION.

A. Inspect deck after tear-off of existing roofing system.

B. Verify that concrete and metal substrates are visibly dry and free of moisture at start of each day's work. Do not proceed with roofing work if moisture is present.

C. If deck surface is not suitable for receiving new roofing or if structural integrity of deck is suspect, immediately notify Owner and/or Consultant. Do not proceed with installation until directed by Owner and/or Consultant.

D. All damaged decking must be removed and replaced with new decking matching gauge and profile of existing.
   1. Remove and replace damaged and deteriorating plywood roof deck and wood blocking per Division 6 and per Unit Prices (see Section 01 22 00 UNIT PRICES).

3.6 SPECIAL INSTRUCTIONS; REMOVAL OF ROOFING MATERIALS AND SHEET METAL FLASHING

A. Remove the existing roofing materials and sheet metal flashing from the roof decks and review existing deck conditions for water damage. Notify the Architect if unsound conditions are discovered.

B. Existing Roofing Systems Being Removed: Contractor to verify.
   1. Prepare for new roofing system specified in Section 07 54 19 PVC ROOFING.

3.7 PROTECTION

A. Provide temporary protective sheeting over uncovered deck surfaces.

B. Turn sheeting up and over parapets and curbing. Retain sheeting in position with weights.

C. Provide for surface drainage from sheeting to existing drainage facilities. Do not allow sheeting to pond water.

D. Do not permit traffic over unprotected or repaired deck surface.

E. Protect under deck fixtures and associated components from damage.

F. Protect flooring from falling debris and asphalt dust during all phases of the roof replacement project.

3.8 DISPOSAL

A. Collect demolished materials and place in containers. Promptly dispose of demolished materials not indicated to be recycled. Do not allow demolished materials to accumulate on-site. Transport and legally dispose of demolished materials off Owner's property.

END OF SECTION

THERMAL INSULATION

PART 1 - GENERAL

1.1 WORK INCLUDED

A. Thermal blanket insulation in wall and roof framing spaces.

B. Vapor retarder/air barrier at interior side of wall framing.

1.2 REFERENCES

A. ASTM International (ASTM):
1. ASTM C665: Standard Specification for Mineral-Fiber Blanket Thermal Insulation for Light Frame Construction and Manufactured Housing.
2. ASTM C991: Standard Specification for Flexible Glass Fiber Insulation for Metal Buildings.
3. ASTM E84: Standard Test Method for Surface Burning Characteristics of Building Materials.

B. Federal Specification (FS):
1. FS HH-I-524b: Insulation Board, Thermal (Polystyrene).
2. FS HH-I-558B, Amendment 3: Insulation, Blocks, Boards, Blankets, Felts, Sleeving (Pipe and Tube Coating), and Pipe Fitting Covering Thermal (Mineral Fiber, Industrial Type).

C. Thermal Insulation Manufacturer's Association: TIMA 202, Flexible Glass Fiber Insulation for Pre-Engineered Metal Buildings.

D. Underwriter's Laboratory: UL 623, Fire Resistance Directory.

E. Uniform Building Code: Standard No. 8-1, Test Method for Surface-Burning Characteristics of Building Materials.

1.3 SUBMITTALS

A. Product Data: Submit for materials being used, recommended adhesives, and manufacturer's stick pin placement for insulation installation. Provide insulation products with binders and adhesives containing no urea formaldehyde.

B. Provide insulation products with binders and adhesives containing no urea formaldehyde.

1.4 DELIVERY, STORAGE, AND HANDLING

A. Deliver all materials to the project site in the manufacturer's original packaging, indicating R-value, type of material, and other pertinent data.

B. Store all materials off the ground and protected from weather and traffic damage.

PART 2 - PRODUCTS

2.1 THERMAL BLANKET INSULATION

A. Insulation Data: Unfaced Mineral Fiber Insulation Blanket, ASTM C665, FS HH-I-521F, 1.5 pound minimum density. CertainTeed, Manville, Owens/Corning, U.S. Gypsum, or accepted substitute.
1. R-Value: R-21, 5-1/2" thick at walls.

2.2 VAPOR RETARDER/AIR BARRIER

A. Vapor Retarder/Air Barrier Sheet: CertainTeed MemBrain or accepted substitute.

B. Seam Tape: 3M Construction Seaming Tape 8087CW or accepted substitute.

C. Seam Sealant: Elastomeric, silicone composition, single component, moisture neutral cured, conforming to ASTM C920; DOWSILL 791 Weatherproofing Sealant or accepted substitute.

2.3 ACCESSORIES

A. Insulation Baffles: ADO ProVent or accepted substitute.

PART 3 - EXECUTION

3.1 INSPECTION

A. Examine areas scheduled to receive insulation to insure protection against weather and other hazards.

B. Inspect space allocated for proper depth to receive specified material.

C. Coordinate timing of installation with framer, plumbers, electricians, and other whose work may be affected or have effect. Low voltage wiring shall not be installed prior to completion of vapor retarder/air barrier installation.

3.2 INSTALLATION - INSULATION

A. Thermal Blanket Insulation:
1. Install blankets snugly between framing members.
2. Insulate small areas between closely spaced framing members. Cut and fit around pipes, conduits, and outlet boxes. Where pipes are located in stud spaces, place insulation between exterior wall and pipe, compressing insulation if necessary.

3.3 INSTALLATION – VAPOR RETARDER/AIR BARRIER

A. Install vapor retarder/air barrier sheet over interior face of wall framing at exterior walls and over interior face of batt insulation at roof framing to result in an airtight enclosure. Do not overstretch sheets where insulation thickness is greater than framing depth.
1. Staple sheet to framing at 8-12” on center.
2. Overlap sheet edges by 6” minimum. Bed sheet edges in a continuous bead of seam sealant and staple sheet through sealant bed. Install seam tape over the sheet lap.
3. At roof framing, install seam tape over all staples.
4. At rough openings, return sheet into opening as shown in the Drawings, Bed sheet edges in a continuous bead along interior side of framing/plate and staple sheet through sealant bed.
5. At tops, bottoms and ends of wall apply seam sealant in a continuous bead along interior side of framing/plate and staple sheet through sealant bead.
6. Cut sheet to fit tightly around penetrations. Seal sheet to penetration with seam sealant or seam tape. Sheet shall be sealed airtight to all penetrations including but not limited to framing/truss webs, electrical, plumbing and mechanical items.
7. At round penetrations larger than 2” in diameter, provide target sheet centered on penetration extending 6” minimum on all sides of penetration, cutting center in a radial finger pattern and set over penetration. Seall edges of target to surrounding sheet with seam tape. Seal target to penetration with seam tape.

3.4 FIELD QUALITY CONTROL

A. Air Barrier Field Testing: The Owner shall engage an AAMA accredited testing agency to perform air barrier testing in accordance with ASTM E779 Standard Test Method for Determining Air Leakage by Fan Pressurization with the use of theatrical fog to determine locations of leakage.

1. Air barrier field testing shall be performed and all observed deficiencies shall be corrected prior to installation of interior finishes, including but not limited to gypsum sheathing, ceiling grids and ceiling tiles.

3.5 CLEANING

A. Remove litter and debris leaving areas in a clean, uncluttered condition.

END OF SECTION

AIR BARRIERS

PART 1 - GENERAL

1.1 WORK INCLUDED

A. Provide air infiltration barrier over the building sheathing as indicated on the Drawings and as herein specified.

1.2 SUBMITTALS

A. Product Data: Submit manufacturer's data showing test data conforming tests indicated herein.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Air Infiltration Barrier:
1. "AMOWRAP Housewrap" by Amoco Foam Products Co., (800) 241-4402.
2. "Rufco-Wrap" by Raven Industries, (800) 635-3456.
3. "Tyvek Housewrap" by Du Pont, (302) 999-3489.
4. Or accepted substitute.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Install with printed side out, directly over the sheathing.

B. Beginning at the ground level, begin at any corner and unroll from left to right. Place the roll one foot around the corner and staple the edge, covering the wall surface. Staple from top to bottom smoothing wrinkles toward the soleplate. Place staples 30" apart. Seal at interfaces.

C. Install air infiltration barrier around the building, covering door openings, windows, louvers, soleplate, and sills. Overlap soleplate by 6". All end laps are to be minimum of 8" overlap.

D. At the second story, begin at any corner and either install precut sheets or unroll as on the first floor. Cover all windows and louver openings. Overlap the first floor material with the second story material minimum of 12".

E. After the building is completely wrapped, go back to windows, louvers, and doors and cut an X from corner to corner. Pull the air infiltration barrier in over the frame and staple inside.

F. Do not leave the air infiltration barrier exposed to UV radiation for more than one month.

END OF SECTION

PLYWOOD SIDING

PART 1 - GENERAL

1.1 WORK INCLUDED

A. Provide MDO plywood siding as indicated on the Drawings and as specified herein.

1.2 SUBMITTALS

A. Product Data: Submit the manufacturer's product data on siding. Indicate sizes, thickness, factory finish, recommended fasteners, and installation instructions.

B. Office Samples: Submit two 12" x 12" samples of plywood siding for review prior to ordering.

1.3 DELIVERY, STORAGE, AND HANDLING

A. Deliver siding in nested or full length bundling.

B. Store siding above grade and protect from weather exposure, moisture, or damage prior to installation.

C. Protect pre-finished and exposed surfaces of siding during lifting and placing at the Site.

PART 2 - PRODUCTS

2.1 MATERIALS

A. MDO Plywood Siding: Exterior type with one face of Medium Density Overlay as described in U.S. Product Standard PS 1. Identify each panel with the trademark of the American Plywood Association (APA). Thickness as indicated on the Drawings.

B. Nails: 8d aluminum siding nails.

C. Metal Z-strip: Stainless steel or extruded aluminum Z-shaped strip with 1/2" legs and web width as required for panel siding thickness.

PART 3 - EXECUTION

3.1 PREPARATION

A. Verify application of concealed wall flashing, sheathing, and bituminous sheet vapor retarder prior to installing siding.

3.2 INSTALLATION

A. Plywood Siding: Install wall panels vertical. Install with edges and ends on solid framing members. Allow 1/8" spacing at panel ends and edges. Nail siding with 8d aluminum siding nails 6" on center at edges and 12" on center at supports in field of panel. Set exposed nails. Install metal Z-strip at horizontal joints.

3.3 ADJUSTING AND CLEANING

A. Replace or repair and touch up damaged or scratched siding prior to field finishing to match factory finish.

B. Clean siding and remove excess joint sealant as directed.

END OF SECTION

MECHANICALLY –ATTACHED THERMOPLASTIC MEMBRANE ROOFING

PART 1 - GENERAL

1.1 DESCRIPTION

A. Work Included: Provide a complete mechanically-attached roofing system including membrane, flashings and other components.

B. Related Work: The work of this Section includes but is not limited to the installation of:

1. Substrate Preparation.
2. Roof Drains.
3. Vapor Retarder.
4. Wood Blocking.
5. Insulation.
6. Separation Layers.
7. Roof Membrane.
8. Fasteners.
9. Adhesive for Flashings.
10. Roof Membrane Flashings.
11. Walkways.
12. Metal Flashings.
13. Sealants.

C. Upon successful completion of work, provide the following warranties to the Owner:
1. Roofing Manufacturer’s Warranty.
2. Roofing Contractor Warranty.

1.2 QUALITY ASSURANCE

A. This roofing system shall be applied only by a Roofing Contractor authorized by the roofing manufacturer prior to bid (Sika Sarnafil "Applicator").

B. Upon completion of the installation and the delivery to the roofing manufacturer by the Applicator of a certification that all work has been done in strict accordance with the Contract Specifications and the roofing manufacturer’s requirements, an inspection shall be made by a Technical Representative of the roofing manufacturer to review the installed roof system.

C. There shall be no deviation made from the Project Specification or the approved shop drawings without prior written approval by the Owner, the Owner's Representative and the roofing manufacturer.

D. All work pertaining to the installation of the roofing membrane and flashings shall only be completed by Applicator personnel trained and authorized by the roofing manufacturer in those procedures.

1.3 SUBMITTALS

A. At the time of bidding, the Applicator shall submit to the Architect the following:
1. Copies of Specification.
2. Samples of each primary component to be used in the roof system and the manufacturer's current literature for each component.

3. Written approval by the insulation manufacturer (as applicable) for use and performance of the product in the proposed system.
4. Sample copy of roofing manufacturer's warranty.
5. Sample copy of Applicator's warranty.

B. Dimensioned shop drawings which shall include:
1. Outline of roof with roof size and elevations shown.
2. Profile details of flashing methods for penetrations.
3. Technical acceptance from the roofing manufacturer.

C. Certifications by manufacturers of roofing and insulating materials that all materials supplied comply with all requirements of the identified ASTM and other industry standards or practices.

D. Certification from the Applicator that the system specified meets all identified code and insurance requirements as required by the Specification.

E. Material Safety Data Sheets (MSDS).

1.4 CODE REQUIREMENTS

A. The applicator shall submit evidence that the proposed roof system meets the requirements of the local building code and has been tested and approved or listed by the following test organizations. These requirements are minimum standards and no roofing work shall commence without written documentation of the system's compliance, as required in the "Submittals" section of this specification.

B. Factory Mutual Research Corporation (FM) - Norwood, MA
1. Class 1-90 (for high wind exposure).

C. Underwriters Laboratories, Inc. - Northbrook, IL
1. Class B assembly.

1.5 PRODUCT DELIVERY, STORAGE AND HANDLING

A. All products delivered to the job site shall be in the original unopened containers or wrappings bearing all seals and approvals.

B. Handle all materials to prevent damage. Place all materials on pallets and fully protect from moisture.

C. Membrane rolls shall be stored lying down on pallets and fully protected from the weather with clean canvas tarpaulins. Unvented polyethylene tarpaulins are not accepted due to the accumulation of moisture beneath the tarpaulin in certain weather conditions that may affect the ease of membrane weldability.

D. As a general rule all adhesives shall be stored at temperatures between 40º F (5º C) and 80º F (27º C). Read instructions contained on adhesive canister for specific storage instructions.

E. All flammable materials shall be stored in a cool, dry area away from sparks and open flames. Follow precautions outlined on containers or supplied by material manufacturer/supplier.

F. Any materials which the owner's representative and/or Sika Sarnafil determine to be damaged are to be removed from the job site and replaced at no cost to the owner.

1.6 JOB CONDITIONS

A. Roofing materials may be installed under certain adverse weather conditions but only after consultation with roofing manufacturer, as installation time and system integrity may be affected.

B. Only as much of the new roofing as can be made weathertight each day, including all flashing and detail work, shall be installed. All seams shall be heat welded before leaving the job site that day.

C. All work shall be scheduled and executed without exposing the interior building areas to the effects of inclement weather. The existing building and its contents shall be protected against all risks.

D. All surfaces to receive new insulation, membrane or flashings shall be dry. Should surface moisture occur, the Applicator shall provide the necessary equipment to dry the surface prior to application.

E. All new and temporary construction, including equipment and accessories, shall be secured in such a manner as to preclude wind blow-off and subsequent roof or equipment damage.

F. Uninterrupted waterstops shall be installed at the end of each day's work and shall be completely removed before proceeding with the next day's work. Waterstops shall not emit dangerous or unsafe fumes and shall not remain in contact with the finished roof as the installation progresses. Contaminated membrane shall be replaced at no cost to the Owner.

G. The Applicator is cautioned that certain roofing membranes are incompatible with asphalt, coal tar, heavy oils, roofing cements, creosote and some preservative materials. Such materials shall not remain in contact with Sarnafil membranes. The Applicator shall consult the roofing manufacturer regarding compatibility, precautions and recommendations.

H. Arrange work sequence to avoid use of newly constructed roofing as a walking surface or for equipment movement and storage. Where such access is absolutely required, the Applicator shall provide all necessary protection and barriers to segregate the work area and to prevent damage to adjacent areas. A substantial protection layer consisting of plywood over roofing membrane or plywood over insulation board shall be provided for all new and existing roof areas that receive rooftop traffic during construction.

I. Prior to and during application, all dirt, debris and dust shall be removed from surfaces either by vacuuming, sweeping, blowing with compressed air and/or similar methods.

J. The Applicator shall follow all safety regulations as required by OSHA and any other applicable authority having jurisdiction.

K. All roofing, insulation, flashings and metal work removed during construction shall be immediately taken off site to a legal dumping area authorized to receive such materials. Hazardous materials, such as materials containing asbestos, are to be removed and disposed of in strict accordance with applicable City, State and Federal requirements.

L. All new roofing waste material (i.e., scrap roof membrane, release paper, empty cans of adhesive) shall be immediately removed from the site by the Applicator and properly transported to a legal dumping area authorized to receive such material.

M. The Applicator shall take precautions that storage and/or application of materials and/or equipment does not overload the roof deck or building structure.

N. Installation of roofing membrane over coal tar pitch or a resaturated roof requires special consideration to protect the roofing membrane from volatile fumes and materials. Consult roofing manufacturer for precautions prior to bid.

O. Flammable adhesives and deck primers shall not be stored and not be used in the vicinity of open flames, sparks and excessive heat.

P. All rooftop contamination that is anticipated or that is occurring shall be reported to the roofing manufacturer to determine the corrective steps to be taken.

Q. The Applicator shall verify that all roof drain lines are functioning correctly (not clogged or blocked) before starting work. Applicator shall report any such blockages in writing (letter copy to the roofing manufacturer) to the Owner's Representative for corrective action prior to the installation of the roof system.

R. Applicator shall immediately stop work if any unusual or concealed condition is discovered and shall immediately notify Owner of such condition in writing for correction at the Owner's expense (letter copy to the roofing manufacturer).

S. Site cleanup, including both interior and exterior building areas that have been affected by construction, shall be completed to the Owner's satisfaction.

T. All landscaped areas damaged by construction activities shall be repaired at no cost to the Owner.

U. The Applicator shall conduct fastener pullout tests in accordance with the latest version of the SPRI/ANSI Fastener Pullout Standard to help verify condition of the deck/substrate and to confirm expected pullout values.

V. The roofing membrane shall not be installed under the following conditions without consulting the roofing manufacturer’s Technical Dept. for precautionary steps:

1 The roof assembly permits interior air to pressurize the membrane underside.
2. Any exterior wall has 10% or more of the surface area comprised of opening doors or windows.
3. The wall/deck intersection permits air entry into the wall flashing area.

W. Precautions shall be taken when using roofing system adhesives at or near rooftop vents or air intakes. Adhesive odors could enter the building. Coordinate the operation of vents and air intakes in such a manner as to avoid the intake of adhesive odor while ventilating the building. Keep lids on unused cans at all times.

X. Protective wear shall be worn when using solvents or adhesives or as required by job conditions.

Y. Roofing membranes are slippery when wet or covered with snow, frost, or ice. Working on surfaces under these conditions is hazardous. Appropriate safety measures must be implemented prior to working on such surfaces. Always follow OSHA and other relevant fall protection standards when working on roofs.

1.7 WARRANTIES

A. Sika Sarnafil System Warranty (only products purchased from Sika Sarnafil are covered under System Warranty).
   1. Warranty Period: 20 years.

B. Upon successful completion of the work to Sika Sarnafil's satisfaction and receipt of final payment, the Sika Sarnafil System Warranty shall be issued.

C. Applicator/Roofing Contractor Warranty: The Applicator shall supply the Owner with a separate workmanship warranty. In the event any work related to roofing, flashing, or metal is found to be within the Applicator warranty term, defective or otherwise not in accordance with the Contract Documents, the Applicator shall repair that defect at no cost to the Owner. The Applicator's warranty obligation shall run directly to the Owner, and a copy shall be sent to the roofing manufacturer.

D. Owner Responsibility: Owner shall notify both the roofing manufacturer and the Applicator of any leaks as they occur during the time period when both warranties are in effect.

PART 2 - PRODUCTS

2.1 MANUFACTURER

A. Mechanically-Attached Roof System Components: Sika Sarnafil Sarnafast mechanically-attached roof system components are to be products of Sika Sarnafil as indicated on the Detail Drawings and specified in the Contract Documents.

B. Components to be used that are other than those supplied or manufactured by Sika Sarnafil may be submitted for review and acceptance by Sika Sarnafil. Sika Sarnafil’s acceptance of any other product is only for a determination of compatibility with Sika Sarnafil products and not for inclusion in the Sika Sarnafil warranty. The specifications, installation instructions, limitations, and/or restrictions of the respective manufacturers must be reviewed by the Architect for acceptability for the intended use with Sika Sarnafil products.

C. Approved Substitutes:
   1. Carlisle Sure-Flex PVC 60-mil Minimum
   2. Siplast Parasolo PVC 60-mil Minimum
   3. Johns Manville PVC 60-mil/MIN with DuPont Elvaloy KEE Polymer

2.2 MEMBRANE

A. Sarnafil S327-60 EnergySmart polyester reinforced membrane with a lacquer coating.

B. Membrane shall conform to ASTM D4434 (latest version), “Standard for Polyvinyl Chloride Sheet Roofing,” Classification: Type III.
   1. Sarnafil S327-60, 60 mil (1.5 mm), thermoplastic membrane with polyester reinforcement.

C. Certified Polymer Thickness:

1. Membrane manufacturer is to certify that the polymer thickness is of the polymer thickness specified (see 2.2, B, 1). Certification is to be signed by the membrane manufacturer's quality control manager. ASTM +/- tolerance for membrane thickness is not accepted.

D. Color of Membrane: White

E. Typical Physical Properties:

Parameters	ASTM Test Method	Minimum ASTM Requirement	Sarnafil Typical Physical Properties
Reinforcing Material	-		Polyester
Overall Thickness, min., inches (mm)	D751	0.060 (1.5)	[0.060inches]
Breaking Strength, min., lbf/in. (KN/m)	D751	200	305
Elongation at Break, min.	D751	15%	20%
Seam strength*, min. (% of breaking strength)	D751	75	85
Retention of Properties After Heat Aging	D3045	-	-
Breaking Strength, min., (% of original)	D751	90	95
Elongation, min., (% of original)	D751	90	90
Tearing Strength, min., lbf (N)	D1004	45.0	48
Low Temperature Bend, -40°F (-40°C)	D2136	Pass	Pass
Accelerated Weathering Test (Florescent Light, UV exposure)	G154	5,000 Hours	Pass
Cracking (7x magnification)	-	None	None
Discoloration (by observation)	-	Negligible	Negligible
Crazing (7 x magnification)	-	None	None
Linear Dimensional Change	D1204	0.5% max.	0.12%
Weight Change After Immersion in Water	D570	± 3.0% max.	2.0%
Static Puncture Resistance, 33 lbf (15 kg)	D5602	Pass	Pass
Dynamic Puncture Resistance, 14.7 ft-lbf (20 J)	D5635	Pass	Pass

* Failure occurs through membrane rupture not seam failure. Physical Properties shown are prior to applying felt backing, if specified.

2.3 VAPOR RETARDER

A. Vapor Retarder SA 31: Self adhesive vapor retarder, 31 mil (0.8 mm) thick for use as temporary roof protection.

2.4 FLASHING MATERIALS

A. Wall/Curb Flashing:
1. Manufacturers acceptable flashing material, adhesive and securement appropriate for the substrate and compatible with adjoining products.

B. Perimeter Edge Flashing:

1 Sarnaclad: A PVC-coated, heat-weldable sheet metal capable of being formed into a variety of shapes and profiles. Sarnaclad is a 25 gauge, G90 galvanized metal sheet with a 20 mil (1 mm)

unsupported Sarnafil membrane laminated on one side. The dimensions of Sarnaclad are 4 ft x 8 ft (1.2 m x 2.4 m).

2. Non-Typical Edge: Project-specific perimeter edge detail reviewed and accepted for one-time use by Sika Sarnafil's Technical Department. Consult Regional Technical Manager prior to job start for review and consideration for acceptance.

C. Miscellaneous Flashing:

1. Sarnastack: A prefabricated vent pipe flashing made from 0.060 inch (60 mil/1.5 mm) thick Sarnafil membrane. Available in multiple sizes. Consult Product Data Sheet for sizes and additional information.
2. Multi-Purpose Sealant: A proprietary sealant used at flashing terminations. Consult Product Data Sheet for additional information.
3. Sarnacol 2170 Adhesive: A solvent-based reactivating-type adhesive used to attach membrane to flashing substrate. Consult Product Data Sheets for additional information.
4. Detail Membrane PVC: Integral fiberglass mat reinforcement for dimensional stability. Used for flashing details.
5. Sarnafil G410 SA: PVC thermoplastic membrane with a factory applied pressure sensitive adhesive backing. Used for flashing details.

2.5 INSULATION/RECOVER BOARD

A. Roof Insulation: Rigid expanded isocyanurate foam insulation with black mat, treated glass, or foil facers. R-30 minimum; Manufacturer: Sarnatherm EPS.

B. Tapered Insulation: ASTM C1289-13 Type II Class 1 Grade 2, polyisocyanurate core foam faced with non asphaltic glass fiver reinforced cellulosic organic felt facers on both major surfaces. Available in 4x4 feet or 4x8 feet. Provide tapered insulation crickets; 3/4” per foot taper. Minimum thickness: ½”. Manufacturer: Sarnatherm Polyisocyanurate.

C. Recover Board: A-111 polyisocyanurate roof board with coated glass facers.

2.6 ATTACHMENT COMPONENTS

A. Sarnaplate: Used with various Sarnafasteners to attach insulation boards to roof deck. Sarnaplate is a 3 inch (75 mm) square or round, 26 gauge stamping of SAE 1010 steel with a Galvalume coating.

B. Sarnafastener #12: A #12 corrosion-resistant threaded drill point fastener used with Sarnaplates to attach insulation boards to steel or wood roof decks. Sarnafastener #12 has a modified buttress thread, a shank diameter of approximately 0.160 inch (4 mm) and a thread diameter of approximately 0.220 inch (5 mm). The driving head has a diameter of approximately 0.435 inch (11 mm) with a #3 Phillips recess for positive engagement.

C. Sarnafastener-15XP: A #15, heavy-duty, corrosion-resistant drill point fastener used with Sarnaplate to attach insulation or Sarnadisc, Sarnadisc-XPN and Sarnabar to attach Sarnafil S327 roof membrane to steel or wood roof decks. Sarnafastener-XP has a shank diameter of approximately 0.202 inch (5.3 mm) and the thread diameter is approximately 0.265 inch (6.6 mm). The driving head has a diameter of approximately 0.435 inch (11 mm) with a #3 Phillips recess for positive engagement.

D. Sarnadisc-XPN: A high strength linear plate used with a Sarnafastener to attach Sarnafil S327 roof membrane to steel, wood or concrete roof decks. Sarnadisc-XPN is an 18 gauge (1.2 mm), 1½ inch by 3¾ inch (38 mm x 95 mm) corrosion resistant steel plate.

2.7 WALKWAY PROTECTION

A. Sarnatred: A polyester reinforced, 0.096 inch (96 mil/2.4 mm), weldable membrane with surface embossment. Used as a protection layer from rooftop traffic. Sarnatred is supplied in rolls of 39 inches (1.0 m) wide and 50 feet (15 m) long.

2.8 MISCELLANEOUS ACCESSORIES

A. Aluminum Tape: A 2 inch (50 mm) wide pressure-sensitive aluminum tape used as a separation layer between small areas of asphalt contamination and the membrane and as a bond-breaker under the coverstrip at Sarnaclad joints.

B. Multi-Purpose Tape ST: A high performance sealant tape used with metal flashings as a preventive measure against air and wind blown moisture entry.

C. Perimeter Warning Membrane: Highly visible yellow strip of PVC thermoplastic membrane to draw attention to roof perimeters.

D. Sarnamatic 641mc or 661: 220 volt, self-propelled, hot-air welding machine used to seal Sarnafil membrane seams.

E. See “Localized Membrane Cleaning” technical bulletin #02-13 for cleaner: A high quality solvent cleaner used for the general cleaning of residual asphalt, scuff marks, etc., from the membrane surface. Also used daily to clean seam areas prior to hot-air welding in tear off or dirty conditions or if the membrane is not welded the same day it is unrolled. Consult Product Data Sheet for additional information.

2.9 SEALANTS AND PITCH POCKET FILLERS

A. Sarnafil sealant as appropriate for conditions.

B. Sarnafiller (two-component urethane adhesive for pitch pocket toppings).

C. Depending on substrates, the following sealants are options for temporary overnight tie-ins:

1. Type III hot asphalt conforming to ASTM D312 (latest revision).
2. Sarnacol 2165 Adhesive.
3. Multiple layers of roofing cement and felt.
4. Spray-applied, water-resistant urethane foam.
5. Mechanical attachment with rigid bars and compressed sealant.

2.10 MISCELLANEOUS FASTENERS AND ANCHORS

A. All fasteners, anchors, nails, straps, bars, etc. shall be post-galvanized steel, aluminum or stainless steel. Mixing metal types and methods of contact shall be assembled in such a manner as to avoid galvanic corrosion. Fasteners for attachment of metal to masonry shall be expansion type fasteners with stainless steel pins. All concrete fasteners and anchors shall have a minimum embedment of 1¼ inch (32 mm) and shall be approved for such use by the fastener manufacturer. All miscellaneous wood fasteners and anchors used for flashings shall have a minimum embedment of 1 inch (25 mm) and shall be approved for such use by the fastener manufacturer.

2.11 RELATED MATERIALS

A. Wood Nailer: Treated wood nailers shall be installed at the perimeter of the entire roof and around such other roof projections and penetrations as specified on Project Drawings. Thickness of nailers must match the insulation thickness to achieve a smooth transition. Wood nailers shall be treated for fire and rot resistance (wolmanized or osmose treated) and be #2 quality or better lumber. Creosote or asphalt-treated wood is not acceptable. Wood nailers shall conform to Factory Mutual Loss Prevention Data Sheet 1-49. All wood shall have a maximum moisture content of 19% by weight on a dry-weight basis.

B. Plywood: When bonding directly to plywood, a minimum 1/2 inch (12 mm) CDX (C side out), smooth-surfaced exterior grade plywood with exterior grade glue shall be used. Rough-surfaced plywood or high fastener heads will require the use of Sarnafelt behind the flashing membrane. Plywood shall have a maximum moisture content of 19% by weight on a dry weight basis.

PART 3 - EXECUTION

3.1 PRE-CONSTRUCTION CONFERENCE

A. The Applicator, Owner's Representative/Designer and Manufacturer(s) shall attend a pre-construction conference.

B. The meeting shall discuss all aspects of the project including but not limited to:
1. Safety.
2. Set up.
3. Construction schedule.
4. Contract conditions.
5. Coordination of the work.

3.2 SUBSTRATE CONDITION

A. Applicator shall be responsible for acceptance or provision of proper substrate to receive new roofing materials.

B. Applicator shall verify that the work done under related sections meets the following conditions:
1. Roof drains and/or scuppers have been reconditioned and/or replaced and installed properly.
2. Roof curbs, nailers, equipment supports, vents and other roof penetrations are properly secured and prepared to receive new roofing materials.
3. All surfaces are smooth and free of dirt, debris and incompatible materials.
4. All roof surfaces shall be free of water, ice and snow.

3.3 SUBSTRATE PREPARATION

A. The roof deck and existing roof construction must be structurally sound to provide support for the new roof system. The Applicator shall load materials on the rooftop in such a manner as to eliminate risk of deck overload due to concentrated weight. The Owner's Representative shall ensure that the roof deck is secured to the structural framing according to local building code and in such a manner as to resist all anticipated wind loads in that location.

3.4 SUBSTRATE INSPECTION

A. A dry, clean and smooth substrate shall be prepared to receive the Sika Sarnafil Sarnafast mechanically-attached roof system.

B. The Applicator shall inspect the substrate for defects such as excessive surface roughness, contamination, structural inadequacy, or any other condition that will adversely affect the quality of work.

C. The substrate shall be clean, smooth, dry, free of flaws, sharp edges, loose and foreign material, oil and grease. Roofing shall not start until all defects have been corrected.

D. All roof surfaces shall be free of water, ice and snow.

E. Sarnafil shall be applied over compatible and accepted substrates only.

3.5 WOOD NAILER INSTALLATION

A. Install continuous wood nailers at the perimeter of the entire roof and around roof projections and penetrations as shown on the Detail Drawings.

B. Nailers shall be anchored to resist a minimum force of 300 pounds per lineal foot (4,500 Newtons/lineal meter) in any direction. Individual nailer lengths shall not be less than 3 feet (0.9 meter) long. Nailer fastener spacing shall be at 12 inches (0.3 m) on center or 16 inches (0.4 m) on center if necessary to match the structural framing. Fasteners shall be staggered 1/3 the nailer width and installed within 6 inches (0.15 m) of each end. Two fasteners shall be installed at ends of nailer lengths. Nailer attachment shall also meet the requirements of the current Factory Mutual Loss Prevention Data Sheet 1-49.

C. Thickness shall be as required to match substrate and/or insulation height to allow a smooth transition.

D. Any existing nailer woodwork which is to remain shall be firmly anchored in place to resist a minimum force of 300 pounds per lineal foot (4,500 Newtons/lineal meter) in any direction and shall be free of rot, excess moisture or deterioration. Only woodwork shown to be reused in Detail Drawings shall be left in place. All other nailer woodwork shall be removed.

3.6 INSULATION INSTALLATION

General Criteria:

A. Insulation shall be installed according to insulation manufacturer's instructions.

B. Insulation shall be neatly cut to fit around penetrations and projections.

C. Install tapered insulation in accordance with insulation manufacturer's shop drawings.

D. Install tapered insulation around drains creating a drain sump.

E. Do not install more insulation board than can be covered with Sarnafil membrane by the end of the day or the onset of inclement weather.

F. Use at least 2 layers of insulation when the total insulation thickness exceeds 2-1/2 inches (64 mm). Stagger joints at least 12 inches (0.3 m) between layers.

G. Mechanical Attachment:
1. Insulation shall be mechanically fastened to the deck with approved fasteners and plates at a rate according to the insulation manufacturer's, FM's and Sika Sarnafil's recommendations for fastening rates and patterns. The quantity and locations of the fasteners and plates shall also cause the insulation boards to rest evenly on the roof deck/substrate so that there are no significant and avoidable air spaces between the boards and the substrate. Each insulation board shall be installed tightly against the adjacent boards on all sides.
2. Fasteners are to be installed consistently in accordance with fastener manufacturer's recommendations. Fasteners are to have minimum penetration into structural deck recommended by the fastener manufacturer and Sika Sarnafil.
3. Use fastener tools with a depth locator and torque-limiting attachment as recommended or supplied by fastener manufacturer to ensure proper installation.

3.7 MEMBRANE ATTACHMENT

A. The surface of the insulation or substrate shall be inspected prior to installation of the Sarnafil roof membrane. The substrate shall be clean, dry, free from debris and smooth with no surface roughness or contamination. Broken, delaminated, wet or damaged insulation boards shall be removed and replaced.

B. General:
1. Sarnafil S327 membrane is to be attached with Sarnafasteners and Sarnabar according to Sika Sarnafil’s and Factory Mutual’s requirements.
2. Membrane overlaps shall be shingled with the flow of water where possible.
3. Sarnafil full-width rolls shall be fastened perpendicular to the direction of the wood plank, where possible.
4. Tack welding of S327 full or half-width rolls for purposes of temporary restraint during installation is not permitted. Consult Sika Sarnafil’s Technical Department for further information.

C. Perimeter and Corner Areas:
1. Over the properly installed and prepared substrate surface, S327 half-width rolls are to be installed either parallel or perpendicular to the entire perimeter edge according to FM guidelines. The number of adjacent half-rolls will be determined by building height and width and other conditions according to FM guidelines and Sika Sarnafil Technical. Sarnafasteners and Sarnadiscs are installed along the edge of the membrane on the fastening line at a spacing determined by Sika Sarnafil and the Owner’s Representative/Designer.
2. Sarnadisc and Sarnadisc-XPN are held-back 1 inch (25 mm) are held-back 1-1/4 inch (31.8 mm) from the outer edge of the membrane. The adjacent half-roll is positioned to overlap the fastened edge of the first half-roll by 5-1/2 inches (140 mm) for Sarnadisc and Sarnadisc-XPN in accordance with the overlap lines marked on it’s edge. The 5-1/2 inch (140 mm) overlap will allow the top membrane to extend 2-1/2 inches (63 mm) past the Sarnadisc and Sarnadisc-XPN for heat-welding. Fasteners shall clamp the S327 membrane

tightly to the substrate. In corner areas where perimeter half-rolls intersect, add rows of Sarnafasteners and Sarnadiscs over the top the half-rolls and weld a (S327) coverstrip above them for watertightness. See Detail Drawings.

a. Perimeter area is defined as the outer boundary of the roof. If the roof is broken into different levels, each roof area shall be treated as an individual roof with its outer boundary being treated as a perimeter. Typically, internal expansion joints and firewalls are not considered to be full perimeters. Refer to Factory Mutual's Data Sheet 1-28 for more information.

b. The ridge area is defined as the high point in the roof area formed by two intersecting planes. When the sum of the slopes is a minimum of 4 inches in 12 inches (30 degrees), each side of the ridge shall be treated as a perimeter area.

3. Hot-air weld overlaps according to Sika Sarnafil's requirements. Seam test cuts shall be taken at least 3 times per day.

D. Interior Area:

1. Over the properly installed and prepared substrate surface, S327 full-width rolls are to be installed perpendicular to the wood plank or wood. Sarnafasteners and Sarnadiscs are installed along the edge of the membrane on the fastening line at a spacing determined by Sika Sarnafil and the Owner's Representative/Designer. Sarnadisc and Sarnadisc-XPN are held-back 1 inch (25 mm) from the outer edge of the membrane. The adjacent full-roll is positioned to overlap the fastened edge of the first full-roll by 5-1/2 inches (140 mm) for Sarnadisc and Sarnadisc-XPN in accordance with the overlap lines marked on it's edge. The 5-1/2 inch (140 mm) overlap will allow the top membrane to extend 2-1/2 inches (63 mm) past the Sarnadisc and Sarnadisc-XPN for heat-welding. Fasteners shall clamp the S327 membrane tightly to the substrate. See Detail Drawings.
2. Hot-air weld overlaps according to Sika Sarnafil's recommendations. Seam test cuts shall be taken at least 3 times per day.

E. Securement around Rooftop Penetrations:

1. Around all perimeters, at the base of walls, drains, curbs, vent pipes, or any other roof penetrations, Sarnafasteners and Sarnadiscs shall be installed according to perimeter rate of attachment. Fasteners shall be installed according to the manufacturer's instructions. Fasteners shall be installed using the fastener manufacturer's recommended torque-sensitive fastening tools with depth locators. Fasteners shall clamp the Sarnafil membrane tightly to the substrate.
2. Sarnafil membrane flashings shall extend 2-1/2 inches (63 mm) past the Sarnadisc and Sarnadisc-XPN and be hot-air welded to the Sarnafil deck membrane.

3.8 HOT-AIR WELDING OF SEAM OVERLAPS

A. General

1. All seams shall be hot-air welded. Seam overlaps should be 5-1/2 inches (140 mm) wide for Sarnadisc and Sarnadisc-XPN when automatic machine-welding and 4 inches (100 mm) wide when hand-welding, except for certain details.
2. Welding equipment shall be provided by or approved by Sika Sarnafil. All mechanics intending to use the equipment shall have successfully completed a training course provided by a Sika Sarnafil Technical Representative prior to welding.
3. All membrane to be welded shall be clean and dry.

B. Hand-Welding: Hand-welded seams shall be completed in two stages. Hot-air welding equipment shall be allowed to warm up for at least one minute prior to welding.

1. The back edge of the seam shall be welded with a narrow but continuous weld to prevent loss of hot air during the final welding.
2. The nozzle shall be inserted into the seam at a 45 degree angle to the edge of the membrane. Once the proper welding temperature has been reached and the membrane begins to "flow," the hand roller is positioned perpendicular to the nozzle and rolled lightly. For straight seams, the 1-1/2 inch (40 mm) wide nozzle is recommended for use. For corners and compound connections, the 3/4 inch (20 mm) wide nozzle shall be used.

C. Machine Welding:
1. Machine welded seams are achieved by the use of Sika Sarnafil's automatic welding equipment. When using this equipment, Sika Sarnafil's instructions shall be followed and local codes for electric supply, grounding and over current protection observed. Dedicated circuit house power or a dedicated portable generator is recommended. No other equipment shall be operated simultaneously off the generator.
2. Metal tracks may be used over the deck membrane and under the machine welder to minimize or eliminate wrinkles.

D. Quality Control of Welded Seams:
1. The Applicator shall check all welded seams for continuity using a rounded screwdriver. Visible evidence that welding is proceeding correctly is smoke during the welding operation, shiny membrane surfaces, and an uninterrupted flow of dark grey material from the underside of the top membrane. On-site evaluation of welded seams shall be made daily by the Applicator at locations as directed by the Owner's Representative or Sika Sarnafil's representative. One inch (25 mm) wide cross-section samples of welded seams shall be taken at least three times a day. Correct welds display failure from shearing of the membrane prior to separation of the weld. Each test cut shall be patched by the Applicator at no extra cost to the Owner.

3.9 MEMBRANE FLASHINGS

A. All flashings shall be installed concurrently with the roof membrane as the job progresses. No temporary flashings shall be allowed without the prior written approval of the Owner's Representative and Sika Sarnafil. Approval shall only be for specific locations on specific dates. If any water is allowed to enter under the newly completed roofing, the affected area shall be removed and replaced at the Applicator's expense. Flashing shall be adhered to compatible, dry, smooth, and solvent-resistant surfaces. Use caution to ensure adhesive fumes are not drawn into the building.

B. Sarnacol Adhesive for Membrane Flashings:
1. Over the properly installed and prepared flashing substrate, Sarnacol adhesive shall be applied according to instructions found on the Product Data Sheet. The Sarnacol adhesive shall be applied in smooth, even coats with no gaps, globs or similar inconsistencies. Only an area which can be completely covered in the same day's operations shall be flashed. The bonded sheet shall be pressed firmly in place with a hand roller.
2. No adhesive shall be applied in seam areas that are to be welded. All panels of membrane shall be applied in the same manner, overlapping the edges of the panels as required by welding techniques.

C. Sika Sarnafil's requirements and recommendations and the specifications shall be followed. All material submittals shall have been accepted by Sika Sarnafil prior to installation.

D. All flashings shall extend a minimum of 8 inches (0.2 m) above roofing level unless otherwise accepted in writing by the Owner's Representative and Sika Sarnafil Technical Department.

E. All flashing membranes shall be consistently adhered to substrates. All interior and exterior corners and miters shall be cut and hot-air welded into place. No bitumen shall be in contact with the Sarnafil membrane.

F. All flashing membranes shall be mechanically fastened along the counter-flashed top edge with Sarnastop at 6-8 inches (0.15-0.20 m) on center.

G. Sarnafil flashings shall be terminated according to Sika Sarnafil recommended details.

H. All adhered flashings that exceed 30 inches (0.75 m) in height or that of the perimeter Sarnastop spacings shall receive additional securement. Consult Sika Sarnafil Technical Department for securement methods.

I. All mechanically-attached flashings that exceed 18 inches (0.46 m) in height shall receive additional securement. Consult Sika Sarnafil Technical Department for securement methods.

3.10 METAL FLASHINGS

A. Metal details, fabrication practices and installation methods shall conform to the applicable requirements of the following:
1. Factory Mutual Loss Prevention Data Sheet 1-49 (latest issue).
2. Sheet Metal and Air Conditioning Contractors National Association, Inc. (SMACNA) - latest issue.

B. Metal, other than that provided by Sika Sarnafil, is not covered under the Sika Sarnafil warranty.

C. Complete all metal work in conjunction with roofing and flashings so that a watertight condition exists daily.

D. Metal shall be installed to provide adequate resistance to bending to allow for normal thermal expansion and contraction.

E. Metal joints shall be watertight.

F. Metal flashings shall be securely fastened into solid wood blocking. Fasteners shall penetrate the wood nailer a minimum of 1 inch (25 mm).

G. Airtight and continuous metal hook strips are required behind metal fascias. Hook strips are to be fastened 12 inches (0.3 m) on center into the wood nailer or masonry wall.

H. Counter flashings shall overlap base flashings at least 4 inches (100 mm).

I. Hook strips shall extend past wood nailers over wall surfaces by 1½ inch (38 mm) minimum and shall be securely sealed from air entry.

3.11 SARNACLAD METAL BASE FLASHINGS/EDGE METAL

A. All flashings shall be installed concurrently with the roof membrane as the job progresses. No temporary flashings shall be allowed without the prior written approval of the Owner's Representative and Sika Sarnafil. Acceptance shall only be for specific locations on specific dates. If any water is allowed to enter under the newly completed roofing due to incomplete flashings, the affected area shall be removed and replaced at the Applicator's expense.

B. Sarnaclad metal flashings shall be formed and installed per the Detail Drawings.
   1. All metal flashings shall be fastened into solid wood nailers with two rows of post galvanized flat head annular ring nails, 4 inches (100 mm) on center staggered. Fasteners shall penetrate the nailer a minimum of 1 inch (25 mm).
   2. Metal shall be installed to provide adequate resistance to bending and allow for normal thermal expansion and contraction.

C. Adjacent sheets of Sarnaclad shall be spaced ¼ inch (6 mm) apart. The joint shall be covered with 2 inch (50 mm) wide aluminum tape. A 4 inch minimum (100 mm) wide strip of Sarnafil flashing membrane shall be hot-air welded over the joint. Exercise caution at perimeter of roof. Workers shall follow OSHA safety procedures.

3.12 WALKWAY INSTALLATION

A. Sarnatred Walkway: Roofing membrane to receive Sarnatred Walkway shall be clean and dry. Place chalk lines on deck sheet to indicate location of Walkway. Apply a continuous coat of Sarnacol 2170 adhesive to the deck sheet and the back of Walkway in accordance with Sika Sarnafil's technical requirements and press Walkway into place with a water-filled, foam-covered lawn roller. Clean the deck membrane in areas to be welded. Hot-air weld the entire perimeter of the Walkway to the Sarnafil deck sheet. Check all welds with a rounded screwdriver. Re-weld any inconsistencies. Important: Check all existing deck membrane seams that are to be covered by Walkway with rounded screwdriver and reweld any inconsistencies before Walkway installation. Do not run Walkway over Sarnabars.

3.13 TEMPORARY CUT-OFF

A. All flashings shall be installed concurrently with the roof membrane in order to maintain a watertight condition as the work progresses. All temporary waterstops shall be constructed to provide a 100% watertight seal. The stagger of the insulation joints shall be made even by installing partial panels of insulation. The new membrane shall be carried into the waterstop. The waterstop shall be sealed to the deck and/or substrate so that water will not be allowed to travel under the new or existing roofing. The edge of the membrane shall be sealed in a continuous heavy application of sealant as described in Section 2.09. When work resumes, the contaminated membrane shall be cut out. All sealant, contaminated membrane, insulation fillers, etc. shall be removed from the work area and properly disposed of off site. None of these materials shall be used in the new work.

B. If inclement weather occurs while a temporary waterstop is in place, the Applicator shall provide the labor necessary to monitor the situation to maintain a watertight condition.

C. If any water is allowed to enter under the newly-completed roofing, the affected area shall be removed and replaced at the Applicator's expense.

3.14 COMPLETION

A. Prior to demobilization from the site, the work shall be reviewed by the Owner's Representative and the Applicator. All defects noted and non-compliances with the Specifications or the recommendations of Sika Sarnafil shall be itemized in a punch list. These items must be corrected immediately by the Applicator to the satisfaction of the Owner's Representative and Sika Sarnafil prior to demobilization.

B. All Warranties referenced in this Specification shall have been submitted and have been accepted at time of contract award.

3.15 DETAILS

A. See Details on Drawings and shop drawings.

B. Refer also to roofing manufacturer’s detail drawings. Refer to the manufacturer’s Typical System Details section for additional details.

END OF SECTION

SHEET METAL FLASHING AND TRIM

PART 1 - GENERAL

1.1 WORK INCLUDED

A. Sheet metal flashing, edge flashing, downspouts, scuppers, and all other sheet metal items required to weatherproof the roofing as indicated on the Drawings and as specified herein.

1.2 REFERENCES

A. ASTM International (ASTM):
1. ASTM A167: Standard Specification for Stainless and Heat-Resisting Chromium-Nickel Steel Plate, Sheet, and Strip.
2. ASTM A480: Standard Specification for General Requirements for Flat-Rolled Stainless and Heat-Resisting Steel Plate, Sheet, and Strip.
3. ASTM A653: Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process.
4. ASTM B32: Standard Specification for Solder Metal.
5. ASTM B209: Standard Specification for Aluminum and Aluminum-Alloy Sheet and Plate.
6. ASTM B370: Standard Specification for Copper Sheet and Strip for Building Construction.
7. ASTM C920: Standard Specification for Elastomeric Joint Sealants.
8. ASTM D4586: Standard Specification for Asphalt Roof Cement, Asbestos-Free.

B. Sheet Metal and Air Conditioning National Association, Inc. (SMACNA): Architectural Sheet Metal Manual, latest edition.

C. ANSI/SPRI ES-1,“Wind Design Standard for Edge Systems”.

1.3 SYSTEM DESCRIPTION

A. Moisture Retention Requirements: Finish work free from water leakage under all weather conditions.

1.4 SUBMITTALS

A. Shop Drawings: Submit shop drawings of flashing details showing dimensions, anchorage, and joint construction.

B. Samples: Submit 3 samples of factory finished metal for color selection.

1.5 PERFORMANCE REQUIREMENTS

A. General: Sheet metal flashing and trim assemblies as indicated shall withstand wind loads, structural movement, thermally induced movement, and exposure to weather without failure due to defective manufacture, fabrication, installation, or other defects in construction. Completed sheet metal flashing and trim shall not rattle, leak, or loosen, and shall remain watertight.

B. Design, fabricate, and install flashings at roof edges in accordance with ANSI/SPRI/FM 4435/ES-1, except with basic wind speed of 130 mph.

C. Water Infiltration: Provide sheet metal flashing and trim that does not allow water infiltration to building interior.

1.6 QUALITY ASSURANCE

A. Flashing systems to be fabricated and installed in compliance with the Sheet Metal and Air Conditioning Contractors National Association (SMACNA) standards and the Architectural Sheet Metal Manual.

1. SMACNA Manual: Comply with latest edition of the "Architectural Sheet Metal Manual" by SMACNA. Conform to details and description in reference standards unless otherwise indicated on the Drawings.

1.7 SEQUENCING AND SCHEDULING

A. Coordinate with roofing work specified in Section 07 54 19, PVC Roofing.

1.8 WARRANTY

A. Provide installer's written warranty against defects in materials and workmanship for a period of not less than 2 years.

B. Provide manufacturer's standard 20 years warranty on coil coated steel sheet.

C. Provide single source warranty provided by the Roofing Manufacturer including flashings herein specified. .

PART 2 - PRODUCTS

2.1 MATERIALS

A. Lead: 4 pound per square foot minimum, Grade B.

B. Pre-Painted Coil Coated Steel: 24-gage minimum, hot-dipped galvanized steel conforming to ASTM A653, G90 coating class.

1. Paint Finish at Exposed Side: Factory applied baked-on 2 coat system comprised of 1 coat of full strength 70% resin fluorocarbon (polyvinylidene fluoride PVF2) over a smooth coat of corrosion-resistant epoxy-based primer. Color to match existing.
2. Paint Finish at Underside: A washcoat over a coat of corrosion-resistant epoxy-based primer.

C. Galvanized Steel: 24-gage or 26 gage, hot-dip galvanized steel conforming to ASTM A653, G90 coating class.

2.2 MILL ROLLED NO. 2D = MATTE NON-REFLECTIVE

A. MILL ROLLED NO. 2B = BRIGHT, MODERATELY REFLECTIVE

B. MILL POLISHED NO. 3 = INTERMEDIATE POLISHED

C. MILL POLISHED NO. 4 = BRIGHT APPEARANCE WITH VISIBLE GRAIN/DIFFICULT TO MATCH

D. MILL POLISHED NO. 7 = HIGH DEGREE OF REFLECTIVITY

E. MILL POLISHED NO. 8 = MIRROR FINISH

F. Stainless Steel: 26-gage; ASTM A167, Type 302/304, dead soft, annealed, 2D (matte non-reflective) finish in accordance with ASTM A480.

G. Aluminum Flashings: As detailed on the Drawings or as otherwise required.
1. Alloy: Alloy 3003 - H14 Sheet and Plate meeting ASTM B209, or Alloy 3004 - Sheet and
2. Plate meeting ASTM B209.
3. Temper: H14.
4. Thickness: 0.032" minimum.
5. Pre-finish in colors to match adjacent metal roofing, wall panels, and/or aluminum storefronts and/or curtain wall frames.

H. Solder: ASTM B32; use 50/50 for all applicable work unless otherwise specified.

I. Soldering Flux: Type best suited for specific material

2.3 ACCESSORIES

A. Clips: Same gage and type as metal covering, 2" wide.

B. Continuous Clips: Same gage and type as coil coated steel used for metal flashings.

C. Concealed Fasteners: Hot-dip galvanized steel, or cadmium plated screws of type as appropriate for materials and substrates encountered.

D. Exposed Fasteners: Hot-dip galvanized steel or stainless steel nails or cadmium plated screws with neoprene grommeted washers and head to match sheet metal color. Color matching rivets may be used on exposed flashing. Provide type(s) as appropriate for the substrates encountered.

E. Sealants: ASTM C920; Type as required for conditions being sealed, compatible with materials encountered. ChemKalk 900, Sonnebourn NP1, or accepted substitute.

F. Plastic Cement: Non-running, heavy-body flashing cement composed of mineral ingredients to meet ASTM D4586.

G. Downspouts: Provide new continuous roll formed gutters of prefinished coil coated 24-gage material in manufacturer's standard color selected by the Architect

H. Downspout Brackets: 1" wide by 10 gage galvanized steel brackets. Prime painted prior to installation. See Section 09 91 00, Painting.

2.4 FABRICATION

A. Minimum Sheet Thickness: 24-gage.

B. Shop Forming Requirements:
1. Fabricate sheet metal flashing and wall liners as detailed and in accordance with reviewed shop drawings. Use the SMACNA Architectural Sheet Metal Manual Specifications and Details as a guide and basis for fabrication wherever applicable.
2. Provide for thermal movement of sheet metal.
3. Angle bottom edges of exposed vertical surfaces to form hemmed drip edge.
4. Fabricate to dimensions indicated on shop drawings.
5. Fabricate sheet metal with lines, brakes and angles sharp and true, and surfaces free from oilcanning, wave, warp, or buckle.
6. Fold exposed edges of sheet metal back to form 1/2" wide hem on side concealed from view.
7. Provide galvanic protection in areas where dissimilar metals are adjacent to each other.

8. Spring Locks: Provide flashing pieces fabricated to spring lock where indicated on the Drawings.
9. Mechanically fasten the top edge of base flashing. Cover metal flashing flanges at roof edges with one ply.

C. New Gutters, Downspouts, Leader Box: Provide new continuous roll formed gutters of pre-finished coil coated 24-gage material in manufacturer's standard color selected by the Architect. Maximum lengths of gutter sections are not to be greater than 100 feet. Submit gutter break joints to the Architect prior to fabrication. Downspouts are to match existing materials and profiles being tied into. Prime paint downspouts prior to installation.

D. Scuppers: Provide stainless scuppers in locations and size as indicated on the Drawings.

E. Pockets: Pitch pockets should be avoided if at all possible. Use of 4 pound lead flashing jack is preferred where applicable. Size pitch pocket to provide a minimum of 2” clearance between the edge of the pitch pocket and the projection. Fit pitch pockets with stainless steel bonnet scaled for projection. Pitch pockets shall be one piece design of stainless steel with 4” soldered flange. If installation requires split design, lap edge shall be set in Vulkem and riveted.

F. Interior Roof Drains: Clamping ring to be lower than surrounding roof surface, minimizing water ponding. Insulated roofs provide at least 3’-0” square depression at drain. Depression to be formed with tapered insulation board. Interior roof drain flashing, 4 pound, 99% pure lead, 36” square, flashing cement between roofing system and lead flashing. Extend lead flashing and roofing plys into clamping ring. Overflow drains should be interior piped. See Division 22 for approved sump receivers.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Do not proceed with Work until construction to receive the Work is completed.

B. Examine substrates and conditions under which Work is to be performed. Do not proceed until unsatisfactory conditions have been corrected. Surfaces to receive sheet metal shall be clean, even, smooth, dry, and free from defects and projections that might adversely affect the application. Verify slope prior to installation.

3.2 PREPARATION

A. Verify that surfaces to receive sheet metal have been covered with flashing membrane specified in Section 07 54 19, PVC Roofing. Notify the Contractor if this has not been installed.

B. Verify that flashing membrane material, specified under roofing work, has been installed prior to sheet metal installation. Refer to Drawings for membrane and sheet metal application.

3.3 INSTALLATION

A. Cleating at Seams: For size and spacing, refer to Drawings and SMACNA Manual. Secure one end with two fasteners and fold the cleat over the fastener heads. Unless otherwise indicated, use 2" x 3" long cleats of the same material and thickness of metal being installed.

B. Soldering: Perform with well-heated coppers, so as to heat thoroughly the seam and sweat the solder through its full width. Roughen edges of stainless steel and monel with emery cloth before soldering. Do not solder aluminum or pre-finished metal.

C. Flux: Use type of flux compatible with the sheet metal. Remove acid flux residue by neutralizing with ammonia or baking soda and rinsing with water.

D. Seams: Comply with SMACNA Manual details (Figures 3-2 and 3-3 and other Figures as applicable to specific installations). Orient seams properly for direction of water flow.

1. Standing Seams: Finish seams 1" high as detailed and in accordance with SMACNA standards. Fold the ends over to form watertight, 45° finished ends.
2. Flat Lock Seams: Provide four-ply flat lock horizontal seams at cap flashing on top of parapet and crickets. Solder lap seams around roof scuppers. Solder exposed gutter and downspouts seams. Finish not less than 1" wide.
3. All cap flashing is to have standing seams as indicated above.

E. Wall Coping: Provide as detailed and in accordance with SMACNA standards. Lock front edge in continuous cleat. Miter, seam, and seal corners of coping with solder. Lap adjacent lengths of coping 2" minimum.

F. Soil Stacks:
1. Install new 4 pound lead soil stacks set in mastic per the roofing manufacturer's recommendations.
2. Five course to new roof membrane in accordance with the roofing manufacturer's recommendations.

G. Use single piece of flashing at window flashing.

H. Provide drip flashing at head and base flashing, parapet and roof trim.

3.4 SCHEDULE

A. Fabricate sheet metal flashing and trim from the following materials of the minimum thicknesses indicated, unless otherwise required on the Drawings or to meet performance requirements.

B. Gutters with Girth 26 to 30 Inches:
1. Pre-Finished Galvanized Steel: 0.040 inch (20 gage) thick.

C. Downspouts and Downspout Leaders:
1. Pre-Finished Galvanized Steel: 0.040 inch (20 gage) thick.

D. Copings:
1. Pre-Finished Galvanized Steel: 0.028 inch (24 gage).

E. Saddles: Fabricate concealed saddles fully welded.
1. Galvanized Steel: 0.028 inch (24 gage) thick.

F. Base Flashing:
1. Galvanized Steel: 0.028 inch (24 gage) thick.

G. Counter Flashing:
1. Galvanized Steel: 0.028 inch (24 gage) thick.

H. Flashing Receivers:
1. Galvanized Steel: 0.022 inch (26 gage) thick.

I. Drip Edge Flashing:

SHEET METAL FLASHING AND TRIM

1. Pre-finished Galvanized Steel: 0.028 inch (24 gauge) thick.
2. Joint Style: Lapped and sealed.

J. Rake Edge Flashing:
1. Pre-finished Galvanized Steel: 0.028 inch (24 gauge) thick.
2. Joint Style: Lapped and sealed.

K. Door Threshold Flashing: Fabricate with profiles shown on Drawings.
1. Stainless Steel: 0.028 inch (24 gauge) thick.
2. Joint Style: Seamed and soldered.

L. One or Two Piece Storm Collar Flashings with Hose Clamp:
1. Stainless Steel: 0.018 inch (26 gauge) thick
2. Joint Style: Soldered.
3. Basis of Design:
   a. SBC Industries: Model UMB or UMB-BELL.
   b. Or approved.

M. Cleats: Fabricate to profiles shown on Drawings.
1. Galvanized Steel: 0.034 inch (22) gauge thick.
2. Joint Style: Lapped and sealed.

N. Roof-Penetration Flashing:
1. Galvanized Steel: 0.028 inch (24 gage) thick.

O. Opening Flashings in Frame Construction: Fabricate head, sill, jamb, and similar flashings to extend 4 inches beyond wall openings. Form head and sill flashing with 2-inch-high, end dams.
1. Galvanized Steel: 0.028 inch (24 gage) thick.

P. Equipment Support Flashing:
1. Galvanized Steel: 0.028 inch (24 gage) thick.

Q. Equipment Support Flashing:
1. Galvanized Steel: 0.028 inch (24 gage) thick.

R. Miscellaneous Flashings: Fabricate with profiles as shown on Drawings and from sheet metal materials as indicated.

END OF SECTION

FLEXIBLE FLASHING

PART 1 - GENERAL

1.1 WORK INCLUDED

A. Provide flexible flashing for window transitions between weather barrier system and existing building paper, transitions between weather barrier and dampproofing system and rough openings as indicated on the Drawings and as specified herein.

1.2 PERFORMANCE REQUIREMENTS

A. It is required that membrane be watertight and not deteriorate in excess of limitations published by the manufacturer. Membrane shall be fully adhered to the substrate to which it is applied.

1.3 SUBMITTALS

A. Product Data: Submit product data and the general recommendations from the membrane manufacturer. Include data substantiating that material complies with requirements.

B. Field Sample: Install 10-lineal feet of membrane product for review by the Architect to demonstrate the application and installation of the finished product.

1.4 STORAGE, DELIVERY AND HANDLING

A. Protect all rolls from rain and physical damage. Store where temperatures will not exceed 90°F for extended periods. Store in a dry area away from high heat, flames or sparks. Store only as much

1.5 PROJECT/SITE CONDITIONS

A. Substrate: Proceed with the Work after substrate construction, openings, and penetrating work has been completed.

B. Temperature and Moisture Requirements: Do not install during wet weather or when ambient temperature is less than 40°F. Do not install on wet, damp, or frost covered surfaces.

PART 2 - PRODUCTS

2.1 ACCEPTED MANUFACTURERS

A. Protecto Wrap Protecto Seal 45 Butyl (Specification Base)

B. Or accepted substitute.

2.2 MATERIALS

A. Self-adhering cold applied sheet waterproofing membrane with butyl adhesive backing and high density polypropylene (HDPE)/foil facer. Protecto Wrap Protecto SafSeal 45 Butyl or accepted substitute.

1. Primer: 3M Hi-strength 90 Spray Adhesive or accepted substitute.

PART 3 - EXECUTION

3.1 INSPECTION

A. Examine surface specified to receive flexible flashing to assure that surface is in condition acceptable to the manufacturer's requirements.
   1. Surface shall be dry and clean of oil, grease, dust, loose debris, or other contaminants.
   2. Surface shall be free of voids, spalled areas, and sharp protrusions.

3.2 INSTALLATION

A. Apply primers to all substrate surfaces for full adhesion. Prime only areas that will be covered by the membrane in the same working day; reprime areas not covered by the membrane within 24-hours.

B. Comply with the manufacturer's instructions for handling and installation of the membrane material.

C. Coordinate the installation of the membrane material and associated work to provide complete system complying with combined recommendations of the manufacturer and installer involved in work. Schedule the installation to minimize period of exposure of the membrane material.

D. Coordinate installation with work of related specification sections including but not limited to Section 07 11 00 Dampproofing and 07 25 00 Weather Barrier.

E. Apply membrane flashing to vertical surfaces as shown on the Drawings and as required to provide complete membrane flashing system. Seal projections through membrane and seal seams.

F. Firmly press the membrane into place with a hand roller or the back of a utility knife as soon as possible, ensuring continuous and intimate contact with the substrate to prevent water from migrating under the membrane. Continue the membrane into all openings in the wall area, such as windows, doors, etc., and terminate at points that will prevent interior visibility. The installation must be made continuous at all framed opening.

3.3 MEMBRANE REPAIRS

A. Repairs must be made using Perm-A-Barrier wall membrane sized to extend 6" in all dimensions from the perimeter of the affected area. If repairs are required, carefully cut out affected areas and replace in similar procedure as outlined above. The repair piece must be pressed into place with a hand roller as soon as possible to ensure continuous and intimate contact with the substrate.

3.4 PROTECTION

A. Institute required procedures for protection of completed membrane during installation of work against the membrane and throughout remainder of construction period.

END OF SECTION

ROOF ACCESSORIES

PART 1 - GENERAL

1.1 WORK INCLUDED

A. Provide portable, non-penetrating rooftop support systems for:
   1. Piping.
   2. Conduit.

1.2 REFERENCES

A. ASTM A 123/A 123M - Standard Specification for Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products.

B. ASTM A 153/A 153M - Standard Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware.

C. ASTM D 1929 - Standard Test Method for Determining Ignition Temperature of Plastics.

D. MSS SP-58 - Pipe Hangers and Supports -- Materials, Design and Manufacture; Manufacturers Standardization Society of the Valve and Fittings Industry

E. MSS SP-69 - Pipe Hangers and Supports -- Selection and Application; Manufacturers Standardization Society of the Valve and Fittings Industry.

1.3 SYSTEM DESCRIPTION

A. Support piping on roof with an engineered, prefabricated support system designed for installation without roof penetrations, flashings, or damage to the roofing material. The system shall consist of bases, made of high density, polypropylene plastics with UV Protection, a hot dipped galvanized structural steel frame, and suitable pipe hangers for the application. Nuts, threaded rods and washers shall be HDG, spring nuts, and bolts for spring nuts, shall be electro-plated. System shall be custom designed to fit piping and conduit to be installed, and the actual conditions of service.

1.4 SUBMITTALS

A. Product Data: Submit for all products proposed for use, describing physical characteristics and method of installation.

B. Shop Drawings: Show installation layout, sizes of units, and details of installation.

C. Verification Samples: Actual samples of bases, each type of support, hanger, and fasteners; and not less than 12 inches (300 mm) of framing members.

D. Manufacturer’s Certification: Submit manufacturer’s certification that materials comply with specified requirements and are suitable for intended application.

E. Maintenance Instructions: Submit manufacturer’s maintenance instructions, describing semi-annual visual inspection of rooftop pipe supports and realignment as necessary

1.5 QUALITY ASSURANCE

A. Manufacturer Qualifications: Company specializing in manufacturing pipe support systems, with a minimum of ten (10) years of documented experience.

B. Installer Qualifications: Company approved by manufacturer with not less than five years of

experience in installation of piping support systems.

C. References: Submit list of references comprising not less than 10 installations that have been in use for a minimum of five years. Include contact name and phone numbers for each reference.

D. Pre-Installation Meeting: After approval of submittals, but before beginning installation, conduct a meeting at the project site attended by the Architect, Consultant, Contractor, installers of roofing, and mechanical and electrical piping, to be installed on pipe support systems.
1. Purpose of meeting is to describe in detail the installation process and to establish agreement, coordination, and responsibilities.
2. Contractor to prepare detailed meeting report and distribute copies to the Architect and all attendees.

1.7 DELIVERY, STORAGE, AND HANDLING

A. Deliver all materials to project site in manufacturer's original packaging, marked with manufacturer's name, product model names and catalog numbers, identification numbers, and other related information.

B. Storage and Handling Requirements:
1. Store and handle materials in accordance with manufacturer’s instructions.
2. Keep materials in manufacturer’s original, unopened containers and packaging until installation.
3. Store materials in clean, dry area indoors.
4. Protect materials during storage, handling, and installation to prevent damage.
5. Store materials under cover until needed for installation.

1.8 WARRANTY

A. Manufacturer’s Warranty: Provide manufacturer’s standard 5-year limited warranty to be issued from the date of Substantial Completion.

B. Intaller’s Warranty: Provide 2-year installation warranty covering defects in workmanship and installation to be issued from the date of Substantial Completion.

PART 2 – PRODUCTS

2.1 MANUFACTURERS

A. Portable Pipe Hangers (Basis of Design).

B. OMG Roofing Products.

C. Or accepted substitute.

2.2 APPLICATIONS – PORTABLE PIPE HANGERS

A. Support pipes, conduit, cable trays, and ducting, a minimum of 6 inches (150 mm) above roof supports.
1. Support Spacing: As herein specified.
2. For Electrical and Gas Lines 2-1/2 inches (64 mm) in diameter or less, up to 10 inches (254 mm) above roof; Portable Pipe Hanger Model number SS8.
3. For Electrical and Gas Lines 3-1/2 inches (89 mm) in diameter or less, up to 16 inches (406 mm) above roof; Portable Pipe Hanger Model number PP10.
4. For Gas Lines 4 to 6 inches (100-150 mm) in diameter, up to 12 inches (305 mm) above roof; Portable Pipe Hanger Model number RB18.
5. For single Electrical and Gas Lines 3 to 8 inches (80-200 mm) in diameter; Portable Pipe Hanger Model number PS 1-2.

6. For Multiple Lines: Portable Pipe Hanger Model number PSE custom.
7. Accessories for PSE Custom and Other Applications when required.
   a. On Sloped Roof Surfaces, where slope exceeds 1/4 inch per foot (13 mm per 305 mm); provide base with swivel for slope adjustment. Note: PHP approved bracing required when using base with swivel.
   b. Un-insulated Piping: Roller support or clevis hanger.
   c. Insulated Piping: Band hanger supported from horizontal channel or clevis hanger with Insulation Protection Shield.
   d. Conduit: Band hanger supported from horizontal channel.
   e. Bracing required when using base with swivel; when pipe exceeds 24 inches (610 mm) above roof, or when thermal expansion of pipe is great.

B. Attachment of Base to Roof Surface when required for Seismic and High-Wind Applications.
1. Adhesive attachment to isolation pad adhered to roof surface.
2. Mechanically fastened to roof deck (only when approved by Architect or Consultant).

2.3 MATERIALS – PORTABLE PIPE HANGERS

A. Portable Support System: Engineered, portable system specifically designed for Installation without the need for roof penetrations, or flashings, and without causing damage to the roofing membrane.
1. Design system using high density, high impact polypropylene bases with carbon black, anti-oxidants for UV protection, and steel framing of 1-5/8 inch (41 mm) B22TH or 1-7/8 inch (48 mm) BTS22TH for support.
2. Custom design system to fit piping, conduits, equipment, or walkways to be installed and actual conditions of service and loading.
3. Piping Supports: Provide suitable hangers and supports.

B. Bases: Injection molded high density, high impact polypropylene with UV-inhibitors and anti-oxidants, conforming to the following:
1. Moisture Content: Negligible.
2. Shrinkage/Swelling Due to Moisture: Negligible.
3. Density: 55.8 lb/cu ft (894 kg/cu m).
4. Insect Resistance: No known insect damage potential.
5. Chemical Resistance (oil, brake fluid, gasoline, diesel, antifreeze, battery acid, and sulfuric acid) No visual or physical change apparent.
6. Flammability: No ignition after 10 minutes, 25 kW/m, when tested in accordance with ASTM D 1929.
7. Sized as required by loading conditions and as indicated on the Drawings.
8. Shop fabricated with inserts for square tubing or threaded rods as required.
9. Color: Integral black color as molded.
10. Bases for Mechanical Attachment: Sealant chamber around penetration point, with injection port for sealing after fastening; beveled lip for sealant bead around entire diameter.
11. Do not use bases containing carbonated plastics, press molded recycled rubber and plastics, steel, stainless steel, or any injection molded threaded receivers.

C. Steel Framing:
1. Channel Types: 1-5/8 inch (41.3 mm) B22TH or 1-7/8 inch (47.6 mm) BTS22H, as required for loading conditions.
2. Thickness: 12 gage (2.7 mm).
3. Form: Roll-formed 3-sided or tubular channel, perforated with 9/16 inch (14.3 mm) holes at 1-7/8 inch (47.6mm) centers on three sides.
4. Finish: Hot dip galvanize in accordance with ASTM A 123 after fabrication, free of roughness, whiskers, unsightly spangles, icicles, runs, barbs, sags, droplets, and other surface blemishes.
5. Do not use tubing or tube steel.

D. Pipe Supports and Hangers: Conform to MSS SP-58 and MSS SP-69 and as follows:
1. Fabricated of carbon steel where framing is carbon steel; finished same as framing.
2. Sizes 2-1/2 inch (63 mm) and smaller: Single roller supports for piping subject to expansion and contraction; 3-sided channels and pipe clamps.
3. Sizes 3 inch (76 mm) and larger: Rollers, clevis hangers, or band hangers, to allow for expansion and contraction without movement of the bases or framing.

F. Accessories: Clamps, bolts, nuts, washers, and other devices as required for a complete system.
1. Carbon Steel: Hot-dip galvanized in accordance with ASTM A 153/A 153M.
2. For Mechanical Fastening to Deck: On wood decks, use bolts with steel plate to attach to deck. Flash roof penetrations in accordance with Section 07 53 23 EPDM Roofing.

2.4 MATERIALS - OMG ROOFING PRODUCTS

A. Rooftop Pipe Supports: "Safety Yellow PipeGuard".
1. Supports small rooftop pipes with engineered, prefabricated pipe supports.
2. Installs without roof penetrations or damage to membrane roofing.
3. Compatible with all roof covers including PVC membranes.

B. Model: Safety Yellow Strut.
1. Material: Smooth, rigid, yellow, recycled High Density Polyethylene (HDPE).
2. Protects roof system from damage due to movement.
3. UV stable.
4. Strut Channel: Low profile, 1-5/8-inch, galvanized steel, accepts standard strut clamps.
5. Supports sit freely on roof.
6. Pipe Support Height: 3 1/2 inches.
7. Width at Top: 10 inches.
8. Accommodates single or multiple pipes.
9. Supports Nominal Pipe Size: Single pipe up to 6 inches.
10. Maximum Load Capacity per Support: 1,000 lbs.

C. Model: Safety Yellow Height Adjustable Strut.
1. Material: Smooth, rigid, yellow, recycled High Density Polyethylene (HDPE).
2. Protects roof system from damage due to movement.
3. UV stable.
4. First Strut Channel: Low profile, 1-5/8-inch, galvanized steel, accepts standard strut clamps placed on top of base support.
5. Second Strut Channel:
   a. Low profile, placed above first strut channel, 1-5/8-inch, galvanized steel, accepts standard strut clamps.
   b. Height: Adjustable with 2, zinc-plated threaded rods and nuts.
6. Supports sit freely on roof.
7. Pipe Support Heights: Adjustable from 3 1/2 inches (after removing second strut channel or setting it above pipes) to 10 inches.
8. Width at Top: 10 inches.
9. Accommodates single or multiple pipes.
10. Supports Nominal Pipe Size: Single pipe up to 6 inches.
11. Maximum Load Capacity per Support: 1,000 lbs.

PART 3 – EXECUTION

3.1 EXAMINATION

A. Verify that roofing system is complete and that roof surfaces are smooth, flat, and ready to receive work of this section.

B. Verify that roof surface temperature is at minimum 60°F (15.5°C) for proper adhesive performance.

C. Notify Architect or Consultant of conditions that would adversely affect installation or subsequent care.

D. Do not begin installation until unacceptable conditions are corrected.

1.2 PREPARATION

A. Clean surfaces of roof in areas to receive portable support bases.
   1. Sweep loose gravel from gravel surfaced roofs.
   2. Remove dirt, dust, oils, and other foreign materials.

B. Install approved separator sheet between each rooftop pipe support and membrane.

C. Use care in handling portable support system components during installation, to avoid damage to roofing, flashing, equipment, or related materials.

3.3 INSTALLATION

A. Pipe, Duct, Cable, and Equipment Support Systems: Install per manufacturer's installation instructions.
   1. Locate bases and support framing as indicated on Drawings and as specified herein. Provide complete and adequate support of all piping, ducting, and conduit; whether or not all required devices are shown.
   2. The use of wood for supporting piping is not permitted.
   3. Provide support spacing so deflection of piping does not exceed 1/240 of span.
   4. Install framing at spacing indicated, but in no case at greater than 10 feet (3 m) on center.
   5. Accurately locate and align bases.
   6. Consult manufacturer of existing or new roofing system as to the type of isolation pads required between the roof and base.
   7. Set isolation pads in adhesive, if required by manufacturer's instructions.
   8. Place bases on isolation pads.
   9. Adhere or mechanically attach, if required by code.
   11. Set framing posts into bases and assemble framing structure as indicated.
   12. Use galvanized fasteners for galvanized framing.

B. Spacing of Rooftop Pipe Supports:
   1. Pipe Diameters 2 inches to 5 inches: Maximum 10 feet apart.
   2. Pipe Diameter 1-1/2 inches: Maximum 8 feet apart.
   3. Pipe Diameters less than 1-1/2 inches: Maximum 6 feet apart.
   4. Place 1 additional support at every union and source and along with 1 at side of junctions.

C. Adherence Method: Use 3-inch or 6-inch wide EPDM roofing seam tape.

3.4 FIELD QUALITY CONTROL

A. When requested by the Architect, provide a factory-trained representative of the manufacturer to visit the site while the work is in progress to assure that the installation conforms to the manufacturers design and installation requirements.

3.5 CLEANING AND PROTECTION

ROOF ACCESSORIES

A. Remove all packaging, unused fasteners, adhesive and other installation materials from the project site.

B. Remove adhesive from exposed surfaces of supports and bases, and leave the work area in clean condition.

C. Provide protection as required, leaving the work area in undamaged condition at the time of completion of work.

END OF SECTION

FIRESTOPPING

PART 1 - GENERAL

1.1 WORK INCLUDED

A. Provide firestopping materials designed to retain the integrity of time rated construction maintaining a barrier against the spread of flame, smoke, and gasses as herein specified. All penetrations in separation walls shall be sealed with an approved firestopping material.

B. Application to include, but not limited to, penetrations through time rated, floors, partitions, or fire walls.

1.2 REFERENCE STANDARDS

A. ASTM International (ASTM):
   1. ASTM E84: Standard Test Method for Surface Burning Characteristics of Building Materials.
   2. ASTM E814: Standard Test Method for Fire Tests of Through-Penetration Fire Stops.

B. UL Building Materials Directory.

C. Uniform Building Code (ICBO).

D. National Fire Protection Association (NFPA):
   1. NFPA 101 - Life Safety Code.
   2. NFPA 70 - National Electric Code.

1.3 SUBMITTALS

A. Submit the manufacturer's product data with certification that materials meet the requirements of applicable codes. Include description of materials, prefabricated devices, reinforcement, anchorage, and method of installation.

1.4 DESIGN CRITERIA

A. Firestopping material shall be asbestos-free and capable of maintaining an effective barrier against flame, smoke and gasses, and suitable for firestopping of penetrations made by steel, glass, plastic, and insulated pipe. The fire rating classification shall not require removal of insulation on insulated pipe.

B. The rating of the firestopping materials shall not be less than the rating of the time rated floor or wall assembly.

C. All firestopping to be of a single type from the same manufacturer. In existing facilities identify and match the existing firestopping material.

1.5 DELIVERY, STORAGE AND HANDLING

A. Deliver materials in unopened containers bearing the manufacturer's name and product description.

B. Store under cover and protected from damage. Remove damaged material from the job site.

FIRESTOPPING

PART 2 - PRODUCTS

2.1 ACCEPTABLE MANUFACTURERS

A. United States Gypsum Thermafiber "Safeing" mineral fiber insulation.

B. 3M Brand CP-25, Caulk; 303 Putty; FS-195 Wrap/Strip; CS-195 Composite sheet; 7900 Series Penetrating Sealing System.

C. Dow Corning 3-6548 Silicone RTV Fire Stop Foam.

D. General Electric Company RTV 850 Silicone Foam.

E. Grace Construction Products "FlameSafe" Systems.

F. Bio Fire Shield Firestopping systems.

G. Metacaulk Brand, 800 series and 900 series.

H. SpecSeal by Specified Technologies Inc.

I. Or accepted substitute.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Clean surfaces to be in contact with the firestopping materials of dirt, grease, oil, or other substance that may affect proper installation or fire resistance.

B. Install materials as indicated in accordance with the manufacturer's instructions. Seal all holes or voids to provide an effective barrier.

C. Examine firestopped areas to ensure proper installation prior to closing or covering. Area to remain accessible until inspection by applicable authority as may be required.

END OF SECTION

JOINT SEALANTS (DOW CORNING)

PART 1 - GENERAL

1.1 WORK INCLUDED

A. Provide complete sealant systems as indicated on Drawings and specified herein.

B. Section includes building sealants for weatherproofing, including but not limited to, perimeter joints of jambs, sills and trim; perimeter of door and window frames; penetrations of mechanical, electrical, and roof drainage equipment and parts through exterior wall, soffit and trim; expansion joints. Miscellaneous sealant products used throughout job. Include interior sealing of joints prior to painting.

1.2 QUALITY ASSURANCE

A. Guarantee: Furnish written guarantee at completion of work. Guarantee period shall be 2 years from date of substantial completion. Include repair and replacement of defective work, such as leaks, failure of material, loss of adhesion, running of compound, or staining of adjacent work.

B. Provide manufacturer’s standard warranties as follows:
1. 20 year Structural Adhesion Warranty.
2. 20 year Weatherseal Warranty.
3. 20 year Non-Staining Warranty.

C. Installer must have 5 years of experience in the installation of sealants specified herein.

D. Laboratory Adhesion Tests: Contractor shall furnish samples of surface materials being sealed to the Sealant manufacturer for laboratory testing. Sealant Manufacturer shall perform laboratory tests of staining, weatherseal, and structural adhesion of sealant on each type of material being sealed. Sealant Manufacturer shall furnish written report of results and recommendations to the Architect and the Contractor prior to first pre-installation conference.

E. Pre-installation Conferences: Notify the Architect, sealant manufacturer's representative, and sealant installer at least 2 weeks before starting sealant work. Arrange a mutually acceptable time for meeting at the job with all notified parties to review the sealant specifications and job conditions. Obtain acceptance and approval of all parties on materials, details, and methods before beginning sealant installation.
1. Schedule 2 on-Site Pre-installation Meetings.
2. First Pre-installation Meeting: The sealant manufacturer shall perform field adhesion tests of each type of material to determine and reconfirm if primer is required. Install sealants (and primers, where recommended) at representative areas at the first Pre-installation Meeting preparatory to the pull tests. After applying sealant at test locations, allow a minimum of 7 days to 14 days for sealants to cure prior to performing pull tests. Refer to recommendations made by sealant manufacturer resulting from laboratory adhesion tests.
3. Second Pre-installation Meeting: Reconvene at the Site to perform pull tests. Allow at least 7 to 14 calendar days for test sealants to cure prior to second meeting.

F. Sealant Manufacturer's Inspections: Arrange for required manufacturer's periodic and final field inspections.

JOINT SEALANTS (DOW CORNING)

1.3 SUBMITTAL

A. Product Data: Submit product data and MSDS sheets for all sealants to be used at interior locations indicating compliance with VOC limits of the Bay Area Air Resources Board Reg. 8, Rule 51.

B. Silicone sealants to have a 20 year warranty at exterior.

PART 2 - PRODUCTS

2.1 ACCEPTABLE MANUFACTURERS

A. Silicone:
1. Dow Corning Corporation. (Specification Base)
2. General Electric Company.
3. Tremco, Inc.
4. Or accepted substitute.

B. Organic (at Interior Locations Only):
1. Pecora Corporation.
2. Sika Corporation.
3. Sonneborn Building Products Division, Contech, Inc.
4. Tremco, Inc. / Mameco Vulkem
5. Bostik.
6. Or accepted substitute.

2.2 MATERIALS

A. Silicone Sealant: General exterior weather resistant applications. Ultra-low modulus, one-part, silicone sealant. Color(s) are to be selected by the Architect. Dow Corning 790 Silicone Building Sealant, Tremco Spectrum 1, or accepted substitute.

B. Primer for Silicone Sealant: Dow Corning No. 1200, or accepted substitute. Use at surfaces as required by manufacturer and as indicated by laboratory and field adhesion tests.

C. Acrylic Latex Sealant: General interior application for finishing gaps between various materials where painting of sealant is specified. Use single or multi-component products as appropriate.

D. Sealant Color: Color as selected by the Architect to match adjacent surfaces at exposed joints. At concealed joints, manufacturer's highest performance color.

E. Joint Cleaner and Primer/Sealers: As recommended by sealant manufacturer for the joint surface to be cleaned, primed, or sealed.

F. Bond Breaker Tape: Polyethylene or other plastic self-adhesive tape, compatible with sealant, which will not bond to sealant.

G. Sealant Backer Rod: Nonabsorptive closed cell compressible rod stock, compatible with sealant, which will not bond to sealant as recommended by the sealant manufacturer.

PART 3 - EXECUTION

3.1 JOINT SURFACE PREPARATION

H. Clean, prime, and seal joint surfaces as recommended by the sealant manufacturer.

I. Support sealant from back with construction indicated or with joint filler or backer rod where recommended by the sealant manufacturer.

3.2 INSTALLATION

A. Comply with the manufacturer's printed instructions. Verify that the Architect has selected the sealant color during the submittal process or at the first pre-installation meeting.

B. Skilled workmen shall install each type of material in locations as called for. All material struck neat to line and cleaned from adjacent surfaces.

C. Apply sealants only to clean and dry surfaces at correct temperatures, and with approved protection from adverse weather conditions and dust.

D. Thoroughly clean and remove any non-compatible substances remaining on surfaces such as lacquers, curing compounds, form coatings, bond breakers and silicone water repellents. Clean out any dust and loose material by brushing, scraping and blowing with air jet as necessary. Clean metal and glass with solvents.

E. Run full, continuous and uniform beads of sealant in joints to be sealed keeping faces of work clean. Dry tool joint to concave profile.

F. 1/2" maximum joint depth and 3/4" maximum width. Use backing rod to make approximately 1:2 joint section depth to width ratio. Use polyethylene bond breaker tape as required to prevent adhesion to back of joints where backer rod cannot be used or would not allow for proper depth to width ratio.

G. Install elastomeric sealants in non-traffic joints to size and shape indicated or with slightly concave surface and depth equal to 50% of normal joint width, but not more than 1/2" and not less than 1/4".

H. Install elastomeric sealants in concrete traffic joints to size and shape indicated or with slightly concave surface and depth equal to 75% of normal joint width, but not more than 5/8" and not less than 3/8" deep.

I. Install non-elastomeric sealants to size and shape indicated or with slightly concave surface and depth from 75% to 125% of normal joint width.

3.3 ADJUSTING AND CLEANING

A. Remove excess and spillage promptly.

B. Replace materials improperly installed as directed by the Architect.

C. Protect all horizontal sealants from dust and dirt until sealant is no longer tacky by covering the joint.

END OF SECTION

FIBERGLASS WINDOWS

PART 1 - GENERAL

1.1 WORK INCLUDED

A. Provide fiberglass windows in locations indicated on the Drawings and as herein specified.

1.2 SUBMITTALS

A. Product Data.

B. Shop Drawings: Include window schedule, window elevations, sections and details, and multiple window assembly details.

C. Samples:
1. Color Samples: Minimum 1" x 4" paint color chips on fiberglass substrate.
2. Glass: Submit sample showing specified tint color.

D. Quality Assurance/Control Submittals:
1. Qualifications: Proof of manufacturer's qualifications.
2. U-Factor and structural rating charts required for AAMA and NFRC labeling requirements.
3. Installation Instructions – AAMA 2400.

E. Closeout Submittals:
1. Temporary window labels marked to identify windows that labels were applied to.
2. Maintenance instructions.
3. Special Warranties.

1.3 QUALITY ASSURANCE

A. Overall Standards: Comply with ANSI/AAMA/NWWDA 101/I.S.2, except as otherwise noted herein.

B. Manufacturer Qualifications:
1. Minimum 10 years experience in producing fiberglass windows of the type(s) specified.
2. Member AAMA, NFRC.

C. Regulatory Requirements:
1. Certifications for insulated glass windows:
   a. AAMA: Silver Label certified with label attached to frame per AAMA requirements.
   b. NFRC: NFRC certified with temporary U-factor label applied to glass and an NFRC tab added to permanent AAMA frame label.

1.4 DELIVERY, STORAGE, AND HANDLING

A. Provide cardboard corner boots and full stretch wrap shipping protection.

B. Follow manufacturer's instructions on label applied to windows.

1.5 WARRANTY

A. Commercial Special Warranty:
1. 10-year guarantee.

2. Guarantee windows against defects in materials and workmanship including costs for parts and labor.

PART 2 – PRODUCTS

2.1 ACCEPTED MANUFACTURES

A. Milgard Manufacturing, Inc., Tel: (800) 645-4273, Website: http://www.milgard.com/, Series Milgard Ultra. (Specification Base)

B. Marvin Windows.

C. Or accepted substitute.

2.2 MATERIALS

A. Fiberglass: AAMA 305 glass fiber reinforced thermoset profile.

2.3 GENERAL PERFORMANCE REQUIREMENTS

A. Thermal Performance: Comply with NFRC 100.

B. Air Leakage, Water Resistance, Structural Test: Comply with ANSI/AAMA /NWWDA 101/I.S.2.

C. Forced-Entry Resistance: Comply with CAWM 301.

2.4 WINDOW TYPES

A. Awning – Ultra Series, C650, 3410 Series, Block Frame
1. Frame: Minimum 3-1/4" deep, multi-chambered fiberglass pultrusion.
2. Sash: Minimum 2-3/8" deep, multi-chambered fiberglass pultrusion.
3. Structural Class: AP-C35.
4. Hardware:
   a. Single steel arm rotary scissor operator with standard handle.
   b. Dual lever locking mechanism.
   c. Two bar stainless steel hinge.
5. Weatherstripping: Vinyl compression bulb seal.

B. Picture – Ultra Series C650, 3315 Series Block Frame:
1. Frame: Minimum 4-1/4" deep, multi-chambered fiberglass pultrusion.
2. Sightlines: Equal to operating windows.
3. Structural Class: F-C50.

2.5 GLAZING

A. Insulated Glass Units: ASTM E774, Class A, 7/8" thick overall:
1. Glazing Type: Clear/SunCoat™ Low-E, argon gas filled.
2. Spacer Bar: Stainless steel spacer.

2.6 INSECT SCREENS

A. Provide tight-fitting screen for operating sash with hardware to allow easy removal.
   1. Screen Cloth: Fiberglass mesh.

2.7 FABRICATION

A. Fabricate frames and panels with milled and mitered joints and mechanically joined corners. Trim and finish corners to match adjacent surfaces.

B. Provide concealed metal reinforcement in sash frame for attaching lock mechanism.

C. Factory exterior wet silicone glaze with snap-on fiberglass glazing stops matching interior sash and frame finish, except where field glazing is required due to large window unit dimensions (over 40-sf). Units shall be reglazeable without dismantling sash framing.

2.8 FINISH

A. Frame and Sash:
   1. Exterior: Harmony
   2. Interior: White baked on enamel.

B. Hardware: Satin Chrome.

C. Screen Frame Color:
   1. Exterior Mounted Screens: Match frame to exterior window frame and sash color.
   2. Interior Mounted Screens: White.

2.9 SOURCE QUALITY CONTROL

A. Inspect windows in accordance with manufacturer's Quality Control Program as required by AAMA Silver Label certification.

PART 3 – EXECUTION

3.1 EXAMINATION

A. Examine openings in which windows will be installed.
   1. Verify that framing complies with AAMA 2400.
   2. Verify that fasteners in framed walls are fully driven and will not interfere with window installation.

B. Coordinate with responsible entity to correct unsatisfactory conditions.

C. Commencement of work by installer is acceptance of substrate conditions.

3.2 INSTALLATION

A. Install windows in framed walls in accordance with AAMA 2400. Provide continuous shim support along full length of sill.

B. Do not remove temporary labels.

C. Install insect screens on operable sash.

3.3 CLEANING

A. Remove temporary labels and retain for Closeout Submittals.

B. Clean soiled surfaces and glass using a mild detergent and warm water solution with soft, clean cloths.

END OF SECTION

GLASS GLAZING

PART 1 - GENERAL

1.1 WORK INCLUDED

A. Provide glass and glazing sealant systems for doors, interior relites, and windows as indicated on the Drawings and as specified herein.

B. Provide all clips, glazier's points, blocks, felt, and other items required to set all glass throughout the building.

1.2 REFERENCES

A. Federal Specifications (FS):
   1. FS DD-G-1403B: Float, Plate, and Sheet Glass.
   2. FS DD-G-1403B: Heat Strengthened and Tempered Glass.

B. U.S. Consumer Product Safety Commission Standard: 16 CFR 1201, Safety Standard.

C. American National Standards Institute: ANSI Z 97.1, Safety Glazing.

D. National Fire Protection Association (NFPA).

E. ASTM International (ASTM):
   1. ASTM E152: Methods of Fire Tests of Door Assemblies.
   2. ASTM E163: Methods of Fire Tests of Window Assemblies.

1.3 SUBMITTALS

A. Product Data: Submit product information on insulated glass systems and glazing accessories for review.

1.4 QUALITY ASSURANCE

A. Do not perform glazing when temperature is below 40°F or when dust and wind conditions are detrimental to glazing work. Do not do any exterior glazing in wet weather except under cover.

B. Comply with Glazing Manual by Flat Glass Marketing Association. Install safety glass to comply with United States Consumer Product Safety Commission Standard 16 CFR 1201, and ANSI Z 97.1.

1.5 WARRANTY

A. Provide 3 year warranty on window glass.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. AFG Glass.

B. American St. Gobain Glass Co.

C. Pilkington.

D. Pittsburgh Plate Glass Co. (PPG)

E. Mississippi Glass Co.

F. General Electric Co.

G. Armortex

H. FireLite by Technical Glass Products.

I. Globe Amerada Infernolite FRP 200.

J. Viracon.

K. Nippon.

L. Or accepted substitute.

2.2 MATERIALS

A. Float Glass: 1/4" minimum thickness clear float glass, glazing quality.

B. Tempered Safety Glass: 1/4" minimum thickness clear float glass, tempered after cutting. PPG "Herculite". Use at display cases.

C. Clear Insulated Glass: 1" thick, clear, thermal insulated glass. 1/4" thick float glass on outside face and 3/16" clear float glass on inside face with 9/16" air space hermetically sealed. Low E coating on inside pane. Provide manufacturer's 10 year guarantee.

D. Clear Insulated Safety Glass: 1" thick, clear, thermal insulated safety glass. 1/4" thick clear tempered glass on outside face with 3/16" clear tempered glass on inside face with 9/16" air space hermetically sealed. Lowe E coating on inside pane. Provide manufacturer's 10 year guarantee.

2.3 GLAZING ACCESSORIES

A. Glazing Tape and Sealants:
1. Glazing Tape: "3M" E.C. 1202 or accepted substitute. Color as selected by the Architect.
2. Silicone Type Sealants: "Pecora BC-158", PTI "606", "Presstite No. 432", Tremco "Poly-Wej", or accepted substitute. Color as selected by the Architect.

B. Setting Blocks: Solid Neoprene, 85-95 Shore A hardness.

C. Spacers: Foam neoprene 40-50 Shore A hardness.

D. Structural Sealants: Dow Corning #795 Silicon Sealant, Black, or General Electric SCS 1200 Series Silicone Structural Construction Sealant, high modulus. Black or Gray color as selected by the Architect. Use Dow Corning #790 Silicon Sealant for adhering glass to plastic laminate or plywood.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Cut glass to size required for measured opening. Provide adequate edge clearance and glass bit all around. Cut prior to tempering and heat-strengthening.

B. Set glass with equal bearing along edges. Do not install sheets that have significant edge damage or other defects.

C. Clean and dry surrounds and glazing rabbets. Remove and correct any defects, screw heads, nails, etc., in glazing rabbets that interfere with proper setting of glass. Wipe frame and glass with Xylol soaked, oil-free rag.

D. Maintain original labels on each piece of glass, naming the manufacturer, quality, and thickness, except where cutting makes this impossible. Deliver other glazing materials in original containers, the manufacturer's labels thereon. Remove labels as soon as possible after their installation.

3.2 EXTERIOR GLAZING

A. See the details on the Drawings, including all exterior windows and doors. Take special care to create strong edges and avoid edge damage. Place glass units with tinted or patterned glass to the exterior side.

B. Provide glass with "Tinted Clean-Cut Edges". Do not install glass with flared edges at bottom. Do not seam or nip edges, scarf corners, bump or brush edges on metal or other hard surfaces.

C. Use glazing tape between glass and stationary glazing stop. Cut tape with scissors from premeasured mark and handle with care to prevent deformation. Set horizontal tapes first then vertical, butting. Do not overlap. Tape set level with sight line. Compress at least 25% of thickness. Minimum finished thickness to be 3/32".

D. Set glass on neoprene setting blocks, two per sill, spaced at quarter points, by not closer than 6" to the corner. Set glass unit firmly against the tape to assure good seal, then place another strip of tape continuous on the face of glass with top edge below sight line. Apply the stops and a bead of sealant in the void beveling off at the sight line to assure proper water runoff. Do not bed sash. Verify that weep holes are provided, three per sill.

3.3 INTERIOR GLAZING

A. Set glass using elastic glazing compound; apply ample compound to rabbet to bed entire perimeter of glass and place necessary setting blocks; press glass, centered, into rabbet.

B. For lights held in place by stop beads all around, bed beads against glass and bottom of rabbet with compound.

C. Secure bead with nail or screws furnished and countersink. Strip surplus compound from both sides of glass at angle, not undercut.

3.4 ADJUSTING AND CLEANING

A. Replace glass that is broken, damaged, or not weathertight prior to acceptance.

B. Clean glass prior to Substantial Completion.

C. Protect all glass from breakage. Reglaze wherever work or material are defective. Replace all glazing damaged prior to final acceptance of the work. Clean and remove all stains and excess glazing compound and sealants from glass, sash, and adjoining surfaces.

END OF SECTION

GYPSUM BOARD

PART 1 - GENERAL

1.1 WORK INCLUDED

A. Provide gypsum drywall partitions, ceilings and soffits on wood framing and wood furring. Include backing for applied finishes and installation of acoustical insulation as scheduled on the Drawings.

1.2 REFERENCES

A. ASTM International (ASTM):
1. ASTM A641: Standard Specification for Zinc-Coated (Galvanized) Carbon Steel Wire.
2. ASTM A653: Specification Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process.
3. ASTM C473: Standard Test Methods for Physical Testing of Gypsum Panel Products.
4. ASTM C475: Standard Specification for Joint Compound and Joint Tape for Finishing Gypsum Board.
5. ASTM C557: Standard Specification for Adhesives for Fastening Gypsum Wallboard to Wood Framing.
6. ASTM C645: Standard Specification for Nonstructural Steel Framing Members.
7. ASTM C754: Standard Specification for Installation of Steel Framing Members to Receive Screw-Attached Gypsum Panel.
8. ASTM C840: Standard Specification for Application and Finishing of Gypsum Board.
9. ASTM C919: Standard Practice For Use of Sealants in Acoustical Applications.
10. ASTM C1002: Standard Specification for Steel Self-Piercing Tapping Screws for Application of Gypsum Panel Products or Metal Plaster Bases to Wood Studs or Steel Studs.
11. ASTM C1177: Standard Specification for Glass Mat Gypsum Substrate for Use as Sheathing.
12. ASTM C1178: Standard Specification for Glass Mat Water-Resistant Gypsum Backing Panel.
13. ASTM C1396: Standard Specification for Gypsum Board.
14. ASTM D3273: Standard Test Method for Resistance to Growth of Mold on the Surface of Interior Coatings in an Environmental Chamber.
15. ASTM E119: Standard Test Methods for Fire Tests of Building Construction and Materials.

B. Gypsum Association:
1. GA-214: Recommended Levels of Gypsum Board Finish.
2. GA-216: Application and Finishing of Gypsum Panel Products.

1.3 SYSTEM DESCRIPTION

A. Structural Requirements:
1. Steel Framing Systems: Maximum deflection of L/240 for design loads.
2. Steel Ceiling Suspension Systems: Maximum deflection of L/360 for design loads.
3. Seismic Loads: Provide steel bracing members to carry loads created by seismic movement of the ceiling systems.

B. System Tolerances: Do not exceed 1/4" variation in 8'-0" from plumb, level and true lines.

1.4 SUBMITTALS

A. Product Data: Submit the manufacturer's specifications and installation instructions for each gypsum drywall product component, including other data as may be required to show compliance with these specifications.

B. Submit wall and ceiling texture sample on 24" x 24" gypsum board materials properly prepared to match specified wall finishing or on 10 square feet of prepared wall surface for the Architect's review. Acceptable texturing may be retained as finish surface. Remove all texturing that is not approved prior to drying on the wall surface. Texturing to be applied by the technician scheduled to do the texturing.

C. Submit product preparation instructions and recommendations, storage and handling requirements and installation methods.

1.5 QUALITY ASSURANCE

A. Regulatory Agency Requirements:
1. Comply with building code and governing authorities requirements for fire-rated partitions and ceilings.
2. Provide materials, accessories and use application procedures that have been listed and approved by UL, ICC, and tested in accordance with ASTM E119 for the type of construction scheduled. When requested, provide UL design numbers for fire-rated wall and ceiling assemblies.

1.6 DELIVERY, STORAGE, AND HANDLING

A. Coordinate the delivery of materials with the installation to minimize storage periods. Deliver materials in original packages, containers or bundles bearing brand name and identification of manufacturer or supplier.

B. Store gypsum and steel materials in dry, ventilated space, under cover protected from weather, direct sunlight, and above grade floor slabs. Neatly stack gypsum boards flat to prevent sagging.

C. Protect structural members from excessive stress during delivery and erection.

D. Handle gypsum boards to prevent damage to edges, ends or surfaces. Protect metal corner beads and trim from being bent or damaged.

1.7 SITE CONDITIONS

A. Temperature Requirements: Do not begin installing gypsum board until building is enclosed or ambient temperature remains above 55°F.

B. Cold Weather Protection: When ambient outdoor temperatures are below 55°F, maintain continuous, uniform, comfortable building working temperatures of not less than 55°F for a minimum period of 48 hours prior to, during, and following application of gypsum board and joint treatment materials or bonding of adhesives.

C. Ventilation: Ventilate building spaces as required to remove water in excess of that required for drying of joint treatment material immediately after its application. Avoid drafts during dry, hot weather to prevent too rapid drying.

PART 2 - PRODUCTS

2.1 ACCEPTABLE MANUFACTURERS

A. Obtain all components and materials of the gypsum drywall system from a single manufacturer, or from producers recommended by the manufacturer, unless otherwise indicated.

2.2 FACE AND BACKING BOARDS

A. Gypsum Face Panels: ASTM C1396. Long edges tapered. 5/8" thick, 48" wide, Type "X" gypsum core, UL classified.
   1. Use moisture and mold resistant type for walls and ceilings in toilet rooms, janitor rooms, shower areas, sink areas and other high moisture spaces. Conform to ASTM C473, ASTM C1396 and ASTM D3273.

2.3 GYPSUM ACCESSORIES

A. Acoustical Sealants: U.S. Gypsum Acoustical sealant, Tremco Drywall Sealant, A.C. Horn Vulcatex Thriftube, non-setting, non-staining, acoustically tested caulking, or accepted substitute.

B. Acoustical Insulation: U.S. Gypsum Thermafiber sound attenuation fire blankets, 3" thick, 15-25 flame spread, smoke developed 0; Certainteed Acoustitherm Batts, Owens/Corning Fiberglas Sonobatts, unfaced, 3-1/2" thick, Type II, smoke developed 10; or accepted substitute.

C. Screw Fasteners: ASTM C1002. No nailing of gypsum materials will be allowed.

D. Fastening Adhesive for Wood Framing: ASTM C557. Supplement adhesive with permanent or temporary fasteners as recommended by the manufacturer.

E. Laminating Adhesives: Product recommended by gypsum board manufacturer.

F. Gypsum Board Metal Trim: Manufacturer's standard 26-gage galvanized steel. All trim to have fine mesh expanded metal flanges. Fine mesh corner beads: Mini-Bead 800/900 by ClarkDietrich Building Systems, Niles Mini-Bead 800/900, Mini Veneer Bead by Phillips Manufacturing Co., CertainTeed No-Coat Corner System, or accepted substitute.

G. Interior Joint Reinforcing Tape: Fiber tape not less than 2-1/4" wide, ASTM C475.

H. Exterior Joint Reinforcing Tape: Open weave glass fiber tape not less than 2-1/2" width, ASTM C475.

I. Interior Joint Treatment Materials: ASTM C475, ready-mixed type as recommended by gypsum wallboard manufacturer. Provide 2 separate grades, 1 specifically for bedding tapes and filling depressions and 1 for topping and sanding. Use chemical-hardening type for bedding and filling where required.

J. Exterior Joint Treatment Materials: ASTM C475, special chemical-hardening type as recommended by the gypsum wallboard soffit board manufacturer.

K. Skim Coat: "First Coat" by U.S. Gypsum, Georgia-Pacific "Ready-Mix All-Purpose Joint Compound", CertainTeed All Purpose Joint Compound, or accepted substitute.
   1. For MMR or Exterior Soffits: CertainTeed CT All Purpose Joint Compound.

L. Paint Primer: Miller No. 6020 P.V.A. Primer, Acrylic Modified Drywall Primer (Rodda Scotseal), Parker 1841, Wall Board Primer, or accepted substitute.

PART 3 - EXECUTION

3.1 PREPARATION

A. Protection: Provide temporary covering to eliminate splattering of joint compound and spray texture on adjacent finished surfaces.

B. Adjusting Location of Steel Framing: Coordinate ceiling suspension wire locations with plumbing, heating, ventilating, fire protection piping and electrical work. Adjust framing locations to align new finish flush with existing finish, where required.

C. Suspension wires must be supported from structure above unless approved otherwise by the Architect.

D. Do not bridge building expansion joints with support systems, frame both sides of joints with furring and other supports as indicated.

3.2 INSTALLATION OF WALL, SOFFIT, AND CEILING PANELS

A. General and Fire Rating Requirements:

1. Comply with Gypsum Association Specifications GA-216.
2. Install acoustical insulation where indicated, without gaps and with snug fit against studs and support where necessary to prevent movement or dislocation. Install full height of partition, unless otherwise indicated. Fit carefully behind electrical outlets and other work that penetrates partition or face of wall.
3. Install panels of thickness indicated and as required meeting structural and fire rating requirements.
4. Glue and screw wallboard to wood framing members as recommended by the manufacturer. Nailing of gypsum panels will no be allowed.
5. For vertical partition wallboard installation, offset panel joints on opposite sides of stud framing.
6. In areas where gypsum wallboard is scheduled for wall and ceilings, install the ceiling first then the wallboard.
7. Verify that acoustical insulation is in place, where scheduled, prior to completing panel installation.
8. Where partitions are sound or fire rated construction, acoustical sealant shall be applied to all cutouts and intersections with adjoining structure as described herein. This will require that the gypsum board be cut for loose fit around the partition perimeter leaving a space approximately 1/8" wide.
9. Cut board neatly and fit around pipes, electrical outlets, mechanical work, etc. Remove any loose face paper at cuts and fill holes or openings with quick setting plaster.
10. Use panels of maximum practical length to minimize end joints. Arrange joints on opposite sides of partition walls to occur on different studs and stagger butt joints on the same surface. Where partitions intersect exterior walls, start installation at exterior end to position butt joints as far away from exterior wall as possible. Board shall be brought into contact but not forced into place with all ends and edges neatly fitted. Bottom edge of gypsum board on walls shall be a maximum of 1/4" above floor.
11. Attach to framing with all edges over framing members using screw fasteners. Space screws at 12" on center on ceiling and 16" on center on walls, staggered on abutting edges. Power drive screws at least 1/32" deep. Space screws at not less than 3/8" from edge and ends of board. Where board may appear loose from framing, install second fastener within 1-1/2" for the first fastener.
12. While fasteners are being driven, hold the gypsum board in firm contact with underlying supports, fastening from the center of the board toward ends and edges. Drive fasteners home with heads slightly below surface, taking care to avoid breaking the paper face.
13. Install gypsum base panels as a substrate for face panels where 2 layers are required. Fasten both the base layer and face layer separately to framing members with screws.
14. Control Joints: Place control joints consistent with lines of building spaces and as indicated. In public areas, confirm locations with Architect for visual effect. Frame both sides of joints independently.
    a. Not more than 30 feet apart on walls and ceilings over 50 feet long.

b. At exterior soffits, not more than 30 feet apart in both directions.

c. Fire-Rated Joints: Comply with Gypsum Association GA-234 for control joints in fire-rated assemblies.

15. Finish in every location with metal edge and corner bead unless other finishing details are given and edge is covered with molding or trim. Install control joints vertically at corners of door and relite frames, and at a maximum of 30 feet apart on unbroken wall surfaces whether shown on the Drawings or not. Extend control joint from head to ceiling and from window sill to floor. Verify all expansion joint locations with the Architect prior to installation of gypsum board. Use casing beads at exposed edges of plaster and drywall and corner beads with 1 ¼" minimum width flange at outside corners.

16. Cover both faces of stud framing with gypsum board in concealed spaces (above ceilings, etc.), except in chase walls that are braced internally. Except where concealed application is required for sound, fire, air or smoke ratings, coverage may be accomplished with scraps of not less than 8 square feet area, and may be limited to not less than 75% of the full coverage.

3.3 SEALANT APPLICATIONS

A. Partition Perimeter: Apply a 1/4" minimum bead of sealant on each side of plates, including those used at intersections with dissimilar wall construction. Immediately install gypsum board, squeezing sealant to form contact with adjacent surfaces. Fasten board as specified. Conform to ASTM C919 for sealant application.

B. Partition Intersections: Seal edges of face layer of wallboard abutting intersection partitions, before taping and finishing.

C. Openings: Apply a 1/4" bead of acoustical sealant around all cut outs to seal openings of electrical boxes, ducts, pipes and similar penetrations. Seal sides and backs of all electrical boxes.

D. Control Joints: Before installing control joints, apply sealant in back of joint to reduce flanking sound path.

E. Install acrylic latex sealant where required to fill exposed openings.

3.4 PATCHING EXISTING SURFACES

A. This subcontractor shall check the Drawings and building site to determine areas requiring patching in the area of the Work described on the Drawings. Wherever patching is necessary or indicated, perform this work using materials as specified. The same materials are to be used as the material of the adjoining surfaces and finished the same. Exercise care in the finishing of the patched area. Feather and blend to the adjoining surface to produce as invisible a joint as possible.

B. In buildings requiring remodeling, patched materials and surfaces must be finished so that existing and new materials match one another, not only in color but also in patterns and surface texture. The intent is to not have a patched appearance. In areas where partitions must be removed to create new areas, careful planning is required to ensure that finishes of the existing and the newly created surfaces are homogenous. The existing materials should blend into the new so that the transitions form one material to the other cannot be readily observed. IF the desired level of finish cannot be achieved, arrange contrasting materials in a pleasing design.

3.5 FINISHING

A. Levels of Finish:

1. Level 0: No taping, finishing, or accessories required.

2. Level 1: All joints and interior angles shall have tape set in joint compound. Surface shall be free of excess joint compound. Tool marks and ridges are acceptable.

3. Level 2: All joints and interior angles shall have tape embedded in joint compound and wiped with a joint knife leaving a thin coating of joint compound over all joints and interior angles. Fastener heads and accessories shall be covered with a coat of joint compound. Surface shall be free of excess joint compound. Tool marks and ridges are acceptable. Mop down all walls after the final mud coat prior to priming. Joint compound applied over the body of the tape at the time of tape embedment shall be considered a separate coat of joint compound and shall satisfy the conditions of this level.

4. Level 3: All joints and interior angles shall have tape embedded in joint compound and one additional coat of joint compound applied over all joints and interior angles. Fastener heads and accessories shall be covered with two separate coats of joint compound. All joint compound shall be smooth and free of tool marks and ridges. Mop down all walls after the final mud coat prior to priming.Note: It is recommended that the prepared surface be coated with a drywall primer prior to the application of final finishes.

5. Level 4: All joints and interior angles shall have tape embedded in joint compound and two separate coats of joint compound applied over all flat joints and one separate coat of joint compound applied over interior angles. Fastener heads and accessories shall be covered with three separate coats of joint compound. All joint compound shall be smooth and free of tool marks and ridges. Mop down all walls after the final mud coat prior to priming.

6. Level 5:
   a. All joints and interior angles shall have tape embedded in joint compound and two separate coats of joint compound applied over all flat joints and one separate coat of joint compound applied over interior angles. Fastener heads and accessories shall be covered with three separate coats of joint compound. A thin skim coat shall be trowel applied to the entire surface. The surface shall be smooth and free of tool marks and ridges.
   b. The skim coat is trowel applied as a thin coat over the entire surface to fill imperfections in the joint work, smooth the paper texture, and provide a uniform surface. Excess compound is immediately sheared off with the trowel, leaving a film of skim coating compound completely covering the paper.
   c. The skim coat is applied with a fine knap roller over the entire surface to fill imperfections in the joint work, smooth the paper texture, and provide a uniform surface. The entire surface is to be lightly sanded leaving a film of skim coating compound completely covering the paper. Smeared roller marks will not be accepted. Mop down all walls after the final mud coat prior to priming.

B. Exposed Board in Finished Areas: Provide Level 4 finish.

C. Exposed Board in Unfinished Areas: Provide Level 1 finish.

D. Exposed Board Where Textured: Level 3 or 4 finish. Texturing to be installed after surface has been primed.

3.6 CLEAN UP

A. Do not dispose of or leave excess drywall materials or debris on the premises. Leave each area "broom clean" after completing drywall work. Clean spots and spills of taping and finishing compounds off of all adjacent surfaces and equipment.

END OF SECTION

ACOUSTICAL CEILING

PART 1 - GENERAL

1.1 WORK INCLUDED

A. Provide acoustical ceilings, complete with suspension systems at locations indicated on the Drawings and as herein specified.

B. Include the installation of a chain suspension system for the seismic attachment or light fixtures and other items that may be associated with the suspended ceiling system.

C. Include the removal and reinstallation of existing panels and track system as required for work above the ceiling space.

1.2 REFERENCES

A. ASTM International (ASTM):
1. ASTM A568: Standard Specification for Steel, Sheet, Carbon, Structural, and High-Strength, Low-Alloy, Hot-Rolled and Cold-Rolled, General Requirements for.
2. ASTM C635: Standard Specification for the Manufacturer, Performance, and Testing of Metal Suspension Systems for Acoustical Tile and Lay-In Panel Ceilings.
3. ASTM C636: Standard Practice for Installation of Metal Ceiling Suspension Systems for Acoustical Tile and Lay-In Panels.

1.3 SUBMITTALS

A. Office Samples: Submit sample of ceiling panels and tiles to the Architect prior to ordering materials.

B. Design Data: Submit diagram of ceiling horizontal and vertical loads on the ceiling suspension components. Indicated loads carried by the hanger wires, main runners, tees, wall angles, and diagonal bracing.

C. Submit product preparation instructions and recommendations, storage and handling requirements and installation methods.

1.4 QUALITY ASSURANCE

A. Regulatory Agency Requirements: Add concealed structural supporting members to ceiling suspension system to resist seismic loads as required by local building officials.

PART 2 - PRODUCTS

2.1 SEISMIC RESTRAINT

A. Suspended acoustical ceiling systems, with or without lighting fixtures or other ceiling mounted items shall comply with the requirements of ASTM C635 and ASTM C636.

B. Provide three copies of Engineered Design calculations, drawings and documentation prepared by a Structural Engineer registered in the State of Oregon, showing compliance and classification of light, medium or heavy duty system. Include manufacturer's literature of ICBO Reports and identification of connection devices and approved loading capabilities.

C. When using a standard 24" x 48" grid system in lieu of an Engineered Design, submit three copies of manufacturer's literature or ICBO Report indication as a light, medium or heavy duty system. Include fixture schedule and other ceiling supported equipment and their weight, with connection devices and approved loading capabilities.

D. Ceiling areas of 144 square feet or less surrounded by walls that connect directly to the structure above shall be exempt from these standards.

E. Light Duty systems to be used only where no loads other than ceiling acoustical materials weighing not more than 15 pounds per square foot are supported by the suspension system.

F. Intermediate and Heavy Duty classification systems shall be used where suspension system is used to support lighting fixtures or other equipment.

2.2 MATERIALS

A. All ratings in conformance with the Acoustical and Insulation Materials Association Bulletin, latest edition.

B. Acoustical Tile: Mineral fiber, square edge tile 12" by 12" by 3/4", Class I flame spread rating. Minimum 2 coats factory applied washable white vinyl latex paint. NRC 0.60-0.70, STC range 35-39, light reflectance of LR-1, Armstrong Travertone Fissured, square edge K4C4 unless otherwise noted to match existing or accepted substitute.

C. Acoustical Board: Mineral fiber 24" by 48" by 3/4" thick, Class 25 flame spread rating. Color white with light reflectance of LR-1, NRC 0.50-0.60, STC 35-39, to match the existing tile. Provide board on wall surface as detailed to match existing.

D. Suspension System: Use 1” white T-bar on 2’ by 4’ grid seismically braced to IBC standards.
1. Main and cross tees, 1-1/2" deep, exposed surfaces finished with white baked enamel and with matching wall angles or as required to match existing.
2. Retaining Clips: BERC2 – 2" Beam End Retaining Clip, 0.034" thick, hot-dipped galvanized cold-rolled steel per ASTM A568 – used to join main beam or cross tee to wall molding.

E. Suspension Wires: Minimum 12-gage galvanized, soft annealed steel hanger wire.

F. Ceiling Tile Adhesive: #137 by W. W. Henry, Ceiling Tile Adhesive by Miracle, or accepted substitute.

G. Metal Edge for Direct Glue Tile: #402 by U.S. Gypsum or accepted substitute.

H. Spare Materials: Furnish 1 full carton of acoustical panels and tiles or 5% overrun whichever is larger. Furnish from the same production run as that used in the installation. Deliver to the Owner for future repairs and maintenance.

PART 3 - EXECUTION

3.1 INSTALLATION OF ACOUSTICAL CEILING SUSPENSION SYSTEMS

A. General: Grid location as indicated on reflected ceiling plan. Install in accordance with manufacturer's instructions and recommendations of Article 2, "Installation of Components", of ASTM C636.

B. Main Runners: Install main runners at 48" on center with hanger wire support at not more than 48" on center. Wrap hanger wire at least 3 full turns.

C. Tees and Moldings:

1. Install cross tees at 24" on center and adjacent to recessed light fixtures not supported by main runners. Install flat splines or tee splines as recommended by manufacturer. Provide moldings where ceilings meet walls, partitions and other vertical elements.
2. Secure terminal ends of the runners by attaching the BERC-2 clip to the wall molding and attaching the runners to the BERC-2 clip. The runners shall have zero clearance at the perimeter on two adjacent walls and with 3/8" (9.5 mm) clearance on the opposite walls. The clip is attached to the wall molding by sliding the locking lances over the hem of the vertical leg of the wall molding. BERC-2 clips installed in this manner are an acceptable means of preventing runners from spreading, in lieu of spacer bars required in CISCA 0-2, which is referenced in ASCE 7, Section 9.6.2.6.2.1, which is referenced in IBC Section 1621. Except for the use of the BERC-2 clip as noted above, installation of the ceiling system must be as prescribed by the applicable code. Maximum ceiling weight permitted is 1.20 pounds per square foot (5.86 kg/m2). This construction is equivalent to that required by CISCA 0-2, which is referenced in ASCE-7, Section 9.2.6.2.1, and which is referenced in IBC Section 1621.

D. Fixture Loads Causing Excess Deflection: Independently support or supplementally support the grid within 6" of each corner. Such loads shall not cause rotation of runners more than 2° from vertical.

E. Trapeze Type System: Provide where obstructions preclude direct attachment. Support all runners within 8" of wall or discontinuity.

F. Positively attach light fixtures weighing less than 20 pounds to the suspension system. Fixtures weighing more than 20 pounds but less than 56 pounds shall include two 12-gage hangers from the fixture to the system hangers or the structure above. Support fixtures weighing more than 56 pounds directly from the structure. Support pendant hung fixtures independently from the structure above.

G. Lateral Loads: Provide channel diagonal bracing of suspended ceiling system as required to meet lateral loads of the ceiling during seismic activity.

3.2 INSTALLATION OF ACOUSTICAL CEILING PANELS

A. Room centerline to match the center of the tile or edge of the tile as indicated on the Drawings.

B. Install ceiling panels in suspended grid system per the manufacturer's recommendations using clean hands or gloves.

C. Install directional pattered tile with patterns running across the short direction of the room.

D. Provide extra panels to protect recessed light fixtures as detailed for fire rated ceilings.

3.3 INSTALLATION OF ADHESIVE SYSTEM

A. Room centerline to match center of tile or edge of tile or to match existing pattern as indicated on Drawings.

B. Install ceiling tiles over wood stripping or gypsum board panels using fire rated adhesive. Apply in non-directional pattern with finished surface in flat smooth plane. Insert fiber splines in kerfs at corners of units where required.

3.4 ADJUSTING AND CLEANING

A. Adjust grid height as required maintaining ceiling system leveled to within 1/8" in 12 feet. Bending or kinking of hangers not permitted.

B. Where required, locate hanger wire around mechanical, plumbing, fire sprinkler and electrical equipment.

C. Clean exposed ceiling suspension members prior to installation of ceiling panels of tile.

D. Remove and replace panels and tile improperly placed, broken, or damaged prior to Substantial Completion.

E. Clean surfaces of panels and tile or remove and replace as directed prior to Substantial Completion.

3.5 EXTRA STOCK

A. Provide four (4) full boxes of each unique type or color of ceiling tile material.

END OF SECTION

RESILIENT BASE AND ACCESSORIES

PART 1 - GENERAL

1.1 WORK INCLUDED

A. Provide resilient base and accessories in locations indicated on the Drawings and as herein specified.

1.2 SUBMITTALS

A. Samples: Submit 2 samples of each type and color of resilient base and trim accessory. Provide 2-1/2" long samples for each accessory.

B. Submit product preparation instructions and recommendations, storage and handling requirements and installation methods.

1.3 QUALITY ASSURANCE

A. Manufacturer: Provide each type of resilient base and accessory as produced by a single manufacturer, including recommended adhesives.

1.4 PROJECT/SITE CONDITIONS

A. Maintain materials and areas of work at temperatures between 70°F and 90°F for not less than 48 hours before, during, and 48 hours after the material installation.

B. Install resilient base and accessories after other finishing operations, including painting and installation of built-in casework have been completed.

PART 2 - PRODUCTS

2.1 ACCESSORY MATERIALS

A. Rubber Base: Type I, 1/8" gage, 4" high, top set with coved toe. Provide continuous roll lengths. Provide color and manufacturer as listed below or accepted substitute.

B. Adhere rubber base with water based adhesive.
1. Manufacturers: Johnsonite, Roppe, Burke or Flexco.

PART 3 - EXECUTION

3.1 INSTALLATION OF ACCESSORIES

A. Apply wall base to walls, columns, pilasters, casework and other permanent fixtures in rooms or areas where base is required.
1. Install base in lengths as long as practicable with corners fabricated from base materials, mitered, or coped inside corners.
2. Tightly bond base to substrate throughout length of each piece with continuous contact at horizontal and vertical surfaces.

3.2 EXTRA STOCK

A. Deliver stock of maintenance materials to Bank. Furnish maintenance materials from same manufactured lot as materials installed and enclosed in protective packaging with appropriate identifying labels.

B. Base Materials: Salvage left over materials to the Owner.

END OF SECTION

PAINTING

PART 1 - GENERAL

1.1 WORK INCLUDED

A. Exterior Painting:
1. Field finish exposed concrete, masonry plaster, primed and galvanized steel, unfinished and primed wood, and plywood.
2. Field paint exposed fire protection, plumbing, HVAC, and electrical equipment not factory finished except as may be noted on the Drawings.

B. Interior Painting:
1. Field finish exposed concrete, masonry, plaster, primed and galvanized steel, gypsum, unfinished and primed wood, plywood, and ceiling tiles in areas scheduled for field finishing.
2. Field paint exposed fire protection, plumbing, HVAC, and electrical equipment not factory finished which is installed in areas scheduled for field finishing.

C. Do Not Paint:
1. Prefinished items, such as light fixtures, plumbing fixtures and finished door hardware.
2. Finished metal such as anodized aluminum, stainless steel, finished brass or bronze.
3. Moving parts of operating units, equipment identification, performance rating, name plates or code-required labels.
4. Exterior insulation and finish system.
5. Brick masonry.

D. Scope of this Section shall include final touch-up after completion of all construction activities.

1.2 REFERENCES

A. Oregon Administrative Rules (OAR), Department of Human Services, Public Health Division: Chapter 333, Division 70 Renovation, Repair and Painting Activities Involving Lead-Based Paint.

B. 40 CFR 59, Subpart D-National Volatile Organic Compound Emmission Standards for Architectural Coatings by US EPA.

C. ASTM D16-Standard Terminology for Paint, Related Coatings, Materials and Applications.

D. ASTM D4258-Standard Practice for Cleaning Concrete for Coating.

E. ASTM D4442-Stanjdard Test Methods for Direct Moisture Content for Measurement of Wood.

F. MPI - Master Painters Institute Architectural Painting Specification Manual.

G. SSPC-SP1 Solvent Cleaning.

H. SSPC-SP2 Hand Tool Cleaning.

I. SSPC-SP 6 Commercial Blast Cleaning.

J. Sspc-Sp13 Surface Preparation of Concrete.

K. Code of Federal Regulations: 40 CFR: Protection of the Environment.

1.3 SUBMITTALS

A. Product Data: Submit manufacturer's literature on each coating proposed for this Project. Obtain approval of coatings prior to ordering. Include the manufacturer's recommended minimum dry film thickness for each coating system. Indicate where the material is to be used.

B. Office Samples:
1. Submit Samples: For the Architect's review of color and gloss.
2. Resubmit Samples: As requested until required color and gloss is achieved.
3. Opaque Finish: Provide three 8" x 8" minimum size samples of each color and gloss.
4. Transparent Finish: On actual wood surfaces provide three 4" x 8" minimum size samples for natural and stained wood finish.

C. Submit finish schedule including color information, gloss and model number for each type and color of paint specified. Provide two verification samples for each finish product specified, minimum size 6” square, representing actual product, color, sheen and pattern.

E. Submit product preparation instructions and recommendations, storage and handling requirements, and installation methods.

1.4 QUALITY ASSURANCE

A. Painter: Provide local subcontractor experienced in painting commercial buildings. Painting subcontractor must have 5 years experience in projects of similar size.

B. Field Samples:
1. On actual building components, duplicate finishes on acceptable office samples.
2. Provide wall and ceiling colors and finishes on minimum 50 square feet of in-place surfaces.
3. Provide trim and equipment colors and finishes on minimum 10 lineal feet of in-place-surfaces.
4. The Architect will approve for color, texture and sheen only.

C. Fire Protection: Provide sufficient fire extinguishers of a type suitable for the control of fire originating in paint materials. Remove and dispose of, or safely store, all waste, empty containers and oily cloths off of the premises daily.

1.5 DELIVERY, STORAGE, AND HANDLING

A. Delivery: Deliver materials to each site in new, original and unopened containers bearing manufacturer's name, trade name, and label analysis.

B. Storage: Store coatings in ventilated spaces with containers closed.

C. Handling: Keep dust and open flame from coating materials while mixing and painting.

PART 2 - PRODUCTS

2.1 ACCEPTABLE MANUFACTURERS

A. Benjamin Moore, Premium Architectural Products.Devoe, a Division of PPG Industies.

B. Miller Paint Co. (Specification Standard)

C. PPG.

D. Rodda Paint Co.

E. Rust-oleum Corporation.

F. Sherwin Williams Co., Professional Coatings Division

G. Glidden Professional, a Division of PPG Industries.

H. Watco-Dennis

I. Kelly Moore.

J. ICI Dulex / Devoe.

K. Coronado Paint (a Benjamin Moore Company) - Specification Standard

D. Carboline.

L. Parker Paint Co.

M. Or accepted substitute.

2.2 EXTERIOR MATERIALS

A. Products listed below are approved for use in the Project. Other products may be used when approved by the Architect in writing.

B. Ferrous Metal:
1. Primer: Miller No. 310-2-10 Acrimetal DTM.
2. Second and Third Coats: Miller No. 310-5-XX Acrimetal DTM Semi Gloss.

Non Ferrous Metal:
3. Primer: Miller No. 310-2-10 Acrimetal DTM.
4. Second and Third Coats: Miller No. 310-5-XX Acrimetal DTM Semi Gloss.

C. Galvanized Metals:
1. Primer: Miller No. 310-2-10 Acrimetal DTM.
2. Second and Third Coats: 310-5-XX Acrimetal DTM Semi Gloss
3. Second and Third Coats: Miller No. 310-2-10 Acrimetal DTM Velvet; Miller No. 310-2-10 Acrimetal DTM Semi Gloss; Miller No. 310-5-XX Acrimetal DTM Gloss.

D. Exterior Soffit Board:
1. Primer over Existing Surfaces: 470011 Prime All Purpose Acrylic Primer.
2. Primer: 620011 Kril Primer.
3. Second and Third Coats: 5204XX Satin Kril.

E. Wood and Plywood:
1. Primer: Miller No. 470-0-11 Miller-Prime, Low Sheen, All Purpose Stain Blocking Primer.
2. Second and Third Coats: Miller No. 520-1-XX Kril Coat Flat.

F. Concrete:
1. Primer: Miller No. 620-0-11 Kril Primer Sealer.
2. First and Second Coats: Miller No. 520-1-xx Kril Coat Flat.

G. Plastics:
1. Primer: PPG Breakthrough 50 Interior/Exterior Satin Water Borne Acrylic.
2. First and Second Coats: PPG Breakthrough 50 Interior/Exterior Satin Water Borne Acrylic.

H. Fiberglass:
1. Primer: PPG Breakthrough 50 Interior/Exterior Satin Water Borne Acrylic.
2. First and Second Coats: PPG Breakthrough 50 Interior/Exterior Satin Water Borne Acrylic.

2.3 INTERIOR MATERIALS

A. Products listed below are approved for use in the Project. Other products may be used when approved by the Architect in writing.

B. Painted Wood and Trim - New and Existing:
1. Primer: Miller No. 270-0-11 Miller-Prime Acrylic Enamel Undercoat
2. Second and Third Coats: Miller No. 320-5-XX Acrinamel Acrylic Semi-Gloss Enamel.

C. Ferrous Metal:
1. Primer: Miller No. 310-2-10 Acrimetal DTM.
2. Second and Third Coats: Miller No. 320-5-XX Acrimetal DTM Semi Gloss.

D. Non Ferrous Metal:
1. Primer: Miller No. 310-2-10Acrimetal DTM.
2. Second and Third Coats: Miller No. 320-5-XX Acrimetal DTM Semi Gloss.

E. Gypsum Drywall - Walls (Paint):
1. Primer: Miller No. 220-0-11 P.V.A. Primer.
2. Second and Third Coats: Miller No. 120-4-XX Premium Satin.;

F. Gypsum Drywall and Plaster - Ceilings:
1. Primer: Miller No. 620-0-11 Kril Primer Sealer.
2. First and Second Coats: Miller No. 120-4-XX Premium Satin; roller application for light eggshell finish.

G. Gypsum Drywall - Walls and Ceiling (Epoxy):
1. Primer: Miller No. 620-0-11 Kril Primer Sealer.
2. First and Second Coats: Miller No. 183-5-10 Waterborne Epoxy.

H. Stained and Sealed Wood:
1. Primer: Watco Toner Stain to match existing and Old Master’s Water Based Sanding Sealer (7520X).
2. Second and Third Coats: Miller No. 710-4-45 Acriclear Satin Waterborne Polyurethane. Sand paper or synthetic steel wool between coats.

I. Acoustical Ceiling Tiles and Panels:
1. One Coat: Miller No. 130-1-XX Performance Plus Flat Latex in White color. Paint ceiling grid where ceiling panels are indicated to be painted.

J. Plastics:
1. Primer: PPG Breakthrough 50 Interior/Exterior Satin Water Borne Acrylic.
2. First and Second Coats: PPG Breakthrough 50 Interior/Exterior Satin Water Borne Acrylic.

K. Fiberglass:
1. Primer: PPG Breakthrough 50 Interior/Exterior Satin Water Borne Acrylic.

2. First and Second Coats: PPG Breakthrough 50 Interior/Exterior Satin Water Borne Acrylic.

PART 3 - EXECUTION

3.1 INSPECTION

A. Examination of Surfaces: Examine areas and conditions under which painting work is to be applied. Correct conditions detrimental to proper and timely completion of work. Do not proceed with work until unsatisfactory conditions have been corrected.

B. Measure moisture content of surfaces. Do not apply paint unless the moisture content of the surfaces are below the following maximums.
1. Exterior Plaster and Stucco: 12%.
2. Fiber Cement Siding: 12%.
3. Masonry, Concrete and CMU: 12%.
4. Exterior Wood: 15%.

C. Contaminated Surfaces: Do not paint over dirt, rust, blistered paint, grease, wet substrates, or surface conditions detrimental to the formation of a durable paint film.

D. Work Start: Start of painting work will be interpreted as the Applicator's acceptance of surfaces and conditions within any particular area.

3.2 PREPARATION

A. Protection:
1. Cover and protect adjacent finished surfaces.
2. Remove hardware, machined surfaces, cover plates, lighting fixtures and prefinished items in place and not scheduled for field finishing, or provide surface applied protection. Reinstall removed items after finishing adjacent surfaces.
3. Post “WET PAINT” signs during application and curing of all coatings that may be accessed by other trades or the public.

B. Cleaning: Comply with coating the manufacturer's instructions for preparation and cleaning of each substrate.

C. High pressure water clean all exterior surfaces prior to repainting using pressures indicated below to ensure complete removal of all loose paint, stains, dirt and other foreign matter with such work being carried out by qualified tradesmen experienced with high pressure water cleaning. The use of spray equipment such as water hose cleaning will not be considered. Allow sufficient drying time and test all surfaces using an electronic moisture meter before commencing work.

Substrate Pressure	Range
Soft Stone	100-600 Psi@6”
Wood or Clay Brick	600-1500 Psi@6”
Stone, Brick or Concrete	1500-4000 Psi@6”

D. Remove mildew from impervious surfaces by scrubbing with solution of Tetra-Sodium Phosphate and bleach. Rinse with clear water and allow surface to dry.

E. At previously painted surfaces comply with recommendations in “Master Painters Institute Maintenance Repainting Manual.”

E. Perform preparation for painting of substrates known to include lead paint in accordance with all state and local regulations and guidelines.

F. Scrape existing paint as required to provide smooth surface free from peeling and bubbling substrates. Fill nail holes, cracks, open joints and other blemishes with sealant, putty or caulking compatible with finish system after priming coat has dried.

G. Surface Preparation of Specific Substrates:

1. Concrete and Concrete Masonry: Clean surfaces free of loose particles and sand. Remove contaminants which could impair coating performance or appearance. Verify moisture transmission and ph levels are incompliance with coating manufacturer's recommendations. Concrete floors: mechanically abrade surface to achieve 80-100 grit medium sandpaper texture.
2. Gypsum Board & Plaster: Repair cracks, holes and other surface defects, as required to create smooth surface and maintain proper surface adhesion. Apply joint compound for gypsum board or patching plaster for plaster and sand to produce surface flush with adjacent undamaged surface. Allow a full cure prior to coating application as recommended by the patching compound manufacturer's recommendations.
3. Aluminum – Mill finish: IF PAINT IS REQUIRED: Clean and etch surfaces with a phosphoric acid water solution or water based industrial cleaner. Scuff sand smooth surfaces to create profile for adhesion. Flush with clean water and allow to dry, before applying primer coat. Test adhesion of primer to ensure performance.
4. Metals – Ferrous, Unprimed: Remove rust or scale, if present, by wire brush, power tool or sandblasting. Remove grease, oil and other contaminants which could impair coating performance or appearance by solvent cleaning. Clean welds, bolts and nuts with phosphoric acid solution; spot prime repaired welds with specified primer.
5. Metals – Ferrous, Shop Primed: Remove loose primer and rust, if present, by scraping and sanding, feathering edges of cleaned areas to produce uniform flat surface; solvent clean surfaces and spot prime bare metal with specified primer, feathering edges to produce uniform flat surface.
6. Metals – Galvanized Steel: Clean with a water based industrial strength cleaner, apply Glava Prep adhesion promoter followed by a clean water rinse; or wipe down surfaces using clean, lint free cloths saturated with xylene or lacquer thinner; followed by wiping the surface dry using clean lint free cloths. Test adhesion of primer to ensure performance.
7. Metals – Stainless Steel: Clean surfaces with pressurized steam, pressurized water or waterbased industrial cleaner. Test adhesion of primer to ensure performance.
8. Wood: Seal knots, pitch streaks and sap areas with sealer recommended by coating manufacturer; fill nail recesses and cracks with filler recommended by coating manufacturer. Sand surfaces smooth. Apply primer coat to back of wood trim and paneling.
9. Wood Doors: Seal door tops and bottoms prior to finishing.
10. Wood – Field Glazed Frames and Sash: Prime or seal glazing channels prior to glazing.
11. Existing Coatings – Repaint: Paint applied over existing painted finish in good condition. If presence of lead in existing coatings is suspected, cease surface preparation and notify Architect immediately.
12. Wall Finish: Etch or sand, prime if needed, fill all holes, caulk gaps between any adjacent painted substrates.
13. Remove surface irregularities by scraping or sanding to produce uniform substrate for coating application; apply one coat primer of type recommended by coating manufacturer or maximum coating adhesion.
14. Doors and other areas requiring semi-gloss finish: 100% Acrylic.

E. Repair cracks, indentations, surface irregularities and abrasions. Do not start work until surfaces to be finished are in proper condition to produce finished surfaces of uniform satisfactory appearance.

G. Ensure substrates have moisture content within tolerances allowed by coating manufacturer. Where exceeding the following values, promptly notify BSD rep and obtain direction before beginning work.

Concrete and Masonry: 13 percent. Cure minimum 28 days.
Exterior Wood: 17 percent.
Interior Wood: 15 percent.
Interior Finish Detail Woodwork, including trim and casework: 10 percent.
Plaster and Gypsum: 15 percent.
Concrete Slab on grade: Perform calcium chloride test over 24 hour period or other test acceptable to manufacturer. Verify acceptable moisture transmission and ph levels.

G. Stains & Marks: Remove completely, if possible, using materials and methods recommended by coating manufacturer; cover stains and marks which cannot be completely with isolating primer or sealer recommended by coating manufacturer to prevent bleed through.

H. Remove mildew, algae and fungus using materials and methods recommended by coating manufacturer.

I. Remove dust and loose particulate matter from surfaces to receive coatings immediately prior to coating application.

J. Protect adjacent surfaces not indicated to receive coatings.

F. Caulk to be installed after the application of primer. Use elastomeric and polyurethane paintable caulk. Use non-sagging polyurethane for expansion joints and elastomeric around windows and doors. Use non sagging polyurethane caulk and foam backer rod for expansion joints. The backer rod needs to be slightly thicker than the expansion joint. Backer rod must be ½ to ¾ of an inch below the surface; caulking to fill until level with surface.

G. Paint applied over existing painted finish in good condition. If presence of lead in existing coatings is suspected, cease surface preparation and notify BSD rep immediately.

1. Wall finish: Etch or sand, prime if needed. Fill all holes, caulk gaps between any adjacent painted substrates. Remove surface irregularities to produce uniform substrate for coating application; apply one coat of primer of type recommended by coating manufacturer for maximum coating adhesion.

A. Priming:

1. Seal wood required to be job painted. Prime edges, ends, face, undersides and backsides of millwork and exterior painted wood.
2. Provide finish coats that are compatible with prime paints used. Provide barrier coats over incompatible primers where required. Notify the Architect in writing of anticipated problems using specified coatings with substrates primed by others.
3. Apply prime coat or first coat to material that is scheduled or required to be painted or finished.
4. Touch up shop primed surfaces scratched or chipped prior to field finishing.

B. Existing Lead Base Paint: For renovations, repairs and painting (RRP) in "Child-Occupied Facilities" (where kids under the age of 6 regularly spend time and built before 1978), the General Contractor shall follow all Federal, State and local rules (including OSHA and US EPA rules and Oregon Administrative Rules Chapter 333, Division 70) associated with lead-based paints (LBP).
   1. The Contractor is responsible for the identification of LBP hazards and providing engineering controls for trigger activities that disturb LBP.
   2. Any time painted surfaces are disturbed, the work must be performed by a certified firm with a trained and certified "renovator" in accordance with *40 CFR (including Part 745.82 Lead*).
   3. Post the areas of the building that will be affected with appropriate signage warning of the potential hazard.

3.3 APPLICATION

A. Methods and Coverage:
   1. Apply painting and finishing materials in accordance with the manufacturer's directions. Use techniques best suited for the material and surfaces to which applied.
   2. For opaque finishes, apply additional coats when undercoats, stains or other conditions show through final paint coat, until paint film is of uniform finish, color and appearance.
   3. Where recommended by manufacturer, sand lightly between succeeding enamel or clear coats.
   4. Apply each material at not less than the manufacturer's recommended spreading rate, to provide a total dry film thickness of not less than amount recommended by coating manufacturer.
   5. Match approved office and field samples for color, texture and sheen.
   6. Paint exposed surfaces behind movable equipment and furniture same as adjacent surfaces.
   7. Paint surfaces behind permanently fixed equipment or furniture with prime coat only.

B. Equipment Surfaces:
   1. Paint interior surfaces of ducts where visible through registers or grilles, flat black.
   2. Except where accent colors are scheduled, paint mechanical and electrical work in finished areas including exposed ducts, piping, conduit, louvers, and grilles to match adjacent surfaces except when factory finished to color matching adjacent surface.
   3. Paint exterior exposed equipment where noted on the Drawings.

C. Existing Surfaces: Existing walls to be repainted are to be cleaned, removing all scaled and loose paint. Wall areas that have been patched are to be primed and painted as specified for new work. The existing painted surfaces, after cleaning and spot priming as necessary, are to receive 2 finish coats of paint.

D. Workmanship: Tint undercoats slightly darker than finish coat to aid Inspector in verifying coverage of each coat. Assume all responsibility for paint coats applied over surfaces and undercoats that have not been inspected and approved by Architect. Apply any additional coats of paint, as directed by Architect where surface preparation and undercoats have not been approved before painting. Make finished work match approved samples.

E. Drywall and Plaster Surfaces: Paint shall not be applied to any surface until it is thoroughly dry and cured. Prime surfaces that show hot spots or alkali in order to prevent such blemishes from showing through the paint. Brush off all loose particles or crystals that may have formed.

F. Colors: Refer to the Color Schedule included at the end of this Section. Colors have been selected from color chips in the Architect's office. Match the colors to these chips. Job mixing and tinting will not be allowed.

3.4 ADJUSTING AND CLEANING

A. Remove, refinish or repaint work not in compliance with specified requirements. Recoat work not meeting minimum dry film thickness.

B. Correct any painting related damage by cleaning, repairing, or replacing and refinishing as directed.

C. Repaint lines between accent colors as directed to obtain clean straight lines.

D. Remove paint splatters from plastic laminate, resilient flooring, anodized aluminum, glass, and similar finished surfaced.

E. Touch up factory finished surfaces damaged during construction.

F. Perform final touch-up after completion of all other construction activities.
1. Flashing paint patches will not be accepted.

G. Remove protective materials.

H. Protect completed coating applications from damage by subsequent construction activities.

I. Repair coatings, damaged by subsequent construction activities, to achieve flat, uniform surface without surface defects visible from 5’. Where repairs cannot be made to Architect's acceptance, re-apply finish coating to nearest adjacent change of surface plane, in both horizontal and vertical directions.

J. Reinstall items that have been removed to protect from coating application.

3.5 EXTRA STOCK

A. Provide maximum 1 gallon each color for extra stock materials.

B. Extra stock will be placed in full one gallon containers. Partial containers are to be removed from project site.

C. All containers to be clearly identified with manufacture, color and recipe.

3.6 COLOR SCHEDULE

A. General Exterior Wall Color: Match existing

B. Exterior Wood Trim: Match existing.

C. General Interior Wall Color: Match existing.

END OF SECTION

MARKERBOARDS

PART 1 – GENERAL

1.1 WORK INCLUDED

A. Provide markerboards as indicated on the Drawings and as specified herein.

1.2 SUBMITTALS

A. Product Data: Submit manufacturer's data and installation instructions for the Architect's review.

B. Office Samples: Provide samples for markerboard surface for the Architect's review prior to fabrication.

C. Shop Drawings: Submit shop drawings showing special details required for this Project.

1.3 WARRANTY

A. Provide the manufacturer's standard 50-year limited warranty against excessive fading, crazing, cracking, or flaking.

PART 2 – PRODUCTS

2.1 ACCEPTABLE MANUFACTURERS

A. Platinum Visual.

B. P.B.S. Supply Co.

C. Claridge

D. Polyvision

E. Or accepted substitute.

2.2 WRITING BOARDS

A. Markerboards Fixed and Sliding: Porcelain enamel on steel, laminated to core.
   1. Provide sliding markerboards where indicated.
   2. Available Writing Surface Products:
      a. LCS3 manufactured by Claridge.
      b. e3 Environmental Ceramicsteel manufactured by Polyvision.
   3. Color: White.
      a. Provide low gloss surface suitable for projection.
   4. Size: As indicated on drawings.
   5. Frame: Extruded aluminum, with concealed fasteners.
   6. Accessories: Provide marker tray, map rail, map hooks, and flag holder.

B. Board Construction:
   1. Writing Surface: Porcelain enamel applied on 24-gage steel in 3 uniform operations:
      a. Base Steel Sheets: Chemically bathed in a solution of potassium hydroxide and sodium metasilicate and rinsed prior to enameling.
      b. Primer Coat: Nickel cobalt (0.002" minimum thickness).
      c. Surface Coat: High fired type porcelain frits (0.0025" minimum thickness).

d. Total Finish Thickness: 0.004" minimum.
e. Panel Edges At Butt Joints: Porcelain coated.

2. Side opposite the writing surface shall have 2 uniform operations:
   a. Base Steel Sheets: Chemically bathed in a solution of potassium hydroxide and sodium metasilicate and rinsed prior to enameling.
   b. Nickel Cobalt: (0.002" minimum thickness) applied with a spray coat of silica for lamination adhesion.
3. Core: 7/16" thick fiberboard; Class A.

B. Writing Surface Color: White. Magnetic.

C. Provide with a continuous display rail, cork insert at top and a continuous chalk tray at the bottom.

D. All sides of markerboard to have a clear satin anodized aluminum molding.

2.3 FABRICATION

A. Provide factory-built units with minimum number of joints.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Install in accordance with manufacturer's instructions.
   1. Marker boards shall be mechanically fastened to the wall with screws.

B. Install complete systems with ground clips, backing material, brackets, anchors, and accessories as required for a complete installation.

C. Mounting Locations and Details: As indicated on the Drawings.

3.2 ADJUSTING AND CLEANING

A. Replace damaged surfaces and correct defects as directed.

B. Clean exposed surfaces prior to Substantial Completion.

END OF SECTION

TACKBOARDS (PICTURE FRAMED)

PART 1 - GENERAL

1.1 WORK INCLUDED

A. Provide tackboards as indicated on the Drawings and as specified herein.

1.2 SUBMITTALS

A. Product Data: Submit manufacturer's data and installation instructions for the Architect's review.

B. Office Samples: Provide samples for tackboard surface for the Architect's review prior to fabrication.

C. Shop Drawings: Submit shop drawings showing special details required for this Project.

PART 2 - PRODUCTS

2.1 TACKBOARDS

A. Tackable panel material shall be standard width material, vinyl covered.
1. Color: Use neutral colors throughout, no accent colors.
2. Match existing at remodels.

B. The preferred manufacturer is Jasco 1/2" TB w/ Koroseal Belair Cotton finish. Product currently supplied by GTS Interior Supply 503.595.1880. Product no. #MFG12TBV. Alternate materials to be reviewed and approved by Facilities Operation Director.

C. All tack board will be installed with ½” brush aluminum J metal trim.

D. Provide pen tray full length.

E. Installation at Tack board material shall be in a manner that precludes dimpling.

2.2 FABRICATION

A. Provide factory-built units with minimum number of joints.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Install in accordance with manufacturer's instructions.

B. Install complete systems with ground clips, backing material, brackets, anchors, and accessories as required for a complete installation.

C. Mounting Locations and Details: As indicated on the Drawings.

3.2 ADJUSTING AND CLEANING

A. Replace damaged surfaces and correct defects as directed.

B. Clean exposed surfaces prior to Substantial Completion.

END OF SECTION