

**SKAGIT COUNTY  
MORGUE FACILITY REMODEL**

1700 Continental Place  
MOUNT VERNON, WA

**PROJECT MANUAL**

**ARCHITECT**



**UNDERWOOD**  
*& ASSOCIATES, LLC*

Underwood & Associates, LLC  
1005 4<sup>th</sup> Street  
Anacortes, WA 98221  
Contact: Jeremy McNett  
[jeremy@underwoodarchitecture.com](mailto:jeremy@underwoodarchitecture.com)

Phone (360) 360-840-3294

**October 18, 2021**

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**PART 1 - GENERAL**

1.1 SECTION INCLUDES

- A . Identification of project team members and their contact information.

1.2

A . OWNER:

1. Name: Skagit County
  - a. Address Line 1: 1800 Continental Place
  - b. City: Mount Vernon
  - c. State: WA
  - d. Zip Code: 98273
  - e. Telephone: 360-41-1170

B . OWNER REPRESENTATIVE:

1. Name: Ken Hansen
  - a. Address Line 1: 1800 Continental Place
  - b. City: Mount Vernon
  - c. State: WA
  - d. Zip Code: 98273
  - e. Telephone: 360-416-1179
2. Primary Contact: All correspondence from the Contractor to the Architect will be through this party, unless alternate arrangements are mutually agreed upon at preconstruction meeting.
3. Title: Director, Facilities Management

1.3 CONSULTANTS:

- A . Architect: Design Professional of Record. All correspondence from the Contractor regarding construction documents authored by Architect's consultants will be through this party, unless alternate arrangements are mutually agreed upon at preconstruction meeting.

1. Company Name: Underwood & Associates, LLC
  - a. Address Line 1: 1005 4<sup>th</sup> Street
  - b. City: Anacortes
  - c. State: Washington
  - d. Zip Code: 98221
  - e. Telephone: 360-588-0471
2. Primary Contact: Jeremy McNett

- a. Title: Project Architect

B . Plumbing:

- 1. Company Name: FSI Engineers, Inc
  - a. Address Line 1: 1001 Alaskan Way Suite 200
  - b. City: Seattle
  - c. State: Washington
  - d. Zip Code: 98104
  - e. Telephone: 206-622-3321
- 2. Primary Contact:
  - a. Title: Project Manager
  - b. Name: Sebastien Boucher, EIT, LEED GA
  - c. Email: [sebastienb@fsi-engineers.com](mailto:sebastienb@fsi-engineers.com)

C . Mechanical Engineering Consultant - HVAC:

- 1. Company Name: FSI Engineers, Inc
  - a. Address Line 1: 1001 Alaskan Way Suite 200
  - b. City: Seattle
  - c. State: Washington
  - d. Zip Code: 98221
  - e. Telephone: 206-622-3321
- 2. Primary Contact:
  - a. Title: Project Manager
  - b. Name: Sebastien Boucher, EIT, LEED GA
  - c. Email: [sebastienb@fsi-engineers.com](mailto:sebastienb@fsi-engineers.com)

D . Electrical Engineering Consultant:

- 1. Company Name: TFWB Engineers
  - a. Address Line 1: 1200 Westlake Ave N Suite 509
  - b. City: Seattle
  - c. State: Washington
  - d. Zip Code: 98109
  - e. Telephone: 206-390-9843
- 2. Primary Contact: .
  - a. Title: Project Manager
  - b. Name: Aprille Balangue
  - c. Email: [aprille@tf-wb.com](mailto:aprille@tf-wb.com)

**PART 2 - PRODUCTS - NOT USED**

**PART 3 - EXECUTION - NOT USED**

END OF SECTION

**PART 1 - GENERAL**

1.1 DESIGN PROFESSIONALS OF RECORD

A. Architect:

1. Mike Underwood, AIA
2. Washington State License #9878
3. Responsible for Divisions 01-49 Sections except where indicated as prepared by other design professionals of record.

B. Civil Engineer: Not Applicable

1. <Insert name>.
2. <Insert license #>.
3. Responsible for <Insert list of Sections>.

C. Landscape Architect: Not Applicable

1. <Insert name>.
2. <Insert license #>.
3. Responsible for <Insert list of Sections>.

D. Structural Engineer: Not Applicable

1. <Insert name>.
2. <Insert license #>.
3. Responsible for <Insert list of Sections>.

E. Fire-Protection Engineer: Not Applicable

1. <Insert name>.

2. <Insert license #>.
3. Responsible for <Insert list of Sections>.

F. Plumbing Engineer:

1. Andrew Langdon, PE, LEED AP.
2. Washington State License No. 48289.
3. Responsible for Sections 22 05 00, 22 05 05, 22 05 07, 22 05 53, 22 07 19, 22 10 05, 22 10 06, 22 30 00, and 22 40 00.

G. HVAC Engineer:

1. Andrew Langdon, PE, LEED AP.
2. Washington State License No. 48289.
3. Responsible for Sections 23 05 00, 23 05 05, 23 05 07, 23 05 43, 23 05 53, 23 05 93, 23 07 13, 23 07 19, 23 08 00, 23 09 13, 23 31 00, 23 33 00, 23 34 23, 23 37 00, 23 40 00, 23 72 26, 23 81 26.13, and 23 82 00.

H. Electrical Engineer:

1. Michael J. Fitzmaurice.
2. Washington State License No. 29035.
3. Responsible for 26 05 00, 26 05 19, 26 05 26, 26 05 29, 26 05 33, 26 05 34, 26 05 43, 26 09 23, 26 51 00, 27 15 00, and 28 31 11.

**PART 2 - PRODUCTS (NOT APPLICABLE)**

**PART 3 - EXECUTION (NOT APPLICABLE)**

END OF SECTION



## **NOTICE OF CALL FOR BIDS**

**Skagit County  
Morgue Facility Remodel  
1700 Continental Place, Mount Vernon, WA**

**NOTICE IS HEREBY GIVEN** that sealed bids will be received on November 23 until 1:30 pm at the Skagit County Commissioners Administrative Building, 1800 Continental Place, Mount Vernon, Washington 98273. Bids must be received at the County Commissioners' Office prior to the bid opening time. Bid Proposals will be recorded as to time and date received and secured until the time set for the opening. All bids must be *plainly marked on the outside*;

**Skagit County  
Morgue Facility Remodel  
1700 Continental Place, Mount Vernon, WA**

### **OPENING OF THE BID PROPOSALS:**

At 1:30 pm or as soon as possible thereafter on November 23, 2021, Bid Proposals will be opened and Publicly read aloud in the Commissioners Hearing Room #100, 1800 Continental Place, Mount Vernon, WA. Attendance will be available in-person or remote. For information on how to join the meeting remotely through your telephone or from your computer, tablet or smartphone, contact the Clerk of the Board at [commissioners@co.skagit.wa.us](mailto:commissioners@co.skagit.wa.us) or 360-416-1300.

### **ITEM FOR BID:**

The Project consists of furnishing all labor, materials and other incidentals for remodel of the Sagers Building to accommodate a County Morgue. The Architect's estimate is \$240,000 not including sales tax.

### **BID DOCUMENTS:**

Free-of-charge access to project bid documents (plans, specifications, addenda, and Bidders List) is provided to Prime Bidders, Subcontractors, and Vendors by going to [www.bxwa.com](http://www.bxwa.com) and clicking on "Posted Projects", "Public Works", and "Skagit County." This online plan room provides Bidders with fully usable online documents with the ability to: download, view, print, order full/partial plan sets from numerous reprographic sources, and a free online digitizer/take-off tool. It is recommended that Bidders "Register" in order to receive automatic e-mail notification of future addenda and to place themselves on the "Self-Registered Bidders List." Bidders that do not register will not be automatically notified of addenda and will need to periodically check the on-line plan room for addenda issued on this project. Contact Builders Exchange of Washington at (425) 258-1303 should you require assistance with access or registration. The content available through [bxwa.com](http://bxwa.com) is our property or the property of our licensors and is protected by copyright and other intellectual property laws. Access to project documents is intended for use by bidders (general contractors/prime bidders, subcontractors and suppliers), agency personnel and agency's consultants, as well as for personal, noncommercial use by the public. You may display or print the content available for these uses only. "Harvesting" (downloading, copying, and transmitting) of any project information and/or project documents for purposes of reselling and/or redistributing information by any other party is not allowed by BXWA.

Plans and specifications may also be obtained from WCR Publications, Inc. (Western Construction Resources) [www.wcrinc.com](http://www.wcrinc.com) ([info@wcrinc.com](mailto:info@wcrinc.com)). Drawings can be obtained through Lithtex NW Printing Solutions, 2226 Market Street, Mount Vernon, WA, ([info@lithtexnw.com](mailto:info@lithtexnw.com) / 360-424-5945) or Office Depot, 201-A E. College Way, Mount Vernon, WA (360-416-4979). Bidders shall register to be automatically notified of addenda and will need to periodically check the on-line plan room for addenda issued on this project.

**BXWA is the official plan center for the project.**

Informational copies of plans and specifications are also on file for inspection at the offices of Underwood & Associates, LLC, 1005 4<sup>th</sup> Street, Anacortes, WA, (360-840-3294).

A non-mandatory pre-bid conference for prospective bidders will be held on site at 10:00 am on Tuesday, November 2, 2021. Meet in the front parking lot in front of the main building entrance at 1700 Continental Place, Mount Vernon, WA.

Questions regarding the project must be submitted to Jeremy McNett email: jeremy@underwoodarchitecture.com. Questions must be received by November 16, 2021, 3:00pm. The County will provide a confirmation of the question(s) receipt within 24 hours; if a bidder does not receive such confirmation it is solely responsible to re-send the question(s). County's responses will be provided to all bidders by addendum. No oral responses from the Owner or its representatives may be relied upon by bidders.

The Successful Bidder will be required to furnish the necessary additional Bond(s) for the faithful performance of the Work, as prescribed in the Bidding Document.

**CONTRACTOR REGISTRATION:**

Pursuant to RCW 39.06, the Bidder shall be registered and licensed as required by the laws of the State of Washington, including but not limited to RCW 18.27.

In order to perform public work, the successful Bidder and Subcontractors, prior to Contract award, shall hold or obtain such licenses and registrations as required by State Statutes and Codes, and Federal and local laws and regulations and a City of Mount Vernon business license.

**BID SECURITY:**

Certified check, bank cashier's check or bid bond congruent with the Form of Bid Bond as identified in the "Instructions to Bidders" is required to be submitted with each proposal, in the amount equal to five percent (5%) of the total basic bid plus additive alternate bids (if applicable). Make bid security payable to the Skagit County, a Municipal Corporation, furnish bond executed by a licensed bonding agency authorized to do business in the locality of the Project.

**RIGHT TO ACCEPT OR REJECT:**

The Owner shall reserve the right to reject any or all proposals and the right to waive any irregularities or informalities in any proposal, subject to the Laws of the State of Washington as pertinent to Public Works and congruent with requirements and policies of Skagit County, and as may be deemed in the best interest of the Owner. In particular, the Owner reserves the right to reject a proposal which is not accompanied by the required bid security or subcontractors listing as described heretofore, and incomplete or irregular proposals which may exclude any item(s) as may be required by the Bid Documents. **NO PROPOSALS WILL BE ACCEPTED AFTER THE TIME SET FOR RECEIPT OF BID PROPOSALS.**

Skagit County is an Equal Opportunity and Affirmative Action Employer/

Small, Minority and Women-Owned firms are encouraged to submit bids.

**WITHDRAWAL OF BID:**

No proposal may be withdrawn after the time set for the opening thereof, unless the Award of the Contract is delayed for a period of forty-five (45) calendar days.

**NOTICE GIVEN BY ORDER OF THE BOARD OF COUNTY COMMISSIONERS THIS**  
\_\_\_\_\_ day of \_\_\_\_\_ 2021.

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Clerk of the Board  
Skagit County Commissioners

Published in the Skagit Valley Herald: October 28 & November 4, 2021

END OF SECTION

SECTION 001002

BIDDER'S QUALIFICATIONS

Each bidder submitting a proposal for this Project shall submit, as part of its bid, the following information:

1. Name of Bidder: \_\_\_\_\_
2. Business Address: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_
3. Telephone Number and Area Code: \_\_\_\_\_
4. IRS Federal Employer's Identification Number: \_\_\_\_\_
5. Current State Unified Business Identification Number \_\_\_\_\_
6. Number of years engaged in the contraction business under the present firm name: \_\_\_\_\_
7. Total value of contracts in force: \_\_\_\_\_
8. General description of work for which Bidder is qualified: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_
9. Recent significant project completed by Bidder including owner's name, approximate cost, and completion date:
  - a) \_\_\_\_\_
  - b) \_\_\_\_\_
  - c) \_\_\_\_\_
  - d) \_\_\_\_\_
10. Major equipment owned by the Bidder:
  - a) \_\_\_\_\_
  - b) \_\_\_\_\_

c) \_\_\_\_\_

d) \_\_\_\_\_

11. Bank Reference: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

12. Washington State Contractor Registration Number: \_\_\_\_\_

13. Bonding Reference: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

14. Bonding Capacity: \_\_\_\_\_

Bidder:

By: \_\_\_\_\_ Title: \_\_\_\_\_ Date: \_\_\_\_\_

END OF SECTION

**Division 001053**

**BIDDER RESPONSIBILITY CRITERIA**

**Low Responsible Bidder**

It is the intent of the Owner to award a contract to the low responsible bidder. In determining the bidder's responsibility, the Owner shall consider an overall accounting of the items listed below. The bidder must submit the following information, demonstrating that they meet the listed criteria:

**1-02 Bid Procedures and Conditions**

**1-02.1 Qualifications of Bidder**

- A. Bidders must meet the minimum qualifications of RCW 39.04.350, as amended:  
"Before award of a public works contract, a bidder must meet the following responsibility criteria to be considered a responsible bidder and qualified to be awarded a public works project. The bidder must:
- (a) At the time of bid submittal, have a certificate of registration in compliance with chapter 18.27 RCW;
  - (b) Have a current State unified business identifier number;
  - (c) If applicable, have industrial insurance coverage for the bidder's employees working in Washington as required in Title 51 RCW; an employment security department number as required in Title 50 RCW; and a State excise tax registration number as required in Title 82 RCW; and
  - (d) Not be disqualified from bidding on any public works contract under RCW 39.06.010 or 39.12.065(3).
  - (e) If bidding on a public works project subject to the apprenticeship utilization requirements in RCW 39.04.320, not have been found out of compliance by the Washington state apprenticeship and training council for working apprentices out of ratio, without appropriate supervision, or outside their approved work processes as outlined in their standards of apprenticeship under chapter 49.04 RCW for the one-year period immediately preceding the date of the bid solicitation; and
  - (f) Until December 31, 2013, not have violated RCW 39.04.370 more than one time as determined by the department of labor and industries.
- B. In addition to the bidder responsibility criteria above, the bidder must also meet the following relevant supplemental bidder responsibility criteria applicable to the project:
- a. The Bidder shall not currently be debarred or suspended by the Federal government. The Bidder shall not be listed as a current debarred or suspended bidder on the U.S. General Services Administration's "Excluded Parties List System" website. Bidder debarment or suspension status may be verified at: <https://secure.Ini.wa.gov/debarandstrike/ContractorDebarList.aspx>. The Owner may also use other sources of information that may be available to otherwise determine whether the Bidder is in compliance with this criteria.

- b. The Bidder shall not owe delinquent taxes to the WA State Department of Revenue, without a payment plan approved by the Washington State Department of Revenue. The Bidder shall not be listed on the Washington State Department of Revenue's "Delinquent Taxpayer List", which may be verified at the following website: <http://dor.wa.gov/content/fileandpataxes/latefiling/dtlwest.aspx>. The Owner may also use other sources of information that may be available to otherwise determine whether the Bidder is in compliance with this supplemental criteria.
- c. The Bidder shall not have been convicted of a crime involving bidding on a public works contract within five (5) years prior to the bid submittal deadline. The Bidder shall provide a duly executed sworn statement (on the included form, or on a form otherwise determined to be acceptable by the Owner), that the Bidder has not been convicted of a crime involving bidding on a public works contract. The Owner may also use independent sources of information that may be available to otherwise determine whether the Bidder is in compliance with this supplemental criteria.
- d. The Bidder's standard subcontract form shall include the subcontractor responsibility language required by RCW 39.06.020, and the Bidder shall have an established written procedure which the Bidder uses to validate the responsibility of each of its subcontractors. The Bidder's subcontract form shall also include a requirement that each of its subcontractors shall have and document a similar procedure to determine whether the sub-tier subcontractors with whom it contracts are also "responsible" contractors as defined per RCW 39.06.020. The Bidder shall submit a copy of its standard subcontract form for review by the Owner, a written description of the Bidder's procedure for validating the responsibility of the subcontractors with which the Bidder contracts, and a duly executed sworn statement (on the included form, or in a form otherwise determined to be acceptable by the Owner) that the Bidder has properly made a determination of responsibility for all subcontractors for the project. The Owner may also use independent sources of information that may be available to otherwise determine whether the Bidder is in compliance with this supplemental criteria.
- e. The Bidder shall not have a record of prevailing wage complaints filed against the Bidder within five (5) years prior to the bid submittal date that demonstrates a pattern of failing to pay workers prevailing wages, unless there are extenuating circumstances that are acceptable to the Owner. The Bidder shall submit a list of prevailing wage complaints filed against it within five (5) years of the bid submittal date along with a written explanation of each complaint, and how it was resolved. The Owner shall evaluate the explanations provided by the Bidder (and the resolution of each complaint) to determine whether the complaints demonstrate a pattern of the Bidder failing to pay its workers prevailing wages as required. The Owner may also evaluate complaints filed within the time period specified that were not reported by the Bidder. The Owner may also use independent sources of information that may be available to otherwise determine whether the Bidder is in compliance with this supplemental criteria.

- f. The Bidder shall not have had any public works contract terminated for cause by a government agency during the five (5) year period immediately preceding the bid submittal deadline for the project, unless there are extenuating circumstances acceptable to the Owner. The Bidder shall provide a duly executed sworn statement (on the included form, or in a form otherwise determined to be acceptable by the Owner), that the Bidder has not had any public works contract terminated for cause by a government agency during the five (5) year period immediately preceding the bid submittal deadline for the project. The Owner may also use independent sources of information that may be available to otherwise determine whether the Bidder is in compliance with this supplemental criteria.
- g. The Bidder shall not have a record of excessive claims filed against the retainage or payment bonds for public works projects within three (3) years of the bid submittal date, that demonstrate a lack of effective management by the Bidder of making timely and appropriate payments to its subcontractors, suppliers, and workers, unless there are extenuating circumstances which are acceptable to the Owner. The Bidder shall submit a list of all public works projects that the Bidder has completed within the previous three (3) years prior to the bid submittal date, and include for each project the following information:
- i. The owner for each public works project, and contact information for each owner.
  - ii. A list of claims filed against the retainage and/or payment bond(s) for each of the public works project.
  - iii. A written explanation of the circumstances surrounding each claim against the retainage and/or payment bond(s), and an explanation as to the ultimate resolution of each claim.

The Owner may contact other previous owners to validate the information provided by the Bidder. The Owner may also use independent sources of information that may be available to otherwise determine whether the Bidder is in compliance with this supplemental criteria.

- h. Within five (5) years prior to the bid submittal date the Bidder must have completed a minimum of at least three (3) other projects for a Federal, State, or local governmental agency. The Bidder shall provide the following information pertaining to these three (3) projects:
- i. The contact information for the Federal, State, or local contracting agency for whom the project was completed;
  - ii. Description of the project;
  - iii. Start and completion dates for the project;
  - iv. Awarded contract amount;
  - v. Final contract amount;
  - vi. Other additional information or documentation pertaining to the projects as may be requested by the Owner.

The Owner may contact other previous owners to validate the information provided by the Bidder. The Owner may also use independent sources of information that may be available to otherwise determine whether the Bidder is in compliance with this supplemental criteria.

- i. The Bidder shall have been duly incorporated and actively doing business in the State of Washington for a minimum of at least five (5) years prior to the bid



submittal date. The Bidder shall provide the Owner with a adequate documentation confirming that the Bidder has been duly incorporated and actively doing business in the State of Washington for a minimum of at least five (5) years prior to the bid submittal date, including, but not necessarily limited to, documentation from the Washington State Secretary of State's Office. Such documentation shall include, but is not necessarily limited to, a copy of the Bidder's Certificate of Existence / Authorization, a copy of the Bidder's Certificate of Incorporation / Formation / Authority, a certified copy of the Bidder's Original Registration Document (i.e., Articles of Incorporation, Certificate of Authority, Certificate of Formation, or Foreign Limited Liability Registration), and any other supporting information or documentation as may otherwise be requested by the Owner (including, but not necessarily limited to, copies of the Bidder's business licenses and contractor's licenses for the previous five [5] years prior to the bid submittal date). The Owner may also use other sources of information that may be available to otherwise determine whether the Bidder is in compliance with this supplemental criteria.

- j. Within two (2) years prior to the bid submittal date the Bidder shall not have received any willful safety violations, and the Bidder shall not have received more than two (2) serious safety violations (i.e., WISHA / OSHA written citations) from the Washington State Department Labor & Industries or analogous agency with jurisdiction in the location the work was performed, regardless of whether such willful and/or serious safety violations have been abated or not. The Bidder shall provide Owner with a list of any and all willful and/or serious safety violations (i.e., WISHA / OSHA written citations) from the Washington State Department Labor & Industries (or analogous agency with jurisdiction in the location the work was performed), regardless of whether such willful and/or serious safety violations have been abated or not. The Owner may verify such information provided with the Washington State Department Labor & Industries or analogous agency with jurisdiction in the location the work was performed. The Owner may also use other sources of information that may be available to otherwise determine whether the Bidder is in compliance with this supplemental criteria.
  
- k. Within five (5) years prior to the bid submittal date the Bidder shall have successfully completed at least one (1) other project of a similar size and scope as required by the contract documents for this project. The project must have had a total construction cost of at least \$100,000. In evaluating whether the other project(s) was/were "successfully completed," the Owner may verify previous owner references for the previous project(s), and may evaluate the previous owner's assessment of the Bidder performance, including but not limited to the following areas:
  - i. Quality control;
  - ii. Safety record;
  - iii. Timeliness of performance;
  - iv. Use of skilled personnel;
  - v. Management of subcontractors;
  - vi. Availability of and use of appropriate equipment;
  - vii. Compliance with contract documents;
  - viii. Management of submittals process, change orders, and close-out.
  - ix. Construction within occupied area.

For the purposes of meeting this criterion, the Owner has determined that “similar size and scope” to this project means project(s) that have the following characteristics: (i.) The awarded project(s) contract amount must have been of not less than \$100,000; (ii.) The project(s) must have included the renovation in excess of 3,000 square feet; and (iii.) The project(s) must have included construction of within the occupied business spaces. The Bidder shall submit a list of other project(s) of similar size and scope to this project or larger, including information on a minimum of at least one (1) project of similar size and scope to this project or larger completed within five (5) years prior to the bid submittal date. The information about each project shall include the following:

1. Owner’s name and contact information for the owner’s representative;
2. Awarded contract amount;
3. Final contract amount;
4. A description of the scope of the project and how the project is similar to this project;
5. The Bidder’s assessment of its performance of each project, including but not limited to the following:
  - a. Quality control;
  - b. Safety record;
  - c. Timeliness of performance;
  - d. Use of skilled personnel;
  - e. Management of subcontractors;
  - f. Availability of and use of appropriate equipment;
  - g. Compliance with contract documents;
  - h. Management of submittals process and change orders.
  - i. Construction within occupied areas.

C. All Bidders must supply and provide the forgoing described bidder responsibility information, documentation, and materials to the satisfaction of the Owner. If a Bidder fails to supply the required bidder responsibility documentation, information, or materials, then Bidder may be determined by the Owner to be non-responsive, and the bid may be rejected on this basis. If the Owner determines the bidder does not meet the bidder responsibility criteria above and is therefore not a responsible bidder, the Owner shall notify the bidder in writing with the reasons for its determination. If the bidder disagrees with this determination, it may appeal the determination within twenty four (24) hours of receipt of the Owner’s determination by presenting additional written information to the Owner. The Owner will consider the additional information before issuing its final determination. If the Owner’s final determination affirms that the bidder is not responsible, the Owner will not execute a contract with any other bidder until two (2) business days after the bidder determined to be not responsible has received the final determination. Please note that the above-described information, materials, and documentation requested by the Owner for purposes of determining Bidder responsibility is not necessarily exclusive, and the Owner expressly reserves the right to request additional information, materials, and documentation as may be determined to be necessary or desirable by the Owner in order to evaluate and determine Bidder’s compliance with the above-described bidder responsibility criteria. At all times, the Owner may also use other sources of information that may be available to otherwise determine whether the Bidder is in compliance with the forgoing bidder responsibility criteria.

D. Certification Regarding Debarment Suspension or Ineligibility:

The Contractor certifies by signing this Agreement that Contractor is not presently debarred, suspended, proposed for debarment, declared ineligible or voluntarily excluded from participating in this contract by any federal department or agency. Further, Contractor agrees not to enter into any arrangements or contracts related to this contract with any party that is on the "General Service Administration List of Parties Excluded from Federal Procurement or Non-procurement Programs" at <http://epls.arnet.gov/>.

**CONTRACTOR:**

\_\_\_\_\_  
Authorizing Signature

\_\_\_\_\_  
Date

Federal Tax ID# \_\_\_\_\_

Contractor Lic.# \_\_\_\_\_

**This form must be submitted with the bid**

**SUPPLEMENTAL BIDDER RESPONSIBILITY - DECLARATION OF BIDDER**

In accordance with the Contract Provisions and Plans the Bidder must provide the following sworn statement relevant to the supplemental bidder responsibility applicable to the project.

Name of Bidder: \_\_\_\_\_

Address: \_\_\_\_\_

Telephone No. \_\_\_\_\_

E-Mail: \_\_\_\_\_

I, \_\_\_\_\_, the undersigned declarant, as the duly authorized representative on behalf of \_\_\_\_\_ (herein the "Bidder") hereby make this declaration on the basis of facts within the scope of my first hand knowledge and authority to which I am competent to testify:

1. I hereby certify, swear, and affirm under penalty of perjury, that the Bidder has not been convicted of a crime involving bidding on a public works contract within the five (5) year period immediately preceding the bid submittal deadline for the project; and
2. I hereby certify, swear and affirm under penalty of perjury, that as of the date of this declaration (below), that the Bidder has hereby made a proper determination of bidder responsibility for all subcontractors for the project in accordance with the terms of RCW 39.06, RCW 39.04.350, and in accordance with the terms of the Bidder's written procedure for validating the responsibility of all subcontractors for the project with which the Bidder contracts; and
3. I hereby certify, swear and affirm under penalty of perjury, that the Bidder, has not had any public works contract terminated for cause by any State, Federal, or local government agency during the five (5) year period immediately preceding the bid submittal deadline for the project.

**This form is to be submitted by the bidder with his bid.**

Signed under penalty of perjury under the laws of the State of Washington this \_\_\_\_\_ day of \_\_\_\_\_ 2021, at \_\_\_\_\_, Washington.

Name of Bidder: \_\_\_\_\_

By: \_\_\_\_\_

Print Name: \_\_\_\_\_

Title: \_\_\_\_\_

STATE OF WASHINGTON }  
COUNTY OF \_\_\_\_\_ } ss.

I certify that I know or have satisfactory evidence that \_\_\_\_\_ is the person who appeared before me, and said person acknowledged that he/she signed this instrument, on oath stated that he/she was duly authorized execute the instrument and acknowledged it as the \_\_\_\_\_ of \_\_\_\_\_, to be the free and voluntary act of such party for the uses and purposes herein mentioned.

DATED this \_\_\_\_\_ day of \_\_\_\_\_, 2021.

(SEAL)

\_\_\_\_\_  
Notary Public  
print name: \_\_\_\_\_  
Residing at \_\_\_\_\_  
My commission expires \_\_\_\_\_

END OF SECTION

**This form is to be submitted by the bidder with his bid.**

**Summary of required submittals with bid**

**1-02.1, B., d.**

.....”The Bidder shall **submit a copy of its standard subcontract form for review by the Owner, a written description of the Bidder’s procedure for validating the responsibility of the subcontractors with which the Bidder contracts**, and a duly executed sworn statement (on the included form, or in a form otherwise determined to be acceptable by the Owner) that the Bidder has properly made a determination of responsibility for all subcontractors for the project....”

**The information above is to be submitted by the bidder with his bid.**

**1-02.1, B., e.**

“.....The Bidder shall submit a list of prevailing wage complaints filed against it within five (5) years of the bid submittal date along with a written explanation of each complaint, and how it was resolved....”

**The information above is to be submitted by the bidder with his bid if applicable. If no complaints have been filed against the bidder, so state on paper, reference this section and submit with bid.**

**1-02.1, B., g.**

“.....The Bidder shall submit a list of all public works projects that the Bidder has completed within the previous three (3) years prior to the bid submittal date, and include for each project the following information:

- i. The owner for each public works project, and contact information for each owner.
- ii. A list of claims filed against the retainage and/or payment bond(s) for each of the public works project.
- iii. A written explanation of the circumstances surrounding each claim against the retainage and/or payment bond(s), and an explanation as to the ultimate resolution of each claim....”

**The information above is to be submitted by the bidder with his bid.**

**1-02.1, B., h.**

“...Within five (5) years prior to the bid submittal date the Bidder must have completed a minimum of at least three (3) other projects for a Federal, State, or local governmental agency.

The Bidder shall provide the following information pertaining to these three (3) projects:

- iv. The contact information for the Federal, State, or local contracting agency for whom the project was completed;
- v. Description of the project;
- vi. Start and completion dates for the project;
- vii. Awarded contract amount;
- viii. Final contract amount;
- ix. Other additional information or documentation pertaining to the projects as may be requested by the Owner....”

**The information above is to be submitted by the bidder with his bid.**

**1-02.1, B., i.**

“....The Bidder shall provide the Owner with adequate documentation confirming that the Bidder has been duly incorporated and actively doing business in the State of Washington for a minimum of at least five (5) years prior to the bid submittal date, including, but not necessarily limited to, documentation from the Washington State Secretary of State’s Office. Such documentation shall include, but is not necessarily limited to, a copy of the Bidder’s Certificate of Existence / Authorization, a copy of the Bidder’s Certificate of Incorporation / Formation / Authority, a certified copy of the Bidder’s Original Registration Document (i.e., Articles of Incorporation, Certificate of Authority, Certificate of Formation, or Foreign Limited Liability Registration), and any other supporting information or documentation as may otherwise be requested by the Owner (including, but not necessarily limited to, copies of the Bidder’s business licenses and contractor’s licenses for the previous five [5] years prior to the bid submittal date)...”

**The information above is to be submitted after the bid opening by the (2) two low bidders within 10 days of the bid opening.**

**1-02.1, B., j.**

“....The Bidder shall provide Owner with a list of any and all willful and/or serious safety violations (i.e., WISHA / OSHA written citations) from the Washington State Department Labor & Industries (or analogous agency with jurisdiction in the location the work was performed), regardless of whether such willful and/or serious safety violations have been abated or not...”

**The information above is to be submitted by the bidder with his bid if applicable. If no safety violations have been filed against the bidder, so state on paper, reference this section and submit with bid.**

**1-02.1, B., k.**

“...The Bidder shall submit a list of other project(s) of similar size and scope to this project, including information on a minimum of at least one (1) project of similar size and scope to this project completed within five (5) years prior to the bid submittal date. The information about each project shall include the following:

1. Owner’s name and contact information for the owner’s representative;
2. Awarded contract amount;
3. Final contract amount;
4. A description of the scope of the project and how the project is similar to this project;
5. The Bidder’s assessment of its performance of each project, including but not limited to the following:
  - a. Quality control;
  - b. Safety record;
  - c. Timeliness of performance;
  - d. Use of skilled personnel;
  - e. Management of subcontractors;
  - f. Availability of and use of appropriate equipment;
  - g. Compliance with contract documents; Management of submittals process and change orders....”

**The information above is to be submitted by the bidder with his bid.**

**1-02.1, D.**

- A. Certification Regarding Debarment Suspension or Ineligibility:

**This form is to be submitted by the bidder with his bid.**



SECTION 002113

INSTRUCTION TO BIDDERS

A. EXAMINATION OF SITE AND CONSTRUCTION DOCUMENTS

1. Before submitting a proposal, the bidder shall:
  - a. Carefully examine the drawings and specifications,
  - b. Visit the site of the work,
  - c. Fully inform itself of existing conditions and limitation, relating to the construction of the project and the employment of labor thereon. Failure to do so will not relieve a successful bidder of its obligation to furnish all material and labor necessary to carry out the provisions of this contract.
  - d. Rely entirely upon its own judgment in making its proposal,
  - e. Include in its bid a sum sufficient to cover all items required by the contract including all labor, materials, and services necessary to complete this project.

A. ADDENDA AND INTERPRETATIONS

No interpretation of the meaning of the plans, specifications, or other pre-bid documents will be made to any bidder verbally. Every request for such interpretation should be in writing addressed to the Architect, and to be given consideration, must be received at least seven (7) days prior to date fixed for opening of bids. Any and all such interpretations and any supplemental instructions will be in the form of written addenda to the specifications. Failure of any bidder to receive addenda shall not relieve any such bidder from any obligation under its bid as submitted. All addenda so issued shall become part of the contract documents. Approval of requested substitutions or proposed equals will be by Addenda as above.

C. PRODUCT SUBSTITUTIONS:

1. Substitutions: Bids must be based upon the specific articles and materials named in the Drawings and Specification. Substitution may be made only under the following conditions:
  - a. Prior to Bid Opening: Not less than ten (10) calendar days prior to bid opening, prime bidders may submit to the Architect written requests for approval of articles or materials, accompanied by complete descriptions, technical data and samples. Approval or rejection of the proposed substitutions will be made by addenda issued to all bidders. Submit material/product requests as specified in Section 01600.
2. After Award of Contract: Approval of substitution will be made only in exceptional cases where the Contractor submits satisfactory evidence to the Architect that through no fault of its own, specified or otherwise approved items cannot be obtained in time to avoid delay to the work. Approval in such cases shall conform to the other requirements above.

D. INTERPRETATIONS AND CORRECTIONS TO BIDDING DOCUMENTS

Bidders and Sub-bidders shall promptly notify the Architect of any ambiguity, inconsistency or error which they may discover upon examination of the Bidding Documents or of the site

and local conditions. Bidders and Sub-bidders requiring clarification or interpretation of the Bidding Documents shall make a written request which shall reach the Architect at least three (3) days prior to the date for receipt of Bids. Any interpretation, correction or change of the Bidding Documents made in any other manner will not be binding, and Bidders shall not rely upon such interpretations, corrections and changes.

E. FORM OF BID

A Bid Form is attached to these Drawings and Specifications. Make Bid according to Form. Fill in all spaces. Bids shall not contain any recapitulation of work done. State numbers in writing and in figures. Completed form must be without interlineation, alteration or erasure. Signatures must be in longhand.

F. POWER OF ATTORNEY

Attorneys-in-fact who sign bid bonds or contract bonds must file with each bond a certified and effectively dated copy of the power of attorney.

G. ORAL AND TELEPHONIC BIDS

Oral and telephonic modifications of bids cannot be considered.

H. SUBMISSION OF BID

Enclose bid, non-collusion affidavit, and bid bond in opaque sealed envelope. Address to: Skagit County Board of Commissioners. Particulars are in the Advertisement for Bid. Deliver in person or by post. Bidder is responsible for delivery of bid at or before the time set for bid opening. The Owner may consider informal any bid not prepared and submitted in accordance with the provisions hereof and may waive any informalities or reject any and all bids. The Owner reserves the right to reject any bid of the evidence submitted by, or investigation of, such bidder fails to satisfy the Owner that such bidder is properly qualified to carry out the obligation of the contract and to complete the work contemplated therein. Conditional bids will not be accepted.

I. BID BOND

Each bidder agrees to furnish a bid bond AIA Document A310 or a certified check amounting to five percent (5%) of the bid, included with its proposal. When left in escrow with the Owner its amount or penalty sum is the measure of damages which the Owner will sustain by the failure of the bidder to execute the Form of Agreement and furnish a 100 percent Performance and Payment Bond, AIA Document A312, and if the bidder fails to deliver said documents within ten (10) days after written notice, notice of the award of the contract to him, then the check shall become the property of the Owner or the Bid Bond shall remain in full effect. But if the bid is not accepted within forty five (45) days after the time set for opening bids, or if the bidder delivers said contract and the bonds, then the check shall be returned to him or the bid bond shall become void. The right is reserved to hold the bid bonds of the three lowest bidders until the award of the contract or for a period of forty five (45) days, whichever is the shorter time. Bids of all unsuccessful bidders will be returned as soon as feasible after the bid opening.

J. WITHDRAWAL OF BIDS

Any bidder may withdraw its bid either personally or by written request at any time prior to the hour set for the bid opening. No bid may be withdrawn or modified after the time set for opening unless and until the award of the contract is delayed for period exceeding forty five (45) days.

K. TIME OF COMPLETION

Bidder must agree to commence work within ten (10) days of the contract execution, Substantially Complete the Work within ninety (90) consecutive calendar days from the date of the Notice to Proceed, and to Finally Complete the Work within thirty (30) consecutive calendar days thereafter. Time is of the essence and contractor shall make every reasonable effort to adhere to the established schedule.

L. SECURITY FOR FAITHFUL PERFORMANCE

Simultaneously with its delivery of the executed contract, the Contractor shall furnish a surety bond or bonds as security for faithful performance of the Contract and for payment of all persons performing labor under the Contract and furnishing material or services in connection with the Contract as described in the Contract Documents. The surety on such bond or bonds shall be a duly authorized surety company satisfactory to the Owner, registered in the State of Washington, Insurance Commissioners Office. List Bonding Agent and address of same.

M. CONTRACTOR'S AND SUBCONTRACTOR'S PUBLIC LIABILITY

Vehicle Liability and Property Damage Insurance shall be furnished as required by the Supplementary General Conditions.

N. BUILDER'S RISK INSURANCE

Property Damage Insurance shall be as required by the Bonds and Certificates Section 00 60 00 and Supplementary General Conditions Section 00 80 00.

O. LAWS AND REGULATIONS, PREVAILING WAGES

The Bidder's attention is directed to the fact that all applicable Federal laws, State laws, municipal ordinances, and rules and regulations of all authorities having jurisdiction over construction of the project shall apply to the Contract throughout, and they shall be deemed to be included in the Contract the same as though written out in full therein. Federal funds will be used in this project, so Contractor must pay employees the higher of federal and state prevailing wages. All persons or firms performing on public service or construction contracts shall submit to the State, in advance of the work of all trades, a completed Form SF 9882, "Statement of Intent to Pay Prevailing Wages," accompanied by the filing fees for each Statement (Statements are available at Offices of Washington State Department of Labor and Industries). Refer to Supplementary General Conditions for Prevailing Wage information applicable to this project required by law.

P. QUALIFICATIONS OF BIDDERS

1. The Architect and/or the Owner may make such investigations as necessary to determine the ability of a Bidder to perform the work, and the Bidder shall furnish all such information and date as may be requested prior to bidding. The Owner reserves the right to reject any bid if the evidence submitted by, or if investigation of, such Bidder fails to satisfy the Owner that such Bidder is properly qualified to perform the obligations of the Contract and to complete the work contemplated therein. Conditional Bids will not be accepted.
2. To enable the Owner to evaluate the competency and financial responsibility of a Contractor, when requested by the Owner, furnish the following information, which shall be sworn to under oath by him or by a properly authorized representative of the Bidder.
  - a. The address and description of the Bidder's plan and place of business.
  - b. The name and/or Articles of Co-Partnership or Incorporation.
  - c. Itemized list of equipment available for use on the project.
  - d. A certified or authenticated financial statement, dated within thirty (30) days prior to the opening of bids. The Owner may require that any items of such statements be further verified.
  - e. A list of present contracts, including dollar values, percentage of completion and the names of all Owners involved.
  - f. A statement regarding any past, present and pending litigation with an Owner.
  - g. Such additional information as may be required that will satisfy the Owner that the Bidder is adequately prepared, in technical experience or otherwise, to fulfill the contract.
  - h. Sufficient documentation to ensure that the Contractor is in compliance with the current Fair Employment Practice requirements of the Owner.

Q. Prior to award of Bid the Owner shall verify all items listed under Bidder's Responsibility Criteria. If criteria cannot be verified bidder will be deemed non-responsive.

R. POST-BID INFORMATION

1. The successful bidder shall submit to the Architect, within ten (10) calendar days of the notifications of selection for award of the Contract, the following:
  - a. Statement of Cost for each major item of work or subcontract included in the Bid, equaling the total Contract award, and such other data as are required by the General Conditions, including Article 5.2.

S. LAWS AND REGULATIONS

The bidders attention is directed to the fact that all applicable State laws, municipal ordinances, and rules and regulations of all authorities having jurisdiction over construction of the project shall apply to the Contract throughout, and they shall be deemed to be included in the Contract the same as though written out in full therein. Bidders are advised that if successful, they will be required to meet all applicable federal, state, and local laws pertaining to permits, licenses, fees and taxes, as well as laws pertaining to employment

and wages. Bidders are responsible for determining the extent and applicability of such laws.

T. DEFINITIONS

1. Bid Documents include the Instructions to Bidders, the Bid Form, and the contract Documents, including any Addenda.
2. Contract Documents consist of the Owner-contractor Agreement, the Conditions of the Contract (General, Supplementary, and other Conditions), the Drawings, the Specifications, and all Addenda issued prior to and all Modifications issued after the execution of the Contract.
3. Addenda are written or graphic instruments issued prior to the execution of the contract which modify or interpret the Bidding Documents, including the drawings and specifications, by addition, deletion, clarification, or correction. Addenda issued prior to the receipt of Bids will be mailed, faxed, or delivered to each person or firm recorded by the Engineer as having received the Bid Documents.

U. AWARD OF THE CONTRACT(S)/REJECTION OF BIDS

1. The Contract will be awarded to the responsible bidder(s) submitting the lowest proposal complying with the condition of the Advertisement for Bid and these contract documents provided the bid is reasonable and in the best interest of Skagit County. Items in this bid, approved for contract by the Board of Commissioners, shall be awarded by Skagit County.
2. Skagit County reserves the right to reject any and all bids and to waive any informality in bids received whenever such rejection or waiver is in the interest of the County. Skagit County reserve the right to select all or individual alternate bid items whichever is determined to be in the best interest of the County.
3. The bidder to whom the award is made will be notified at the earliest practicable date.

V. DISQUALIFICATION OF BIDDERS

1. Any one or more of the following causes may be considered sufficient for the disqualification of a Bidder and the rejection of its bid or bids:
  - a. Evidence of collusion among Bidders.
  - b. Lack of expertise as shown by past work and judged from the standpoint of workmanship and performance history.
  - c. Uncompleted work under other contracts which, in the judgment of the Skagit County, might hinder or prevent the prompt completion of additional work if awarded.
  - d. Being in arrears on existing contracts, in litigation with an Owner, or having defaulted on a previous contract.
  - e. Delinquent taxes due to State and Federal Government including: B&O, L&I, payroll, social security and Medicare.
  - f. Contractor's naming oneself as a Subcontractor for which they have no expertise and working knowledge directly within the firm.
  - g. Federal or State debarment from contracts.

END OF SECTION

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1. Bid Documents include the Instructions to Bidders, the Bid Form, and the contract Documents, including any Addenda.
2. Contract Documents consist of the Owner-contractor Agreement, the Conditions of the Contract (General, Supplementary, and other Conditions), the Drawings, the Specifications, and all Addenda issued prior to and all Modifications issued after the execution of the Contract.
3. Addenda are written or graphic instruments issued prior to the execution of the contract which modify or interpret the Bidding Documents, including the drawings and specifications, by addition, deletion, clarification, or correction. Addenda issued prior to the receipt of Bids will be mailed, faxed, or delivered to each person or firm recorded by the Engineer as having received the Bid Documents.

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2. Skagit County reserves the right to reject any and all bids and to waive any informality in bids received whenever such rejection or waiver is in the interest of the County. Skagit County reserve the right to select all or individual alternate bid items whichever is determined to be in the best interest of the County.
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  - a. Evidence of collusion among Bidders.
  - b. Lack of expertise as shown by past work and judged from the standpoint of workmanship and performance history.
  - c. Uncompleted work under other contracts which, in the judgment of the Skagit County, might hinder or prevent the prompt completion of additional work if awarded.
  - d. Being in arrears on existing contracts, in litigation with an Owner, or having defaulted on a previous contract.
  - e. Delinquent taxes due to State and Federal Government including: B&O, L&I, payroll, social security and Medicare.
  - f. Contractor's naming oneself as a Subcontractor for which they have no expertise and working knowledge directly within the firm.
  - g. Federal or State debarment from contracts.

END OF SECTION

**PART 1 - GENERAL**

1.1 INSTRUCTIONS TO BIDDERS

A . Instructions to Bidders for Project consist of the following:

1. AIA Document A701, "Instructions to Bidders[.]"["], " a copy of which is bound in this Project Manual.]
2. The following Supplementary Instructions to Bidders that modify and add to the requirements of the Instructions to Bidders.

1.2 SUPPLEMENTARY INSTRUCTIONS TO BIDDERS, GENERAL

A . The following supplements modify AIA Document A701, "Instructions to Bidders." Where a portion of the Instructions to Bidders is modified or deleted by these Supplementary Instructions to Bidders, unaltered portions of the Instructions to Bidders shall remain in effect.

1.3 ARTICLE 1 - DEFINITIONS

A . None.

1.4 ARTICLE 2 - BIDDER'S REPRESENTATIONS

A . Add Section 2.1.3.1:

1. 2.1.3.1 - The Bidder has investigated all required fees, permits, and regulatory requirements of authorities having jurisdiction and has properly included in the submitted bid the cost of such fees, permits, and requirements not otherwise indicated as provided by Owner.

B . Add Section 2.1.5:

1. 2.1.5 - The Bidder is a properly licensed Contractor according to the laws and regulations of Mount Vernon, WA and meets qualifications indicated in the Procurement and Contracting Documents.

C . Add Section 2.1.6:

1. 2.1.6 - The Bidder has incorporated into the Bid adequate sums for work performed by installers whose qualifications meet those indicated in the Procurement and Contracting Documents.

1.5 ARTICLE 3 - BIDDING DOCUMENTS

A . 3.2 - Interpretation or Correction of Procurement and Contracting Documents:

1. Add Section 3.2.2.1:

- a. 3.2.2.1 - Submit Bidder's Requests for Interpretation using form [bound in the Project Manual] [furnished on Project Web site] [furnished with electronic bid forms and submitted via email].

B . 3.4 - Addenda:

1. Delete Section 3.4.3 and replace with the following:
  - a. 3.4.3 - Addenda may be issued at any time prior to the receipt of bids.
2. Add Section 3.4.4.1:
  - a. 3.4.4.1 - Owner may elect to waive the requirement for acknowledging receipt of 3.4.4 Addenda as follows:
    - 1) 3.4.4.1.1 - Information received as part of the Bid indicates that the Bid, as submitted, reflects modifications to the Procurement and Contracting Documents included in an unacknowledged Addendum.
    - 2) 3.4.4.1.2 - Modifications to the Procurement and Contracting Documents in an unacknowledged Addendum do not, in the opinion of Owner, affect the Contract Sum or Contract Time.

1.6 ARTICLE 4 - BIDDING PROCEDURES

A . 4.1 - Preparation of Bids:

1. Add Section 4.1.1.1:
  - a. 4.1.1.1 - Printable electronic Bid Forms and related documents are available from [Architect] [Construction Manager].
2. Add Section 4.1.8:
  - a. 4.1.8 - The Bid shall include unit prices when called for by the Procurement and Contracting Documents. Owner may elect to consider unit prices in the determination of award. Unit prices will be incorporated into the Contract.
3. Add Section 4.1.9:
  - a. 4.1.9 - Owner may elect to disqualify a bid due to failure to submit a bid in the form requested, failure to bid requested alternates or unit prices, failure to complete entries in all blanks in the Bid Form, or inclusion by the Bidder of any alternates, conditions, limitations or provisions not called for.
4. Add Section 4.1.10:
  - a. 4.1.10 - Bids shall include sales and use taxes. Contractors shall show separately with each monthly payment application the sales and use taxes paid by them and their subcontractors in the form indicated. Reimbursement of sales and use taxes, if any, shall be applied for by Owner for the sole benefit of Owner.

B . 4.3 - Submission of Bids:

1. Add Section 4.3.1.2:
  - a. 4.3.1.2 - Include Bidder's Contractor License Number applicable in Project jurisdiction on the face of the sealed bid envelope.



C . 4.4 - Modification or Withdrawal of Bids:

1. Add the following sections to 4.4.2:
  - a. 4.4.2.1 - Such modifications to or withdrawal of a bid may only be made by persons authorized to act on behalf of the Bidder. Authorized persons are those so identified in the Bidder's corporate bylaws, specifically empowered by the Bidder's charter or similar legally binding document acceptable to Owner, or by a power of attorney, signed and dated, describing the scope and limitations of the power of attorney. Make such documentation available to Owner at the time of seeking modifications or withdrawal of the Bid.
  - b. 4.4.2.2 - Owner will consider modifications to a bid written on the sealed bid envelope by authorized persons when such modifications comply with the following: the modification is indicated by a percent or stated amount to be added to or deducted from the Bid; the amount of the Bid itself is not made known by the modification; a signature of the authorized person, along with the time and date of the modification, accompanies the modification. Completion of an unsealed bid form, awaiting final figures from the Bidder, does not require power of attorney due to the evidenced authorization of the Bidder implied by the circumstance of the completion and delivery of the Bid.

D . 4.5 - Break-Out Pricing Bid Supplement:

1. Add Section 4.5:
  - a. 4.5 - Provide detailed cost breakdowns[ on forms provided] no later than two business days following Architect's request.

E . 4.6 - Subcontractors, Suppliers, and Manufacturers List Bid Supplement:

1. Add Section 4.6:
  - a. 4.6 - Provide list of major subcontractors, suppliers, and manufacturers furnishing or installing products[ on forms provided] no later than [two] <Insert number> business days following Architect's request. Include those subcontractors, suppliers, and manufacturers providing work totaling [three] <Insert number> percent or more of the Bid amount. Do not change subcontractors, suppliers, and manufacturers from those submitted without approval of Architect.

1.7 ARTICLE 5 - CONSIDERATION OF BIDS

A . 5.2 - Rejection of Bids:

1. Add Section 5.2.1:
  - a. 5.2.1 - Owner reserves the right to reject a bid based on Owner's and Architect's evaluation of qualification information submitted following opening of bids. Owner's evaluation of the Bidder's qualifications will include: status of licensure and record of compliance with licensing requirements, record of quality of completed work, record of Project completion and ability to complete, record of financial management including financial resources available to complete Project and record of timely payment of obligations, record of Project site management including compliance with requirements of authorities having jurisdiction, record of and number of current claims and disputes and the status of their resolution, and qualifications of the Bidder's proposed Project staff and proposed subcontractors.

1.8 ARTICLE 6 - POSTBID INFORMATION

A . 6.1 - Contractor's Qualification Statement:

1. Add Section 6.1.1:
  - a. 6.1.1 - Submit Contractor's Qualification Statement no later than [two] <Insert number> business days following Architect's request.

B . 6.3 - Submittals:

1. Add Section 6.3.1.4:
  - a. 6.3.1.4 - Submit information requested in Sections 6.3.1.1, 6.3.1.2, and 6.3.1.3 no later than [two] <Insert number> business days following Architect's request.

1.9 ARTICLE 7 - PERFORMANCE BOND AND PAYMENT BOND

A . 7.1 - Bond Requirements:

1. Add Section 7.1.1.1:
  - a. 7.1.1.1 - Both a Performance Bond and a Payment Bond will be required, each in an amount equal to 100 percent of the Contract Sum.

B . 7.2 - Time of Delivery and Form of Bonds:

1. Delete the first sentence of Section 7.2.1 and insert the following:
  - a. The Bidder shall deliver the required bonds to Owner no later than [10] <Insert number> days after the date of Notice of Intent to Award and no later than the date of execution of the Contract, whichever occurs first. Owner may deem the failure of the Bidder to deliver required bonds within the period of time allowed a default.
2. Delete Section 7.2.3 and insert the following:
  - a. 7.2.3 - Bonds shall be executed and be in force on the date of the execution of the Contract.

1.10 ARTICLE 8 - FORM OF AGREEMENT BETWEEN OWNER AND CONTRACTOR

A . AIA A101 and A201.

1.11 ARTICLE 9 - EXECUTION OF THE CONTRACT

A . Add Article 9:

1. 9.1.1 - Subsequent to the Notice of Intent to Award, and within ten (10) days after the prescribed Form of Agreement is presented to the Awardee for signature, the Awardee shall execute and deliver the Agreement to Owner through [Architect] [Construction Manager], in such number of counterparts as Owner may require.
2. 9.1.2 - Owner may deem as a default the failure of the Awardee to execute the Contract and to supply the required bonds when the Agreement is presented for signature within the period of time allowed.
3. 9.1.3 - Unless otherwise indicated in the Procurement and Contracting Documents or the executed Agreement, the date of commencement of the Work shall be the date of the executed Agreement[ or the date that the Bidder is obligated to deliver the executed Agreement and required bonds to Owner].

4. 9.1.4 - In the event of a default, Owner may declare the amount of the Bid security forfeited and elect to either award the Contract to the next responsible bidder or re-advertise for bids.

**PART 2 - PRODUCTS (NOT APPLICABLE)**

**PART 3 - EXECUTION (NOT APPLICABLE)**

END OF SECTION

**PART 1 - GENERAL**

1.1 DEFINITIONS

- A . Procurement Substitution Requests: Requests for changes in products, materials, equipment, and methods of construction from those indicated in the Procurement and Contracting Documents, submitted prior to receipt of bids.
- B . Substitution Requests: Requests for changes in products, materials, equipment, and methods of construction from those indicated in the Contract Documents, submitted following Contract award. See Section 012500 "Substitution Procedures" for conditions under which Substitution requests will be considered following Contract award.

1.2 QUALITY ASSURANCE

- A . Compatibility of Substitutions: Investigate and document compatibility of proposed substitution with related products and materials. Engage a qualified testing agency to perform compatibility tests recommended by manufacturers.

1.3 PROCUREMENT SUBSTITUTIONS

- A . Procurement Substitutions, General: By submitting a bid, the Bidder represents that its bid is based on materials and equipment described in the Procurement and Contracting Documents, including Addenda. Bidders are encouraged to request approval of qualifying substitute materials and equipment when the Specifications Sections list materials and equipment by product or manufacturer name.
- B . Procurement Substitution Requests will be received and considered by Owner when the following conditions are satisfied, as determined by Architect; otherwise requests will be returned without action:
  - 1. Extensive revisions to the Contract Documents are not required.
  - 2. Proposed changes are in keeping with the general intent of the Contract Documents, including the level of quality of the Work represented by the requirements therein.
  - 3. The request is fully documented and properly submitted.

1.4 SUBMITTALS

- A . Procurement Substitution Request: Submit to [Architect] [Construction Manager]. Procurement Substitution Request must be made in writing[ by prime contract Bidder only] in compliance with the following requirements:
  - 1. Requests for substitution of materials and equipment will be considered if received no later than [10] <Insert number> days prior to date of bid opening.
  - 2. Submittal Format: Submit [three] <Insert number> copies of each written Procurement Substitution Request, using [form bound in Project Manual] [or] [CSI Substitution Request Form 1.5C].
  - 3. Submittal Format: Submit Procurement Substitution Request, using format provided on Project Web site.
    - a. Identify the product or the fabrication or installation method to be replaced in each request. Include related Specifications Sections and drawing numbers.

- b. Provide complete documentation on both the product specified and the proposed substitute, including the following information as appropriate:
    - 1) Point-by-point comparison of specified and proposed substitute product data, fabrication drawings, and installation procedures.
    - 2) Copies of current, independent third-party test data of salient product or system characteristics.
    - 3) Samples where applicable or when requested by Architect.
    - 4) Detailed comparison of significant qualities of the proposed substitute with those of the Work specified. Significant qualities may include attributes such as performance, weight, size, durability, visual effect, sustainable design characteristics, warranties, and specific features and requirements indicated. Indicate deviations, if any, from the Work specified.
    - 5) Material test reports from a qualified testing agency indicating and interpreting test results for compliance with requirements indicated.
    - 6) Research reports, where applicable, evidencing compliance with building code in effect for Project, from [ICC-ES] <Insert applicable code organization>.
    - 7) Coordination information, including a list of changes or modifications needed to other parts of the Work and to construction performed by Owner and separate contractors, which will become necessary to accommodate the proposed substitute.
  - c. Provide certification by manufacturer that the substitute proposed is equal to or superior to that required by the Procurement and Contracting Documents, and that its in-place performance will be equal to or superior to the product or equipment specified in the application indicated.
  - d. Bidder, in submitting the Procurement Substitution Request, waives the right to additional payment or an extension of Contract Time because of the failure of the substitute to perform as represented in the Procurement Substitution Request.
- B . Architect's Action:
- 1. Architect may request additional information or documentation necessary for evaluation of the Procurement Substitution Request. Architect will notify all bidders of acceptance of the proposed substitute by means of an Addendum to the Procurement and Contracting Documents.
- C . Architect's approval of a substitute during bidding does not relieve Contractor of the responsibility to submit required shop drawings and to comply with all other requirements of the Contract Documents.

**PART 2 - PRODUCTS (NOT APPLICABLE)**

**PART 3 - EXECUTION (NOT APPLICABLE)**

END OF SECTION

**PART 1 - GENERAL**

1.1 BID INFORMATION

- A . Bidder: \_\_\_\_\_.
- B . Project Name: Morgue Facility Remodel.
- C . Project Location: 1700 Continental Place, Mount Vernon, WA.
- D . Owner: Skagit County.
- E . Architect: Jeremy McNett, Underwood & Associates, LLC.
- F . Architect Project Number: SCC-2020.

1.2 CERTIFICATIONS AND BASE BID

- A . Base Bid, Single-Prime (All Trades) Contract: The undersigned Bidder, having carefully examined the Procurement and Contracting Requirements, Conditions of the Contract, Drawings, Specifications, and all subsequent Addenda, as prepared by <Insert Architect's firm name> and Architect's consultants, having visited the site, and being familiar with all conditions and requirements of the Work, hereby agrees to furnish all material, labor, equipment and services, including all scheduled allowances, necessary to complete the construction of the above-named project, according to the requirements of the Procurement and Contracting Documents, for the stipulated sum of:
  - 1. \_\_\_\_\_ Dollars  
( \$ \_\_\_\_\_ ).
  - 2. Above does not include work and bid amount(s) in Schedule of Alternates on next page of this form.

1.3 BID GUARANTEE

- A . The undersigned Bidder agrees to execute a contract for this Work in the above amount and to furnish surety as specified within ten (10) days after a written Notice of Award, if offered within forty-five (45) days after receipt of bids, and on failure to do so agrees to forfeit to Owner the attached cash, cashier's check, certified check, U.S. money order, or bid bond, as liquidated damages for such failure, in the following amount constituting five percent (5%) of the Base Bid amount above.
- B . In the event Owner does not offer Notice of Award within the time limits stated above, Owner will return to the undersigned the cash, cashier's check, certified check, U.S. money order, or bid bond.

1.4 BID ALTERNATES

A . DESCRIPTION

- 1. The undersigned Bidder proposes the amount below be added to or deducted from the Base Bid if particular alternates are accepted by Owner. Amounts listed for each alternate include costs of related coordination, modification, or adjustment.

- a. Cost-Plus-Fee Contract: Alternate price given below includes adjustment to Contractor's Fee.
2. If the alternate does not affect the Contract Sum, the Bidder shall indicate "NO CHANGE."
3. If the alternate does not affect the Work of this Contract, the Bidder shall indicate "NOT APPLICABLE."
4. The Bidder shall be responsible for determining from the Contract Documents the affects of each alternate on the Contract Time and the Contract Sum.
5. Owner reserves the right to accept or reject any alternate, in any order, and to award or amend the Contract accordingly within [60] days of the Notice of Award unless otherwise indicated in the Contract Documents.
6. Acceptance or non-acceptance of any alternates by the Owner shall have no affect on the Contract Time unless the "Schedule of Alternates" Article below provides a formatted space for the adjustment of the Contract Time.

B . SCHEDULE OF ALTERNATES

1. Alternate No. 1: Second Floor Offices and Stairwell:
  - a. ADD X DEDUCT \_\_\_ NO CHANGE \_\_\_ NOT APPLICABLE \_\_\_.
  - b. \_\_\_\_\_ Dollars  
(\$ \_\_\_\_\_).
  - c. ADD \_\_\_ DEDUCT \_\_\_ calendar days to adjust the Contract Time for this alternate.

1.5 SUBCONTRACTORS AND SUPPLIERS

- A . The following companies shall execute subcontracts for the portions of the Work indicated:
1. Concrete Work: \_\_\_\_\_.
  2. Masonry Work: \_\_\_\_\_.
  3. Roofing Work: \_\_\_\_\_.
  4. Plumbing Work: \_\_\_\_\_.
  5. HVAC Work: \_\_\_\_\_.
  6. Electrical Work: \_\_\_\_\_.

1.6 TIME OF COMPLETION

- A . The undersigned Bidder proposes and agrees hereby to commence the Work of the Contract Documents on a date specified in a written Notice to Proceed to be issued by Architect, and shall fully complete the Work within ninety (90) calendar days.

1.7 ACKNOWLEDGEMENT OF ADDENDA

A. The undersigned Bidder acknowledges receipt of and use of the following Addenda in the preparation of this Bid:

1. Addendum No. 1, dated \_\_\_\_\_.
2. Addendum No. 2, dated \_\_\_\_\_.
3. Addendum No. 3, dated \_\_\_\_\_.
4. Addendum No. 4, dated \_\_\_\_\_.

1.8 BID SUPPLEMENTS

A. The following supplements are a part of this Bid Form and are attached hereto.

1. Bid Form Supplement - Qualifications.
2. Bid Form Supplement - Certification regarding Debarment
3. Bid Form Supplement - Declaration of Bidder
4. Bid Form Supplement - Copy of standard subcontract form
5. Bid Form Supplement - List of prevailing wage complaints filed in last 5 years
6. Bid Form Supplement - List of all public works projects within previous 3 years
7. Bid Form Supplement - List of at least 3 projects for Federal, State, or Local agencies
8. Bid Form Supplement - List of L&I safety violations
9. Bid Form Supplement – List of other similar size and scope projects within 5 years
10. Bid Form Supplement - Bid Bond Form (AIA Document A310-2010).

1.9 CERTIFICATION OF COMPLIANCE WITH WAGE PAYMENT STATUES

The bidder hereby certifies that, within the three-year period immediately preceding the bid solicitation date, the bidder is not a “willful” violator, as defined in RCW 49.48.082, of any provision of chapters 49.46, 49.48, or 49.52 RCW, as determined by a final and binding citation and notice of assessment issued by the Department of Labor and Industries or through a civil judgment entered by a court of limited or general jurisdiction.

I certify under penalty of perjury under the laws of the State of Washington that the foregoing is true and correct.

---

Bidder’s Business Name

---

Signature of Authorized Official\*



---

Printed Name

---

Title

---

Date

City

State

*Check One:*

Sole Proprietorship  Partnership  Joint Venture  Corporation

State of Incorporation, or if not a corporation, State where business entity was formed:

---

If a co-partnership, give firm name under which business is transacted:

1.10 CONTRACTOR'S LICENSE

A . The undersigned further states that it is a duly licensed contractor, for the type of work proposed, in the City of Mount Vernon, and that all fees, permits, etc., pursuant to submitting this proposal have been paid in full.

1.11 SUBMISSION OF BID

A . Respectfully submitted this \_\_\_\_ day of \_\_\_\_\_, 2021.

B . Submitted By: \_\_\_\_\_ (Name of bidding firm or corporation).

C . Authorized Signature: \_\_\_\_\_ (Handwritten signature).

D . Signed By: \_\_\_\_\_ (Type or print name).

E . Title: \_\_\_\_\_ (Owner/Partner/President/Vice President).

F . Witnessed By: \_\_\_\_\_ (Handwritten signature).

G . Attest: \_\_\_\_\_ (Handwritten signature).

H . By: \_\_\_\_\_ (Type or print name).

I . Title: \_\_\_\_\_ (Corporate Secretary or Assistant Secretary).

J . Street Address:\_\_\_\_\_.

K . City, State, Zip:\_\_\_\_\_.

L . Phone:\_\_\_\_\_.

M . License No.:\_\_\_\_\_.

N . Federal ID No.:\_\_\_\_\_ (Affix Corporate Seal Here).

**PART 2 - PRODUCTS (NOT APPLICABLE)**

**PART 3 - EXECUTION (NOT APPLICABLE)**

END OF SECTION

**PART 1 - GENERAL**

1.1 BID FORM SUPPLEMENT

A . A completed bid bond form is required to be attached to the Bid Form.

1.2 BID BOND FORM

A . AIA Document A310-2010 "Bid Bond" is the recommended form for a bid bond. A bid bond acceptable to Owner, or other bid security as described in the Instructions to Bidders, is required to be attached to the Bid Form as a supplement.

B . Copies of AIA standard forms may be obtained from The American Institute of Architects; <https://www.aiacontracts.org/>; email: [docspurchases@aia.org](mailto:docspurchases@aia.org); (800) 942-7732.

**PART 2 - PRODUCTS (NOT APPLICABLE)**

**PART 3 - EXECUTION (NOT APPLICABLE)**

END OF SECTION

**PART 1 - GENERAL**

1.1 BID INFORMATION

- A . Project Name: Skagit County Morgue Facility Remodel.
- B . Project Location: 1700 Continental Place, Mount Vernon, WA 98273.
- C . Owner: Skagit County.
- D . Owner Contact: Facilities Management Department.
- E . Architect: Underwood & Associates, LLC.
- F . Architect Project Number: SCC-2020.
- G . Construction Manager: Jeremy McNett.

1.2 BIDDER'S CHECKLIST

In an effort to assist the Bidder in properly completing all documentation required, the following checklist is provided for the Bidder's convenience. The Bidder is solely responsible for verifying compliance with bid submittal requirements.

1. Prepared the Bid Form as required by the Instructions to Bidders.
2. Indicated on the Bid Form the Addenda received.
3. Attached to the Bid Form: Bidder's Qualifications.
4. Attached to the Bid Form: Certification Regarding Debarment Suspension or Ineligibility.
5. Attached to the Bid Form: Supplemental Bidder Responsibility – Declaration of Bidder.
6. Attached to the Bid Form: Copy of standard subcontract form
7. Attached to the Bid Form: List of prevailing wage complaints filed in last 5 years
8. Attached to the Bid Form: List of all public works projects within previous 3 years
9. Attached to the Bid Form: List of at least 3 projects for Federal, State, or Local agencies
10. Attached to the Bid Form: List of L&I safety violations
11. Attached to the Bid Form: List of other similar size and scope projects within 5 years
12. Attached to the Bid Form: Bid Bond Form (AIA Document A310-2010)

**The following forms are to be executed after the contract is awarded:**

- F. CONTRACT: This agreement to be executed by the successful bidder.
- G. PERFORMANCE & PAYMENT BOND: One hundred percent of the Contract Price to be executed by the successful bidder and his surety company. The surety on such bonds shall be a duly authorized surety company satisfactory of the Owner.

- H. CONTRACTOR'S CERTIFICATION: Concerning Labor Standards and Prevailing Wage Requirements. Submit Statement of Intent to Pay Prevailing Wages. (Form F 700-029-000, available at Offices of Washington State Department of Labor and Industries).

**PART 2 - PRODUCTS (NOT APPLICABLE)**

**PART 3 - EXECUTION (NOT APPLICABLE)**

END OF SECTION

SECTION 00 50 20  
AGREEMENT FORM

PART 1 - GENERAL

- A. The "Standard Form of Agreement Between Owner and Contractor", AIA Document A101, is a part of the Contract Documents and is incorporated as fully as if bound herein.
1. Copies of AIA standard forms may be obtained from The American Institute of Architects; <https://www.aiacontracts.org/>; email: [docspurchases@aia.org](mailto:docspurchases@aia.org); (800) 942-7732.
  2. Original documents will be provided for Contracting.

END OF SECTION

# DRAFT 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 [redacted] day of [redacted] in the year **Two Thousand**  
**Twenty-one**

*(In words, indicate day, month and year.)*

**BETWEEN** the Owner:

*(Name, legal status, address and other information)*

Skagit County, a Municipal Corporation  
1800 Continental Place  
Mount Vernon, WA 98273

and the Contractor:

*(Name, legal status, address and other information)*

TBD

for the following Project:

*(Name, location and detailed description)*

Skagit County Morgue Facility Remodel  
1700 Continental Place  
Mount Vernon, WA 98273

The Architect:

*(Name, legal status, address and other information)*

Underwood & Associates, LLC  
ATTN: Jeremy McNett  
1005 4<sup>th</sup> Street  
Anacortes, WA 98221

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

- 1 THE CONTRACT DOCUMENTS
- 2 THE WORK OF THIS CONTRACT
- 3 DATE OF COMMENCEMENT AND SUBSTANTIAL COMPLETION
- 4 CONTRACT SUM
- 5 PAYMENTS
- 6 DISPUTE RESOLUTION
- 7 TERMINATION OR SUSPENSION
- 8 MISCELLANEOUS PROVISIONS
- 9 ENUMERATION OF CONTRACT DOCUMENTS

## EXHIBIT A INSURANCE AND BONDS

### 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.)*

**A date set forth in a notice to precede issued by the Owner.**

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 180 calendar days from the date of commencement of the Work. No later than

§ 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**

Not applicable

**Substantial Completion Date**

No later than April 1, 2022.

§ 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 <TBD> (\$ \_\_\_\_\_), 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
Additive Second floor office space	TBD

§ 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

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

Item	Price

**§ 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)

**§ 4.5 Liquidated damages, if any:**

(Insert terms and conditions for liquidated damages, if any.)

**§ 4.6 Other:**

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

**ARTICLE 5 PAYMENTS**

**§ 5.1 Progress Payments**

§ 5.1.1 Based upon Applications for Payment submitted to the Architect by the Contractor and Certificates for Payment issued by the Architect, 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 Architect not later than any Monday, the Owner shall make payment of the amount certified to the Contractor not later than twenty (20) days later. If an Application for Payment is received by the Architect after the application date fixed above, payment of the amount certified shall be made by the Owner not later than twenty-eight (28) days after the Architect 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 Architect 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 Architect determines, in the Architect'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 Architect 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 Architect 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.)*

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.)*

Not applicable

§ 5.1.7.2 Reduction or limitation of retainage, if any, shall be as follows: Add that portion of the Contract Sum properly allocable to materials and equipment delivered and suitably stored at the site for subsequent incorporation *(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.)*

5%

§ 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.)*

Receipt of release certificates from WA Department of Revenue, Labor & Industries, and Employment Security.

§ 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 Architect.

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

Twenty-one (21) days following receipt of release certificates from WA Department of Revenue, Labor & Industries, and Employment Security.

## § 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 Architect 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 Architect.)*

### § 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.)*

- 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.)*

0%

§ 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, email address, and other information)*

Skagit County Facilities Management  
ATTN: Ken Hansen  
1730 Continental Place  
Mount Vernon, WA 98273

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

N/a

§ 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:

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- .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
TBD		

.6 Specifications

Section	Title	Date	Pages
TBD			

.7 Addenda, if any:

Number	Date	Pages
TBD		

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.)

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)

See attached signature sheet

(Printed name and title)

CONTRACTOR (Signature)

See attached signature sheet

(Printed name and title)

SECTION 00 60 14

PERFORMANCE BOND AND PAYMENT BOND

PART 1 - GENERAL

- A. The "Performance Bond and Payment Bond", AIA Document A312, is a part of these Contract Documents and is incorporated as fully as if bound herein.

1. Copies of AIA standard forms may be obtained from The American Institute of Architects; <https://www.aiacontracts.org/>; email: [docspurchases@aia.org](mailto:docspurchases@aia.org); (800) 942-7732.

END OF SECTION

SECTION 00 60 23

CERTIFICATES OF INSURANCE

Certificates of Insurance Requirements:

1. Certificate shall be issued on an ACORD Form, or a form that meets with Skagit County's approval.
2. The Insuring Company shall have a Best Rating of A+, or meet with Skagit County's approval.
3. The minimum acceptable General Liability Limit shall be \$2,000,000 Aggregate/\$2,000,000 Occurrence. Coverage shall include Owners & Contractors Protective Liability and Employers Liability (Stop-Gap) Coverage.

Coverage shall be written on an "Occurrence" Basis, or meet with Skagit County's approval.

4. Automobile Coverage shall include "Any Auto" or "Scheduled Autos" and shall include Hired and Non-Owned Auto Liability.

The minimum acceptable Automobile Liability Limit shall be \$2,000,000.

5. Skagit County, its Commissioners and Employees shall be added as Additional Insureds on the Certificate, and a separate endorsement shall be issued by the Company adding Skagit County, it's Commissioners and Employees, as Additional Insured to the General Liability and Automobile Policy and the Umbrellas Excess Policy, where required to meet minimum limits outlined in #3 and #4 above.
6. Worker's Compensation and Employer's Liability Insurance: All employees of the Contractor and subcontractors shall be insured under Washington State Industrial Insurance. Employees not subject to the State Act shall be insured under Employer's Liability with a \$2,000,000.00 limit of liability. A separate Certificate of Insurance shall be furnished to Skagit County if any of the Contractor's payroll is not reported to the Washington State Industrial Insurance. The contractor shall be responsible for confirming compliance of all subcontractors with the above requirements.
7. The "Cancellation" Block shall be altered to include the wording "Should any of the above described policies be canceled or materially reduced before expiration date thereof, the issuing company will mail 30 days written notice to the certificate holder named to the left."

If there are any questions regarding these requirements please contact Skagit County's Risk Manager, Barbara Fuller, at 360-416-1380.

END OF SECTION

SECTION 00 60 30  
PROPERTY INSURANCE

PART 1 – GENERAL

- A. **PROPERTY INSURANCE:** Unless otherwise provided, the Contractor shall purchase and maintain property insurance upon the entire Work at the site to 115 percent of the full value thereof. This insurance shall include the interests of Skagit County, the Contractor and all subcontractors in the Work being performed. The coverage should be written on a “Builder’s Risk” basis. All materials which are to be made part of the construction project are to be so insured while being stored at or off the job site(s) and/or while being transported to and from the job site(s). Insurance against loss of tools, equipment, construction, or otherwise not to be incorporated into the Work is the responsibility of the Contractor and the cost of such insurance shall not be included in the cost of insurance required herein before.
- a. **Endorsements:** The policy shall be specifically endorsed as follows:
1. **Payments:** It is agreed that loss payments under the policy shall be made payable to Skagit County as trustee for each of the interests named in the policy.
- B. **Waiver:** Skagit County and the contractor waive all rights against (1) each other and the subcontractors, sub-subcontractors, agents and employees each of the other, and (2) the Owner for damages caused by fire or other perils to the extent covered by insurance obtained pursuant to this Article or any other property insurance applicable to the Work, except such rights as they may have to the proceeds of such insurance held by Skagit County, as trustee.

END OF SECTION



SECTION 00700  
GENERAL CONDITIONS

PART 1 - GENERAL

- A. The "General Conditions of the Contract for Construction", AIA Document A201, is part of the Contract Documents and is incorporated as fully as if bound herein.
1. Copies of AIA standard forms may be obtained from The American Institute of Architects; <https://www.aiacontracts.org/>; email: [docspurchases@aia.org](mailto:docspurchases@aia.org); (800) 942-7732.
  2. Modifications to AIA Document A201 are as attached.

END OF SECTION

# DRAFT AIA® Document A201® - 2017

## General Conditions of the Contract for Construction

### for the following PROJECT:

(Name and location or address)

Skagit County Morgue Facility Remodel  
1700 Continental Place  
Mount Vernon, WA 98273

### THE OWNER:

(Name, legal status and address)

Skagit County, a Municipal Corporation  
1800 Continental Place  
Mount Vernon, WA 98273

### THE ARCHITECT:

(Name, legal status and address)

Underwood & Associates, LLC  
ATTN: Jeremy McNett  
1005 4<sup>th</sup> Street  
Anacortes, WA 98221

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**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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14 TERMINATION OR SUSPENSION OF THE CONTRACT

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## **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 Architect. 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 Architect or the Architect's consultants, (2) between the Owner and a Subcontractor or a Sub-subcontractor, (3) between the Owner and the Architect or the Architect's consultants, or (4) between any persons or entities other than the Owner and the Contractor. The Architect shall, however, be entitled to performance and enforcement of obligations under the Contract intended to facilitate performance of the Architect'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 Architect and the Architect'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 Architect and the Architect'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 Architect's or Architect'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, Architect, and the Architect'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 Architect 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 architect lawfully licensed to practice architecture, or an entity lawfully practicing architecture, in the jurisdiction where the Project is located. That person or entity is identified as the Architect in the Agreement and is referred to throughout the Contract Documents as if singular in number.

§ 2.3.3 If the employment of the Architect 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 Architect.

§ 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 Architect and the Architect 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 Architect'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 Architect, 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 Architect in the Architect'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 Architect any errors, inconsistencies or omissions discovered by or made known to the Contractor as a request for information in such form as the Architect 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 Architect any nonconformity discovered by or made known to the Contractor as a request for information in such form as the Architect may require.

**§ 3.2.4** If the Contractor believes that additional cost or time is involved because of clarifications or instructions the Architect 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 Architect 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 Architect, and shall propose alternative means, methods, techniques, sequences, or procedures. The Architect shall evaluate the proposed alternative solely for conformance with the design intent for the completed construction. Unless the Architect 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 Architect in accordance with Section 3.12.8 or ordered by the Architect in accordance with Section 7.4, the Contractor may make substitutions only with the consent of the Owner, after evaluation by the Architect 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 Architect 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 Architect, 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 Architect before conditions are disturbed and in no event later than 14 days after first observance of the conditions. The Architect will promptly investigate such conditions and, if the Architect 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 Architect 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 Architect shall promptly notify the Owner and Contractor, stating the reasons. If either party disputes the Architect'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 Architect. 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 Architect of the name and qualifications of a proposed superintendent. Within 14 days of receipt of the information, the Architect may notify the Contractor, stating whether the Owner or the Architect (1) has reasonable objection to the proposed superintendent or (2) requires additional time for review. Failure of the Architect 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 Architect 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 Architect'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 Architect's approval. The Architect'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 Architect 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 Architect.

### **§ 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 Architect and Owner, and delivered to the Architect 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 Architect is subject to the limitations of Section 4.2.7. Informational submittals upon which the Architect 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 Architect without action.

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

**§ 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 Architect's approval of Shop Drawings, Product Data, Samples, or similar submittals, unless the Contractor has specifically notified the Architect of such deviation at the time of submittal and (1) the Architect 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 Architect'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 Architect on previous submittals. In the absence of such notice, the Architect'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 architecture or engineering unless such services are specifically required by the Contract Documents for a portion of the Work or unless the Contractor needs to provide such services in order to carry out the Contractor's responsibilities for construction means, methods, techniques, sequences, and procedures. The Contractor shall not be required to provide professional services in violation of applicable law.

**§ 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 Architect 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 Architect. The Owner and the Architect 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 Architect have specified to the Contractor the performance and design criteria that such services must satisfy. Pursuant to this Section 3.12.10, the Architect 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 Architect at the time and in the form specified by the Architect.

### **§ 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 Architect 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 Architect 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 Architect. 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 Architect.

### § 3.18 Indemnification

§ 3.18.1 To the fullest extent permitted by law, the Contractor shall indemnify and hold harmless the Owner, Architect, Architect'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 ARCHITECT

### § 4.1 General

§ 4.1.1 The Architect 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 Architect as set forth in the Contract Documents shall not be restricted, modified, or extended without written consent of the Owner, Contractor, and Architect. Consent shall not be unreasonably withheld.

### § 4.2 Administration of the Contract

§ 4.2.1 The Architect 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 Architect issues the final Certificate for Payment. The Architect will have authority to act on behalf of the Owner only to the extent provided in the Contract Documents.

§ 4.2.2 The Architect 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 Architect will not be required to make exhaustive or continuous on-site inspections to check the quality or quantity of the Work. The Architect 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 Architect 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 Architect will not be responsible for the Contractor's failure to perform the Work in accordance with the requirements of the Contract Documents. The Architect 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 Architect in all communications that relate to or affect the Architect's services or professional responsibilities. The Owner shall promptly notify the Architect of the substance of any direct communications between the Owner and the Contractor otherwise relating to the Project. Communications by and with the Architect's consultants shall be through the Architect. 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 Architect's evaluations of the Contractor's Applications for Payment, the Architect will review and certify the amounts due the Contractor and will issue Certificates for Payment in such amounts.

§ 4.2.6 The Architect has authority to reject Work that does not conform to the Contract Documents. Whenever the Architect considers it necessary or advisable, the Architect 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 Architect 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 Architect to the Contractor, Subcontractors, suppliers, their agents or employees, or other persons or entities performing portions of the Work.

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

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

§ 4.2.9 The Architect 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 Architect agree, the Architect will provide one or more Project representatives to assist in carrying out the Architect'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 Architect will interpret and decide matters concerning performance under, and requirements of, the Contract Documents on written request of either the Owner or Contractor. The Architect'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 Architect 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 Architect 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 Architect'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 Architect will review and respond to requests for information about the Contract Documents. The Architect's response to such requests will be made in writing within any time limits agreed upon or otherwise with reasonable promptness. If appropriate, the Architect 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 Architect 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 Architect may notify the Contractor whether the Owner or the Architect (1) has reasonable objection to any such proposed person or entity or (2) requires additional time for review. Failure of the Architect 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 Architect 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 Architect has reasonable objection to a person or entity proposed by the Contractor, the Contractor shall propose another to whom the Owner or Architect 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 Architect 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 Architect. Each subcontract agreement shall preserve and protect the rights of the Owner and Architect 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 Architect 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 Architect 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 Architect 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 Architect. A Construction Change Directive requires agreement by the Owner and Architect 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 Architect 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 Architect and signed by the Owner, Contractor, and Architect 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 Architect and signed by the Owner and Architect, 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 Architect 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 Architect 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 Architect;



- .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 Architect 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 Architect. 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 Architect will make an interim determination for purposes of monthly certification for payment for those costs and certify for payment the amount that the Architect determines, in the Architect's professional judgment, to be reasonably justified. The Architect'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 Architect 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 Architect 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 Architect 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 Architect'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 Architect and shall not proceed to implement the change in the Work. If the Contractor performs the Work set forth in the Architect's order for a minor change without prior notice to the Architect 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 Architect 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 Architect, 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 Architect determines, justify delay, then the Contract Time shall be extended for such reasonable time as the Architect 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 Architect 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 Architect. This schedule, unless objected to by the Architect, 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 Architect and supported by such data to substantiate its accuracy as the Architect may require, and unless objected to by the Architect, 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 Architect 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 Architect 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 Architect, 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 Architect 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 Architect determines is properly due, and notify the Contractor and Owner of the Architect'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 Architect'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 Architect to the Owner, based on the Architect's evaluation of the Work and the data in the Application for Payment, that, to the best of the Architect'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 Architect. However, the issuance of a Certificate for Payment will not be a representation that the Architect 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 Architect may withhold a Certificate for Payment in whole or in part, to the extent reasonably necessary to protect the Owner, if in the Architect's opinion the representations to the Owner required by Section 9.4.2 cannot be made. If the Architect is unable to certify payment in the amount of the Application, the Architect will notify the Contractor and Owner as provided in Section 9.4.1. If the Contractor and Architect cannot agree on a revised amount, the Architect will promptly issue a Certificate for Payment for the amount for which the Architect is able to make such representations to the Owner. The Architect 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 Architect'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 Architect'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 Architect 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 Architect and the Contractor shall reflect such payment on its next Application for Payment.

#### § 9.6 Progress Payments

§ 9.6.1 After the Architect 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 Architect.

§ 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 Architect 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 Architect 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 Architect 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 Architect 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 Architect or awarded by binding dispute resolution, then the Contractor may, upon seven additional days' notice to the Owner and Architect, 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 Architect 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 Architect will make an inspection to determine whether the Work or designated portion thereof is substantially complete. If the Architect'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 Architect. In such case, the Contractor shall then submit a request for another inspection by the Architect to determine Substantial Completion.

**§ 9.8.4** When the Work or designated portion thereof is substantially complete, the Architect 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 Architect 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 Architect.

**§ 9.9.2** Immediately prior to such partial occupancy or use, the Owner, Contractor, and Architect 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 Architect will promptly make such inspection. When the Architect finds the Work acceptable under the Contract Documents and the Contract fully performed, the Architect will promptly issue a final Certificate for Payment stating that to the best of the Architect's knowledge, information and belief, and on the basis of the Architect'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 Architect'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 Architect (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 Architect so confirms, the Owner shall, upon application by the Contractor and certification by the Architect, 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 Architect 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 Architect 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 Architect.

§ 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 Architect 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 Architect 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 Architect 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 Architect has an objection to a person or entity proposed

by the Owner, the Owner shall propose another to whom the Contractor and the Architect 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, Architect, Architect'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, Architect, and Architect'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 Architect and Architect'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 Architect, Architect'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 Architect 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 Architect and Contractor their just shares of insurance proceeds received by the Owner, and by appropriate agreements the Architect 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 Architect's request or to requirements specifically expressed in the Contract Documents, it must, if requested in writing by the Architect, be uncovered for the Architect'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 Architect has not specifically requested to examine prior to its being covered, the Architect 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 Architect 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 Architect'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 Architect, 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, Architect, 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 Architect

timely notice of when and where tests and inspections are to be made so that the Architect 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 Architect, 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 Architect 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 Architect of when and where tests and inspections are to be made so that the Architect 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 Architect'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 Architect.

§ 13.4.5 If the Architect is to observe tests, inspections, or approvals required by the Contract Documents, the Architect 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 Architect 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 Architect, 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 Architect, 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 Architect 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 Architect'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 Architect, if the Architect 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 Architect 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 Architect 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 Architect, if the Architect 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.



SECTION 00 80 00

SUPPLEMENTARY CONDITIONS

UNLESS EXPRESSLY OTHERWISE INDICATED, THE FOLLOWING REQUIREMENTS SUPPLEMENT THE REFERENCED ARTICLES OF THE "GENERAL CONDITIONS OF THE CONTRACT FOR CONSTRUCTION" (AIA DOCUMENT A201) AND SUPERSEDE THEM WHERE THEY CONTRADICT THE SAME.

1.1 GENERAL PROVISIONS (Article 1)

A. ADD to Subparagraph 1.2.1 the following:

In the event of conflicts or discrepancies among the Contract Documents, interpretations will be based on the following priorities.

1. The Agreement.
2. Addenda, with those of later date having precedence over those of earlier date.
3. Supplementary Conditions.
4. General Conditions.
5. Drawings and Specifications.

In the case of an inconsistency between Drawings and Specifications or within either Document not clarified by Addendum, provide the better quality or greater quantity of Work in accordance with the Architect's interpretation.

B. ADD Subparagraph 1.2.4:

1.2.4 General Conditions, Supplementary Conditions, Special Provisions and Division 1 - General Requirements govern the execution of all Sections of the Specifications.

C. ADD to Subparagraph 1.5.2 the following:

No allowance shall subsequently be made on behalf of the Contractor on account of an error on his part or his negligence or failure to acquaint himself with the conditions of the Site.

1.2 OWNER (Article 2)

A. DELETE paragraph 2.2.3 and SUBSTITUTE the following:

2.2.3 The Contractor shall secure and pay for City of Mount Vernon business license for the duration for the project, and electrical permits.

1.3 CONTRACTOR (Article 3)

A. Paragraph 3.6.1, line 1, DELETE the word .."sales,".

B. ADD to Paragraph 3.6.1 the following.

Applicable sales tax shall be included in progress payments as provided in Article 9 of this Agreement.

#### 1.4 CHANGES IN THE WORK (Article 7)

A. Paragraph 7.3.6: In the first sentence, Lines 4 and 5, DELETE the words .."a reasonable allowance for overhead and profit"..and SUBSTITUTE .."an allowance for overhead and profit in accordance with subparagraphs 7.3.10 and 7.3.10.1 through 7.3.10.8.

B. Add subparagraphs as follows:

7.3.10 In subparagraph 7.3.6, the allowance for overhead and profit shall be based on the following schedule:

- .1 Additive Change Orders for Work performed by the General Contractor: 15 percent overhead and profit.
- .2 Deductive Change Order Work for Work performed by the General Contractor: 7 percent profit to be credited to the Owner.
- .3 Additive Change Orders for Work performed by a Single-Tiered sub-contractor: 8 percent overhead and profit for the General Contractor, 15 percent overhead and profit for the sub-contractor.
- .4 Deductive Change Orders for Work performed by a Single-Tiered sub-contractor: 4 percent profit credited to the Owner from the General Contractor. 7 percent profit credited to the Owner from the sub-contractor.
- .5 Additive Change Orders for Work performed by a Double-Tiered sub sub-contractor: 8 percent overhead and profit for the General Contractor, 8 percent overhead and profit for the sub-contractor, 15 percent overhead and profit for the sub sub-contractor.
- .6 Deductive Change Orders for Work performed by a Double-Tiered sub sub-contractor: 4 percent profit credited to the Owner from the General Contractor. 4 percent profit credited to the Owner from the sub-contractor, 7 percent profit credited to the Owner from the sub sub-contractor.
- .7 Cost to which overhead and profit is to be applied shall be determined in accordance with subparagraph 7.3.6.
- .8 In order to facilitate checking of quotations for extras or credits, all proposals shall be accompanied by a complete itemization of costs, including labor, materials, and equipment. All Change Orders shall be itemized accordingly. No Lump Sum amounts will be accepted.

#### 1.5 TIME (Article 8)

A. DELETE paragraph 8.2.1 in its entirety and substitute the following:

8.2.1 The Work shall be complete within ninety (90) consecutive calendar days from the date of the Notice to Proceed, and finally complete within (30) thirty consecutive calendar days thereafter. By executing the Agreement the Contractor confirms that the Contract Time is a reasonable period for performing the Work.

#### 1.6 PAYMENTS AND COMPLETION (Article 9)

A. ADD to Subparagraph 9.6.1 the Following:

On or about the fifteenth of each month the Owner agrees to pay to the Contractor an amount to be determined by taking 95 percent of the value of labor and materials incorporated in the Work, plus material not incorporated in the Work but accepted by the Architect under provisions of the Contract Documents, up to the date of payment proposed to be made, less the aggregate of all previous payments and deductions provided for in the Contract Documents. The 5 percent withheld shall be the retainage, which retainage will be held as current expense by the owner; deposited in an interest bearing or escrow/investment account, by the Owner, and will be paid as provided herein with all accrued interest paid to the Contractor, or contractor shall post a bond in lieu of the retainage and retainage amount shall be paid to the contractor. Contractor shall select one of the above (4) four options as described in Section 00457 Retainage Investment Option.

1.7 INSURANCE AND BONDS (Article 11)

A. DELETE paragraph 11.5.1 in its entirety and substitute the following:

11.5.1 The Contractor shall furnish a Performance Bond in an amount equal to one hundred percent of the Contract Sum as security for the faithful performance of this Contract. The Contractor shall also furnish a Labor and Material Payment Bond in an amount not less than one hundred percent of the Contract Sum or in a penal sum not less than that prescribed by State, or Local law, as security for the payment of all persons performing labor on the Project under this Contract and furnishing materials in connection with this Contract. The Performance Bond and the Labor and Material Payment Bond may be in one or in separate instruments in accordance with local law and shall be delivered to the Owner not later than the date of execution of the Contract. The Bond(s) must be issued by a surety licensed to transact such business in Washington State, and must state that it is provided pursuant to Ch. 39.08 RCW.

1.8 MISCELLANEOUS PROVISIONS (Article 13)

A. ADD Subparagraphs as follows:  
13.8 LIQUIDATED DAMAGES

13.8.1 If the Contractor should fail to complete the Work, or any part thereof, within the Contract Time, the Owner will sustain damage because of the following type of damage.

.1 Increased costs and inefficiency resulting from disruption and delay of Owner's moving schedules.

.2 Interests on money borrowed for construction payments.

13.8.2 Therefore the parties agree that the Contractor shall pay the Owner, as liquidated damages and not as penalty, the sum of Five Hundred Dollars (\$500.00), for each consecutive calendar day that Substantial Completion is delayed and the sum of Five Hundred Dollars (\$500.00) thereafter for each consecutive calendar day that Final Completion is delayed.

13.8.3 The Owner may deduct the sum of such liquidated damages from any moneys due or that may become due the Contractor, or if such moneys are insufficient, the Contractor, or its Surety or Sureties shall pay any deficiency.

END OF SECTION

**PART 1 - GENERAL**

1.1 PREVAILING WAGES

- A . The State of Washington prevailing wage rates applicable for this Public Works project, which is located in Skagit County, may be found at the following website address of the Department of Labor and Industries:

<https://lni.wa.gov/licensing-permits/public-works-projects/prevailing-wage-rates/>

- B . Based on the bid submittal deadline for this project, the applicable effective date for prevailing wages for this project is date on coversheet of this project manual.
- C . Use Commercial Wage Rates (Not Residential Wage Rates) for work in all disciplines and trades.
- D . Contractor shall post copies of statements of intent to pay prevailing wages in accordance with RCW 39.12.020.

1.2 DAVIS-BACON ACT

- A . This project will utilize federal funds, so Contractor and subcontractors must pay their laborers and mechanics employed under the contract no less than the locally prevailing wages and fringe benefits for corresponding work on similar projects in the area. The Davis-Bacon Act directs the Department of Labor to determine such locally prevailing wage rates. The Davis-Bacon Act applies to contractors and subcontractors performing work on federal or District of Columbia contracts. The Davis-Bacon Act prevailing wage provisions apply to the "Related Acts," under which federal agencies assist construction projects through grants, loans, loan guarantees, and insurance.
- B . For prime contracts in excess of \$100,000, contractors and subcontractors must also, under the provisions of the Contract Work Hours and Safety Standards Act, as amended, pay laborers and mechanics, including guards and watchmen, at least one and one-half times their regular rate of pay for all hours worked over 40 in a workweek.
- C . Full details are available from the U.S. Department of Labor website at:

<https://www.dol.gov/agencies/whd/government-contracts/construction>

**PART 2 - PRODUCTS (NOT APPLICABLE)**

**PART 3 - EXECUTION (NOT APPLICABLE)**

END OF SECTION

## **PART 1 - GENERAL**

### 1.1 SECTION INCLUDES

- A . Project description.
- B . Contract description.
- C . Work by Owner.
- D . Owner occupancy.
- E . Contractor use of site and premises.
- F . Specification and drawing conventions.
- G . Architect's Digital Files.
- H . Uncertainties, Conflicts and Omissions.

### 1.2 RELATED REQUIREMENTS

- A . 011150 - Delegated Design and Deferred Submittals.
- B . 016001 - Substitution Request Form.

### 1.3 PROJECT DESCRIPTION

- A . Project Name: Skagit County Morgue.
- B . Owner Name: Skagit County Coroner.
- C . Architect: Underwood & Associates, Inc.
- D . Architect's Consultants:
  - 1. Specifications: Applied Building Information, LLC.
  - 2. Mechanical Engineer: FSI Engineers.
  - 3. Electrical Engineer: TFWB Engineers, Inc.
- E . Project Description: The proposed project consists of converting an existing storage room into an autopsy and morgue space within the current Skagit County Coroner's building on College Way and Continental. The space will incorporate one autopsy station with provisions for a future station. A portion of the space will include a storage cooler. Modifications to the space include incorporating epoxy floors, modified electrical, re-configured air handling systems, updates to the lighting system, new viewing areas, re-located lab and work stations, as well as provisions for a generator.
- F . Code: 2015 International Building Code.
  - 1. Occupancy Category: Refer to drawings.
  - 2. Construction Type: Refer to drawings.
  - 3. Fire Protection: Refer to drawings.

1.4 CONTRACT DESCRIPTION

- A . Contract Type: A Single Prime contract based on a Stipulated Sum as described in the Agreement.

1.5 WORK BY OWNER

- A . Items noted NIC (Not in Contract) will be supplied and installed by Owner before Substantial Completion. Items include, but are not limited to:

1. Furnishings: lockers, washer, and dryer; stand-alone computer station.
2. Small equipment.
3. Artwork.

- B . Owner furnished products for Contractor installation (OFCI):

1. Contractor to receive, store, and install Owner furnished products.
2. Items include, but are not limited to:
  - a. Large cooler.
  - b. Autopsy station (72-inches).
  - c. Wall mount handwash station with eyewash; no shower.
  - d. Appendix A: OFCI - Equipment Cutsheets.

1.6 OWNER OCCUPANCY

- A . Owner intends to occupy the Project upon Substantial Completion.

1.7 CONTRACTOR USE OF SITE

- A . Access to Site: Contractor to have full use of site area indicated on drawings.

- B . Work restrictions:

1. On-Site Work Hours: As negotiated with Owner.
2. Existing Utility Interruptions: As negotiated with Owner.
3. Noise:
  - a. Outdoors: Limit conduct of especially noisy exterior work to the hours of 8 am to 5 pm.
  - b. Indoors: Limit conduct of especially noisy interior work to the hours of 6 pm to 7 am.
4. Vibration and Odors: As negotiated with Owner.
5. Smoking: Prohibited in building and within 25 feet of openings or air intakes.

1.8 SPECIFICATION AND DRAWING CONVENTIONS

- A . Division 01 General Requirements apply to the work of all sections.
- B . Streamlined language is used in specifications.



- C . Work required by the specifications are to be performed by Contractor unless indicated otherwise.
- D . Coordination: Materials and products are indicated on drawings with typical generic terms used in specifications. Specific types of materials and products are indicated with abbreviations used in specifications, schedules, and legends.

#### 1.9 ARCHITECT'S DIGITAL FILES

- A . Use of Architect's Digital Files: Architect's CAD, BIM, or other digital data may or may not, at Architect's discretion, be made available for Contractor's use in connection with Project. Where digital data is made available:
  - 1. Make requests for copies of digital data in written form, including list of data requested, its intended use, and an executed copy of Architect's Transfer of Electronic Files agreement (available from Architect).
  - 2. Architect makes no representations as to the accuracy or completeness of digital data drawing files as they relate to the Contract Drawings.

#### 1.10 UNCERTAINTIES, CONFLICTS AND OMISSIONS

- A . For pricing purposes, until discrepancies are resolved:
  - 1. Conflicts: Assume the most costly of conflicting requirements.
  - 2. Omissions and uncertainties: Assume a level of quality consistent with the general quality level of the project.

### **PART 2 - PRODUCTS - NOT USED**

### **PART 3 - EXECUTION - NOT USED**

END OF SECTION

## **PART 1 - GENERAL**

### 1.1 SECTION INCLUDES

- A . Delegated design components and systems.
- B . Deferred submittal procedures

### 1.2 RELATED REQUIREMENTS

- A . Drawing coversheet; list of Deferred Submittals.

### 1.3 DEFINITIONS

- A . Applicant: Contractor applying for submittal approval by Architect, approved permit for Deferred Submittals, and coordinating Contractor Engineered Components with Project and with each other. Includes coordination of required submittals with Architect and the City of Mount Vernon.
- B . Architect: Architect registered in the State in which the Project is located and engaged by Owner to provide contract documents including drawings, computations and specifications required for building permit approval by the City of Mount Vernon for principal project systems. Includes Architect's staff, consultants and consultant's staffs.
- C . Contractor: Firm engaged by Owner to construct Project. Includes employees, subcontractors, suppliers and their employees.
- D . Contractor Design Engineer: Professional Engineer with 5 years documented experience in design of this work and licensed in the location of the Project and engaged by Contractor, subcontractor or supplier to provide drawings, computations and specifications required by Building Official for designated Contractor Engineered specialty system, in accordance with criteria set forth in Contract Documents.
- E . Contractor Engineered Components are defined as complete systems provided for intended use.
- F . Seal: Certification that drawings, computations and specifications were designed and prepared under direct supervision of Architect or Engineer whose name appears thereon.
- G . Review Stamp: Certification that Architect has reviewed drawings, computations and specifications bearing seal of Contractor Design Engineer, verifying conformance with information given and design concept set forth in Drawings and Specifications.
- H . Approval Stamp: Certification that Building Official has reviewed submittal and finds it acceptable with respect to applicable code compliance.

### 1.4 SUBMITTALS

- A . Show complete criteria, design assumptions, details, calculations, instructions for fabrications, assembly, installation and interface with other trades.
- B . Contractor Design Engineer's stamp with calculations for that portion of work.

1. Submittals without required calculations or Contractor Design Engineer's stamp and which have not been reviewed by Contractor will not be reviewed by Architect.

#### 1.5 DELEGATED DESIGN COMPONENTS AND SYSTEMS

##### A . Components of Work and designated Delegated Design.

1. Contractor is responsible to coordinate and assume complete responsibility for design, calculations, submittals, permits if required, fabrication, delivery and installation of Delegated Design Components and Systems.
2. If these Delegated Design systems are designated as a Deferred Submittal Contractor is responsible for submittal of documents to Authority Having Jurisdiction for review. Schedule Work so review will not adversely affect Project's construction schedule.
3. Architect's review of Delegated Design submittals is for general conformance with design intent as required by Authority Having Jurisdiction. Architect not responsible for coordination of Contractor Engineered Components with Contract Documents. Review does not lessen nor shift burden of responsibility from Contractor or assigned subcontractor/supplier to Owner or Architect.
4. Owner not responsible to pay for delays, additional products, hours of work or overtime, restocking or rework required due to failure to coordinate the Work with other trades or to provide Delegated Design and Deferred Submittal Components and their approval as required to meet project schedule.
5. Delegated Design Components and Systems: As scheduled below.

#### 1.6 DEFERRED SUBMITTAL PROCEDURES

##### A . Components listed below are designated as a Deferred Submittal within the Authority Having Jurisdiction building permit approval process.

1. See drawing coversheet for list of deferred submittals.

##### B . Contractor shall serve as Applicant and submit for review and approval per Authority Having Jurisdiction requirements for all Deferred Submittals.

##### C . Components shall be coordinated with adjacent systems.

##### D . Authority Having Jurisdiction Submittals:

1. Contractor Engineered Summary Sheet listing Contractor's Delegated Design engineer including registered engineer's name, address and telephone number.
2. Three sets of design drawings and specifications clearly and legibly showing members, dimensions, connections, materials and indicating how component is attached to main structure.
  - a. Prepare these documents stamped by Engineer licensed in the State in which the Project is located.
  - b. Submit for Architect's signature indicating General Design Conformance.
3. Submit one set of calculations including criteria, design assumptions, substantiating computations and additional data sufficient to show correctness of drawings and compliance with structural revisions as indicated Structural Specialty Code.
  - a. Prepare calculations stamped by Engineer who prepared calculations.

- b. Submit for Architect's signature indicating acceptance of design concepts, loading criteria and compatibility of designs.
- E . Prior to start of work Deferred Submittals must be examined and approved by Authority Having Jurisdiction and returned to Owner.
- F . Documents not completed prior to issuance of building permit, must be completed and submitted for approval prior to fabrication.

**PART 2 - PRODUCTS - NOT USED**

**PART 3 - EXECUTION**

3.1 SCHEDULE OF DELEGATED DESIGN COMPONENTS AND SYSTEMS

- A . <<<Drawings do not list yet: Include which pieces are requiring delegated design and which section it is specified in.>>>

END OF SECTION

TO:

PROJECT:

SPECIFIED ITEM:

SECTION	PAGE	PARAGRAPH	DESCRIPTION
---------	------	-----------	-------------

1.1 PROPOSED SUBSTITUTION:

- A . Undersigned certifies following items, unless modified by attachments, are correct:
1. Proposed substitution does not affect dimensions shown on drawings.
  2. Undersigned will pay 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 are available locally or are readily obtainable for proposed substitution.
  5. Undersigned further certifies the function, appearance, and quality of the proposed substitution are equivalent or superior to the specified item.
  6. Undersigned agrees, if this page is reproduced, the terms and conditions for substitutions found in Bidding Documents apply to this proposed substitution.

Submitted by:

Name (printed or type)

Contractor (if after award of Contract)

Signature

For Use by Design Team

Firm Name

Approved      Approved as Noted  
Not Approved      Received Too Late

Address

By

City, State, Zipwq43./

Date

Date

Remarks

Telephone

Fax

List of Attachments:

END OF SECTION

**PART 1 - GENERAL**

1.1 SECTION INCLUDES

- A . Selective demolition of building elements.
- B . Description of items to be salvaged or removed and reused.

1.2 RELATED REQUIREMENTS

1.3 ADMINISTRATIVE REQUIREMENTS

- A . Review preparation and installation procedures and coordinating and scheduling required with related work.

1.4 SUBMITTALS

- A . Qualification Data: For demolition contractor listing projects and references.
- B . Delegated-Design Submittal: For assemblies indicated to comply with performance requirements and design criteria, including analysis data signed and sealed by the qualified professional engineer responsible for their preparation.
- C . Demolition Plan: Submit demolition plan as specified by OSHA and local authorities.
  - 1. Indicate extent of demolition, removal sequence, bracing and shoring, and location and construction of partitions, barricades and fences.
  - 2. Include procedures and coordination with other work in progress, a disconnection schedule of utility services, and a detailed description of methods and equipment to be used for each operation and of the sequence of operations.
  - 3. Identify demolition firm and submit qualifications.
  - 4. Include a summary of safety procedures.
- D . Engineering Survey.
- E . Existing Condition Survey.
- F . Shop Drawings: extents of demolition, locations of existing utilities, and locations of utility capping. Indicate structural members and elements that will be demolished. .
- G . Closeout Submittals: Accurately record actual locations of capped and active utilities and subsurface construction.

1.5 QUALITY ASSURANCE

- A . Demolition Contractor Qualifications: Company specializing in selective demolition comparable in scope, environmental and historical sensitivity of work specified in this section with minimum 5 years experience.

## **PART 2 - PRODUCTS**

### 2.1 DESCRIPTION

- A . Selectively demolish existing elements to accommodate tie-in of new work to existing conditions.
- B . Existing building hazardous material and asbestos surveys are being conducted by Owner; information about known hazardous materials will be known (and disposed of) prior to the work of this section.

### 2.2 PERFORMANCE AND DESIGN CRITERIA

- A . 29 CFR 1910: Occupational Safety and Health Standards.
- B . 29 CFR 1926 - U.S. Occupational Safety and Health Standards; current edition.
- C . NFPA 241 - Standard for Safeguarding Construction, Alteration, and Demolition Operations; 2013.

### 2.3 ACCESSORIES

- A . All accessory materials required by the manufacturer for a warrantable installation of the installed products in a manner that meets the Performance and Design Criteria.

## **PART 3 - EXECUTION**

### 3.1 EXAMINATION

- A . Verify that utilities have been disconnected and capped before start of work.
- B . Review record documents provided by Owner and schedule listing salvage and remove for reuse items.
- C . Engage a professional engineer to perform an engineering survey to determine if removing indicated elements may result in a structural deficiency or unsafe condition during scope of work.
- D . Perform a survey of existing conditions by use of measured drawings and preconstruction photographs.
- E . It is not expected that hazardous materials will be encountered in the Work.
  - 1. If suspected hazardous materials are encountered, do not disturb; immediately notify Architect and Owner. Hazardous materials will be removed by Owner under a separate contract.

### 3.2 PREPARATION

- A . Conduct selective demolition and debris removal operations to ensure minimum interference with roads, streets, walks, walkways, and other adjacent occupied and used facilities.
- B . Provide fire watch during hot work while sprinklers are offline.

- C . Provide temporary barricades and other protection required to prevent injury to people and damage to adjacent buildings and facilities to remain.
- D . Provide and maintain shoring, bracing, and structural supports as required to preserve stability and prevent movement, settlement, or collapse of construction and finishes to remain, and to prevent unexpected or uncontrolled movement or collapse of construction being demolished.

### 3.3 SELECTIVE DEMOLITION OF BUILDING ELEMENTS

- A . Demolish and remove existing construction only to the extent required by new construction and as indicated. Use methods required to complete the Work within limitations of governing regulations.
- B . Neatly cut openings and holes plumb, square, and true to dimensions required. Use cutting methods least likely to damage construction to remain or adjoining construction.
- C . Existing Items to Remain: Protect construction indicated to remain against damage and soiling during selective demolition. When permitted by Architect, items may be removed to a suitable, protected storage location during selective demolition and reinstalled in their original locations after selective demolition operations are complete.
- D . Locate selective demolition equipment and remove debris and materials so as not to impose excessive loads on supporting walls, floors, or framing.
- E . Removed and Salvaged Items:
  - 1. Clean salvaged items.
  - 2. Pack or crate items after cleaning. Identify contents of containers.
  - 3. Store items in a secure area until delivery to Owner.
  - 4. Transport items to Owner's storage area designated by Owner.
  - 5. Protect items from damage during transport and storage.
- F . Removed and Reinstalled Items:
  - 1. Clean and repair items to functional condition adequate for intended reuse.
  - 2. Pack or crate items after cleaning and repairing. Identify contents of containers.
  - 3. Reinstall items in locations indicated. Comply with installation requirements for new materials and equipment. Provide connections, supports, and miscellaneous materials necessary to make item functional for use indicated.

### 3.4 CLEANING

- A . Clean adjacent structures and improvements of dust, dirt, and debris caused by selective demolition. Return adjacent areas to condition existing before selective demolition rations began.

### 3.5 SCHEDULE

- A . Locations and extent in accordance with demolition drawings.

END OF SECTION



**PART 1 - GENERAL**

1.1 SECTION INCLUDES

- A . Liquid-applied self-leveling floor underlayment:
  - 1. Cementitious underlayment.

1.2 RELATED REQUIREMENTS

- A . Division 9 Flooring sections.

1.3 ADMINISTRATIVE REQUIREMENTS

- A . Review preparation and installation procedures, and coordinating and scheduling required with related work.

1.4 SUBMITTALS

- A . Qualification Data: For installer.
- B . Product Data: Provide manufacturer's data sheets documenting physical characteristics and product limitations of underlayment materials. Include information on surface preparation, environmental limitations, and installation instructions.

1.5 QUALITY ASSURANCE

- A . Installer Qualifications: Company specializing in performing the work of this section with minimum 3 years of experience.
  - 1. Installer shall be listed with the manufacturer as a having special skill in this work.

1.6 DELIVERY, STORAGE, AND HANDLING

- A . Store products in manufacturer's unopened packaging until ready for installation.
- B . Keep dry and protect from direct sun exposure, freezing, and ambient temperature greater than 105 degrees F.

1.7 FIELD CONDITIONS

- A . Do not install underlayment until floor penetrations and peripheral work are complete.
- B . Maintain minimum ambient temperatures of 50 degrees F 24 hours before, during, and 72 hours after installation of underlayment.
- C . During the curing process, ventilate spaces to remove excess moisture.

1.8 REGULATORY REQUIREMENTS

- A . Conform to applicable code for combustibility or flame spread requirements.
- B . Provide certificate of compliance from authority having jurisdiction indicating approval of underlayment materials in the required fire rated assembly.

## **PART 2 - PRODUCTS**

### 2.1 DESCRIPTION

- A . Where specified floor flatness tolerances are not achieved, or where defects unacceptable to the finish flooring installer are present, use the work of this section to remedy such work.

### 2.2 PERFORMANCE AND DESIGN CRITERIA

### 2.3 MATERIALS

A . Cementitious Underlayment:

1. Ardex Engineered Cements Inc: [www.ardex.com](http://www.ardex.com).
  - a. Ardex V1200 self leveling underlayment.
  - b. Ardex Forti finish high strength, self drying finishing underlayment.
2. Bonsal American, an Oldcastle company Pro-spec; Level Set 300: [www.prospec.com](http://www.prospec.com).
  - a. Levelset 300 Self-Leveling Underlayment Concrete.
  - b. Feather Edge, A Trowelable, Rapid Setting, Cement-Based Underlayment.
3. LATICRETE International, Inc.; LATICRETE SUPERCAP SC500 with LATICRETE SUPERCAP Primer Plus: [www.laticrete.com](http://www.laticrete.com).
4. Substitutions: See Section 016000 - Alternates.

### 2.4 ACCESSORIES

A . Aggregate:

1. Dry, well graded, washed silica aggregate, approximately 1/8 inch in size and acceptable to underlayment manufacturer.

B . Reinforcement:

1. Galvanized metal lath complying with recommendations of underlayment manufacturer for specific project circumstances.

C . Water:

1. Potable and not detrimental to underlayment mix materials.

D . Primer:

1. Manufacturer's recommended type.

E . Joint and Crack Filler:

1. Cementitious type recommended by manufacturer.

### 2.5 MIXING

- A . Site mix materials in accordance with manufacturer's instructions.

- B . Add aggregate for areas where thickness will exceed 1/2 inch. Mix underlayment and water for at least two minutes before adding aggregate, and continue mixing to assure that aggregate has been thoroughly coated.

- C . Mix to self-leveling consistency without over-watering.

### **PART 3 - EXECUTION**

#### **3.1 EXAMINATION**

- A . Verify that substrate surfaces are clean, dry, unfrozen, do not contain petroleum byproducts, or other compounds detrimental to underlayment material bond to substrate.

#### **3.2 PREPARATION**

- A . Concrete: Mechanically prepare steel troweled concrete to create a textured surface necessary to achieve the best bond; acceptable methods include bead blasting and scarifying. Do not use acid etching.
- B . Wood: Install metal lath for reinforcement of underlayment.
- C . Remove substrate surface irregularities. Fill voids and deck joints with filler. Finish smooth.
- D . Vacuum clean surfaces.
- E . Prime substrate in accordance with manufacturer's instructions.
- F . Close floor openings.

#### **3.3 APPLICATION**

- A . Install underlayment in accordance with manufacturer's instructions.
- B . Pump or pour material onto substrate. Do not retemper or add water.
  - 1. Pump, move, and screed while the material is still highly flowable.
  - 2. Be careful not to create cold joints.
  - 3. Wear spiked shoes while working in the wet material to avoid leaving marks.
- C . For final thickness over 1-1/2 inches, place underlayment in layers. Allow initial layer to harden to the point where the material has lost its evaporative moisture. Immediately prime and begin application of the subsequent layer within 24 hours.
- D . Place concrete floor topping continuously in a single layer, tamping and consolidating to achieve tight contact with bonding surface. Do not permit cold joints or seams to develop within pour strip.
  - 1. Screed surface with a straightedge and strike off to correct elevations.
  - 2. Slope surfaces uniformly where indicated
  - 3. Begin initial floating using bull floats to form a uniform and open-textured surface plane free of humps or hollows.
- E . Place before partition installation.
- F . Where additional aggregate has been used in the mix, add a top layer of neat mix (without aggregate), if needed to level and smooth the surface.

- G . If a fine, feathered edge is desired, steel trowel the edge after initial set, but before it is completely hard.

#### 3.4 CURING

- A . Once underlayment starts to set, prohibit foot traffic until final set has been reached.
- B . Air cure in accordance with manufacturer's instructions.

#### 3.5 INSTALLATION

- A . General: Install all materials in accordance with manufacturer's instructions based on conditions present.

#### 3.6 FIELD QUALITY CONTROL

- A . An independent testing agency will perform field inspection and testing, as specified in Section 01 40 00.
- B . Placed Material: Agency will inspect and test for conformance to specification requirements.

#### 3.7 PROTECTION

- A . Protect against direct sunlight, heat, and wind; prevent rapid drying to avoid shrinkage and cracking.
- B . Do not permit traffic over unprotected floor underlayment surfaces unless allowed in writing by manufacturer.

END OF SECTION

**PART 1 - GENERAL**

1.1 SECTION INCLUDES

- A . Penetration firestopping.
- B . Fire resistive joint systems.

1.2 RELATED REQUIREMENTS

- A . 09 21 16 - Gypsum Board Assemblies: For fire rated assemblies requiring firestopping.
- B . Divisions 21-28: For items typically penetrating fire rated assemblies requiring firestopping.

1.3 ADMINISTRATIVE REQUIREMENTS

- A . Review preparation and installation procedures and coordinating and scheduling required with related work.

1.4 SUBMITTALS

- A . Qualification Data: For manufacturer and fabricator.
- B . Product Data: Provide product criteria, characteristics, accessories, and jointing methods, and termination conditions.
- C . Shop Drawings: Indicate system design listing by UL, FM Research, Intertek Testing Services, Omega Point Laboratories (OPL).
  - 1. Where system design listing is not available for a particular configuration provide an Engineering Judgment (EJ) or Equivalent Fire Resistance Rated Assembly (EFRRA) for submittal
- D . Contractor Installation log.
- E . Manufacturer's Installation Instructions: Indicate special preparation of substrate, installation and attachment methods, and perimeter conditions requiring special attention.
- F . Maintenance Data: For user's operation and maintenance of system including:
  - 1. Methods for maintaining system's materials.

1.5 QUALITY ASSURANCE

- A . Manufacturer of firestop products shall have been successfully producing and supplying these products for a period of not less than 3 years, and be able to show evidence of at least 10 projects where similar products have been installed and accepted.
- B . Fabricators Qualifications: Company specializing in performing the work of this section with minimum 5 years of experience on projects of similar size and complexity.

1.6 WARRANTY

- A . Installation Warranty: Contractor shall correct defective Work within a five year period after Date of Substantial Completion.

- B . Manufacturer Warranty: Provide five year warranty for firestopping systems.

## **PART 2 - PRODUCTS**

### 2.1 DESCRIPTION

- A . Interior Firestopping: Provide firestopping of all joints head of walls and penetrations in fire-resistance rated and smoke-resistant assemblies. Single source installer.

### 2.2 PERFORMANCE AND DESIGN CRITERIA

- A . Penetrations: Provide firestopping systems that resist the spread of fire, and the passage of smoke and other gases according to requirements indicated:
1. Firestop all penetrations passing through fire resistance rated wall and floor assemblies and other locations as indicated on the drawings.
  2. Provide complete penetration firestopping systems that have been tested and approved by third party testing agency.
  3. F - Rated Through-Penetration Firestop Systems: Provide through-penetration firestop systems with F ratings indicated, as determined per ASTM E814, but not less than one hour or the fire-resistance rating of the construction being penetrated.
  4. T - Rated Through-Penetration Firestop Systems: Provide firestop systems with T ratings, in addition to F ratings, as determined per ASTM E814, where indicated by Code.
  5. Provide T-Rating Collar Devices tested in accordance with ASTM E814 or ANSI/UL 1479 for metallic pipe penetrations requiring T-Ratings per the applicable building code.
  6. L - Rated Through-Penetration Firestop Systems: Provide firestop systems with L ratings, in addition to F and T ratings, as determined per UL 1479, where indicated by Code.
  7. W - Rated Through-Penetration Firestop Systems: Provide firestop systems with W Water Resistance ratings, in addition to F, T and L ratings, as determined per UL 1479, where indicated.
- B . Perimeter Fire Containment Systems: Provide interior perimeter joint systems with fire-resistance ratings indicated, as determined per ASTM E2307, but not less than the fire-resistance rating of the floor construction.
- C . Fire-Resistive Joints: Provide joint systems with fire-resistance ratings indicated, as determined per UL 2079, but not less than the fire-resistance rating of the construction in which the joint occurs.
- D . For firestopping exposed to view, traffic, moisture, and physical damage, provide appropriate firestop systems for these conditions.
1. Exposed to view firestopping must be paintable.
- E . Firestop material must be able to be installed per manufacturers written instructions in temperatures ranging from 35 degrees F to 120 degrees F, and have the ability to be frozen, thawed and still comply with its UL designation and testing results.
- F . Provide products that upon curing, do not re-emulsify, dissolve, leach, breakdown or otherwise deteriorate over time from exposure to atmospheric moisture, sweating pipes, ponding water or other forms of moisture characteristic during and after construction.

G . Movement:

1. Provide firestop sealants and fire resistive joint sealants sufficiently flexible to accommodate motion such as pipe vibration, water hammer, thermal expansion and other normal building movement without damage to the seal.
2. Provide fire-resistive joint sealants designed to accommodate a specific range of movement and tested for this purpose in accordance with a cyclic movement test criteria as outlined in Standards, ASTM E-1399, ASTM E1966, or ANSI/ UL 2079.

H . Pipe insulation shall not be removed, cut away or otherwise interrupted through wall or floor openings. Provide products appropriately tested for the thickness and type of insulation utilized.

I . Fire rated pathway devices shall be the preferred product and shall be installed in all locations where frequent cable moves, add-ons and changes will occur.

J . When mechanical cable pathways are not practical, openings within walls and floors designed to accommodate voice, data and video cabling shall be provided with re-enterable products specifically designed for retrofit.

K . Penetrants passing through fire-resistance rated floor-ceiling assemblies contained within chase wall assemblies shall be protected with products tested by being fully exposed to the fire outside of the chase wall. Systems within the UL Fire Resistance Directory that meet this criterion are identified with the words "Chase Wall Optional".

L . Provide penetration firestop systems, fire-resistive joint systems, or perimeter fire barrier systems subjected to an air leakage test conducted in accordance with Standard, ANSI/ UL 1479 for penetrations and ANSI/UL 2079 for joint systems with published L-Ratings for ambient and elevated temperatures as evidence of the ability of firestop system to restrict the movement of smoke.

## 2.3 MANUFACTURERS

A . Specification is based on products listed in assemblies shown on Drawings.

1. Comparable products by one of the following are also acceptable. See Section 016000 - Alternates for submittal requirements.
  - a. 3M Fire Protection Products.
  - b. HILTI, Inc.
  - c. Hydroflame.
  - d. Specified Technologies, Inc.
2. Substitutions for products by manufacturers other than those listed above: See Section 016000 - Alternates.

## 2.4 ACCESSORIES

A . All accessory materials required by the manufacturer for a warrantable installation of the installed products in a manner that meets the Performance and Design Criteria.

### **PART 3 - EXECUTION**

#### **3.1 EXAMINATION**

- A . Examine substrates and conditions for compliance with requirements for opening configurations, penetrating items, substrates, and other conditions affecting performance of firestopping.

#### **3.2 PREPARATION**

- A . Priming: Prime substrates where recommended by firestopping manufacturer using that manufacturer's recommended products and methods. Confine primers to areas of bond. Do not allow spillage and migration onto exposed surfaces.
- B . Masking Tape: Use masking tape to prevent firestopping from contacting adjoining surfaces that will remain exposed. Remove tape as soon as it is possible to do so without disturbing the firestopping seal with substrates.
- C . Verify that system components are clean, dry, and ready for installation.
- D . Verify that field dimensions are as shown on the Drawings and as recommended by the manufacturer.

#### **3.3 PENETRATION FIRESTOP INSTALLATION**

- A . Ensure that all pipes, conduit, cable, and other items, which penetrate fire rated construction, have been permanently installed prior to installation of firestop assemblies.
- B . Ensure that partitions and all other construction that conceal penetrations are not erected prior to the installation of firestop and smoke seals.
- C . Install forming/damming materials and other accessories in accordance with manufacturers written instructions.
- D . Install fill materials for through-penetration firestop systems by proven techniques to produce the following results:
  - 1. Completely fill voids and cavities formed by openings, forming materials, accessories, and penetrating items.
  - 2. Install materials so they contact and adhere to substrates formed by openings and penetrating items.
  - 3. For fill materials that will remain exposed finish to produce smooth, uniform surfaces.

#### **3.4 FIRESTOP JOINT SYSTEM INSTALLATION**

- A . Install joint fillers to provide support of firestop materials during application.
- B . Provide at the position to produce the cross-sectional shapes and depths of installed firestop material relative to joint widths for optimum sealant movement capability and required fire-resistance.
- C . Install systems that result in firestop materials:
  - 1. Directly contacting and fully wetting joint substrates.
  - 2. Completely filling recesses provided for each joint configuration.



3. Providing uniform, cross-sectional shapes and depths relative to joint width that optimize movement capability.
- D. Tool non-sag firestop materials immediately after application and prior to skinning begins. Form smooth, uniform beads of configuration indicated or required to:
1. Produce fire-resistance rating.
  2. Eliminate air pockets.
  3. Ensure contact and adhesion with sides of joint.

### 3.5 INSTALLATION LOG

- A. Include the following items for all firestop and fire resistive joint installations:
1. Contractor's name, address, and phone number.
  2. Through-penetration firestop systems designation of applicable testing and inspecting agency.
  3. Date of installation.
  4. Firestop systems manufacturer's name.
- B. Provide as a pdf file with bi-directional links to floor plans and elevations to clearly illustrate location of material.

### 3.6 IDENTIFICATION

- A. Identify through-penetration firestop systems with pressure-sensitive, self-adhesive, preprinted vinyl labels. Attach labels permanently to surfaces of penetrated construction on both sides of each firestop system installation where labels will be visible to anyone seeking to remove penetrating items or firestop systems.

### 3.7 CLEANING

- A. Clean off excess fill materials and sealants adjacent to openings and joints as work progresses. Use methods and cleaning materials approved by manufacturers of firestopping products and or assemblies in which openings and joints occur.
- B. Protect firestopping during and after curing period from contact with contaminating substances.

END OF SECTION

**PART 1 - GENERAL**

1.1 SECTION INCLUDES

- A . Sealants for interior surfaces.

1.2 ADMINISTRATIVE REQUIREMENTS

- A . Review preparation and installation procedures and coordinating and scheduling required with related work.

1.3 SUBMITTALS

- A . Qualification Data: For Manufacturer, Installer, Testing Agency.
- B . Product Data: Provide data indicating sealant chemical characteristics, performance criteria, substrate preparation, limitations, and color availability.
- C . Preliminary Selection Sample: Manufacturer's color charts consisting of strips of cured sealants showing the full range of colors available for each product exposed to view.
- D . Field Samples for Confirmation: Provide sealant samples in the color selected based on Manufacturer's charts for sealants other than the ones included in the Visual and Performance Mockup. Field samples shall be minimum 12 inches long and installed at joints intended for each particular sealant use. Mockup and field samples will be used to confirm sealant color selection.
- E . Sanded sealant samples: Include in the Visual and Performance mockup, as part of the brick portion of the mockup.
- F . SWRI Validation Certificate: For each elastomeric sealant specified to be validated by SWRI's Sealant Validation Program.
- G . Manufacturer's Installation Instructions: Indicate special preparation of substrate, installation and attachment methods, and perimeter conditions requiring special attention.
- H . Preconstruction Field Test Reports: Indicate which sealants and joint preparation methods resulted in optimum adhesion to joint substrates based on preconstruction testing specified in "Quality Assurance" Article.
- I . Compatibility and Adhesion Test Reports: From sealant manufacturer, indicating the following:
  - 1. Materials forming joint substrates and joint-sealant backings have been tested for compatibility and adhesion with joint sealants.
  - 2. Interpretation of test results and written recommendations for primers and substrate preparation needed for adhesion.
- J . Field Test Report Log: For each elastomeric sealant application.
- K . Product Test Reports: Based on comprehensive testing of product formulations performed by a qualified testing agency, indicating that sealants comply with requirements.

L . Warranty: Submit manufacturer warranty and ensure forms have been completed in Owner's name and registered with manufacturer.

M . Maintenance Data: For user's operation and maintenance of system including:

1. Methods for maintaining system's materials and finishes.
2. Precautions about cleaning materials and methods that could be detrimental to components, finishes, and performance.
3. Recommendations on maintenance schedule.

#### 1.4 QUALITY ASSURANCE

A . Manufacturer Qualifications: Company specializing in the manufacture of work specified in this section with minimum 5 years of experience.

B . Installer Qualifications: Manufacturer's authorized Installer who is approved or licensed for installation of elastomeric sealants required for this Project. Minimum 5 years of documented experience in facilities of this size and scope.

1. Prequalification of single source installers for exterior sealants is encouraged.

C . Source Limitations: Obtain each type of joint sealant through one source from a single manufacturer.

#### 1.5 DELIVERY, STORAGE, AND HANDLING

A . As required by the manufacturer for a warrantable installation of the installed products to meet the Performance and Design Criteria.

#### 1.6 WARRANTY

A . Special Installer's Warranty: Installer's standard form in which Installer agrees to repair or replace elastomeric joint sealants that do not comply with performance and other requirements specified in this Section within specified warranty period.

1. Warranty Period: Two years from date of Substantial Completion.

B . Special Manufacturer's Warranty: Manufacturer's standard form in which elastomeric sealant manufacturer agrees to furnish elastomeric joint sealants to repair or replace those that do not comply with performance and other requirements specified in this Section within specified warranty period.

1. Warranty Period: Ten (10) years from date of Substantial Completion.

C . Special warranties exclude deterioration or failure of elastomeric joint sealants from the following:

1. Movement of the structure resulting in stresses on the sealant exceeding sealant manufacturer's written specifications for sealant elongation and compression caused by structural settlement or errors attributable to design or construction.
2. Disintegration of joint substrates from natural causes exceeding design specifications.
3. Mechanical damage caused by individuals, tools, or other outside agents.
4. Changes in sealant appearance caused by accumulation of dirt or other atmospheric contaminants.

## **PART 2 - PRODUCTS**

### 2.1 DESCRIPTION

- A . Joint sealers for properly designed joints in interior materials; selected for durability, movement capacity, adhesion to substrates and non-staining characteristics.

### 2.2 PERFORMANCE AND DESIGN CRITERIA

- A . Compatibility: Provide joint sealants, backings, and other related materials that are compatible with one another and with joint substrates under conditions of service and application, as demonstrated by sealant manufacturer, based on testing and field experience.
- B . Colors of Exposed Joint Sealants: As selected by Architect from manufacturer's full range.
- C . Elastomeric Sealants: Comply with ASTM C920 and other requirements indicated for each liquid-applied chemically curing sealant specified, including those referencing ASTM C920 classifications for type, grade, class, and uses related to exposure and joint substrates.
- D . Stain-Test-Response Characteristics: Where elastomeric sealants are specified to be nonstaining to porous substrates, provide products that have undergone testing according to ASTM C1248 and have not stained porous joint substrates indicated for Project.

### 2.3 MANUFACTURERS

- A . Specification is based on products listed below.
  - 1. Comparable products by one of the following are also acceptable. See Section 016000 - Alternates for submittal requirements.
    - a. Dow.
    - b. Pecora Corporation.
    - c. Tremco.
  - 2. Substitutions for products by manufacturers other than those listed above: See Section 016000 - Alternates.

### 2.4 MATERIALS

- A . Sealants for interior surfaces:
  - 1. General Purpose Interior Sealant: polyurethane; single, or multi- component, paintable.
    - a. Color: Standard colors matching finished surfaces.
    - b. Product: Dymonic FC, Dymeric 240FC by Tremco Inc.
    - c. Designed for interior movement and non-moving joints adjacent to painted surfaces.
  - 2. Acoustical Sealant: Acrylic sealant; ASTM C834.
    - a. Product: Tremco "Acoustical Sealant".
    - b. Non-hardening type.
    - c. Tested as part of acoustical assemblies.

3. Interior Floor Joint Sealant: Polyurethane, self-leveling; ASTM C920, Grade P, Class 25, Uses T, M and A; single or multi-component.
  - a. Approved by manufacturer for wide joints up to 1-1/2 inches.
  - b. Color: Standard colors matching finished surfaces.
  - c. Product: Vulkem 45 SSL by Tremco Inc.
  - d. Designed for exposed, trafficked joints with pourable self-leveling installation.
4. Security Sealant: \_\_\_\_\_ TBD
  - a. Manufacturers that provide security sealant:
    - 1) Pecora Corporation.
    - 2) Sika.
    - 3) Surebond.
    - 4) Tremco.

## 2.5 ACCESSORIES

### A . Joint sealant backing:

1. General:
  - a. Provide sealant backings of material and type that are nonstaining; are compatible with joint substrates, sealants, primers, and other joint fillers; and are approved for applications indicated by sealant manufacturer based on field experience and laboratory testing.
2. Cylindrical Sealant Backings:
  - a. ASTM C1330, Type C (closed-cell material with a surface skin), O (open-cell material), B (bicellular material with a surface skin), or any of the preceding types, as approved in writing by joint-sealant manufacturer for joint application indicated, and of size and density to control sealant depth and otherwise contribute to producing optimum sealant performance:
3. Elastomeric Tubing Sealant Backings:
  - a. Neoprene, butyl, EPDM, or silicone tubing complying with ASTM D1056, nonabsorbent to water and gas, and capable of remaining resilient at temperatures down to minus 26 deg F. Provide products with low compression set and of size and shape to provide a secondary seal, to control sealant depth, and to otherwise contribute to optimum sealant performance.
4. Bond-Breaker Tape:
  - a. Polyethylene tape or other plastic tape recommended by sealant manufacturer for preventing sealant from adhering to rigid, inflexible joint-filler materials or joint surfaces at back of joint where such adhesion would result in sealant failure. Provide self-adhesive tape where applicable.

### B . Miscellaneous Materials:

1. Primer:
  - a. Material recommended by joint-sealant manufacturer where required for adhesion of sealant to joint substrates indicated, as determined from preconstruction joint-sealant-substrate tests and field tests.

2. Cleaners for Nonporous Surfaces:
    - a. Chemical cleaners acceptable to manufacturers of sealants and sealant backing materials, free of oily residues or other substances capable of staining or harming joint substrates and adjacent nonporous surfaces in any way, and formulated to promote optimum adhesion of sealants to joint substrates.
  3. Masking Tape:
    - a. Non-staining, nonabsorbent material compatible with joint sealants and surfaces adjacent to joints.
  4. Natural Sand:
    - a. Washed natural sand containing no contaminants that would affect the sealant. Color as approved by the architect for sanded joints as indicated or scheduled.
- C. All accessory materials required by the manufacturer for a warrantable installation of the installed products in a manner that meets the Performance and Design Criteria.

### **PART 3 - EXECUTION**

#### 3.1 EXAMINATION

- A. Verify existing conditions meet the manufacturer's requirements before starting work.

#### 3.2 PREPARATION

- A. Prepare surfaces to receive work in accordance with manufacturer's instructions.

#### 3.3 INSTALLATION

- A. General: Install all materials in accordance with manufacturer's instructions based on conditions present.
- B. Joint Sanding: Sand sealant joints at brick and sidewalks.
  1. Immediately after tooling and prior to skinning over of sealant, broadcast sand onto surface of sealant.
  2. Retool by rolling a dowel over the joint to achieve sufficient embedment.
  3. Maintain uniform appearance.

#### 3.4 FIELD QUALITY CONTROL

- A. Field quality control to include field adhesion testing, field stain testing, test methods and evaluation of field test results.
- B. Perform all corrections necessary for issuance of warranty.

#### 3.5 PROTECTION

- A. Protect installed work as required by the manufacturer to maintain product performance, design criteria, and warranty.

### 3.6 SCHEDULE

#### A . Sealants for interior surfaces:

1. (S-10): Typical Interior Sealant: Moving and non-moving Interior wall and ceiling control joints, smoke rated (but not fire rated) partitions.
2. (S-11): Joints between plumbing fixtures and floor and wall surfaces. Joints between kitchen, laundry room and bath countertops and wall surfaces.
3. (S-12): Use for concealed locations only. Sealant bead between top stud runner and structure and between bottom stud track and floor at any wall designated as acoustical.
4. (S-13): Control joints in floors.
5. Joint between resilient floor and impact resistant wall coverings, and joints in a around impact-resistant wall coverings in procedure rooms and other locations indicated:  
Security Sealant.

END OF SECTION

**PART 1 - GENERAL**

1.1 SECTION INCLUDES

- A . Non-fire rated steel doors.
- B . Fire rated steel doors.
- C . Non-fire rated steel frames.
- D . Fire rated steel frames.

1.2 RELATED REQUIREMENTS

- A . 09 90 00 - Painting and Coating: For field painting.

1.3 ADMINISTRATIVE REQUIREMENTS

- A . Review preparation and installation procedures and coordinating and scheduling required with related work.

1.4 SUBMITTALS

- A . Product Data: Materials and details of design and construction, hardware locations, reinforcement type and locations, anchorage and fastening methods, and finishes. Include U-value data for thermally broken doors and frames.
- B . Shop Drawings: Details of each opening, showing elevations, glazing, frame profiles, and identifying location of different finishes, if any.
- C . Manufacturer's Installation Instructions: Indicate special preparation of substrate, installation and attachment methods, and perimeter conditions requiring special attention.
- D . Warranty: Submit manufacturer warranty and ensure forms have been completed in Owner's name and registered with manufacturer.
- E . Maintenance Data: For user's operation and maintenance of system including:
  - 1. Methods for maintaining system's materials and finishes
  - 2. Precautions about cleaning materials and methods that could be detrimental to components, finishes, and performance.

1.5 QUALITY ASSURANCE

- A . Manufacturer Qualifications: Company specializing in manufacturing the products specified in this section with minimum five years of documented experience.

1.6 DELIVERY, STORAGE, AND HANDLING

- A . As required by the manufacturer for a warrantable installation of the installed products to meet the Performance and Design Criteria.



## **PART 2 - PRODUCTS**

### 2.1 DESCRIPTION

- A . Hollow metal frames for hollow metal doors to match existing doors.

### 2.2 PERFORMANCE AND DESIGN CRITERIA

- A . Accessibility Requirements: For doors required to be accessible, comply with applicable provisions in the Accessible and Usable Building Facilities ICC A117.1 and 2010 ADA Standards for Accessible Design – Department of Justice.
- B . Comply with ANSI A250.8 in general and for grade and style specified.
- C . NAAMM HMMA doors of equivalent or better construction are allowed.
- D . Provide hardware preparation in accordance with BHMA A156.115, with reinforcement welded in place, in addition to other requirements specified in door grade standard. Coordinate with Section 087100 - Door Hardware.

### 2.3 MANUFACTURERS

- A . Specification is based on Doors and Frames by one of the following:
  - 1. Comparable products by one of the following are also acceptable. See Section 016000 - Alternates for submittal requirements.
    - a. Assa Abloy.
    - b. Ceco.
    - c. Curries.
    - d. Fleming.
    - e. Steelcraft.
  - 2. Substitutions for products by manufacturers other than those listed above: 016000 - Alternates.

### 2.4 MATERIALS

- A . Non-fire rated steel doors.
  - 1. Performance Criteria:
    - a. Grade: ANSI A250.8 Level 3, physical performance Level C, Model 2, seamless.
    - b. Thickness: 1-3/4 inches.
    - c. Exterior Doors, Non-Fire Rated:
      - 1) Galvanizing: All components hot-dipped zinc-iron alloy-coated (galvannealed) in accordance with ASTM A653/A653M, with manufacturer's standard coating thickness.
      - 2) Insulating Value: U-value of 0.37, when tested in accordance with ASTM C1363.
  - 2. Features:
    - a. Door Top and Closures: Steel, Flush with top of faces and edges.

- b. Door Edge Profile: Beveled on both edges.
  - c. Face Texture: Smooth.
  - d. Finish: Factory primed for field finishing.
  - e. Field Finish: In accordance with Section 09 90 00 - Painting and Coating.
  - f. Field Finish Color: To be selected from manufacturer's full range.
- B . Fire rated steel doors.
- 1. Performance Criteria:
    - a. Fire Rating: As indicated on Door and Frame Schedule, tested in accordance with UL 10C ("positive pressure").
      - 1) Provide units listed and labeled by UL.
      - 2) Attach fire rating label to each fire rated unit.
    - b. Grade: ANSI A250.8 Level 3, physical performance Level C, Model 2, seamless.
    - c. Thickness: 1-3/4 inches.
  - 2. Features:
    - a. Door Top and Closures: Steel, Flush with top of faces and edges.
    - b. Door Edge Profile: Beveled on both edges.
    - c. Face Texture: Smooth.
    - d. Color: To be selected from manufacturer's full range.
    - e. Finish: Factory primed for field finishing.
- C . Non-Fire Rated Frames:
- 1. Performance Criteria:
    - a. Comply with the requirements of grade specified for corresponding door.
    - b. Frames for Wood Doors: Comply with frame requirements specified in ANSI A250.8 for Level 2.
  - 2. Features:
    - a. Assembly: Fully welded.
    - b. Finish: Factory primed, for field finishing.
- D . Fire Rated Frames:
- 1. Performance Criteria:
    - a. Comply with the requirements of grade specified for corresponding door.
    - b. Fire Rating: Same as door, labeled, tested in accordance with UL 10C ("positive pressure").
    - c. Frames for Wood Doors: Comply with frame requirements specified in ANSI A250.8 for Level 2.
  - 2. Features:
    - a. Assembly: Fully welded.
    - b. Finish: Factory primed, for field finishing.

## 2.5 ACCESSORIES

- A . All accessory materials required by the manufacturer for a warrantable installation of the installed products in a manner that meets the Performance and Design Criteria.
- B . Mineral Fiber Insulation: For filling frame cavities.

## 2.6 FINISHING

- A . Primer: Rust-inhibiting, complying with ANSI A250.10, door manufacturer's standard.
- B . Field Finish: In accordance with Section 09 90 00 - Painting and Coating.

## **PART 3 - EXECUTION**

### 3.1 EXAMINATION

- A . Verify existing conditions meet the manufacturer's requirements before starting work.

### 3.2 PREPARATION

- A . Prepare surfaces to receive work in accordance with manufacturer's instructions.
- B . Coat inside of frames to be installed in masonry, with bituminous coating, prior to installation.
- C . Coat inside of other frames with bituminous coating to a thickness of 1/16 inch.

### 3.3 INSTALLATION

- A . General: Install all materials in accordance with manufacturer's instructions based on conditions present.
- B . Install in accordance with the requirements of the specified door grade standard and NAAMM HMMA 840.
- C . Install fire rated units in accordance with NFPA 80.
- D . Seal seam at top closures after finish is applied to create a smooth surface without groove or pits.
  - 1. Seal with sealant Per Section 079005 - TABLE OF CONTENTS.
- E . Pack all frames with insulation.
- F . Coordinate installation of hardware.
- G . Coordinate installation of electrical connections to electrical hardware items.
- H . Touch up damaged factory finishes.

### 3.4 TOLERANCES

- A . Clearances Between Door and Frame: As specified in ANSI A250.8.
- B . Maximum Diagonal Distortion: 1/16 in measured with straight edge, corner to corner.

3.5 ADJUSTING

- A . Adjust and lubricate hardware for proper operation.
- B . Adjust for smooth and balanced door movement in accordance with manufacturer's instructions.

3.6 PROTECTION

- A . Protect installed work as required by the manufacturer to maintain product performance, design criteria, and warranty.

3.7 SCHEDULE

- A . Refer to door schedule on drawings.

END OF SECTION

**PART 1 - GENERAL**

1.1 SECTION INCLUDES

- A . Gypsum Sheathing.
- B . Gypsum Board.

1.2 RELATED REQUIREMENTS

- A . 09 22 19 - Non-Structural Metal Framing: Blocking product and execution requirements.

1.3 ADMINISTRATIVE REQUIREMENTS

- A . Review preparation and installation procedures and coordinating and scheduling required with related work.

1.4 SUBMITTALS

- A . Qualification Data: For Installer and design engineer.
- B . Product Data: Provide data on gypsum board, glass mat faced gypsum board, accessories, joint finishing system, and cement board.
- C . Shop Drawings: Indicate special details associated with fireproofing and acoustic seals.
- D . Test Reports: For all stud framing products that do not comply with ASTM C645 or ASTM C754, provide independent laboratory reports showing maximum stud heights at required spacings and deflections.

1.5 QUALITY ASSURANCE

- A . Manufacturer Qualifications: Company specializing in the manufacture of work specified in this section with minimum 5 years of experience.
- B . Installer Qualifications: Company specializing in performing the work of this section with minimum 5 years of experience on projects of similar size and complexity.

1.6 DELIVERY, STORAGE, AND HANDLING

- A . As required by the manufacturer for a warrantable installation of the installed products to meet the Performance and Design Criteria.

**PART 2 - PRODUCTS**

2.1 DESCRIPTION

- A . Includes Gypsum wallboard finishing, metal trim and accessories.

2.2 PERFORMANCE AND DESIGN CRITERIA

- A . Provide completed gypsum board assemblies complying with ASTM C840 and GA-216.

- B . Fire Rated Assemblies: Provide completed assemblies complying with UL listed assemblies indicated and ratings indicated on life safety drawings.
1. Gypsum Association File Numbers: Comply with requirements of GA-600 for the particular assembly.
  2. UL Assembly Numbers: Provide construction equivalent to that listed for the particular assembly in the current UL Fire Resistance Directory.

## 2.3 MANUFACTURERS

- A . Products selected by one of the manufacturers:
1. CertainTeed Gypsum, Inc.
  2. Georgia-Pacific Gypsum.
  3. Custom Building Products.
- B . Substitutions for products by manufacturers other than those listed above: See Section 016001 - Substitution Request Form.

## 2.4 MATERIALS

- A . Impact-Resistant Gypsum Board:
1. Gypsum Wallboard: Paper-faced gypsum panels as defined in ASTM C1629/C1629, sizes to minimize joints in place; ends square cut.
    - a. Application: Use as indicated.
    - b. Type X: Thickness 5/8 inch.
    - c. Edges: Tapered.
    - d. Products:
      - 1) Georgia-Pacific Gypsum; ToughRock FireGuard X Abuse Resistant Gypsum Wallboard.
      - 2) CertainTeed Extreme Impact Resistant Gypsum Panels.
      - 3) National Gypsum; Hi-Impact XP Gypsum Wallboard.
- B . Gypsum Board:
1. Gypsum Wallboard: Paper-faced gypsum panels as defined in ASTM C1396/C1396M; sizes to minimize joints in place; ends square cut.
    - a. Application: Use for vertical surfaces, unless otherwise indicated.
    - b. Type X: Thickness 5/8 inch.
      - 1) Edges: Tapered.
      - 2) Products:
        - a) Georgia-Pacific Gypsum; ToughRock, and ToughRock Fireguard.
        - b) CertainTeed Gypsum, Inc.; GlasRoc.
    - c. Type C: Thickness: As indicated.
      - 1) Edges: Tapered.

2) Products:

- a) ToughRock FireGuard C Gypsum Wallboard.
- b) CertainTeed Gypsum, Inc.; Type C Fire-Resistant Drywall.

2.5 ACCESSORIES

- A . All accessory materials required by the manufacturer for a warrantable installation of the installed products in a manner that meets the Performance and Design Criteria.
- B . Acoustic Sealant:
  - 1. As specified in Section 079005 - Joint Sealers.
- C . Finishing Accessories:
  - 1. ASTM C1047, galvanized steel or rolled zinc, unless otherwise indicated.
    - a. Types: As detailed or required for finished appearance.
    - b. Special Shapes: In addition to conventional cornerbead and control joints, provide U-bead at exposed panel edges.
- D . Joint Materials:
  - 1. ASTM C475/C475M and as recommended by gypsum board manufacturer for project conditions.
    - a. Tape: 2 inch wide, coated glass fiber tape for joints and corners, except as otherwise indicated.
    - b. Typical: Ready-mixed vinyl-based joint compound.
- E . Anchorage to Substrate:
  - 1. Tie wire, nails, screws, and other metal supports, of type and size to suit application; to rigidly secure materials in place.

**PART 3 - EXECUTION**

3.1 EXAMINATION

- A . Verify existing conditions meet the manufacturer's requirements before starting work.

3.2 PREPARATION

- A . Prepare surfaces to receive work in accordance with manufacturer's instructions.

3.3 INSTALLATION

- A . General: Install all materials in accordance with manufacturer's instructions based on conditions present.
- B . Comply with ASTM C840 and GA-216. Install to minimize butt end joints, especially in highly visible locations.
- C . Fire-Rated Construction: Install gypsum board in strict compliance with requirements of assembly listing.

### 3.4 INSTALLATION OF TRIM AND ACCESSORIES

- A . Control Joints: Place control joints consistent with lines of building spaces and as indicated.
  - 1. Not more than 30 feet apart on walls and ceilings over 50 feet long.
  - 2. At exterior soffits, not more than 30 feet apart in both directions.
- B . Corner Beads: Install at external corners, using longest practical lengths.
- C . Edge Trim: Install at locations where gypsum board abuts dissimilar materials and as indicated.

### 3.5 JOINT TREATMENT

- A . Glass Mat Faced Gypsum Board and Exterior Glass Mat Faced Sheathing: Use fiberglass joint tape, bedded and finished with chemical hardening type joint compound.
- B . Paper Faced Gypsum Board: Use paper joint tape, bedded with ready-mixed vinyl-based joint compound and finished with ready-mixed vinyl-based joint compound.
- C . Finish gypsum board in accordance with levels defined in ASTM C840, as follows:
  - 1. Level 5: Walls and ceilings typical.
  - 2. Level 4: Perforated gypsum.
  - 3. Level 4: For flat paint, a light final paint texture, or with lightweight wall covering.
  - 4. Level 3: In utility areas, behind cabinetry, and on backing board to receive tile finish.
  - 5. Level 2: In utility areas, behind cabinetry, and on backing board to receive tile finish.
  - 6. Level 1: Fire rated wall areas above finished ceilings, whether or not accessible in the completed construction.
  - 7. Level 0: Temporary partitions and surfaces indicated to be finished in later stage of project.
  - 8. Level 0: Surfaces indicated to be finished in later stage of project.
- D . Tape, fill, and sand exposed joints, edges, and corners to produce smooth surface ready to receive finishes.
  - 1. Feather coats of joint compound so that camber is maximum 1/32 inch.
- E . Where Level 5 finish is indicated, spray apply high build drywall surfacer over entire surface after joints have been properly treated; achieve a flat and tool mark-free finish.
- F . Fill and finish joints and corners of cementitious backing board as recommended by manufacturer.

### 3.6 FIELD OBSERVATION AT "PUNCH"

- A . Finish will be judged from a viewing difference of 4 feet.
- B . Ceilings will be viewed from a standing position.
- C . Finished lighting system or temporary lighting similar to proposed finished lighting should be used for judging the wall.



- D . Eye catching discrepancies and or blemishes, including “fuzzy” wall board surfaces, will be rejected.

3.7 PROTECTION

- A . Protect installed work as required by the manufacturer to maintain product performance, design criteria and warranty.

3.8 SCHEDULE

- A . Typical: Gypsum Board, Type X, 5/8 thickness.

END OF SECTION

**PART 1 - GENERAL**

1.1 SECTION INCLUDES

- A . Suspended metal grid ceiling system.

1.2 RELATED REQUIREMENTS

- A . 07 90 05 - Joint Sealers.
- B . 09 21 16 - Gypsum Board Assemblies.

1.3 ADMINISTRATIVE REQUIREMENTS

- A . Review preparation and installation procedures and coordinating and scheduling required with related work.

1.4 SUBMITTALS

- A . Qualification Data: For manufacturer and installer.
- B . Shop Drawings: Indicate grid layout and related dimensioning.
- C . Product Data: Provide data on suspension system components and acoustical units.
- D . Samples: Submit samples, as directed by Architect for size, illustrating material and finish of acoustical units.
- E . Manufacturer's Installation Instructions: Indicate special preparation of substrate, installation and attachment methods, and perimeter conditions requiring special attention.
- F . Warranty: Submit manufacturer warranty and ensure forms have been completed in Owner's name and registered with manufacturer.
- G . Maintenance Data: For user's operation and maintenance of system including:
  - 1. Methods for maintaining system's materials and finishes.
  - 2. Precautions about cleaning materials and methods that could be detrimental to components, finishes, and performance.

1.5 QUALITY ASSURANCE

- A . Manufacturer Qualifications: Company specializing in the manufacture of work specified in this section with minimum 5 years of experience.
- B . Installer Qualifications: Company specializing in performing the work of this section with minimum of 5 years of experience.

1.6 DELIVERY, STORAGE, AND HANDLING

- A . As required by the manufacturer for a warrantable installation of the installed products to meet the Performance and Design Criteria.

## 1.7 WARRANTY

- A . Provide 10 year manufacturer warranty on all acoustical panels for sagging and warping, grid system, rusting, and manufacturer's defects.
- B . Provide 15 year warranty for all products using additional "Humidity and Sag resistance" control systems.

## **PART 2 - PRODUCTS**

### 2.1 DESCRIPTION

- A . Suspended metal grid ceiling systems manufactured edge trim at changes in plane.

### 2.2 PERFORMANCE AND DESIGN CRITERIA

- A . Components: Lock together in a positive manner.
- B . Pull out tension:
  - 1. Cross Tee Connections: Minimum 300 pounds.
  - 2. Main Tee Splices: Minimum 200 pounds.
- C . Install to conceal plenum space above acoustical ceiling system and to allow access.
- D . Make provisions for vertical as well as horizontal suspension systems.

### 2.3 MATERIALS

- A . Acoustical Units - General: ASTM E1264, Class A.
  - 1. Performance Criteria:
    - a. Flame Spread Index: 25 or less.
    - b. Smoke Developed Index: 50 or less.
    - c. Ceiling Attenuation Class (CAC): 33, determined in accordance with ASTM E1264.
  - 2. Features:
    - a. Application: Cafeterias, Kitchen/Food Preparation Areas, Laboratories, Lavatories/Restrooms.
      - 1) Class A, Non-Directional, Smooth Surface Meets USDA/FSIS Guidelines for Use In Food Processing Areas and Kitchens, Washable and Scrubbable, Water-Repellent.
    - b. Size: 24 x 48 inches.
    - c. Thickness: 5/8 inches.
    - d. Edge: Square.
    - e. Texture: Smooth.
    - f. Surface Color: White.

## 2.4 ACCESSORIES

- A . All accessory materials required by the manufacturer for a warrantable installation of the installed products in a manner that meets the Performance and Design Criteria.
- B . Support Channels and Hangers:
  - 1. Galvanized steel; size and type to suit application, seismic requirements, and ceiling system flatness requirement specified.
- C . Perimeter Moldings at Changes in Elevation:
  - 1. Same material and finish as grid.
    - a. At Exposed Grid: Provide L-shaped molding for mounting at same elevation as face of grid. Basis of Design Product: Axiom Trim and Transitions by Armstrong Commercial Ceilings.
    - b. At Concealed Grid: Provide concealed molding.
- D . Demountable Ceiling Grid Clips:
  - 1. C1430 variable placement hook clip by Armstrong.
- E . Acoustical Sealant For Perimeter Moldings:
  - 1. Specified in Section 079005 Joint Sealers.
- F . Touch-up Paint:
  - 1. Type and color to match acoustical and grid units.

## **PART 3 - EXECUTION**

### 3.1 EXAMINATION

- A . Verify existing conditions meet the manufacturer's requirements before starting work.
- B . Verify that layout of hangers will not interfere with other work.

### 3.2 PREPARATION

- A . Prepare surfaces to receive work in accordance with manufacturer's instructions.

### 3.3 INSTALLATION

- A . General: Install all materials in accordance with manufacturer's instructions based on conditions present.
- B . Suspension system:
  - 1. Install suspension system in accordance with ASTM C636/C636M and manufacturer's instructions and as supplemented in this section.
  - 2. Rigidly secure system, including integral mechanical and electrical components, for maximum deflection of 1:360.
  - 3. Lay out system to a balanced grid design with edge units no less than 50 percent of acoustical unit size.

- a. See also reflected ceiling plans. Where 50 percent unit cannot be achieved, consult Architect before installation.
4. Install after major above-ceiling work is complete. Coordinate the location of hangers with other work.
5. Provide hanger clips during steel deck erection. Provide additional hangers and inserts as required.
6. Hang suspension system independent of walls, columns, ducts, pipes and conduit. Where carrying members are spliced, avoid visible displacement of face plane of adjacent members.
7. Where ducts or other equipment prevent the regular spacing of hangers, reinforce the nearest affected hangers and related carrying channels to span the extra distance.
8. Do not support components on main runners or cross runners if weight causes excess deflection.
9. Support fixture loads using supplementary hangers located within 6 inches of each corner, or support components independently.
10. Do not eccentrically load system or induce rotation of runners.
11. Form expansion joints as detailed. Form to accommodate plus or minus 1 inch movement. Maintain visual closure.

### 3.4 TOLERANCES

- A . Maximum Variation from Flat and Level Surface: 1/8 inch in 10 feet.
- B . Maximum Variation from Plumb of Grid Members Caused by Eccentric Loads: 2 degrees.

### 3.5 PROTECTION

- A . Protect installed work as required by the manufacturer to maintain product performance, design criteria and warranty.

END OF SECTION

**PART 1 - GENERAL**

1.1 SECTION INCLUDES

- A . Resilient sheet flooring.
- B . Resilient base.

1.2 RELATED REQUIREMENTS

- A . 035400 - Cast Underlayment.
- B . 096700 - Fluid-Applied Flooring.

1.3 ADMINISTRATIVE REQUIREMENTS

- A . Review preparation and installation procedures and coordinating and scheduling required with related work.

1.4 SUBMITTALS

- A . Qualification Data: For installer.
- B . Product Data: Provide data on specified products, describing physical and performance characteristics; including sizes, patterns and colors available; and installation instructions.
- C . Shop Drawings: Indicate seaming plan.
- D . Flooring Sample: Submit two samples, 6 x 6 inch in size illustrating color and pattern for each resilient flooring product specified; heat weld rod samples for selection.
- E . Base and Accessory Samples: Submit manufacturer's complete set of color samples for initial selection.
- F . Certificate: Prior to installation of flooring, submit written certification by flooring manufacturer and adhesive manufacturer that condition of subfloor is acceptable.
- G . Manufacturer's Installation Instructions: Indicate special preparation of substrate, installation and attachment methods, and perimeter conditions requiring special attention.
- H . Warranty: Submit manufacturer warranty and ensure forms have been completed in Owner's name and registered with manufacturer.
- I . Maintenance Data: For user's operation and maintenance of system including:
  - 1. Methods for maintaining system's materials and finishes.
  - 2. Precautions about cleaning materials and methods that could be detrimental to components, finishes, and performance.
  - 3. Include maintenance procedures, recommended maintenance materials, and suggested schedule for cleaning, stripping, and re-waxing.

1.5 MAINTENANCE MATERIAL

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

1.6 QUALITY ASSURANCE

- A . Manufacturer Qualifications: Company specializing in the manufacture of work specified in this section with minimum 5 years of experience.
- B . Installer Qualifications: Company specializing in performing the work of this section with minimum 2 years of experience.

1.7 DELIVERY, STORAGE, AND HANDLING

- A . As required by the manufacturer for a warrantable installation of the installed products to meet the Performance and Design Criteria.

1.8 WARRANTY

- A . Provide minimum Manufacturers Limited 5 year commercial warranty for manufacturing defects.

**PART 2 - PRODUCTS**

2.1 DESCRIPTION

- A . Resilient sheet flooring, resilient base and installation accessories for transition to other flooring types.

2.2 PERFORMANCE AND DESIGN CRITERIA

- A . Critical Radiant Flux (CRF): Minimum 0.45 watt per square centimeter, when tested in accordance with ASTM E648 or NFPA 253.

2.3 RESILIENT SHEET FLOORING

- A . Luxury Vinyl Plank Sheet Flooring: 100 percent virgin composition, color and pattern through total thickness.
1. Basis of Design: match existing.
  2. Performance Requirements:
    - a. Homogenous sheet good.
    - b. Minimum Requirements: Comply with ASTM F1913, without backing and .
    - c. Critical Radiant Flux (CRF): Minimum 0.45 watt per square centimeter, when tested in accordance with ASTM E648 or NFPA 253.
  3. Features:
    - a. Total Thickness: 0.079 inch minimum.
    - b. Sheet Width: 72 inch minimum.
    - c. Profile: match existing.
    - d. Pattern: match existing.

4. Integral Cove Base:
  - a. 6 inch minimum height with 3/8 inch minimum radius.
5. Seamless Installation: Heat weld

#### 2.4 ACCESSORIES

- A. All accessory materials required by the manufacturer for a warrantable installation of the installed products in a manner that meets the Performance and Design Criteria.
- B. Subfloor Filler:
  1. White premix latex; type recommended by adhesive material manufacturer.
- C. Primers, Adhesives, and Seaming Materials:
  1. Waterproof; types recommended by flooring manufacturer.

~~D. Moldings, Transition and Edge Strips:~~

- ~~1. \_\_\_\_\_ [Metal].~~

~~E. Filler for Cove Base:~~

- ~~1. \_\_\_\_\_.~~

~~F-D.~~ Sealer and Wax:

1. Types recommended by flooring manufacturer.
2. Heat Weld Rod
  - a. Color to closely match resilient flooring, as selected by Architect from manufacturer's standard colors.

### **PART 3 - EXECUTION**

#### 3.1 EXAMINATION

- A. Verify existing conditions meet the manufacturer's requirements before starting work.
- B. Verify existing conditions meet the manufacturer's requirements before starting work, free of cracks that might telegraph through flooring, clean, dry, and free of curing compounds, surface hardeners, and other chemicals that might interfere with bonding of flooring to substrate.
- C. Verify that wall surfaces are smooth and flat within the tolerances specified, are dust-free, and are ready to receive resilient base.
- D. Cementitious Subfloor Surfaces: Verify that substrates meet moisture, internal relative humidity and alkalinity requirements of flooring and adhesive manufacturers in accordance with Section 090510 - Flooring Moisture Measurement and Mitigation.
  1. Obtain instructions if test results are not within limits recommended by resilient flooring manufacturer and adhesive materials manufacturer.
- E. Verify that required floor-mounted utilities are in correct location.



### 3.2 PREPARATION

- A . Prepare surfaces to receive work in accordance with manufacturer's instructions.

### 3.3 INSTALLATION

A . General:

1. Install all materials in accordance with manufacturer's instructions based on conditions present.
2. Starting installation constitutes acceptance of subfloor conditions.
3. Fit joints tightly.
4. Where type of floor finish, pattern, or color are different on opposite sides of door, terminate flooring under centerline of door.
5. Install edge strips at unprotected or exposed edges, where flooring terminates, and where indicated.
  - a. Metal Strips: Attach to substrate before installation of flooring using stainless steel screws.
  - b. Resilient Strips: Attach to substrate using adhesive.
6. Scribe flooring to walls, columns, cabinets, floor outlets, and other appurtenances to produce tight joints.
7. Install flooring in recessed floor access covers, maintaining floor pattern.
8. At movable partitions, install flooring under partitions without interrupting floor pattern.
9. Turn sheet flooring up 4 inches to create integral cove base. Heat weld corner seams.
10. Seamless Installation:
  - a. Heat-Welded Seams: Comply with ASTM F1516. Rout joints and heat weld with welding bead to fuse sections permanently into a seamless flooring installation. Prepare, weld, and finish seams to produce surfaces flush with adjoining flooring surfaces.

### 3.4 CLEANING

- A . Remove excess adhesive from floor, base, and wall surfaces without damage.
- B . Initial cleaning and finishing is the responsibility of the contractor.
1. Follow manufacturer's recommendations for initial cleaning and finishing procedures.
  2. Not all types of flooring require finishing.

### 3.5 PROTECTION

- A . Protect installed work as required by the manufacturer to maintain product performance, design criteria, and warranty.

END OF SECTION

**PART 1 - GENERAL**

1.1 SECTION INCLUDES

- A . Fluid-applied flooring and base.

1.2 RELATED REQUIREMENTS

- A . Section 079005 - Joint Sealers: Sealing joints between fluid-applied flooring and adjacent construction and fixtures.
- B . Section 260526 - Grounding and Bonding for Electrical Systems: Grounding and bonding of conductive flooring to building grounding system.

1.3 ADMINISTRATIVE REQUIREMENTS

- A . Review preparation and installation procedures and coordinating and scheduling required with related work.

1.4 SUBMITTALS

- A . Product Data: Provide data on specified products, describing physical and performance characteristics; sizes, patterns and colors available.
- B . Samples: Submit two samples, 6 inch by 6 inch in size illustrating color and pattern for each floor material for each color specified.
- C . Concrete Subfloor Test Report: Submit a copy of the moisture and alkalinity (pH) test reports.
- D . Manufacturer's Installation Instructions: Indicate special procedures.
- E . Manufacturer's Qualification Statement.
- F . Applicator's Qualification Statement.
- G . Maintenance Data: Include maintenance procedures, recommended maintenance materials, procedures for stain removal, repairing surface, and suggested schedule for cleaning.

1.5 QUALITY ASSURANCE

- A . Manufacturer Qualifications: Company specializing in manufacturing products specified in this section with minimum three years documented experience.
- B . Applicator Qualifications: Company specializing in performing the work of this section.
  - 1. Minimum three years of documented experience.
  - 2. Approved by manufacturer.
- C . Supervisor Qualifications: Trained by product manufacturer, under direct full time supervision of manufacturer's own foreman.

1.6 DELIVERY, STORAGE, AND HANDLING

- A . Store resin materials in a dry, secure area.
- B . Store materials for three days prior to installation in area of installation to achieve temperature stability.

1.7 FIELD CONDITIONS

- A . Maintain minimum temperature in storage area of 55 degrees F.
- B . Store materials in area of installation for minimum period of 24 hours prior to installation.
- C . Maintain ambient temperature required by manufacturer 72 hours prior to, during, and 24 hours after installation of materials.

**PART 2 - PRODUCTS**

2.1 MANUFACTURERS

- A . Fluid-Applied Flooring: Provide product indicated in Part 3 schedule or a comparable product by one of the following:
  - 1. Concrete Solutions by Rhino Linings: [www.concretesolutions.com](http://www.concretesolutions.com).
  - 2. Crossfield Products Corp: [www.crossfieldproducts.com/#sle](http://www.crossfieldproducts.com/#sle).
  - 3. Elite Crete Systems: [www.elitecrete.com/#sle](http://www.elitecrete.com/#sle).
  - 4. Flowcrete Americas: [www.flowcreteamericas.com/#sle](http://www.flowcreteamericas.com/#sle).
  - 5. Key Resin Company: [www.keyresin.com/#sle](http://www.keyresin.com/#sle).
  - 6. Master Builders Solutions by BASF: [www.master-builders-solutions.basf.us/en-us/#sle](http://www.master-builders-solutions.basf.us/en-us/#sle).
  - 7. PPG Paints Megaseal Fluid Applied Flooring: [www.ppgpaints.com/#sle](http://www.ppgpaints.com/#sle) and [www.ppgpmc.com/home.aspx/#sle](http://www.ppgpmc.com/home.aspx/#sle).
  - 8. SPARTACOTE™, a division of LATICRETE International, Inc: [www.laticrete.com/#sle](http://www.laticrete.com/#sle).
  - 9. Sherwin-Williams Company: [www.protective.sherwin-williams.com/#sle](http://www.protective.sherwin-williams.com/#sle).
  - 10. Sherwin-Williams Company: General Polymers Brand: [www.generalpolymers.com/#sle](http://www.generalpolymers.com/#sle).
  - 11. Sika Corporation: [www.sikafloorusa.com/#sle](http://www.sikafloorusa.com/#sle).
  - 12. Surface Koatings, Inc: [www.surfcoat.com/#sle](http://www.surfcoat.com/#sle).
  - 13. Terrazzo & Marble Supply Companies: [www.tmsupply.com/#sle](http://www.tmsupply.com/#sle).
  - 14. Substitutions: See Section 016000 - Product Requirements.

2.2 FLUID-APPLIED FLOORING SYSTEMS

- A . Fluid-Applied Flooring: Epoxy base coat(s), polyurethane top coat, no aggregate.
  - 1. System Thickness: 40 mils, nominal, when dry.
  - 2. Metallic Pigment: Mica powder.
  - 3. Texture: Smooth.
  - 4. Sheen: High gloss.

5. Color: As selected by Architect to match existing.

### 2.3 ACCESSORIES

- A. Cant Strips: Molded of flooring resin material.
- B. Copper Grounding Strips: Type and size as recommended by fluid-applied flooring manufacturer.
- C. Subfloor Filler: Type recommended by fluid-applied flooring manufacturer.
- D. Primer: Type recommended by fluid-applied flooring manufacturer.

## **PART 3 - EXECUTION**

### 3.1 EXAMINATION

- A. Verify that wall surfaces are smooth and flat within the tolerances specified for that type of work, are dust-free, and are ready to receive flooring.
- B. Verify that sub-floor surfaces are dust-free and free of substances that could impair bonding of materials to sub-floor surfaces.
- C. Cementitious Subfloor Surfaces: Verify that substrates are ready for fluid-applied flooring installation by testing for moisture and alkalinity (pH).
  1. Obtain instructions if test results are not within limits recommended by fluid-applied flooring manufacturer.

### 3.2 PREPARATION

- A. Prepare concrete surfaces according to ICRI 310.2R.
- B. Apply, trowel, and float filler to achieve smooth, flat, hard surface. Grind irregularities above the surface level. Prohibit traffic until filler is cured.
- C. Vacuum clean substrate.
- D. Apply primer to surfaces required by flooring manufacturer.

### 3.3 INSTALLATION - ACCESSORIES

- A. Install cant strips at base of walls where flooring is to be extended up wall as base.
- B. Install terminating cap strip at top of base; attach securely to wall substrate.
- C. Install copper grounding strips in accordance with flooring manufacturer's instructions. Refer to Section 260526 for grounding and bonding to building grounding system.

### 3.4 INSTALLATION - FLOORING

- A. Apply in accordance with manufacturer's instructions.
- B. Apply each coat to minimum thickness indicated.

C . Finish to smooth level surface.

D . At movable partitions install flooring under partitions without interrupting floor pattern.

3.5 FIELD QUALITY CONTROL

A . See Section 014000 - Quality Requirements, for additional requirements.

B . Test installed floor surface in accordance with ANSI/ESD STM7.1 .

3.6 PROTECTION

A . Prohibit traffic on floor finish for 48 hours after installation.

B . Barricade area to protect flooring until fully cured.

END OF SECTION

## **PART 1 - GENERAL**

### 1.1 SECTION INCLUDES

- A . Interior paint systems.

### 1.2 ADMINISTRATIVE REQUIREMENTS

- A . Review preparation and installation procedures and coordinating and scheduling required with related work.

### 1.3 SUBMITTALS

- A . Product Data: Provide product criteria, characteristics, accessories, jointing and seaming methods, and termination conditions.
- B . Sample: Submit three paper chip samples, 8.5 x 11 inch in size illustrating range of colors and textures available for each surface finishing product scheduled.
- C . Manufacturer's Installation Instructions: Indicate special preparation of substrate, installation and attachment methods, and perimeter conditions requiring special attention.
- D . Maintenance Data: For user's operation and maintenance of system including:
  - 1. Methods for maintaining system's materials and finishes.
  - 2. Precautions about cleaning materials and methods that could be detrimental to components, finishes, and performance.
  - 3. Recommendations on maintenance schedule.

### 1.4 QUALITY ASSURANCE

- A . Manufacturer Qualifications: Company specializing in the manufacture of paint and coating products used in the work of this section with minimum ten years of experience.
- B . Installer Qualifications: Company specializing in performing the work of this section with minimum 5 years of experience on projects of similar size and complexity.

### 1.5 DELIVERY, STORAGE, AND HANDLING

- A . As required by the manufacturer for a warrantable installation of the installed products to meet the Performance and Design Criteria.

## **PART 2 - PRODUCTS**

### 2.1 DESCRIPTION

- A . Surface preparation and field application of paints coatings.

### 2.2 MANUFACTURERS

- A . Provide all paint and coating products used in any individual system from the same manufacturer; unless noted otherwise below.

B . Paints:

1. B-M: Benjamin Moore & Co: [www.benjaminmoore.com](http://www.benjaminmoore.com).
2. S-W: Sherwin-Williams Co.: [www.sherwin-williams.com](http://www.sherwin-williams.com).

C . Substitutions for products by manufacturers other than those listed above: See Section 016000 - Alternates.

2.3 MATERIALS

A . Interior paint systems:

1. Colors: Neutral base as selected by Architect.
2. PS-01 Acrylic-Enamel.
  - a. Substrate: Concrete, Concrete Masonry Units, Gypsum Board..
  - b. Benjamin Moore & Company:
    - 1) Primer: 046 Fresh Start 100% Acrylic Superior Primer.
    - 2) Top coat: 526 Aura Waterborne Satin (2 coats min.).
  - c. Sherwin Williams:
    - 1) Primer: PrepRite® ProBlock® Interior/Exterior Latex Primer, B51-600 Series (4.0 mils wet, 1.4 mils dry).
    - 2) Top Coat: Duration Home® Interior Latex Satin, A97-1200 Series (4 mils wet, 1.6 mils dry per coat).
    - 3) Alternate Top Coat: S-W ProMar 200 HP Zero VOC Latex Eg-Shel, B20-1900 Series (4 mils wet, 1.7 mils dry per coat)
3. PS-02 Epoxy.
  - a. Substrate: Concrete, Concrete Masonry Units, Gypsum Board.
  - b. Benjamin Moore & Company:
    - 1) Primer: 253 Super Spec Latex Primer Sealer & Enamel Undercoat, 1.1 mils.
    - 2) Top coat: P43-86 Super Spec HP Acrylic Epoxy Semi-Gloss 1.0-2.0 mils.
  - c. Sherwin Williams:
    - 1) Primer: Quick Dry Interior/Exterior Latex Stain Blocking Primer, B51W8670 (4 mils wet, 1.1 mils dry per coat).
    - 2) Top Coat: S-W Pro Industrial Water Based Catalyzed Epoxy Gloss B73-300 Series (5.0 mils wet, 2.0 mils dry per coat).
    - 3) Alternate Top Coat: S-W Pro Industrial Pre-Catalyzed Waterbased Epoxy Semi-Gloss, K46 Series (4.0 mils wet, 1.4 mils dry per coat).
4. PS-03 Urethane Finish.
  - a. Substrate: Ferrous, Non-Ferrous, and Zinc-Coated Metals:
    - 1) Benjamin Moore & Company:
      - a) Primer: HP04 Ultra Spec HP Acrylic Metal Primer.
      - b) Top coat: M735 Super Spec HP Waterborne Urethane Semi-Gloss.

- 2) Sherwin Williams:
  - a) Primer: S-W Pro Industrial Pro-Cryl Universal Primer B66-1310 Series (5.0 mils wet, 1.9 mils dry).
  - b) Top Coat: S-W Pro Industrial Waterbased Acrolon 100, B65-720 Series (4.0 mils wet, 1.8 mils dry per coat).
5. PS-04 Acrylic.
  - a. Substrate: Interior Ferrous Metal.
  - b. Sheen: Satin.
  - c. Sherwin Williams:
    - 1) Shop Primer: S-W Kem Kromik Universal Metal Primer B50 Series (6.0-8.0 mils wet, 3.3-4.4 mils dry per coat).
    - 2) Primer: S-W Pro Industrial Pro-Cryl Universal Primer B66-1310 Series (5.0 mils wet, 1.9 mils dry).
    - 3) Top Coat: S-W Pro Industrial Eg-Shel Acrylic, B66-660 Series (6.0 mils wet, 2.2 mils dry per coat).
6. PS-05 Pavement Marking Paint.
  - a. Substrate: Concrete.
  - b. Benjamin Moore & Company:
    - 1) Yellow: M58 Safety & Zone Marking Paint Yellow.
    - 2) White: M58 Safety & Zone Marking Paint White.
  - c. Sherwin-Williams:
    - 1) Yellow: PRO-PARK™ Waterborne Traffic Marking Paint, B97YD2467
    - 2) White: PRO-PARK™ Waterborne Traffic Marking Paint, B97WD2434

## 2.4 ACCESSORIES

- A . All accessory materials required by the manufacturer for a warrantable installation of the installed products in a manner that meets the Performance and Design Criteria.

## **PART 3 - EXECUTION**

### 3.1 EXAMINATION

- A . Verify existing conditions meet the manufacturer's requirements before starting work.

### 3.2 PREPARATION

- A . Prepare surfaces to receive work in accordance with manufacturer's instructions.

### 3.3 INSTALLATION

- A . General: Install all materials in accordance with manufacturer's instructions based on conditions present.



### 3.4 PROTECTION

- A . Protect installed work as required by the manufacturer to maintain product performance, design criteria, and warranty.

### 3.5 SCHEDULE

A . Interior Coating Systems:

1. Gypsum Board - Ceilings & Soffits:
  - a. Typical Ceilings/Soffits:
    - 1) System: PS-01 Acrylic-Enamel.
    - 2) Sheen: Flat.
    - 3) Color: As indicated by location.
  - b. Typical Walls:
    - 1) System: PS-01 Acrylic-Enamel.
    - 2) Sheen: Eggshell.
  - c. Toilet and Laundry Rooms:
    - 1) System: PS-02 Epoxy.
    - 2) Sheen: Semi-Gloss.
    - 3) Color: As indicated by location.
2. Concrete
  - a. interior exterior
  - b. acrylic epoxy urethane
3. Typical Steel:
  - a. System: PS-04 Acrylic
4. CMU Walls:
  - a. Inside Ventilation Shafts:
    - 1) System: PS-02 Epoxy.
    - 2) Sheen: Semi-Gloss.
    - 3) Color: As indicated by location.
5. Concrete Floors:
  - a. Garage Traffic Markings as indicated:
    - 1) System: PS-09 Pavement Marking Paint.
    - 2) Color: As indicated by location.
6. Exposed Structure - Painted (Includes ductwork, conduit, cables, hangers, and piping).
  - a. Primer: None or factory prime
  - b. Two finish coats: Acrylic dryfall.
7. Hollow Metal Doors and Frames: Acrylic.
  - a. System: PS-04 Acrylic.

B . Colors:

1. Match existing as close as possible.

END OF SECTION

## **PART 1 - GENERAL**

### 1.1 SECTION INCLUDES

- A . Plastic sheet wall protection.

### 1.2 ADMINISTRATIVE REQUIREMENTS

- A . Review preparation and installation procedures and coordinating and scheduling required with related work.

### 1.3 SUBMITTALS

- A . Product Data: Provide product criteria, characteristics, accessories, jointing and methods, and termination details for curtains, track and accessories.
- B . Manufacturer's Installation Instructions: Indicate special preparation of substrate, installation and attachment methods, and perimeter conditions requiring special attention.
- C . Maintenance Data: For user's operation and maintenance of system including:
  - 1. Methods for maintaining system's hardware, operation, materials and finishes.
  - 2. Precautions about cleaning materials and methods that could be detrimental to components, finishes, and performance.
  - 3. Recommendations on maintenance schedule.

### 1.4 DELIVERY, STORAGE, AND HANDLING

- A . As required by the manufacturer for a warrantable installation of the installed products to meet the Performance and Design Criteria.

## **PART 2 - PRODUCTS**

### 2.1 DESCRIPTION

- A . Surface applied wall protection including plastic sheet wall protection.

### 2.2 PERFORMANCE AND DESIGN CRITERIA

- A . Surface Burning Characteristics: Flame spread index of 25 or less, smoke developed index of 450 or less, when tested in accordance with ASTM E84.

### 2.3 MATERIALS

- A . Sheet Wall Protection.
  - 1. Plastic Sheet:
    - a. Basis of Design Product: \_\_\_\_\_ [match existing] Acrovyn 4000 SSM-20N by Construction Specialties Inc.
      - 1) Substitutions for products by manufacturers other than those listed above: See Section 016001 - Substitution Request Form.
    - b. Material: PVC free plastic.

- c. Height: As indicated in elevations.
- d. Thickness: 0.060 inch.
- e. Mounting: Adhesive.
- f. Seams: Provide manufacturer's color matched PVC trim components.
- g. Color and Finish: \_\_\_\_\_

#### 2.4 ACCESSORIES

- A . All accessory materials required by the manufacturer for a warrantable installation of the installed products in a manner that meets the Performance and Design Criteria.

### **PART 3 - EXECUTION**

#### 3.1 EXAMINATION

- A . Verify existing conditions meet the manufacturer's requirements before starting work, including location of blocking.

#### 3.2 PREPARATION

- A . Prepare surfaces to receive work in accordance with manufacturer's instructions.

#### 3.3 INSTALLATION

- A . General: Install all materials in accordance with manufacturer's instructions based on conditions present.
- B . Install components plumb, level, square, and in proper alignment with drawings.

#### 3.4 ADJUSTING

- A . Repair minor damages to finish in accordance with manufacturer's instructions and as approved by Architect.

#### 3.5 PROTECTION

- A . Protect installed work as required by the manufacturer to maintain product performance, design criteria, and warranty.

END OF SECTION

**PART 1 - GENERAL**

1.1 SECTION INCLUDES

- A . Countertops for cabinetwork.

1.2 RELATED REQUIREMENTS

- A . 102600 - Wall and Corner Protection: For additional requirements of preinstallation meeting.

1.3 ADMINISTRATIVE REQUIREMENTS

- A . Review preparation and installation procedures and coordinating and scheduling required with related work.

1.4 SUBMITTALS

- A . Delegated-Design Submittal: For assemblies indicated to comply with performance requirements and design criteria, including analysis data signed and sealed by the qualified professional engineer responsible for their preparation.
- B . Product Data: Provide product criteria, characteristics, accessories, jointing and seaming methods, and termination conditions.
- C . Shop Drawings: Complete details of materials and installation.
- D . Sample: For each finish product specified, minimum size 6 inches square, representing actual product, color, and patterns.
  - 1. For sealant and accessories submit manufacturer's full range of available colors and patterns for selection.
- E . Test Reports: Chemical resistance testing, showing compliance with specified requirements.
- F . Manufacturer's Installation Instructions: Indicate special preparation of substrate, installation and attachment methods, and perimeter conditions requiring special attention.
- G . Warranty: Submit manufacturer warranty and ensure forms have been completed in Owner's name and registered with manufacturer.
- H . Maintenance Data: For user's operation and maintenance of system including:
  - 1. Methods for maintaining system's materials and finishes.
  - 2. Precautions about cleaning materials and methods that could be detrimental to components, finishes, and performance.
  - 3. Recommendations on maintenance schedule.

1.5 QUALITY ASSURANCE

- A . Manufacturer Qualifications: Company specializing in the manufacture of work specified in this section with minimum 5 years of experience.

1.6 DELIVERY, STORAGE, AND HANDLING

- A . As required by the manufacturer for a warrantable installation of the installed products to meet the Performance and Design Criteria.

**PART 2 - PRODUCTS**

2.1 DESCRIPTION

- A . Casework supported countertops fabricated from plastic laminate.

2.2 PERFORMANCE AND DESIGN CRITERIA

- A . Quality Standard: Premium Grade, in accordance with AWI/AWMAC/WI (AWS) Architectural Woodwork Standards.

2.3 MATERIALS

- A . Plastic Laminate Countertops: High pressure decorative laminate sheet bonded to substrate.
1. Product: to match existing.
    - a. Substitutions: See Section 016000 - Alternates.
  2. Performance Criteria:
    - a. Laminate Sheet, Unless Otherwise Indicated: NEMA LD 3 Grade HGS, 0.048 inch (HGS, 1.2 mm) nominal thickness.
    - b. Surface Burning Characteristics: Flame spread 25, maximum; smoke developed 450, maximum; when tested in accordance with ASTM E84.
    - c. Wear Resistance: In addition to specified grade, comply with NEMA LD 3 High Wear Grade requirements for wear resistance.
  3. Features:
    - a. Back and End Splashes: Same material, same construction, square top; minimum 4 inches high.
    - b. Exposed Edge Treatment:
      - 1) Square, substrate built up to minimum 1-1/4 inch thick; covered with matching laminate.

2.4 ACCESSORIES

- A . All accessory materials required by the manufacturer for a warrantable installation of the installed products in a manner that meets the Performance and Design Criteria.
- B . Particleboard for Supporting Substrate: ANSI A208.1 Grade 2-M-2, 45 pcf (20 kg/cu m) minimum density; minimum 3/4 inch (19 mm) thick; join lengths using metal splines.
1. Made with binder containing no urea formaldehyde.
- C . Adhesives: Chemical resistant waterproof adhesive as recommended by manufacturer of materials being joined.

- D . Joint Sealant: Mildew-resistant silicone sealant, as selected by Architect from manufacturer's full range.

## 2.5 FABRICATION

- A . Fabricate tops and splashes in the largest sections practicable, with top surface of joints flush.
  - 1. Join lengths of tops using best method recommended by manufacturer.
  - 2. Fabricate to overhang fronts and ends of cabinets 1 inch except where top butts against cabinet or wall.
  - 3. Prepare all cutouts accurately to size; replace tops having improperly dimensioned or unnecessary cutouts or fixture holes.
- B . Provide back/end splash wherever counter edge abuts vertical surface unless otherwise indicated.
  - 1. Secure to countertop with concealed fasteners and secure finish surfaces with contact surfaces with a waterproof glue.
  - 2. Height: 4 inches, unless otherwise indicated.
- C . Wall-Mounted Counters: Provide skirts, aprons, brackets, and braces as indicated on drawings, finished to match.

## **PART 3 - EXECUTION**

### 3.1 EXAMINATION

- A . Verify existing conditions meet the manufacturer's requirements before starting work.

### 3.2 PREPARATION

- A . Prepare surfaces to receive work in accordance with manufacturer's instructions.

### 3.3 INSTALLATION

- A . General: Install all materials in accordance with manufacturer's instructions based on conditions present.
- B . Securely attach countertops to cabinets using concealed fasteners. Make flat surfaces level; shim where required.
- C . Seal joint between back/end splashes and vertical surfaces.
  - 1. Where indicated use rubber cove molding.
  - 2. Where applied cove molding is not indicated use specified sealant.
- D . Joints between adjacent pieces of surfacing.
  - 1. Securely join with manufacturer's approved adhesive.
  - 2. Fill joints level with surfacing.
  - 3. Clamp or brace surfacing in position until adhesive sets.
  - 4. Joints shall be flush, tight fitting, level, and neat.

3.4 TOLERANCES

- A . Variation From Horizontal: 1/8 inch in 10 feet, maximum.
- B . Offset From Wall, Countertops: 1/8 inch maximum; 1/16 inch minimum.
- C . Field Joints: 1/8 inch wide, maximum.

3.5 CLEANING

- A . Clean countertop surfaces thoroughly.

3.6 PROTECTION

- A . Protect installed work as required by the manufacturer to maintain product performance, design criteria, and warranty.

END OF SECTION



PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A . Drawings and general provisions of Contract, including Sections 00 70 00 "General Conditions" and 00 80 00 "Supplemental Conditions," apply to work of this section.

1.2 SCOPE OF WORK – GENERAL

- A . This section specifies general requirements for plumbing installations and includes requirements common to more than one section of Division 22. It expands and supplements the requirements specified in sections of Divisions 0 and 1.
- B . Provide materials, labor, transportation, tools, permits, fees, inspections, utilities, and incidentals necessary for the complete installation of plumbing work indicated and described in the Contract Documents.
- C . It is the intent of the Contract Documents to provide an installation complete in every respect. If additional details or special construction is required for work indicated or specified under this section of work or work specified in other sections, provide material and equipment which is usually furnished with such systems to complete the installation, whether mentioned or not.

1.3 SEQUENCE OF WORK

- A . Conduct work in sequence to provide least possible interference to the activities of the Owner, and to permit orderly transfer of activities and equipment to completed areas.
- B . Work shall be substantially complete by the dates listed in Section 01 10 00 "Summary".

1.4 DEFINITIONS

- A . Provide: Furnish and install complete and ready for intended use.
- B . Indicated: Indicated on drawings.
- C . Noted: Noted on Drawings or in Specifications.
- D . Finished Spaces: Spaces other than mechanical and electrical equipment rooms, furred spaces, pipe shafts, unheated spaces immediately below roof, spaces above ceilings, unexcavated spaces, crawlspaces, and tunnels.
- E . Exposed, Interior Installations: Exposed to view indoors. Examples include finished occupied spaces and mechanical equipment rooms.
- F . Exposed, Exterior Installations: Exposed to view outdoors or subject to outdoor ambient temperatures and weather conditions. Examples include rooftop locations.

G . Concealed, Interior Installations: Concealed from view and protected from physical contact by building occupants. Examples include above ceilings and in shafts.

H . Concealed, Exterior Installations: Concealed from view and protected from weather conditions and physical contact by building occupants but subject to outdoor ambient temperatures. Examples include installations within unheated shelters.

#### 1.5 CODES AND STANDARDS

A . Code Compliance: Comply with most current edition adopted by the Authority Having Jurisdiction of following:

1. International Building Code (IBC), Standards and Amendments.
2. International Mechanical Code (IMC), Standards and Amendments.
3. International Fire Code (IFC), Standards and Amendments.
4. Uniform Plumbing Code (UPC), Standards and Amendments.
5. International Fuel Gas Code (IFGC).
6. National Fire Protection Association (NFPA).
7. National Electrical Code (NEC); NFPA 70.
8. Washington State Energy Code, Commercial Provisions.
9. Applicable State and local codes, laws, and ordinances.

#### 1.6 SAFETY OF PEOPLE AND PROPERTY

A . Comply with applicable laws, ordinances, rules, and regulations of any public authority for the safety of persons and property, including requirements of the Washington Department of Safety and Health (DOSH) or the Occupational Safety and Health Act (OSHA) whichever is most stringent, and Sections 00 70 00 "General Conditions" and 00 80 00 "Supplemental Conditions."

#### 1.7 PERMITS AND FEES

A . Obtain and pay for required permits and fees necessary to fully complete work included in the Contract Documents.

#### 1.8 INTENT AND INTERPRETATION

A . Drawings and Specifications supplement each other, and any details contained in one and not the other shall be included as if contained in both. Items not specifically mentioned in the specifications or noted on the drawings, but which are obviously necessary to make a complete working installation shall be included.

- B . Drawings are partly diagrammatic and do not necessarily show exact location of new piping and existing utilities, unless specifically dimensioned.
- C . Riser and other diagrams are schematic only and do not necessarily show the physical arrangement of equipment. They shall not be used for obtaining quantities or lineal runs of piping.
- D . Grilles, fixtures, or other pieces of equipment shall be centered on windows, wall spaces, or other items, unless specifically dimensioned otherwise.
- E . Location of piping shall be checked to determine that it clears openings and structural members; that it may be properly concealed; and that it clears cabinets, lights and equipment having fixed locations.
- F . Mechanical drawings shall serve as working drawings for Division 22 work. Refer to Architectural, Structural and Electrical drawings for additional detail affecting the installation of work. Architectural drawings shall take precedence over the Mechanical drawings if any dimensional discrepancies exist.
- G . Approximate location of each item is indicated on the drawings. These drawings are not intended to give complete and exact details regarding location. Exact locations are to be determined by actual measurements at the building. Not all pipe offsets are indicated on the drawings.

#### 1.9 SUBMITTAL OF EQUIPMENT FOR APPROVAL

- A . Refer to Division 01 requirements for submittal definitions, requirements, and procedures. Additional requirements are listed below.
- B . Shop drawings, catalog information, and material schedules shall be submitted for approval on materials and equipment prior to ordering.
- C . Submittals not meeting the following requirements will be returned for revision:
  - 1. Provide a cover page for each item or group of items (schedule group, single fixture plus trim group, etc.).
  - 2. Each cover page must be clearly identified with the project name, specification number and paragraph number.
  - 3. Submittal package must be accompanied by an itemized index listing specification section, paragraph number, item, and manufacturer; larger projects will be index tabbed by specification section with index for each section.

#### 1.10 GUARANTEE

- A . Guarantee satisfactory operation of material and equipment installed under Division 22. Repair or replace any defective materials, equipment, or workmanship which may show itself within one year from date of Substantial Completion.

## PART 2 - PRODUCTS

### 2.1 GENERAL MATERIALS AND EQUIPMENT REQUIREMENTS

- A . Where more than one manufacturer is listed, provide products of only one manufacturer for each type of product.
- B . Materials used under this Contract, unless specifically noted otherwise, shall be new and of the latest and most current model line produced by the manufacturer. Outdated “new” equipment is not acceptable.
- C . Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, Article 100, by a testing agency acceptable to authorities having jurisdiction, and marked for intended use.

### 2.2 EQUIPMENT AND MATERIAL SUBSTITUTIONS

- A . Throughout these Contract Documents, various materials, equipment, apparatus, etc., are specified by manufacturer, brand name, type, or catalog number. Such designation is to establish standards of desired quality and construction and shall be the basis of the bid.
- B . Where more than one manufacturer is listed, and only one manufacturer’s catalog number is indicated, that standard of quality and construction shall be maintained by materials supplied by other manufacturer(s).
- C . Substitutions of equipment or materials shall be made only with written prior approval. Prior approval requests must be received at least ten (10) days prior to bid date unless otherwise instructed. Refer to Section 00 26 00 “Procurement Substitution Procedures” for procedures in requesting substitutions. The Owner or Owner’s representative shall review all substitution requests for final approval.
- D . Acceptance of substitution request signifies manufacturer recognition only. No attempt has been made to check each item as to special features, capacities, or physical dimensions required by this project. Verify requirements before submitting for approval. Acceptance of exact features, sizes, capacities, etc., all of which must meet or exceed design requirements will be determined when submitted during the construction phase.
- E . Substitution request must include manufacturer, specific model number, special features, physical dimensions, and capacities of proposed equipment. Verify requirements before submitting for approval.
- F . The Contractor shall bear full responsibility for substituted equipment and materials, including, but not limited to:
  - 1. Costs.
  - 2. Available space requirements
  - 3. Effect on other trades

4. Changes in electrical requirements
5. Changes in structural requirements.

### PART 3 - EXECUTION

#### 3.1 COMMISSIONING

- A . At a minimum, comply with requirements of the Washington State Energy Code.
- B . Refer to Division 1 Section "Commissioning" for additional requirements.

#### 3.2 COORDINATION

- A . Refer to Division 1 Section "Project Management and Coordination".
- B . Coordinate available space for equipment and systems with other trades. Refer to Architectural, Structural and Electrical Drawings for additional building details necessary for coordination.
- C . Cutting, patching, wiring, finishing or any other work required for relocation of work installed due to interferences between work of the various trades will be at no additional cost to the Owner.

#### 3.3 MANUFACTURER'S INSTRUCTIONS

- A . Furnish proper equipment and/or materials required for installation as intended by the manufacturer, for all work described under Division 22. If needed for proper installation or operation, request advice and supervisory assistance from the representative of the specific manufacturer. Manufacturer's published instructions shall be followed for preparing, assembling, installing, erecting, and cleaning manufactured materials or equipment, unless otherwise indicated. Promptly notify the Architect in writing of any conflict between the requirements of the Contract Documents and the manufacturer's directions and obtain the Architect's instructions before proceeding with the work.

#### 3.4 EXAMINATION OF SITE

- A . Visit site of proposed work and become familiar with conditions affecting work. Verify measurements at the building before beginning work.

#### 3.5 EXISTING UTILITIES AND PIPING

- A . Locations of existing concealed lines and connection points have been indicated as closely as possible from available information. Assume that such connection points are within a 10-foot radius of indicated locations. Where connection points are not within this radius, contact the Architect for a decision before proceeding.

### 3.6 LAYING OUT WORK

- A . Locations of equipment and devices, as shown on the drawings, are approximate unless dimensioned. Exact locations of such items shall be determined from the Construction Drawings. Verify physical dimensions of each item of mechanical equipment, piping system, to fit available space and promptly notify the Architect prior to roughing-in if conflicts appear. Coordinate equipment to available space and access routes through construction. Offsets or transitions in piping systems required for proper system operation and/or installation, whether indicated on drawings or not, shall be provided at no additional cost to Owner.

### 3.7 DELIVERY, STORAGE, AND HANDLING

- A . Deliver products to project properly identified with names, model numbers, types, grades, compliance labels, and similar information needed for distinct identifications; adequately packaged and protected to prevent damage during shipment, storage, and handling.
- B . Store equipment and materials at the site unless offsite storage is authorized in writing. Protect stored equipment and materials from damage.
- C . Coordinate deliveries of mechanical materials and equipment to minimize construction site congestion. Limit each shipment of materials and equipment to the items and quantities needed for the smooth and efficient flow of installations.

### 3.8 ACCESSIBILITY

- A . Install equipment and materials to provide required access for servicing and maintenance. Coordinate location of concealed equipment and devices requiring access with location of access panels and doors. Allow ample space for removal of parts that require replacement or servicing.

### 3.9 TEMPORARY USE OF NEW EQUIPMENT

- A . New equipment shall not be used for temporary heating, cooling or ventilation unless authorized in writing by the Owner.

### 3.10 CUTTING AND PATCHING

- A . Comply with Division 01 Section, "Execution" for general requirements for cutting and patching.
- B . Cutting shall be performed with masonry saws, core drills or similar equipment to provide neat and uniform openings.
- C . Patching shall match adjacent surfaces in materials and finish. Do not endanger or damage installed work through procedures and processes of cutting and patching.
- D . Arrange for repairs required to restore other work, because of damage resulting from mechanical installations. Upon receipt of written authorization from Architect, Contractor will

be authorized for cutting and patching work that is necessitated by ill-timed, defective, or non-conforming installations.

- E . No additional compensation will be authorized for cutting and patching work that is necessitated by ill-timed, defective, or non-conforming installations.
- F . Perform cutting, fitting, and patching of mechanical equipment and materials required to:
  - 1. Uncover work to provide for installation of ill-timed work.
  - 2. Remove and replace defective work.
  - 3. Remove and replace work not conforming to requirements of the Contract Documents.
  - 4. Remove samples of installed work as specified for testing.
  - 5. Install equipment and materials in existing structures.
  - 6. Upon written instructions from the Architect, uncover and restore work to provide for observation of concealed work.
- G . Cut, remove, and legally dispose of selected mechanical equipment, components, and materials as indicated, including, but not limited to removal of mechanical piping, heating units, and other mechanical items made obsolete by new work.
- H . Protect structure, furnishings, finishes, and adjacent materials not indicated or scheduled to be removed.
- I . Provide and maintain temporary partitions or dust barriers adequate to prevent the spread of dust and dirt to adjacent areas.

### 3.11 EXCAVATING AND BACKFILLING

- A . Provide trench and pit excavation and backfilling required for mechanical work, inside and outside the building, including repairing of finished surfaces, required shoring, bracing, pumping, and protection for safety of persons and property. Remove excess earth resulting from their work from the site. Comply with Local or State safety codes. Check the elevations of the utilities entering and leaving the building. If such elevations require excavations lower than the footing levels, notify the Architect of such conditions before excavations are commenced. Make the excavations at the minimum required depths to not undercut the footings.

### 3.12 FILLING, BACKFILLING, AND COMPACTION

- A . General: Remove debris and decayable matter from areas to be filled before proceeding. Use only materials approved by the Architect for fills. Obtain Architect's approval before filling against concrete or masonry walls. Make fills as soon as feasible to insure maximum settlement.

- B . Compaction of Fills: Compact by ASTM D1557, Method "A," 95% density under paved areas and building areas to 10 feet beyond building perimeter, 90% elsewhere. Place fills in lifts which, when compacted, shall not exceed 8-inches in depth and compact with multiple-wheeled pneumatic-tired rollers or other approved methods. Fills made from cuts shall be made and compacted in one operation so that the material is not left exposed to rain while in an uncompacted state.
  
- C . Fills under Interior Slabs: 4-inches of  $\frac{3}{4}$ -inch to 1½ inches washed gravel, evenly graded. Cover with reinforced Kraft paper. Lap joints 4-inches, turn up 4-inches onto vertical surfaces. Repair any punctures in membrane before pouring concrete.

END OF SECTION 22 05 00



PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A . Drawings and general provisions of Contract, including Sections 00 70 00 "General Conditions" and 00 80 00 "Supplemental Conditions", apply to work of this section.

1.2 SCOPE OF WORK – GENERAL

- A . This section specifies procedural requirements for plumbing installations project closeout, including but not limited to:

1. Project Record Document submittal.
2. Operation and Maintenance Manual submittal.
3. Operation and Maintenance Instruction and Training.
4. Plumbing Equipment and Systems Startup.
5. Final Cleaning.
6. Owner Training Session Agenda.

- B . Related Sections include the following:

1. Section 01 10 00 "Submittal Procedures".
2. Section 01 77 00 "Closeout Procedures".

1.3 PROJECT RECORD DOCUMENTS

- A . Record differences between plumbing work as installed and as shown in Contract Drawings on a set of prints of plumbing drawings furnished by Architect. Return these prints to Architect at completion of project. Notations made on drawings shall be neat and legible. Comply with Division 01 requirements.
- B . Mark drawings to indicate revisions to plumbing piping, size, and location both exterior and interior; including locations of coils, dampers, and other control devices, filters, motors, and similar items requiring periodic maintenance; actual equipment locations; concealed equipment and control devices; mains and branches of piping systems, with valves and control devices located and numbered.
- C . Revise equipment and fixture schedules on the Drawings to indicate actual installed manufacturer and model numbers.
- D . Mark specifications to indicate change orders; actual equipment and materials used.

1.4 OPERATION AND MAINTENANCE MANUALS

- A . Prepare and submit Operation and Maintenance (O&M) Manuals for plumbing systems provided. Comply with Section 01 78 00 "Closeout Submittal" requirements.
- B . Provide master index at beginning of Manual showing sections and items included.
- C . Cover section: List name, address, and phone number of Project Architect, General Contractor, Mechanical Engineer, Plumbing Contractor, and all Plumbing Subcontractors. Provide a list of equipment suppliers with address and phone number.
- D . Provide a separate section for each Section of the Specifications. Provide index for each section listing equipment included. Include all items specified.
- E . Include descriptive literature (manufacturer's catalog data) of each manufactured item. Literature shall show capacities and size of equipment used and be marked indicating each specific item with applicable data underlined. Data sheets shall be originals or clean copies of originals.
- F . One draft copy of the manual shall be submitted for review, comment, and approval, as applicable, at least 15 days prior to substantial completion or training, whichever is first. After approval, submit three (3) copies of manual to Architect for approval unless otherwise directed by Division 01 requirements. Information to be included in manual:
  - 1. Description of function, normal operating characteristics and limitations, performance curves, engineering data and tests, and complete nomenclature and commercial numbers of all replaceable parts.
  - 2. Manufacturer's printed operating procedures to include startup, break-in, routine, and normal operating instructions; regulation, control, stopping shutdown, and emergency instructions; and summer and winter operating instructions.
  - 3. Maintenance procedures for routine preventative maintenance and troubleshooting; disassembly, repair, and reassembly; aligning and adjusting instructions.
  - 4. Servicing instructions and lubrication charts and schedules.
  - 5. Schematic control diagrams for each automatic control system. Mark the correct operating setting for each control instrument on these diagrams.
  - 6. Valve schedule indicating the valve symbol (tag number), valve location by room number and description, valve purpose and system served, and valve size. Provide one (1) corresponding set of full-size plumbing prints showing these valve locations for cross-reference. A second complete set of valve schedules (8½-inches x 11-inches) encased in transparent plastic laminate and fitted in an aluminum holding frame shall be furnished to the Owner.
  - 7. Testing, Adjusting, and Balancing Report.
  - 8. Test records and certifications.

- 9. Equipment startup reports.
  - 10. Warranty information and letters of guarantee.
  - 11. Instruction period checklist for each equipment item.
- G. Complete O&M Manual shall be available for use by Owner's representatives during instruction and training sessions.

#### 1.5 OPERATION AND MAINTENANCE INSTRUCTION AND TRAINING

- A. Instruct Owner's Representative(s) in the Operation and Maintenance procedures described in Operation and Maintenance Manual. Comply with Division 01 Section requirements.
- B. Enlist services of qualified personnel, including each sub-trade and factory trained specialists for each major piece of equipment, to attend training sessions and provide operation and maintenance instructions.
- C. Submit training agenda, schedule, and list of representatives for review 30 days prior to training sessions. Confirm attendance by written notification to all participants.
- D. Prepare checklist of all equipment and systems requiring instruction and maintenance for verification and agreement by the Owner's Representative of satisfactory startup and instruction. Checklist shall include a statement of completion by the Contractor, date and topic(s) covered in each training session, and an attendance list of all participants at each training session. Submit a copy of checklist for review 30 days prior to training sessions. Include copy of the completed checklist in Operation and Maintenance Manual.
- E. Refer to individual Division 22 Sections for additional instruction/training requirements.
- F. All plumbing systems shall be properly functioning prior to instruction period.

#### PART 2 - PRODUCT (NOT APPLICABLE)

#### PART 3 - EXECUTION

##### 3.1 PLUMBING EQUIPMENT AND SYSTEMS STARTUP

- A. Provide the services of a factory-authorized service representative to test and inspect unit installation, provide startup service, and demonstrate and train Owner's maintenance personnel.
- B. Include certification of factory-authorized representative status as part of equipment submittal from manufacturer. Include copies of any installation and startup instructions, manufacturer's checklists and other forms used in startup as part of the equipment submittal.
- C. Include written startup reports with test data for equipment in Operation and Maintenance Manual.

- D . All construction debris, including electrical wiring debris shall be removed from units prior to equipment startup. Areas surrounding and served by equipment being started must be free of construction debris, sheetrock dust, and any materials that may adversely affect the equipment.

### 3.2 FINAL CLEANING

- A . Refer to Division 01 general requirements for final cleaning.
- B . At time of final cleanup, clean all fixtures and equipment and leave in condition for use intended. Vacuum cabinet interiors of control panels, air handling units, etc. to remove all construction debris including electrical wiring debris.

END OF SECTION 22 05 05

## PART 1 - GENERAL

### 1.1 RELATED DOCUMENTS

- A . Drawings and general provisions of Contract, including Sections 00 70 00 "General Conditions" and 00 80 00 "Supplemental Conditions", apply to work of this section.

### 1.2 SUMMARY

- A . Include all labor, equipment, and materials necessary to complete demolition of existing plumbing systems as shown on the drawings and described herein.
- B . Mechanical Services to areas occupied by Owner shall be maintained.

### 1.3 RELATED SECTIONS

- A . Section 01 10 00 "Summary" for phasing requirements.
- B . Section 02 03 41 "Selective Demolition" for general demolition requirements and procedures.

### 1.4 DEFINITIONS

- A . Remove: Detach items from existing construction and legally dispose of them off-site, unless indicated to be removed and salvaged or removed and reinstalled.
- B . Remove and Salvage: Detach items from existing construction and deliver them to Owner.
- C . Remove and Reinstall: Detach items from existing construction, prepare them for reuse, and reinstall them where indicated.
- D . Existing to Remain: Existing items of construction that are not to be removed and that are not otherwise indicated to be removed, removed, and salvaged, or removed and reinstalled.

## PART 2 - SALVAGE

### 2.1 MATERIALS OWNERSHIP

- A . The Owner shall have first salvage rights to all removed fixtures and equipment. Coordinate selection with the Owner's Representative.
- B . Except for items or materials to be reused, salvaged, reinstalled, or otherwise indicated to remain owner's property, demolished materials shall become Contractor's property and removed from Project site.
- C . Transport and legally dispose of offsite, all materials resulting from demolition not being salvaged.

PART 3 - EXECUTION

3.1 DEMOLITION

- A . Condition and Premises: The Owner assumes no responsibility for condition of areas to be demolished. General conditions existing at time of inspection for bidding purposes will be maintained by Owner.
- B . Partial Removal: Items of salvageable value to Contractor indicated to be removed, may be removed from structure as work progresses. Salvaged items must be transported from site as they are removed. Storage or sale of removed items on site will not be permitted.
- C . Protections: Ensure safe passage of persons around area of demolition. Conduct operations to prevent injury to adjacent buildings, structures, other facilities, and persons.
- D . Damages: Promptly repair damages caused to adjacent facilities by demolition operations at no cost to Owner.
- E . Existing Utility Services: Maintain existing utilities indicated to remain, keep in service, and protect against damage during demolition operations.
- F . Cut and/or patch and repair all existing floor or wall penetrations not being reused. Comply with Division 01 Section requirements.
- G . Not all piping or equipment items are shown on drawings. Other demolition may be required.
- H . Any existing piping that is to be reused or left in existing position shall have the opening of such covered and protected during demolition and construction until final connections can be made.
- I . Disconnect, demolish, and remove plumbing systems, equipment, and components indicated to be removed.
  - 1. Piping to Be Removed: Remove portion of piping indicated to be removed and cap or plug remaining piping with same or compatible piping material.
  - 2. Piping to Be Abandoned in Place: Drain piping and cap or plug piping with same or compatible piping material.
  - 3. Equipment to Be Removed: Disconnect and cap services and remove equipment. Equipment removal shall include removal of all connecting piping, etc., either to a point below floor behind wall surface, etc.
  - 4. Equipment to Be Removed and Reinstalled: Disconnect and cap services and remove, clean, and store equipment; when appropriate, reinstall, reconnect, and make equipment operational.
  - 5. Equipment to Be Removed and Salvaged: Disconnect and cap services and remove equipment and deliver to Owner.

- J . If pipe, insulation, or equipment to remain is damaged in appearance during construction, or is rendered unserviceable, remove damaged or unserviceable portions, and replace with new products of equal capacity and quality.

END OF SECTION 22 05 07

## PART 1 - GENERAL

### 1.1 SECTION INCLUDES

- A . Nameplates.
- B . Tags.
- C . Pipe markers.

### 1.2 REFERENCE STANDARDS

- A . ASME A13.1 –Scheme for the Identification of Piping Systems.

### 1.3 SUBMITTALS

- A . Chart and Schedule: Submit valve chart and schedule, including valve tag number, location, function, and valve manufacturer's name and model number.
- B . Product Data: Provide manufacturer's catalog literature for each product required.
- C . Project Record Documents: Record actual locations of tagged valves.

## PART 2 - PRODUCTS

### 2.1 IDENTIFICATION APPLICATIONS

- A . Piping: Pipe markers.
- B . Pumps: Nameplates.
- C . Tanks: Nameplates.
- D . Valves: Tags.

### 2.2 NAMEPLATES

- A . Manufacturers:
  - 1. Brimar Industries, Inc.
  - 2. Kolbi Pipe Marker Co.
  - 3. Seton Identification Products.
- B . Description: Laminated three-layer plastic with engraved letters.
  - 1. Letter Color: White.



2. Letter Height: ¼-inch.
3. Background Color: Black.
4. Plastic: Comply with ASTM D709.

## 2.3 TAGS

### A . Manufacturers:

1. Brady Corporation.
2. Brimar Industries, Inc.
3. Craftmark Pipe Markers.
4. Kolbi Pipe Marker Co.
5. Seton Identification Products.

B . Metal Tags: Brass with stamped letters; tag size minimum 1½-inch diameter with smooth edges.

C . Valve Tag Chart: Typewritten letter size list in anodized aluminum frame.

## 2.4 PIPE MARKERS

### A . Manufacturers:

1. Brady Corporation.
2. Brimar Industries, Inc.
3. Craftmark Pipe Markers.
4. Kolbi Pipe Marker Co.
5. Seton Identification Products.

B . Comply with ASME A13.1.

C . Plastic Pipe Markers: Factory fabricated, flexible, semi- rigid plastic, preformed to fit around pipe or pipe covering; minimum information indicating flow direction arrow and identification of fluid being conveyed.

D . Underground Plastic Pipe Markers: Bright colored continuously printed plastic ribbon tape, minimum 6 inches wide by 4 mil thick, manufactured for direct burial service.

PART 3 - EXECUTION

3.1 PREPARATION

- A . Degrease and clean surfaces to receive adhesive for identification materials.

3.2 INSTALLATION

- A . Install plastic nameplates with corrosive-resistant mechanical fasteners, or adhesive. Apply with sufficient adhesive to ensure permanent adhesion and seal with clear lacquer.
- B . Install tags with corrosion resistant chain.
- C . Install plastic pipe markers in accordance with manufacturer's instructions.
- D . Install underground plastic pipe markers 6 to 8 inches below finished grade, directly above buried pipe.
- E . Locate identification not to exceed 20 feet on straight runs including risers and drops, adjacent to each valve and Tee, at each side of penetration of structure or enclosure, and at each obstruction.

END OF SECTION 22 05 53

PART 1 - GENERAL

1.1 SECTION INCLUDES

- A . Piping insulation.
- B . Fitting Covers.
- C . Protective shielding guards.

1.2 REFERENCE STANDARDS

- A . ADA Standards – Americans with Disabilities Act (ADA) Standards for Accessible Design.
- B . ASTM C177 – Standard Test Method for Steady-State Heat Flux Measurements and Thermal Transmission Properties by Means of the Guarded-Hot-Plate Apparatus.
- C . ASTM C547 – Standard Specification for Mineral Fiber Pipe Insulation.
- D . ASTM C795 – Standard Specification for Thermal Insulation for Use in Contact with Austenitic Stainless Steel.
- E . ASTM C1822 – Standard Specification for Insulating Covers on Accessible Lavatory Piping.
- F . ASTM E84 – Standard Test Method for Surface Burning Characteristics of Building Materials.
- G . ASTM E96/E96M – Standard Test Methods for Water Vapor Transmission of Materials.
- H . ASTM G21 – Standard Practice for Determining Resistance of Synthetic Polymeric Materials to Fungi.
- I . UL 723 – Standard for Test for Surface Burning Characteristics of Building Materials.

1.3 SUBMITTALS

- A . See Section 22 05 00 “Common Work Results for Plumbing” for submittal procedures.
- B . Product Data: Provide product description, thermal characteristics, list of materials and thickness for each service, and locations.
- C . Manufacturer’s Instructions: Indicate installation procedures that ensure acceptable workmanship and installation standards will be achieved.

1.4 QUALITY ASSURANCE

1.5 DELIVERY, STORAGE, AND HANDLING

- A . Accept materials on site, labeled with manufacturer's identification, product density, and thickness.
- B . Protect insulation from weather and construction traffic, dirt, water, chemical, and mechanical damage, by storing in original wrapping.

1.6 FIELD CONDITIONS

- A . Maintain ambient conditions required by manufacturers of each product.
- B . Maintain temperature before, during, and after installation for minimum of 24 hours.

PART 2 - PRODUCTS

2.1 REGULATORY REQUIREMENTS

- A . Surface Burning Characteristics: Flame spread index/Smoke developed index of 25/50, maximum, when tested in accordance with ASTM E84 or UL 723.

2.2 GLASS FIBER

- A . Manufacturers:
  - 1. CertainTeed Corporation.
  - 2. Johns Manville Corporation.
  - 3. Knauf Insulation.
  - 4. Owens Corning Corporation.
- B . Insulation: ASTM C547 and ASTM C795; rigid molded, noncombustible.
  - 1. K Value: ASTM C177, 0.24 at 75°F.
  - 2. Maximum Service Temperature: 850°F.
  - 3. Maximum Moisture Absorption: 0.2% by volume.
- C . Vapor Barrier Jacket: White Kraft paper with glass fiber yarn, bonded to aluminized film; moisture vapor transmission when tested in accordance with ASTM E96/E96M of 0.02 perm-inches.
- D . Vapor Barrier Lap Adhesive: Compatible with insulation.

## 2.3 FITTING COVERS

### A . Manufacturers:

1. Johns Manville Corporation "Zeston"
2. P.I.C. Plastics, Inc.
3. Proto Corporation
4. Speedline Corporation

### B . Jacket: One-piece molded type fitting covers, off-white color.

1. PVC Plastic.
  - a. Minimum Service Temperature: 0°F.
  - b. Maximum Service Temperature: 150°F.
  - c. Moisture Vapor Permeability: 0.002 perm inch, when tested in accordance with ASTM E96/E96M.
  - d. Thickness: 20 mils.
2. Connections: Brush on welding adhesive and pressure-sensitive color matching vinyl tape.

## 2.4 PROTECTIVE SHIELDING GUARDS

### A . Protective Shielding Pipe Covers

1. Manufacturers:
  - a. Buckaroos, Inc.
  - b. McGuire Manufacturing.
  - c. MVG Molded Products.
  - d. Oatey Company.
  - e. Plumbrex Specialty Products
  - f. Truebro, IPS Corporation.

B . Description: Manufactured plastic wraps for covering plumbing fixture hot- and cold-water supplies and trap and drain piping. Comply with ADA Standards.

C . Comply with ASTM C1822 for covers on accessible lavatories.

D . Microbial and Fungal Resistance for Interior and Exterior: Comply with ASTM G21.

**PART 3 - EXECUTION**

**3.1 EXAMINATION**

- A . Verify that piping has been tested before applying insulation materials.
- B . Verify that surfaces are clean and dry, with foreign material removed.

**3.2 INSTALLATION**

- A . Install in accordance with manufacturer's instructions.
- B . Install in accordance with North American Insulation Manufacturers Association (NAIMA) National Insulation Standards.
- C . Exposed Piping: Locate insulation and cover seams in least visible locations.
- D . Insulated pipes conveying fluids below ambient temperature: Insulate entire system including fittings, valves, unions, flanges, strainers, flexible connections, and expansion joints.
- E . Glass fiber insulated pipes conveying fluids below ambient temperature:
  - 1. Provide vapor barrier jackets, factory-applied or field-applied. Secure with self-sealing longitudinal laps and butt strips with pressure-sensitive adhesive. Secure with outward clinch expanding staples and vapor barrier mastic.
  - 2. Insulate fittings, joints, and valves with molded insulation of like material and thickness as adjacent pipe. Finish with glass cloth and vapor barrier adhesive or PVC fitting covers.
- F . Inserts and Shields:
  - 1. Application: Piping 1½-inches diameter or larger.
  - 2. Shields: Galvanized steel between pipe hangers or pipe hanger rolls and inserts.

**3.3 PIPING INSULATION SCHEDULE**

DESIGN OPERATING TEMP. RANGE	INSULATION CONDUCTIVITY		NOMINAL PIPE DIAMETER (INCHES)				
	CONDUCTIVITY RANGE (BTU-INCHES/ (H-FT <sup>2</sup> - °F)	MEAN RATING TEMP (°F)	<1	1 TO <1.5	1.5 TO <4	4 TO <8	8 TO >8
<b>ALL DOMESTIC WATER AND SERVICE HOT WATER SYSTEMS</b>							
105-140 <sup>1</sup>	0.21-0.28	100	1.0	1.0	1.5	1.5	1.5
40-60 <sup>2</sup>	0.22-0.28	75	0.5	0.5	1.0	1.0	1.0

<sup>1</sup> Hot water and hot water circulation

<sup>2</sup> Cold water and rainwater

END OF SECTION 22 07 19

PART 1 - GENERAL

1.1 SECTION INCLUDES

- A . Sanitary waste piping, buried within 5 feet of building.
- B . Sanitary waste piping, above grade.
- C . Domestic water piping, above grade.
- D . Natural gas piping, above grade.
- E . Pipe flanges, unions, and couplings.
- F . Pipe hangers and supports.
- G . Ball valves.
- H . Swing check valves.
- I . Balancing valves.

1.2 REFERENCE STANDARDS

- A . ASME B16.3 – Malleable Iron Threaded Fittings: Classes 150 and 300.
- B . ASME B16.18 – Cast Copper Alloy Solder Joint Pressure Fittings.
- C . ASME B16.22 – Wrought Copper and Copper Alloy Solder-Joint Pressure Fittings.
- D . ASME B31.1 – Power Piping.
- E . ASTM A53/A53M – Standard Specification for Pipe, Steel, Black and Hot-Dipped, Zinc-Coated, Welded and Seamless.
- F . ASTM A234/A234M – Standard Specification for Piping Fittings of Wrought Carbon Steel and Alloy Steel for Moderate and High Temperature Service.
- G . ASTM B32 – Standard Specification for Solder Metal.
- H . ASTM B88 – Standard Specification for Seamless Copper Water Tube.
- I . ASTM B88M – Standard Specification for Seamless Copper Water Tube (Metric).
- J . ASTM B813 – Standard Specification for Liquid and Paste Fluxes for Soldering of Copper and Copper Alloy Tube.

- K . ASTM B828 – Standard Practice for Making Capillary Joints by Soldering of Copper and Copper Alloy Tube and Fittings.
- L . ASTM C564 – Standard Specification for Rubber Gaskets for Cast Iron Soil Pipe and Fittings.
- M . ASTM D2235 – Standard Specification for Solvent Cement for Acrylonitrile-Butadiene-Styrene (ABS) Plastic Pipe and Fittings.
- N . AWWA C651 – Disinfecting Water Mains.
- O . CISPI 301 – Standard Specification for Hubless Cast Iron Soil Pipe and Fittings for Sanitary and Storm Drain, Waste and Vent Piping Applications.
- P . CISPI 310 – Specification for Coupling for Use in Connection with Hubless Cast Iron Soil Pipe and Fittings for Sanitary and Storm Drain, Waste, and Vent Piping Applications.
- Q . MSS SP-58 – Pipe Hangers and Supports – Materials, Design, Manufacture, Selection, Application, and Installation.
- R . MSS SP-110 – Ball Valves Threaded, Socket-Welding, Solder Joint, Grooved and Flared Ends.
- S . NSF 61 – Drinking Water System Components – Health Effects.
- T . NSF 372 – Drinking Water System Components – Lead Content.

### 1.3 SUBMITTALS

- A . See Section 22 05 00 “Common Work Results for Plumbing” for submittal procedures.
- B . Product Data: Provide data on pipe materials, pipe fittings, valves, and accessories. Provide manufacturer’s catalog information. Indicate valve data and ratings.

## PART 2 - PRODUCTS

### 2.1 GENERAL REQUIREMENTS

- A . Potable Water Supply Systems: Provide piping, pipe fittings, and solder and flux (if used), that comply with NSF 61 and NSF 372 for maximum lead content; label pipe and fittings.
- B . Sanitary Waste Piping Systems: Soil pipe, waste and vent pipe.

### 2.2 SANITARY WASTE PIPING, BURIED WITHIN 5 FEET OF BUILDING

- A . Cast Iron Pipe: CISPI 301, hubless.
  - 1. Fittings: Cast iron.



2. Joints: CISPI 310, neoprene gasket and stainless steel clamp and shield assemblies.

B . ABS Pipe: ASTM F628.

1. Fittings: ABS.
2. Joints: Solvent welded with ASTM D2235 cement.

2.3 SANITARY WASTE PIPING, ABOVE GRADE

A . Cast Iron Pipe: CISPI 301, hubless, service weight.

1. Fittings: Cast iron.
2. Joints: CISPI 310, neoprene gaskets and stainless steel clamp-and-shield assemblies.

B . ABS Pipe: ASTM F628.

1. Fittings: ABS.
2. Joints: Solvent welded with ASTM D2235 cement.

2.4 DOMESTIC WATER PIPING, ABOVE GRADE

A . Copper Tube: ASTM B88 (ASTM B88M), Type L (B), Drawn (H).

1. Fittings: ASME B16.18, cast copper alloy or ASME B16.22, wrought copper and bronze.
2. Joints: ASTM B32, alloy Sn95 solder.
3. Mechanical Press Sealed Fittings: Double-pressed type; NSF 61 and NSF 372 approved or certified, utilizing EPDM, nontoxic, synthetic rubber sealing elements.

2.5 NATURAL GAS PIPING, ABOVE GRADE

A . Steel Pipe: ASTM A53/A53M Schedule 40 black.

1. Fittings: ASME B16.3, malleable iron, or ASTM A234/A234M, wrought steel welding type.
2. Joints: Threaded or welded to ASME B31.1.

2.6 PIPE FLANGES, UNIONS, AND COUPLINGS

A . Unions for Pipe Sizes 3 inches and Under:

1. Ferrous Pipe: Class 150 malleable iron threaded unions.
2. Copper Tube and Pipe: Class 150 bronze unions with soldered joints.

B . Flanges for Pipe Sizes Over 1 inch:

1. Ferrous Pipe: Class 150 malleable iron threaded or forged steel slip-on flanges; preformed neoprene gaskets.
2. Copper Tube and Pipe: Class 150 slip-on bronze flanges; preformed neoprene gaskets.

C . No-Hub Couplings:

1. Gasket Material: Neoprene complying with ASTM C564.
2. Band Material: Stainless steel.
3. Eyelet Material: Stainless steel.
4. Manufacturers:
  - a. ANACO-Husky
  - b. Fernco
  - c. Ideal-Tridon Group
  - d. Mission Rubber Co.

2.7 PIPE HANGERS AND SUPPORTS

- A . Provide hangers and supports that comply with MSS SP-58.
1. If type of hanger or support for a particular situation is not indicated, select appropriate type using MSS SP-58 recommendations.
  2. Overhead Supports: Individual steel rod hangers attached to structure or to trapeze hangers.
  3. Trapeze Hangers: Welded steel channel frames attached to structure.
  4. Vertical Pipe Support: Steel riser clamp.

2.8 BALL VALVES

- A . Manufacturers:
1. Apollo Valves.
  2. Grinnell Products.
  3. Nibco, Inc.
- B . Construction, 4 inch and Smaller: MSS SP-110, Class 150, 400 psi CWP, bronze or ductile iron body, 304 stainless steel or chrome plated brass ball, regular port, Teflon seats and stuffing box ring, blowout-proof stem, lever handle with balancing stops, threaded or grooved ends with union.

2.9 SWING CHECK VALVES

A . Manufacturers:

1. Anvil International.
2. Apollo Valves.
3. Grinnell Products.
4. NIBCO, Inc.
5. Victaulic Company.
6. Watts.

B . Up To and Including 2 Inches:

1. Bronze body, bronze trim, bronze rotating swing disc, with composition disc, solder or threaded ends.

2.10 BALANCING VALVES

A . Manufacturers:

1. ITT Bell & Gossett.
2. Griswold Controls.
3. Taco, Inc.

B . Calibrated Balancing Valves, NPS 2 and Smaller:

1. Bronze body, ball type, 125-psig working pressure, 230°F maximum operating temperature, and having threaded ends. Valves shall have calibrated orifice or venturi, connections for portable differential pressure meter with integral seals, and be equipped with a memory stop to retain set position.

PART 3 - EXECUTION

3.1 INSTALLATION

- A . Install in accordance with manufacturer's instructions.
- B . Provide non-conducting dielectric connections wherever jointing dissimilar metals.
- C . Route piping in orderly manner and maintain gradient. Route parallel and perpendicular to walls.
- D . Install piping to maintain headroom, conserve space, and not interfere with use of space.

- E . Provide clearance in hangers and from structure and other equipment for installation of insulation and access to valves and fittings.
- F . Excavate in accordance with Section 22 05 00.
- G . Backfill in accordance with Section 22 05 00.
- H . Copper Pipe and Tube: Make soldered joints in accordance with ASTM B828, using specified solder, and flux meeting ASTM B813; in potable water systems use flux also complying with NSF 61 and NSF 372.

### 3.2 FIELD TESTS AND INSPECTIONS

- A . Verify and inspect systems according to requirements by the Authority Having Jurisdiction. In the absence of specific test and inspection procedures proceed as indicated below.
- B . Domestic Water Systems:
  - 1. Perform hydrostatic testing for leakage prior to system disinfection.
  - 2. Test Preparation: Close each fixture valve or disconnect and cap each connected fixture.
  - 3. General:
    - a. Fill the system with water and raise static head to 10 psi above service pressure. Minimum static head of 50 to 100 psi. As an exception, certain codes allow a maximum static pressure of 80 psi.
- C . Test Results: Document and certify successful results, otherwise repair, document, and retest.

### 3.3 DISINFECTION OF DOMESTIC WATER PIPING SYSTEM

- A . Prior to starting work, verify system is complete, flushed, and clean.
- B . Ensure acidity (pH) of water to be treated is between 7.4 and 7.6 by adding alkali (caustic soda or soda ash) or acid (hydrochloric).
- C . Inject disinfectant, free chlorine in liquid, powder, tablet, or gas form throughout system to obtain 50 to 80 mg/L residual.
- D . Bleed water from outlets to ensure distribution and test for disinfectant residual at minimum 15% of outlets.
- E . Maintain disinfectant in system for 24 hours.
- F . If final disinfectant residual tests less than 25 mg/L, repeat treatment.
- G . Flush disinfectant from system until residual equal to that of incoming water or 1.0 mg/L.

Underwood & Associates, Inc.  
Bid Set  
October 18, 2021

SKAGIT COUNTY MORGUE  
SECTION 22 10 05  
PLUMBING PIPING

- H . Take samples no sooner than 24 hours after flushing from 10% of outlets and from water entry, and analyze in accordance with AWWA C651.

END OF SECTION 22 10 05

PART 1 - GENERAL

1.1 SECTION INCLUDES

- A . Escutcheons
- B . Drains.
- C . Cleanouts.
- D . Washing machine boxes and valves.
- E . Water hammer arrestors.
- F . Mixing valves.
- G . Trap seal primer valves.

1.2 REFERENCE STANDARDS

- A . ASME A112.18.1 – Plumbing Supply Fittings.
- B . ASME A112.6.3 – Floor and Trench Drains.
- C . ASSE 1070 – Performance Requirements for Water Temperature Limiting Devices.
- D . NSF 61 – Drinking Water System Components – Health Effects.
- E . NSF 372 – Drinking Water System Components – Lead Content.
- F . PDI-WH 201 – Water Hammer Arresters.

1.3 SUBMITTALS

- A . See Section 22 05 00 “Common Work Results for Plumbing” for submittal procedures.
- B . Product Data: Provide component sizes, rough-in requirements, service sizes, and finishes.

PART 2 - PRODUCTS

2.1 GENERAL REQUIREMENTS

- A . Specialties in Potable Water Supply Systems: Provide products that comply with NSF 61 and NSF 372 for maximum lead content.

2.2 ESCUTCHEONS

- A . Material:

1. Fabricate from nonferrous metal.
2. Chrome-plated.
3. Metals and Finish: Comply with ASME A112.18.1.

B . Construction:

1. One-piece for mounting on chrome-plated tubing or pipe and one-piece or split-pattern type elsewhere.
2. Internal spring tension devices or setscrews to maintain a fixed position against a surface.

2.3 DRAINS

A . Manufacturers:

1. Jay R. Smith Manufacturing Company.
2. Josam Company.
3. MIFAB, Inc.
4. WADE, McWane, Inc.
5. Zurn Industries, LLC.

B . Floor Drains:

C . Floor Drain:

1. ASME A112.6.3; lacquered cast iron or stainless-steel, two-piece body with double drainage flange, weep holes, reversible clamping collar, and round, adjustable nickel-bronze strainer.

D . Floor Sink:

1. Type 304, 16-gauge, stainless steel body with dome strainer, grate as indicated.

2.4 CLEANOUTS

A . Manufacturers:

1. Jay R. Smith Manufacturing Company.
2. Josam Company.
3. MIFAB, Inc.
4. WADE, McWane, Inc.

5. Zurn Industries, LLC.

B. Cleanouts at Interior Finished Floor Areas:

1. Lacquered cast iron body with anchor flange, reversible clamping collar, threaded top assembly, and round gasketed scored cover in service areas and round gasketed depressed cover to accept floor finish in finished floor areas.

C. Cleanouts at Interior Finished Wall Areas:

1. Line type with lacquered cast iron body and round epoxy coated gasketed cover, and round stainless-steel access cover secured with machine screw.

## 2.5 WASHING MACHINE BOXES AND VALVES

A. Box Manufacturers:

1. IPS Corporation/Water-Tite.
2. Oatey Supply Chain Services, Inc.

B. Description: Plastic preformed rough-in box with brass valves with single lever handle, socket for 2-inch waste, slip-in finishing cover.

## 2.6 WATER HAMMER ARRESTORS

A. Manufacturers:

1. Jay R. Smith Manufacturing Company.
2. Josam Company.
3. MIFAB, Inc.
4. Precision Plumbing Products, Inc.
5. Sioux Chief Manufacturing Co., Inc.
6. Watts Regulator Company, a part of Watts Water Technologies.
7. Zurn Industries, LLC.

B. Water Hammer Arrestors:

1. Stainless steel or copper construction, bellows or piston type sized in accordance with PDI-WH 201, precharged suitable for operation in temperature range of -100° to 300°F and maximum 250 psi working pressure.

## 2.7 MIXING VALVES

A. Thermostatic Mixing Valves:



1. Manufacturers:
  - a. Bradley Corporation.
  - b. Lawler Manufacturing Company, Inc.
  - c. Leonard Valve Company.
  - d. Powers, a Watts brand.
2. Point-of-Use Mixing Valve: Limits hot water temperatures to end use fixtures, such as sinks, bidets, lavatories, and bathtubs.
  - a. ASSE 1070, thermostatically controlled, water tempering valve.
  - b. Vandal resistant, locking temperature adjustment.
  - c. Cast brass body and corrosion resistant internal components.
  - d. Integral check valves with stainless steel screens on hot and cold inlets.

## 2.8 TRAP SEAL PRIMER VALVES

- A. Manufacturers:
  1. Josam Co.
  2. MIFAB
  3. Precision Plumbing Products, Inc.
  4. Smith, Jay R. Mfg. Co.
  5. Sioux Chief Manufacturing Co.
  6. Watts Industries, Inc.
- B. Supply-Type Trap Seal Primer Valves: ASSE 1018, water-supply-fed type, with the following characteristics:
  1. 125-psig minimum working pressure.
  2. Field serviceable.
  3. Activated with a 3-psig pressure drop.
  4. Bronze body with atmospheric-vented drain chamber.
  5. Inlet and Outlet Connections: NPS ½ threaded, union, or solder joint.
  6. Gravity Drain Outlet Connection: NPS ½ threaded or solder joint.

7. Finish: Chrome plated, or rough bronze for units used with pipe or tube that is not chrome finished.
- C . Vacuum Breaker Type Trap Seal Primer Valves: ASSE 1044, Chrome-plated, cast-brass, NPS 1½, flushometer valve vacuum breaker with NPS ¾ outlet tubing.

### PART 3 - EXECUTION

#### 3.1 INSTALLATION

- A . Install in accordance with manufacturer's instructions.
- B . Escutcheons:
1. Install and firmly attach escutcheons at piping penetrations into finished spaces.
  2. Provide escutcheons on both sides of partitions separating finished areas through which piping passes.
  3. Use deep-drawn, high-box type where sleeves or fittings extend beyond finished surfaces.
- C . Extend cleanouts to finished floor or wall surface. Lubricate threaded cleanout plugs with mixture of graphite and linseed oil. Ensure clearance at cleanout for rodding of drainage system.
1. Encase exterior cleanouts in concrete flush with grade.
  2. Install floor cleanouts at elevation to accommodate finished floor.
- D . Install approved potable water protection devices on plumbing lines where contamination of domestic water may occur; on boiler feed water lines, janitor rooms, fire sprinkler systems, premise isolation, irrigation systems, flush valves, interior and exterior hose bibbs.
1. Pipe relief from backflow preventer to nearest drain.
- E . Trap seal primers are not indicated on the Drawings. Trap seal primers shall be drainage-type used with flushometer valves. At locations remote from a flushometer valve fixture, trap seal primers shall be supply-type trap seal primer valves.
- F . Size and install water hammer arresters in accordance with manufacturer's recommendations and instructions. Install arresters at quick-closing valves, solenoid valves, and at each plumbing fixture or battery of fixtures in domestic water systems. Arrestors shall be accessible for servicing or replacement.

END OF SECTION 22 10 06

PART 1 - GENERAL

1.1 SECTION INCLUDES

- A . Water Heaters:
  - 1. Residential gas-fired.
- B . Diaphragm-type compression tanks.
- C . Inline wet-rotor pumps.

1.2 REFERENCE STANDARDS

- A . ANSI Z21.10.1 – Gas Water Heaters – Volume I – Storage Water Heaters with Input Ratings of 75,000 Btu per Hour or Less.
- B . ANSI Z21.10.3 – Gas-Fired Water Heaters – Volume III – Storage Water Heaters with Input Ratings Above 75,000 BTU per Hour, Circulating and Instantaneous.
- C . ASHRAE Std 90.1 I-P – Energy Standard for Buildings Except Low-Rise Residential Buildings.
- D . ASME BPVC-VIII-1 – Boiler and Pressure Vessel Code, Section VIII, Division 1: Rules for Construction of Pressure Vessels.

1.3 SUBMITTALS

- A . See Section 22 05 00 “Common Work Results for Plumbing” for submittal procedures.
- B . Product Data:
- C . Warranty Documentation: Submit manufacturer warranty and ensure that forms have been completed in Owner’s name and registered with manufacturer.

1.4 QUALITY ASSURANCE

- A . Certifications:
  - 1. Gas Water Heaters: Certified by CSA International or Underwriters Laboratories (UL), Inc. to ANSI Z21.10.1 or ANSI Z21.10.3, as applicable, in addition to requirements specified elsewhere.
  - 2. Thermal efficiency and standby loss requirements of the U. S. Department of Energy and ASHRAE Std 90.1 I-P.
  - 3. Products Requiring Electrical Connection: Listed and classified by Underwriters Laboratories Inc., as suitable for the purpose specified and indicated.

1.5 WARRANTY

- A . Provide five-year manufacturer's warranty for domestic water heaters.

PART 2 - PRODUCTS

2.1 WATER HEATERS

A . Manufacturers:

1. A.O. Smith Water Products Co.
2. Bock Water Heaters, Inc.
3. Rheem Manufacturing Company.

B . Residential Gas Fired:

1. Type: Automatic, natural gas-fired, vertical storage.
2. Tank: Glass lined welded steel with single flue passage, direct vent; thermally insulated and encased in corrosion-resistant steel jacket; baked-on enamel finish; floor shield and legs.
  - a. Insulation: Glass fiber.
3. Controls: Automatic water thermostat and built-in gas pressure regulator; temperature range adjustable from 120° to 170°F, cast iron or sheet metal burner, safety pilot and thermocouple.
4. Accessories:
  - a. Water Connections: Brass.
  - b. Dip Tube: Brass.
  - c. Drain valve.
  - d. Anode: Magnesium.
  - e. Seismic Restraints: Anchor to substrate.

2.2 DIAPHRAGM-TYPE COMPRESSION TANKS

A . Manufacturers:

1. Amtrol Inc.
2. Bell & Gossett, a xylem brand.
3. Taco, Inc.

B . Construction: Welded steel, tested and stamped in accordance with ASME BPVC-VIII-1; supplied with National Board Form U-1, rated for working pressure of 125 psig, with flexible EPDM diaphragm sealed into tank, and steel legs or saddles.

C . Accessories: Pressure gauge and air-charging fitting, tank drain; precharge to 12 psig.

### 2.3 INLINE WET-ROTOR PUMPS

A . Manufacturers:

1. Armstrong Fluid Technology.
2. Bell & Gossett, a xylem brand.
3. Sterling SIHI GmbH.
4. Taco Comfort Solutions.

B . Description: Factory-assembled and -tested, inline, close-coupled, canned-motor, no seals, overhung-impeller centrifugal pumps.

C . Pump Construction:

1. Pump and Motor Assembly: Hermetically sealed, replaceable-cartridge type with motor and impeller on common shaft and designed for installation with pump and motor shaft horizontal.
2. Casing: Bronze, with threaded or companion-flange connections.
3. Impeller: Plastic.

D . Motor: Single speed, unless otherwise indicated.

## PART 3 - EXECUTION

### 3.1 INSTALLATION

A . Install plumbing equipment in accordance with manufacturer's instructions, as required by code, and complying with conditions of certification, if any.

B . Coordinate with plumbing piping and related fuel piping work to achieve operating system.

C . Domestic Water Storage Tanks:

1. Provide steel pipe support, independent of building structural framing members.
2. Clean and flush prior to delivery to site. Seal until pipe connections are made.

END OF SECTION 22 30 00

PART 1 - GENERAL

1.1 SECTION INCLUDES

- A . Water closets.
- B . Sinks.
- C . Showers.
- D . Emergency showers.

1.2 REFERENCE STANDARDS

- A . ASME A112.18.1 – Plumbing Supply Fittings.
- B . ASME A112.19.2 – Ceramic Plumbing Fixtures.
- C . ASME A112.19.3 – Stainless Steel Plumbing Fixtures.
- D . ASME A112.19.4M – Porcelain Enameled Formed Steel Plumbing Fixtures.
- E . ASSE 1014 – Performance Requirements for Backflow Prevention Devices for Hand-Held Showers.
- F . ASSE 1070 – Performance Requirements for Water Temperature Limiting Devices.
- G . IAPMO Z124 – Plastic Plumbing Fixtures.
- H . NSF 61 – Drinking Water System Components – Health Effects.
- I . NSF 372 – Drinking Water System Components – Lead Content.

1.3 SUBMITTALS

- A . See Section 22 05 00 “Common Work Results for Plumbing” for submittal procedures.
- B . Product Data: Provide catalog illustrations of fixtures, sizes, rough-in dimensions, utility sizes, trim, and finishes.
- C . Warranty: Submit manufacturer’s warranty and ensure forms have been completed in Owner’s name and registered with manufacturer.

1.4 WARRANTY

- A . See Section 01 78 00 “Closeout Submittals” for additional warranty requirements.
- B . Provide five-year manufacturer’s warranty for electric water cooler.

PART 2 - PRODUCTS

2.1 GENERAL REQUIREMENTS

- A . Potable Water Systems: Provide plumbing fittings and faucets that comply with NSF 61 and NSF 372 for maximum lead content; label pipe and fittings.

2.2 TANK TYPE WATER CLOSETS

- A . Tank Type Water Closet Manufacturers:

1. American Standard, Inc.
2. Kohler Company.
3. TOTO USA, Inc.
4. Zurn Industries, Inc.

- B . Bowl: ASME A112.19.2; floor mounted, siphon jet, vitreous china, 16.5 inches high, close-coupled closet combination with elongated rim, vitreous china closet tank with fittings and lever flushing valve, bolt caps.

1. Water Consumption: Maximum 1.28 gallons per flush.

- C . Seat Manufacturers:

1. American Standard, Inc.
2. Bemis Manufacturing Company.
3. Church Seat Company.
4. Olsonite.
5. Zurn Industries, Inc.

- D . Seat: Solid white plastic, open front, extended back, less cover, complete with self-sustaining hinge.

2.3 SINKS

- A . Manufacturers:

1. American Standard, Inc.
2. Elkay Manufacturing Co.
3. Just Manufacturing Co.
4. Kohler Company.

B . Single Compartment Bowl: ASME A112.19.3; minimum 20 gauge, 0.0359-inch-thick, Type 304 stainless steel, self rimming and undercoated, with ledge back drilled for trim.

1. Drain: 1½-inch chromed brass drain.
2. Drain: 3½-inch crumb cup and tailpiece.

## 2.4 SHOWERS

A . Manufacturers:

1. American Standard, Inc.
2. Aqua Glass Corporation.
3. Best Bath Systems.
4. Kohler Company.
5. MAXX.

B . Cabinet: IAPMO Z124 reinforced glass fiber, 39 by 39 by 79 inches overall with integral receptor, soap dish, integral seat, removable chrome plated strainer, tail piece, color as selected.

C . Shower Valve:

1. Comply with ASME A112.18.1.
2. Provide with integral pressure balanced mixing valve to supply 1.5 GPM.

D . Hand-Held Shower Head:

1. ASME A112.18.1, adjustable spray handheld shower head with swivel fitting, with ASSE 1014 backflow preventer.
2. Include 60-inch minimum flexible polished stainless-steel hose and in-line vacuum breaker
3. Provide 25-inch grab bar with sliding spray holder that locks at any height, allowing use of unit as either a handheld spray or a fixed shower head.

## 2.5 EMERGENCY SHOWERS

A . Thermostatic Mixing Valve: Thermostatic mixing valve, ASSE 1070 listed, with combination stop, strainer, and check valves, and flexible stainless-steel connectors.



PART 3 - EXECUTION

3.1 EXAMINATION

- A . Verify that walls and floor finishes are prepared and ready for installation of fixtures.

3.2 INSTALLATION

- A . Install each fixture with trap, easily removable for servicing and cleaning.
- B . Provide chrome plated rigid or flexible supplies to fixtures with loose key stops, reducers, and escutcheons.
- C . Install components level and plumb.
- D . Install and secure fixtures in place with wall supports and bolts.

3.3 CLEANING

- A . Clean plumbing fixtures and equipment.

3.4 PROTECTION

- A . Protect installed products from damage due to subsequent construction operations.
- B . Do not permit use of fixtures by construction personnel.
- C . Repair or replace damaged products before Date of Substantial Completion.

END OF SECTION 22 40 00

## PART 1 - GENERAL

### 1.1 RELATED DOCUMENTS

- A . Drawings and general provisions of Contract, including Sections 00 70 00 "General Conditions" and 00 80 00 "Supplemental Conditions", apply to work of this section.

### 1.2 SCOPE OF WORK – GENERAL

- A . This section specifies general requirements for HVAC installations and includes requirements common to more than one section of Division 23. It expands and supplements the requirements specified in sections of Divisions 0 and 1.
- B . Provide materials, labor, transportation, tools, permits, fees, inspections, utilities, and incidentals necessary for the complete installation of HVAC work indicated and described in the Contract Documents.
- C . It is the intent of the Contract Documents to provide an installation complete in every respect. If additional details or special construction is required for work indicated or specified under this section of work or work specified in other sections, provide material and equipment which is usually furnished with such systems to complete the installation, whether mentioned or not.

### 1.3 SEQUENCE OF WORK

- A . Conduct work in sequence to provide least possible interference to the activities of the Owner, and to permit orderly transfer of activities and equipment to completed areas.
- B . Work shall be substantially complete by the dates listed in Section 01 10 00 "Summary".

### 1.4 DEFINITIONS

- A . Provide: Furnish and install complete and ready for intended use.
- B . Indicated: Indicated on drawings.
- C . Noted: Noted on Drawings or in Specifications.
- D . Finished Spaces: Spaces other than mechanical and electrical equipment rooms, furred spaces, pipe and duct shafts, unheated spaces immediately below roof, spaces above ceilings, unexcavated spaces, crawlspaces, and tunnels.
- E . Exposed, Interior Installations: Exposed to view indoors. Examples include finished occupied spaces and mechanical equipment rooms.
- F . Exposed, Exterior Installations: Exposed to view outdoors or subject to outdoor ambient temperatures and weather conditions. Examples include rooftop locations.

- G . Concealed, Interior Installations: Concealed from view and protected from physical contact by building occupants. Examples include above ceilings and in duct shafts.
- H . Concealed, Exterior Installations: Concealed from view and protected from weather conditions and physical contact by building occupants but subject to outdoor ambient temperatures. Examples include installations within unheated shelters.

#### 1.5 CODES AND STANDARDS

- A . Code Compliance: Comply with most current edition adopted by the Authority Having Jurisdiction of following:
  - 1. International Building Code (IBC), Standards and Amendments.
  - 2. International Mechanical Code (IMC), Standards and Amendments.
  - 3. International Fire Code (IFC), Standards and Amendments.
  - 4. Uniform Plumbing Code (UPC), Standards and Amendments.
  - 5. International Fuel Gas Code (IFGC).
  - 6. National Fire Protection Association (NFPA).
  - 7. National Electrical Code (NEC); NFPA 70.
  - 8. Washington State Energy Code, Commercial Provisions.
  - 9. Applicable State and local codes, laws, and ordinances.

#### 1.6 SAFETY OF PERSONS AND PROPERTY

- A . Comply with applicable laws, ordinances, rules, and regulations of any public authority for the safety of persons and property, including requirements of the Washington Department of Safety and Health (DOSH) or the Occupational Safety and Health Act (OSHA) whichever is most stringent, and Sections 00 70 00 "General Conditions" and 00 80 00 "Supplemental Conditions."

#### 1.7 PERMITS AND FEES

- A . Obtain and pay for required permits and fees necessary to fully complete work included in the Contract Documents.

#### 1.8 INTENT AND INTERPRETATION

- A . Drawings and Specifications supplement each other, and any details contained in one and not the other shall be included as if contained in both. Items not specifically mentioned in the specifications or noted on the drawings, but which are obviously necessary to make a complete working installation shall be included.

- B . Drawings are partly diagrammatic and do not necessarily show exact location of new piping and existing utilities, unless specifically dimensioned.
- C . Riser and other diagrams are schematic only and do not necessarily show the physical arrangement of equipment. They shall not be used for obtaining quantities or lineal runs of piping.
- D . Grilles, fixtures, or other pieces of equipment shall be centered on windows, wall spaces, or other items, unless specifically dimensioned otherwise.
- E . Location of piping and ductwork shall be checked to determine that it clears openings and structural members; that it may be properly concealed; and that it clears cabinets, lights and equipment having fixed locations.
- F . Mechanical drawings shall serve as working drawings for Division 23 work. Refer to Architectural, Structural, and Electrical drawings for additional detail affecting the installation of work. Architectural drawings shall take precedence over the Mechanical drawings if any dimensional discrepancies exist.
- G . Approximate location of each item is indicated on the drawings. These drawings are not intended to give complete and exact details regarding location. Exact locations are to be determined by actual measurements at the building. Not all pipe and duct offsets are indicated on the drawings.

#### 1.9 SUBMITTAL OF EQUIPMENT FOR APPROVAL

- A . Refer to Division 01 requirements for submittal definitions, requirements, and procedures. Additional requirements are listed below.
- B . Shop drawings, catalog information, and material schedules shall be submitted for approval on materials and equipment prior to ordering.
- C . Submittals not meeting the following requirements will be returned for revision:
  - 1. Provide a cover page for each item or group of items (schedule group, single fixture plus trim group, etc.).
  - 2. Each cover page must be clearly identified with the project name, specification number, and paragraph number.
  - 3. Submittal package must be accompanied by an itemized index listing specification section, paragraph number, item, and manufacturer; larger projects will be index tabbed by specification section with index for each section.

#### 1.10 GUARANTEE

- A . Guarantee satisfactory operation of material and equipment installed under Division 23. Repair or replace any defective materials, equipment, or workmanship which may show itself within one year from date of Substantial Completion.

## PART 2 - PRODUCTS

### 2.1 GENERAL MATERIALS AND EQUIPMENT REQUIREMENTS

- A . Where more than one manufacturer is listed, provide products of only one manufacturer for each type of product.
- B . Materials used under this Contract, unless specifically noted otherwise, shall be new and of the latest and most current model line produced by the manufacturer. Outdated “new” equipment is not acceptable.
- C . Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, Article 100, by a testing agency acceptable to authorities having jurisdiction, and marked for intended use.

### 2.2 EQUIPMENT AND MATERIAL SUBSTITUTIONS

- A . Throughout these Contract Documents, various materials, equipment, apparatus, etc., are specified by manufacturer, brand name, type, or catalog number. Such designation is to establish standards of desired quality and construction, and shall be the basis of the bid.
- B . Where more than one manufacturer is listed, and only one manufacturer’s catalog number is indicated, that standard of quality and construction shall be maintained by materials supplied by other manufacturer(s).
- C . Substitutions of equipment or materials shall be made only with written prior approval. Prior approval requests must be received at least ten (10) days prior to bid date unless otherwise instructed. Refer to Section 00 26 00 “Substitution Procedures” for procedures in requesting substitutions. The Owner or Owner’s Representative shall review all substitution requests for final approval.
- D . Acceptance of substitution request signifies manufacturer recognition only. No attempt has been made to check each item as to special features, capacities, or physical dimensions required by this project. Verify requirements before submitting for approval. Acceptance of exact features, sizes, capacities, etc., all of which must meet or exceed design requirements will be determined when submitted during the construction phase.
- E . Substitution request must include manufacturer, specific model number, special features, physical dimensions, and capacities of proposed equipment. Verify requirements before submitting for approval.
- F . The Contractor shall bear full responsibility for substituted equipment and materials, including, but not limited to:
  - 1. Costs.
  - 2. Available space requirements
  - 3. Effect on other trades

4. Changes in electrical requirements
5. Changes in structural requirements.

### PART 3 - EXECUTION

#### 3.1 COMMISSIONING

- A . At a minimum, comply with requirements of the Washington State Energy Code.
- B . Refer to Section 23 08 00 "Commissioning of HVAC" for additional requirements.

#### 3.2 COORDINATION

- A . Refer to Division 01 Section "Project Management and Coordination".
- B . Coordinate available space for equipment and systems with other trades. Refer to Architectural, Structural and Electrical Drawings for additional building details necessary for coordination.
- C . Cutting, patching, wiring, finishing or any other work required for relocation of work installed due to interferences between work of the various trades will be at no additional cost to the Owner.

#### 3.3 MANUFACTURER'S INSTRUCTIONS

- A . Furnish proper equipment and/or materials required for installation as intended by the manufacturer, for all work described under Division 23. If needed for proper installation or operation, request advice and supervisory assistance from the representative of the specific manufacturer. Manufacturer's published instructions shall be followed for preparing, assembling, installing, erecting, and cleaning manufactured materials or equipment, unless otherwise indicated. Promptly notify the Architect in writing of any conflict between the requirements of the Contract Documents and the manufacturer's directions and obtain the Architect's instructions before proceeding with the work.

#### 3.4 EXAMINATION OF SITE

- A . Visit site of proposed work and become familiar with conditions affecting work. Verify measurements at the building before beginning work.

#### 3.5 EXISTING UTILITIES AND PIPING

- A . Locations of existing concealed lines and connection points have been indicated as closely as possible from available information. Assume that such connection points are within a 10-foot radius of indicated locations. Where connection points are not within this radius, contact the Architect for a decision before proceeding.

### 3.6 LAYING OUT WORK

- A . Locations of equipment and devices, as shown on the drawings, are approximate unless dimensioned. Exact locations of such items shall be determined from the Construction Drawings. Verify physical dimensions of each item of mechanical equipment, ductwork system and piping system, to fit available space and promptly notify the Architect prior to roughing-in if conflicts appear. Coordinate equipment to available space and access routes through construction. Offsets or transitions in ductwork or piping systems required for proper system operation and/or installation, whether indicated on drawings or not, shall be provided at no additional cost to Owner.

### 3.7 DELIVERY, STORAGE, AND HANDLING

- A . Deliver products to project properly identified with names, model numbers, types, grades, compliance labels, and similar information needed for distinct identifications; adequately packaged and protected to prevent damage during shipment, storage, and handling.
- B . Store equipment and materials at the site unless offsite storage is authorized in writing. Protect stored equipment and materials from damage.
- C . Coordinate deliveries of mechanical materials and equipment to minimize construction site congestion. Limit each shipment of materials and equipment to the items and quantities needed for the smooth and efficient flow of installations.

### 3.8 ACCESSIBILITY

- A . Install equipment and materials to provide required access for servicing and maintenance. Coordinate location of concealed equipment and devices requiring access with location of access panels and doors. Allow ample space for removal of parts that require replacement or servicing.

### 3.9 TEMPORARY USE OF NEW EQUIPMENT

- A . New equipment shall not be used for temporary heating, cooling or ventilation unless authorized in writing by the Owner.

### 3.10 CUTTING AND PATCHING

- A . Comply with Division 01 Section "Execution" for general requirements for cutting and patching.
- B . Cutting shall be performed with masonry saws, core drills or similar equipment to provide neat and uniform openings.
- C . Patching shall match adjacent surfaces in materials and finish. Do not endanger or damage installed work through procedures and processes of cutting and patching.
- D . Arrange for repairs required to restore other work, because of damage resulting from mechanical installations. Upon receipt of written authorization from Architect, Contractor will

be authorized for cutting and patching work that is necessitated by ill-timed, defective, or non-conforming installations.

- E . No additional compensation will be authorized for cutting and patching work that is necessitated by ill-timed, defective, or non-conforming installations.
- F . Perform cutting, fitting, and patching of mechanical equipment and materials required to:
  - 1. Uncover work to provide for installation of ill-timed work.
  - 2. Remove and replace defective work.
  - 3. Remove and replace work not conforming to requirements of the Contract Documents.
  - 4. Remove samples of installed work as specified for testing.
  - 5. Install equipment and materials in existing structures.
  - 6. Upon written instructions from the Architect, uncover and restore work to provide for observation of concealed work.
- G . Cut, remove, and legally dispose of selected mechanical equipment, components, and materials as indicated, including, but not limited to removal of mechanical piping, heating units, and other mechanical items made obsolete by new work.
- H . Protect structure, furnishings, finishes, and adjacent materials not indicated or scheduled to be removed.
- I . Provide and maintain temporary partitions or dust barriers adequate to prevent the spread of dust and dirt to adjacent areas.

END OF SECTION 23 05 00



PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A . Drawings and general provisions of Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to work of this section.

1.2 SCOPE OF WORK - GENERAL

- A . This section specifies procedural requirements for HVAC installations project closeout, including but not limited to:

1. Project Record Document submittal.
2. Operation and Maintenance (O&M) Manual submittal.
3. Operation and Maintenance Instruction and Training.
4. HVAC Equipment and Systems Startup.
5. Final Cleaning.
6. Owner Training Session Agenda.

- B . Related Sections include the following:

1. Division 01 Section, "Submittal Procedures".
2. Division 01 Section "Closeout Procedures".

1.3 PROJECT RECORD DOCUMENTS

- A . Record differences between HVAC work as installed and as shown in Contract Drawings on a set of prints of HVAC drawings furnished by Architect. Return these prints to Architect at completion of project. Notations made on drawings shall be neat and legible. Comply with Division 01 Section requirements.
- B . Mark drawings to indicate revisions to HVAC piping and ductwork, size and location both exterior and interior; including locations of coils, dampers, and other control devices, filters, motors and similar items requiring periodic maintenance; actual equipment locations; concealed equipment and control devices; mains and branches of piping systems, with valves and control devices located and numbered.
- C . Revise equipment and fixture schedules on the Drawings to indicate actual installed manufacturer and model numbers.
- D . Mark specifications to indicate change orders; actual equipment and materials used.

#### 1.4 OPERATION AND MAINTENANCE MANUALS

- A . Prepare and submit Operation and Maintenance (O&M) Manuals for HVAC systems provided. Comply with Division 01 requirements.
- B . Provide master index at beginning of Manual showing sections and items included.
- C . Cover section: List name, address, and phone number of Project Architect, General Contractor, Mechanical Engineer, HVAC Contractor, and all HVAC Subcontractors. Provide a list of equipment suppliers with address and phone number.
- D . Provide a separate section for each Section of the Specifications. Provide index for each section listing equipment included. Include all items specified.
- E . Include descriptive literature (manufacturer's catalog data) of each manufactured item. Literature shall show capacities and size of equipment used and be marked indicating each specific item with applicable data underlined. Data sheets shall be originals or clean copies of originals.
- F . One (1) draft copy of the manual shall be submitted for review, comment, and approval, as applicable, at least 15 days prior to substantial completion or training, whichever is first. After approval, submit three (3) copies of manual to Architect for approval unless otherwise directed by Division 01 Section requirements. Information to be included in manual:
  - 1. Description of function, normal operating characteristics and limitations, performance curves, engineering data and tests, and complete nomenclature and commercial numbers of all replaceable parts.
  - 2. Manufacturer's printed operating procedures to include startup, break-in, routine and normal operating instructions; regulation, control, stopping shutdown, and emergency instructions; and summer and winter operating instructions.
  - 3. Maintenance procedures for routine preventative maintenance and troubleshooting; disassembly, repair, and reassembly; aligning and adjusting instructions.
  - 4. Servicing instructions and lubrication charts and schedules.
  - 5. Schematic control diagrams for each automatic control system. Mark the correct operating setting for each control instrument on these diagrams.
  - 6. Valve schedule indicating the valve symbol (tag number), valve location by room number and description, valve purpose and system served, and valve size. Provide one (1) corresponding set of full-size HVAC prints showing these valve locations for cross-reference. A second complete set of valve schedules (8.5 inches x 11 inches) encased in clear plastic laminate and fitted in an aluminum holding frame shall be furnished to the Owner.
  - 7. Testing, Adjusting, and Balancing Report.
  - 8. Test records and certifications.

9. Equipment startup reports.
  10. Warranty information and letters of guarantee.
  11. Instruction period checklist for each equipment item.
- G. Complete O&M Manual shall be available for use by Owner's representatives during instruction and training sessions.

#### 1.5 OPERATION AND MAINTENANCE INSTRUCTION AND TRAINING

- A. Instruct Owner's Representative(s) in the Operation and Maintenance procedures described in Operation and Maintenance Manual. Comply with Division 01 requirements.
- B. Enlist services of qualified personnel, including each sub-trade and factory trained specialists for each major piece of equipment, to attend training sessions and provide operation and maintenance instructions.
- C. Submit training agenda, schedule, and list of representatives for review 30 days prior to training sessions. Confirm attendance by written notification to all participants.
- D. Prepare checklist of all equipment and systems requiring instruction and maintenance for verification and agreement by the Owner's Representative of satisfactory startup and instruction. Checklist shall include a statement of completion by the Contractor, date and topic(s) covered in each training session, and an attendance list of all participants at each training session. Submit a copy of checklist for review 30 days prior to training sessions. Include copy of the completed checklist in Operation and Maintenance Manual.
- E. Refer to individual Division 23 Sections for additional instruction/training requirements.
- F. All HVAC systems shall be properly functioning prior to instruction period.

#### PART 2 - PRODUCT (NOT APPLICABLE)

#### PART 3 - EXECUTION

##### 3.1 HVAC EQUIPMENT AND SYSTEMS STARTUP

- A. Provide the services of a factory-authorized service representative to test and inspect unit installation, provide startup service, and demonstrate and train Owner's maintenance personnel.
- B. Include certification of factory-authorized representative status as part of equipment submittal from manufacturer. Include copies of any installation and startup instructions, manufacturer's checklists, and other forms used in startup as part of the equipment submittal.

- C . Include written startup reports with test data for equipment in Operation and Maintenance Manual.
- D . All construction debris, including electrical wiring debris shall be removed from units prior to equipment startup. Areas surrounding and served by equipment being started must be free of construction debris, sheetrock dust, and any materials that may adversely affect the equipment.

### 3.2 FINAL CLEANING

- A . Refer to Division 01 general requirements for final cleaning.
- B . At time of final cleanup, clean all fixtures and equipment, and leave in condition for use intended. Vacuum cabinet interiors of control panels, air handling units, etc. to remove all construction debris including electrical wiring debris.

END OF SECTION 23 05 05

## PART 1 - GENERAL

### 1.1 RELATED DOCUMENTS

- A . Drawings and general provisions of Contract, including General and Supplementary Conditions and Division 01 Specifications, apply to work of this section.

### 1.2 SUMMARY

- A . Include all labor, equipment, and materials necessary to complete demolition of existing HVAC systems as shown on the drawings and described herein.
- B . Mechanical Services to areas occupied by Owner shall be maintained.
- C . Related Sections include the following:
  - 1. Division 01 Section "Summary" for phasing requirements.
  - 2. Division 02 Section "Selective Demolition" for general demolition requirements and procedures.

### 1.3 DEFINITIONS

- A . Remove: Detach items from existing construction and legally dispose of them offsite, unless indicated to be removed and salvaged or removed and reinstalled.
- B . Remove and Salvage: Detach items from existing construction and deliver them to Owner.
- C . Remove and Reinstall: Detach items from existing construction, prepare them for reuse, and reinstall them where indicated.
- D . Existing to Remain: Existing items of construction that are not to be removed and that are not otherwise indicated to be removed, removed and salvaged, or removed and reinstalled.

## PART 2 - SALVAGE

### 2.1 MATERIALS OWNERSHIP

- A . The Owner shall have first salvage rights to all removed fixtures and equipment. Coordinate selection with the Owner's Representative.
- B . Except for items or materials to be reused, salvaged, reinstalled, or otherwise indicated to remain Owner's property, demolished materials shall become Contractor's property and removed from Project site.
- C . Transport and legally dispose of offsite all materials resulting from demolition not being salvaged.

PART 3 - EXECUTION

3.1 DEMOLITION

- A . Condition and Premises: The Owner assumes no responsibility for condition of areas to be demolished. General conditions existing at time of inspection for bidding purposes will be maintained by Owner.
- B . Partial Removal: Items of salvageable value to Contractor indicated to be removed, may be removed from structure as work progresses. Salvaged items must be transported from site as they are removed. Storage or sale of removed items on site will not be permitted.
- C . Protections: Ensure safe passage of persons around area of demolition. Conduct operations to prevent injury to adjacent buildings, structures, other facilities, and persons.
- D . Damages: Promptly repair damages caused to adjacent facilities by demolition operations at no cost to Owner.
- E . Existing Utility Services: Maintain existing utilities indicated to remain, keep in service, and protect against damage during demolition operations.
- F . Cut and/or patch and repair all existing floor or wall penetrations not being reused. Comply with Division 01 requirements.
- G . Not all piping, ductwork or equipment items are shown on drawings. Other demolition may be required.
- H . Any existing ductwork or piping that is to be reused or left in existing position shall have the opening of such covered and protected during demolition and construction until final connections can be made.
- I . Disconnect, demolish, and remove HVAC systems, equipment, and components indicated to be removed.
  - 1. Piping to Be Removed: Remove portion of piping indicated to be removed and cap or plug remaining piping with same or compatible piping material.
  - 2. Piping to Be Abandoned in Place: Drain piping and cap or plug piping with same or compatible piping material.
  - 3. Ducts to Be Removed: Remove portion of ducts indicated to be removed and plug remaining ducts with same or compatible ductwork material.
  - 4. Ducts to Be Abandoned in Place: Cap or plug ducts with same or compatible ductwork material.
  - 5. Equipment to Be Removed: Disconnect and cap services and remove equipment. Equipment removal shall include removal of all connecting piping, ductwork, etc., either to a point below floor behind wall surface, etc.

6. Equipment to Be Removed and Reinstalled: Disconnect and cap services and remove, clean, and store equipment; when appropriate, reinstall, reconnect, and make equipment operational.
  7. Equipment to Be Removed and Salvaged: Disconnect and cap services and remove equipment and deliver to Owner.
- J . If pipe, insulation, or equipment to remain is damaged in appearance during construction, or is rendered unserviceable, remove damaged or unserviceable portions, and replace with new products of equal capacity and quality.

END OF SECTION 23 05 07

PART 1 - GENERAL

1.1 SECTION INCLUDES

- A . Vibration isolation requirements.
- B . Support Bases.
- C . Hangers.
- D . Flexible Duct Connectors.

1.2 REFERENCE STANDARDS

- A . ASHRAE (HVACA) – ASHRAE Handbook – HVAC Applications.

1.3 SUBMITTALS

- A . See Section 23 05 00 “Common Work Results for HVAC” for submittal procedures.
- B . Product Data: Provide manufacturer’s standard catalog pages and data sheets for products, including materials, fabrication details, dimensions, and finishes.
  - 1. Vibration Isolators: Include rated load capacities and deflections; include information on color coding or other identification methods for spring element load capacities.

PART 2 - PRODUCTS

2.1 VIBRATION ISOLATION REQUIREMENTS

- A . Design and provide vibration isolation systems to reduce vibration transmission to supporting structure from vibration-producing HVAC equipment and/or HVAC connections to vibration-isolated equipment.
- B . Comply with applicable general recommendations of ASHRAE (HVACA), where not in conflict with other specified requirements:
- C . General Requirements:
  - 1. Select vibration isolators to provide required static deflection.
  - 2. Select vibration isolators for uniform deflection based on distributed operating weight of actual installed equipment.
- D . Each piece of rotating equipment must meet a reasonable criterion for maximum vibration levels at each bearing, while in operation. The criteria for varying operating speeds are given as follows:



1. Peak vibration velocities shall not exceed 0.06 in./sec. If it is discovered that the operating vibration velocities exceed this criterion, the equipment shall be repaired or replaced at no expense to the Owner.

## 2.2 MANUFACTURERS

A . Basis of Design Product: Subject to compliance with requirements, provide products indicated in this Section or comparable products of one of the following:

1. Mason Industries, Inc.
2. Amber Booth Co.
3. Kinetics Noise Control, Inc.
4. Vibration Eliminator Co., Inc.
5. Vibration Mountings & Controls, Inc.

## 2.3 SUPPORT BASES

A . B-1 Hanger Rods

1. Base shall consist of four vertical steel hanger rods attached to structure above. Hanger rods shall be sufficient to carry a five (5) times overload without yielding or failure. Unless otherwise specified, hangers H-1 shall be located on all four hanger rods in series with the supported load. Rods shall attach to fan at the support "ears" provided. The fan manufacturer shall supply the fan with these "ears" attached.
  - a. Coordination of the location of the ears and the method of attachment is the responsibility of the vibration isolator manufacturer or its representative.
2. Steel cross-bracing rods shall be provided to base framework above, where vertical hangers are longer than 12-inches to prevent excess motion during startup and operation. Cross-bracing requires isolators if vertical hanger isolators or thrust restraint isolators are mechanically short circuited. Cross-bracing rods should be threaded to allow adjustment of tension at one end.

## 2.4 HANGERS

A . H-1 Resilient Hanger

1. Hangers shall consist of a neoprene-in-shear or fiberglass isolator encased in a welded steel bracket. Hangers shall have an operating static deflection of 0.35-inches.
2. Schedule H-1: Mason HD.

## 2.5 FLEXIBLE DUCT CONNECTORS

A . See Section 23 33 00 "Air Duct Accessories" for requirements.

- B . F-1 Flexible Duct Connectors: Fabric crimped into metal edging strip.

### PART 3 - EXECUTION

#### 3.1 GENERAL

#### 3.2 DUCTWORK ISOLATION

- A . Isolate duct penetration through fire rated walls as described below:

1. Support the fire damper on both sides of the wall opening. Support duct independent of fire damper.

#### 3.3 ELECTRICAL CONDUIT ISOLATION

- A . Use flexible electrical conduit to isolate all electrical connections to vibration isolated equipment.

- B . Do not install conduit clamps or hangers between the flex conduit and equipment.

- C . Size flex conduit large enough to allow a non-stressed loop, unrestrained in all directions.

- D . Recommended minimum flex conduit length is 6 ft.

### PART 4 - SCHEDULES

#### 4.1 VIBRATION ISOLATION SCHEDULE

Equipment	Mounting	Isolator	Static Deflection	Base	Flex Connector
Inline Exhaust Fans	Hung	H-1	0.35 inch	B-1	F-1
Fan Coils	Hung	H-1	0.35 inch	B-1	F-1
ERV Units	Hung	H-1	0.35 inch	B-1	F-1
Fan Filter Units	Hung	H-1	0.35 inch	B-1	F-1

END OF SECTION 23 05 43

PART 1 - GENERAL

1.1 SECTION INCLUDES

- A . Nameplates.

1.2 REFERENCE STANDARDS

- A . ASTM D709 – Standard Specification for Laminated Thermosetting Materials.

1.3 SUBMITTALS

- A . See Section 23 05 00 – Common Work Results for HVAC for submittal procedures.

PART 2 - PRODUCTS

2.1 IDENTIFICATION APPLICATIONS

- A . Air Handling Equipment:

1. Exhaust Fans: Nameplates.
2. Fan Filter Units: Nameplates.
3. Energy Recovery Ventilators: Nameplates.
4. Split System Air Conditioning Units: Nameplates.
5. Electric Duct Heaters: Nameplates.

2.2 NAMEPLATES

- A . Letter Color: White.
- B . Letter Height: ¼-inch.
- C . Background Color: Black.
- D . Plastic: Comply with ASTM D709.

PART 3 - EXECUTION

3.1 INSTALLATION

- A . Install nameplates with corrosive-resistant mechanical fasteners, or adhesive. Apply with sufficient adhesive to ensure permanent adhesion and seal with clear lacquer.

END OF SECTION 23 05 53

PART 1 - GENERAL

1.1 SECTION INCLUDES

- A . Testing, adjustment, and balancing of air systems.

1.2 RELATED REQUIREMENTS

1.3 REFERENCE STANDARDS

- A . AABC (NSTSB) - AABC National Standards for Total System Balance, 7th Edition.
- B . ASHRAE Std 111 – Measurement, Testing, Adjusting, and Balancing of Building HVAC Systems.
- C . SMACNA (TAB) – HVAC Systems Testing, Adjusting and Balancing.
- D . Washington State Energy Code Commercial Provisions, latest adopted version.

1.4 SUBMITTALS

- A . See Section 23 05 00 “Common Work Results for HVAC” for submittal procedures.
- B . Installer Qualifications: Submit name of adjusting and balancing agency and TAB supervisor for approval within 30 days after award of Contract.
- C . TAB Plan: Submit a written plan indicating the testing, adjusting, and balancing standard to be followed and the specific approach for each system and component.
  - 1. Include at least the following in the plan:
    - a. List of all airflow, water flow, sound level, system capacity and efficiency measurements to be performed and a description of specific test procedures, parameters, formulas to be used.
    - b. Copy of field checkout sheets and logs to be used, listing each piece of equipment to be tested, adjusted, and balanced with the data cells to be gathered for each.
    - c. Discussion of what notations and markings will be made on the duct and piping drawings during the process.
    - d. Final test report forms to be used.
    - e. Procedures for formal deficiency reports, including scope, frequency, and distribution.
  - D . Final Report: Indicate deficiencies in systems that would prevent proper testing, adjusting, and balancing of systems and equipment to achieve specified performance.

1. Revise TAB plan to reflect actual procedures and submit as part of final report.
2. Submit draft copies of report for review prior to final acceptance of Project. Provide final copies for Architect and for inclusion in operating and maintenance manuals.
3. Include actual instrument list, with manufacturer name, serial number, and date of calibration.
4. Form of Test Reports: Where the TAB standard being followed recommends a report format use that; otherwise, follow ASHRAE Std 111.
5. Units of Measure: Report data in I-P (inch-pound) units only.

## PART 2 - PRODUCTS (NOT APPLICABLE)

## PART 3 - EXECUTION

### 3.1 GENERAL REQUIREMENTS

- A . Perform total system balance in accordance with one of the following:
  1. AABC (NSTSB), AABC National Standards for Total System Balance.
  2. SMACNA (TAB).
- B . Begin work after completion of systems to be tested, adjusted, or balanced and complete work prior to Substantial Completion of the project.
- C . TAB Agency Qualifications:
  1. Company specializing in the testing, adjusting, and balancing of systems specified in this section independent of the installing contractors or equipment suppliers for this project.
  2. Having minimum of five years documented experience of projects of similar scope and complexity.
  3. Certified by one of the following:
    - a. AABC, Associated Air Balance Council.
    - b. NEBB, National Environmental Balancing Bureau.
    - c. TABB, The Testing, Adjusting, and Balancing Bureau of National Energy Management Institute.
- D . TAB Supervisor and Technician Qualifications: Certified by same organization as TAB agency.
- E . Pre-Qualified TAB Agencies:

1. Neudorfer Engineers
2. AirTest Inc.
3. United Test & Balance
4. TAC Systems
5. Hardin and Sons
6. Or approved equal

### 3.2 EXAMINATION

- A . Verify that systems are complete and operable before commencing work. Ensure the following conditions:
1. Systems are started and operating in a safe and normal condition.
  2. Temperature control systems are installed complete and operable.
  3. Final filters are clean and in place. If required, install temporary media in addition to final filters.
  4. Duct systems are clean of debris.
  5. Fans are rotating correctly.
  6. Air coil fins are cleaned and combed.
  7. Access doors are closed, and duct end caps are in place.
  8. Air outlets are installed and connected.

### 3.3 ADJUSTMENT TOLERANCES

- A . Air Handling Systems: Adjust to within  $\pm 5\%$  of design for supply systems and plus or minus 10% of design for return and exhaust systems.
- B . Air Outlets and Inlets: Adjust total to within +0% and -5% of design to space. Adjust outlets and inlets in space to within  $\pm 10\%$  of design.

### 3.4 RECORDING AND ADJUSTING

- A . Field Logs: Maintain written logs including:
1. Running log of events and issues.
  2. Discrepancies, deficient or uncompleted work by others.
  3. Contract interpretation requests.

4. Lists of completed tests.
  - B. Ensure recorded data represents actual measured or observed conditions.
  - C. Permanently mark settings of valves, dampers, and other adjustment devices allowing settings to be restored. Set and lock memory stops.
  - D. After adjustment, take measurements to verify balance has not been disrupted or that such disruption has been rectified.
  - E. Leave systems in proper working order, replacing belt guards, closing access doors, closing doors to electrical switch boxes, and restoring thermostats to specified settings.

### 3.5 AIR SYSTEM PROCEDURE

- A. Adjust air handling and distribution systems to provide required or design supply, return, and exhaust air quantities at site altitude.
- B. Make air quantity measurements in ducts by pitot tube traverse of entire cross-sectional area of duct.
- C. Measure air quantities at air inlets and outlets.
- D. Measure static air pressure conditions on air supply units, including filter and coil pressure drops, and total pressure across the fan. Make allowances for 50% loading of filters.
- E. Adjust outside air automatic dampers, outside air, return air, and exhaust dampers for design conditions.
- F. Measure temperature conditions across outside air, return air, and exhaust dampers to check leakage.
- G. Where modulating dampers are provided, take measurements and balance at extreme conditions.

### 3.6 SCOPE

- A. Test, adjust, and balance the following:
  1. Energy Recovery Unit.
  2. Split-system Fan-coil Unit.
  3. Fan Filter Unit.
  4. Exhaust Fans.
  5. Air Inlets and Outlets.
  6. Room Pressure Differential.

3.7 MINIMUM DATA TO BE REPORTED

A . Electric Duct Heaters:

1. Manufacturer.
2. Identification/number.
3. Location.
4. Model number.
5. Design kW.
6. Number of stages.
7. Phase, voltage, amperage.
8. Test voltage (each phase).
9. Test amperage (each phase).
10. Airflow: specified and actual.
11. Temperature rise: specified and actual.

B . Split System Air Conditioning Unit:

1. Location.
2. Manufacturer.
3. Serial number.
4. Arrangement/Class/Discharge.
5. Airflow: specified and actual.
6. Return airflow: specified and actual.
7. Outside airflow: specified and actual.
8. Total static pressure (total external), specified and actual.
9. Inlet pressure.
10. Discharge pressure.

C . Energy Recovery Ventilator (ERV)

1. Identification/location.
2. Manufacture.



3. Model number.
4. Serial number.
5. Design outside airflow.
6. Actual outside airflow.
7. Design return airflow.
8. Actual return airflow
9. Design supply airflow.
10. Actual supply airflow.
11. Design exhaust airflow.
12. Actual exhaust airflow.
13. Filter pressure drop design/actual

D . Fan Filter Units:

1. Location.
2. Manufacturer.
3. Model number.
4. Serial number.
5. Airflow: specified and actual.:

E . Terminal Unit Data:

1. Manufacturer.
2. Type, constant, variable, single, dual duct.
3. Identification/number.
4. Location.
5. Model number.
6. Size.
7. Minimum static pressure.
8. Minimum design air flow.
9. Maximum design air flow.
10. Maximum actual air flow.
11. Inlet static pressure.

F . Exhaust Fans:

1. Location.
2. Manufacturer.
3. Model number.
4. Serial number.
5. Airflow: specified and actual.
6. Total static pressure (total external), specified and actual.
7. Inlet pressure.
8. Discharge pressure.

END OF SECTION 23 05 93

PART 1 - GENERAL

1.1 SECTION INCLUDES

- A . Duct insulation.
- B . Duct liner.

1.2 REFERENCE STANDARDS

- A . ASTM C518 – Standard Test Method for Steady-State Thermal Transmission Properties by Means of the Heat Flow Meter Apparatus.
- B . ASTM C553 – Standard Specification for Mineral Fiber Blanket Thermal Insulation for Commercial and Industrial Applications.
- C . ASTM C612 – Standard Specification for Mineral Fiber Block and Board Thermal Insulation.
- D . ASTM C916 – Standard Specification for Adhesives for Duct Thermal Insulation.
- E . ASTM C1071 – Standard Specification for Fibrous Glass Duct Lining Insulation (Thermal and Sound Absorbing Material).
- F . ASTM E84 – Standard Test Method for Surface Burning Characteristics of Building Materials.
- G . ASTM E96/E96M – Standard Test Methods for Water Vapor Transmission of Materials.
- H . ASTM G21 – Standard Practice for Determining Resistance of Synthetic Polymeric Materials to Fungi.
- I . SMACNA (DCS) – HVAC Duct Construction Standards Metal and Flexible.
- J . UL 723 – Standard for Test for Surface Burning Characteristics of Building Materials.

1.3 SUBMITTALS

- A . See Section 23 05 00 “Common Work Results for HVAC” for submittal procedures.
- B . Product Data: Provide product description, thermal characteristics, list of materials and thickness for each service, and locations.

1.4 DELIVERY, STORAGE, AND HANDLING

- A . Accept materials on site in original factory packaging, labeled with manufacturer’s identification, including product density and thickness.

- B . Protect insulation from weather and construction traffic, dirt, water, chemical, and mechanical damage, by storing in original wrapping.

## PART 2 - PRODUCTS

### 2.1 REGULATORY REQUIREMENTS

- A . Surface Burning Characteristics: Flame spread index/Smoke developed index of 25/50, maximum, when tested in accordance with ASTM E84 or UL 723.

### 2.2 GLASS FIBER, FLEXIBLE

#### A . Manufacturer:

1. CertainTeed Corporation.
2. Johns Manville.
3. Knauf Insulation.
4. Owens Corning Corporation.

#### B . Insulation: ASTM C553; flexible, noncombustible blanket.

1. K value: 0.36 at 75°F, when tested in accordance with ASTM C518.

#### C . Vapor Barrier Jacket:

1. Kraft paper with glass fiber yarn and bonded to aluminized film.
2. Moisture Vapor Permeability: 0.02 perm inch, when tested in accordance with ASTM E96/E96M.
3. Secure with pressure sensitive tape.

#### D . Vapor Barrier Tape:

1. Kraft paper reinforced with glass fiber yarn and bonded to aluminized film, with pressure-sensitive rubber-based adhesive.

### 2.3 GLASS FIBER, RIGID

#### A . Manufacturer:

1. CertainTeed Corporation.
2. Johns Manville.
3. Knauf Insulation.
4. Owens Corning Corporation.

- B . Insulation: ASTM C612; rigid, noncombustible blanket.
  - 1. K Value: 0.24 at 75°F, when tested in accordance with ASTM C518.
  - 2. Maximum Density: 8.0 lbs./cu. ft.
- C . Vapor Barrier Jacket:
  - 1. Kraft paper with glass fiber yarn and bonded to aluminized film.
  - 2. Moisture Vapor Permeability: 0.02 perm inch, when tested in accordance with ASTM E96/E96M.
  - 3. Secure with pressure-sensitive tape.
- D . Vapor Barrier Tape:
  - 1. Kraft paper reinforced with glass fiber yarn and bonded to aluminized film, with pressure-sensitive rubber-based adhesive.

## 2.4 DUCT LINER

- A . Manufacturers:
  - 1. CertainTeed Corporation.
  - 2. Johns Manville.
  - 3. Knauf Insulation.
  - 4. Owens Corning Corporation.
- B . Glass Fiber Insulation: Noncorrosive, incombustible glass fiber complying with ASTM C1071; flexible blanket, rigid board, and preformed round liner board; impregnated surface and edges coated with poly vinyl acetate polymer, acrylic polymer, or black composite.
  - 1. Fungal Resistance: No growth when tested according to ASTM G21.
  - 2. Apparent Thermal Conductivity: Maximum of 0.31 at 75°F.
  - 3. Rated Velocity on Coated Air Side for Air Erosion: 5,000 fpm, minimum.
- C . Adhesive: Waterproof, fire-retardant type, ASTM C916.
- D . Liner Fasteners: Galvanized steel, self-adhesive pad with integral head.

## PART 3 - EXECUTION

### 3.1 EXAMINATION

- A . Test ductwork for design pressure prior to applying insulation materials.

- B . Verify that surfaces are clean, foreign material removed, and dry.

3.2 INSTALLATION

- A . Install in accordance with manufacturer’s instructions.
- B . Install in accordance with NAIMA National Insulation Standards.
- C . External Duct Insulation Application:
  1. Secure insulation with vapor barrier with wires and seal jacket joints with vapor barrier adhesive or tape to match jacket.
  2. Install without sag on underside of duct. Use adhesive or mechanical fasteners where necessary to prevent sagging. Lift duct off trapeze hangers and insert spacers.
  3. Seal vapor barrier penetrations by mechanical fasteners with vapor barrier adhesive.
  4. Stop and point insulation around access doors and damper operators to allow operation without disturbing wrapping.
- D . Duct Liner Application:
  1. Adhere insulation with adhesive for 90% coverage.
  2. Secure insulation with mechanical liner fasteners. Refer to SMACNA (DCS) for spacing.
  3. Seal and smooth joints. Seal and coat transverse joints.
  4. Seal liner surface penetrations with adhesive.
  5. Duct dimensions indicated are net inside dimensions required for airflow. Increase duct size to allow for insulation thickness.

3.3 DUCT AND PLENUM INSULATION SCHEDULE:

DUCT TYPE	LOCATION/SITUATION	INSTALLED R-VALUE	OTHER REQUIREMENTS
Supply, Return, Exhaust <sup>8</sup>	Outside Of Building, Climate Zone 4C	R-8	Weatherproof Jacket
Supply, Return, Exhaust <sup>8</sup>	Outside Of Building, Climate Zone 5B	R-12	Weatherproof Jacket
Supply, Return, Exhaust <sup>8</sup>	Unconditioned Space <sup>1</sup>	R-6	
Supply	Conditioned Space <sup>2</sup>	R-3.3	
Supply	Conditioned Space <sup>3</sup>	None	
Supply, Return, Exhaust <sup>8</sup>	Conditioned Space <sup>4</sup>	None	
Return, Exhaust	Conditioned Space <sup>5</sup> Climate Zone 4C	R-8	
Return, Exhaust	Conditioned Space <sup>6</sup> Climate Zone 5B	R-12	
Outside Air	Between Exterior and Automatic Shutoff Damper <sup>7</sup>	R-16	See Energy Code for Requirements

DUCT TYPE	LOCATION/SITUATION	INSTALLED R-VALUE	OTHER REQUIREMENTS
Outside Air	Between Automatic Shutoff Damper and HVAC Unit Climate Zone 4C	R-8	
Outside Air	Between Automatic Shutoff Damper and HVAC Unit Climate Zone 5B	R-12	
Outside Air	Between Exterior and Individual Supply Units with Less Than 2800 CFM Supply	R-7	

- <sup>1</sup> Not within conditioned space: In attic, in enclosed ceiling space, in walls, in garage, in crawl spaces, in concrete, underground.
- <sup>2</sup> Conveying supply air less than 55°F or greater than 105°F.
- <sup>3</sup> Ductwork exposed to view within a zone that serves that zone.
- <sup>4</sup> Conveying air greater than 55°F and less than 105°F.
- <sup>5</sup> Downstream of an energy recovery media, upstream of an automatic shutoff damper.
- <sup>6</sup> Downstream of an energy recovery media, upstream of an automatic shutoff damper.
- <sup>7</sup> Extend building envelope air and vapor control continuously from the building exterior to the automatic shutoff damper.
- <sup>8</sup> Exhaust ductwork between exhaust grilles and ERV-1

END OF SECTION 23 07 13

PART 1 - GENERAL

1.1 SECTION INCLUDES

- A . Piping insulation.

1.2 REFERENCE STANDARDS

- A . ASTM C534/C534M – Standard Specification for Preformed Flexible Elastomeric Cellular Thermal Insulation in Sheet and Tubular Form.
- B . ASTM E84 – Standard Test Method for Surface Burning Characteristics of Building Materials.
- C . UL 723 – Standard for Test for Surface Burning Characteristics of Building Materials.

1.3 SUBMITTALS

- A . See Section 23 05 00 “Common Work Results for HVAC” for submittal procedures.
- B . Product Data: Provide product description, thermal characteristics, list of materials and thickness for each service, and locations.

1.4 QUALITY ASSURANCE

- A . Manufacturer Qualifications: Company specializing in manufacturing the Products specified in this section with not less than three years of documented experience.

PART 2 - PRODUCTS

2.1 REGULATORY REQUIREMENTS

- A . Surface Burning Characteristics: Flame spread index/Smoke developed index of 25/50, maximum, when tested in accordance with ASTM E84 or UL 723.

2.2 FLEXIBLE ELASTOMERIC CELLULAR INSULATION

A . Manufacturers:

1. Aeroflex USA, Inc.
2. Armacell LLC.
3. K-Flex USA LLC.

- B . Insulation: Preformed flexible elastomeric cellular rubber insulation complying with ASTM C534/C534M Grade 1; use molded tubular material wherever possible.



1. Minimum Service Temperature: -40°F.
2. Maximum Service Temperature: 180°F.
3. Connection: Waterproof vapor barrier adhesive.

C. Elastomeric Foam Adhesive: Air dried, contact adhesive, compatible with insulation.

**PART 3 - EXECUTION**

**3.1 INSTALLATION**

- A. Install in accordance with manufacturer's instructions.
- B. Install in accordance with NAIMA National Insulation Standards.
- C. Refrigerant Piping: Insulate with flexible elastomeric cellular insulation.
  1. Insulate suction line of cooling only systems.
  2. Insulate both refrigerant lines of heat pumps systems.
  3. Exterior Applications: Provide two (2) coats of UV resistant finish for flexible elastomeric cellular insulation without jacketing.

**3.2 PIPING INSULATION SCHEDULE**

Design Operating Temp. Range (°F)	Insulation Conductivity		Nominal Pipe Diameter (inches)				
	Conductivity Range (BTU-in/hr.·ft. <sup>2</sup> ·°F)	Mean Rating Temp. (°F)	<1	<1 to 1.5	1.5 to <4	4 to <8	>8
<b>COOLING AND REFRIGERANT SYSTEMS</b>							
40 - 60	0.21 - 0.27	75	0.5	0.5	1.0	1.0	1.0
Below 40	0.20 - 0.26	75	0.5	0.5	1.0	1.0	1.5
<b>CONDENSATE DRAIN SYSTEMS</b>							
40 - 60	0.21 - 0.27	75	0.5	0.5	1.0	1.0	1.0

END OF SECTION 23 07 19

PART 1 - GENERAL

1.1 WORK INCLUDED

- A . HVAC Systems Commissioning
- B . Coordination with Systems Balancing

1.2 RELATED WORK

- A . All portions of specification Division 1 apply to this work.
- B . All portions of specification Section 23 05 00 apply to this work.
- C . Additional sections of the mechanical specifications are required to provide a fully functional system. Refer to the specifications index.

1.3 CODES AND STANDARDS

- A . All codes and standards refer to the current edition.
- B . Associated Air Balance Council (AABC) – National Standard for Total System Balance.
- C . ASHRAE Guideline 1.1 – The HVAC&R Technical Requirements for the Commissioning Process, 2007, with Errata (2012)
- D . Washington State Energy Code Commercial Provisions, latest adopted version.

1.4 SUBMITTALS

- A . Submittals shall be submitted in accordance with Section 01 33 00 “Submittal Procedures.”
- B . HVAC Systems Commissioning Plan
- C . Preliminary and Final Commissioning Reports, Submitted During Construction
- D . Commissioning Agent Qualifications

1.5 COMMISSIONING AGENT QUALIFICATIONS

- A . Commissioning agent (CA) must be a licensed Professional Engineer, or a Certified Commissioning Authority as defined by the Washington State Energy Code with demonstrated experience in at least two prior projects of similar size and scope.

PART 2 - PRODUCT

2.1 INSTRUMENTS

- A . When instruments are used, they shall be accurate and recently calibrated. Provide instrument calibration history if requested by the Architect. Use instrumentation application methods in accordance with AABC or NEBB procedures.
- B . COMMISSIONING PLAN
- C . Submit commissioning plan prior to start of work. As a minimum, include the following in the plan:
  - 1. General description of each air and water system with its associated equipment and operating cycles for heating and cooling.
  - 2. A detailed explanation of the original design intent,
  - 3. Equipment and systems to be tested, including the extent of sampling tests.
  - 4. Functions to be tested (i.e., calibration, economizer controls, etc.).
  - 5. Conditions under which the test shall be performed (for example, winter design conditions, full outside air, etc.)
  - 6. Measurable criteria for acceptable performance.
  - 7. Schedule of activities
  - 8. Roles and responsibilities of Commissioning Team
  - 9. Include in agenda sample forms showing application of procedure to typical systems.

2.2 PRELIMINARY AND FINAL COMMISSIONING REPORTS

- A . Provide four (4) sets of commissioning reports
  - 1. One (1) submitted in preliminary form to the Engineer.
  - 2. Three (3) sets in final form incorporating comments made by the Engineer on the preliminary report.

2.3 COMMISSIONING REQUIREMENTS

- A . Commissioning shall include, as a minimum:
  - 1. A Commissioning Plan,
  - 2. Prefunctional Performance Testing
  - 3. System Testing and Balancing,

4. Equipment/System Functional Performance Testing,
5. Mechanical Controls Functional Performance Testing,
6. A Preliminary Commissioning Report,
7. Post Construction Documentation (all), and
8. A Final Commissioning Report.

#### 2.4 SYSTEMS TESTING AND BALANCING

- A. All HVAC systems shall be balanced in accordance with generally accepted engineering standards, in compliance with the latest adopted version of the Washington State Energy Code Commercial Provisions and in accordance with specification Section 23 05 93 "Testing, Adjusting and Balancing for HVAC Systems."

### PART 3 - EXECUTION

#### 3.1 PREFUNCTIONAL PERFORMANCE TESTING

- A. Equipment/Systems Testing: Prefunctional Performance Testing shall demonstrate the correct installation and operation of each component, and system, in accordance with approved plans and specifications. This demonstration is to prove the operation, for each of the Commissioned systems.
- B. Prefunctional performance checklists are to be supplied by the commissioning agent and filled out by the installing contractor.
  1. At the commission agent's discretion, manufacturer's startup documentation may be submitted in lieu of prefunctional performance checklists.

#### C. FUNCTIONAL PERFORMANCE TESTING

- D. Equipment/Systems Testing: Functional Performance Testing shall demonstrate the correct installation and operation of each component, system, and system-to-system inertie relationship in accordance with approved plans and specifications. This demonstration is to prove the operation, function, and maintenance serviceability for each of the Commissioned systems.
- E. Testing shall include all modes of operation, including:
  1. All modes as described in the Sequence of Operation,
  2. Controls Testing: HVAC control systems shall be tested to ensure that control devices, components, equipment, and systems are calibrated, adjusted, and operate in accordance with approved plans and specifications. Sequences of operation shall be functionally tested to ensure they operate in accordance with approved plans and specifications.

### 3.2 POST-CONSTRUCTION COMMISSIONING

- A . General: Construction documents shall require post-construction commissioning is provided to the building Owner. Drawing notes may refer to specifications for further commissioning requirements. Post-construction commissioning shall include, as a minimum, review, and approval of Operation and Maintenance Materials, Record Drawings, and Systems Operational Training.
- B . Operation and Maintenance (O&M) Manuals: The O&M manual shall be in accordance with industry-accepted standards, in compliance with the Washington State Energy Code Commercial Provisions, and in accordance with Specification Section 23 05 00.
- C . Record Drawings: Provide Record (“As-Built”) drawings in accordance with industry accepted standards, in compliance with the Washington State Energy Code Commercial Provisions, and in accordance with Specification Section 23 05 00.
- D . Provide completed Washington State Energy Code Commercial Provisions Figure C408.1.2.1 “Commissioning Compliance Checklist” to the Owner and Engineer.
- E . Systems Operational Training: The training of the appropriate maintenance staff for each equipment type and/or system shall include, as a minimum, the following:
  - 1. System/Equipment overview (what it is, what it does and which other systems and/or equipment does it interface with).
  - 2. Review of the available O&M materials.
  - 3. Review of the Record Drawings on the subject system/equipment.
  - 4. Hands-on demonstration of all normal maintenance procedures, normal operating modes, and all emergency shutdown and startup procedures.
- F . COMMISSIONING REPORTS
- G . General: The reports shall include Project Name, Owner, Owner’s Project Number, Year, Engineer, and the Systems Commissioning Company. The report shall include all observed and measured data to document whether systems are operating to the full intent of the contract documents. As a minimum, the reports shall include the following information.
  - 1. Preliminary Commissioning Report: A preliminary report of commissioning test procedures and results shall be completed and provided to the Owner. The preliminary commissioning report shall identify:
    - a. Deficiencies found during testing required by this section which have not been corrected at the time of report preparation and the anticipated date of correction.
    - b. Deferred tests which cannot be performed at the time of report preparation due to climatic conditions.

- c. Climatic conditions required for performance of the deferred tests, and the anticipated date of each deferred test.
2. Final Commissioning Report: A complete report of test procedures and results shall be prepared and filed with the Owner. Tests which cannot be performed at the time of report preparation due to climatic conditions may be deferred until climatic conditions allow and may be submitted separately. The Final Commissioning Report shall identify:
    - a. Results of all Functional Performance Tests.
    - b. Disposition of all deficiencies found during testing, including details of corrective measures used or proposed.
    - c. All Functional Performance Test procedures used during the commissioning process including measurable criteria for test acceptance, provided herein for repeatability.

### 3.3 PROCEDURES

- A . Commissioning shall be performed following installation, clean up, controls checkout and system startup to verify proper operation of all features of the systems installed.
- B . Use procedures in accordance with the AABC National Standard for Total System Balance.

### 3.4 COORDINATION

- A . Prior to the start of the commissioning, confirm notify and coordinate with the piping, sheet metal, controls, balancing, electrical and other related contractors. Obtain the support of these contractors. Upon discovery of a system or portion of a system that is suspected of improper function, notify the appropriate contractor. Allow for a minimum of one repair by the contractor(s) and provide a re-test of the suspected system at no additional cost to the Owner. Document both the initial and final measurements as outlined in PART 2 – PRODUCT.

END OF SECTION 23 08 00

PART 1 - GENERAL

1.1 SECTION INCLUDES

A . Thermostats:

1. Programmable room thermostats.

1.2 SUBMITTALS

- A . See Section 23 05 00 "Common Work Results for HVAC" for submittal procedures.
- B . Product Data: Provide description and engineering data for each control system component. Include sizing as requested. Provide data for each system component and software module.

PART 2 - PRODUCTS

2.1 EQUIPMENT – GENERAL

- A . Products Requiring Electrical Connection: Listed and classified by Underwriters Laboratories Inc., as suitable for the purpose specified and indicated.

2.2 THERMOSTATS

- A . Programmable Room Thermostats: Programmable type with seven-day programming for two occupied and two unoccupied periods per day; individual occupied and unoccupied set points; three-hour override of unoccupied program with automatic return to programmed schedule; battery back-up with rechargeable nicad battery; fan "auto" cycle available for both occupied and unoccupied cycles; automatic changeover on heating/cooling sequences.

PART 3 - EXECUTION

3.1 INSTALLATION

- A . Install in accordance with manufacturer's instructions.
- B . Check and verify location of thermostats with plans and room details before installation. Locate 60 inches above floor. Align with lighting switches.

END OF SECTION 23 09 13

PART 1 - GENERAL

1.1 SECTION INCLUDES

- A . Metal ductwork.
- B . Nonmetal ductwork.

1.2 REFERENCE STANDARDS

- A . ASTM A36/A36M – Standard Specification for Carbon Structural Steel.
- B . ASTM A653/A653M – Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process.
- C . ASTM E84 – Standard Test Method for Surface Burning Characteristics of Building Materials.
- D . NFPA 90A – Standard for the Installation of Air-Conditioning and Ventilating Systems.
- E . SMACNA (DCS) – HVAC Duct Construction Standards Metal and Flexible.
- F . UL 181 – Standard for Factory-Made Air Ducts and Air Connectors.

1.3 SUBMITTALS

- A . See Section 23 05 00 “Common Work Results for HVAC” for submittal procedures.
- B . Product Data: Provide data for duct materials.

PART 2 - PRODUCTS

2.1 DUCT ASSEMBLIES

- A . Regulatory Requirements: Construct ductwork to comply with NFPA 90A standards.
- B . Ducts: Galvanized steel, unless otherwise indicated.
- C . Low Pressure Supply (Heating Systems): ½-inch w.g. pressure class, galvanized steel.
- D . Low Pressure Supply (System with Cooling Coils): ½-inch w.g. pressure class, galvanized steel.
- E . Return and Relief: ½-inch w.g. pressure class, galvanized steel.
- F . General Exhaust: ½-inch w.g. pressure class, galvanized steel.



## 2.2 MATERIALS

- A . Galvanized Steel for Ducts: Hot-dipped galvanized steel sheet, ASTM A653/A653M FS Type B, with G60/Z180 coating.
- B . Joint Sealers and Sealants: Non-hardening; water-, mildew-, and mold-resistant.
  - 1. Type: Heavy mastic or liquid used alone or with tape, suitable for joint configuration and compatible with substrates, and recommended by manufacturer for pressure class of ducts.
  - 2. VOC Content: Not more than 250 g/L, excluding water.
  - 3. Surface Burning Characteristics: Flame spread index of zero and smoke developed index of zero, when tested in accordance with ASTM E84.
- C . Hanger Rod: ASTM A36/A36M; steel, galvanized; threaded both ends, threaded one end, or continuously threaded.

## 2.3 DUCTWORK FABRICATION

- A . Fabricate and support in accordance with SMACNA (DCS) and as indicated.
- B . Construct tees, bends, and elbows with radius of not less than 1.5 times width of duct on centerline. Where not possible and where rectangular elbows must be used, provide air foil turning vanes of perforated metal with glass fiber insulation.
- C . Increase duct sizes gradually, not exceeding 15 degrees divergence wherever possible; maximum 30 degrees divergence upstream of equipment and 45 degrees convergence downstream.
- D . Fabricate continuously welded round and oval duct fittings in accordance with SMACNA (DCS).

## 2.4 MANUFACTURED DUCTWORK AND FITTINGS

- A . Flexible Ducts: UL 181, Class 1, aluminum laminate and polyester film with latex adhesive supported by helically wound spring steel wire.
  - 1. Insulation: Fiberglass insulation with polyethylene vapor barrier film.
  - 2. Pressure Rating: 10 inches w.g. positive and 1.0 inches w.g. negative.
  - 3. Maximum Velocity: 4000 fpm.
  - 4. Temperature Range: Minus 20°F to 210°F.
  - 5. Manufacturers:
    - a. ATCO Rubber Products, Inc.

- b. Flexmaster U.S.A., Inc.
- c. Hart & Cooley, Inc.
- d. JP Lanborn, Company.
- e. Thermaflex.

### PART 3 - EXECUTION

#### 3.1 INSTALLATION

- A . Install, support, and seal ducts in accordance with SMACNA (DCS).
- B . Install in accordance with manufacturer's instructions.
- C . During construction provide temporary closures of metal or taped polyethylene on open ductwork to prevent construction dust from entering ductwork system.
- D . Flexible Ducts: Connect to metal ducts with draw bands.
- E . Duct sizes indicated are inside clear dimensions. For lined ducts, maintain sizes inside lining.
- F . Locate ducts with sufficient space around equipment to allow normal operating and maintenance activities.

END OF SECTION 23 31 00

PART 1 - GENERAL

1.1 SECTION INCLUDES

- A . Air turning devices/extractors.
- B . Duct access doors.
- C . Flexible duct connectors.
- D . Volume control dampers.

1.2 REFERENCE STANDARDS

- A . NFPA 90A – Standard for the Installation of Air-Conditioning and Ventilating Systems.
- B . SMACNA (DCS) – HVAC Duct Construction Standards Metal and Flexible.

1.3 SUBMITTALS

- A . See Section 23 05 00 “Common Work Results for HVAC” for submittal procedures.
- B . Product Data: Provide for shop-fabricated assemblies including volume control dampers. Include electrical characteristics and connection requirements.

PART 2 - PRODUCTS

2.1 AIR TURNING DEVICES/EXTRACTORS

- A . Multi-blade device with blades aligned in short dimension; steel construction; with individually adjustable blades, mounting straps.

2.2 DUCT ACCESS DOORS

- A . Manufacturers:
  - 1. Acudor Products Inc, a Division of Nelson Industrial Inc.
  - 2. Ductmate Industries, Inc, a DMI Company.
  - 3. Elgen Manufacturing, Inc.
  - 4. Ward Industries, a brand of Hart and Cooley, Inc.

2.3 FLEXIBLE DUCT CONNECTORS

- A . Manufacturers:
  - 1. Carlisle HVAC Products.

2. Duro Dyne Corp.
  3. Elgen Manufacturing, Inc.
  4. Ventfabrics, Inc.
- B. Fabricate in accordance with SMACNA (DCS) and as indicated.
- C. Flexible Duct Connections: Fabric crimped into metal edging strip.
1. Fabric: UL listed fire-retardant neoprene coated woven glass fiber fabric to NFPA 90A, minimum density 30 oz per sq yd.
    - a. Net Fabric Width: Approximately 2-inches-wide.
  2. Metal: 3-inches-wide, 24 gauge, 0.0239-inch-thick galvanized steel.

#### 2.4 VOLUME CONTROL DAMPERS

- A. Fabricate in accordance with SMACNA (DCS) and as indicated.
- B. Multi-Blade Damper: Fabricate of opposed blade pattern with maximum blade sizes 8-inches by 72-inches. Assemble center and edge crimped blades in prime coated or galvanized channel frame with suitable hardware.
- C. End Bearings: Except in round ducts 12-inches and smaller, provide end bearings. On multiple blade dampers, provide oil-impregnated nylon, thermoplastic elastomer, or sintered bronze bearings.
- D. Quadrants:
1. Provide locking, indicating quadrant regulators on single and multi-blade dampers.

### PART 3 - EXECUTION

#### 3.1 INSTALLATION

- A. Install accessories in accordance with manufacturer's instructions, NFPA 90A, and follow SMACNA (DCS). Refer to Section 23 31 00 for duct construction and pressure class.
- B. At fans and motorized equipment associated with ducts, provide flexible duct connections immediately adjacent to the equipment.
- C. At equipment supported by vibration isolators, provide flexible duct connections immediately adjacent to the equipment.
- D. Provide balancing dampers at points on supply, return, and exhaust systems where branches are taken from larger ducts as required for air balancing. Install minimum 2 duct widths from duct takeoff.

- E . Provide balancing dampers on duct takeoff to diffusers, grilles, and registers, regardless of whether dampers are specified as part of the diffuser, grille, or register assembly.

END OF SECTION 23 33 00

PART 1 - GENERAL

1.1 SECTION INCLUDES

- A . Ceiling exhaust fans.
- B . Inline centrifugal fans and blowers.

1.2 REFERENCE STANDARDS

- A . AMCA (DIR) – (Directory of) Products Licensed Under AMCA International Certified Ratings Program.
- B . AMCA 99 – Standards Handbook.
- C . AMCA 204 – Balance Quality and Vibration Levels for Fans.
- D . AMCA 210 – Laboratory Methods of Testing Fans for Certified Aerodynamic Performance Rating.
- E . AMCA 300 – Reverberant Room Method for Sound Testing of Fans.
- F . AMCA 301 – Methods for Calculating Fan Sound Ratings from Laboratory Test Data.

1.3 SUBMITTALS

- A . See Section 23 05 00 “Common Work Results for HVAC” for submittal procedures.
- B . Product Data: Provide data on fans and accessories including fan curves with specified operating point clearly plotted, power, RPM, sound power levels at rated capacity, and electrical characteristics and connection requirements.

1.4 FIELD CONDITIONS

- A . Permanent ventilators may not be used for ventilation during construction.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A . Greenheck Fan Corporation
- B . Loren Cook Company
- C . Twin City Fan & Blower

## 2.2 POWER VENTILATORS – GENERAL

- A . Static and Dynamically Balanced: Comply with AMCA 204.
- B . Performance Ratings: Comply with AMCA 210, bearing certified rating seal.
- C . Sound Ratings: Comply with AMCA 301, tested to AMCA 300, bearing certified sound ratings seal.
- D . Fabrication: Comply with AMCA 99.
- E . Electrical Components: Listed and classified by Underwriters Laboratories Inc. as suitable for the purpose specified and indicated.

## 2.3 CEILING EXHAUST FANS

- A . Centrifugal Fan Unit: Forward curved, direct driven with galvanized steel housing lined with acoustic insulation, resilient mounted motor, gravity backdraft damper in discharge.
- B . Motor: Electronically commutated (EC) motor.
- C . Disconnect Switch: Cord and plug in housing for thermal overload protected motor.
- D . Grille: Molded white plastic.

## 2.4 INLINE CENTRIFUGAL FANS AND BLOWERS

- A . Centrifugal Fan Unit: V-belt or direct driven with galvanized steel housing lined with acoustic insulation, resilient mounted motor, gravity backdraft damper in discharge.
- B . Backward Inclined Blower:
  - 1. Direct-driven, resiliently mounted electrically commutated motor, heavy-duty ball bearings, galvanized steel housing for indoor service, and removable service panels.
- C . Disconnect Switch: Cord and plug in housing for thermal overload protected motor.

## PART 3 - EXECUTION

### 3.1 INSTALLATION

- A . Install in accordance with manufacturer's instructions.
- B . Hung Cabinet Fans:
  - 1. Install fans with resilient mountings and flexible electrical leads; see Section 23 05 43.

2. Install flexible connections specified in Section 23 33 00 between fan and ductwork. Ensure metal bands of connectors are parallel with minimum 1-inch flex between ductwork and fan while running.

END OF SECTION 23 34 23



PART 1 - GENERAL

1.1 SECTION INCLUDES

A . Diffusers:

1. Rectangular ceiling diffusers.

B . Registers/grilles:

1. Ceiling-mounted, egg crate exhaust and return register/grilles.
2. Ceiling-mounted, exhaust and return register/grilles.
3. Wall-mounted, exhaust and return register/grilles.

C . Louvers:

1. Extruded aluminum louvers.

1.2 REFERENCE STANDARDS

- A . AAMA 2603 – Voluntary Specification, Performance Requirements and Test Procedures for Pigmented Organic Coatings on Aluminum Extrusions and Panels (with Coil Coating Appendix).
- B . AMCA 500-L – Laboratory Methods of Testing Louvers for Rating.
- C . ASTM B221 – Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes.
- D . ASTM B221M – Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes (Metric).

1.3 SUBMITTALS

- A . See Section 23 05 00 “Common Work Results for HVAC” for submittal procedures.
- B . Product Data: Provide data for equipment required for this project. Review outlets and inlets as to size, finish, and type of mounting prior to submission. Submit schedule of outlets and inlets showing type, size, location, application, and noise level.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A . Carnes, a division of Carnes Company Inc.

- B . Hart & Cooley, Inc.
- C . Krueger-HVAC.
- D . Price Industries.
- E . Titus, a brand of Air Distribution Technologies.
- F . Tuttle and Bailey.

## 2.2 RECTANGULAR CEILING DIFFUSERS

- A . Type: Provide square, adjustable pattern, stamped, multi-core diffuser to discharge air in an adjustable pattern.
- B . Connections: Rectangular.
- C . Frame: 1¼-inch margin with countersunk screw mounting for surface mounting.
- D . Frame: Channel lay-in frame for suspended grid ceilings.
- E . Fabrication: Steel with baked enamel finish.
- F . Color: white.

## 2.3 CEILING EXHAUST AND RETURN REGISTERS/GRILLES

- A . Type: Streamlined blades, ¾-inch minimum depth, ¾-inch maximum spacing, with blades set at 45 degrees, horizontal face.
- B . Frame: 1¼-inch margin with countersunk screw mounting.
- C . Fabrication: Steel with 20-gauge, 0.0359-inch minimum frames and 22-gauge, 0.0299-inch minimum blades, steel and aluminum with 20-gauge, 0.0359-inch minimum frame, or aluminum extrusions, with factory baked enamel finish.

## 2.4 CEILING EGG CRATE EXHAUST AND RETURN GRILLES

- A . Type: Egg crate style face consisting of ½-inch by ½-inch by ½-inch grid core.
- B . Fabrication: Grid core consists of aluminum with mill aluminum finish.
- C . Frame: 1¼-inch margin with countersunk screw mounting for surface mounting.
- D . Frame: Channel lay-in frame for suspended grid ceilings.

2.5 WALL EXHAUST AND RETURN REGISTERS/GRILLES

- A . Type: Streamlined blades,  $\frac{3}{4}$ -inch minimum depth,  $\frac{3}{4}$ -inch maximum spacing, with spring or other device to set blades, vertical face.
- B . Frame: 1 $\frac{1}{4}$ -inch margin with countersunk screw mounting.
- C . Fabrication: Aluminum extrusions, with factory-baked enamel finish.

2.6 LOUVERS

- A . Manufacturers:
  - 1. American Warming and Ventilating.
  - 2. Construction Specialties, Inc.
  - 3. Greenheck Fan Corporation.
  - 4. Pottorff.
  - 5. Ruskin Company.

2.7 EXTRUDED ALUMINUM LOUVERS

- A . Stationary Louvers: Horizontal blade, extruded aluminum construction, with intermediate mullions matching frame.
  - 1. Extruded Aluminum: ASTM B221 (ASTM B221M), 6063 alloy, T5 temper.
  - 2. Free Area: 50%, minimum.
  - 3. Pressure Drop: 0.20-inches of water gauge maximum per square foot of free area at velocity of 1000 fpm, when tested in accordance with AMCA 500-L, test unit size 48-inches by 48-inches.
  - 4. Blades: Straight.
  - 5. Frame: 4 inches deep, channel profile; mitered corner joints.
  - 6. Aluminum Thickness: Frame 12 gauge, 0.0808-inch minimum; blades 12 gauge, 0.0808-inch minimum.
  - 7. Aluminum Finish: Pigmented organic coatings; finish welded units after fabrication.
- B . Finishes:
  - 1. Pigmented Organic Coatings: AAMA 2603; polyester or acrylic baked enamel finish.
  - 2. Primer: Zinc chromate, alkyd type.
  - 3. Color: To be selected by Architect from manufacturer's standard range..

C . Accessories:

1. Screens: Frame of same material as louver, with reinforced corners; removable, screw attached; installed on inside face of louver frame.
2. Bird Screen: Interwoven wire mesh of steel, 14 gauge, 0.0641-inch diameter wire, ½-inch open weave, diagonal design.
3. Fasteners and Anchors: Stainless-steel.
4. Sealant for Setting Sills and Sill Flashing: Non-curing butyl type.

PART 3 - EXECUTION

3.1 INSTALLATION

- A . Install in accordance with manufacturer's instructions.
- B . Check location of outlets and inlets and make necessary adjustments in position to comply with architectural features, symmetry, and lighting arrangement.
- C . Provide balancing dampers on duct take-off to diffusers, and grilles and registers, despite whether dampers are specified as part of the diffuser, or grille and register assembly.
- D . Install louver assembly in accordance with manufacturer's instructions.
- E . Coordinate with installation of flashings by others.
- F . Install louvers level and plumb.
- G . Set sill members and sill flashing in continuous bead of sealant.
- H . Align louver assembly to ensure moisture shed from flashings and diversion of moisture to exterior.
- I . Secure louver frames in openings with concealed fasteners.
- J . Coordinate with installation of mechanical ductwork.

END OF SECTION 23 37 00

PART 1 - GENERAL

1.1 SECTION INCLUDES

- A . Fan Filter Units.

1.2 REFERENCE STANDARDS

- A . AHRI 851 (SI) – Performance Rating of Commercial and Industrial Air Filter Equipment.
- B . ASHRAE Std 70 – Method of Testing the Performance of Air Outlets and Inlets.
- C . IEST-RP-CC002.3 – Recommended Practice for Unidirectional-Flow of Clean Air Devices..

1.3 SUBMITTALS

- A . See Section 23 05 00 “Common Work Results for HVAC” for submittal procedures.
- B . Product Data: Provide data on filter media, filter performance data, filter assembly and filter frames, dimensions, motor locations and electrical characteristics and connection requirements.

1.4 QUALITY ASSURANCE

- A . Products Requiring Electrical Connection: Listed and classified by Underwriters Laboratories Inc. as suitable for the purpose specified and indicated.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

- A . Comply with the rating requirements in AHRI 851 (SI).

2.2 FAN FILTER UNITS

- A . Manufacturers:
  1. American Air Filter Company, Inc.
  2. Envirco USA.
  3. Nailor Industries, Inc.
  4. Price Industries.
  5. Titus HVAC.

B . Construction

1. The unit shall be constructed and classified in accordance with IEST-RP-CC002.3.
2. The perforated face of the diffuser shall be constructed with 304 stainless steel and have 3/16-inch diameter holes on 60° ¼-inch staggered centers with 51% free area.
3. The face shall be attached with quarter-turn fasteners to allow for complete removal and access to the interior for cleaning. All diffusers are to include safety cables to prevent accidental dropping of the removable face.
4. Frame type shall be either Lay-in T-Bar suitable for flat ceiling tees, up to 1½-inches-wide, or surface mount.
5. All room-side exposed surfaces shall have Number 4 Brushed Satin Polished finish.
6. Ducted units shall be provided with 10-inch, 12-inch, or 14-inch round inlet and MERV 4 pre-filter with access door.
7. The diffuser plenum shall be welded 304 stainless steel, minimum 20 gauge. The diffuser plenum shall incorporate an integral filter frame to accommodate a gel seal filter of type HEPA or ULPA. Integral hanger tabs shall be included and shall be permanently welded to the plenum.
8. Fan Filter Diffusers shall be lined with 1.25-inch-thick internal urethane foam insulation attached to the bottom of the plenum and 0.75-inch on the mid-panel, both surrounding the fan, for sound attenuation.
9. A static pressure port shall be included for upstream filter static pressure measurements. The pressure port shall be factory installed and factory leak tested prior to shipment.
10. Filters shall be securely held in place by at least four mounting brackets, allowing filter removal from the face of the diffuser without disturbing the installed ductwork or the diffuser mounting surface. The mounting bracket assembly shall not compromise the integrity of the knife edge assembly with any through penetrations of the knife edge.

C . Filters

1. The filters efficiency shall be HEPA: 99.99% minimum removal efficiency on 0.30 micrometer particle size. Filters shall incorporate an anodized extruded aluminum frame and 2-inch-deep separator-less filter pack. Filters shall incorporate a removable test port, to measure filter pressure drop or to perform leakage (scan) tests.
2. All filters shall be UL 900 Class 1 Listed and Factory Mutual Approved.
3. Filters shall be packaged independently from the diffuser for final installation in the field (by others).

D . Performance

1. The manufacturer shall provide published performance data for the diffuser, which shall be tested in accordance with ASHRAE Std 70.
2. Motor shall be a high efficiency ECM for precise constant airflow and field balancing, complete with integrated electronics, advanced thermal and overload protection.
  - a. Operation Modes: Constant CFM.
3. Blower wheel shall be forward curved centrifugal type, dynamically balanced and driven by direct drive ECM.
4. Motor/Blower assembly shall be accessible and removable from the top of the unit.

E . Controls

1. ECM Fan Card shall be a manual volume controller that provides precise manual adjustment of CFM and monitoring of the fan when used with the ECM. The display shall include a backlit and clearly legible digital readout.
2. LED fan operation indicator shall remain on during normal operation and be room-side visible.
3. Toggle type disconnect switch shall be provided with all units for main power on/off.

PART 3 - EXECUTION

3.1 INSTALLATION

- A . Install air cleaning devices in accordance with manufacturer's instructions.
- B . Prevent passage of unfiltered air around filters with felt, rubber, or neoprene gaskets.
- C . Do not operate fan system until filters (temporary or permanent) are in place. Replace temporary filters used during construction and testing with a clean set.

END OF SECTION 23 40 00

## PART 1 - GENERAL

### 1.1 SECTION INCLUDES

- A . Energy recovery ventilators.

### 1.2 REFERENCE STANDARDS

- A . AHRI 1060 I-P – Performance Rating of Air-to-Air Exchangers for Energy Recovery Ventilation Equipment.
- B . ASHRAE Std 52.2 – Method of Testing General Ventilation Air-Cleaning Devices for Removal Efficiency by Particle Size.
- C . ASTM E84 – Standard Test Method for Surface Burning Characteristics of Building Materials.
- D . NFPA 70 – National Electrical Code.
- E . UL 723 – Standard for Test for Surface Burning Characteristics of Building Materials.

### 1.3 SUBMITTALS

- A . See Section 23 05 00 “Common Work Results for HVAC” for submittal procedures.
- B . Product Data: Manufacturer’s installation instruction, product data, and engineering calculations.
- C . Shop Drawings: Show design and assembly of energy recovery unit and installation and connection details.

## PART 2 - PRODUCTS

### 2.1 REGULATORY REQUIREMENTS

- A . Surface Burning Characteristics: Flame spread index/Smoke developed index of 25/50, maximum, when tested in accordance with ASTM E84 or UL 723.

### 2.2 MANUFACTURERS

- A . Energy Recovery Ventilators:
  - 1. Fantech, Systemair AB.
  - 2. Greenheck Fan Corporation
  - 3. Oxygen8



4. Panasonic Corporation of North America.
5. RenewAire.
6. Ruskin Company.
7. Soler Palau – USA.

## 2.3 INDOOR ENERGY RECOVERY VENTILATORS

A . Energy Recovery Ventilators: Provide stationary core air-to-air exchanger; prefabricated packaged system designed by manufacturer.

1. Provide unit with a AHRI 1060 I-P-compliant air-to-air exchanger.

## 2.4 CASING

A . Construction: Single wall, minimum 22-gauge galvanized steel sheet. Galvanized steel framing.

B . Access: Hinged and/or screwed access panels.

C . Insulation: 1-inch insulated fiberglass with FSK facing.

## 2.5 FANS

A . Provide separate fans for exhaust and supply blowers.

B . Fans:

1. Individually driven with a dedicated motor.

C . Housings: 12-gauge, 0.1046-inch aluminized steel with plenums integral to general housing and constructed to Class 1 fan standards.

D . Motors:

1. Motors: Electronically commutated (EC).
2. Efficiency: High.
3. Speed: Single.
4. Control: Constant Speed.
5. Fan Motor: UL listed and labeled.

## 2.6 STATIONARY ENERGY RECOVERY CORE

A . Stationary Core: AHRI 1060 I-P certified, air-to-air energy exchanger with evenly spaced and sealed plates arranged for counter airflow.

- B . Plate Material: Washable, polymer fiber membrane with selective hydroscopic and moisture permeability, and gas barrier properties. Comply with

## 2.7 FILTERS

- A . Exhaust and Fresh Air Streams: MERV 8 filters constructed to meet ASHRAE Std 52.2.

## 2.8 VIBRATION ISOLATION

- A . Vibration Isolation: Provide whole unit vibration isolation with the energy recovery unit assembly.

## 2.9 POWER AND CONTROLS

- A . Provide single-point field connection to power supply.
- B . Provide non-fused main disconnect integral to control panel.
- C . Install wiring in accordance with NFPA 70.
- D . Control package for operation of external dampers and duct heater.

## PART 3 - EXECUTION

### 3.1 EXAMINATION

- A . Verify that structure is ready for installation of unit, that openings in deck for ductwork, if required, are correctly sized and located, and that mechanical and electrical utilities supplying unit are of correct capacities and are accessible.

### 3.2 INSTALLATION

- A . Provide openings for suitable ductwork connection.
- B . Provide interconnecting control wiring between devices.

### 3.3 CLEANING

- A . Clean filters, air plenums, interior and exposed-to-view surfaces prior to Substantial Completion.

END OF SECTION 23 72 26

PART 1 - GENERAL

1.1 SECTION INCLUDES

- A . Air-cooled condensing units.
- B . Indoor air-handling (fan and coil) units for ducted systems.
- C . Controls.

1.2 REFERENCE STANDARDS

- A . AHRI 210/240 – Standard for Performance Rating of Unitary Air-Conditioning and Air-Source Heat Pump Equipment.
- B . AHRI 520 – Performance Rating of Positive Displacement Condensing Units.
- C . ASHRAE Std 15 – Safety Standard for Refrigeration Systems and Designation and Classification of Refrigerants.
- D . ASHRAE Std 23.1 – Methods for Performance Testing Positive Displacement Refrigerant Compressors and Condensing Units that Operate at Subcritical Pressures of the Refrigerant.
- E . ASME B16.18 – Cast Copper Alloy Solder Joint Pressure Fittings.
- F . ASTM B16.22 – Wrought Copper and Copper Alloy Solder-Joint Pressure Fittings.
- G . ASTM B88 – Standard Specification for Seamless Copper Water Tube.
- H . NEMA MG 1 – Motors and Generators.
- I . NFPA 90A – Standard for the Installation of Air-Conditioning and Ventilating Systems.
- J . NFPA 90B – Standard for the Installation of Warm Air Heating and Air-Conditioning Systems.
- K . UL 207 – Standard for Refrigerant-Containing Components and Accessories, Nonelectrical.

1.3 SUBMITTALS

- A . See Section 23 05 00 “Common Work Results for HVAC” for submittal procedures.
- B . Product Data: Provide rated capacities, weights, accessories, electrical nameplate data, and wiring diagrams.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A . Carrier Corporation.
- B . Daikin Industries.
- C . Lennox International Inc.
- D . LG Electronics.
- E . Mitsubishi Electric.
- F . Trane Inc.
- G . York International Corporation/Johnson Controls.

2.2 SYSTEM DESIGN

- A . Split-System Heating and Cooling Units: Self-contained, packaged, matched factory-engineered and assembled, pre-wired indoor and outdoor units; UL listed.
  - 1. Heating and Cooling: Air-source electric heat pump located in outdoor unit with evaporator.
  - 2. Provide refrigerant lines internal to units and between indoor and outdoor units, soft-annealed copper tubing with flared fittings, factory cleaned, dried, pressurized and sealed.
    - a. See 23 07 19 "HVAC Piping Insulation."

2.3 INDOOR AIR HANDLING UNITS FOR DUCTED SYSTEMS

- A . Indoor Units: Self-contained, packaged, factory assembled, pre-wired unit consisting of cabinet, supply fan, heating and cooling element(s), controls, and accessories; wired for single power connection with control transformer.
  - 1. Air Flow Configuration: Horizontal.
  - 2. Cabinet: Galvanized steel, easily removed and secured access doors with safety interlock switches, glass fiber insulation with reflective liner.
- B . Supply Fan: Centrifugal type rubber mounted with direct drive.
  - 1. Motor: Electronically commutated (EC).
- C . Air Filters: 1-inch-thick, MERV 8, glass fiber, disposable type arranged for easy replacement.

D . Evaporator Coils: Copper tube aluminum fin assembly, galvanized or polymer drain pan sloped in all directions to drain, drain connection, refrigerant piping connections, and restricted distributor or thermostatic expansion valve.

1. Construction and Ratings: In accordance with AHRI 210/240 and UL 207.

#### 2.4 AIR COOLED CONDENSING UNITS

A . Outdoor Units: Self-contained, packaged, pre-wired unit consisting of cabinet, with compressor and condenser.

1. Comply with AHRI 210/240.
2. Refrigerant: R-410A.
3. Construction and Ratings: In accordance with AHRI 210/240 with testing in accordance with ASHRAE Std 23.1 and UL 207.

B . Compressor: Scroll, 3600 rpm, AHRI 520 resiliently mounted integral with condenser, with positive lubrication, crankcase heater, high pressure control, motor overload protection, service valves and drier. Provide time delay control to prevent short cycling.

C . Air Cooled Condenser: Aluminum fin and copper tube coil, AHRI 520 with direct drive axial propeller fan resiliently mounted, galvanized fan guard.

D . Accessories: Filter drier, high-pressure switch (manual reset), low-pressure switch (automatic reset), service valves and gauge ports, thermometer well (in liquid line).

1. Provide thermostatic expansion valves.
2. Provide heat pump reversing valves.

E . Operating Controls:

1. Control by room thermostat to maintain room temperature setting.

#### 2.5 ACCESSORY EQUIPMENT

A . Condensate Drain Piping: Copper tube, ASTM B88, Type M, hard-drawn temper with ASME B16.22 wrought-copper fittings or ASME B16.18, cast-copper alloy solder-joint pressure fittings.

1. See 23 07 19 "HVAC Piping Insulation."

### PART 3 - EXECUTION

#### 3.1 INSTALLATION

A . Install in accordance with manufacturer's instructions and requirements of local authorities having jurisdiction.

- B . Install in accordance with NFPA 90A and NFPA 90B.
- C . Install refrigeration systems in accordance with ASHRAE Std 15.
- D . Pipe drain from cooling coils to nearest floor drain.
- E . Install thermostat and interconnecting wiring.

END OF SECTION 23 81 26

PART 1 - GENERAL

1.1 SECTION INCLUDES

- A . Electric wall heaters.
- B . Electric duct heaters.

1.2 REFERENCE STANDARDS

- A . SMACNA (DCS) – HVAC Duct Construction Standards, Metal and Flexible.
- B . UL 2021 – Fixed and Location Dedicated Electric Room Heaters.

1.3 SUBMITTALS

- A . See Section 23 05 00 “Common Work Results for HVAC” for submittal procedures.
- B . Product Data: Provide typical catalog of information including arrangements.

PART 2 - PRODUCTS

2.1 ELECTRIC WALL HEATERS

A . Manufacturers:

1. Berko Electric Heating, a division of Marley Engineered Products.
2. Chromalox, Inc., a division of Emerson Electric Company.
3. King Electrical Manufacturing Company.
4. Markel Products, a division of TPI Corporation.
5. Marley Electric Heating, a division of Marley Engineered Products.
6. QMark Electric Heating, a division of Marley Engineered Products.

- B . Description: An assembly including chassis, electric heating coil, fan, motor, and controls. Comply with UL 2021.

C . Cabinet:

1. Front Panel: Stamped-steel louver or extruded-aluminum bar grille, with removable panels fastened with tamperproof fasteners.
2. Finish: Baked enamel over baked-on primer with manufacturer’s standard color selected by Architect, applied to factory-assembled and -tested wall heaters before shipping.

3. Surface-Mounting Cabinet Enclosure: Steel with finish to match cabinet.
- D . Electric-Resistance Heating Coil: Nickel-chromium heating wire, free from expansion noise and hum, embedded in magnesium oxide refractory and sealed in corrosion-resistant metallic sheath. Terminate elements in stainless-steel, machine-staked terminals secured with stainless-steel hardware, and limit controls for high-temperature protection
- E . Fan: Aluminum tangential fan directly connected to motor.
- F . Motor: Permanently lubricated sealed bearings.
- G . Controls: Wall-mounted thermostat.
- H . Electrical Connection: Factory wire motors and controls for a single field connection.

## 2.2 ELECTRIC DUCT HEATERS

- A . Manufacturers:
  1. Greenheck Fan Corporation.
  2. INDEECO.
  3. Markel Products, a division of TPI Corporation.
  4. Marley Electric Heating, a division of Marley Engineered Products.
  5. Nailor Industries, Inc.
  6. RenewAire, LLC.
- B . Provide products listed, classified, and labeled by Underwriters Laboratories Inc. (UL) or Intertek (ETL) as suitable for the purpose indicated.
- C . Assembly: Terminal control box with hinged access cover, heating element, casing, and controls.
- D . Open Coil: Nickel chromium heating element, nickel plated terminals supported in ceramic bracket bushings.
- E . Frame: Heavy gauge galvanized or corrosion-resistant steel.
- F . Standard Built-In Components:
  1. Interlock disconnect switch.
  2. Contactors.
  3. Fused transformers.
  4. Airflow switch.



5. Circuit fuses.
  6. Load and control terminal blocks.
- G . Over-Temperature Protection: Provide thermal cutouts for primary and secondary over-temperature protection.

### PART 3 - EXECUTION

#### 3.1 INSTALLATION

- A . Install in accordance with manufacturer's recommendations.
- B . Install equipment exposed to finished areas after walls and ceilings are finished and painted.
- C . Wall Heaters:
  1. Install as indicated.
  2. Coordinate to ensure correct recess size for recessed units.
- D . Duct Heaters:
  1. Install in ducts and casings in accordance with SMACNA (DCS).

END OF SECTION 23 82 00

**APPENDIX A**  
**EQUIPMENT CUTSHEETS**

Skagit County Coroner's Office

Morgue Remodel

Cooler Information

Manufacturer: MOBI Medical Supply

Size: 10 x 15 x 8 (height can be adjusted)

Cooling Units: 2

Model: Split Outside Remcte

Door Options: 1 or 2 doors, 36 inch, 42 inch, 48 inch, or 48 inch sliding door

Floor: Commonly floorless units, can include a floor if requested

Lights: 3 48 inch LED light fixtures

Thermostat: Digital temperature display

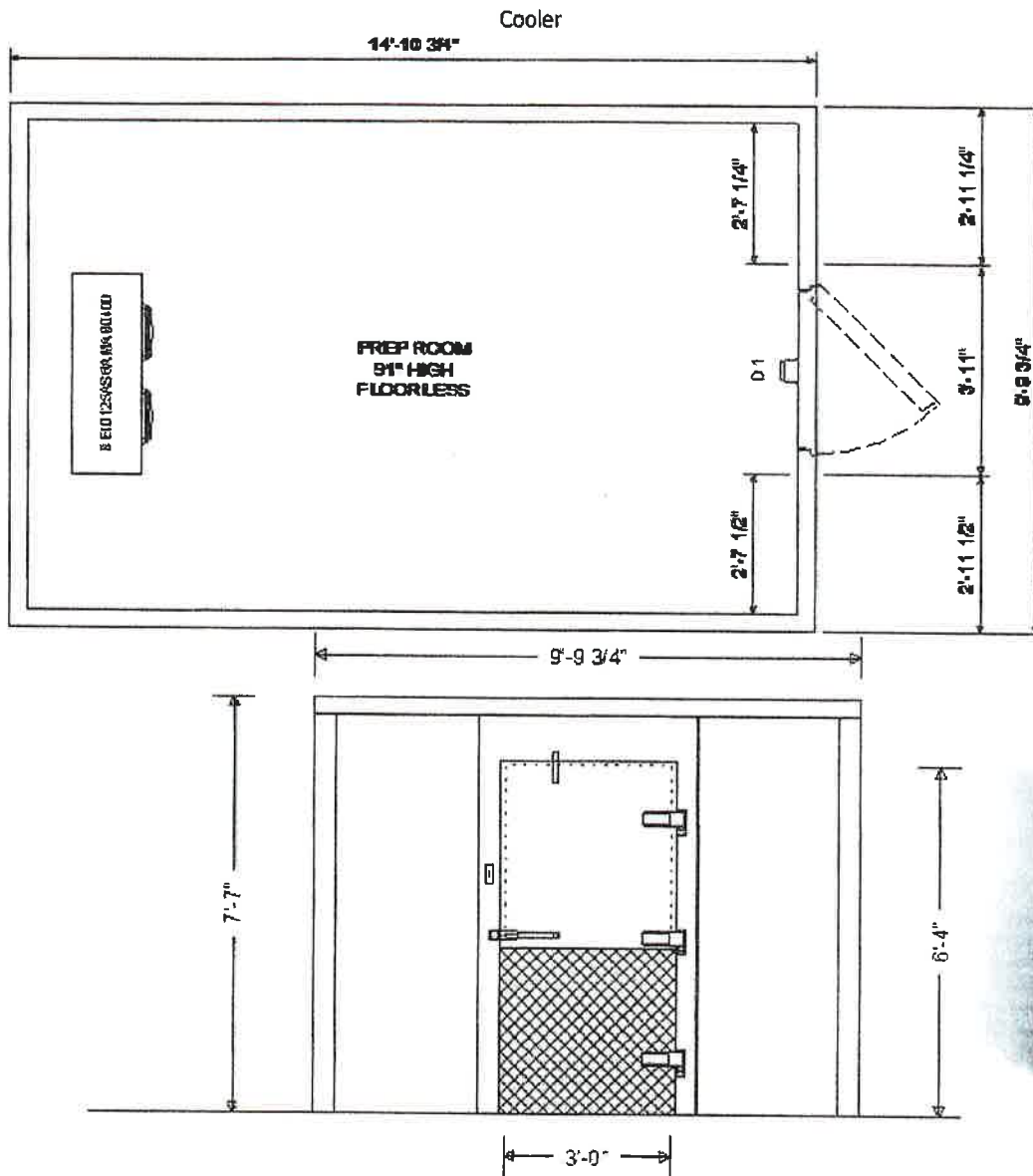
Electricity (wiring): Requires 220-230 volt electrical outlet, can come wired for single, double, or triple phase electricity depending on the building specifications (single is most common).

Extras: This company can also manufacture and supply body racks if necessary. All components are made in the USA.

Notes: All specifications will be emailed to [coroner@co.skagit.wa.us](mailto:coroner@co.skagit.wa.us) on 07/15/2021, the company has been given the office phone number (360-416-1996) if they have further questions.

- Information obtained via phone call by SCCO Intern Radovan Woods on 07/14/2021 at 1320 hours

Side door instead of front



Buyer's Signature To Accept This Quotation: \_\_\_\_\_

*Acceptance of this Quotation is expressly subject to The Terms and Conditions of Sale attached hereto which are incorporated into this Quotation by this reference as if fully set forth herein.*

Evaporator placement is the responsibility of the installer. This drawing is simply a recommended location but we do not know the field conditions.

**\*\*Dimensions and Specifications show are for quoting purposes and are subject to change. When engineering and manufacturing drawing are finalized\*\***



# BCH0020MBACZA0100 - SUBMITTAL

Project Name:		Project Location:	
Quote ID:		Item #:	1000
Submitted For:		Submitted Co.:	
Submitted By:		Submitted From:	
Identify #:		Tag:	

For Record       For Approval      By: \_\_\_\_\_      Date: \_\_\_\_\_

## General Product Information

Product Family:	BCH	Compressor Brand:	Copeland
Application:	Outdoor	Compressor Type:	Scroll
Temperature Range:	Medium Temp	Compressor Hp:	2
Voltage: (Volts/Ph/Hz)	208-230/1/60	Compressor Model:	ZS15KAE-PFV-118
Refrigerant Type:	R448A	Number of Compressor(s):	1
Piping:	Standard	Coil Type:	Microchannel

## Technical Information

### Performance Data

Ambient Temperature (°F)	Saturated Suction Temperature (°F)	Application Capacity* (BTU/H)	Altitude (ft)	AWEF Value
95	25.0	16,410	0	7.5

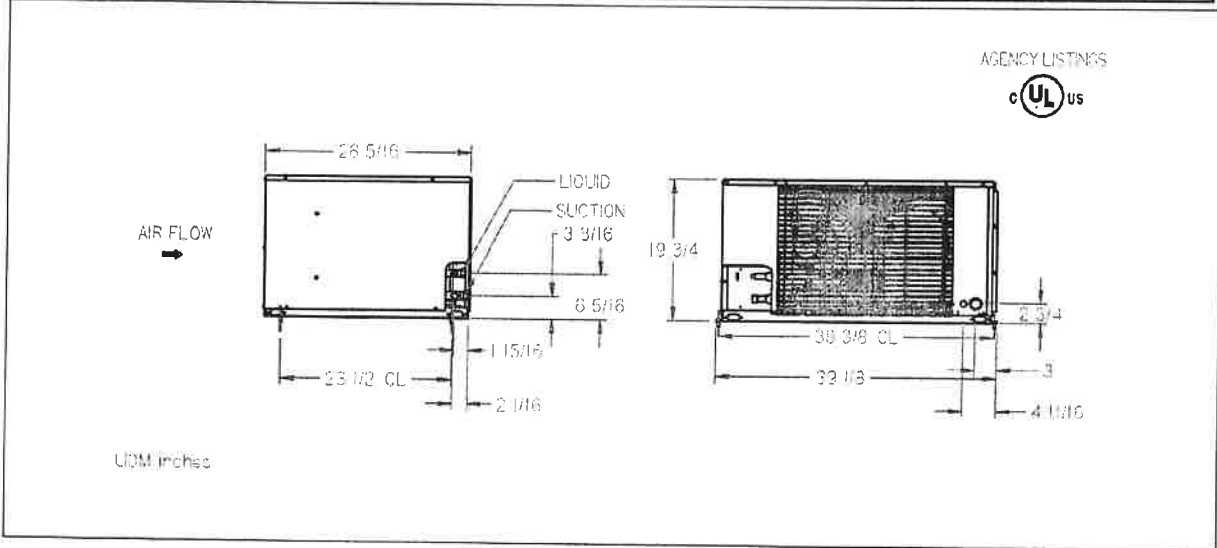
### Electrical Data

Compressor(s)		Fan Motor(s)			Electric Ratings						
RLA	LRA	Quantity	Hp	FLA	Defrost Type	High or Low Amps?	Number of Contactors	MCA	MOPD	Evap. Fan Amps	Defrost Heater Amps
14.1	68	2	1/12	1	AIR DEFROST			20	30	10	30

### Unit Specifications

Connections (in.)		Receiver 90% Full (lbs)		Fan Blade(s) Diameter (in)	Sound Data (dB)	Approx. Net Weight (lbs)
Liquid Line	Suction	Standard	Over Sized			
0.5	0.875	14	20	14	63	221

### Dimensional Drawing(s)





# BCH0020MBACZA0100 - SUBMITTAL

Project Name		Project Location:	
Quote ID:		Item #:	1000
Submitted For:		Submitted Co.:	
Submitted By:		Submitted From:	
Identity #:		Tag:	

## Standard Features

### CABINET AND CONSTRUCTION

- MICROCHANNEL COIL TECHNOLOGY STANDARD ON ALL UNITS

### QUALITY

- ALL UNITS ARE COMPLETELY LEAK TESTED IN A HELIUM ENVIRONMENT, BUMP TESTED AND ALLOWED TO CYCLE OFF ON THE HIGH AND LOW PRESSURE CONTROL. EACH UNIT HAS A COPY OF THE RUN DATA SHIPPED INSIDE THE ELECTRICAL PANEL
- ELECTRICAL CIRCUITS ARE COMPLETELY CHECKED FOR CONTINUITY
- PIPING IS LAID OUT TO MINIMIZE STRESS AND VIBRATION AND IS PRE-BENT TO ELIMINATE LEAKS
- ENCAPSULATED, AUTO-RESET, HIGH AND LOW PRESSURE CONTROLS TO ELIMINATE LEAKS (ADJUSTABLE LOW PRESSURE CONTROL STANDARD)
- PAINTED STEEL CABINETS FOR SUPERIOR STRENGTH AND CORROSION PROTECTION
- HEAVY DUTY, STEEL, 1-1/2" TALL BASE

### SERVICEABILITY

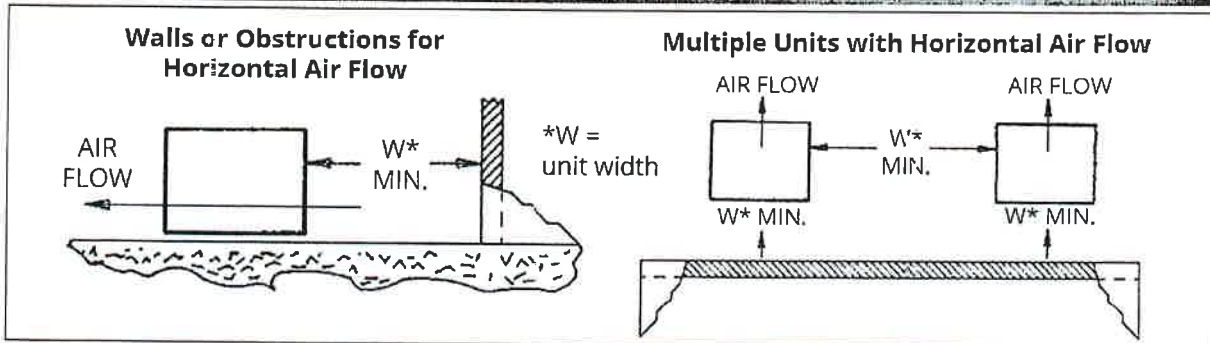
- SUCTION SERVICE VALVES FOR HERMETIC AND SCROLL COMPRESSORS LOCATED OUTSIDE THE CABINET FOR QUICK INSTALLATIONS.
- RECEIVER WITH FUSIBLE PLUG LIQUID SHUTOFF VALVE AND CHARGING PORT IS STANDARD
- LARGE ELECTRICAL PANEL FOR EASE OF ACCESS
- PREFABRICATED WIRING HARNESSSES FOR TIGHT CRIMP CONNECTIONS AND CONSISTENT LABELING
- UNIT STAYS ON IF THE HOOD IS REMOVED FOR SERVICING
- SIGHT GLASS IS EASILY VIEWABLE

## Options

### Mounted Options

- Brand Label - BOHN
- Coil Selection - MICROCHANNEL COIL
- Defrost Timer Options - AIR DEFROST TIMER
- Suction Line Options - SUCTION TUBE ONLY
- Cabinet Selection - Painted
- Pressure Options - ADJUSTABLE LOW - FIXED HIGH
- Phase Loss Monitor - NONE
- Snow Legs - NONE
- Customer Special - N/A
- Motor - PSC
- Receiver Options - STANDARD
- Liquid Line Options - FILTER DRIER AND SIGHT GLASS
- Discharge Line Options - HEAD PRESSURE VALVE 150#
- Fused Disconnect - NO FUSED DISCONNECT
- Crankcase Heater - CRANKCASE HEATER
- Pre Charged - NONE
- Hall Guard Factory Installed - NONE

## Minimum Unit Clearances



\* Capacities shown are Application Capacities reflecting nominal operation at 10°F TD. For models within the scope of the DOE AWEF (Annual Whole-In Energy Factor) standard, the Net Capacity is determined by the AHRI 1250 test method. DOE will publish this compliance data at [www.regulations.doe.gov](http://www.regulations.doe.gov)



# BEL0095AS6AMAB0400 - SUBMITTAL

Project Name		Project Location:	
Quote ID:		Item #:	2000
Submitted For:		Submitted On:	
Submitted By		Submitted From:	
Identity #:		Tag:	

For Record       For Approval      By: \_\_\_\_\_      Date: \_\_\_\_\_

## General Product Information

Product Family:	EEL	Motor type	2 SPEED EC
Defrost Type:	Air	Number of Fans:	2
Voltage: (Volts/Ph/Hz)	115/1/60	Fan HorsePower	1/20
Refrigerant Type:	R404A	Fins per Inch	6

## Technical Information

### Performance Data

Capacity			Air Flow			Altitude (ft)	AWEF Value		
TD (°F)	SST (°F)	Application Capacity* (BTU/H)	CFM	Fan Diameter (in.)	Air Throw (ft)		Cooler > 32	Freezer <= 32	
					Standard	w/Collar			
10	25.0	8,000	1305	12			0	9	N/A

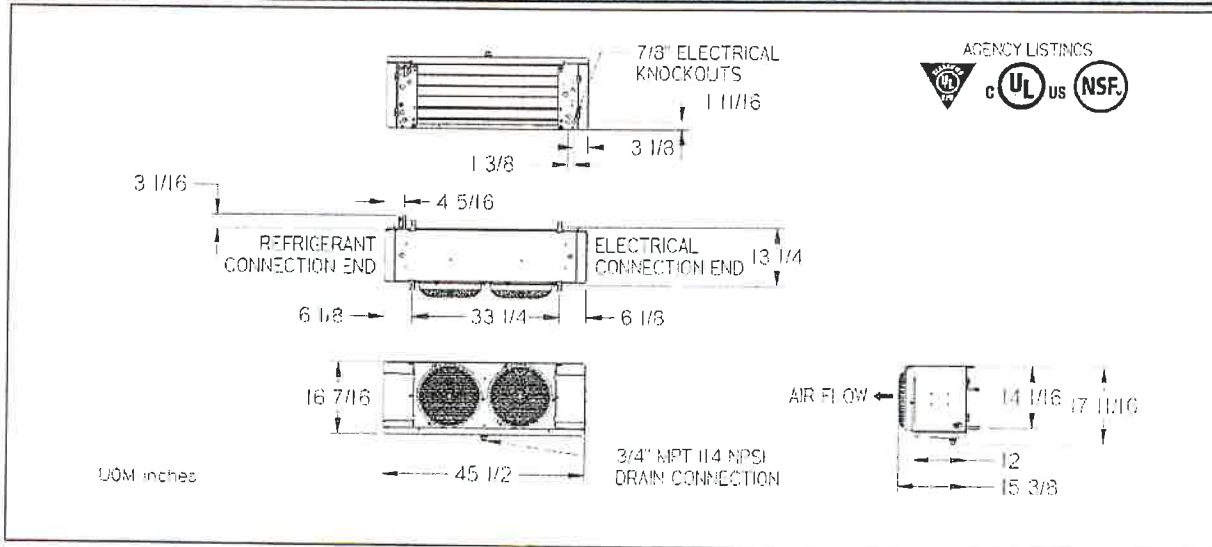
### Electrical Data

Fan Motor(s)		Defrost Heaters(s)		Drain Pan Heaters(s)	
Watts	Amps	Watts	Amps	Watts	Amps
110	1.8				

### Unit Specifications

Connections (in.)						Approx Net Weight (lbs)
Coil Inlet	Suction	External Equalizer	Drain	Side Port	Hot Gas Drain Pan	
1/2	5/8	1/4	3/4			51

### Dimensional Drawing(s)





# BEL0095AS6AMAB0400 - SUBMITTAL

Project Name:		Project Location:	
Quote ID:		Item #:	2000
Submitted For:		Submitted On:	
Submitted By:		Submitted From:	
Identity #:		Tag:	

## Standard Features

### EASE OF INSTALLATION SERVICE

- ALL ELECTRICAL COMPONENTS FACTORY WIRED TO TERMINAL BOARD AND IDENTIFIED, MAKING IT EASY TO FIELD WIRE THE UNIT

### RELIABLE DURABLE

- HEAVY GAUGE GRAINED ALUMINUM CABINET CLEANS EASILY AND LOOKS ATTRACTIVE
- MOLDED FAN GUARD AND ACCESS PANELS ARE MADE OF STRONG, DURABLE, AND NSF AND UL SANITATION RATED PLASTIC MATERIAL
- SWEAT CONNECTIONS TO REDUCE POTENTIAL FOR LEAKS

### PERFORMANCE

- EC MOTORS STANDARD ON ALL MODELS FOR IMPROVED UNIT EFFICIENCY

### VERSATILE

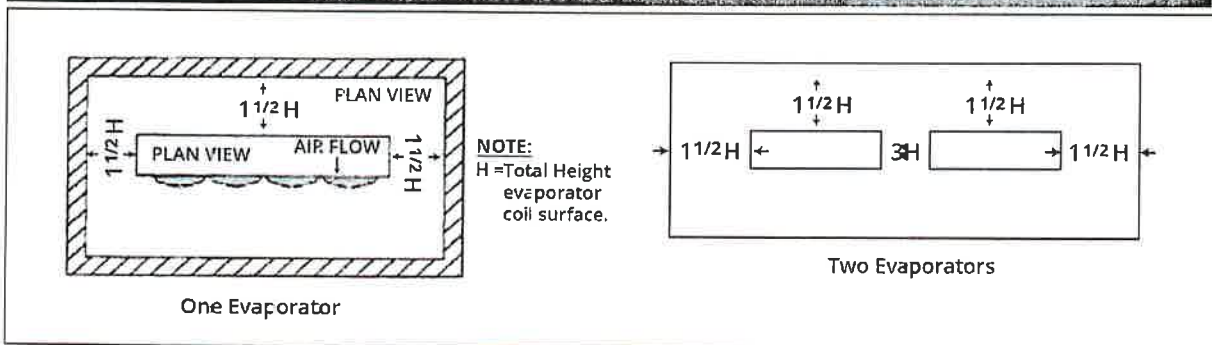
- LARGE DIAMETER DRAIN HOLE (3/4" ID) IS LOCATED TOWARDS THE BACK OF THE UNIT
- MINIMAL HEIGHT OF THE LOW PROFILE SERIES MAKES IT IDEAL FOR LOW CEILING COOLERS
- CABINET DESIGN FEATURES HINGED REMOVABLE FRONT ACCESS PANELS ON EACH SIDE FOR EASY ACCESS TO ELECTRICAL AND REFRIGERATION COMPONENTS
- LIQUID LINE SOLENOID WIRE HARNESS IS FACTORY-INSTALLED FOR QUICK INSTALLATION
- MOTORS PLUG INTO WIRING HARNESS FOR EASIER SERVICING
- HINGED, REMOVABLE DRAIN PAN FOR EASY AND SAFE ACCESS
- PRE-DRILLED HOLES ON THE BACK OF THE UNIT FOR ROOM THERMOSTAT
- QUICK REMOVAL FAN GUARD/MOTOR ASSEMBLY FOR EASY SERVICE OR REPLACEMENT OF AIR MOVER PARTS
- INTERNAL PANELS ARE ISOLATED FOR QUIET OPERATION
- INTERNALLY ENHANCED TUBING AND FIN DESIGN FOR HIGHER EFFICIENCY

## Options

### Mounted Options:

- Refrigerant Bundle - R404A
- Motor - 2 Speed EC
- Defrost Type - Air
- Fan Blade - Standard
- Cabinet Type - Stucco
- Controller Option - Mechanical Thermostat
- Solenoid Voltage - 115
- Coil Mechanical Option - Mounted Scorian TXV / Sid Sol Mounted
- Valve Family - L
- Brand Label - BOHN
- Voltage - 115/1/60
- DTRFD Option - None
- Fan Guard - Molded
- Drain Pan Type - Stucco
- Defrost Control - None
- Fin Material - Aluminum
- Customer Specified Valve Type - TXV

## Minimum Unit Clearances



\* Capacities shown are Application Capacities reflecting nominal operation at 10°F TD. For models within the scope of the DOE AWEF (Annual Work-in Energy Factor) standard, the Net Capacity is determined by the AHRI 1250 test method. DOE will publish this compliance data at [www.regulations.doe.gov](http://www.regulations.doe.gov)



Quantity	Description	Amount
----------	-------------	--------

Model #: AWIC- Series PPS Walk in Storage: Indoor Cooler  
**A. Cooler Overall Dimensions: 15' X 10' 8'H see attached shop drawing**

**AWIC Cabinet Features – 100% Made in the USA:**

- |        |   |
|--------|---|
| 1      | <ul style="list-style-type: none"> <li>▪ Department of Energy Compliance Certified PPS (Performance Panel System) 4" thick high-density insulation R-32 Rated cooler panels, UL-NSF Approved / Smoke &amp; Flame Spread per ASTM E84 testing</li> </ul> |
| 1      | <ul style="list-style-type: none"> <li>▪ 36"x76" UL approved "Super-Door" package (normal temp).</li> </ul>   |
| 3 Free | <ul style="list-style-type: none"> <li>▪ Vapor Proof 48" LED Light fixtures shipped loose.</li> </ul>   |
| 1      | <ul style="list-style-type: none"> <li>▪ UL approved Energy saving vapor proof CFL lamp pre-wired to exterior switch w/pilot light installed.</li> </ul>  |
| 1      | <ul style="list-style-type: none"> <li>▪ Temperature Display</li> </ul>   |
| 1      | <ul style="list-style-type: none"> <li>▪ Heavy duty Chrome Kason Cam-lift with additional self-actuating door closure</li> </ul>  |
| 1      | <ul style="list-style-type: none"> <li>▪ Dart mount magnetic door seal gaskets for a firm tight door seal</li> </ul>  |
| 1      | <ul style="list-style-type: none"> <li>▪ .063 Aluminum diamond tread kick plates on lower portion of door (exterior)</li> </ul>   |
| 1      | <ul style="list-style-type: none"> <li>▪ Floorless construction in cooler; Includes Floor Cove Base supplied in 8' lengths.</li> </ul>  |
| 1 Free | <ul style="list-style-type: none"> <li>▪ PVC Strip Curtain 36" X 78"</li> </ul>   |

**EISA Compliance:**

All walk-in panels manufactured are compliant with the Federal Energy Independence & Security Act of 2007 (public law 110-140) Title III; section 312, regarding walk-in coolers and freezers.

Buyer's Acceptance

Date

7/6/21

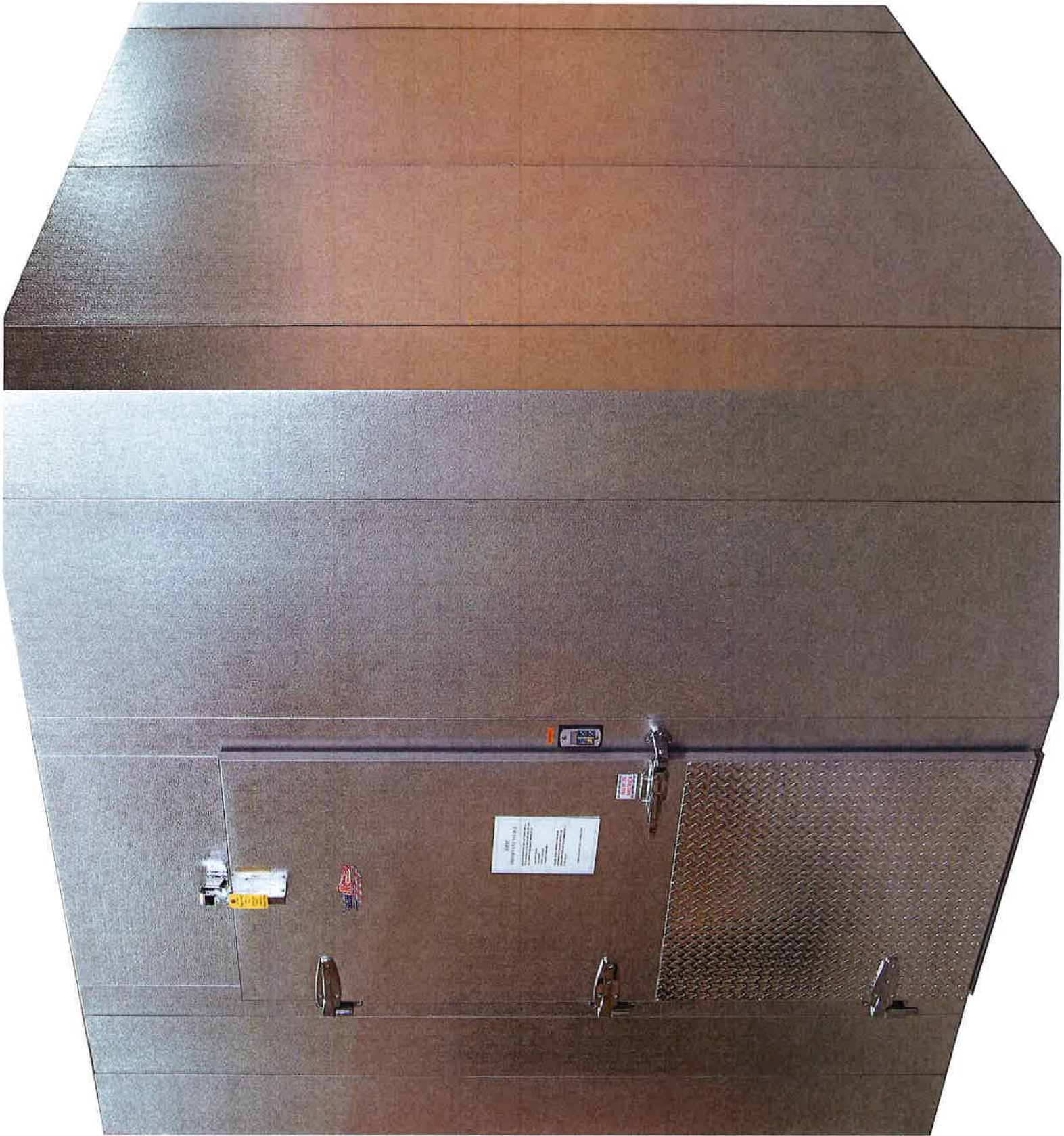
**Refrigeration System Includes:**

- 1     ▪ **Med Temp Outdoor 1 HP w/Pump-down Controls.** Pre-assembled outdoor condensing unit, UL approved headmaster low ambient control.
- 1     ▪ NSF-UL Approved Low Profile Air-defrost evaporator coil(s) 115 volt.
- 1     ▪ Liquid Line Solenoid
- 1     ▪ Copeland Compressor
- 1     ▪ Anodized condenser coils (Standard)
- 1     ▪ Adjustable Low-pressure control (Standard)
- 1     ▪ Liquid line filter and sight glass (Standard)
- 1     ▪ High pressure safety controls
- 1     ▪ Thermostat temperature control
- 1     ▪ TXV (factory Mounted and Piped)
- 1     ▪ Suction line filter
- 1     ▪ **Please Select electrical voltage and phase of condensing unit: (208-230 volt) 1-ph \_\_\_\_\_**
- 1     ▪ **Warranty: 5 Year Compressor Motor - 1 Year Parts - No Labor**

*Refrigeration is designed for product entering at 65 Deg. per customer. Product load, Product Temperature, personnel, location and usage can affect sizing. This quote is based on information provided by customer. Please note that all above factors play a critical role in the recommended HP.*

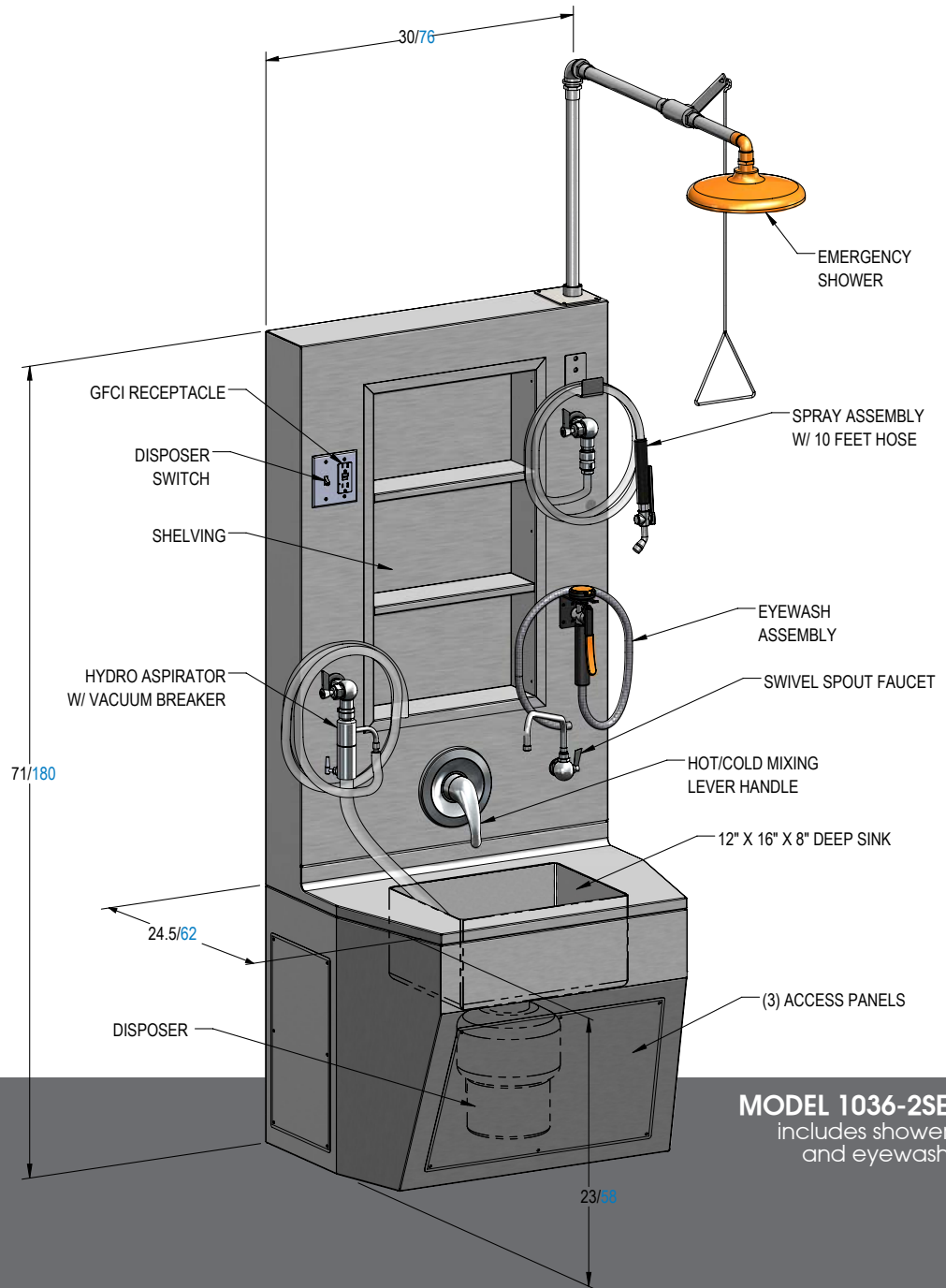
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# MODEL 1036-2 WALL MOUNT SERVICE STATION

SINK STATIONS



**MODEL 1036-2SE**  
includes shower  
and eyewash

## STANDARD DESIGN FEATURES

Height: ..... 71 in./180 m.  
Length: ..... 30 in./76 cm.  
Width: ..... 24.5 in./62 cm.

- Fully Fabricated of stainless steel
- Spray hose assembly with cold water control valve, nozzle and 10 ft./3 m. of flexible hose
- Waste disposer unit
- Hot and cold water tempering unit with lever handle
- Utility faucet with elbow handle and swivel spout
- GFCI duplex receptacle
- Deluxe aspirator with reverse flow for additional waste removal: "reverse flow" feature instantly relieves suction clogging by providing a reverse pressure of water
- Open stainless steel shelving designed for storage of chemical bottles
- 1036-2SE includes emergency shower and eyewash assemblies
- All plumbing and electrical hook-ups designed for easy installation

All measurements in inches/centimeters +-

T(800) 410-0100  
T(626) 334-1471  
F(626) 334-1704

411 North Aerojet Avenue  
Azusa, CA 91702  
www.mortechmfg.com



## Options based on available space

When planning an order, we will assist you in selecting options to complete your system. Feel free to contact your sales associate.



**LC-50 - 1/2 HP HEAVY DUTY COMMERCIAL DISPOSER** Standard on most sinks. Variable power options. Available in 1/2, 1 or 2 HP.



**SS-100, SS-200 - HEAVY DUTY COMMERCIAL DISPOSER** Variable power options. Available in 1 or 2 HP.



**OA-100-WM - CO2/NATURAL GAS VALVES** All brass with chrome plated finish. Wall Mounted. Visually marked for type of function required.



**OA-101-WM - COMPRESSED AIR VALVE** All brass with chrome plated finish. Wall Mounted. Visually marked for type of function required.



**OA-102-WM - VACUUM VALVES** All brass with chrome plated finish. Wall Mounted. Visually marked for type of function required.



**OA-111 - EMERGENCY EYEWASH / HOSE ASSEMBLY** Hand controlled spray to provide a gentle flow of water to rinse eyes of foreign debris.



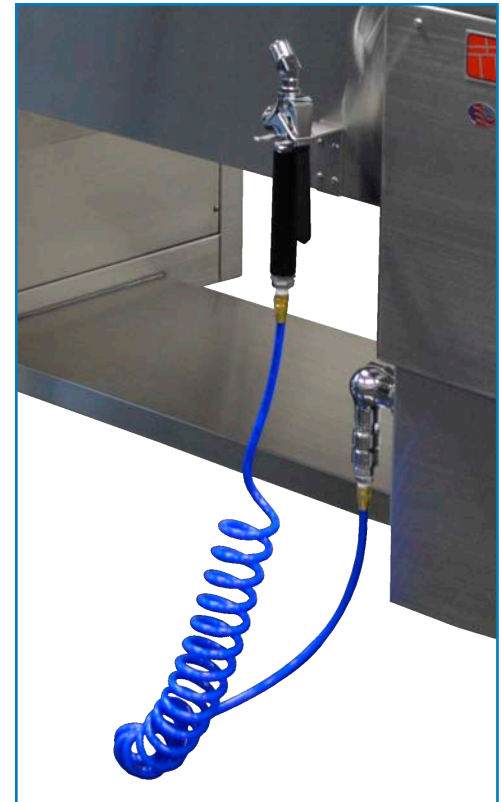
**OA-112 - EYEWASH / FAUCET ASSEMBLY** Deck Mounted Eye wash for hands free eye wash or can be removed for use as a drench hose for eye, face, or body use coverage.



**OA-113 - EYEWASH - FLIP DOWN STYLE** Wall mounted polished chrome-plated brass single action pull down activated eye/face wash.



**OA-150 - SPRAY HOSE ASSEMBLY** Easy grip assembly with flexible hose, conveniently placed for easy spray cleaning.



**OA-506 - SPRAY HOSE ASSEMBLY WITH BACKFLOW & RECOIL HOSE** Wash off contaminants and debris with flexible and wide reaching recoil hose.

# SINK STATIONS

## AUTOPSY STATION FEATURES & ACCESSORIES

### Options based on available space

When planning an order, we will assist you in selecting options to complete your system. Feel free to contact your sales associate.



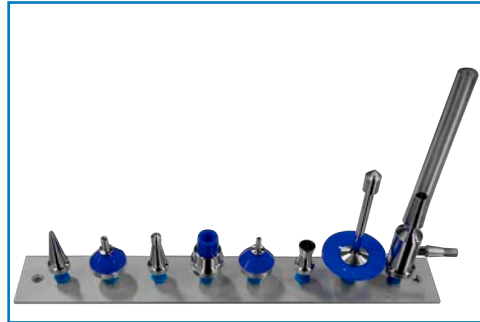
**OA-203 - ADDITIONAL MIXING FAUCET WITH VACUUM BREAKER** Add an additional faucet with vacuum breaker included.



**OA-204 - HANDS FREE MIXING FAUCET** Toggle a steady stream of water with this motion activated sensor.



**OA-225 - SELECTA SPRAY HOSE ASSEMBLY** Ideal for cleaning laboratory glassware, and variety of other instruments using either water or pressurized air.



**OA-226 - SELECTA SPRAY HOSE ASSEMBLY ACCESSORIES** Multi-purpose accessories for cleaning pipettes, syringes, catheters, curettes, endoscopes, cystoscopes, cannulae and a variety of other instruments.



**OA-210 - VENT CONNECTION (TOP SINK)**



**LW480 - HYDRO ASPIRATOR** With built-in vacuum breaker and control lever used to reverse the flow of water directing it through the hose connections for drawing fluid or rinsing.



**LW481 - ASPIRATOR EXTENSION** Fabricated from chrome plated brass, and provides further safety against polluted backflow.



**OA-206 - EXHAUST DUCT**  
8 x 10, Each



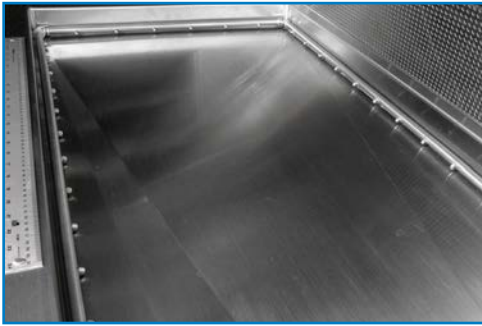
**LW482 - NON-CLOGGING ASPIRATOR HEAD** Prevents large debris from entering and clogging the system.



**AHT - TROCAR TUBING**  
10 ft. min., priced per foot. Clear vinyl Aspirator/Trocar tubing. Internal diameter of .375 in. and outside diameter of .625 in.



**AHS - ASPIRATOR DISCHARGE TUBING**  
3 ft. min., priced per foot. Splash tubing for aspirator drain, embalming and autopsy tops. Internal diameter of 1 in. and outside diameter of 1.25 in..



**OA-115 - THREE SIDED RINSE ASSEMBLY**  
Provides a rinse to gently wash debris and non-viable material away from the work area. A sturdy stainless steel assembly controlled by an on/off valve.



**OA-116 - END RINSE ASSEMBLY**  
Provides a constant flow of water beneath the dissecting area grid plates to wash debris toward sink and drain. Includes cold water control valve and back flow protection.



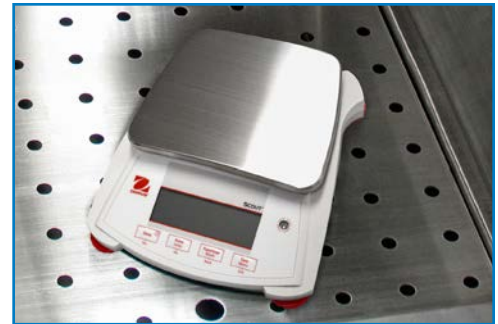
**OA-202 - ELECTRIC ASPIRATOR**  
Diaphragm pump unit designed for high performance, powerful suction capability, when and where you need it at a moment's notice. Accommodates 600 ml. glass bottle or 1100 ml. disposable canisters.



**LW418 - ELECTRONIC SCALE - PLATFORM**  
*6.5 in. x 5.5 in. Platform, 2000g.*  
Compact, lightweight, portable and perfectly suited for laboratory and educational purposes. 2200 x .1 gm.



**LW419 - ELECTRONIC SCALE - PLATFORM**  
*6.6 in. x 6 in. Platform, 2100g.*  
Compact, lightweight, portable and perfectly suited for laboratory and educational purposes. 2200 x .1 gm.



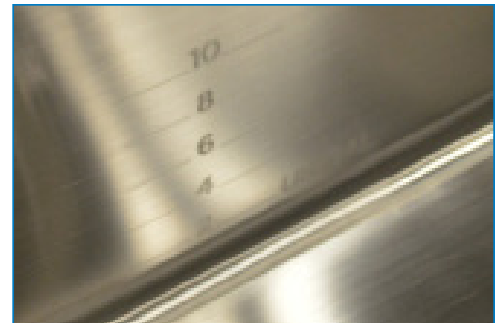
**LW425 - ELECTRONIC SCALE - PLATFORM**  
*6 in. Platform, 2000g.*  
Compact, lightweight, portable and perfectly suited for laboratory and educational purposes. 2200 x .1 gm.



**LW410 - SCALE POLE AND MOUNTING BRACKET**  
For use with standard hanging autopsy scale. Pole can swivel left and right, and includes locking knob. 44 in. length.



**OA-205 - STAINLESS STEEL SCALE SHELF**  
All stainless steel construction adds storage space for accessories. 12 in. x 12 in.



**LASER-ETCHED GRADUATED SINK**  
Keep track of the volume of fluid used.



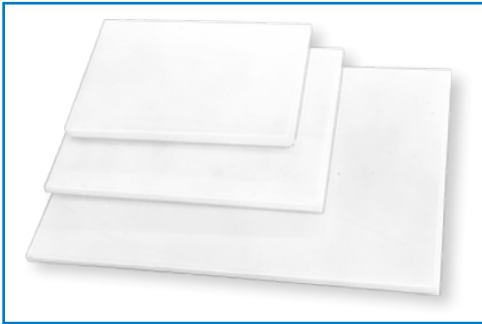
**LW485 - EVIDENCE SCREEN**  
Designed to prevent evidence from being washed down drain. Fabricated from perforated stainless steel. For use in 3.5 in. diameter drains.



**LW487 - ORGAN RINSE BASKET**  
Designed to hang on the interior of the sink basin. Ideal for rinsing organs. Fabricated from stainless steel with a perforated bottom.

**Options based on available space**  
When planning an order, we will assist you in selecting options to complete your system. Feel free to contact your sales associate.

## SINK STATIONS



**LW385, LW386, LW387 - DISSECTING BOARDS** Available in 24 in. x 18 in., 18 in. x 12 in. & 20 in. x 15 in.



**LW389 - PHOTO-BLUE DISSECTING BOARD** Manufactured from high-density polyethylene, providing an excellent cutting surface. Bottom corners have a non-skid rubber foot attached.



**LW379 - DISSECTING BOARDS w/ 3 in. LEGS** Manufactured from high density polyethylene. Provides an excellent cutting surface. 20 in length x 15 in width x .7 in thick cutting board



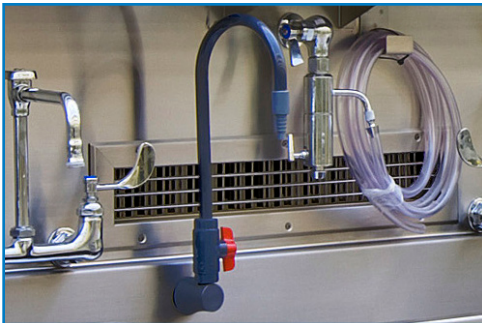
**LW379A - RAISED DISSECTING PLATFORM** Manufactured from high density polyethylene with adjustable legs. Provides an excellent cutting surface. Color is photo blue.



**LW380 - INSTRUMENT DISSECTING TRAY** Stainless steel construction. Heavy gauge material provides a highly stable work surface. Tray creased toward center drain with optional hose attachment to route flow. Custom heights available.



**LW392 - RAISED BODY BOARDS** Elevates body away from work surface.



**MDA-20W - WALL-MOUNTED FORMALIN SPIGOT** Conveniently placed formalin supply spout.



**OA-201 - FORMALIN DISPENSING AND COLLECTION** 2.5 gal. container and receptacle hold reserve formalin and collects waste. Foot controlled motor dispenses formalin at a steady flow.



**OA-147-1, OA-147-2, OA-147-3 GLOVE BOX HOLDER** Stainless Steel support to hold latex and nitrile glove boxes, holders come in a side or top load model. Available in 1, 2, & 3 capacity.





### Options based on available space

When planning an order, we will assist you in selecting options to complete your system. Feel free to contact your sales associate.



**OA-144 - MAGNETIC INSTRUMENT HOLDER**  
Conveniently store and organize your instruments.



**LW390 - HEADREST**  
(LW390A - available in aluminum)



**OA-209-84, OA-209-114, OA-209-132 - STAINLESS STEEL LEG ASSEMBLY**



**OA-208 - INTEGRAL RAISED DISSECTING AREA**



**HEIGHT ADJUSTABLE SINK MOUNT STRUCTURE & SURGICAL LIGHTING**

## CUSTOM LAYOUT AND DESIGN

We understand that every project is unique. If you have special requirements, we can modify the stations to suit your needs. A custom layout can consist of modifications to allow larger or restricted work areas, additional utilities, shelving, drawers and ventilation.

Pictured accessories may differ depending on your unit and other optional accessories. Please review the model's standard features to ensure accuracy of specifications.

## WALL MOUNTED AUTOPSY STATION Left-Hand POSITION



CAT NO.	LENGTHS
90-0320 LEFT	64", 72" and 84"

### FEATURES:

*Plumbing & Electrical Lines are Factory Installed & Tested before Leaving our Manufacturing Facility. Single Point Connection at Customer Location. Installation Requires a Trade Professional*

**MATERIAL:** 304 Stainless Steel Construction with a #4 finish

Deluxe Aspirator and Vacuum Breaker with Reverse Flow for Additional Waste Removal;

**“Reverse Flow”** feature instantly relieves suction clogging by providing a reverse pressure of water

Hot and Cold Water Fixture with Convenient Gooseneck Faucet and Wrist-Blade Handles

Spray Hose Assembly with Cold Water Control Valve, Nozzle and 10 Feet of Flexible Hose

Heliarc Welded Seams and Joints for Uniformity; Ground and Polished to a Smooth Finish

Large Radius on all inside Corners for easy Cleaning and Required Sanitation

Rapid and Positive Drainage

Large Single-Compartment Sink

Waterproof Electrical Outlets

1/2 hp heavy duty commercial disposer

Perforated stainless steel removable grids

Waterproof Deluxe GFCI Protected Electrical Outlet (6" x 15" x 1/2" deep) (1/2" deep)