

PROJECT MANUAL

For the Construction of:

Remodel for Shelley Senior Center Shelley, Idaho

October 2018

Set No.



990 John Adams Parkway, P.O. Box 2212, Idaho Falls, Idaho 83403-2212
Telephone: (208) 522-8779 / Fax: (208) 522-8785 / Email: nbw@nbwarchitects.com

Project Manual

for

Remodel

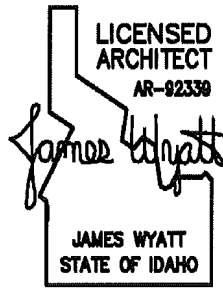
Shelley Senior Center

Shelley, Idaho

October 2018

Architect's Project No. 18023

ARCHITECTS:



NBW Architects, P.A.
990 John Adams Parkway
P.O. Box 2212
Idaho Falls, Idaho 83403
Telephone: (208) 522-8779
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MECHANICAL CONSULTANT:

Engineered Systems Associates, Inc.
1355 East Center Street
Pocatello, Idaho 83201
Telephone: (208) 233-0501
Fax: (208) 233-0529

ELECTRICAL CONSULTANT:

Payne Engineering, Inc.
1823 East Center Street
Pocatello, Idaho 83201
Telephone: (208) 232-4439
Fax: (208) 232-1435

PROJECT MANUAL
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DOCUMENT 00 0115 - LIST OF DRAWING SHEETS

1.1 LIST OF DRAWINGS

- A. Drawings: Drawings consist of the Contract Drawings and other drawings listed on the Table of Contents page of the separately bound drawing set titled Remodel for Shelley Senior Center, Shelley, Idaho, dated October 2018, as modified by subsequent Addenda and Contract modifications.

END OF DOCUMENT 00 0115

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PROCUREMENT AND CONTRACTING REQUIREMENTS

DOCUMENT 00 1113 - ADVERTISEMENT FOR BIDS

1.1 PROJECT INFORMATION

- A. Notice to Bidders: Qualified bidders may submit bids for project as described in this Document. Submit bids according to the Instructions to Bidders.
 - 1. Regulatory Requirements: State of Idaho Public Works bidding laws shall govern submittal, opening, and award of bids.
- B. Project Identification:
 - 1. Project Location: 193 W. Pine St., Shelley, Idaho 83274
- C. Owner:
 - 1. Owner's Representative: Denine Wong
- D. Architect: NBW Architects, P.A., 990 John Adams Parkway, P.O. Box 2212, Idaho Falls, Idaho 83403, Telephone: 208-522-8779.
- E. Project Description
 - 1. Project cost range is anticipated to be under \$250,000.
 - 2. Commercial kitchen remodel and HVAC replacement
- F. Construction Contract: Bids will be received for the following Work:
 - 1. General Contract (all trades).

1.2 BID SUBMITTAL AND OPENING

- A. Owner will receive sealed lump sum bids until the bid time and date at the location given below. Owner will consider bids prepared in compliance with the Instructions to Bidders issued by Owner, and delivered as follows:
 - 1. Bid Date: November 28, 2018
 - 2. Bid Time: 2:00pm
 - 3. Location: NBW Architects Office: 990 John Adams Parkway, Idaho Falls, ID 83401
- B. Bids will be thereafter publicly opened and read aloud.

1.3 BID SECURITY

- A. Bid security shall be submitted with each bid in the amount of 5 percent of the bid amount. No bids may be withdrawn for a period of 60 days after opening of bids. Owner reserves the right to reject any and all bids and to waive informalities and irregularities.

1.4 PREBID MEETING

- A. Prebid Meeting: A Prebid meeting for all bidders will be held at the Shelley Senior Center on November 8, 2018 at 9:00 a.m., local time. Prospective prime bidders are requested to attend.

1.5 DOCUMENTS

- A. Printed Procurement and Contracting Documents: Obtain by contacting Architects. Documents will be provided to prime bidders only; only complete sets of documents will be issued.
 - 1. Deposit: \$50.00 made payable to the Architect.
- B. Online Procurement and Contracting Documents: Obtain by contacting Architect. Online access will be provided to all registered bidders and suppliers.
- C. Viewing Procurement and Contracting Documents: Examine at the locations below:
 - 1. Idaho AGC: www.idahoagc.org.
 - 2. Mountain Lands Area Plan Room: www.mountainlandsareaplanroom.com.

3. Architect's office.

1.6 TIME OF COMPLETION AND LIQUIDATED DAMAGES

- A. Successful bidder shall begin the Work on receipt of the Notice to Proceed and shall complete the Work within the Contract Time. Work is subject to liquidated damages.

1.7 BIDDER'S QUALIFICATIONS

- A. Bidders must be properly licensed under the laws governing their respective trades and be able to obtain insurance and bonds required for the Work. A Performance Bond, separate Labor and Material Payment Bond, and Insurance in a form acceptable to Owner will be required of the successful Bidder.

1.8 NOTIFICATION

- A. This Advertisement for Bids document is issued by Shelley Senior Center.

END OF DOCUMENT 00 1113

DOCUMENT 00 2113 - INSTRUCTIONS TO BIDDERS

1.1 INSTRUCTIONS TO BIDDERS

- A. AIA Document A701, "Instructions to Bidders," is hereby incorporated into the Procurement and Contracting Requirements by reference.
 - 1. A copy of AIA Document A701, "Instructions to Bidders," is bound in this Project Manual.

END OF DOCUMENT 00 2113



AIA[®] Document A701[™] – 1997

Instructions to Bidders

for the following PROJECT:

(Name and location or address):

THE OWNER:

(Paragraph deleted)

(Name and address):

THE ARCHITECT:

(Name and address):

NBW Architects, P.A.
990 John Adams Parkway
P.O. Box 2212
Idaho Falls, Idaho 83403

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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. A vertical line in the left margin of this document indicates where the author has added necessary information and where the author has added to or deleted from the original AIA text.

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

ARTICLE 1 DEFINITIONS

§ 1.1 Bidding Documents include the Bidding Requirements and the proposed Contract Documents. The Bidding Requirements consist of the Advertisement or Invitation to Bid, Instructions to Bidders, Supplementary Instructions to Bidders, the bid form, and other sample bidding and contract forms. The proposed Contract Documents consist of the form of Agreement between the Owner and Contractor, Conditions of the Contract (General, Supplementary and other Conditions), Drawings, Specifications and all Addenda issued prior to execution of the Contract.

§ 1.2 Definitions set forth in the General Conditions of the Contract for Construction, AIA Document A201, or in other Contract Documents are applicable to the Bidding Documents.

§ 1.3 Addenda are written or graphic instruments issued by the Architect prior to the execution of the Contract which modify or interpret the Bidding Documents by additions, deletions, clarifications or corrections.

§ 1.4 A Bid is a complete and properly executed proposal to do the Work for the sums stipulated therein, submitted in accordance with the Bidding Documents.

§ 1.5 The Base Bid is the sum stated in the Bid for which the Bidder offers to perform the Work described in the Bidding Documents as the base, to which Work may be added or from which Work may be deleted for sums stated in Alternate Bids.

§ 1.6 An Alternate Bid (or Alternate) is an amount stated in the Bid to be added to or deducted from the amount of the Base Bid if the corresponding change in the Work, as described in the Bidding Documents, is accepted.

§ 1.7 A Unit Price is an amount stated in the Bid as a price per unit of measurement for materials, equipment or services or a portion of the Work as described in the Bidding Documents.

§ 1.8 A Bidder is a person or entity who submits a Bid and who meets the requirements set forth in the Bidding Documents.

§ 1.9 A Sub-bidder is a person or entity who submits a bid to a Bidder for materials, equipment or labor for a portion of the Work.

ARTICLE 2 BIDDER'S REPRESENTATIONS

§ 2.1 The Bidder by making a Bid represents that:

§ 2.1.1 The Bidder has read and understands the Bidding Documents or Contract Documents, to the extent that such documentation relates to the Work for which the Bid is submitted, and for other portions of the Project, if any, being bid concurrently or presently under construction.

§ 2.1.2 The Bid is made in compliance with the Bidding Documents.

§ 2.1.3 The Bidder has visited the site, become familiar with local conditions under which the Work is to be performed and has correlated the Bidder's personal observations with the requirements of the proposed Contract Documents.

§ 2.1.4 The Bid is based upon the materials, equipment and systems required by the Bidding Documents without exception.

ARTICLE 3 BIDDING DOCUMENTS

§ 3.1 COPIES

§ 3.1.1 Bidders may obtain complete sets of the Bidding Documents from the issuing office designated in the Advertisement or Invitation to Bid in the number and for the deposit sum, if any, stated therein. The deposit will be refunded to Bidders who submit a bona fide Bid and return the Bidding Documents in good condition within ten days after receipt of Bids. The cost of replacement of missing or damaged documents will be deducted from the deposit. A Bidder receiving a Contract award may retain the Bidding Documents and the Bidder's deposit will be refunded.

§ 3.1.2 Bidding Documents will not be issued directly to Sub-bidders unless specifically offered in the Advertisement or Invitation to Bid, or in supplementary instructions to bidders.

§ 3.1.3 Bidders shall use complete sets of Bidding Documents in preparing Bids; neither the Owner nor Architect assumes responsibility for errors or misinterpretations resulting from the use of incomplete sets of Bidding Documents.

§ 3.1.4 The Owner and Architect may make copies of the Bidding Documents available on the above terms for the purpose of obtaining Bids on the Work. No license or grant of use is conferred by issuance of copies of the Bidding Documents.

§ 3.2 INTERPRETATION OR CORRECTION OF BIDDING DOCUMENTS

§ 3.2.1 The Bidder shall carefully study and compare the Bidding Documents with each other, and with other work being bid concurrently or presently under construction to the extent that it relates to the Work for which the Bid is submitted, shall examine the site and local conditions, and shall at once report to the Architect errors, inconsistencies or ambiguities discovered.

§ 3.2.2 Bidders and Sub-bidders requiring clarification or interpretation of the Bidding Documents shall make a written request which shall reach the Architect at least seven days prior to the date for receipt of Bids.

§ 3.2.3 Interpretations, corrections and changes of the Bidding Documents will be made by Addendum. Interpretations, corrections and changes of the Bidding Documents made in any other manner will not be binding, and Bidders shall not rely upon them.

§ 3.3 SUBSTITUTIONS

§ 3.3.1 The materials, products and equipment described in the Bidding Documents establish a standard of required function, dimension, appearance and quality to be met by any proposed substitution.

§ 3.3.2 No substitution will be considered prior to receipt of Bids unless written request for approval has been received by the Architect at least ten days prior to the date for receipt of Bids. Such requests shall include the name of the material or equipment for which it is to be substituted and a complete description of the proposed substitution including drawings, performance and test data, and other information necessary for an evaluation. A statement setting forth changes in other materials, equipment or other portions of the Work, including changes in the work of other contracts that incorporation of the proposed substitution would require, shall be included. The burden of proof of the merit of the proposed substitution is upon the proposer. The Architect's decision of approval or disapproval of a proposed substitution shall be final.

§ 3.3.3 If the Architect approves a proposed substitution prior to receipt of Bids, such approval will be set forth in an Addendum. Bidders shall not rely upon approvals made in any other manner.

§ 3.3.4 No substitutions will be considered after the Contract award unless specifically provided for in the Contract Documents.

§ 3.4 ADDENDA

§ 3.4.1 Addenda will be transmitted to all who are known by the issuing office to have received a complete set of Bidding Documents.

§ 3.4.2 Copies of Addenda will be made available for inspection wherever Bidding Documents are on file for that purpose.

§ 3.4.3 Addenda will be issued no later than four days prior to the date for receipt of Bids except an Addendum withdrawing the request for Bids or one which includes postponement of the date for receipt of Bids.

§ 3.4.4 Each Bidder shall ascertain prior to submitting a Bid that the Bidder has received all Addenda issued, and the Bidder shall acknowledge their receipt in the Bid.

ARTICLE 4 BIDDING PROCEDURES

§ 4.1 PREPARATION OF BIDS

§ 4.1.1 Bids shall be submitted on the forms included with the Bidding Documents.

§ 4.1.2 All blanks on the bid form shall be legibly executed in a non-erasable medium.

§ 4.1.3 Sums shall be expressed in both words and figures. In case of discrepancy, the amount written in words shall govern.

§ 4.1.4 Interlineations, alterations and erasures must be initialed by the signer of the Bid.

§ 4.1.5 All requested Alternates shall be bid. If no change in the Base Bid is required, enter "No Change."

§ 4.1.6 Where two or more Bids for designated portions of the Work have been requested, the Bidder may, without forfeiture of the bid security, state the Bidder's refusal to accept award of less than the combination of Bids stipulated by the Bidder. The Bidder shall make no additional stipulations on the bid form nor qualify the Bid in any other manner.

§ 4.1.7 Each copy of the Bid shall state the legal name of the Bidder and the nature of legal form of the Bidder. The Bidder shall provide evidence of legal authority to perform within the jurisdiction of the Work. Each copy shall be signed by the person or persons legally authorized to bind the Bidder to a contract. A Bid by a corporation shall further give the state of incorporation and have the corporate seal affixed. A Bid submitted by an agent shall have a current power of attorney attached certifying the agent's authority to bind the Bidder.

§ 4.2 BID SECURITY

§ 4.2.1 Each Bid shall be accompanied by a bid security in the form and amount required if so stipulated in the Instructions to Bidders. The Bidder pledges to enter into a Contract with the Owner on the terms stated in the Bid and will, if required, furnish bonds covering the faithful performance of the Contract and payment of all obligations arising thereunder. Should the Bidder refuse to enter into such Contract or fail to furnish such bonds if required, the amount of the bid security shall be forfeited to the Owner as liquidated damages, not as a penalty. The amount of the bid security shall not be forfeited to the Owner in the event the Owner fails to comply with Section 6.2.

§ 4.2.2 If a surety bond is required, it shall be written on AIA Document A310, Bid Bond, unless otherwise provided in the Bidding Documents, and the attorney-in-fact who executes the bond on behalf of the surety shall affix to the bond a certified and current copy of the power of attorney.

§ 4.2.3 The Owner will have the right to retain the bid security of Bidders to whom an award is being considered until either (a) the Contract has been executed and bonds, if required, have been furnished, or (b) the specified time has elapsed so that Bids may be withdrawn or (c) all Bids have been rejected.

§ 4.3 SUBMISSION OF BIDS

§ 4.3.1 All copies of the Bid, the bid security, if any, and any other documents required to be submitted with the Bid shall be enclosed in a sealed opaque envelope. The envelope shall be addressed to the party receiving the Bids and shall be identified with the Project name, the Bidder's name and address and, if applicable, the designated portion of the Work for which the Bid is submitted. If the Bid is sent by mail, the sealed envelope shall be enclosed in a separate mailing envelope with the notation "SEALED BID ENCLOSED" on the face thereof.

§ 4.3.2 Bids shall be deposited at the designated location prior to the time and date for receipt of Bids. Bids received after the time and date for receipt of Bids will be returned unopened.

§ 4.3.3 The Bidder shall assume full responsibility for timely delivery at the location designated for receipt of Bids.

§ 4.3.4 Oral, telephonic, telegraphic, facsimile or other electronically transmitted bids will not be considered.

§ 4.4 MODIFICATION OR WITHDRAWAL OF BID

§ 4.4.1 A Bid may not be modified, withdrawn or canceled by the Bidder during the stipulated time period following the time and date designated for the receipt of Bids, and each Bidder so agrees in submitting a Bid.

§ 4.4.2 Prior to the time and date designated for receipt of Bids, a Bid submitted may be modified or withdrawn by notice to the party receiving Bids at the place designated for receipt of Bids. Such notice shall be in writing over the signature of the Bidder. Written confirmation over the signature of the Bidder shall be received, and date- and

time-stamped by the receiving party on or before the date and time set for receipt of Bids. A change shall be so worded as not to reveal the amount of the original Bid.

§ 4.4.3 Withdrawn Bids may be resubmitted up to the date and time designated for the receipt of Bids provided that they are then fully in conformance with these Instructions to Bidders.

§ 4.4.4 Bid security, if required, shall be in an amount sufficient for the Bid as resubmitted.

ARTICLE 5 CONSIDERATION OF BIDS

§ 5.1 OPENING OF BIDS

At the discretion of the Owner, if stipulated in the Advertisement or Invitation to Bid, the properly identified Bids received on time will be publicly opened and will be read aloud. An abstract of the Bids may be made available to Bidders.

§ 5.2 REJECTION OF BIDS

The Owner shall have the right to reject any or all Bids. A Bid not accompanied by a required bid security or by other data required by the Bidding Documents, or a Bid which is in any way incomplete or irregular is subject to rejection.

§ 5.3 ACCEPTANCE OF BID (AWARD)

§ 5.3.1 It is the intent of the Owner to award a Contract to the lowest qualified Bidder provided the Bid has been submitted in accordance with the requirements of the Bidding Documents and does not exceed the funds available. The Owner shall have the right to waive informalities and irregularities in a Bid received and to accept the Bid which, in the Owner's judgment, is in the Owner's own best interests.

§ 5.3.2 The Owner shall have the right to accept Alternates in any order or combination, unless otherwise specifically provided in the Bidding Documents, and to determine the low Bidder on the basis of the sum of the Base Bid and Alternates accepted.

ARTICLE 6 POST-BID INFORMATION

§ 6.1 CONTRACTOR'S QUALIFICATION STATEMENT

Bidders to whom award of a Contract is under consideration shall submit to the Architect, upon request, a properly executed AIA Document A305, Contractor's Qualification Statement, unless such a Statement has been previously required and submitted as a prerequisite to the issuance of Bidding Documents.

§ 6.2 OWNER'S FINANCIAL CAPABILITY

The Owner shall, at the request of the Bidder to whom award of a Contract is under consideration and no later than seven days prior to the expiration of the time for withdrawal of Bids, furnish to the Bidder reasonable evidence that financial arrangements have been made to fulfill the Owner's obligations under the Contract. Unless such reasonable evidence is furnished, the Bidder will not be required to execute the Agreement between the Owner and Contractor.

§ 6.3 SUBMITTALS

§ 6.3.1 The Bidder shall, as soon as practicable or as stipulated in the Bidding Documents, after notification of selection for the award of a Contract, furnish to the Owner through the Architect in writing:

- .1 a designation of the Work to be performed with the Bidder's own forces;
- .2 names of the manufacturers, products, and the suppliers of principal items or systems of materials and equipment proposed for the Work; and
- .3 names of persons or entities (including those who are to furnish materials or equipment fabricated to a special design) proposed for the principal portions of the Work.

§ 6.3.2 The Bidder will be required to establish to the satisfaction of the Architect and Owner the reliability and responsibility of the persons or entities proposed to furnish and perform the Work described in the Bidding Documents.

§ 6.3.3 Prior to the execution of the Contract, the Architect will notify the Bidder in writing if either the Owner or Architect, after due investigation, has reasonable objection to a person or entity proposed by the Bidder. If the Owner or Architect has reasonable objection to a proposed person or entity, the Bidder may, at the Bidder's option, (1) withdraw the Bid or (2) submit an acceptable substitute person or entity with an adjustment in the Base Bid or

Alternate Bid to cover the difference in cost occasioned by such substitution. The Owner may accept the adjusted bid price or disqualify the Bidder. In the event of either withdrawal or disqualification, bid security will not be forfeited.

§ 6.3.4 Persons and entities proposed by the Bidder and to whom the Owner and Architect have made no reasonable objection must be used on the Work for which they were proposed and shall not be changed except with the written consent of the Owner and Architect.

ARTICLE 7 PERFORMANCE BOND AND PAYMENT BOND

§ 7.1 BOND REQUIREMENTS

§ 7.1.1 If stipulated in the Bidding Documents, the Bidder shall furnish bonds covering the faithful performance of the Contract and payment of all obligations arising thereunder. Bonds may be secured through the Bidder's usual sources.

§ 7.1.2 If the furnishing of such bonds is stipulated in the Bidding Documents, the cost shall be included in the Bid. If the furnishing of such bonds is required after receipt of bids and before execution of the Contract, the cost of such bonds shall be added to the Bid in determining the Contract Sum.

§ 7.1.3 If the Owner requires that bonds be secured from other than the Bidder's usual sources, changes in cost will be adjusted as provided in the Contract Documents.

§ 7.2 TIME OF DELIVERY AND FORM OF BONDS

§ 7.2.1 The Bidder shall deliver the required bonds to the Owner not later than three days following the date of execution of the Contract. If the Work is to be commenced prior thereto in response to a letter of intent, the Bidder shall, prior to commencement of the Work, submit evidence satisfactory to the Owner that such bonds will be furnished and delivered in accordance with this Section 7.2.1.

§ 7.2.2 Unless otherwise provided, the bonds shall be written on AIA Document A312, Performance Bond and Payment Bond. Both bonds shall be written in the amount of the Contract Sum.

§ 7.2.3 The bonds shall be dated on or after the date of the Contract.

§ 7.2.4 The Bidder shall require the attorney-in-fact who executes the required bonds on behalf of the surety to affix thereto a certified and current copy of the power of attorney.

ARTICLE 8 FORM OF AGREEMENT BETWEEN OWNER AND CONTRACTOR

Unless otherwise required in the Bidding Documents, the Agreement for the Work will be written on AIA Document A101, Standard Form of Agreement Between Owner and Contractor Where the Basis of Payment Is a Stipulated Sum.

DOCUMENT 00 2215 – SUPPLEMENTARY INSTRUCTIONS TO BIDDERS

The following supplements modify, change, delete, or add to the "Instructions to Bidders", AIA Document A701, 1997. Where any part of the Instructions to Bidders is modified or voided by these Articles, the undeleted provisions of that part shall remain in effect.

ARTICLE 3: BIDDING DOCUMENTS

3.1 COPIES

- 3.1.2 Delete the entire subparagraph and substitute the following: "Bidding Documents may be issued to major Sub-bidders or others at the discretion of the Architect on a first come first serve basis.

3.3 SUBSTITUTIONS

- 3.3.2 In the second line change the word "ten" to "seven".

ARTICLE 4: BIDDING PROCEDURES

4.2 BID SECURITY

- 4.2.1.1 No proposal will be considered unless accompanied by a deposit in the amount of five percent (5%) of the total bid, either by a Bid Bond, certified or cashier's check made payable to the Owner.
- 4.2.2 In the first line following the word "Bond," add "or other approved form,".

ARTICLE 5: CONSIDERATION OF BIDS

5.1 OPENING OF BIDS

- 5.1.1 Sealed Bids for performing the work contemplated by this contract will be received at the date, time and place indicated in the advertisement for bids.

5.3 ACCEPTANCE OF BID (AWARD)

- 5.3.3 The Bidder to whom the award is made will be promptly notified and within seven (7) calendar days. From the date of such notification, he shall execute the contract agreement in triplicate, furnish contract bond and insurance certification.

ARTICLE 7: PERFORMANCE BOND AND PAYMENT BOND

7.1 BOND REQUIREMENTS:

Add Section 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.

7.2 TIME OF DELIVERY AND FORM OF BONDS:

Delete the first sentence of Section 7.2.1 and insert the following:

The Bidder shall deliver the required bonds to Owner no later than 10 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.

Delete Section 7.2.3 and insert the following:

- 7.2.3 - Bonds shall be executed and be in force on the date of the execution of the Contract.

ARTICLE 9: PROJECT INFORMATION

9.1 THE WORK

- 9.1.1 Remodel Shelley Senior Center
193 W. Pine St.
Shelley, Idaho 83274

9.2 THE OWNER

- 9.2.1 Shelley Senior Center
193 W. Pine St.
Shelley, Idaho 83274

9.3 THE ARCHITECT

- 9.3.1 NBW Architects, P.A.
990 John Adams Parkway
P.O. Box 2212
Idaho Falls, Idaho 83403

ARTICLE 10: ARRANGEMENT OF CONTRACTS

10.1 PROPOSALS

- 10.1.1 The proposed work will be bid and awarded under one contract covering only those divisions and work stipulated in the construction Documents.
- 10.1.2 Proposals must be for the complete Work and no separate proposals will be received on portions of the Work.

ARTICLE 11: CONSTRUCTION TIME AND LIQUIDATED DAMAGES

11.2 TIME OF COMPLETION

- 11.2.1 Time is hereby expressly declared to be of the essence of the contract. The successful bidder will be expected to gear his operations and organize his work and subcontract to complete this project in the earliest possible time. The Owner acknowledges that the Contractor is not able to control the weather; however, the Contractor shall be otherwise required to take all necessary steps to furnish adequate labor to complete the project as soon as possible. He shall be responsible for any and all damages incurred by the Owner by reason of delays necessitated by his failure or failure of the Subcontractors to diligently act to secure necessary materials and labor for the completion of this project in a reasonable time, which we have calculated to be 45 calendar days after receiving notice to proceed with actual construction.

11.3 LIQUIDATED DAMAGES

- 11.3.1 The Contractor agrees to pay to the Owner the sum of \$500.00 per day as liquidated damages unless he notified the Architect in writing that conditions are beyond his control and his request is approved by the Architect and the Owner.

END OF DOCUMENT 00 2215

DOCUMENT 00 2600 - PROCUREMENT SUBSTITUTION PROCEDURES

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 01 2500 "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. 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 days prior to date of bid opening.
 - 2. Submittal Format: Submit three copies of each written Procurement Substitution Request, using 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.
 - 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.

END OF DOCUMENT 00 2600

DOCUMENT 00 4113 - BID FORM - STIPULATED SUM (SINGLE-PRIME CONTRACT)

1.1 BID INFORMATION

- A. Bidder:
- B. Project Name: Shelley Senior Center Remodel
- C. Project Location: 193 W. Pine St., Shelley, Idaho 83274.
- D. Owner: Shelley Senior Center, 193 W. Pine St., Shelley, Idaho 83274.
- E. Architect: NBW Architects, P.A., 990 John Adams Parkway, P.O. Box 2212, Idaho Falls, Idaho 83403. Telephone: 208-522-8779. Fax: 208-522-878.

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 NBW Architects, P.A. 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 (\$_____).

1.3 BID GUARANTEE

- A. The undersigned Bidder agrees to execute a contract for this Work in the above amount, if offered within 30 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 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 SUBCONTRACTORS AND SUPPLIERS

- A. The following companies will perform the indicated portions of the Work if the undersigned bidder is awarded the Contract:
 - 1. Plumbing Work (Name): _____
(Address): _____
Idaho Plumbing Contractor's License No. _____
 - 2. HVAC Work (Name): _____
(Address): _____
Idaho Contractor's License No. _____
 - 3. Electrical Work (Name): _____
(Address): _____
Idaho Electrical Contractor's License No. _____

1.5 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 substantially complete the Work within 45 calendar days.

1.6 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. __, dated _____.
 2. Addendum No. __, dated _____.
 3. Addendum No. __, dated _____.
 4. Addendum No. __, dated _____.

1.7 CONTRACTOR'S LICENSE

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

1.8 SUBMISSION OF BID

Respectfully submitted this ____ day of _____, 2018.

Submitted By: _____
(Name of bidding firm or corporation)

Authorized Signature: _____
(Handwritten signature)

Signed By: _____
(Type or print name)

Title: _____
(Owner/Partner/President/Vice President)

Street Address: _____

City, State, Zip _____

Phone: _____

License No.: _____

Federal ID No.: _____

(Affix Corporate Seal Here)

END OF DOCUMENT 00 4113

DOCUMENT 00 4313 - BID SECURITY FORMS

1.1 BID FORM SUPPLEMENT

- A. A completed bid bond form or cashiers check in the amount of 5% of the bid amount is required to be attached to the Bid Form.

1.2 BID BOND FORM

- A. AIA Document A310, "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; www.aia.org/contractdocs/purchase/index.htm; email: docspurchases@aia.org; (800) 942-7732.

END OF DOCUMENT 00 4313

DOCUMENT 00 4373 - PROPOSED SCHEDULE OF VALUES FORM

1.1 BID FORM SUPPLEMENT

- A. A completed Proposed Schedule of Values form is required to be submitted to the Architect within 10 days of the bid opening.

1.2 PROPOSED SCHEDULE OF VALUES FORM

- A. Proposed Schedule of Values Form: Provide a breakdown of the bid amount, including alternates, in enough detail to facilitate continued evaluation of bid. Coordinate with the Project Manual table of contents. Provide multiple line items for principal material and subcontract amounts in excess of five percent of the Contract Sum.
- B. Arrange schedule of values consistent with format of AIA Document G703.
 - 1. Copies of AIA standard forms may be obtained from the American Institute of Architects; <http://www.aia.org/contractdocs/purchase/index.htm>; docspurchases@aia.org; (800) 942-7732.

END OF DOCUMENT 00 4373

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DOCUMENT 00 4393 - BID SUBMITTAL CHECKLIST

1.1 BID INFORMATION

- A. Bidder:
- B. Project Name: Shelley Senior Center Remodel.
- C. Project Location: 193 W. Pine St., Shelley, Idaho 83274.
- D. Owner: Shelley Senior Center, 193 W. Pine St., Shelley, Idaho 83274.
- E. Architect: NBW Architects, P.A., 990 John Adams Parkway, P.O. Box 2212, Idaho Falls, Idaho 83403.
- F. Architect Project Number: 18023.

1.2 BIDDER'S CHECKLIST

- A. 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.
- B. Attach this completed checklist to the outside of the Submittal envelope.
 - 1. Used the Bid Form provided in the Project Manual.
 - 2. Prepared the Bid Form as required by the Instructions to Bidders.
 - 3. Indicated on the Bid Form the Addenda received.
 - 4. Include Bid Security in Bid envelope.
 - 5. Bid envelope shows name and address of the Bidder.
 - 6. Bid envelope shows name of Project being bid.
 - 7. Verified that the Bidder can provide executed Performance Bond and Labor and Material Bond.
 - 8. Verified that the Bidder can provide Certificates of Insurance in the amounts indicated.

DOCUMENT 00 6000 - PROJECT FORMS

1.1 FORM OF AGREEMENT AND GENERAL CONDITIONS

- A. The following form of Owner/Contractor Agreement and form of the General Conditions shall be used for Project:
 - 1. AIA Document A105-2017, "Standard Short Form of Agreement between Owner and Contractor."
 - 2. The General Conditions are included in the Agreement form.
 - 3. The Supplementary Conditions for Project are separately prepared and included in the Project Manual.

1.2 ADMINISTRATIVE FORMS

- A. Administrative Forms: Additional administrative forms are specified in Division 01 General Requirements.
- B. Copies of AIA standard forms may be obtained from the American Institute of Architects; <http://www.aia.org/contractdocs/purchase/index.htm>; docspurchases@aia.org; (800) 942-7732.
- C. Preconstruction Forms:
 - 1. Form of Performance Bond and Labor and Material Bond: AIA Document A312-2010 "Performance Bond and Payment Bond."
 - 2. Form of Certificate of Insurance: AIA Document G715, "Supplemental Attachment for ACORD Certificate of Insurance 25-S."
 - 3. Form for Public Works Contract Report: State Tax Commission Form WH-5, "Public Works Contract Report."
 - 4. Form for Tax Affidavit: "Contractor's Affidavit Concerning Taxes."
- D. Information and Modification Forms:
 - 1. Form for Requests for Information (RFIs): AIA Document G716, "Request for Information (RFI)" or acceptable Contractor's form
 - 2. Form of Request for Proposal: AIA Document G709, "Work Changes Proposal Request" or acceptable Contractor's form.
 - 3. Change Order Form: AIA Document G701, "Change Order" or Architect's standard form.
- E. Payment Forms:
 - 1. Schedule of Values Form: AIA Document G703, "Continuation Sheet."
 - 2. Payment Application: AIA Document G702/703, "Application and Certificate for Payment and Continuation Sheet."

END OF DOCUMENT 00 6000



AIA[®] Document A105[™] – 2017

Standard Short Form of Agreement Between Owner and Contractor

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

BETWEEN the Owner:

(Name, legal status, address and other information)

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

and the Contractor:

(Name, legal status, address and other information)

for the following Project:

(Name, location and detailed description)

The Architect:

(Name, legal status, address and other information)

The Owner and Contractor agree as follows.

Init.

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ARTICLE 1 THE CONTRACT DOCUMENTS

The Contractor shall complete the Work described in the Contract Documents for the Project. The Contract Documents consist of

- .1 this Agreement signed by the Owner and Contractor;
- .2 the drawings and specifications prepared by the Architect, dated _____, and enumerated as follows:

Drawings:
Number

Title

Date

Specifications:
Section

Title

Pages

.3 addenda prepared by the Architect as follows:

Number

Date

Pages

.4 written orders for changes in the Work, pursuant to Article 10, issued after execution of this Agreement; and

.5 other documents, if any, identified as follows:

ARTICLE 2 DATE OF COMMENCEMENT AND SUBSTANTIAL COMPLETION

§ 2.1 The Contract Time is the number of calendar days available to the Contractor to substantially complete the Work.

§ 2.2 Date of Commencement:

Unless otherwise set forth below, the date of commencement shall be the date of this Agreement.

(Insert the date of commencement if other than the date of this Agreement.)

§ 2.3 Substantial Completion:

Subject to adjustments of the Contract Time as provided in the Contract Documents, the Contractor shall achieve Substantial Completion, as defined in Section 12.5, of the entire Work:

(Check the appropriate box and complete the necessary information.)

☐ Not later than () calendar days from the date of commencement.

☐ By the following date:

ARTICLE 3 CONTRACT SUM

§ 3.1 The Contract Sum shall include all items and services necessary for the proper execution and completion of the Work. Subject to additions and deductions in accordance with Article 10, the Contract Sum is: (\$)

§ 3.2 For purposes of payment, the Contract Sum includes the following values related to portions of the Work:

(Itemize the Contract Sum among the major portions of the Work.)

Portion of the Work

Value

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

(Identify the accepted alternates. If the bidding or proposal documents permit the Owner to accept other alternates subsequent to the execution of this Agreement, attach a schedule of such other alternates showing the amount for each and the date when that amount expires.)

§ 3.4 Allowances, if any, included in the Contract Sum are as follows:
(Identify each allowance.)

Item	Price
------	-------

§ 3.5 Unit prices, if any, are as follows:
(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)
------	-----------------------	-------------------------

ARTICLE 4 PAYMENTS

§ 4.1 Based on Contractor's Applications for Payment certified by the Architect, the Owner shall pay the Contractor, in accordance with Article 12, as follows:

(Insert below timing for payments and provisions for withholding retainage, if any.)

§ 4.2 Payments due and unpaid under the Contract Documents shall bear interest from the date payment is due at the rate below, or in the absence thereof, at the legal rate prevailing at the place of the Project.

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

%

ARTICLE 5 INSURANCE

§ 5.1 The Contractor shall maintain the following types and limits of insurance until the expiration of the period for correction of Work as set forth in Section 14.2, subject to the terms and conditions set forth in this Section 5.1:

§ 5.1.1 Commercial General Liability insurance for the Project, written on an occurrence form, with policy limits of not less than (\$) each occurrence, (\$) general aggregate, and (\$) aggregate for products-completed operations hazard.

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

§ 5.1.3 The Contractor may achieve the required limits and coverage for Commercial General Liability and Automobile Liability through a combination of primary and excess or umbrella liability insurance, provided that such primary and excess or umbrella insurance policies result in the same or greater coverage as those required under Section 5.1.1 and 5.1.2, and in no event shall any excess or umbrella liability insurance provide narrower coverage than the primary policy. The excess policy shall not require exhaustion of the underlying limits only through the actual payment by the underlying insurers.

§ 5.1.4 Workers' Compensation at statutory limits.

§ 5.1.5 Employers' Liability with policy limits not less than (\$) each accident, (\$) each employee, and (\$) policy limit.

§ 5.1.6 The Contractor shall provide builder's risk insurance to cover the total value of the entire Project on a replacement cost basis.

§ 5.1.7 Other Insurance Provided by the Contractor

(List below any other insurance coverage to be provided by the Contractor and any applicable limits.)

Coverage

Limits

§ 5.2 The Owner shall be responsible for purchasing and maintaining the Owner's usual liability insurance and shall provide property insurance to cover the value of the Owner's property. The Contractor is entitled to receive an increase in the Contract Sum equal to the insurance proceeds related to a loss for damage to the Work covered by the Owner's property insurance.

§ 5.3 The Contractor shall obtain an endorsement to its Commercial General Liability insurance policy to provide coverage for the Contractor's obligations under Section 8.12.

§ 5.4 Prior to commencement of the Work, each party shall provide certificates of insurance showing their respective coverages.

§ 5.5 Unless specifically precluded by the Owner's property insurance policy, the Owner and Contractor waive all rights against (1) each other and any of their subcontractors, suppliers, agents, and employees, each of the other; and (2) the Architect, Architect's consultants, and any of their agents and employees, for damages caused by fire or other causes of loss to the extent those losses are covered by property insurance or other insurance applicable to the Project, except such rights as they have to the proceeds of such insurance.

ARTICLE 6 GENERAL PROVISIONS

§ 6.1 The Contract

The Contract represents the entire and integrated agreement between the parties and supersedes prior negotiations, representations or agreements, either written or oral. The Contract may be amended or modified only by a written modification in accordance with Article 10.

§ 6.2 The Work

The term "Work" means the construction and services required by the Contract Documents, and includes all other labor, materials, equipment, and services provided, or to be provided, by the Contractor to fulfill the Contractor's obligations.

§ 6.3 Intent

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.

§ 6.4 Ownership and Use of Architect's Drawings, Specifications and Other Documents

Documents prepared by the Architect are instruments of the Architect's service for use solely with respect to this Project. The Architect shall retain all common law, statutory, and other reserved rights, including the copyright. The Contractor, subcontractors, sub-subcontractors, and suppliers are authorized to use and reproduce the instruments of service solely and exclusively for execution of the Work. The instruments of service may not be used for other Projects or for additions to this Project outside the scope of the Work without the specific written consent of the Architect.

§ 6.5 Electronic Notice

Written notice under this Agreement may be given by one party to the other by email as set forth below.

(Insert requirements for delivering written notice by email 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.)

ARTICLE 7 OWNER

§ 7.1 Information and Services Required of the Owner

§ 7.1.1 If requested by the Contractor, the Owner shall furnish all necessary surveys and a legal description of the site.

§ 7.1.2 Except for permits and fees under Section 8.7.1 that are the responsibility of the Contractor, the Owner shall obtain and pay for other necessary approvals, easements, assessments, and charges.

§ 7.1.3 Prior to commencement of the Work, at the written request of 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.

§ 7.2 Owner's Right to Stop the Work

If the Contractor fails to correct Work which is not in accordance with the Contract Documents, the Owner may direct the Contractor in writing to stop the Work until the correction is made.

§ 7.3 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 seven day period after receipt of written notice from the Owner to commence and continue correction of such default or neglect with diligence and promptness, the Owner may, without prejudice to other remedies, correct such deficiencies. In such case, the Architect may withhold or nullify a Certificate for Payment in whole or in part, to the extent reasonably necessary to reimburse the Owner for the cost of correction, provided the actions of the Owner and amounts charged to the Contractor were approved by the Architect.

§ 7.4 Owner's Right to Perform Construction and to Award Separate Contracts

§ 7.4.1 The Owner reserves the right to perform construction or operations related to the Project with the Owner's own forces, and to award separate contracts in connection with other portions of the Project.

§ 7.4.2 The Contractor shall coordinate and cooperate with the Owner's own forces and separate contractors employed by the Owner.

ARTICLE 8 CONTRACTOR

§ 8.1 Review of Contract Documents and Field Conditions by Contractor

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

§ 8.1.2 The Contractor shall carefully study and compare the Contract Documents with each other and with information furnished by the Owner. Before commencing activities, the Contractor shall (1) take field measurements and verify field conditions; (2) carefully compare this and other information known to the Contractor with the Contract Documents; and (3) promptly report errors, inconsistencies, or omissions discovered to the Architect.

§ 8.2 Contractor's Construction Schedule

The Contractor, promptly after being awarded the Contract, shall prepare and submit for the Owner's and Architect's information a Contractor's construction schedule for the Work.

§ 8.3 Supervision and Construction Procedures

§ 8.3.1 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.

§ 8.3.2 The Contractor, as soon as practicable after award of the Contract, shall furnish in writing to the Owner, through the Architect, the names of subcontractors or suppliers for each portion of the Work. The Contractor shall not contract with any subcontractor or supplier to whom the Owner or Architect have made a timely and reasonable objection.

§ 8.4 Labor and Materials

§ 8.4.1 Unless otherwise provided in the Contract Documents, the Contractor shall provide and pay for labor, materials, equipment, tools, utilities, transportation, and other facilities and services necessary for proper execution and completion of the Work.

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

§ 8.5 Warranty

The Contractor warrants to the Owner and Architect that: (1) materials and equipment furnished under the Contract will be new and of good quality unless otherwise required or permitted by the Contract Documents; (2) the Work will be free from defects not inherent in the quality required or permitted; and (3) the Work will conform to the requirements of the Contract Documents. Any material or equipment 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 12.5.

§ 8.6 Taxes

The Contractor shall pay sales, consumer, use, and similar taxes that are legally required when the Contract is executed.

§ 8.7 Permits, Fees and Notices

§ 8.7.1 The Contractor shall obtain and pay for the building permit and other permits and governmental fees, licenses, and inspections necessary for proper execution and completion of the Work.

§ 8.7.2 The Contractor shall comply with and give notices required by agencies having jurisdiction over the Work. 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 full responsibility for such Work and shall bear the attributable costs. The Contractor shall promptly notify the Architect in writing of any known inconsistencies in the Contract Documents with such governmental laws, rules, and regulations.

§ 8.8 Submittals

The Contractor shall promptly review, approve in writing, and submit to the Architect shop drawings, product data, samples, and similar submittals required by the Contract Documents. Shop drawings, product data, samples, and similar submittals are not Contract Documents.

§ 8.9 Use of Site

The Contractor shall confine operations at the site to areas permitted by law, ordinances, permits, the Contract Documents, and the Owner.

§ 8.10 Cutting and Patching

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

§ 8.11 Cleaning Up

The Contractor shall keep the premises and surrounding area free from accumulation of debris and trash related to the Work. At the completion of the Work, the Contractor shall remove its tools, construction equipment, machinery, and surplus material; and shall properly dispose of waste materials.

§ 8.12 Indemnification

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.

ARTICLE 9 ARCHITECT

§ 9.1 The Architect will provide administration of the Contract as described in the Contract Documents. The Architect will have authority to act on behalf of the Owner only to the extent provided in the Contract Documents.

§ 9.2 The Architect will visit the site at intervals appropriate to the stage of construction to become generally familiar with the progress and quality of the Work.

§ 9.3 The Architect will not have control over or charge of, and will not be responsible for, construction means, methods, techniques, sequences, or procedures, or for safety precautions and programs in connection with the Work, since these are solely the Contractor's responsibility. The Architect will not be responsible for the Contractor's failure to carry out the Work in accordance with the Contract Documents.

§ 9.4 Based on the Architect's observations and evaluations of the Contractor's Applications for Payment, the Architect will review and certify the amounts due the Contractor.

§ 9.5 The Architect has authority to reject Work that does not conform to the Contract Documents.

§ 9.6 The Architect will promptly review and approve or take appropriate action upon Contractor's submittals, but only for the limited purpose of checking for conformance with information given and the design concept expressed in the Contract Documents.

§ 9.7 On written request from either the Owner or Contractor, the Architect will promptly interpret and decide matters concerning performance under, and requirements of, the Contract Documents.

§ 9.8 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.

§ 9.9 The Architect's duties, responsibilities, and limits of authority as described in the Contract Documents shall not be changed without written consent of the Owner, Contractor, and Architect. Consent shall not be unreasonably withheld.

ARTICLE 10 CHANGES IN THE WORK

§ 10.1 The Owner, without invalidating the Contract, may order changes in the Work within the general scope of the Contract, consisting of additions, deletions or other revisions, and the Contract Sum and Contract Time shall be adjusted accordingly, in writing. If the Owner and Contractor cannot agree to a change in the Contract Sum, the Owner shall pay the Contractor its actual cost plus reasonable overhead and profit.

§ 10.2 The Architect may authorize or 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. Such authorization or order shall be in writing and shall be binding on the Owner and Contractor. The Contractor shall proceed with such minor changes promptly.

§ 10.3 If concealed or unknown physical conditions are encountered at the site that differ materially from those indicated in the Contract Documents or from those conditions ordinarily found to exist, the Contract Sum and Contract Time shall be subject to equitable adjustment.

ARTICLE 11 TIME

§ 11.1 Time limits stated in the Contract Documents are of the essence of the Contract.

§ 11.2 If the Contractor is delayed at any time in progress of the Work by changes ordered in the Work, or by labor disputes, fire, unusual delay in deliveries, unavoidable casualties, or other causes beyond the Contractor's control, the Contract Time shall be subject to equitable adjustment.

§ 11.3 Costs caused by delays or by improperly timed activities or defective construction shall be borne by the responsible party.

ARTICLE 12 PAYMENTS AND COMPLETION

§ 12.1 Contract Sum

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

§ 12.2 Applications for Payment

§ 12.2.1 At least ten days before the date established for each progress payment, the Contractor shall submit to the Architect an itemized Application for Payment for Work completed in accordance with the values stated in this Agreement. The Application shall be supported by data substantiating the Contractor's right to payment as the Owner or Architect may reasonably require, such as evidence of payments made to, and waivers of liens from, subcontractors and suppliers. 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 stored, and protected from damage, off the site at a location agreed upon in writing.

§ 12.2.2 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 other encumbrances adverse to the Owner's interests.

§ 12.3 Certificates for Payment

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; (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 in writing of the Architect's reasons for withholding certification in part; 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. If certification or notification is not made within such seven day period, the Contractor may, upon seven additional days' written notice to the Owner and Architect, stop the Work until payment of the amount owing has been received. The Contract Time and the Contract Sum shall be equitably adjusted due to the delay.

§ 12.4 Progress Payments

§ 12.4.1 After the Architect has issued a Certificate for Payment, the Owner shall make payment in the manner provided in the Contract Documents.

§ 12.4.2 The Contractor shall promptly pay each subcontractor and supplier, upon receipt of payment from the Owner, an amount determined in accordance with the terms of the applicable subcontracts and purchase orders.

§ 12.4.3 Neither the Owner nor the Architect shall have responsibility for payments to a subcontractor or supplier.

§ 12.4.4 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 requirements of the Contract Documents.

§ 12.5 Substantial Completion

§ 12.5.1 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 the Owner can occupy or utilize the Work for its intended use.

§ 12.5.2 When the Contractor believes that the Work or designated portion thereof is substantially complete, it will notify the Architect and the Architect will make an inspection to determine whether the Work is substantially complete. When the Architect determines that the Work is substantially complete, the Architect shall prepare a Certificate of Substantial Completion that shall establish the date of Substantial Completion, establish the responsibilities of the Owner and Contractor, 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.

§ 12.6 Final Completion and Final Payment

§ 12.6.1 Upon receipt of a final Application for Payment, the Architect will inspect the Work. When the Architect finds the Work acceptable and the Contract fully performed, the Architect will promptly issue a final Certificate for Payment.

§ 12.6.2 Final payment shall not become due until the Contractor submits to the Architect releases and waivers of liens, and data establishing payment or satisfaction of obligations, such as receipts, claims, security interests, or encumbrances arising out of the Contract.

§ 12.6.3 Acceptance of final payment by the Contractor, a subcontractor or 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 13 PROTECTION OF PERSONS AND PROPERTY

The Contractor shall be responsible for initiating, maintaining and supervising all safety precautions and programs, including all those required by law in connection with performance of the Contract. The Contractor shall take reasonable precautions to prevent damage, injury, or loss to employees on the Work and other persons who may be affected thereby, the Work and materials and equipment to be incorporated therein, and other property at the site or adjacent thereto. The Contractor shall promptly remedy damage and loss to property caused in whole or in part by the Contractor, or by anyone for whose acts the Contractor may be liable.

ARTICLE 14 CORRECTION OF WORK

§ 14.1 The Contractor shall promptly correct Work rejected by the Architect as failing to conform to the requirements of the Contract Documents. The Contractor shall bear the cost of correcting such rejected Work, including the costs of uncovering, replacement, and additional testing.

§ 14.2 In addition to the Contractor's other obligations including warranties under the Contract, the Contractor shall, for a period of one year after Substantial Completion, correct work not conforming to the requirements of the Contract Documents.

§ 14.3 If the Contractor fails to correct nonconforming Work within a reasonable time, the Owner may correct it in accordance with Section 7.3.

ARTICLE 15 MISCELLANEOUS PROVISIONS

§ 15.1 Assignment of Contract

Neither party to the Contract shall assign the Contract as a whole without written consent of the other.

§ 15.2 Tests and Inspections

§ 15.2.1 At the appropriate times, the Contractor shall arrange and bear cost of tests, inspections, and approvals of portions of the Work required by the Contract Documents or by laws, statutes, ordinances, codes, rules and regulations, or lawful orders of public authorities.

§ 15.2.2 If the Architect requires additional testing, the Contractor shall perform those tests.

§ 15.2.3 The Owner shall bear cost of tests, inspections, or approvals that do not become requirements until after the Contract is executed. The Owner shall directly arrange and pay for tests, inspections, or approvals where building codes or applicable laws or regulations so require.

§ 15.3 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.

ARTICLE 16 TERMINATION OF THE CONTRACT

§ 16.1 Termination by the Contractor

If the Work is stopped under Section 12.3 for a period of 14 days through no fault of the Contractor, the Contractor may, upon seven additional days' written notice to the Owner and Architect, terminate the Contract and recover from the Owner payment for Work executed including reasonable overhead and profit, and costs incurred by reason of such termination.

§ 16.2 Termination by the Owner for Cause

§ 16.2.1 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 for materials or labor in accordance with the respective agreements between the Contractor and the subcontractors;
- .3 repeatedly disregards applicable laws, statutes, ordinances, codes, rules and regulations, or lawful orders of a public authority; or
- .4 is otherwise guilty of substantial breach of a provision of the Contract Documents.

§ 16.2.2 When any of the above reasons exist, the Owner, after consultation with the Architect, may without prejudice to any other rights or remedies of the Owner and after giving the Contractor and the Contractor's surety, if any, seven days' written notice, terminate employment of the Contractor and may

- .1 take possession of the site and of all materials thereon owned by the Contractor, and
- .2 finish the Work by whatever reasonable method the Owner may deem expedient.

§ 16.2.3 When the Owner terminates the Contract for one of the reasons stated in Section 16.2.1, the Contractor shall not be entitled to receive further payment until the Work is finished.

§ 16.2.4 If the unpaid balance of the Contract Sum exceeds costs of finishing the Work, such excess shall be paid to the Contractor. If such costs exceed the unpaid balance, the Contractor shall pay the difference to the Owner. This obligation for payment shall survive termination of the Contract.

§ 16.3 Termination by the Owner for Convenience

The Owner may, at any time, terminate the Contract for the Owner's convenience and without cause. The Contractor shall be entitled to receive payment for Work executed, and costs incurred by reason of such termination, along with reasonable overhead and profit on the Work not executed.

ARTICLE 17 OTHER TERMS AND CONDITIONS

(Insert any other terms or conditions below.)

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

(If required by law, insert cancellation period, disclosures or other warning statements above the signatures.)

OWNER *(Signature)*

(Printed name and title)

CONTRACTOR *(Signature)*

(Printed name and title)

LICENSE NO.:

JURISDICTION:

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DOCUMENT 00 6110 - SUPPLEMENTARY CONDITIONS

The following supplements modify, change, delete, or add to the General Conditions of the Contract for Construction, included in AIA Document A105-2017. Where any part of the General Conditions is modified or voided by these Articles, the unaltered provisions of that part shall remain in effect.

ARTICLE 5: INSURANCE

Delete Paragraphs 5.1.1, 5.1.2, 5.1.3, 5.1.4, 5.1.5, 5.1.6 and 5.1.7.

NOTE: Contractor must comply with insurance requirements. Any Contractor circumventing legitimacy of insurance requirements (i.e., listing employees as sub-contractors) will not be considered for bid award.

Add the following Paragraphs 5.1.1 and 5.1.2 to Article 5:

5.1.1 The insurance required by Subparagraph 5.1 and indicated below shall be written for not less than the following limits:

1. Workers' Compensation:
 - (a) State: Statutory
 - (b) Employer's Liability: \$ 100,000 per Accident
\$ 500,000 Disease, Policy Limit
\$ 100,000 Disease, Each Employee
2. Comprehensive or Commercial General Liability (including Premises Operations; Independent Contractor's Protective; Products and Completed Operations; Broad Form Property Damage):
 - (a) Bodily Injury: \$ 500,000 Each Occurrence
\$1,000,000 Aggregate
 - (b) Property Damage: \$ 500,000 Each Occurrence
\$1,000,000 Aggregate
 - (c) Products and Completed Operations to be maintained for One year after final payment:
\$1,000,000 Aggregate
 - (d) Property Damage Liability Insurance shall provide X, C and U coverage.
 - (e) Broad Form Property Damage Coverage shall include Completed Operations.
3. Contractual Liability:
 - (a) Bodily Injury: \$ 500,000 Each Occurrence
\$1,000,000 Aggregate
 - (b) Property Damage: \$ 500,000 Each Occurrence
\$1,000,000 Aggregate
4. Personal Injury, with Employment Exclusion deleted:
\$1,000,000 Aggregate
5. Business Auto Liability (including owner, non-owned and hired vehicles):
 - (a) Combined Single Limit \$1,000,000
6. If the General Liability coverages are provided by a Commercial Liability policy, the
 - (a) General Aggregate shall be not less than \$1,000,000 and it shall apply, in total, to this Project only.
 - (b) Fire Damage Limit shall be not less than \$50,000 on any one Fire.
 - (c) Medical Expense Limit shall be not less than \$5,000 on any one person."

7. Umbrella Excess Liability:

- (a) An umbrella policy may be used in combination with other policies to provide a minimum coverage of \$1,000,000.

5.1.2 The Owner shall be named as an additional insured on the insurance required in 5.1.1.2 above and the insurance shall contain the severability of interest clause as follows:

- (a) "The insurance afforded herein applies separately to each insured against whom claim is made or suit is brought, except with respect to the limits of the company's 'liability'."

Add the following Paragraph 5.6 to Article 5:

5.6 PERFORMANCE BOND AND PAYMENT BOND

5.6.1 The Owner shall have the right to require the Contractor to furnish bonds covering the faithful performance of the Contract and payment of obligations arising thereunder as stipulated in the Contract Documents on the date of execution of the Contract.

5.6.2 Upon 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 be furnished.

5.6.3 The Contractor shall furnish bonds or acceptable government obligations covering faithful performance of the Contract and payment of obligations arising thereunder. Bonds shall be obtained through a company licensed to transact business in the locality of the project and the cost thereof shall be included in the Contract Sum. The amount of each bond shall be equal to 100 percent of the Contract Sum.

5.6.3.1 The Contractor shall deliver the required bonds to the Owner not later than three days following the date the Agreement is entered into, or if the Work is to be commenced prior thereto in response to a letter of intent, the Contractor shall, prior to the commencement of the Work, submit evidence satisfactory to the Owner that such bonds will be furnished.

5.6.3.2 The Contractor shall require the attorney-in-fact who executes the required bonds on behalf of the surety to affix thereto a certified and current copy of the power of attorney.

5.6.3.3 Form of bonds shall be AIA Document A312.

ARTICLE 10: CHANGES IN THE WORK

Add the following Paragraphs 10.4 and 10.5 to Article 10:

10.4 The combined overhead and profit included in the total cost to the Owner of a change in the Work shall be based on the following schedule:

- .1 For the Contractor, for Work performed by the Contractor's own forces, 15 percent of the cost.
- .2 For the Contractor, for Work performed by the contractor's Subcontractor, 5 percent of the amount due the Subcontractor.
- .3 For the Subcontractor or Sub-subcontractor involved, for Work performed by that Subcontractor's or Sub-subcontractor's own forces, 10 percent of the cost.
- .4 For each Subcontractor, for Work performed by the Subcontractor's Sub-subcontractors, 5 percent of the amount due the Sub-subcontractor.
- .5 Cost to which overhead and profit is to be applied shall be determined in accordance with Subparagraph 7.3.6.
- .6 In order to facilitate checking of quotations for extras or credits, all proposals, except those so minor that their propriety can be seen by inspection, shall be accompanied by a complete itemization of costs including labor, materials and Subcontracts. Labor and materials shall be itemized in the manner prescribed above. Where major cost items are Subcontracts, they shall be itemized also. In no case will a change involving over \$500.00 be approved without such itemization.

10.5 Agreement on any Change Order shall constitute a final settlement of all matters relating to the change in the Work which is the subject of the change Order, including, but not limited to, all direct and indirect costs associated with such change and any and all adjustments to the Contract Sum and the construction schedule. In the event a Change Order increases the contract Sum, the Contractor shall include the Work covered by such Change Order in Application for Payment as if such Work were originally

part of the Project and Contract Documents.

ARTICLE 12: PAYMENTS AND COMPLETION

12.2 APPLICATIONS FOR PAYMENT

Add the following Paragraph 12.2.1.1 to Article 12:

12.2.1.1 Progress payments shall represent 95% of the actual value of the work done and materials and equipment furnished and/or suitably stored at the jobsite or other approved location up to the first day of that month. In making such partial (monthly) payments, there shall be retained five percent (5%) on the estimated amounts until final completion and acceptance of all work covered by the Contract. Payments for work under the subcontracts of the General Contractor shall be subject to the above conditions. The form of Application for Payment shall be AIA Document G702, Application and Certification for Payment, supported by AIA Document G703, Continuation Sheet.

ARTICLE 15: MISCELLANEOUS PROVISIONS

Add the following Paragraph 15.4 to Article 15:

15.4 EQUAL OPPORTUNITY

15.4.1 The Contractor shall maintain policies of employment as follows:

15.4.1.1 The Contractor and the Contractor's Subcontractors shall not discriminate against any employee or applicant for employment because of race, religion, color, sex, age or national origin. The contractor shall take affirmative action to insure that applicants are employed, and that employees are treated during employment without regard to their race, religion, color, sex, age or national origin. Such action shall include, but not be limited to, the following: employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. The Contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices setting forth the policies of non-discrimination.

15.4.1.2 The Contractor and the Contractor's Subcontractors shall, in all solicitation or advertisements for employees placed by them or on their behalf, state that all qualified applicants will receive consideration for employment without regard to race, religion, color, sex, age or national origin.

ARTICLE 17: OTHER TERMS AND CONDITIONS

Add the following Attachment to Article 17: **CDBG Supplemental General Conditions**

END OF SUPPLEMENTARY CONDITIONS

CDBG Supplemental General Conditions

These Supplemental General Conditions are to be part of an Idaho Community Development Block Grant funded construction project.

Preconstruction Conference

After the contract(s) have been awarded but before the start of construction, a conference will be held for the purpose of discussing requirements on such matters as project supervision, progress schedule and reports, payrolls, payment to contractors, contract change order, insurance, safety and other items pertinent to the project. The contractor shall arrange to have all subcontractors and supervisory personnel connected with the project on hand to meet with representatives of the engineer and owner to discuss any problems anticipated

Reports and Information

The contractor, at such times and in such forms as the owner may require, shall furnish the owner such periodic reports as requested pertaining to the work or services undertaken pursuant to this contract, the costs and obligations incurred or to be incurred in connection therewith, and any other matters covered by this contract.

Conflict of Interest

No member, officer, or employees of the grantee, or its designees or agents, no members of the grantee's governing body and no other public official of the grantee who exercises any functions or responsibilities with respect to this contract during his/her tenure or for one (1) year thereafter, shall have any interest, direct or indirect, in work to be performed in connection with this contract. All contractors shall incorporate, or cause to be incorporated, in all subcontracts, a provision prohibiting such interest.

Minority Business Enterprise

Affirmative steps will be taken to assure that small, minority and female businesses and firms located in labor surplus areas are used when possible as sources of supplies, equipment, construction and services. Affirmative steps shall include the following:

1. Include any such qualified firms on solicitation lists.
2. Assure that such firms are solicited whenever they are potential sources.
3. When economically feasible, divide total requirements into small tasks or quantities so as to permit such firms maximum participation.
4. Where possible, establish delivery schedules which will encourage such participation.
5. Use the services and assistance of the Small Business Administration, Idaho Transportation Department's Disadvantage Business Enterprise Program, and other sources when appropriate. (24 CFR Part 85.36(e)(vi))

HUD Section 3

If the CDBG funding for this project exceeds construction contract exceeds \$100,000, the parties to this contract will comply with the regulations set forth in 24 CFR Part 135, and all applicable rules and orders of the department issued thereunder. Section 3 requires that to the greatest extent feasible opportunities for training and employment be given to lower income residents of the project area and contracts for work in connection with the project be awarded to business concerns which are located in, or owned in substantial part by persons residing in the area of the project. The parties to this contract certify and agree that they are under no contractual or other disability that would prevent them from complying with these requirements. The contractor will include this Section 3 clause in every subcontract in excess of \$100,000 for work in connection with the project.

Failure to fulfill these requirements shall subject the contractor and subcontractors, its successors, and assigns to those sanctions specified by the grant agreement through which federal assistance is provided, and to such sanctions as are specified by 24 CFR Part 135.

Bonding

All bids in excess of \$150,000 shall be accompanied by a guarantee equal to at least five percent (5%) of the bid amount. This guarantee may be in the form of a bond, certified check or other negotiable instrument. Bid bonds will be accompanied by power of attorney bearing the same date as the bond.

If this contract is for an amount in excess of \$150,000, the contractor shall furnish a performance bond in an amount not less than one hundred percent (100%) of the contract price as security for the faithful performance of this contract. The contractor shall also furnish a payment bond in an amount not less than one hundred percent (100%) of the contract price as security for the payment of all persons performing labor under this contract and furnishing materials in connection with this contract. Idaho Code shall govern if this contract is \$150,000 or less.

Public Works Licensing of Contractors

Prior to the award of the contract, bidders shall possess or obtain a license issued in the state of Idaho by the Idaho Public Works Contractors License Board in the class and type specified for the value and scope of work to be done in accordance with the provision of Title 54, Chapter 19, Idaho Code, as amended. Subcontractors undertaking to perform any work covered by the contract must also possess or obtain a license prior to award of the contract. Any construction project with an estimated cost of less than fifty thousand dollars (\$50,000) is exempt from the licensing requirement.

Standard Environmental Mitigation Measures

1. The construction contractors must comply with the Rules for the Control of Air Pollution in Idaho, IDAPA 58.01.01.651, by implementing precautions to prevent particulate matter from becoming airborne.
2. If any items of suspected historical or archaeological value are uncovered during construction, the contractor will be required to stop work and contact the Idaho State Historic Preservation Office and the Idaho Department of Commerce.
3. The collection and disposal of storm and surface water runoff from the project site must comply with the Idaho Department of Environmental Quality's (DEQ) Catalog of Storm Water Best Management Practices for design of all storm water treatment and disposal systems.
4. The contractor shall comply with the provisions of the Environmental Protection Agency's National Pollutant Discharge Elimination System (NPDES) General Permit for Storm Water Discharge from Construction Activities and the Construction Storm Water Pollution Prevention Plan (SWPPP).
5. If during the construction of the project, an underground storage tank, buried drum, other container, contaminated soil, or debris not scheduled for removal under the contract are discovered, the Contractor shall immediately notify the Engineer and the Idaho Department of Commerce. No attempt shall be made to excavate, open, or remove such material without written approval.

Clean Air and Water Act

For all contracts and subcontracts exceeding \$100,000, the contractor and all subcontractors shall comply with the requirements of the Clean Air Act, as amended, 42 USC 1857 et seq., the Federal Water Pollution Control Act, as amended, 33 USC 1368 et seq., and the regulations of the Environmental Protection Agency with respect thereto, at 40 CFR 15, as amended.

1. Any building, facility or site listed on the EPA List of Violating Facilities as of this contract may not be used in the performance of this contract.
2. The contractor will comply with all the requirements of Section 114 of the Air Act and Section 308 of the Water Act relating to inspection, monitoring, entry, reports and information, as well as other requirements specified in Sections 114 and 308 of the respective Acts, and all regulations and guidelines issued thereunder.
3. Prior to signing this contract, the contractor shall notify the grantee of any communication from EPA indicating that a facility to be used in the performance of this contract is under consideration to be listed on the EPA List of Violating Facilities.

4. The contractor shall include or cause to be included these four (4) provisions in every subcontract in excess of \$100,000 and take such action as the government may direct as a means of enforcing such provisions.

Insurance During Construction

The contractor shall have in effect without interruption from the date of construction commencement until final payment is made and the Project is closed-out pursuant to the terms of this Contract, the following types of insurance. Further, the contractor warrants such insurance coverage shall be written on an "occurrence" basis and will be obtained with the following minimum liability limits:

1. Workers' Compensation Insurance and Employer's Liability Insurance:

(1) State:	Statutory Limits
(2) Employer's Liability:	\$100,000 per accident
	\$500,000 Disease, Policy Limit
	\$100,000 Disease, Each Employee

2. Comprehensive or Commercial General Liability Insurance which shall be endorsed to name the DEPARTMENT as an additional insured. It shall include premises operation, owners and contractors protective liability, products and completed operations liability, personal injury liability including employee acts, broad form property damage liability and blanket contractual liability, with no exclusion for explosion (X), collapse (C) and underground (U) hazards:

- (1) \$1,000,000 Each Occurrence
- (2) \$1,000,000 Personal Injury
- (3) \$2,000,000 Products/Completed Operations to be maintained for two (2) years following final payment
- (4) \$2,000,000 General Aggregate

3. Automobile Liability Insurance which shall be endorsed to name the DEPARTMENT as an additional insured. It shall include for bodily injury and property damage: \$1,000,000 Combined Single Limit

Property or Builder's Risk Insurance

If required by the owner, the contractor shall have in effect Property or Builder's Risk Insurance. The Property or Builder's Risk Insurance shall include coverage for all direct physical loss, also known as "Special Causes of Loss" in an amount equal to one-hundred percent (100%) of the estimated maximum value of the Project upon completion with the broadest form of "all risk" coverage possible.

Certification of Nonsegregated Facilities

For contracts in excess of \$10,000, the contractor certifies that he/she does not maintain or provide for his/her employees any segregated facility at any of his/her establishments, and that he/she does not permit employees to perform their services at any location, under his/her control, where segregated facilities are maintained. He/she certifies further that he/she will not maintain or provide for employees any segregated facilities at any of his/her establishments, and he/she will not permit employees to perform their services at any location under his/her control where segregated facilities are maintained.

The bidder, offeror, applicant or subcontractor agrees that a breach of this certification is a violation of the Equal Opportunity Clause of this contract. As used in this certification, the term "segregated facilities" means any waiting rooms, work areas, rest rooms and wash rooms, restaurants and other eating areas, time clocks, locker rooms, and other storage or dressing areas, *transportation and housing facilities provided for employees which are segregated by explicit directive or are in fact segregated on the basis of race, color, religion, or national origin, because of habit, local custom, or otherwise. She/he further agrees that (except where she/he has obtained identical certifications from proposed subcontractors for specific time periods) she/he will obtain identical certification from proposed subcontractors prior to the award of subcontracts exceeding \$10,000 which are not exempt from the provisions of the Equal

Opportunity Clause; that she/he will forward the following notice to such proposed subcontractors (except where proposed subcontractors have submitted identical certifications for specific time periods). *Parking lots, drinking fountains, recreation or entertainment areas.

Sign Requirements

The contractor shall supply, erect and maintain a project sign. The sign shall be located prominently at the project site as directed by the project owner. The sign shall be maintained in good condition and removed six (6) months after the project is completed. The sign shall be identical to the one included in this bidding document in overall appearance and proportion. It is to be on 4'x8' or 3'x6' plywood or equivalent material. The sign should be secured into the ground or on a vertical surface.

Contract Pricing

The cost plus a percentage of cost and percentage of construction cost method of contracting shall not be used. This clause overrides all references to the cost-plus method of pricing.

Data, Patent, and Copyright

The contractor shall hold and save the owner and its officers, agents, servants and employees harmless from liability of any nature or kind, including cost and expenses for, or on account of, any patented or unpatented invention, process, article or appliance manufactured or used in the performance of the contract, including its use by the owner, unless otherwise specifically stipulated in the contract documents.

Access to Records

The grantee, the federal grantor agency, the Comptroller General of the United States, the Idaho Department of Commerce, or any of their duly authorized representatives, shall have access to any books, documents, papers, and records of the contractor which are directly pertinent to this specific contract, for the purpose of making audit, examination, excerpts, and transcriptions. All required records must be maintained by the contractor for three (3) years after grantee makes final payments and all other pending matters are closed. (24 CFR Part 85.36(i)(10))

Architectural Barrier Act

Any building designed, constructed or altered must be made accessible to persons with disabilities. Exceptions include (1) alterations where access cannot be provided, i.e. roofs, heating systems, water and sewer systems; (2) alterations are not structurally feasible; or (3) where Uniform Federal Accessibility Standards (UFAS) or Americans With Disabilities Act (ADA) requirements cannot be met according to undue hardship criteria. (42 USC 4151 et seq., 24 CFR Part 40 (UFAS), 24 CFR Part 8)

Lead Based Paint

For all residential new construction or rehabilitation, use of lead based paint on any interior surface, whether accessible or inaccessible, and exterior surfaces readily accessible to children under seven (7) years of age is prohibited. *The surfaces of all existing structures must be inspected.* If lead based paint is found on any interior surfaces or accessible surfaces, it must be treated and repainted with two (2) coats of nonlead paint; or completely removed; or covered with a suitable material such as gypsum wallboard, plywood or plaster. (42 USC 4801 et seq., 24 CFR Part 35)

Davis-Bacon and Related Acts

See Federal Labor Standards Provisions HUD Form 4010 within the bidding document.

Copeland "Anti-Kickback" Act

See Federal Labor Standards Provisions HUD Form 4010 within the bidding document.

Contract Work Hours and Safety Standards Act, Sections 103 and 107

See Federal Labor Standards Provisions HUD Form 4010 within the bidding document.

Executive Order 11246: Equal Employment Opportunity

During the performance of this contract, the contractor agrees as follows:

1. The contractor will not discriminate against any employee or applicant for employment because of race, color, religion, sex, or national origin. The contractor will take affirmative action to ensure that applicants are employed, and that employees are treated during their employment without regard to their race, color, religion, sex, or national origin. Such action shall include, but not be limited to the following: *employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship.* The contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices to be provided setting forth the provisions of this nondiscrimination clause.
2. The contractor will, in all solicitations or advertisements for employees placed by or on behalf of the contractor, state that all qualified applicants will receive considerations for employment without regard to race, color, religion, sex, or national origin.
3. The contractor will send to each labor union or representative of workers with which he has a collective bargaining agreement or other contract or understanding, a notice to be provided advising the said labor union or workers' representatives of the contractor's commitments under this section, and shall post copies of the notice in conspicuous places available to employees and applicants for employment.
4. The contractor will comply with all provisions of Executive Order 11246 of September 24, 1965, and of the rules, regulations, and relevant orders of the Secretary of Labor.
5. The contractor will furnish all information and reports required by Executive Order 11246 of September 24, 1965, and by rules, regulations, and orders of the Secretary of Labor, or pursuant thereto, and will permit access to his books, records, and accounts by the administering agency and the Secretary of Labor for purposes of investigation to ascertain compliance with such rules, regulations, and orders.
6. In the event of the contractor's noncompliance with the nondiscrimination clauses of this contract or with any of the said rules, regulations, or orders, this contract may be canceled, terminated, or suspended in whole or part and the contractor may be declared ineligible for further government contracts or federally assisted construction contracts in accordance with procedures authorized in Executive Order 11246 of September 24, 1965, and such other sanctions may be imposed and remedies invoked as provided in Executive Order 11246 of September 24, 1965, or by rule, regulation, or order of the Secretary of Labor, or as otherwise provided by law.
7. The contractor will include the portion of the sentence immediately preceding paragraph (1) and the provisions of paragraphs (1) through (7) in every subcontract or purchase order unless exempted by rules, regulations, or orders of the Secretary of Labor issued pursuant to section 204 of Executive Order 11246 of September 24, 1965, so that such provisions will be binding upon each subcontractor or vendor. The contractor will take such action with respect to any subcontract or purchase order as the administering agency may direct as a means of enforcing such provisions, including sanctions for noncompliance: Provided, however, that in the event a contractor becomes involved in, or is threatened with, litigation with a subcontractor or vendor as a result of such direction by the administering agency the contractor may request the United States to enter into such litigation to protect the interests of the United States.
8. The applicant further agrees that it will be bound by the above equal opportunity clause with respect to its own employment practices when it participates in federally assisted construction work: *Provided, That* if the applicant so participating is a State or local government, the above equal opportunity clause is not applicable to any agency, instrumentality or subdivision of such government which does not participate in work on or under the contract.

9. The applicant agrees that it will assist and cooperate actively with the administering agency and the Secretary of Labor in obtaining the compliance of contractors and subcontractors with the equal opportunity clause and the rules, regulations, and relevant orders of the Secretary of Labor, that it will furnish the administering agency and the Secretary of Labor such information as they may require for the supervision of such compliance, and that it will otherwise assist the administering agency in the discharge of the agency's primary responsibility for securing compliance.
10. The applicant further agrees that it will refrain from entering into any contract or contract modification subject to Executive Order 11246 of September 24, 1965, with a contractor debarred from, or who has not demonstrated eligibility for, Government contracts and federally assisted construction contracts pursuant to the Executive order and will carry out such sanctions and penalties for violation of the equal opportunity clause as may be imposed upon contractors and subcontractors by the administering agency or the Secretary of Labor pursuant to Part II, Subpart D of the Executive order. In addition, the applicant agrees that if it fails or refuses to comply with these undertakings, the administering agency may take any or all of the following actions: Cancel, terminate, or suspend in whole or in part this grant (contract, loan, insurance, guarantee); refrain from extending any further assistance to the applicant under the program with respect to which the failure or refund occurred until satisfactory assurance of future compliance has been received from such applicant; and refer the case to the Department of Justice for appropriate legal proceedings.

Steps to Comply with Section 3

***This form must be completed by the awarded prime contractor and all of his/her subcontractors with contracted amounts over \$100,000 prior to issuing the notice to proceed. (rev 8/2014)**

From: _____ For: _____

Name of Contractor

Name of Project

What is Section 3?

Under Section 3 of the Housing and Urban Development Act of 1968, whenever HUD financial assistance is given for housing or community development, to the greatest extent feasible, economic opportunities will be given to low income residents and businesses in that area. The project being awarded has Idaho Community Development Block Grant funding which is subject to HUD requirements. ***Covered prime contractors and subcontractors are required to show a good faith effort to:**

- A. Provide employment and training opportunities for **Section 3 Residents**.
- B. Provide opportunities for **Section 3 Businesses** for supplies, services, and construction contracts.

Definition of a Section 3 Resident: (1) A low to moderate income person residing in the County in which the CDBG funds are expended. (A low to moderate income person typically has an annual income of less than \$29,300 or **(2)** A public or Indian housing resident or recipient of the Section 8 housing assistance.

Definition of a Section 3 Business: A business that meets at least **one** of the following criteria: **(1)** Majority (51%) ownership held by Section 3 Residents or **(2)** at least thirty percent (30%) of the permanent full-time employees are Section 3 Residents or were within the first three years of their employment with the business or **(3)** more than twenty-five percent (25%) of the business' work is subcontracted to a business that meets either of the first two criteria.

Part I. Affirmative Action Plan for hiring and training Section 3 Residents:

- A. The total number of new hires I need for this project is _____.
- B. Activities planned to meet Section 3 hiring objectives (check those applicable):
 - () Recruit through local advertising media (include phrase "equal opportunity employer").
 - () Recruit by contacting the local housing authority or agency.
 - () Utilize the recruiting services provided by the Idaho Department of Labor.
 - () Utilize the services of local apprenticeship or training programs.
- C. The total number of my current employees I intend to use on this project is _____. The number of these who would be considered Section 3 Residents is _____.
- D. The total number of *trainees* or *apprentices* I intend to use on this project is _____. The number of these trainees or apprentices that would be considered lower income project area residents is _____.

Part II. Affirmative Action Plan for contracting with Section 3 Businesses:

- A. Activities planned to recruit Section 3 Businesses:
 - () Recruit via Section 3 Business Registry – www.hud.gov/sec3biz "Search for a Business."
 - () Recruit by submitting sub-contracting bidding opportunities to the Idaho Procurement Technical Assistance Center (PTAC) and the ITD Disadvantage Business Enterprise (DBE) program.
- B. I will award _____ contracts in connection with these project activities.
 - 1) The total estimated dollar value of these contracts is \$_____.

- 2) Of these contracts _____ will likely be awarded to Section 3 Businesses.
- 3) The total estimated dollar value of contracts awarded to Section 3 Businesses is \$_____.

I certify to the greatest extent possible I will hire and train Section 3 Residents and will obtain services, supplies and construction subcontracts from Section 3 Businesses.

Signature (Prime Contractor or Subcontractor)

Date

Federal Labor Standards Provisions

U.S. Department of Housing and Urban Development Office of Labor Relations

Applicability

The Project or Program to which the construction work covered by this contract pertains is being assisted by the United States of America and the following Federal Labor Standards Provisions are included in this Contract pursuant to the provisions applicable to such Federal assistance.

A. 1. (i) Minimum Wages. All laborers and mechanics employed or working upon the site of the work, will be paid unconditionally and not less often than once a week, and without subsequent deduction or rebate on any account (except such payroll deductions as are permitted by regulations issued by the Secretary of Labor under the Copeland Act (29 CFR Part 3), the full amount of wages and bona fide fringe benefits (or cash equivalents thereof) due at time of payment computed at rates not less than those contained in the wage determination of the Secretary of Labor which is attached hereto and made a part hereof, regardless of any contractual relationship which may be alleged to exist between the contractor and such laborers and mechanics. Contributions made or costs reasonably anticipated for bona fide fringe benefits under Section I(b)(2) of the Davis-Bacon Act on behalf of laborers or mechanics are considered wages paid to such laborers or mechanics, subject to the provisions of 29 CFR 5.5(a)(1)(iv); also, regular contributions made or costs incurred for more than a weekly period (but not less often than quarterly) under plans, funds, or programs, which cover the particular weekly period, are deemed to be constructively made or incurred during such weekly period.

Such laborers and mechanics shall be paid the appropriate wage rate and fringe benefits on the wage determination for the classification of work actually performed, without regard to skill, except as provided in 29 CFR 5.5(a)(4). Laborers or mechanics performing work in more than one classification may be compensated at the rate specified for each classification for the time actually worked therein: Provided, That the employer's payroll records accurately set forth the time spent in each classification in which work is performed. The wage determination (including any additional classification and wage rates conformed under 29 CFR 5.5(a)(1)(ii) and the Davis-Bacon poster (WH-1321) shall be posted at all times by the contractor and its subcontractors at the site of the work in a prominent and accessible, place where it can be easily seen by the workers.

(ii) (a) Any class of laborers or mechanics which is not listed in the wage determination and which is to be employed under the contract shall be classified in conformance with the wage determination. HUD shall approve an additional classification and wage rate and fringe benefits therefor only when the following criteria have been met:

(1) The work to be performed by the classification requested is not performed by a classification in the wage determination; and

(2) The classification is utilized in the area by the construction industry; and

(3) The proposed wage rate, including any bona fide fringe benefits, bears a reasonable relationship to the wage rates contained in the wage determination.

(b) If the contractor and the laborers and mechanics to be employed in the classification (if known), or their representatives, and HUD or its designee agree on the classification and wage rate (including the amount designated for fringe benefits where appropriate), a report of the action taken shall be sent by HUD or its designee to the Administrator of the Wage and Hour Division, Employment Standards Administration, U.S. Department of Labor, Washington, D.C. 20210. The Administrator, or an authorized representative, will approve, modify, or disapprove every additional classification action within 30 days of receipt and so advise HUD or its designee or will notify HUD or its designee within the 30-day period that additional time is necessary. (Approved by the Office of Management and Budget under OMB control number 1215-0140.)

(c) In the event the contractor, the laborers or mechanics to be employed in the classification or their representatives, and HUD or its designee do not agree on the proposed classification and wage rate (including the amount designated for fringe benefits, where appropriate), HUD or its designee shall refer the questions, including the views of all interested parties and the recommendation of HUD or its designee, to the Administrator for determination. The Administrator, or an authorized representative, will issue a determination within 30 days of receipt and so advise HUD or its designee or will notify HUD or its designee within the 30-day period that additional time is necessary. (Approved by the Office of Management and Budget under OMB Control Number 1215-0140.)

(d) The wage rate (including fringe benefits where appropriate) determined pursuant to subparagraphs (1)(ii)(b) or (c) of this paragraph, shall be paid to all workers performing work in the classification under this contract from the first day on which work is performed in the classification.

(iii) Whenever the minimum wage rate prescribed in the contract for a class of laborers or mechanics includes a fringe benefit which is not expressed as an hourly rate, the contractor shall either pay the benefit as stated in the wage determination or shall pay another bona fide fringe benefit or an hourly cash equivalent thereof.

(iv) If the contractor does not make payments to a trustee or other third person, the contractor may consider as part

of the wages of any laborer or mechanic the amount of any costs reasonably anticipated in providing bona fide fringe benefits under a plan or program, Provided, That the Secretary of Labor has found, upon the written request of the contractor, that the applicable standards of the Davis-Bacon Act have been met. The Secretary of Labor may require the contractor to set aside in a separate account assets for the meeting of obligations under the plan or program. (Approved by the Office of Management and Budget under OMB Control Number 1215-0140.)

2. Withholding. HUD or its designee shall upon its own action or upon written request of an authorized representative of the Department of Labor withhold or cause to be withheld from the contractor under this contract or any other Federal contract with the same prime contractor, or any other Federally-assisted contract subject to Davis-Bacon prevailing wage requirements, which is held by the same prime contractor so much of the accrued payments or advances as may be considered necessary to pay laborers and mechanics, including apprentices, trainees and helpers, employed by the contractor or any subcontractor the full amount of wages required by the contract. In the event of failure to pay any laborer or mechanic, including any apprentice, trainee or helper, employed or working on the site of the work, all or part of the wages required by the contract, HUD or its designee may, after written notice to the contractor, sponsor, applicant, or owner, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds until such violations have ceased. HUD or its designee may, after written notice to the contractor, disburse such amounts withheld for and on account of the contractor or subcontractor to the respective employees to whom they are due. The Comptroller General shall make such disbursements in the case of direct Davis-Bacon Act contracts.

3. (i) Payrolls and basic records. Payrolls and basic records relating thereto shall be maintained by the contractor during the course of the work preserved for a period of three years thereafter for all laborers and mechanics working at the site of the work. Such records shall contain the name, address, and social security number of each such worker, his or her correct classification, hourly rates of wages paid (including rates of contributions or costs anticipated for bona fide fringe benefits or cash equivalents thereof of the types described in Section 1(b)(2)(B) of the Davis-bacon Act), daily and weekly number of hours worked, deductions made and actual wages paid. Whenever the Secretary of Labor has found under 29 CFR 5.5 (a)(1)(iv) that the wages of any laborer or mechanic include the amount of any costs reasonably anticipated in providing benefits under a plan or program described in Section 1(b)(2)(B) of the Davis-Bacon Act, the contractor shall maintain records which show that the commitment to provide such benefits is enforceable, that the plan or program is financially responsible, and that the plan or program has been

communicated in writing to the laborers or mechanics affected, and records which show the costs anticipated or the actual cost incurred in providing such benefits. Contractors employing apprentices or trainees under approved programs shall maintain written evidence of the registration of apprenticeship programs and certification of trainee programs, the registration of the apprentices and trainees, and the ratios and wage rates prescribed in the applicable programs. (Approved by the Office of Management and Budget under OMB Control Numbers 1215-0140 and 1215-0017.)

(ii) (a) The contractor shall submit weekly for each week in which any contract work is performed a copy of all payrolls to HUD or its designee if the agency is a party to the contract, but if the agency is not such a party, the contractor will submit the payrolls to the applicant sponsor, or owner, as the case may be, for transmission to HUD or its designee. The payrolls submitted shall set out accurately and completely all of the information required to be maintained under 29 CFR 5.5(a)(3)(i) except that full social security numbers and home addresses shall not be included on weekly transmittals. Instead the payrolls shall only need to include an individually identifying number for each employee (e.g., the last four digits of the employee's social security number). The required weekly payroll information may be submitted in any form desired. Optional Form WH-347 is available for this purpose from the Wage and Hour Division Web site at <http://www.dol.gov/esa/whd/forms/wh347instr.htm> or its successor site. The prime contractor is responsible for the submission of copies of payrolls by all subcontractors. Contractors and subcontractors shall maintain the full social security number and current address of each covered worker, and shall provide them upon request to HUD or its designee if the agency is a party to the contract, but if the agency is not such a party, the contractor will submit the payrolls to the applicant sponsor, or owner, as the case may be, for transmission to HUD or its designee, the contractor, or the Wage and Hour Division of the Department of Labor for purposes of an investigation or audit of compliance with prevailing wage requirements. It is not a violation of this subparagraph for a prime contractor to require a subcontractor to provide addresses and social security numbers to the prime contractor for its own records, without weekly submission to HUD or its designee. (Approved by the Office of Management and Budget under OMB Control Number 1215-0149.)

(b) Each payroll submitted shall be accompanied by a "Statement of Compliance," signed by the contractor or subcontractor or his or her agent who pays or supervises the payment of the persons employed under the contract and shall certify the following:

(1) That the payroll for the payroll period contains the information required to be provided under 29 CFR 5.5 (a)(3)(ii), the appropriate information is being maintained under 29 CFR 5.5(a)(3)(i), and that such information is correct and complete;

(2) That each laborer or mechanic (including each helper, apprentice, and trainee) employed on the contract during the payroll period has been paid the full weekly wages earned, without rebate, either directly or indirectly, and that no deductions have been made either directly or indirectly from the full wages earned, other than permissible deductions as set forth in 29 CFR Part 3;

(3) That each laborer or mechanic has been paid not less than the applicable wage rates and fringe benefits or cash equivalents for the classification of work performed, as specified in the applicable wage determination incorporated into the contract.

(c) The weekly submission of a properly executed certification set forth on the reverse side of Optional Form WH-347 shall satisfy the requirement for submission of the "Statement of Compliance" required by subparagraph A.3.(ii)(b).

(d) The falsification of any of the above certifications may subject the contractor or subcontractor to civil or criminal prosecution under Section 1001 of Title 18 and Section 231 of Title 31 of the United States Code.

(iii) The contractor or subcontractor shall make the records required under subparagraph A.3.(i) available for inspection, copying, or transcription by authorized representatives of HUD or its designee or the Department of Labor, and shall permit such representatives to interview employees during working hours on the job. If the contractor or subcontractor fails to submit the required records or to make them available, HUD or its designee may, after written notice to the contractor, sponsor, applicant or owner, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds. Furthermore, failure to submit the required records upon request or to make such records available may be grounds for debarment action pursuant to 29 CFR 5.12.

4. Apprentices and Trainees.

(i) **Apprentices.** Apprentices will be permitted to work at less than the predetermined rate for the work they performed when they are employed pursuant to and individually registered in a bona fide apprenticeship program registered with the U.S. Department of Labor, Employment and Training Administration, Office of Apprenticeship Training, Employer and Labor Services, or with a State Apprenticeship Agency recognized by the Office, or if a person is employed in his or her first 90 days of probationary employment as an apprentice in such an apprenticeship program, who is not individually registered in the program, but who has been certified by the Office of Apprenticeship Training, Employer and Labor Services or a State Apprenticeship Agency (where appropriate) to be eligible for probationary employment as an apprentice. The allowable ratio of apprentices to journeymen on the job site in any craft classification shall not be greater than the ratio permitted to the contractor as to the entire work force under the registered program. Any worker listed on a payroll at an apprentice wage rate, who

is not registered or otherwise employed as stated above, shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any apprentice performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed. Where a contractor is performing construction on a project in a locality other than that in which its program is registered, the ratios and wage rates (expressed in percentages of the journeyman's hourly rate) specified in the contractor's or subcontractor's registered program shall be observed. Every apprentice must be paid at not less than the rate specified in the registered program for the apprentice's level of progress, expressed as a percentage of the journeymen hourly rate specified in the applicable wage determination. Apprentices shall be paid fringe benefits in accordance with the provisions of the apprenticeship program. If the apprenticeship program does not specify fringe benefits, apprentices must be paid the full amount of fringe benefits listed on the wage determination for the applicable classification. If the Administrator determines that a different practice prevails for the applicable apprentice classification, fringes shall be paid in accordance with that determination. In the event the Office of Apprenticeship Training, Employer and Labor Services, or a State Apprenticeship Agency recognized by the Office, withdraws approval of an apprenticeship program, the contractor will no longer be permitted to utilize apprentices at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

(ii) **Trainees.** Except as provided in 29 CFR 5.16, trainees will not be permitted to work at less than the predetermined rate for the work performed unless they are employed pursuant to and individually registered in a program which has received prior approval, evidenced by formal certification by the U.S. Department of Labor, Employment and Training Administration. The ratio of trainees to journeymen on the job site shall not be greater than permitted under the plan approved by the Employment and Training Administration. Every trainee must be paid at not less than the rate specified in the approved program for the trainee's level of progress, expressed as a percentage of the journeyman hourly rate specified in the applicable wage determination. Trainees shall be paid fringe benefits in accordance with the provisions of the trainee program. If the trainee program does not mention fringe benefits, trainees shall be paid the full amount of fringe benefits listed on the wage determination unless the Administrator of the Wage and Hour Division determines that there is an apprenticeship program associated with the corresponding journeyman wage rate on the wage determination which provides for less than full fringe benefits for apprentices. Any employee listed on the payroll at a trainee rate who is not registered and participating in a training plan approved by

the Employment and Training Administration shall be paid not less than the applicable wage rate on the wage determination for the work actually performed. In addition, any trainee performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed. In the event the Employment and Training Administration withdraws approval of a training program, the contractor will no longer be permitted to utilize trainees at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

(iii) **Equal employment opportunity.** The utilization of apprentices, trainees and journeymen under 29 CFR Part 5 shall be in conformity with the equal employment opportunity requirements of Executive Order 11246, as amended, and 29 CFR Part 30.

5. Compliance with Copeland Act requirements. The contractor shall comply with the requirements of 29 CFR Part 3 which are incorporated by reference in this contract

6. Subcontracts. The contractor or subcontractor will insert in any subcontracts the clauses contained in subparagraphs 1 through 11 in this paragraph A and such other clauses as HUD or its designee may by appropriate instructions require, and a copy of the applicable prevailing wage decision, and also a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The prime contractor shall be responsible for the compliance by any subcontractor or lower tier subcontractor with all the contract clauses in this paragraph.

7. Contract termination; debarment. A breach of the contract clauses in 29 CFR 5.5 may be grounds for termination of the contract and for debarment as a contractor and a subcontractor as provided in 29 CFR 5.12.

8. Compliance with Davis-Bacon and Related Act Requirements. All rulings and interpretations of the Davis-Bacon and Related Acts contained in 29 CFR Parts 1, 3, and 5 are herein incorporated by reference in this contract

9. Disputes concerning labor standards. Disputes arising out of the labor standards provisions of this contract shall not be subject to the general disputes clause of this contract. Such disputes shall be resolved in accordance with the procedures of the Department of Labor set forth in 29 CFR Parts 5, 6, and 7. Disputes within the meaning of this clause include disputes between the contractor (or any of its subcontractors) and HUD or its designee, the U.S. Department of Labor, or the employees or their representatives.

10. (i) Certification of Eligibility. By entering into this contract the contractor certifies that neither it (nor he or she) nor any person or firm who has an interest in the contractor's firm is a person or firm ineligible to be awarded Government contracts by virtue of Section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1) or to be

awarded HUD contracts or participate in HUD programs pursuant to 24 CFR Part 24.

(ii) No part of this contract shall be subcontracted to any person or firm ineligible for award of a Government contract by virtue of Section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1) or to be awarded HUD contracts or participate in HUD programs pursuant to 24 CFR Part 24.

(iii) The penalty for making false statements is prescribed in the U.S. Criminal Code, 18 U.S.C. 1001. Additionally, U.S. Criminal Code, Section 1 01 0, Title 18, U.S.C., "Federal Housing Administration transactions", provides in part: "Whoever, for the purpose of . . . influencing in any way the action of such Administration..... makes, utters or publishes any statement knowing the same to be false..... shall be fined not more than \$5,000 or imprisoned not more than two years, or both."

11. Complaints, Proceedings, or Testimony by Employees. No laborer or mechanic to whom the wage, salary, or other labor standards provisions of this Contract are applicable shall be discharged or in any other manner discriminated against by the Contractor or any subcontractor because such employee has filed any complaint or instituted or caused to be instituted any proceeding or has testified or is about to testify in any proceeding under or relating to the labor standards applicable under this Contract to his employer.

B. Contract Work Hours and Safety Standards Act. The provisions of this paragraph B are applicable where the amount of the prime contract exceeds \$100,000. As used in this paragraph, the terms "laborers" and "mechanics" include watchmen and guards.

(1) Overtime requirements. No contractor or subcontractor contracting for any part of the contract work which may require or involve the employment of laborers or mechanics shall require or permit any such laborer or mechanic in any workweek in which the individual is employed on such work to work in excess of 40 hours in such workweek unless such laborer or mechanic receives compensation at a rate not less than one and one-half times the basic rate of pay for all hours worked in excess of 40 hours in such workweek.

(2) Violation; liability for unpaid wages; liquidated damages. In the event of any violation of the clause set forth in subparagraph (1) of this paragraph, the contractor and any subcontractor responsible therefor shall be liable for the unpaid wages. In addition, such contractor and subcontractor shall be liable to the United States (in the case of work done under contract for the District of Columbia or a territory, to such District or to such territory), for liquidated damages. Such liquidated damages shall be computed with respect to each individual laborer or mechanic, including watchmen and guards, employed in violation of the clause set forth in subparagraph (1) of this paragraph, in the sum of \$10 for each calendar day on which such individual was required or permitted to work in excess of the standard workweek of 40 hours without payment of the overtime wages required by the clause set forth in subparagraph (1) of this paragraph.

(3) Withholding for unpaid wages and liquidated damages. HUD or its designee shall upon its own action or upon written request of an authorized representative of the Department of Labor withhold or cause to be withheld, from any moneys payable on account of work performed by the contractor or subcontractor under any such contract or any other Federal contract with the same prime contract, or any other Federally-assisted contract subject to the Contract Work Hours and Safety Standards Act which is held by the same prime contractor such sums as may be determined to be necessary to satisfy any liabilities of such contractor or subcontractor for unpaid wages and liquidated damages as provided in the clause set forth in subparagraph (2) of this paragraph.

(4) Subcontracts. The contractor or subcontractor shall insert in any subcontracts the clauses set forth in subparagraph (1) through (4) of this paragraph and also a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The prime contractor shall be responsible for compliance by any subcontractor or lower tier subcontractor with the clauses set forth in subparagraphs (1) through (4) of this paragraph.

C. Health and Safety. The provisions of this paragraph C are applicable where the amount of the prime contract exceeds \$100,000.

(1) No laborer or mechanic shall be required to work in surroundings or under working conditions which are unsanitary, hazardous, or dangerous to his health and safety as determined under construction safety and health standards promulgated by the Secretary of Labor by regulation.

(2) The Contractor shall comply with all regulations issued by the Secretary of Labor pursuant to Title 29 Part 1926 and failure to comply may result in imposition of sanctions pursuant to the Contract Work Hours and Safety Standards Act, (Public Law 91-54, 83 Stat 96). 40 USC 3701 et seq.

(3) The contractor shall include the provisions of this paragraph in every subcontract so that such provisions will be binding on each subcontractor. The contractor shall take such action with respect to any subcontractor as the Secretary of Housing and Urban Development or the Secretary of Labor shall direct as a means of enforcing such provisions.

General Decision Number: ID180021 10/05/2018 ID21

Superseded General Decision Number: ID20170021

State: Idaho

Construction Type: Building

Counties: Bear Lake, Bingham, Fremont, Lemhi, Oneida and Teton Counties in Idaho.

Note: Under Executive Order (EO) 13658, an hourly minimum wage of \$10.35 for calendar year 2018 applies to all contracts subject to the Davis-Bacon Act for which the contract is awarded (and any solicitation was issued) on or after January 1, 2015. If this contract is covered by the EO, the contractor must pay all workers in any classification listed on this wage determination at least \$10.35 per hour (or the applicable wage rate listed on this wage determination, if it is higher) for all hours spent performing on the contract in calendar year 2018. The EO minimum wage rate will be adjusted annually. Please note that this EO applies to the above-mentioned types of contracts entered into by the federal government that are subject to the Davis-Bacon Act itself, but it does not apply to contracts subject only to the Davis-Bacon Related Acts, including those set forth at 29 CFR 5.1(a)(2)-(60). Additional information on contractor requirements and worker protections under the EO is available at www.dol.gov/whd/govcontracts.

Modification Number	Publication Date
0	01/05/2018
1	04/06/2018
2	05/11/2018
3	06/01/2018
4	06/15/2018
5	09/07/2018
6	10/05/2018

BRID0003-003 06/01/2017

	Rates	Fringes
BRICKLAYER.....	\$ 24.31	17.02

CARP0808-001 06/01/2017

	Rates	Fringes
CARPENTER.....	\$ 27.77	14.08

ZONE PAY:

ZONE 1 0-30 MILES: FREE
 ZONE 2 MORE THAN 30-60 MILES: \$2.00/PER HOUR
 ZONE 3 MORE THAN 60 MILES: \$3.00/PER HOUR

If a project is located in more than one zone the lower zone rate shall apply

ZONES SHALL BE MEASURED FROM THE THE FOLLOWING U.S. POST OFFICES:

BOISE: 304 N. 8TH STREET
TWIN FALLS: 253 2ND AVE. WEST
POCATELLO: CLARK STREET
IDAHO FALLS: 875 NORTH CAPITAL AVE.

ELEC0449-007 06/01/2018

	Rates	Fringes
ELECTRICIAN (Including Low Voltage Wiring).....	\$ 30.71	13.79

ENGI0370-013 01/01/2018

ZONE 1 (Anyone working on HAZMAT jobs working with supplied air shall receive \$1.00 per hour above classification)

	Rates	Fringes
POWER EQUIPMENT OPERATOR:		
Group 3		
Forklift.....	\$ 29.02	12.05
Group 5		
Backhoe (up to 3/4 yd), Industrial Oiler.....	\$ 29.50	12.05
Group 6		
Backhoe (3/4 yd to 3 1/2 yd), Crane (up to and including 50 ton).....	\$ 29.67	12.05
Group 7		
Excavator, Crane (over 50 tons), Tower Crane, Heavy Duty Mechanic.....	\$ 30.04	12.05

ZONE PAY:

Zone Centers: Boise, Twin Falls, Pocatello, and Idaho Falls
Zone 1 0 - 30 miles: free
Zone 2 30 - 60 miles: \$25.00/per day
Zone 3 More than 60 miles: \$30.00/per day.

CRANE LONG BOOM PAY:

A. Crane Booms, 100ft to 150ft, fifteen cents over scale
B. Crane Booms, 150 ft to 200 ft, thirty cents over scale
C. Crane Booms, over 200 ft., forty-five cents over scale

IRON0732-002 06/01/2018

	Rates	Fringes
IRONWORKER, STRUCTURAL.....	\$ 27.15	19.85

LABO0155-005 01/01/2018

	Rates	Fringes
LABORER (Common or General)		
Group 1.....	\$ 27.44	12.67

LABORER: Mason Tender -
Cement/Concrete

Group 4.....\$ 27.74 12.67

PLUM0648-004 06/01/2018

	Rates	Fringes
PLUMBER.....	\$ 36.95	15.85

* ROOF0200-002 06/01/2018

	Rates	Fringes
ROOFER.....	\$ 21.25	16.15

SHEE0103-003 06/01/2017

	Rates	Fringes
SHEET METAL WORKER, Includes HVAC Duct Installation.....	\$ 25.75	17.96

TEAM0983-001 01/01/2018

	Rates	Fringes
TRUCK DRIVER		
GROUP 5A.....	\$ 26.28	14.65
GROUP 5B.....	\$ 26.46	14.65
GROUP 5C.....	\$ 26.69	14.65
GROUP 5D.....	\$ 26.80	14.65
GROUP 5E.....	\$ 27.43	14.65
GROUP 5F.....	\$ 27.87	14.65

GROUP DEFINITIONS:

GROUP 5A: Dump (0-16 yds)
GROUP 5B: Dump (16-30 yds)
GROUP 5C: Dump (30-50 yds)
GROUP 5D: Dump (50-75 yds)
GROUP 5E: Dump (75-100 yds)
GROUP 5F: Dump (over 100 yds)

SUID2010-014 08/08/2012

	Rates	Fringes
CEMENT MASON/CONCRETE FINISHER...	\$ 14.76	2.80
INSULATOR - MECHANICAL (Duct, Pipe & Mechanical System Insulation).....	\$ 20.13	1.80
PAINTER: Brush, Roller and Spray.....	\$ 16.12	0.00
SPRINKLER FITTER (Fire Sprinklers).....	\$ 26.80	12.00

WELDERS - Receive rate prescribed for craft performing

operation to which welding is incidental.

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Note: Executive Order (EO) 13706, Establishing Paid Sick Leave for Federal Contractors applies to all contracts subject to the Davis-Bacon Act for which the contract is awarded (and any solicitation was issued) on or after January 1, 2017. If this contract is covered by the EO, the contractor must provide employees with 1 hour of paid sick leave for every 30 hours they work, up to 56 hours of paid sick leave each year. Employees must be permitted to use paid sick leave for their own illness, injury or other health-related needs, including preventive care; to assist a family member (or person who is like family to the employee) who is ill, injured, or has other health-related needs, including preventive care; or for reasons resulting from, or to assist a family member (or person who is like family to the employee) who is a victim of, domestic violence, sexual assault, or stalking. Additional information on contractor requirements and worker protections under the EO is available at www.dol.gov/whd/govcontracts.

Unlisted classifications needed for work not included within the scope of the classifications listed may be added after award only as provided in the labor standards contract clauses (29CFR 5.5 (a) (1) (ii)).

The body of each wage determination lists the classification and wage rates that have been found to be prevailing for the cited type(s) of construction in the area covered by the wage determination. The classifications are listed in alphabetical order of "identifiers" that indicate whether the particular rate is a union rate (current union negotiated rate for local), a survey rate (weighted average rate) or a union average rate (weighted union average rate).

Union Rate Identifiers

A four letter classification abbreviation identifier enclosed in dotted lines beginning with characters other than "SU" or "UAVG" denotes that the union classification and rate were prevailing for that classification in the survey. Example: PLUM0198-005 07/01/2014. PLUM is an abbreviation identifier of the union which prevailed in the survey for this classification, which in this example would be Plumbers. 0198 indicates the local union number or district council number where applicable, i.e., Plumbers Local 0198. The next number, 005 in the example, is an internal number used in processing the wage determination. 07/01/2014 is the effective date of the most current negotiated rate, which in this example is July 1, 2014.

Union prevailing wage rates are updated to reflect all rate changes in the collective bargaining agreement (CBA) governing this classification and rate.

Survey Rate Identifiers

Classifications listed under the "SU" identifier indicate that

no one rate prevailed for this classification in the survey and the published rate is derived by computing a weighted average rate based on all the rates reported in the survey for that classification. As this weighted average rate includes all rates reported in the survey, it may include both union and non-union rates. Example: SULA2012-007 5/13/2014. SU indicates the rates are survey rates based on a weighted average calculation of rates and are not majority rates. LA indicates the State of Louisiana. 2012 is the year of survey on which these classifications and rates are based. The next number, 007 in the example, is an internal number used in producing the wage determination. 5/13/2014 indicates the survey completion date for the classifications and rates under that identifier.

Survey wage rates are not updated and remain in effect until a new survey is conducted.

Union Average Rate Identifiers

Classification(s) listed under the UAVG identifier indicate that no single majority rate prevailed for those classifications; however, 100% of the data reported for the classifications was union data. EXAMPLE: UAVG-OH-0010 08/29/2014. UAVG indicates that the rate is a weighted union average rate. OH indicates the state. The next number, 0010 in the example, is an internal number used in producing the wage determination. 08/29/2014 indicates the survey completion date for the classifications and rates under that identifier.

A UAVG rate will be updated once a year, usually in January of each year, to reflect a weighted average of the current negotiated/CBA rate of the union locals from which the rate is based.

WAGE DETERMINATION APPEALS PROCESS

1.) Has there been an initial decision in the matter? This can be:

- * an existing published wage determination
- * a survey underlying a wage determination
- * a Wage and Hour Division letter setting forth a position on a wage determination matter
- * a conformance (additional classification and rate) ruling

On survey related matters, initial contact, including requests for summaries of surveys, should be with the Wage and Hour Regional Office for the area in which the survey was conducted because those Regional Offices have responsibility for the Davis-Bacon survey program. If the response from this initial contact is not satisfactory, then the process described in 2.) and 3.) should be followed.

With regard to any other matter not yet ripe for the formal process described here, initial contact should be with the Branch of Construction Wage Determinations. Write to:

Branch of Construction Wage Determinations
Wage and Hour Division

U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

2.) If the answer to the question in 1.) is yes, then an interested party (those affected by the action) can request review and reconsideration from the Wage and Hour Administrator (See 29 CFR Part 1.8 and 29 CFR Part 7). Write to:

Wage and Hour Administrator
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

The request should be accompanied by a full statement of the interested party's position and by any information (wage payment data, project description, area practice material, etc.) that the requestor considers relevant to the issue.

3.) If the decision of the Administrator is not favorable, an interested party may appeal directly to the Administrative Review Board (formerly the Wage Appeals Board). Write to:

Administrative Review Board
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

4.) All decisions by the Administrative Review Board are final.

=====

END OF GENERAL DECISION

**Prime Contractor's Certification
Concerning Federal Labor Standards (Davis Bacon)**

Local Government Name:

CDBG Number and Project
Name:_____

The undersigned prime contractor, having executed a contract with _____
(Local Government)

in the amount\$_____ for the construction of the above-identified project, certifies
that:

1. He/she will comply with the Federal Labor Standards Provisions (e.g. Davis-Bacon Act, Copeland Act, Contract Work Hours and Safety Standards Act) and Prevailing Wage Decision(s) are included in the project's contract documents.
2. All laborers and mechanics employed on the project will be paid according to the appropriate Prevailing Wage Decision #_____,
MOD#_____.
3. Corrections of any infractions of the Federal Labor Standards Provisions, including infractions by any subcontractors and any lower tier subcontractors, is this contractor's responsibility.
4. Neither this contractor, any subcontractor, nor any affiliates, have been declared ineligible to participate in federally funded construction projects.
5. Contractor agrees to obtain and forward all Subcontractors' Certification concerning Federal Labor Standards Provisions and Prevailing Wage requirements to the Local Government or Local Government's representative within ten (10) days after execution of any subcontract.

Prime Contractor

Tax ID Number

Address

City, State ZIP

DUNS Number

Prime Contractor Signature

Date

**Subcontractor's Certification
Concerning Federal Labor Standards (Davis Bacon)**

Local Government Name:

CDBG Number and Project
Name:_____

The undersigned subcontractor, having executed a contract with _____ for
(Prime Contractor)

(Nature of Work)

in the amount\$_____ for the above-identified project, certifies that:

1. He/she will comply with the Federal Labor Standards provisions (e.g. Davis-Bacon Act, Copeland Act, Contract Work Hours and Safety Standards Act) and Prevailing Wage Decision(s) as per the project's contract documents.
2. All laborers and mechanics employed on the project will be paid according to the appropriate Prevailing Wage Decision #_____,
MOD#_____.
3. Corrections of any infractions of the Federal Labor Standards Provisions, including infractions by any lower tier subcontractors, is this subcontractor's responsibility.
4. Neither this subcontractor, nor any affiliates, have been declared ineligible to participate in federally funded construction projects.
5. This subcontractor agrees to forward a Subcontractor's Certification concerning Federal Labor Standards provisions and Prevailing Wage requirements to the Prime Contractor within ten (10) days after execution of any subcontract.

Subcontractor

Tax ID Number

Address

City, State ZIP

DUNS Number

Subcontractor Signature

Date

AIA® Document A312™ – 2010

Performance Bond

CONTRACTOR:

(Name, legal status and address)

SURETY:

(Name, legal status and principal place of business)

OWNER:

(Name, legal status and address)

CONSTRUCTION CONTRACT

Date:

Amount: \$

Description:

(Name and location)

BOND

Date:

(Not earlier than Construction Contract Date)

Amount: \$

Modifications to this Bond: ☐ None ☐ See Section 16

CONTRACTOR AS PRINCIPAL

Company: (Corporate Seal)

SURETY

Company: (Corporate Seal)

Signature: _____

Name and

Title:

(Any additional signatures appear on the last page of this Performance Bond.)

Signature: _____

Name and

Title:

(FOR INFORMATION ONLY — Name, address and telephone)

AGENT or BROKER:

OWNER'S REPRESENTATIVE:

(Architect, Engineer or other party:)

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. A vertical line in the left margin of this document indicates where the author has added necessary information and where the author has added to or deleted from the original AIA text.

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

Any singular reference to Contractor, Surety, Owner or other party shall be considered plural where applicable.

Init.

§ 1 The Contractor and Surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors and assigns to the Owner for the performance of the Construction Contract, which is incorporated herein by reference.

§ 2 If the Contractor performs the Construction Contract, the Surety and the Contractor shall have no obligation under this Bond, except when applicable to participate in a conference as provided in Section 3.

§ 3 If there is no Owner Default under the Construction Contract, the Surety's obligation under this Bond shall arise after

- .1 the Owner first provides notice to the Contractor and the Surety that the Owner is considering declaring a Contractor Default. Such notice shall indicate whether the Owner is requesting a conference among the Owner, Contractor and Surety to discuss the Contractor's performance. If the Owner does not request a conference, the Surety may, within five (5) business days after receipt of the Owner's notice, request such a conference. If the Surety timely requests a conference, the Owner shall attend. Unless the Owner agrees otherwise, any conference requested under this Section 3.1 shall be held within ten (10) business days of the Surety's receipt of the Owner's notice. If the Owner, the Contractor and the Surety agree, the Contractor shall be allowed a reasonable time to perform the Construction Contract, but such an agreement shall not waive the Owner's right, if any, subsequently to declare a Contractor Default;
- .2 the Owner declares a Contractor Default, terminates the Construction Contract and notifies the Surety; and
- .3 the Owner has agreed to pay the Balance of the Contract Price in accordance with the terms of the Construction Contract to the Surety or to a contractor selected to perform the Construction Contract.

§ 4 Failure on the part of the Owner to comply with the notice requirement in Section 3.1 shall not constitute a failure to comply with a condition precedent to the Surety's obligations, or release the Surety from its obligations, except to the extent the Surety demonstrates actual prejudice.

§ 5 When the Owner has satisfied the conditions of Section 3, the Surety shall promptly and at the Surety's expense take one of the following actions:

§ 5.1 Arrange for the Contractor, with the consent of the Owner, to perform and complete the Construction Contract;

§ 5.2 Undertake to perform and complete the Construction Contract itself, through its agents or independent contractors;

§ 5.3 Obtain bids or negotiated proposals from qualified contractors acceptable to the Owner for a contract for performance and completion of the Construction Contract, arrange for a contract to be prepared for execution by the Owner and a contractor selected with the Owner's concurrence, to be secured with performance and payment bonds executed by a qualified surety equivalent to the bonds issued on the Construction Contract, and pay to the Owner the amount of damages as described in Section 7 in excess of the Balance of the Contract Price incurred by the Owner as a result of the Contractor Default; or

§ 5.4 Waive its right to perform and complete, arrange for completion, or obtain a new contractor and with reasonable promptness under the circumstances:

- .1 After investigation, determine the amount for which it may be liable to the Owner and, as soon as practicable after the amount is determined, make payment to the Owner; or
- .2 Deny liability in whole or in part and notify the Owner, citing the reasons for denial.

§ 6 If the Surety does not proceed as provided in Section 5 with reasonable promptness, the Surety shall be deemed to be in default on this Bond seven days after receipt of an additional written notice from the Owner to the Surety demanding that the Surety perform its obligations under this Bond, and the Owner shall be entitled to enforce any remedy available to the Owner. If the Surety proceeds as provided in Section 5.4, and the Owner refuses the payment or the Surety has denied liability, in whole or in part, without further notice the Owner shall be entitled to enforce any remedy available to the Owner.

§ 7 If the Surety elects to act under Section 5.1, 5.2 or 5.3, then the responsibilities of the Surety to the Owner shall not be greater than those of the Contractor under the Construction Contract, and the responsibilities of the Owner to the Surety shall not be greater than those of the Owner under the Construction Contract. Subject to the commitment by the Owner to pay the Balance of the Contract Price, the Surety is obligated, without duplication, for

- .1 the responsibilities of the Contractor for correction of defective work and completion of the Construction Contract;
- .2 additional legal, design professional and delay costs resulting from the Contractor's Default, and resulting from the actions or failure to act of the Surety under Section 5; and
- .3 liquidated damages, or if no liquidated damages are specified in the Construction Contract, actual damages caused by delayed performance or non-performance of the Contractor.

§ 8 If the Surety elects to act under Section 5.1, 5.3 or 5.4, the Surety's liability is limited to the amount of this Bond.

§ 9 The Surety shall not be liable to the Owner or others for obligations of the Contractor that are unrelated to the Construction Contract, and the Balance of the Contract Price shall not be reduced or set off on account of any such unrelated obligations. No right of action shall accrue on this Bond to any person or entity other than the Owner or its heirs, executors, administrators, successors and assigns.

§ 10 The Surety hereby waives notice of any change, including changes of time, to the Construction Contract or to related subcontracts, purchase orders and other obligations.

§ 11 Any proceeding, legal or equitable, under this Bond may be instituted in any court of competent jurisdiction in the location in which the work or part of the work is located and shall be instituted within two years after a declaration of Contractor Default or within two years after the Contractor ceased working or within two years after the Surety refuses or fails to perform its obligations under this Bond, whichever occurs first. If the provisions of this Paragraph are void or prohibited by law, the minimum period of limitation available to sureties as a defense in the jurisdiction of the suit shall be applicable.

§ 12 Notice to the Surety, the Owner or the Contractor shall be mailed or delivered to the address shown on the page on which their signature appears.

§ 13 When this Bond has been furnished to comply with a statutory or other legal requirement in the location where the construction was to be performed, any provision in this Bond conflicting with said statutory or legal requirement shall be deemed deleted herefrom and provisions conforming to such statutory or other legal requirement shall be deemed incorporated herein. When so furnished, the intent is that this Bond shall be construed as a statutory bond and not as a common law bond.

§ 14 Definitions

§ 14.1 **Balance of the Contract Price.** The total amount payable by the Owner to the Contractor under the Construction Contract after all proper adjustments have been made, including allowance to the Contractor of any amounts received or to be received by the Owner in settlement of insurance or other claims for damages to which the Contractor is entitled, reduced by all valid and proper payments made to or on behalf of the Contractor under the Construction Contract.

§ 14.2 **Construction Contract.** The agreement between the Owner and Contractor identified on the cover page, including all Contract Documents and changes made to the agreement and the Contract Documents.

§ 14.3 **Contractor Default.** Failure of the Contractor, which has not been remedied or waived, to perform or otherwise to comply with a material term of the Construction Contract.

§ 14.4 **Owner Default.** Failure of the Owner, which has not been remedied or waived, to pay the Contractor as required under the Construction Contract or to perform and complete or comply with the other material terms of the Construction Contract.

§ 14.5 **Contract Documents.** All the documents that comprise the agreement between the Owner and Contractor.

§ 15 If this Bond is issued for an agreement between a Contractor and subcontractor, the term Contractor in this Bond shall be deemed to be Subcontractor and the term Owner shall be deemed to be Contractor.

§ 16 Modifications to this bond are as follows:

(Space is provided below for additional signatures of added parties, other than those appearing on the cover page.)

CONTRACTOR AS PRINCIPAL

Company: _____ *(Corporate Seal)*

Signature: _____

Name and Title: _____

Address: _____

SURETY

Company: _____ *(Corporate Seal)*

Signature: _____

Name and Title: _____

Address: _____

Init.

AIA[®] Document A312[™] – 2010

Payment Bond

CONTRACTOR:

(Name, legal status and address)

SURETY:

(Name, legal status and principal place of business)

OWNER:

(Name, legal status and address)

CONSTRUCTION CONTRACT

Date:

Amount: \$

Description:

(Name and location)

BOND

Date:

(Not earlier than Construction Contract Date)

Amount: \$

Modifications to this Bond: ☐ None ☐ See Section 18

CONTRACTOR AS PRINCIPAL

Company: (Corporate Seal)

SURETY

Company: (Corporate Seal)

Signature: _____

Name and

Title:

Signature: _____

Name and

Title:

(Any additional signatures appear on the last page of this Payment Bond.)

(FOR INFORMATION ONLY — Name, address and telephone)

AGENT or BROKER:

OWNER'S REPRESENTATIVE:

(Architect, Engineer or other party:)

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. A vertical line in the left margin of this document indicates where the author has added necessary information and where the author has added to or deleted from the original AIA text.

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

Any singular reference to Contractor, Surety, Owner or other party shall be considered plural where applicable.

Init.

§ 1 The Contractor and Surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors and assigns to the Owner to pay for labor, materials and equipment furnished for use in the performance of the Construction Contract, which is incorporated herein by reference, subject to the following terms.

§ 2 If the Contractor promptly makes payment of all sums due to Claimants, and defends, indemnifies and holds harmless the Owner from claims, demands, liens or suits by any person or entity seeking payment for labor, materials or equipment furnished for use in the performance of the Construction Contract, then the Surety and the Contractor shall have no obligation under this Bond.

§ 3 If there is no Owner Default under the Construction Contract, the Surety's obligation to the Owner under this Bond shall arise after the Owner has promptly notified the Contractor and the Surety (at the address described in Section 13) of claims, demands, liens or suits against the Owner or the Owner's property by any person or entity seeking payment for labor, materials or equipment furnished for use in the performance of the Construction Contract and tendered defense of such claims, demands, liens or suits to the Contractor and the Surety.

§ 4 When the Owner has satisfied the conditions in Section 3, the Surety shall promptly and at the Surety's expense defend, indemnify and hold harmless the Owner against a duly tendered claim, demand, lien or suit.

§ 5 The Surety's obligations to a Claimant under this Bond shall arise after the following:

§ 5.1 Claimants, who do not have a direct contract with the Contractor,

- .1 have furnished a written notice of non-payment to the Contractor, stating with substantial accuracy the amount claimed and the name of the party to whom the materials were, or equipment was, furnished or supplied or for whom the labor was done or performed, within ninety (90) days after having last performed labor or last furnished materials or equipment included in the Claim; and
- .2 have sent a Claim to the Surety (at the address described in Section 13).

§ 5.2 Claimants, who are employed by or have a direct contract with the Contractor, have sent a Claim to the Surety (at the address described in Section 13).

§ 6 If a notice of non-payment required by Section 5.1.1 is given by the Owner to the Contractor, that is sufficient to satisfy a Claimant's obligation to furnish a written notice of non-payment under Section 5.1.1.

§ 7 When a Claimant has satisfied the conditions of Sections 5.1 or 5.2, whichever is applicable, the Surety shall promptly and at the Surety's expense take the following actions:

§ 7.1 Send an answer to the Claimant, with a copy to the Owner, within sixty (60) days after receipt of the Claim, stating the amounts that are undisputed and the basis for challenging any amounts that are disputed; and

§ 7.2 Pay or arrange for payment of any undisputed amounts.

§ 7.3 The Surety's failure to discharge its obligations under Section 7.1 or Section 7.2 shall not be deemed to constitute a waiver of defenses the Surety or Contractor may have or acquire as to a Claim, except as to undisputed amounts for which the Surety and Claimant have reached agreement. If, however, the Surety fails to discharge its obligations under Section 7.1 or Section 7.2, the Surety shall indemnify the Claimant for the reasonable attorney's fees the Claimant incurs thereafter to recover any sums found to be due and owing to the Claimant.

§ 8 The Surety's total obligation shall not exceed the amount of this Bond, plus the amount of reasonable attorney's fees provided under Section 7.3, and the amount of this Bond shall be credited for any payments made in good faith by the Surety.

§ 9 Amounts owed by the Owner to the Contractor under the Construction Contract shall be used for the performance of the Construction Contract and to satisfy claims, if any, under any construction performance bond. By the Contractor furnishing and the Owner accepting this Bond, they agree that all funds earned by the Contractor in the performance of the Construction Contract are dedicated to satisfy obligations of the Contractor and Surety under this Bond, subject to the Owner's priority to use the funds for the completion of the work.

§ 10 The Surety shall not be liable to the Owner, Claimants or others for obligations of the Contractor that are unrelated to the Construction Contract. The Owner shall not be liable for the payment of any costs or expenses of any Claimant under this Bond, and shall have under this Bond no obligation to make payments to, or give notice on behalf of, Claimants or otherwise have any obligations to Claimants under this Bond.

§ 11 The Surety hereby waives notice of any change, including changes of time, to the Construction Contract or to related subcontracts, purchase orders and other obligations.

§ 12 No suit or action shall be commenced by a Claimant under this Bond other than in a court of competent jurisdiction in the state in which the project that is the subject of the Construction Contract is located or after the expiration of one year from the date (1) on which the Claimant sent a Claim to the Surety pursuant to Section 5.1.2 or 5.2, or (2) on which the last labor or service was performed by anyone or the last materials or equipment were furnished by anyone under the Construction Contract, whichever of (1) or (2) first occurs. If the provisions of this Paragraph are void or prohibited by law, the minimum period of limitation available to sureties as a defense in the jurisdiction of the suit shall be applicable.

§ 13 Notice and Claims to the Surety, the Owner or the Contractor shall be mailed or delivered to the address shown on the page on which their signature appears. Actual receipt of notice or Claims, however accomplished, shall be sufficient compliance as of the date received.

§ 14 When this Bond has been furnished to comply with a statutory or other legal requirement in the location where the construction was to be performed, any provision in this Bond conflicting with said statutory or legal requirement shall be deemed deleted herefrom and provisions conforming to such statutory or other legal requirement shall be deemed incorporated herein. When so furnished, the intent is that this Bond shall be construed as a statutory bond and not as a common law bond.

§ 15 Upon request by any person or entity appearing to be a potential beneficiary of this Bond, the Contractor and Owner shall promptly furnish a copy of this Bond or shall permit a copy to be made.

§ 16 Definitions

§ 16.1 Claim. A written statement by the Claimant including at a minimum:

- .1 the name of the Claimant;
- .2 the name of the person for whom the labor was done, or materials or equipment furnished;
- .3 a copy of the agreement or purchase order pursuant to which labor, materials or equipment was furnished for use in the performance of the Construction Contract;
- .4 a brief description of the labor, materials or equipment furnished;
- .5 the date on which the Claimant last performed labor or last furnished materials or equipment for use in the performance of the Construction Contract;
- .6 the total amount earned by the Claimant for labor, materials or equipment furnished as of the date of the Claim;
- .7 the total amount of previous payments received by the Claimant; and
- .8 the total amount due and unpaid to the Claimant for labor, materials or equipment furnished as of the date of the Claim.

§ 16.2 Claimant. An individual or entity having a direct contract with the Contractor or with a subcontractor of the Contractor to furnish labor, materials or equipment for use in the performance of the Construction Contract. The term Claimant also includes any individual or entity that has rightfully asserted a claim under an applicable mechanic's lien or similar statute against the real property upon which the Project is located. The intent of this Bond shall be to include without limitation in the terms "labor, materials or equipment" that part of water, gas, power, light, heat, oil, gasoline, telephone service or rental equipment used in the Construction Contract, architectural and engineering services required for performance of the work of the Contractor and the Contractor's subcontractors, and all other items for which a mechanic's lien may be asserted in the jurisdiction where the labor, materials or equipment were furnished.

§ 16.3 Construction Contract. The agreement between the Owner and Contractor identified on the cover page, including all Contract Documents and all changes made to the agreement and the Contract Documents.

§ 16.4 **Owner Default.** Failure of the Owner, which has not been remedied or waived, to pay the Contractor as required under the Construction Contract or to perform and complete or comply with the other material terms of the Construction Contract.

§ 16.5 **Contract Documents.** All the documents that comprise the agreement between the Owner and Contractor.

§ 17 If this Bond is issued for an agreement between a Contractor and subcontractor, the term Contractor in this Bond shall be deemed to be Subcontractor and the term Owner shall be deemed to be Contractor.

§ 18 Modifications to this bond are as follows:

(Space is provided below for additional signatures of added parties, other than those appearing on the cover page.)

CONTRACTOR AS PRINCIPAL

SURETY

Company: _____ *(Corporate Seal)*

Company: _____ *(Corporate Seal)*

Signature: _____
Name and Title: _____
Address: _____

Signature: _____
Name and Title: _____
Address: _____



AIA[®] Document G715[™] – 2017

Supplemental Attachment for ACORD Certificate of Insurance 25

PROJECT: <i>(name and address)</i>	CONTRACT INFORMATION: Contract For: Date:	CERTIFICATE INFORMATION: Producer: Insured: Date:
OWNER: <i>(name and address)</i>	ARCHITECT: <i>(name and address)</i>	CONTRACTOR: <i>(name and address)</i>

A. General Liability	Yes	No	N/A
1. Does this policy include coverage for:			
a Damages because of bodily injury, sickness, or disease, including occupational sickness or disease, and death of any person?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b Personal injury and advertising injury?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c Damages because of physical damage to or destruction of tangible property, including the loss of use of such property?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d Bodily injury or property damage arising out of completed operations?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e The Contractor's indemnity obligations included in the Contract Documents?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Does this policy contain an exclusion or restriction of coverage for:			
a Claims by one insured against another insured, where the exclusion or restrictions is based solely on the fact that the claimant is an insured, and there would otherwise be coverage for the claim?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b Claims for property damage to the Contractor's Work arising out of the products-completed operations hazard where the damaged Work or the Work out of which the damage arises was performed by a Subcontractor?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c Claims for bodily injury other than to employees of the insured?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d Claims for the Contractor's indemnity obligations included in the Contract Documents arising out of injury to employees of the insured?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e Claims for loss excluded under a prior work endorsement or other similar exclusionary language?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
f Claims or loss due to physical damage under a prior injury endorsement or similar exclusionary language?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
g Claims related to residential, multi-family, or other habitational projects?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
h Claims related to roofing?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
i Claims related to exterior insulation finish systems, synthetic stucco, or similar exterior coatings or surfaces?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
j Claims related to earth subsistence or movement?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
k Claims related to explosion, collapse, and underground hazards?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
B. Other Insurance Coverage	Yes	No	N/A
1. Indicate whether the Contractor has the following insurance coverages and, if so, indicate the coverage limits for each.			
a Professional liability insurance	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Coverage limits:			
b Pollution liability insurance	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Coverage limits:			
c Insurance for maritime liability risks associated with the operation of a vessel	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Coverage limits:			

- | | | | | |
|---|--|--------------------------|--------------------------|--------------------------|
| d | Insurance for the use or operation of manned or unmanned aircraft | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| | Coverage limits: | | | |
| e | Property insurance | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| | Coverage limits: | | | |
| f | Railroad protective liability insurance | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| | Coverage limits: | | | |
| g | Asbestos abatement liability insurance | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| | Coverage limits: | | | |
| h | Insurance for physical damage to property while it is in storage and in transit to the construction site | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| | Coverage limits: | | | |
| i | Other: | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

(Authorized Representative)

(Date of Issue)

PUBLIC WORKS CONTRACT REPORT

Ref. No.	Code No.
This space for state use only.	

Sections 54-1904A and 63-3624(f), Idaho Code, require all Public Works Contracts to be reported to the State Tax Commission.

Contract awarded by (public body and address)

Contract awarded to (contractor's name and home address)

State of Incorporation

Federal employer number

Date qualified to do business in Idaho (Section 30-501, I.C.)

Business operates as

☐

Sole proprietorship

☐

Partnership

☐

Corporation

Public Works contractor license number

Sales/Use tax permit number

Withholding tax number

Telephone number

()

Project number (if any)

Amount of contract

\$

Description and location of work to be performed

Scheduled project start date: _____ and completion date: _____

If the following information is not available at this time, please indicate when it will be. _____ Date

This form must be filed with the State Tax Commission within 30 days after a contract is awarded.

ALL SUBCONTRACTORS

1	Name	State of Incorporation	Federal employer number
	Address	Date qualified to do business in Idaho	Public works contractor number
	City, State, Zip	Business operates as <input type="checkbox"/> Sole proprietorship <input type="checkbox"/> Partnership <input type="checkbox"/> Corporation	Amount of subcontract \$
	Description of work		
2	Name	State of Incorporation	Federal employer number
	Address	Date qualified to do business in Idaho	Public works contractor number
	City, State, Zip	Business operates as <input type="checkbox"/> Sole proprietorship <input type="checkbox"/> Partnership <input type="checkbox"/> Corporation	Amount of subcontract \$
	Description of work		
3	Name	State of Incorporation	Federal employer number
	Address	Date qualified to do business in Idaho	Public works contractor number
	City, State, Zip	Business operates as <input type="checkbox"/> Sole proprietorship <input type="checkbox"/> Partnership <input type="checkbox"/> Corporation	Amount of subcontract \$
	Description of work		
4	Name	State of Incorporation	Federal employer number
	Address	Date qualified to do business in Idaho	Public works contractor number
	City, State, Zip	Business operates as <input type="checkbox"/> Sole proprietorship <input type="checkbox"/> Partnership <input type="checkbox"/> Corporation	Amount of subcontract \$
	Description of work		

ALL SUBCONTRACTORS (Continued)

5	Name		State of Incorporation		Federal employer number	
	Address		Date qualified to do business in Idaho		Public works contractor number	
	City, State, Zip		Business operates as <input type="checkbox"/> Partnership <input type="checkbox"/> Corporation		Amount of subcontract \$	
	Description of work					
6	Name		State of Incorporation		Federal employer number	
	Address		Date qualified to do business in Idaho		Public works contractor number	
	City, State, Zip		Business operates as <input type="checkbox"/> Partnership <input type="checkbox"/> Corporation		Amount of subcontract \$	
	Description of work					
7	Name		State of Incorporation		Federal employer number	
	Address		Date qualified to do business in Idaho		Public works contractor number	
	City, State, Zip		Business operates as <input type="checkbox"/> Partnership <input type="checkbox"/> Corporation		Amount of subcontract \$	
	Description of work					

SUPPLIERS

Use the space below to report: Major suppliers of materials and supplies: items removed from inventory; equipment purchased, rented or leased for use in project; materials provided by government agency. Please indicate how sales or use tax was paid.

1	Name		Address		Phone number		<input type="checkbox"/> Tax paid to supplier. <input type="checkbox"/> Tax paid to state. * <input type="checkbox"/> No tax paid.
	Materials and equipment purchased and used:		Total value		Total value		
			\$				
2	Name		Address		Phone number		<input type="checkbox"/> Tax paid to supplier. <input type="checkbox"/> Tax paid to state. * <input type="checkbox"/> No tax paid.
	Materials and equipment purchased and used:		Total value		Total value		
			\$				
3	Name		Address		Phone number		<input type="checkbox"/> Tax paid to supplier. <input type="checkbox"/> Tax paid to state. * <input type="checkbox"/> No tax paid.
	Materials and equipment purchased and used:		Total value		Total value		
			\$				
4	Name		Address		Phone number		<input type="checkbox"/> Tax paid to supplier. <input type="checkbox"/> Tax paid to state. ** <input type="checkbox"/> No tax paid.
	Materials and equipment purchased and used:		Total value		Total value		
			\$				
5	Name		Address		Phone number		<input type="checkbox"/> Tax paid to supplier. <input type="checkbox"/> Tax paid to state. * <input type="checkbox"/> No tax paid.
	Materials and equipment purchased and used:		Total value		Total value		
			\$				
6	Name		Address		Phone number		<input type="checkbox"/> Tax paid to supplier. <input type="checkbox"/> Tax paid to state. * <input type="checkbox"/> No tax paid.
	Materials and equipment purchased and used:		Total value		Total value		
			\$				

* If tax was not paid to suppliers, but WAS or WILL BE reported as "Items Subject to Use Tax" under your permit number, indicate period of return on which payment WAS or WILL BE reported: _____

If tax was remitted to a state other than Idaho, name state: _____

If tax is due and has not previously been reported, attach remittance to this form.

SIGN HERE->	Authorized signature	Phone number	Date
---------------------------	----------------------	--------------	------

File with the Idaho State Tax Commission, P.O. Box 36, Boise, Idaho 83722
For additional information call (208) 334-7691

CONTRACTOR'S AFFIDAVIT CONCERNING TAXES

STATE OF _____)

COUNTY OF _____)

Pursuant to the Idaho Code, Title 63, Chapter 15, I the undersigned, being duly sworn, deposes and certify that all taxes, excises and license fees due to the State or it's taxing units, for which I or my property is liable then due or delinquent, has been paid, or arrangements have been made, before entering into a Contract for construction of any public works in the State of Idaho.

SEAL

Name of Contractor

Address

City and State

By: _____
Signature

Subscribed and sworn to before me this _____ day of _____ 20____.

NOTARY PUBLIC

Residing at _____

Commission expires _____



AIA Document G702™ - 1992

Application and Certificate for Payment

TO OWNER:	PROJECT:	APPLICATION NO:	Distribution to:
FROM CONTRACTOR:	VIA ARCHITECT:	PERIOD TO:	OWNER: <input type="checkbox"/>
		CONTRACT FOR:	ARCHITECT: <input type="checkbox"/>
		CONTRACT DATE:	CONTRACTOR: <input type="checkbox"/>
		PROJECT NOS: / /	FIELD: <input type="checkbox"/>
			OTHER: <input type="checkbox"/>

CONTRACTOR'S APPLICATION FOR PAYMENT

Application is made for payment, as shown below, in connection with the Contract. Continuation Sheet, AIA Document G703, is attached.

1. ORIGINAL CONTRACT SUM.....	\$
2. Net change by Change Orders	\$
3. CONTRACT SUM TO DATE (Line 1 + 2)	\$
4. TOTAL COMPLETED & STORED TO DATE (Column G on G703)	\$
5. RETAINAGE:	
a. 0 % of Completed Work (Column D + E on G703)	\$
b. 0 % of Stored Material (Column F on G703)	\$
Total Retainage (Lines 5a + 5b or Total in Column I of G703)	\$
6. TOTAL EARNED LESS RETAINAGE	\$
(Line 4 Less Line 5 Total)	
7. LESS PREVIOUS CERTIFICATES FOR PAYMENT	\$
(Line 6 from prior Certificate)	
8. CURRENT PAYMENT DUE	\$
9. BALANCE TO FINISH, INCLUDING RETAINAGE (Line 3 less Line 6)	\$

CHANGE ORDER SUMMARY	ADDITIONS	DEDUCTIONS
Total changes approved in previous months by Owner	\$	\$
Total approved this Month	\$	\$
TOTALS	\$	\$
NET CHANGES by Change Order	\$	

The undersigned Contractor certifies that to the best of the Contractor's knowledge, information and belief the Work covered by this Application for Payment has been completed in accordance with the Contract Documents, that all amounts have been paid by the Contractor for Work for which previous Certificates for Payment were issued and payments received from the Owner, and that current payment shown herein is now due.

CONTRACTOR:

By: _____	Date: _____
State of: _____	
County of: _____	
Subscribed and sworn to before me this _____ day of _____	
Notary Public: _____	
My Commission expires: _____	

ARCHITECT'S CERTIFICATE FOR PAYMENT

In accordance with the Contract Documents, based on on-site observations and the data comprising this application, the Architect certifies to the Owner that to the best of the Architect's knowledge, information and belief the Work has progressed as indicated, the quality of the Work is in accordance with the Contract Documents, and the Contractor is entitled to payment of the AMOUNT CERTIFIED.

AMOUNT CERTIFIED	\$
(Attach explanation if amount certified differs from the amount applied. Initial all figures on this Application and on the Continuation Sheet that are changed to conform with the amount certified.)	

ARCHITECT:

By: _____	Date: _____
This Certificate is not negotiable. The AMOUNT CERTIFIED is payable only to the Contractor named herein. Issuance, payment and acceptance of payment are without prejudice to any rights of the Owner or Contractor under this Contract	



Continuation Sheet

AIA Document G702™-1992, Application and Certificate for Payment, or G732™-2009, Application and Certificate for Payment, Construction Manager as Adviser Edition, containing Contractor's signed certification is attached.
In tabulations below, amounts are in US dollars.
Use Column I on Contracts where variable retainage for line items may apply.

APPLICATION NO:
APPLICATION DATE:
PERIOD TO:
ARCHITECT'S PROJECT NO:

[illegible]

CAUTION: You should sign an original AIA Contract Document, on which this text appears in RED. An original assures that changes will not be obscured.

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SPECIFICATIONS

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DIVISION 01 - GENERAL REQUIREMENTS

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012500	SUBSTITUTION PROCEDURES
012600	CONTRACT MODIFICATION PROCEDURES
012900	PAYMENT PROCEDURES
013100	PROJECT MANAGEMENT AND COORDINATION
013200	CONSTRUCTION PROGRESS DOCUMENTATION
013300	SUBMITTAL PROCEDURES
014000	QUALITY REQUIREMENTS
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017823	OPERATION AND MAINTENANCE DATA
017839	PROJECT RECORD DOCUMENTS
017900	DEMONSTRATION AND TRAINING

SECTION 01 1000 - SUMMARY

PART 1 - GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Project information.
 - 2. Work covered by Contract Documents.
 - 3. Work under separate contracts.
 - 4. Access to site.
 - 5. Coordination with occupants.
 - 6. Work restrictions.
 - 7. Specification and drawing conventions.
 - 8. Miscellaneous provisions.
- B. Related Requirements:
 - 1. Section 015000 "Temporary Facilities and Controls" for limitations and procedures governing temporary use of Owner's facilities.

1.2 PROJECT INFORMATION

- A. Project Identification: Shelley Senior Center Remodel.
 - 1. Project Location: 193 W. Pine St., Shelley, Idaho 83274.
- B. Owner: Shelley Senior Center, 193 W. Pine St., Shelley, Idaho 83274.
 - 1. Owner's Representative: Denine Wong.
- C. Architect: NBW Architects, P.A., 990 John Adams Parkway, P.O. Box 2212, Idaho Falls, Idaho 83403. Telephone: 208-522-8779. Fax: 208-522-878.

1.3 WORK COVERED BY CONTRACT DOCUMENTS

- A. The Work of Project is defined by the Contract Documents and consists of the following:
 - 1. Project consists of interior remodeling of existing kitchen including new equipment, plumbing, HVAC, electrical including new lighting.
- B. Type of Contract.
 - 1. Project will be constructed under a single prime contract.

1.4 PHASED CONSTRUCTION

- A. The Work shall be conducted in two phases, with each phase substantially complete as indicated.
- B. Before commencing Work of each phase, submit an updated copy of Contractor's construction schedule showing the sequence, commencement and completion dates for all phases of the Work.

1.5 ACCESS TO SITE

- A. General: Contractor shall have full use of Project site for construction operations during construction period. Contractor's use of Project site is limited only by Owner's right to perform work or to retain other contractors on portions of Project.
- B. Use of Site: Limit use of Project site to areas within the Contract limits indicated. Do not disturb portions of Project site beyond areas in which the Work is indicated.
 - 1. Driveways, Walkways and Entrances: Keep driveways and entrances serving premises clear and available to Owner, Owner's employees, and emergency vehicles at all times. Do not use these areas for parking or storage of materials.

- a. Schedule deliveries to minimize use of driveways and entrances by construction operations.
- b. Schedule deliveries to minimize space and time requirements for storage of materials and equipment on-site.

1.6 COORDINATION WITH OCCUPANTS

- A. Full Owner Occupancy: Owner will occupy adjacent site and adjacent building(s) during entire construction period. Cooperate with Owner during construction operations to minimize conflicts and facilitate Owner usage. Perform the Work so as not to interfere with Owner's day-to-day operations. Maintain existing exits unless otherwise indicated.
 - 1. Maintain access to existing walkways, corridors, and other adjacent occupied or used facilities. Do not close or obstruct walkways, corridors, or other occupied or used facilities without written permission from Owner and approval of authorities having jurisdiction.
 - 2. Notify Owner not less than 72 hours in advance of activities that will affect Owner's operations.
- B. Owner Limited Occupancy of Completed Areas of Construction: Owner reserves the right to occupy and to place and install equipment in completed portions of the Work, prior to Substantial Completion of the Work, provided such occupancy does not interfere with completion of the Work. Such placement of equipment and limited occupancy shall not constitute acceptance of the total Work.
 - 1. Architect will prepare a Certificate of Substantial Completion for each specific portion of the Work to be occupied prior to Owner acceptance of the completed Work.
 - 2. Obtain a Certificate of Occupancy from authorities having jurisdiction before limited Owner occupancy.
 - 3. Before limited Owner occupancy, mechanical and electrical systems shall be fully operational, and required tests and inspections shall be successfully completed. On occupancy, Owner will operate and maintain mechanical and electrical systems serving occupied portions of Work.
 - 4. On occupancy, Owner will assume responsibility for maintenance and custodial service for occupied portions of Work.

1.7 WORK RESTRICTIONS

- A. Work Restrictions, General: Comply with restrictions on construction operations.
 - 1. Comply with limitations on use of public streets and with other requirements of authorities having jurisdiction.
- B. Existing Utility Interruptions: Do not interrupt utilities serving facilities occupied by Owner or others unless permitted under the following conditions and then only after providing temporary utility services according to requirements indicated:
 - 1. Notify Owner not less than two days in advance of proposed utility interruptions.
- C. Controlled Substances: Use of tobacco products and other controlled substances on Project site is not permitted.

1.8 SPECIFICATION AND DRAWING CONVENTIONS

- A. Specification Content: The Specifications use certain conventions for the style of language and the intended meaning of certain terms, words, and phrases when used in particular situations. These conventions are as follows:
 - 1. Imperative mood and streamlined language are generally used in the Specifications. The words "shall," "shall be," or "shall comply with," depending on the context, are implied where a colon (:) is used within a sentence or phrase.
 - 2. Specification requirements are to be performed by Contractor unless specifically stated otherwise.
- B. Division 01 General Requirements: Requirements of Sections in Division 01 apply to the Work of all Sections in the Specifications.
- C. Drawing Coordination: Requirements for materials and products identified on Drawings are described in detail in the Specifications. One or more of the following are used on Drawings to identify materials and products:
 - 1. Terminology: Materials and products are identified by the typical generic terms used in the individual Specifications Sections.
 - 2. Abbreviations: Materials and products are identified by abbreviations and scheduled on Drawings.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 011000

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SECTION 01 2500 - SUBSTITUTION PROCEDURES

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes administrative and procedural requirements for substitutions.
- B. Related Requirements:
 - 1. Section 01 6000 "Product Requirements" for requirements for submitting comparable product submittals for products by listed manufacturers.

1.2 DEFINITIONS

- A. Substitutions: Changes in products, materials, equipment, and methods of construction from those required by the Contract Documents and proposed by Contractor.

1.3 ACTION SUBMITTALS

- A. Substitution Requests: Submit three copies of each request for consideration. Identify product or fabrication or installation method to be replaced. Include Specification Section number and title and Drawing numbers and titles.
 - 1. Substitution Request Form: Use CSI Form 13.1A.
 - 2. Documentation: Show compliance with requirements for substitutions and the following, as applicable:
 - a. Statement indicating why specified product or fabrication or installation cannot be provided, if applicable.
 - b. Coordination information, including a list of changes or revisions needed to other parts of the Work and to construction performed by Owner and separate contractors, that will be necessary to accommodate proposed substitution.
 - c. Detailed comparison of significant qualities of proposed substitution with those of the Work specified. Include annotated copy of applicable Specification Section. 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.
 - d. Product Data, including drawings and descriptions of products and fabrication and installation procedures.
 - e. Samples, where applicable or requested.
 - f. Certificates and qualification data, where applicable or requested.
 - g. List of similar installations for completed projects with project names and addresses and names and addresses of architects and owners.
 - h. Material test reports from a qualified testing agency indicating and interpreting test results for compliance with requirements indicated.
 - i. Research reports evidencing compliance with building code in effect for Project, from ICC-ES.
 - j. Detailed comparison of Contractor's construction schedule using proposed substitution with products specified for the Work, including effect on the overall Contract Time. If specified product or method of construction cannot be provided within the Contract Time, include letter from manufacturer, on manufacturer's letterhead, stating date of receipt of purchase order, lack of availability, or delays in delivery.
 - k. Cost information, including a proposal of change, if any, in the Contract Sum.
 - l. Contractor's certification that proposed substitution complies with requirements in the Contract Documents except as indicated in substitution request, is compatible with related materials, and is appropriate for applications indicated.
 - m. Contractor's waiver of rights to additional payment or time that may subsequently become necessary because of failure of proposed substitution to produce indicated results.
 - 3. Architect's Action: If necessary, Architect will request additional information or documentation for evaluation within seven days of receipt of a request for substitution. Architect will notify Contractor of acceptance or rejection of proposed substitution within 15 days of receipt of request, or seven days of receipt of additional information or documentation, whichever is later.
 - a. Forms of Acceptance: Change Order, Construction Change Directive, or Architect's Supplemental Instructions for minor changes in the Work.

- b. Use product specified if Architect does not issue a decision on use of a proposed substitution within time allocated.

1.4 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.

PART 2 - PRODUCTS

2.1 SUBSTITUTIONS

- A. Substitutions for Cause: Submit requests for substitution immediately on discovery of need for change, but not later than 15 days prior to time required for preparation and review of related submittals.
 - 1. Conditions: Architect will consider Contractor's request for substitution when the following conditions are satisfied:
 - a. Requested substitution is consistent with the Contract Documents and will produce indicated results.
 - b. Requested substitution provides sustainable design characteristics that specified product provided.
 - c. Requested substitution will not adversely affect Contractor's construction schedule.
 - d. Requested substitution has received necessary approvals of authorities having jurisdiction.
 - e. Requested substitution is compatible with other portions of the Work.
 - f. Requested substitution has been coordinated with other portions of the Work.
 - g. Requested substitution provides specified warranty.
 - h. If requested substitution involves more than one contractor, requested substitution has been coordinated with other portions of the Work, is uniform and consistent, is compatible with other products, and is acceptable to all contractors involved.
- B. Substitutions for Convenience: Not allowed.

PART 3 - EXECUTION (Not Used)

END OF SECTION 01 2500

SECTION 01 2600 - CONTRACT MODIFICATION PROCEDURES

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes administrative and procedural requirements for handling and processing Contract modifications.

1.2 MINOR CHANGES IN THE WORK

- A. Architect will issue supplemental instructions authorizing minor changes in the Work, not involving adjustment to the Contract Sum or the Contract Time, on AIA Document G710, "Architect's Supplemental Instructions."

1.3 PROPOSAL REQUESTS

- A. Owner-Initiated Proposal Requests: Architect will issue a detailed description of proposed changes in the Work that may require adjustment to the Contract Sum or the Contract Time. If necessary, the description will include supplemental or revised Drawings and Specifications.
 - 1. Work Change Proposal Requests issued by Architect are not instructions either to stop work in progress or to execute the proposed change.
 - 2. Within time specified in Proposal Request or 20 days, when not otherwise specified, after receipt of Proposal Request, submit a quotation estimating cost adjustments to the Contract Sum and the Contract Time necessary to execute the change.
 - a. Include a list of quantities of products required or eliminated and unit costs, with total amount of purchases and credits to be made. If requested, furnish survey data to substantiate quantities.
 - b. Indicate applicable taxes, delivery charges, equipment rental, and amounts of trade discounts.
 - c. Include costs of labor and supervision directly attributable to the change.
 - d. Include an updated Contractor's construction schedule that indicates the effect of the change, including, but not limited to, changes in activity duration, start and finish times, and activity relationship. Use available total float before requesting an extension of the Contract Time.
 - e. Quotation Form: Use forms acceptable to Architect.
- B. Contractor-Initiated Work Change Proposals: If latent or changed conditions require modifications to the Contract, Contractor may initiate a claim by submitting a request for a change to Architect.
 - 1. Include a statement outlining reasons for the change and the effect of the change on the Work. Provide a complete description of the proposed change. Indicate the effect of the proposed change on the Contract Sum and the Contract Time.
 - 2. Include a list of quantities of products required or eliminated and unit costs, with total amount of purchases and credits to be made. If requested, furnish survey data to substantiate quantities.
 - 3. Indicate applicable taxes, delivery charges, equipment rental, and amounts of trade discounts.
 - 4. Include costs of labor and supervision directly attributable to the change.
 - 5. Include an updated Contractor's construction schedule that indicates the effect of the change, including, but not limited to, changes in activity duration, start and finish times, and activity relationship. Use available total float before requesting an extension of the Contract Time.
 - 6. Comply with requirements in Section 01 2500 "Substitution Procedures" if the proposed change requires substitution of one product or system for product or system specified.
 - 7. Work Change Proposal Request Form: Use form acceptable to Architect.

1.4 ADMINISTRATIVE CHANGE ORDERS

- A. Allowance Adjustment: See Section 01 2100 "Allowances" for administrative procedures for preparation of Change Order Proposal for adjusting the Contract Sum to reflect actual costs of allowances.

1.5 CHANGE ORDER PROCEDURES

- A. On Owner's approval of a Work Changes Proposal Request, Architect will issue a Change Order for signatures of Owner and Contractor on AIA Document G701.

1.6 CONSTRUCTION CHANGE DIRECTIVE

- A. Construction Change Directive: Architect may issue a Construction Change Directive on AIA Document G714. Construction Change Directive instructs Contractor to proceed with a change in the Work, for subsequent inclusion in a Change Order.
 - 1. Construction Change Directive contains a complete description of change in the Work. It also designates method to be followed to determine change in the Contract Sum or the Contract Time.
- B. Documentation: Maintain detailed records on a time and material basis of work required by the Construction Change Directive.
 - 1. After completion of change, submit an itemized account and supporting data necessary to substantiate cost and time adjustments to the Contract.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 01 2600

SECTION 01 2900 - PAYMENT PROCEDURES

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes administrative and procedural requirements necessary to prepare and process Applications for Payment.
- B. Related Requirements:
 - 1. Section 01 2100 "Allowances" for procedural requirements governing the handling and processing of allowances.
 - 2. Section 01 2600 "Contract Modification Procedures" for administrative procedures for handling changes to the Contract.
 - 3. Section 01 3200 "Construction Progress Documentation" for administrative requirements governing the preparation and submittal of the Contractor's construction schedule.

1.2 SCHEDULE OF VALUES

- A. Coordination: Coordinate preparation of the schedule of values with preparation of Contractor's construction schedule.
 - 1. Coordinate line items in the schedule of values with other required administrative forms and schedules, including the following:
 - a. Application for Payment forms with continuation sheets.
 - b. Submittal schedule.
 - c. Items required to be indicated as separate activities in Contractor's construction schedule.
 - 2. Submit the schedule of values to Architect at earliest possible date but no later than seven days before the date scheduled for submittal of initial Applications for Payment.
- B. Format and Content: Use Project Manual table of contents as a guide to establish line items for the schedule of values. Provide at least one line item for each Specification Section.
 - 1. Identification: Include the following Project identification on the schedule of values:
 - a. Project name and location.
 - b. Name of Architect.
 - c. Architect's project number.
 - d. Contractor's name and address.
 - e. Date of submittal.
 - 2. Arrange schedule of values consistent with format of AIA Document G703.
 - 3. Provide a breakdown of the Contract Sum in enough detail to facilitate continued evaluation of Applications for Payment and progress reports. Coordinate with Project Manual table of contents. Provide multiple line items for principal subcontract amounts in excess of five percent of the Contract Sum.
 - 4. Round amounts to nearest whole dollar; total shall equal the Contract Sum.
 - 5. Provide a separate line item in the schedule of values for each part of the Work where Applications for Payment may include materials or equipment purchased or fabricated and stored, but not yet installed.
 - 6. Provide separate line items in the schedule of values for initial cost of materials, for each subsequent stage of completion, and for total installed value of that part of the Work.
 - 7. Allowances: Provide a separate line item in the schedule of values for each allowance. Show line-item value of unit-cost allowances, as a product of the unit cost, multiplied by measured quantity. Use information indicated in the Contract Documents to determine quantities.
 - 8. Each item in the schedule of values and Applications for Payment shall be complete. Include total cost and proportionate share of general overhead and profit for each item.
 - a. Temporary facilities and other major cost items that are not direct cost of actual work-in-place may be shown either as separate line items in the schedule of values or distributed as general overhead expense, at Contractor's option.
 - 9. Schedule Updating: Update and resubmit the schedule of values before the next Applications for Payment when Change Orders or Construction Change Directives result in a change in the Contract Sum.

1.3 APPLICATIONS FOR PAYMENT

- A. Each Application for Payment shall be consistent with previous applications and payments as certified by Architect and paid for by Owner.
 - 1. Initial Application for Payment, Application for Payment at time of Substantial Completion, and final Application for Payment involve additional requirements.
- B. Payment Application Times: The date for each progress payment is indicated in the Agreement between Owner and Contractor. The period of construction work covered by each Application for Payment is the period indicated in the Agreement.
- C. Payment Application Times: Submit Application for Payment to Architect by the first of the month. The period covered by each Application for Payment is one month, ending on the twenty-fifth day of the month.
- D. Application for Payment Forms: Use AIA Document G702 and AIA Document G703 as form for Applications for Payment.
- E. Application Preparation: Complete every entry on form. Notarize and execute by a person authorized to sign legal documents on behalf of Contractor. Architect will return incomplete applications without action.
 - 1. Entries shall match data on the schedule of values and Contractor's construction schedule. Use updated schedules if revisions were made.
 - 2. Include amounts of Change Orders and Construction Change Directives issued before last day of construction period covered by application.
- F. Transmittal: Submit three signed and notarized original copies of each Application for Payment to Architect by a method ensuring receipt within 24 hours. One copy shall include waivers of lien and similar attachments if required.
 - 1. Transmit each copy with a transmittal form listing attachments and recording appropriate information about application.
- G. Waivers of Mechanic's Lien: With each Application for Payment, submit waivers of mechanic's lien from entities lawfully entitled to file a mechanic's lien arising out of the Contract and related to the Work covered by the payment.
 - 1. Submit partial waivers on each item for amount requested in previous application, after deduction for retainage, on each item.
 - 2. When an application shows completion of an item, submit conditional final or full waivers.
 - 3. Owner reserves the right to designate which entities involved in the Work must submit waivers.
 - 4. Waiver Forms: Submit executed waivers of lien on forms acceptable to Owner.
- H. Initial Application for Payment: Administrative actions and submittals that must precede or coincide with submittal of first Application for Payment include the following:
 - 1. List of subcontractors.
 - 2. Schedule of values.
 - 3. Contractor's construction schedule (preliminary if not final).
 - 4. Submittal schedule (preliminary if not final).
 - 5. List of Contractor's staff assignments.
 - 6. List of Contractor's principal consultants.
 - 7. Copies of building permits.
 - 8. Copies of authorizations and licenses from authorities having jurisdiction for performance of the Work.
 - 9. Initial progress report.
 - 10. Report of preconstruction conference.
 - 11. Certificates of insurance and insurance policies.
- I. Application for Payment at Substantial Completion: After Architect issues the Certificate of Substantial Completion, submit an Application for Payment showing 100 percent completion for portion of the Work claimed as substantially complete.
 - 1. Include documentation supporting claim that the Work is substantially complete and a statement showing an accounting of changes to the Contract Sum.
 - 2. This application shall reflect Certificates of Partial Substantial Completion issued previously for Owner occupancy of designated portions of the Work.

- J. Final Payment Application: After completing Project closeout requirements, submit final Application for Payment with releases and supporting documentation not previously submitted and accepted, including, but not limited, to the following:
1. Evidence of completion of Project closeout requirements.
 2. Insurance certificates for products and completed operations where required and proof that taxes, fees, and similar obligations were paid.
 3. Updated final statement, accounting for final changes to the Contract Sum.
 4. AIA Document G706-1994, "Contractor's Affidavit of Payment of Debts and Claims."
 5. AIA Document G706A-1994, "Contractor's Affidavit of Release of Liens."
 6. AIA Document G707-1994, "Consent of Surety to Final Payment."
 7. Evidence that claims have been settled.
 8. Final meter readings for utilities, a measured record of stored fuel, and similar data as of date of Substantial Completion or when Owner took possession of and assumed responsibility for corresponding elements of the Work.
 9. Final liquidated damages settlement statement.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 01 2900

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SECTION 01 3100 - PROJECT MANAGEMENT AND COORDINATION

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes administrative provisions for coordinating construction operations on Project including, but not limited to, the following:
 - 1. Coordination drawings.
 - 2. Requests for Information (RFIs).
 - 3. Project meetings.
- B. Related Requirements:
 - 1. Section 01 7300 "Execution" for procedures for coordinating general installation and field-engineering services, including establishment of benchmarks and control points.

1.2 DEFINITIONS

- A. RFI: Request from Owner, Architect, or Contractor seeking information required by or clarifications of the Contract Documents.

1.3 INFORMATIONAL SUBMITTALS

- A. Subcontract List: Prepare a written summary identifying individuals or firms proposed for each portion of the Work, including those who are to furnish products or equipment fabricated to a special design. Include the following information in tabular form:
 - 1. Name, address, and telephone number of entity performing subcontract or supplying products.
 - 2. Number and title of related Specification Section(s) covered by subcontract.
 - 3. Drawing number and detail references, as appropriate, covered by subcontract.

1.4 GENERAL COORDINATION PROCEDURES

- A. Coordination: Coordinate construction operations included in different Sections of the Specifications to ensure efficient and orderly installation of each part of the Work. Coordinate construction operations, included in different Sections that depend on each other for proper installation, connection, and operation.
 - 1. Schedule construction operations in sequence required to obtain the best results where installation of one part of the Work depends on installation of other components, before or after its own installation.
 - 2. Coordinate installation of different components to ensure maximum performance and accessibility for required maintenance, service, and repair.
 - 3. Make adequate provisions to accommodate items scheduled for later installation.
- B. Prepare memoranda for distribution to each party involved, outlining special procedures required for coordination. Include such items as required notices, reports, and list of attendees at meetings.
 - 1. Prepare similar memoranda for Owner and separate contractors if coordination of their Work is required.
- C. Administrative Procedures: Coordinate scheduling and timing of required administrative procedures with other construction activities and activities of other contractors to avoid conflicts and to ensure orderly progress of the Work. Such administrative activities include, but are not limited to, the following:
 - 1. Preparation of Contractor's construction schedule.
 - 2. Preparation of the schedule of values.
 - 3. Installation and removal of temporary facilities and controls.
 - 4. Delivery and processing of submittals.
 - 5. Progress meetings.
 - 6. Preinstallation conferences.
 - 7. Project closeout activities.
 - 8. Startup and adjustment of systems.

1.5 COORDINATION DRAWINGS

- A. Coordination Drawings, General: Prepare coordination drawings according to requirements in individual Sections, where installation is not completely shown on Shop Drawings, where limited space availability necessitates coordination, or if coordination is required to facilitate integration of products and materials fabricated or installed by more than one entity.
 - 1. Content: Project-specific information, drawn accurately to a scale large enough to indicate and resolve conflicts. Do not base coordination drawings on standard printed data. Include the following information, as applicable:
 - a. Indicate functional and spatial relationships of components of architectural, structural, civil, mechanical, and electrical systems.
 - b. Indicate dimensions shown on the Drawings. Specifically note dimensions that appear to be in conflict with submitted equipment and minimum clearance requirements. Provide alternate sketches to Architect indicating proposed resolution of such conflicts. Minor dimension changes and difficult installations will not be considered changes to the Contract.
- B. Coordination Drawing Organization: Organize coordination drawings as follows:
 - 1. Floor Plans and Reflected Ceiling Plans: Show architectural and structural elements, and mechanical, plumbing, fire-protection, fire-alarm, and electrical Work. Show locations of visible ceiling-mounted devices relative to acoustical ceiling grid.
 - 2. Plenum Space: Indicate subframing for support of ceiling and wall systems, mechanical and electrical equipment, and related Work. Locate components within ceiling plenum to accommodate layout of light fixtures indicated on Drawings.
 - 3. Mechanical Rooms: Provide coordination drawings for mechanical rooms showing plans and elevations of mechanical, plumbing, fire-protection, fire-alarm, and electrical equipment.
 - 4. Structural Penetrations: Indicate penetrations and openings required for all disciplines.
 - 5. Slab Edge and Embedded Items: Indicate slab edge locations and sizes and locations of embedded items for metal fabrications, sleeves, anchor bolts, bearing plates, angles, door floor closers, slab depressions for floor finishes, curbs and housekeeping pads, and similar items.
 - 6. Review: Architect will review coordination drawings to confirm that the Work is being coordinated, but not for the details of the coordination, which are Contractor's responsibility.

1.6 REQUESTS FOR INFORMATION (RFIs)

- A. General: Immediately on discovery of the need for additional information or interpretation of the Contract Documents, Contractor shall prepare and submit an RFI in the form specified.
 - 1. Architect will return RFIs submitted to Architect by other entities controlled by Contractor with no response.
 - 2. Coordinate and submit RFIs in a prompt manner so as to avoid delays in Contractor's work or work of subcontractors.
- B. Content of the RFI: Include a detailed, legible description of item needing information or interpretation and the following:
 - 1. Project name.
 - 2. Project number.
 - 3. Date.
 - 4. Name of Contractor.
 - 5. Name of Architect.
 - 6. RFI number, numbered sequentially.
 - 7. RFI subject.
 - 8. Specification Section number and title and related paragraphs, as appropriate.
 - 9. Drawing number and detail references, as appropriate.
 - 10. Field dimensions and conditions, as appropriate.
 - 11. Contractor's suggested resolution. If Contractor's solution(s) impacts the Contract Time or the Contract Sum, Contractor shall state impact in the RFI.
 - 12. Contractor's signature.
 - 13. Attachments: Include sketches, descriptions, measurements, photos, Product Data, Shop Drawings, coordination drawings, and other information necessary to fully describe items needing interpretation.
- C. RFI Forms: Form acceptable to Architect.

- D. Architect's Action: Architect will review each RFI, determine action required, and respond. Allow seven working days for Architect's response for each RFI. RFIs received by Architect after 1:00 p.m. will be considered as received the following working day.
1. The following RFIs will be returned without action:
 - a. Requests for approval of submittals.
 - b. Requests for approval of substitutions.
 - c. Requests for coordination information already indicated in the Contract Documents.
 - d. Requests for adjustments in the Contract Time or the Contract Sum.
 - e. Requests for interpretation of Architect's actions on submittals.
 - f. Incomplete RFIs or inaccurately prepared RFIs.
 2. Architect's action may include a request for additional information, in which case Architect's time for response will date from time of receipt of additional information.
 3. Architect's action on RFIs that may result in a change to the Contract Time or the Contract Sum may be eligible for Contractor to submit Change Proposal according to Section 01 2600 "Contract Modification Procedures."
 - a. If Contractor believes the RFI response warrants change in the Contract Time or the Contract Sum, notify Architect in writing within 10 days of receipt of the RFI response.
- E. RFI Log: Prepare, maintain, and submit a tabular log of RFIs organized by the RFI number. Submit log monthly. Include the following:
1. Project name.
 2. Name and address of Contractor.
 3. Name and address of Architect.
 4. RFI number including RFIs that were dropped and not submitted.
 5. RFI description.
 6. Date the RFI was submitted.
 7. Date Architect's response was received.
- F. On receipt of Architect's action, update the RFI log and immediately distribute the RFI response to affected parties. Review response and notify Architect within seven days if Contractor disagrees with response.
1. Identification of related Minor Change in the Work, Construction Change Directive, and Proposal Request, as appropriate.
 2. Identification of related Field Order, Work Change Directive, and Proposal Request, as appropriate.

1.7 PROJECT MEETINGS

- A. General: Schedule and conduct meetings and conferences at Project site unless otherwise indicated.
1. Attendees: Inform participants and others involved, and individuals whose presence is required, of date and time of each meeting. Notify Owner and Architect of scheduled meeting dates and times.
 2. Agenda: Prepare the meeting agenda. Distribute the agenda to all invited attendees.
 3. Minutes: Entity responsible for conducting meeting will record significant discussions and agreements achieved. Distribute the meeting minutes to everyone concerned, including Owner and Architect, within three days of the meeting.
- B. Preconstruction Conference: Owner's Representative will schedule and conduct a preconstruction conference before starting construction, at a time convenient to Contractor, Owner and Architect, but no later than 15 days after execution of the Agreement.
1. Attendees: Authorized representatives of Owner, Architect, and their consultants; Contractor and its superintendent; major subcontractors; suppliers; and other concerned parties shall attend the conference. Participants at the conference shall be familiar with Project and authorized to conclude matters relating to the Work.
 2. Agenda: Discuss items of significance that could affect progress, including the following:
 - a. Tentative construction schedule.
 - b. Phasing.
 - c. Critical work sequencing and long-lead items.
 - d. Designation of key personnel and their duties.
 - e. Procedures for processing field decisions and Change Orders.
 - f. Procedures for RFIs.
 - g. Procedures for testing and inspecting.
 - h. Procedures for processing Applications for Payment.
 - i. Distribution of the Contract Documents.

- j. Submittal procedures.
 - k. Preparation of record documents.
 - l. Use of the premises.
 - m. Work restrictions.
 - n. Working hours.
 - o. Owner's occupancy requirements.
 - p. Responsibility for temporary facilities and controls.
 - q. Procedures for moisture and mold control.
 - r. Procedures for disruptions and shutdowns.
 - s. Construction waste management and recycling.
 - t. Parking availability.
 - u. Office, work, and storage areas.
 - v. Equipment deliveries and priorities.
 - w. First aid.
 - x. Security.
 - y. Progress cleaning.
3. Minutes: Entity responsible for conducting meeting will record and distribute meeting minutes.
- C. Preinstallation Conferences: Conduct a preinstallation conference at Project site before each construction activity that requires coordination with other construction.
- 1. Attendees: Installer and representatives of manufacturers and fabricators involved in or affected by the installation and its coordination or integration with other materials and installations that have preceded or will follow, shall attend the meeting. Advise Architect of scheduled meeting dates.
 - 2. Agenda: Review progress of other construction activities and preparations for the particular activity under consideration, including requirements for the following:
 - a. Contract Documents.
 - b. Options.
 - c. Related RFIs.
 - d. Related Change Orders.
 - e. Purchases.
 - f. Deliveries.
 - g. Submittals.
 - h. Review of mockups.
 - i. Possible conflicts.
 - j. Compatibility problems.
 - k. Time schedules.
 - l. Weather limitations.
 - m. Manufacturer's written instructions.
 - n. Warranty requirements.
 - o. Compatibility of materials.
 - p. Acceptability of substrates.
 - q. Temporary facilities and controls.
 - r. Space and access limitations.
 - s. Regulations of authorities having jurisdiction.
 - t. Testing and inspecting requirements.
 - u. Installation procedures.
 - v. Coordination with other work.
 - w. Required performance results.
 - x. Protection of adjacent work.
 - y. Protection of construction and personnel.
 - 3. Record significant conference discussions, agreements, and disagreements, including required corrective measures and actions.
 - 4. Reporting: Distribute minutes of the meeting to each party present and to other parties requiring information.
 - 5. Do not proceed with installation if the conference cannot be successfully concluded. Initiate whatever actions are necessary to resolve impediments to performance of the Work and reconvene the conference at earliest feasible date.
- D. Progress Meetings: Owner's Representative will conduct progress meetings at monthly intervals.
- 1. Attendees: In addition to representatives of Owner and Architect, each contractor, subcontractor, supplier, and other entity concerned with current progress or involved in planning, coordination, or performance of future activities shall be represented at these meetings. All participants at the meeting shall be familiar with Project and authorized to conclude matters relating to the Work.

2. Agenda: Review and correct or approve minutes of previous progress meeting. Review other items of significance that could affect progress. Include topics for discussion as appropriate to status of Project.
 - a. Contractor's Construction Schedule: Review progress since the last meeting. Determine whether each activity is on time, ahead of schedule, or behind schedule, in relation to Contractor's construction schedule. Determine how construction behind schedule will be expedited; secure commitments from parties involved to do so. Discuss whether schedule revisions are required to ensure that current and subsequent activities will be completed within the Contract Time.
 - 1) Review schedule for next period.
 - b. Review present and future needs of each entity present, including the following:
 - 1) Interface requirements.
 - 2) Sequence of operations.
 - 3) Status of submittals.
 - 4) Deliveries.
 - 5) Off-site fabrication.
 - 6) Access.
 - 7) Site utilization.
 - 8) Temporary facilities and controls.
 - 9) Progress cleaning.
 - 10) Quality and work standards.
 - 11) Status of correction of deficient items.
 - 12) Field observations.
 - 13) Status of RFIs.
 - 14) Status of proposal requests.
 - 15) Pending changes.
 - 16) Status of Change Orders.
 - 17) Pending claims and disputes.
 - 18) Documentation of information for payment requests.
3. Minutes: Entity responsible for conducting the meeting will record and distribute the meeting minutes to each party present and to parties requiring information.
 - a. Schedule Updating: Revise Contractor's construction schedule after each progress meeting where revisions to the schedule have been made or recognized. Issue revised schedule concurrently with the report of each meeting.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 01 3100

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SECTION 01 3200 - CONSTRUCTION PROGRESS DOCUMENTATION

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes administrative and procedural requirements for documenting the progress of construction during performance of the Work, including the following:
 - 1. Contractor's construction schedule.
 - 2. Construction schedule updating reports.
 - 3. Daily construction reports.
 - 4. Site condition reports.

1.2 DEFINITIONS

- A. Activity: A discrete part of a project that can be identified for planning, scheduling, monitoring, and controlling the construction project. Activities included in a construction schedule consume time and resources.
 - 1. Critical Activity: An activity on the critical path that must start and finish on the planned early start and finish times.
 - 2. Predecessor Activity: An activity that precedes another activity in the network.
 - 3. Successor Activity: An activity that follows another activity in the network.
- B. CPM: Critical path method, which is a method of planning and scheduling a construction project where activities are arranged based on activity relationships. Network calculations determine when activities can be performed and the critical path of Project.
- C. Critical Path: The longest connected chain of interdependent activities through the network schedule that establishes the minimum overall Project duration and contains no float.
- D. Float: The measure of leeway in starting and completing an activity.
 - 1. Float time is not for the exclusive use or benefit of either Owner or Contractor, but is a jointly owned, expiring Project resource available to both parties as needed to meet schedule milestones and Contract completion date.

1.3 INFORMATIONAL SUBMITTALS

- A. Format for Submittals: Submit required submittals in the following format:
 - 1. Working electronic copy of schedule file, where indicated.
 - 2. PDF electronic file.
 - 3. Three paper copies.
- B. Startup Network Diagram: Of size required to display entire network for entire construction period. Show logic ties for activities.
- C. Contractor's Construction Schedule: Initial schedule, of size required to display entire schedule for entire construction period.
 - 1. Submit a working electronic copy of schedule, using software indicated, and labeled to comply with requirements for submittals. Include type of schedule (initial or updated) and date on label.
- D. CPM Reports: Concurrent with CPM schedule, submit each of the following reports. Format for each activity in reports shall contain activity number, activity description, original duration, remaining duration, early start date, early finish date, late start date, late finish date, and total float in calendar days.
 - 1. Activity Report: List of all activities sorted by activity number and then early start date, or actual start date if known.
 - 2. Logic Report: List of preceding and succeeding activities for all activities, sorted in ascending order by activity number and then early start date, or actual start date if known.
 - 3. Total Float Report: List of all activities sorted in ascending order of total float.
 - 4. Earnings Report: Compilation of Contractor's total earnings from commencement of the Work until most recent Application for Payment.

- E. Construction Schedule Updating Reports: Submit with Applications for Payment.
- F. Daily Construction Reports: Submit at monthly intervals.
- G. Site Condition Reports: Submit at time of discovery of differing conditions.

1.4 COORDINATION

- A. Coordinate Contractor's construction schedule with the schedule of values, list of subcontracts, submittal schedule, progress reports, payment requests, and other required schedules and reports.
 - 1. Secure time commitments for performing critical elements of the Work from entities involved.
 - 2. Coordinate each construction activity in the network with other activities and schedule them in proper sequence.

PART 2 - PRODUCTS

2.1 CONTRACTOR'S CONSTRUCTION SCHEDULE, GENERAL

- A. Time Frame: Extend schedule from date established for commencement of the Work to date of final completion.
 - 1. Contract completion date shall not be changed by submission of a schedule that shows an early completion date, unless specifically authorized by Change Order.
- B. Activities: Treat each story or separate area as a separate numbered activity for each main element of the Work. Comply with the following:
 - 1. Activity Duration: Define activities so no activity is longer than 20 days, unless specifically allowed by Architect.
 - 2. Procurement Activities: Include procurement process activities for long lead items and major items, requiring a cycle of more than 60 days, as separate activities in schedule. Procurement cycle activities include, but are not limited to, submittals, approvals, purchasing, fabrication, and delivery.
 - 3. Submittal Review Time: Include review and resubmittal times indicated in Section 01 3300 "Submittal Procedures" in schedule. Coordinate submittal review times in Contractor's construction schedule with submittal schedule.
 - 4. Startup and Testing Time: Include no fewer than 15 days for startup and testing.
 - 5. Substantial Completion: Indicate completion in advance of date established for Substantial Completion, and allow time for Architect's administrative procedures necessary for certification of Substantial Completion.
 - 6. Punch List and Final Completion: Include not more than 30 days for completion of punch list items and final completion.
- C. Constraints: Include constraints and work restrictions indicated in the Contract Documents and as follows in schedule, and show how the sequence of the Work is affected.
 - 1. Work under More Than One Contract: Include a separate activity for each contract.
 - 2. Work Restrictions: Show the effect of the following items on the schedule:
 - a. Coordination with existing construction.
 - b. Limitations of continued occupancies.
 - c. Uninterruptible services.
 - d. Partial occupancy before Substantial Completion.
 - e. Use of premises restrictions.
 - f. Provisions for future construction.
 - g. Seasonal variations.
 - h. Environmental control.
 - 3. Work Stages: Indicate important stages of construction for each major portion of the Work.
- D. Milestones: Include milestones indicated in the Contract Documents in schedule, including, but not limited to, the Notice to Proceed, Substantial Completion, and final completion.
- E. Upcoming Work Summary: Prepare summary report indicating activities scheduled to occur or commence prior to submittal of next schedule update. Summarize the following issues:
 - 1. Unresolved issues.
 - 2. Unanswered Requests for Information.
 - 3. Rejected or unreturned submittals.

4. Notations on returned submittals.
 5. Pending modifications affecting the Work and Contract Time.
- F. Recovery Schedule: When periodic update indicates the Work is 14 or more calendar days behind the current approved schedule, submit a separate recovery schedule indicating means by which Contractor intends to regain compliance with the schedule.
- G. Computer Scheduling Software: Prepare schedules using current version of a program that has been developed specifically to manage construction schedules.

2.2 CONTRACTOR'S CONSTRUCTION SCHEDULE (CPM SCHEDULE)

- A. General: Prepare network diagrams using AON (activity-on-node) format.
- B. Startup Network Diagram: Submit diagram within 14 days of date established for commencement of the Work. Outline significant construction activities for the first 90 days of construction. Include skeleton diagram for the remainder of the Work and a cash requirement prediction based on indicated activities.
- C. CPM Schedule: Prepare Contractor's construction schedule using a time-scaled CPM network analysis diagram for the Work.
1. Develop network diagram in sufficient time to submit CPM schedule so it can be accepted for use no later than 60 days after date established for commencement of the Work.
 - a. Failure to include any work item required for performance of this Contract shall not excuse Contractor from completing all work within applicable completion dates, regardless of Architect's approval of the schedule.
 2. Establish procedures for monitoring and updating CPM schedule and for reporting progress. Coordinate procedures with progress meeting and payment request dates.
 3. Use "one workday" as the unit of time for individual activities. Indicate nonworking days and holidays incorporated into the schedule in order to coordinate with the Contract Time.
- D. CPM Schedule Preparation: Prepare a list of all activities required to complete the Work. Using the startup network diagram, prepare a skeleton network to identify probable critical paths.
1. Activities: Indicate the estimated time duration, sequence requirements, and relationship of each activity in relation to other activities. Include estimated time frames for the following activities:
 - a. Preparation and processing of submittals.
 - b. Mobilization and demobilization.
 - c. Purchase of materials.
 - d. Delivery.
 - e. Fabrication.
 - f. Utility interruptions.
 - g. Installation.
 - h. Work by Owner that may affect or be affected by Contractor's activities.
 - i. Testing and commissioning.
 - j. Punch list and final completion.
 - k. Activities occurring following final completion.
 2. Critical Path Activities: Identify critical path activities, including those for interim completion dates. Scheduled start and completion dates shall be consistent with Contract milestone dates.
 3. Processing: Process data to produce output data on a computer-drawn, time-scaled network. Revise data, reorganize activity sequences, and reproduce as often as necessary to produce the CPM schedule within the limitations of the Contract Time.
 4. Format: Mark the critical path. Locate the critical path near center of network; locate paths with most float near the edges.
 - a. Subnetworks on separate sheets are permissible for activities clearly off the critical path.
- E. Contract Modifications: For each proposed contract modification and concurrent with its submission, prepare a time-impact analysis using a network fragment to demonstrate the effect of the proposed change on the overall project schedule.
- F. Initial Issue of Schedule: Prepare initial network diagram from a sorted activity list indicating straight "early start-total float." Identify critical activities. Prepare tabulated reports showing the following:
1. Contractor or subcontractor and the Work or activity.

2. Description of activity.
 3. Main events of activity.
 4. Immediate preceding and succeeding activities.
 5. Early and late start dates.
 6. Early and late finish dates.
 7. Activity duration in workdays.
 8. Total float or slack time.
- G. Schedule Updating: Concurrent with making revisions to schedule, prepare tabulated reports showing the following:
1. Identification of activities that have changed.
 2. Changes in early and late start dates.
 3. Changes in early and late finish dates.
 4. Changes in activity durations in workdays.
 5. Changes in the critical path.
 6. Changes in total float or slack time.
 7. Changes in the Contract Time.

2.3 REPORTS

- A. Daily Construction Reports: Prepare a daily construction report recording the following information concerning events at Project site:
1. List of subcontractors at Project site.
 2. List of separate contractors at Project site.
 3. Approximate count of personnel at Project site.
 4. Equipment at Project site.
 5. Material deliveries.
 6. High and low temperatures and general weather conditions, including presence of rain or snow.
 7. Accidents.
 8. Meetings and significant decisions.
 9. Unusual events.
 10. Stoppages, delays, shortages, and losses.
 11. Meter readings and similar recordings.
 12. Emergency procedures.
 13. Orders and requests of authorities having jurisdiction.
 14. Change Orders received and implemented.
 15. Construction Change Directives received and implemented.
 16. Services connected and disconnected.
 17. Equipment or system tests and startups.
 18. Partial completions and occupancies.
 19. Substantial Completions authorized.
- B. Site Condition Reports: Immediately on discovery of a difference between site conditions and the Contract Documents, prepare and submit a detailed report. Submit with a Request for Information. Include a detailed description of the differing conditions, together with recommendations for changing the Contract Documents.

PART 3 - EXECUTION

3.1 CONTRACTOR'S CONSTRUCTION SCHEDULE

- A. Contractor's Construction Schedule Updating: At monthly intervals, update schedule to reflect actual construction progress and activities. Issue schedule one week before each regularly scheduled progress meeting.
1. Revise schedule immediately after each meeting or other activity where revisions have been recognized or made. Issue updated schedule concurrently with the report of each such meeting.
 2. Include a report with updated schedule that indicates every change, including, but not limited to, changes in logic, durations, actual starts and finishes, and activity durations.
 3. As the Work progresses, indicate final completion percentage for each activity.
- B. Distribution: Distribute copies of approved schedule to Architect, Owner, separate contractors, testing and inspecting agencies, and other parties identified by Contractor with a need-to-know schedule responsibility.
1. Post copies in Project meeting rooms and temporary field offices.

2. When revisions are made, distribute updated schedules to the same parties and post in the same locations. Delete parties from distribution when they have completed their assigned portion of the Work and are no longer involved in performance of construction activities.

END OF SECTION 01 3200

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SECTION 01 3300 - SUBMITTAL PROCEDURES

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes requirements for the submittal schedule and administrative and procedural requirements for submitting Shop Drawings, Product Data, Samples, and other submittals.
- B. Related Requirements:
 - 1. Section 01 3200 "Construction Progress Documentation" for submitting schedules and reports, including Contractor's construction schedule.
 - 2. Section 01 7823 "Operation and Maintenance Data" for submitting operation and maintenance manuals.
 - 3. Section 01 7839 "Project Record Documents" for submitting record Drawings, record Specifications, and record Product Data.

1.2 DEFINITIONS

- A. Action Submittals: Written and graphic information and physical samples that require Architect's responsive action.
- B. Informational Submittals: Written and graphic information and physical samples that do not require Architect's responsive action. Submittals may be rejected for not complying with requirements.

1.3 ACTION SUBMITTALS

- A. Submittal Schedule: Submit a schedule of submittals, arranged in chronological order by dates required by construction schedule. Include time required for review, ordering, manufacturing, fabrication, and delivery when establishing dates. Include additional time required for making corrections or revisions to submittals noted by Architect and additional time for handling and reviewing submittals required by those corrections.

1.4 SUBMITTAL ADMINISTRATIVE REQUIREMENTS

- A. Architect's Digital Data Files: Electronic copies of digital data files of the Contract Drawings may be provided by Architect for Contractor's use in preparing submittals. At Contractor's written request and upon payment to the Architect of \$150.00, copies of Architect's CAD files may be provided to Contractor for Contractor's use in connection with Project, subject to the following conditions:
 - 1. Architect will furnish Contractor one set of digital data drawing files of the Contract Drawings for use in preparing Shop Drawings.
 - a. Architect makes no representations as to the accuracy or completeness of digital data drawing files as they relate to the Contract Drawings.
 - b. Contractor shall execute a data licensing agreement in the form of AIA Document C106, Digital Data Licensing Agreement.
 - c. Due to the potential that the information set forth in the electronic files can be modified unintentionally or otherwise and that the files may not reflect changes made by addendum or during construction, the Architect does not warranty nor guarantee the suitability or content of the electronic files provided. It is recognized that the use of these electronic files will be at the Contractor's or user's sole risk and without liability to the Architect, Owner or Construction Manager.
 - d. Electronic files available are those existing at the time of the request. Files will be provided by e-mail or on CD-ROM in Architect's standard format. Requests will not be processed until payment is made. Allow seven days for processing. Any translation or other modification necessary to make files usable for Contractor's purpose is the responsibility of the Contractor.
 - e. Architect's consultants may or may not provide electronic CAD or data files to Contractor at the consultant's sole discretion.
- B. Coordination: Coordinate preparation and processing of submittals with performance of construction activities.
 - 1. Coordinate each submittal with fabrication, purchasing, testing, delivery, other submittals, and related activities that require sequential activity.
 - 2. Coordinate transmittal of different types of submittals for related parts of the Work so processing will not be delayed because of need to review submittals concurrently for coordination.

- a. Architect reserves the right to withhold action on a submittal requiring coordination with other submittals until related submittals are received.
- C. Processing Time: Allow time for submittal review, including time for resubmittals, as follows. Time for review shall commence on Architect's receipt of submittal. No extension of the Contract Time will be authorized because of failure to transmit submittals enough in advance of the Work to permit processing, including resubmittals.
 1. Initial Review: Allow 15 days for initial review of each submittal. Allow additional time if coordination with subsequent submittals is required. Architect will advise Contractor when a submittal being processed must be delayed for coordination.
 2. Intermediate Review: If intermediate submittal is necessary, process it in same manner as initial submittal.
 3. Resubmittal Review: Allow 15 days for review of each resubmittal.
- D. Paper Submittals: Place a permanent label or title block on each submittal item for identification.
 1. Indicate name of firm or entity that prepared each submittal on label or title block.
 2. Provide a space on label or beside title block to record Contractor's review and approval markings and action taken by Architect.
 3. Include the following information for processing and recording action taken:
 - a. Project name.
 - b. Date.
 - c. Name of Architect.
 - d. Name of Contractor.
 - e. Name of subcontractor.
 - f. Name of supplier.
 - g. Name of manufacturer.
 - h. Submittal number or other unique identifier, including revision identifier.
 - 1) Submittal number shall use Specification Section number followed by a decimal point and then a sequential number (e.g., 061000.01). Resubmittals shall include an alphabetic suffix after another decimal point (e.g., 061000.01.A).
 - i. Number and title of appropriate Specification Section.
 - j. Drawing number and detail references, as appropriate.
 - k. Location(s) where product is to be installed, as appropriate.
 - l. Other necessary identification.
 4. Additional Paper Copies: Unless additional copies are required for final submittal, and unless Architect observes noncompliance with provisions in the Contract Documents, initial submittal may serve as final submittal.
 - a. Submit one copy of submittal to concurrent reviewer in addition to specified number of copies to Architect.
 5. Transmittal for Paper Submittals: Assemble each submittal individually and appropriately for transmittal and handling. Transmit each submittal using a transmittal form. Architect will return without review submittals received from sources other than Contractor.
 - a. Transmittal Form for Paper Submittals: Provide locations on form for the following information:
 - 1) Project name.
 - 2) Date.
 - 3) Destination (To:).
 - 4) Source (From:).
 - 5) Name and address of Architect.
 - 6) Name of Construction Manager.
 - 7) Name of Contractor.
 - 8) Name of firm or entity that prepared submittal.
 - 9) Names of subcontractor, manufacturer, and supplier.
 - 10) Category and type of submittal.
 - 11) Submittal purpose and description.
 - 12) Specification Section number and title.
 - 13) Specification paragraph number or drawing designation and generic name for each of multiple items.
 - 14) Drawing number and detail references, as appropriate.
 - 15) Indication of full or partial submittal.
 - 16) Transmittal number, numbered consecutively.
 - 17) Submittal and transmittal distribution record.
 - 18) Remarks.
 - 19) Signature of transmitter.

- E. Options: Identify options requiring selection by Architect.
- F. Deviations: Identify deviations from the Contract Documents on submittals.
- G. Resubmittals: Make resubmittals in same form and number of copies as initial submittal.
 - 1. Note date and content of previous submittal.
 - 2. Note date and content of revision in label or title block and clearly indicate extent of revision.
 - 3. Resubmit submittals until they are marked with approval notation from Architect's action stamp.
- H. Distribution: Furnish copies of final submittals to manufacturers, subcontractors, suppliers, fabricators, installers, authorities having jurisdiction, and others as necessary for performance of construction activities. Show distribution on transmittal forms.
- I. Use for Construction: Retain complete copies of submittals on Project site. Use only final action submittals that are marked with approval notation from Architect's action stamp.

PART 2 - PRODUCTS

2.1 SUBMITTAL PROCEDURES

- A. General Submittal Procedure Requirements:
 - 1. Action Submittals: Submit eight paper copies of each submittal unless otherwise indicated. Architect will return six copies.
 - 2. Informational Submittals: Submit two paper copies of each submittal unless otherwise indicated. Architect will not return copies.
 - 3. Certificates and Certifications Submittals: Provide a statement that includes signature of entity responsible for preparing certification. Certificates and certifications shall be signed by an officer or other individual authorized to sign documents on behalf of that entity.
 - a. Provide a digital signature with digital certificate on electronically-submitted certificates and certifications where indicated.
 - b. Provide a notarized statement on original paper copy certificates and certifications where indicated.
- B. Product Data: Collect information into a single submittal for each element of construction and type of product or equipment.
 - 1. If information must be specially prepared for submittal because standard published data are not suitable for use, submit as Shop Drawings, not as Product Data.
 - 2. Mark each copy of each submittal to show which products and options are applicable.
 - 3. Include the following information, as applicable:
 - a. Manufacturer's catalog cuts.
 - b. Manufacturer's product specifications.
 - c. Standard color charts.
 - d. Statement of compliance with specified referenced standards.
 - e. Testing by recognized testing agency.
 - f. Application of testing agency labels and seals.
 - g. Notation of coordination requirements.
 - h. Availability and delivery time information.
 - 4. For equipment, include the following in addition to the above, as applicable:
 - a. Wiring diagrams showing factory-installed wiring.
 - b. Printed performance curves.
 - c. Operational range diagrams.
 - d. Clearances required to other construction, if not indicated on accompanying Shop Drawings.
 - 5. Submit Product Data before or concurrent with Samples.
 - 6. Submit Product Data in the following format:
 - a. Five paper copies of Product Data unless otherwise indicated. Architect will return three copies.
- C. Shop Drawings: Prepare Project-specific information, drawn accurately to scale. Do not base Shop Drawings on reproductions of the Contract Documents or standard printed data, unless submittal based on Architect's digital data drawing files is otherwise permitted.
 - 1. Preparation: Fully illustrate requirements in the Contract Documents. Include the following information, as applicable:
 - a. Identification of products.

- b. Schedules.
 - c. Compliance with specified standards.
 - d. Notation of coordination requirements.
 - e. Notation of dimensions established by field measurement.
 - f. Relationship and attachment to adjoining construction clearly indicated.
 - g. Seal and signature of professional engineer if specified.
 - 2. Sheet Size: Except for templates, patterns, and similar full-size drawings, submit Shop Drawings on sheets at least 8-1/2 by 11 inches, but no larger than 30 by 42 inches.
 - 3. Submit Shop Drawings in the following format:
 - a. Five opaque copies of each submittal. Architect will retain two copies; remainder will be returned.
- D. Samples: Submit Samples for review of kind, color, pattern, and texture for a check of these characteristics with other elements and for a comparison of these characteristics between submittal and actual component as delivered and installed.
- 1. Transmit Samples that contain multiple, related components such as accessories together in one submittal package.
 - 2. Identification: Attach label on unexposed side of Samples that includes the following:
 - a. Generic description of Sample.
 - b. Product name and name of manufacturer.
 - c. Sample source.
 - d. Number and title of applicable Specification Section.
 - 3. For projects where electronic submittals are required, provide corresponding electronic submittal of Sample transmittal, digital image file illustrating Sample characteristics, and identification information for record.
 - 4. Disposition: Maintain sets of approved Samples at Project site, available for quality-control comparisons throughout the course of construction activity. Sample sets may be used to determine final acceptance of construction associated with each set.
 - a. Samples that may be incorporated into the Work are indicated in individual Specification Sections. Such Samples must be in an undamaged condition at time of use.
 - b. Samples not incorporated into the Work, or otherwise designated as Owner's property, are the property of Contractor.
 - 5. Samples for Initial Selection: Submit manufacturer's color charts consisting of units or sections of units showing the full range of colors, textures, and patterns available.
 - a. Number of Samples: Submit one full set(s) of available choices where color, pattern, texture, or similar characteristics are required to be selected from manufacturer's product line. Architect will return submittal with options selected.
 - 6. Samples for Verification: Submit full-size units or Samples of size indicated, prepared from same material to be used for the Work, cured and finished in manner specified, and physically identical with material or product proposed for use, and that show full range of color and texture variations expected. Samples include, but are not limited to, the following: partial sections of manufactured or fabricated components; small cuts or containers of materials; complete units of repetitively used materials; swatches showing color, texture, and pattern; color range sets; and components used for independent testing and inspection.
 - a. Number of Samples: Submit two sets of Samples. Architect will retain one Sample sets; remainder will be returned. Mark up and retain one returned Sample set as a project record sample.
 - 1) If variation in color, pattern, texture, or other characteristic is inherent in material or product represented by a Sample, submit at least three sets of paired units that show approximate limits of variations.
- E. Product Schedule: As required in individual Specification Sections, prepare a written summary indicating types of products required for the Work and their intended location. Include the following information in tabular form:
- 1. Submit product schedule in the following formats:
 - a. PDF electronic file.
 - b. Three paper copies of product schedule or list unless otherwise indicated. Architect will return two copies.
- F. Coordination Drawings Submittals: Comply with requirements specified in Section 01 3100 "Project Management and Coordination."
- G. Contractor's Construction Schedule: Comply with requirements specified in Section 01 3200 "Construction Progress Documentation."

- H. Application for Payment and Schedule of Values: Comply with requirements specified in Section 01 2900 "Payment Procedures.
- I. Test and Inspection Reports and Schedule of Tests and Inspections Submittals: Comply with requirements specified in Section 01 4000 "Quality Requirements."
- J. Closeout Submittals and Maintenance Material Submittals: Comply with requirements specified in Section 01 7700 "Closeout Procedures."
- K. Maintenance Data: Comply with requirements specified in Section 01 7823 "Operation and Maintenance Data."
- L. Qualification Data: Prepare written information that demonstrates capabilities and experience of firm or person. Include lists of completed projects with project names and addresses, contact information of architects and owners, and other information specified.
- M. Welding Certificates: Prepare written certification that welding procedures and personnel comply with requirements in the Contract Documents. Submit record of Welding Procedure Specification and Procedure Qualification Record on AWS forms. Include names of firms and personnel certified.
- N. Installer Certificates: Submit written statements on manufacturer's letterhead certifying that Installer complies with requirements in the Contract Documents and, where required, is authorized by manufacturer for this specific Project.
- O. Manufacturer Certificates: Submit written statements on manufacturer's letterhead certifying that manufacturer complies with requirements in the Contract Documents. Include evidence of manufacturing experience where required.
- P. Product Certificates: Submit written statements on manufacturer's letterhead certifying that product complies with requirements in the Contract Documents.
- Q. Material Certificates: Submit written statements on manufacturer's letterhead certifying that material complies with requirements in the Contract Documents.
- R. Material Test Reports: Submit reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting test results of material for compliance with requirements in the Contract Documents.
- S. Product Test Reports: Submit written reports indicating that current product produced by manufacturer complies with requirements in the Contract Documents. Base reports on evaluation of tests performed by manufacturer and witnessed by a qualified testing agency, or on comprehensive tests performed by a qualified testing agency.
- T. Research Reports: Submit written evidence, from a model code organization acceptable to authorities having jurisdiction, that product complies with building code in effect for Project.
- U. Schedule of Tests and Inspections: Comply with requirements specified in Section 01 4000 "Quality Requirements."
- V. Preconstruction Test Reports: Submit reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting results of tests performed before installation of product, for compliance with performance requirements in the Contract Documents.
- W. Compatibility Test Reports: Submit reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting results of compatibility tests performed before installation of product. Include written recommendations for primers and substrate preparation needed for adhesion.
- X. Field Test Reports: Submit written reports indicating and interpreting results of field tests performed either during installation of product or after product is installed in its final location, for compliance with requirements in the Contract Documents.
- Y. Design Data: Prepare and submit written and graphic information, including, but not limited to, performance and design criteria, list of applicable codes and regulations, and calculations. Include list of assumptions and other

performance and design criteria and a summary of loads. Include load diagrams if applicable. Provide name and version of software, if any, used for calculations. Include page numbers.

2.2 DELEGATED-DESIGN SERVICES

- A. Performance and Design Criteria: Where professional design services or certifications by a design professional are specifically required of Contractor by the Contract Documents, provide products and systems complying with specific performance and design criteria indicated.
 - 1. If criteria indicated are not sufficient to perform services or certification required, submit a written request for additional information to Architect.
- B. Delegated-Design Services Certification: In addition to Shop Drawings, Product Data, and other required submittals, submit digitally signed PDF electronic file and three paper copies of certificate, signed and sealed by the responsible design professional, for each product and system specifically assigned to Contractor to be designed or certified by a design professional.
 - 1. Indicate that products and systems comply with performance and design criteria in the Contract Documents. Include list of codes, loads, and other factors used in performing these services.

PART 3 - EXECUTION

3.1 CONTRACTOR'S REVIEW

- A. Action and Informational Submittals: Review each submittal and check for coordination with other Work of the Contract and for compliance with the Contract Documents. Note corrections and field dimensions. Mark with approval stamp before submitting to Architect.
- B. Project Closeout and Maintenance Material Submittals: See requirements in Section 01 7700 "Closeout Procedures."
- C. Approval Stamp: Stamp each submittal with a uniform, approval stamp. Include Project name and location, submittal number, Specification Section title and number, name of reviewer, date of Contractor's approval, and statement certifying that submittal has been reviewed, checked, and approved for compliance with the Contract Documents.

3.2 ARCHITECT'S ACTION

- A. General: Architect will not review submittals that do not bear Contractor's approval stamp and will return them without action.
- B. Action Submittals: Architect will review each submittal, make marks to indicate corrections or revisions required, and return it. Architect will stamp each submittal with an action stamp and will mark stamp appropriately to indicate action.
- C. Informational Submittals: Architect will review each submittal and will not return it, or will return it if it does not comply with requirements. Architect will forward each submittal to appropriate party.
- D. Incomplete submittals are unacceptable, will be considered nonresponsive, and will be returned for resubmittal without review.
- E. Submittals not required by the Contract Documents may not be reviewed and may be discarded.

END OF SECTION 01 3300

SECTION 01 4000 - QUALITY REQUIREMENTS

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes administrative and procedural requirements for quality assurance and quality control.
- B. Testing and inspecting services are required to verify compliance with requirements specified or indicated. These services do not relieve Contractor of responsibility for compliance with the Contract Document requirements.
 - 1. Specified tests, inspections, and related actions do not limit Contractor's other quality-assurance and -control procedures that facilitate compliance with the Contract Document requirements.
 - 2. Requirements for Contractor to provide quality-assurance and -control services required by Architect, Owner, or authorities having jurisdiction are not limited by provisions of this Section.
 - 3. Specific test and inspection requirements are not specified in this Section.

1.2 DEFINITIONS

- A. Quality-Assurance Services: Activities, actions, and procedures performed before and during execution of the Work to guard against defects and deficiencies and substantiate that proposed construction will comply with requirements.
- B. Quality-Control Services: Tests, inspections, procedures, and related actions during and after execution of the Work to evaluate that actual products incorporated into the Work and completed construction comply with requirements. Services do not include contract enforcement activities performed by Architect.
- C. Mockups: Full-size physical assemblies that are constructed on-site. Mockups are constructed to verify selections made under Sample submittals; to demonstrate aesthetic effects and, where indicated, qualities of materials and execution; to review coordination, testing, or operation; to show interface between dissimilar materials; and to demonstrate compliance with specified installation tolerances. Mockups are not Samples. Unless otherwise indicated, approved mockups establish the standard by which the Work will be judged.
 - 1. Laboratory Mockups: Full-size physical assemblies constructed at testing facility to verify performance characteristics.
- D. Preconstruction Testing: Tests and inspections performed specifically for Project before products and materials are incorporated into the Work, to verify performance or compliance with specified criteria.
- E. Product Testing: Tests and inspections that are performed by an NRTL, an NVLAP, or a testing agency qualified to conduct product testing and acceptable to authorities having jurisdiction, to establish product performance and compliance with specified requirements.
- F. Source Quality-Control Testing: Tests and inspections that are performed at the source, e.g., plant, mill, factory, or shop.
- G. Field Quality-Control Testing: Tests and inspections that are performed on-site for installation of the Work and for completed Work.
- H. Testing Agency: An entity engaged to perform specific tests, inspections, or both. Testing laboratory shall mean the same as testing agency.
- I. Installer/Applicator/Erector: Contractor or another entity engaged by Contractor as an employee, Subcontractor, or Sub-subcontractor, to perform a particular construction operation, including installation, erection, application, and similar operations.
 - 1. Use of trade-specific terminology in referring to a trade or entity does not require that certain construction activities be performed by accredited or unionized individuals, or that requirements specified apply exclusively to specific trade(s).
- J. Experienced: When used with an entity or individual, "experienced" means having successfully completed a minimum of five previous projects similar in nature, size, and extent to this Project; being familiar with special requirements indicated; and having complied with requirements of authorities having jurisdiction.

1.3 CONFLICTING REQUIREMENTS

- A. Referenced Standards: If compliance with two or more standards is specified and the standards establish different or conflicting requirements for minimum quantities or quality levels, comply with the most stringent requirement. Refer conflicting requirements that are different, but apparently equal, to Architect for a decision before proceeding.
- B. Minimum Quantity or Quality Levels: The quantity or quality level shown or specified shall be the minimum provided or performed. The actual installation may comply exactly with the minimum quantity or quality specified, or it may exceed the minimum within reasonable limits. To comply with these requirements, indicated numeric values are minimum or maximum, as appropriate, for the context of requirements. Refer uncertainties to Architect for a decision before proceeding.

1.4 INFORMATIONAL SUBMITTALS

- A. Contractor's Statement of Responsibility: When required by authorities having jurisdiction, submit copy of written statement of responsibility sent to authorities having jurisdiction before starting work on the following systems:
 - 1. Seismic-force-resisting system, designated seismic system, or component listed in the designated seismic system quality-assurance plan prepared by Architect.
 - 2. Main wind-force-resisting system or a wind-resisting component listed in the wind-force-resisting system quality-assurance plan prepared by Architect.
- B. Testing Agency Qualifications: For testing agencies specified in "Quality Assurance" Article to demonstrate their capabilities and experience. Include proof of qualifications in the form of a recent report on the inspection of the testing agency by a recognized authority.

1.5 REPORTS AND DOCUMENTS

- A. Test and Inspection Reports: Prepare and submit certified written reports specified in other Sections. Include the following:
 - 1. Date of issue.
 - 2. Project title and number.
 - 3. Name, address, and telephone number of testing agency.
 - 4. Dates and locations of samples and tests or inspections.
 - 5. Names of individuals making tests and inspections.
 - 6. Description of the Work and test and inspection method.
 - 7. Identification of product and Specification Section.
 - 8. Complete test or inspection data.
 - 9. Test and inspection results and an interpretation of test results.
 - 10. Record of temperature and weather conditions at time of sample taking and testing and inspecting.
 - 11. Comments or professional opinion on whether tested or inspected Work complies with the Contract Document requirements.
 - 12. Name and signature of laboratory inspector.
 - 13. Recommendations on retesting and reinspecting.
- B. Manufacturer's Field Reports: Prepare written information documenting tests and inspections specified in other Sections. Include the following:
 - 1. Name, address, and telephone number of representative making report.
 - 2. Statement on condition of substrates and their acceptability for installation of product.
 - 3. Summary of installation procedures being followed, whether they comply with requirements and, if not, what corrective action was taken.
 - 4. Results of operational and other tests and a statement of whether observed performance complies with requirements.
 - 5. Other required items indicated in individual Specification Sections.
- C. Permits, Licenses, and Certificates: For Owner's records, submit copies of permits, licenses, certifications, inspection reports, releases, jurisdictional settlements, notices, receipts for fee payments, judgments, correspondence, records, and similar documents, established for compliance with standards and regulations bearing on performance of the Work.

1.6 QUALITY ASSURANCE

- A. General: Qualifications paragraphs in this article establish the minimum qualification levels required; individual Specification Sections specify additional requirements.
- B. Manufacturer Qualifications: A firm experienced in manufacturing products or systems similar to those indicated for this Project and with a record of successful in-service performance, as well as sufficient production capacity to produce required units.
- C. Fabricator Qualifications: A firm experienced in producing products similar to those indicated for this Project and with a record of successful in-service performance, as well as sufficient production capacity to produce required units.
- D. Installer Qualifications: A firm or individual experienced in installing, erecting, or assembling work similar in material, design, and extent to that indicated for this Project, whose work has resulted in construction with a record of successful in-service performance.
- E. Professional Engineer Qualifications: A professional engineer who is legally qualified to practice in jurisdiction where Project is located and who is experienced in providing engineering services of the kind indicated. Engineering services are defined as those performed for installations of the system, assembly, or product that are similar in material, design, and extent to those indicated for this Project.
- F. Specialists: Certain Specification Sections require that specific construction activities shall be performed by entities who are recognized experts in those operations. Specialists shall satisfy qualification requirements indicated and shall be engaged for the activities indicated.
 - 1. Requirements of authorities having jurisdiction shall supersede requirements for specialists.
- G. Testing Agency Qualifications: An NRTL, an NVLAP, or an independent agency with the experience and capability to conduct testing and inspecting indicated, as documented according to ASTM E 329; and with additional qualifications specified in individual Sections; and, where required by authorities having jurisdiction, that is acceptable to authorities.
 - 1. NRTL: A nationally recognized testing laboratory according to 29 CFR 1910.7.
 - 2. NVLAP: A testing agency accredited according to NIST's National Voluntary Laboratory Accreditation Program.
- H. Manufacturer's Representative Qualifications: An authorized representative of manufacturer who is trained and approved by manufacturer to observe and inspect installation of manufacturer's products that are similar in material, design, and extent to those indicated for this Project.
- I. Preconstruction Testing: Where testing agency is indicated to perform preconstruction testing for compliance with specified requirements for performance and test methods, comply with the following:
 - 1. Contractor responsibilities include the following:
 - a. Provide test specimens representative of proposed products and construction.
 - b. Submit specimens in a timely manner with sufficient time for testing and analyzing results to prevent delaying the Work.
 - c. Build laboratory mockups at testing facility using personnel, products, and methods of construction indicated for the completed Work.
 - d. When testing is complete, remove test specimens, assemblies, and mockups, and laboratory mockups; do not reuse products on Project.
 - 2. Testing Agency Responsibilities: Submit a certified written report of each test, inspection, and similar quality-assurance service to Architect, with copy to Contractor. Interpret tests and inspections and state in each report whether tested and inspected work complies with or deviates from the Contract Documents.
- J. Mockups: Before installing portions of the Work requiring mockups, build mockups for each form of construction and finish required to comply with the following requirements, using materials indicated for the completed Work:
 - 1. Build mockups in location and of size indicated or, if not indicated, as directed by Architect.
 - 2. Notify Architect seven days in advance of dates and times when mockups will be constructed.
 - 3. Demonstrate the proposed range of aesthetic effects and workmanship.
 - 4. Obtain Architect's approval of mockups before starting work, fabrication, or construction.
 - a. Allow seven days for initial review and each re-review of each mockup.

5. Maintain mockups during construction in an undisturbed condition as a standard for judging the completed Work.
 6. Demolish and remove mockups when directed unless otherwise indicated.
- K. Laboratory Mockups: Comply with requirements of preconstruction testing and those specified in individual Specification Sections.

1.7 QUALITY CONTROL

- A. Owner Responsibilities: Where quality-control services are indicated as Owner's responsibility, Owner will engage a qualified testing agency to perform these services.
1. Owner will furnish Contractor with names, addresses, and telephone numbers of testing agencies engaged and a description of types of testing and inspecting they are engaged to perform.
 2. Costs for retesting and reinspecting construction that replaces or is necessitated by work that failed to comply with the Contract Documents will be charged to Contractor, and the Contract Sum will be adjusted by Change Order.
- B. Contractor Responsibilities: Tests and inspections not explicitly assigned to Owner are Contractor's responsibility. Perform additional quality-control activities required to verify that the Work complies with requirements, whether specified or not.
1. Where services are indicated as Contractor's responsibility, engage a qualified testing agency to perform these quality-control services.
 - a. Contractor shall not employ same entity engaged by Owner, unless agreed to in writing by Owner.
 2. Notify testing agencies at least 24 hours in advance of time when Work that requires testing or inspecting will be performed.
 3. Where quality-control services are indicated as Contractor's responsibility, submit a certified written report, in duplicate, of each quality-control service.
 4. Testing and inspecting requested by Contractor and not required by the Contract Documents are Contractor's responsibility.
 5. Submit additional copies of each written report directly to authorities having jurisdiction, when they so direct.
- C. Manufacturer's Field Services: Where indicated, engage a manufacturer's representative to observe and inspect the Work. Manufacturer's representative's services include examination of substrates and conditions, verification of materials, inspection of completed portions of the Work, and submittal of written reports.
- D. Retesting/Reinspecting: Regardless of whether original tests or inspections were Contractor's responsibility, provide quality-control services, including retesting and reinspecting, for construction that replaced Work that failed to comply with the Contract Documents.
- E. Testing Agency Responsibilities: Cooperate with Architect and Contractor in performance of duties. Provide qualified personnel to perform required tests and inspections.
1. Notify Architect and Contractor promptly of irregularities or deficiencies observed in the Work during performance of its services.
 2. Determine the location from which test samples will be taken and in which in-situ tests are conducted.
 3. Conduct and interpret tests and inspections and state in each report whether tested and inspected work complies with or deviates from requirements.
 4. Submit a certified written report, in duplicate, of each test, inspection, and similar quality-control service through Contractor.
 5. Do not release, revoke, alter, or increase the Contract Document requirements or approve or accept any portion of the Work.
 6. Do not perform any duties of Contractor.
- F. Associated Services: Cooperate with agencies performing required tests, inspections, and similar quality-control services, and provide reasonable auxiliary services as requested. Notify agency sufficiently in advance of operations to permit assignment of personnel. Provide the following:
1. Access to the Work.
 2. Incidental labor and facilities necessary to facilitate tests and inspections.
 3. Adequate quantities of representative samples of materials that require testing and inspecting. Assist agency in obtaining samples.
 4. Facilities for storage and field curing of test samples.
 5. Delivery of samples to testing agencies.

6. Preliminary design mix proposed for use for material mixes that require control by testing agency.
 7. Security and protection for samples and for testing and inspecting equipment at Project site.
- G. Coordination: Coordinate sequence of activities to accommodate required quality-assurance and -control services with a minimum of delay and to avoid necessity of removing and replacing construction to accommodate testing and inspecting.
1. Schedule times for tests, inspections, obtaining samples, and similar activities.

1.8 SPECIAL TESTS AND INSPECTIONS

- A. Special Tests and Inspections: Owner will engage a qualified testing agency to conduct special tests and inspections required by authorities having jurisdiction as the responsibility of Owner, and as follows:
1. Verifying that manufacturer maintains detailed fabrication and quality-control procedures and reviews the completeness and adequacy of those procedures to perform the Work.
 2. Notifying Architect and Contractor promptly of irregularities and deficiencies observed in the Work during performance of its services.
 3. Submitting a certified written report of each test, inspection, and similar quality-control service to Architect with copy to Contractor and to authorities having jurisdiction.
 4. Submitting a final report of special tests and inspections at Substantial Completion, which includes a list of unresolved deficiencies.
 5. Interpreting tests and inspections and stating in each report whether tested and inspected work complies with or deviates from the Contract Documents.
 6. Retesting and reinspecting corrected work.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 TEST AND INSPECTION LOG

- A. Test and Inspection Log: Prepare a record of tests and inspections. Include the following:
1. Date test or inspection was conducted.
 2. Description of the Work tested or inspected.
 3. Date test or inspection results were transmitted to Architect.
 4. Identification of testing agency or special inspector conducting test or inspection.
- B. Maintain log at Project site. Post changes and revisions as they occur. Provide access to test and inspection log for Architect's reference during normal working hours.

3.2 REPAIR AND PROTECTION

- A. General: On completion of testing, inspecting, sample taking, and similar services, repair damaged construction and restore substrates and finishes.
1. Provide materials and comply with installation requirements specified in other Specification Sections or matching existing substrates and finishes. Restore patched areas and extend restoration into adjoining areas with durable seams that are as invisible as possible. Comply with the Contract Document requirements for cutting and patching in Section 01 7300 "Execution."
- B. Protect construction exposed by or for quality-control service activities.
- C. Repair and protection are Contractor's responsibility, regardless of the assignment of responsibility for quality-control services.

END OF SECTION 01 4000

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SECTION 01 4200 - REFERENCES

PART 1 - GENERAL

1.1 DEFINITIONS

- A. General: Basic Contract definitions are included in the Conditions of the Contract.
- B. "Approved": When used to convey Architect's action on Contractor's submittals, applications, and requests, "approved" is limited to Architect's duties and responsibilities as stated in the Conditions of the Contract.
- C. "Directed": A command or instruction by Architect. Other terms including "requested," "authorized," "selected," "required," and "permitted" have the same meaning as "directed."
- D. "Indicated": Requirements expressed by graphic representations or in written form on Drawings, in Specifications, and in other Contract Documents. Other terms including "shown," "noted," "scheduled," and "specified" have the same meaning as "indicated."
- E. "Regulations": Laws, ordinances, statutes, and lawful orders issued by authorities having jurisdiction, and rules, conventions, and agreements within the construction industry that control performance of the Work.
- F. "Furnish": Supply and deliver to Project site, ready for unloading, unpacking, assembly, installation, and similar operations.
- G. "Install": Operations at Project site including unloading, temporarily storing, unpacking, assembling, erecting, placing, anchoring, applying, working to dimension, finishing, curing, protecting, cleaning, and similar operations.
- H. "Provide": Furnish and install, complete and ready for the intended use.
- I. "Project Site": Space available for performing construction activities. The extent of Project site is shown on Drawings and may or may not be identical with the description of the land on which Project is to be built.

1.2 INDUSTRY STANDARDS

- A. Applicability of Standards: Unless the Contract Documents include more stringent requirements, applicable construction industry standards have the same force and effect as if bound or copied directly into the Contract Documents to the extent referenced. Such standards are made a part of the Contract Documents by reference.
- B. Publication Dates: Comply with standards in effect as of date of the Contract Documents unless otherwise indicated.
- C. Copies of Standards: Each entity engaged in construction on Project should be familiar with industry standards applicable to its construction activity. Copies of applicable standards are not bound with the Contract Documents.
 - 1. Where copies of standards are needed to perform a required construction activity, obtain copies directly from publication source.

1.3 ABBREVIATIONS AND ACRONYMS

- A. Industry Organizations: Where abbreviations and acronyms are used in Specifications or other Contract Documents, they shall mean the recognized name of the entities indicated in Thomson Gale's "Encyclopedia of Associations" or in Columbia Books' "National Trade & Professional Associations of the U.S."

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 01 4200

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SECTION 01 5000 - TEMPORARY FACILITIES AND CONTROLS

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes requirements for temporary utilities, support facilities, and security and protection facilities.
- B. Related Requirements:
 - 1. Section 01 1000 "Summary" for work restrictions and limitations on utility interruptions.

1.2 USE CHARGES

- A. General: Installation and removal of and use charges for temporary facilities shall be included in the Contract Sum unless otherwise indicated. Allow other entities to use temporary services and facilities without cost, including, but not limited to, Owner's construction forces, Architect, testing agencies, and authorities having jurisdiction.

1.3 INFORMATIONAL SUBMITTALS

- A. Site Plan: Show temporary facilities, utility hookups, staging areas, and parking areas for construction personnel.
- B. Erosion- and Sedimentation-Control Plan: Show compliance with requirements of EPA Construction General Permit or authorities having jurisdiction, whichever is more stringent.
- C. Fire-Safety Program: Show compliance with requirements of NFPA 241 and authorities having jurisdiction. Indicate Contractor personnel responsible for management of fire prevention program.

1.4 QUALITY ASSURANCE

- A. Electric Service: Comply with NECA, NEMA, and UL standards and regulations for temporary electric service. Install service to comply with NFPA 70.
- B. Tests and Inspections: Arrange for authorities having jurisdiction to test and inspect each temporary utility before use. Obtain required certifications and permits.
- C. Accessible Temporary Egress: Comply with applicable provisions in the U.S. Architectural & Transportation Barriers Compliance Board's ADA-ABA Accessibility Guidelines and ICC/ANSI A117.1.

1.5 PROJECT CONDITIONS

- A. Temporary Use of Permanent Facilities: Engage Installer of each permanent service to assume responsibility for operation, maintenance, and protection of each permanent service during its use as a construction facility before Owner's acceptance, regardless of previously assigned responsibilities.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. Chain-Link Fencing: Minimum 2-inch, 0.148-inch- thick, galvanized-steel, chain-link fabric fencing; minimum 6 feet high with galvanized-steel pipe posts; minimum 2-3/8-inch- OD line posts and 2-7/8-inch- OD corner and pull posts, with 1-5/8-inch- OD top rails.
- B. Portable Chain-Link Fencing: Minimum 2-inch, 0.148-inch- thick, galvanized-steel, chain-link fabric fencing; minimum 6 feet high with galvanized-steel pipe posts; minimum 2-3/8-inch- OD line posts and 2-7/8-inch- OD corner and pull posts, with 1-5/8-inch- OD top and bottom rails. Provide galvanized-steel bases for supporting posts.

2.2 TEMPORARY FACILITIES

- A. Field Offices, General: Prefabricated or mobile units with serviceable finishes, temperature controls, and foundations adequate for normal loading.
- B. Common-Use Field Office: Of sufficient size to accommodate needs of Owner, Architect, and construction personnel office activities and to accommodate Project meetings specified in other Division 01 Sections. Keep office clean and orderly.
- C. Storage and Fabrication Sheds: Provide sheds sized, furnished, and equipped to accommodate materials and equipment for construction operations.

2.3 EQUIPMENT

- A. Fire Extinguishers: Portable, UL rated; with class and extinguishing agent as required by locations and classes of fire exposures.
- B. HVAC Equipment: Unless Owner authorizes use of permanent HVAC system, provide vented, self-contained, liquid-propane-gas or fuel-oil heaters with individual space thermostatic control.
 - 1. Use of gasoline-burning space heaters, open-flame heaters, or salamander-type heating units is prohibited.
 - 2. Heating Units: Listed and labeled for type of fuel being consumed, by a qualified testing agency acceptable to authorities having jurisdiction, and marked for intended location and application.
 - 3. Permanent HVAC System: If Owner authorizes use of permanent HVAC system for temporary use during construction, provide filter with MERV of 8 at each return-air grille in system and remove at end of construction and clean HVAC system as required in Section 01 7700 "Closeout Procedures".

PART 3 - EXECUTION

3.1 INSTALLATION, GENERAL

- A. Locate facilities where they will serve Project adequately and result in minimum interference with performance of the Work. Relocate and modify facilities as required by progress of the Work.
 - 1. Locate facilities to limit site disturbance as specified in Section 01 1000 "Summary."
- B. Provide each facility ready for use when needed to avoid delay. Do not remove until facilities are no longer needed or are replaced by authorized use of completed permanent facilities.

3.2 TEMPORARY UTILITY INSTALLATION

- A. General: Install temporary service or connect to existing service.
 - 1. Arrange with utility company, Owner, and existing users for time when service can be interrupted, if necessary, to make connections for temporary services.
- B. Sewers and Drainage: Provide temporary utilities to remove effluent lawfully.
 - 1. Connect temporary sewers to municipal system as directed by authorities having jurisdiction.
- C. Water Service: Install water service and distribution piping in sizes and pressures adequate for construction.
- D. Sanitary Facilities: Provide temporary toilets, wash facilities, and drinking water for use of construction personnel. Comply with requirements of authorities having jurisdiction for type, number, location, operation, and maintenance of fixtures and facilities.
- E. Heating: Provide temporary heating required by construction activities for curing or drying of completed installations or for protecting installed construction from adverse effects of low temperatures or high humidity. Select equipment that will not have a harmful effect on completed installations or elements being installed.
- F. Ventilation and Humidity Control: Provide temporary ventilation required by construction activities for curing or drying of completed installations or for protecting installed construction from adverse effects of high humidity.

Select equipment that will not have a harmful effect on completed installations or elements being installed. Coordinate ventilation requirements to produce ambient condition required and minimize energy consumption.

- G. Electric Power Service: Provide electric power service and distribution system of sufficient size, capacity, and power characteristics required for construction operations.
 - 1. Install electric power service underground unless otherwise indicated.
- H. Lighting: Provide temporary lighting with local switching that provides adequate illumination for construction operations, observations, inspections, and traffic conditions.
 - 1. Install and operate temporary lighting that fulfills security and protection requirements without operating entire system.
- I. Telephone Service: Provide temporary telephone service in common-use facilities for use by all construction personnel. Install one telephone line(s) for each field office.
 - 1. Provide additional telephone lines for the following:
 - a. Provide a dedicated telephone line for each facsimile machine in each field office.
 - 2. At each telephone, post a list of important telephone numbers.
 - a. Police and fire departments.
 - b. Ambulance service.
 - c. Contractor's home office.
 - d. Contractor's emergency after-hours telephone number.
 - e. Architect's office.
 - f. Engineers' offices.
 - g. Owner's office.
 - h. Principal subcontractors' field and home offices.
 - 3. Provide superintendent with cellular telephone or portable two-way radio for use when away from field office.
- J. Electronic Communication Service: Provide a desktop computer in the primary field office adequate for use by Architect and Owner to access project electronic documents and maintain electronic communications. Equip computer with not less than the following:
 - 1. Processor: Intel Pentium D or Intel CoreDuo, 3.0 GHz processing speed.
 - 2. Memory: 4 gigabyte.
 - 3. Disk Storage: 300 gigabyte hard-disk drive and combination DVD-RW/CD-RW drive.
 - 4. Display: 22-inch LCD monitor with 128 Mb dedicated video RAM.
 - 5. Network Connectivity: 10/100BaseT Ethernet.
 - 6. Productivity Software:
 - a. Microsoft Office Professional, XP or higher, including Word, Excel, and Outlook.
 - b. Adobe Reader 7.0 or higher.
 - c. WinZip 7.0 or higher.
 - 7. Printer: "All-in-one" unit equipped with printer server, combining color printing, photocopying, scanning, and faxing, or separate units for each of these three functions.
 - 8. Internet Service: Broadband modem, router and ISP, equipped with hardware firewall, providing minimum 384 Kbps upload and 1 Mbps download speeds at each computer.
 - 9. Internet Security: Integrated software, providing software firewall, virus, spyware, phishing, and spam protection in a combined application.

3.3 SUPPORT FACILITIES INSTALLATION

- A. General: Comply with the following:
 - 1. Provide construction for temporary offices, shops, and sheds located within construction area or within 30 feet of building lines that is noncombustible according to ASTM E 136. Comply with NFPA 241.
 - 2. Maintain support facilities until Architect schedules Substantial Completion inspection. Remove before Substantial Completion. Personnel remaining after Substantial Completion will be permitted to use permanent facilities, under conditions acceptable to Owner.
- B. Temporary Roads and Paved Areas: Construct and maintain temporary roads and paved areas adequate for construction operations. Locate temporary roads and paved areas within construction limits indicated on Drawings.
 - 1. Provide dust-control treatment that is nonpolluting and nontracking. Reapply treatment as required to minimize dust.

- C. Temporary Use of Permanent Roads and Paved Areas: Locate temporary roads and paved areas in same location as permanent roads and paved areas. Construct and maintain temporary roads and paved areas adequate for construction operations. Extend temporary roads and paved areas, within construction limits indicated, as necessary for construction operations.
 - 1. Coordinate elevations of temporary roads and paved areas with permanent roads and paved areas.
 - 2. Prepare subgrade and install subbase and base for temporary roads and paved areas according to Section 31 2000 "Earth Moving."
 - 3. Recondition base after temporary use, including removing contaminated material, regrading, proofrolling, compacting, and testing.
 - 4. Delay installation of final course of permanent hot-mix asphalt pavement until immediately before Substantial Completion. Repair hot-mix asphalt base-course pavement before installation of final course according to Section 32 1216 "Asphalt Paving."
- D. Traffic Controls: Comply with requirements of authorities having jurisdiction.
 - 1. Protect existing site improvements to remain including curbs, pavement, and utilities.
 - 2. Maintain access for fire-fighting equipment and access to fire hydrants.
- E. Parking: Provide temporary parking areas for construction personnel.
- F. Dewatering Facilities and Drains: Comply with requirements of authorities having jurisdiction. Maintain Project site, excavations, and construction free of water.
 - 1. Dispose of rainwater in a lawful manner that will not result in flooding Project or adjoining properties or endanger permanent Work or temporary facilities.
 - 2. Remove snow and ice as required to minimize accumulations.
- G. Project Signs: Provide Project signs. Unauthorized signs are not permitted.
 - 1. Identification Signs: Provide Project identification signs.
 - 2. Temporary Signs: Provide other signs as indicated and as required to inform public and individuals seeking entrance to Project.
 - a. Provide temporary, directional signs for construction personnel and visitors.
 - 3. Maintain and touchup signs so they are legible at all times.
- H. Waste Disposal Facilities: Provide waste-collection containers in sizes adequate to handle waste from construction operations. Comply with requirements of authorities having jurisdiction. Comply with progress cleaning requirements in Section 01 7300 "Execution."
- I. Lifts and Hoists: Provide facilities necessary for hoisting materials and personnel.
 - 1. Truck cranes and similar devices used for hoisting materials are considered "tools and equipment" and not temporary facilities.
- J. Temporary Elevator Use: Use of elevators is not permitted.
- K. Temporary Stairs: Until permanent stairs are available, provide temporary stairs where ladders are not adequate.
- L. Temporary Use of Permanent Stairs: Use of new stairs for construction traffic will be permitted, provided stairs are protected and finishes restored to new condition at time of Substantial Completion.

3.4 SECURITY AND PROTECTION FACILITIES INSTALLATION

- A. Protection of Existing Facilities: Protect existing vegetation, equipment, structures, utilities, and other improvements at Project site and on adjacent properties, except those indicated to be removed or altered. Repair damage to existing facilities.
- B. Environmental Protection: Provide protection, operate temporary facilities, and conduct construction as required to comply with environmental regulations and that minimize possible air, waterway, and subsoil contamination or pollution or other undesirable effects.
- C. Temporary Erosion and Sedimentation Control: Provide measures to prevent soil erosion and discharge of soil-bearing water runoff and airborne dust to undisturbed areas and to adjacent properties and walkways, according to

erosion- and sedimentation-control Drawings and requirements of 2003 EPA Construction General Permit or authorities having jurisdiction, whichever is more stringent.

- D. Stormwater Control: Comply with requirements of authorities having jurisdiction. Provide barriers in and around excavations and subgrade construction to prevent flooding by runoff of stormwater from heavy rains.
- E. Tree and Plant Protection: Install temporary fencing located as indicated or outside the drip line of trees to protect vegetation from damage from construction operations. Protect tree root systems from damage, flooding, and erosion.
- F. Pest Control: Engage pest-control service to recommend practices to minimize attraction and harboring of rodents, roaches, and other pests and to perform extermination and control procedures at regular intervals so Project will be free of pests and their residues at Substantial Completion. Perform control operations lawfully, using environmentally safe materials.
- G. Site Enclosure Fence: Before construction operations begin, furnish and install site enclosure fence in a manner that will prevent people and animals from easily entering site except by entrance gates.
 - 1. Extent of Fence: As required to enclose entire Project site or portion determined sufficient to accommodate construction operations.
 - 2. Maintain security by limiting number of keys and restricting distribution to authorized personnel.
- H. Security Enclosure and Lockup: Install temporary enclosure around partially completed areas of construction. Provide lockable entrances to prevent unauthorized entrance, vandalism, theft, and similar violations of security. Lock entrances at end of each work day.
- I. Barricades, Warning Signs, and Lights: Comply with requirements of authorities having jurisdiction for erecting structurally adequate barricades, including warning signs and lighting.
- J. Temporary Egress: Maintain temporary egress from existing occupied facilities as indicated and as required by authorities having jurisdiction.
- K. Temporary Enclosures: Provide temporary enclosures for protection of construction, in progress and completed, from exposure, foul weather, other construction operations, and similar activities. Provide temporary weathertight enclosure for building exterior.
 - 1. Where heating or cooling is needed and permanent enclosure is not complete, insulate temporary enclosures.
- L. Temporary Fire Protection: Install and maintain temporary fire-protection facilities of types needed to protect against reasonably predictable and controllable fire losses. Comply with NFPA 241; manage fire prevention program.
 - 1. Prohibit smoking in construction areas.
 - 2. Supervise welding operations, combustion-type temporary heating units, and similar sources of fire ignition according to requirements of authorities having jurisdiction.
 - 3. Develop and supervise an overall fire-prevention and -protection program for personnel at Project site. Review needs with local fire department and establish procedures to be followed. Instruct personnel in methods and procedures. Post warnings and information.
 - 4. Provide temporary standpipes and hoses for fire protection. Hang hoses with a warning sign stating that hoses are for fire-protection purposes only and are not to be removed. Match hose size with outlet size and equip with suitable nozzles.

3.5 MOISTURE AND MOLD CONTROL

- A. Contractor's Moisture Protection Plan: Avoid trapping water in finished work. Document visible signs of mold that may appear during construction.
- B. Exposed Construction Phase: Before installation of weather barriers, when materials are subject to wetting and exposure and to airborne mold spores, protect materials from water damage and keep porous and organic materials from coming into prolonged contact with concrete.
- C. Partially Enclosed Construction Phase: After installation of weather barriers but before full enclosure and conditioning of building, when installed materials are still subject to infiltration of moisture and ambient mold spores, protect as follows:

1. Do not load or install drywall or other porous materials or components, or items with high organic content, into partially enclosed building.
 2. Keep interior spaces reasonably clean and protected from water damage.
 3. Discard or replace water-damaged and wet material.
 4. Discard, replace, or clean stored or installed material that begins to grow mold.
 5. Perform work in a sequence that allows any wet materials adequate time to dry before enclosing the material in drywall or other interior finishes.
- D. Controlled Construction Phase of Construction: After completing and sealing of the building enclosure but prior to the full operation of permanent HVAC systems, maintain as follows:
1. Control moisture and humidity inside building by maintaining effective dry-in conditions.
 2. Remove materials that can not be completely restored to their manufactured moisture level within 48 hours.

3.6 OPERATION, TERMINATION, AND REMOVAL

- A. Supervision: Enforce strict discipline in use of temporary facilities. To minimize waste and abuse, limit availability of temporary facilities to essential and intended uses.
- B. Maintenance: Maintain facilities in good operating condition until removal.
1. Maintain operation of temporary enclosures, heating, cooling, humidity control, ventilation, and similar facilities on a 24-hour basis where required to achieve indicated results and to avoid possibility of damage.
- C. Temporary Facility Changeover: Do not change over from using temporary security and protection facilities to permanent facilities until Substantial Completion.
- D. Termination and Removal: Remove each temporary facility when need for its service has ended, when it has been replaced by authorized use of a permanent facility, or no later than Substantial Completion. Complete or, if necessary, restore permanent construction that may have been delayed because of interference with temporary facility. Repair damaged Work, clean exposed surfaces, and replace construction that cannot be satisfactorily repaired.
1. Materials and facilities that constitute temporary facilities are property of Contractor. Owner reserves right to take possession of Project identification signs.
 2. At Substantial Completion, repair, renovate, and clean permanent facilities used during construction period. Comply with final cleaning requirements specified in Section 01 7700 "Closeout Procedures."

END OF SECTION 01 5000

SECTION 01 6000 - PRODUCT REQUIREMENTS

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes administrative and procedural requirements for selection of products for use in Project; product delivery, storage, and handling; manufacturers' standard warranties on products; special warranties; and comparable products.
- B. Related Requirements:
 - 1. Section 01 2500 "Substitution Procedures" for requests for substitutions.

1.2 DEFINITIONS

- A. Products: Items obtained for incorporating into the Work, whether purchased for Project or taken from previously purchased stock. The term "product" includes the terms "material," "equipment," "system," and terms of similar intent.
 - 1. Named Products: Items identified by manufacturer's product name, including make or model number or other designation shown or listed in manufacturer's published product literature, that is current as of date of the Contract Documents.
 - 2. New Products: Items that have not previously been incorporated into another project or facility. Products salvaged or recycled from other projects are not considered new products.
 - 3. Comparable Product: Product that is demonstrated and approved through submittal process to have the indicated qualities related to type, function, dimension, in-service performance, physical properties, appearance, and other characteristics that equal or exceed those of specified product.
- B. Basis-of-Design Product Specification: A specification in which a specific manufacturer's product is named and accompanied by the words "basis-of-design product," including make or model number or other designation, to establish the significant qualities related to type, function, dimension, in-service performance, physical properties, appearance, and other characteristics for purposes of evaluating comparable products of additional manufacturers named in the specification.

1.3 ACTION SUBMITTALS

- A. Comparable Product Requests: Submit request for consideration of each comparable product. Identify product or fabrication or installation method to be replaced. Include Specification Section number and title and Drawing numbers and titles.
 - 1. Architect's Action: If necessary, Architect will request additional information or documentation for evaluation within one week of receipt of a comparable product request. Architect will notify Contractor of approval or rejection of proposed comparable product request within 15 days of receipt of request, or seven days of receipt of additional information or documentation, whichever is later.
 - a. Form of Approval: As specified in Section 01 3300 "Submittal Procedures."
 - b. Use product specified if Architect does not issue a decision on use of a comparable product request within time allocated.
- B. Basis-of-Design Product Specification Submittal: Comply with requirements in Section 01 3300 "Submittal Procedures." Show compliance with requirements.

1.4 QUALITY ASSURANCE

- A. Compatibility of Options: If Contractor is given option of selecting between two or more products for use on Project, select product compatible with products previously selected, even if previously selected products were also options.

1.5 PRODUCT DELIVERY, STORAGE, AND HANDLING

- A. Deliver, store, and handle products using means and methods that will prevent damage, deterioration, and loss, including theft and vandalism. Comply with manufacturer's written instructions.

- B. Delivery and Handling:
 - 1. Schedule delivery to minimize long-term storage at Project site and to prevent overcrowding of construction spaces.
 - 2. Coordinate delivery with installation time to ensure minimum holding time for items that are flammable, hazardous, easily damaged, or sensitive to deterioration, theft, and other losses.
 - 3. Deliver products to Project site in an undamaged condition in manufacturer's original sealed container or other packaging system, complete with labels and instructions for handling, storing, unpacking, protecting, and installing.
 - 4. Inspect products on delivery to determine compliance with the Contract Documents and to determine that products are undamaged and properly protected.
- C. Storage:
 - 1. Store products to allow for inspection and measurement of quantity or counting of units.
 - 2. Store materials in a manner that will not endanger Project structure.
 - 3. Store products that are subject to damage by the elements, under cover in a weathertight enclosure above ground, with ventilation adequate to prevent condensation.
 - 4. Protect foam plastic from exposure to sunlight, except to extent necessary for period of installation and concealment.
 - 5. Comply with product manufacturer's written instructions for temperature, humidity, ventilation, and weather-protection requirements for storage.
 - 6. Protect stored products from damage and liquids from freezing.

1.6 PRODUCT WARRANTIES

- A. Warranties specified in other Sections shall be in addition to, and run concurrent with, other warranties required by the Contract Documents. Manufacturer's disclaimers and limitations on product warranties do not relieve Contractor of obligations under requirements of the Contract Documents.
 - 1. Manufacturer's Warranty: Written warranty furnished by individual manufacturer for a particular product and specifically endorsed by manufacturer to Owner.
 - 2. Special Warranty: Written warranty required by the Contract Documents to provide specific rights for Owner.
- B. Special Warranties: Prepare a written document that contains appropriate terms and identification, ready for execution.
 - 1. Manufacturer's Standard Form: Modified to include Project-specific information and properly executed.
 - 2. Specified Form: When specified forms are included with the Specifications, prepare a written document using indicated form properly executed.
 - 3. Refer to other Sections for specific content requirements and particular requirements for submitting special warranties.
- C. Submittal Time: Comply with requirements in Section 01 7700 "Closeout Procedures."

PART 2 - PRODUCTS

2.1 PRODUCT SELECTION PROCEDURES

- A. General Product Requirements: Provide products that comply with the Contract Documents, are undamaged and, unless otherwise indicated, are new at time of installation.
 - 1. Provide products complete with accessories, trim, finish, fasteners, and other items needed for a complete installation and indicated use and effect.
 - 2. Standard Products: If available, and unless custom products or nonstandard options are specified, provide standard products of types that have been produced and used successfully in similar situations on other projects.
 - 3. Owner reserves the right to limit selection to products with warranties not in conflict with requirements of the Contract Documents.
 - 4. Where products are accompanied by the term "as selected," Architect will make selection.
 - 5. Descriptive, performance, and reference standard requirements in the Specifications establish salient characteristics of products.
- B. Product Selection Procedures:

1. Product: Where Specifications name a single manufacturer and product, provide the named product that complies with requirements. Comparable products or substitutions for Contractor's convenience will not be considered.
 2. Manufacturer/Source: Where Specifications name a single manufacturer or source, provide a product by the named manufacturer or source that complies with requirements. Comparable products or substitutions for Contractor's convenience will not be considered.
 3. Products:
 - a. Restricted List: Where Specifications include a list of names of both manufacturers and products, provide one of the products listed that complies with requirements. Comparable products or substitutions for Contractor's convenience will not be considered unless otherwise indicated.
 - b. Nonrestricted List: Where Specifications include a list of names of both available manufacturers and products, provide one of the products listed, or an unnamed product, that complies with requirements. Comply with requirements in "Comparable Products" Article for consideration of an unnamed product.
 4. Manufacturers:
 - a. Restricted List: Where Specifications include a list of manufacturers' names, provide a product by one of the manufacturers listed that complies with requirements. Comparable products or substitutions for Contractor's convenience will not be considered unless otherwise indicated.
 - b. Nonrestricted List: Where Specifications include a list of available manufacturers, provide a product by one of the manufacturers listed, or a product by an unnamed manufacturer, that complies with requirements. Comply with requirements in "Comparable Products" Article for consideration of an unnamed manufacturer's product.
 5. Basis-of-Design Product: Where Specifications name a product, or refer to a product indicated on Drawings, and include a list of manufacturers, provide the specified or indicated product or a comparable product by one of the other named manufacturers. Drawings and Specifications indicate sizes, profiles, dimensions, and other characteristics that are based on the product named. Comply with requirements in "Comparable Products" Article for consideration of an unnamed product by one of the other named manufacturers.
- C. Visual Matching Specification: Where Specifications require "match Architect's sample", provide a product that complies with requirements and matches Architect's sample. Architect's decision will be final on whether a proposed product matches.
1. If no product available within specified category matches and complies with other specified requirements, comply with requirements in Section 01 2500 "Substitution Procedures" for proposal of product.
- D. Visual Selection Specification: Where Specifications include the phrase "as selected by Architect from manufacturer's full range" or similar phrase, select a product that complies with requirements. Architect will select color, gloss, pattern, density, or texture from manufacturer's product line that includes both standard and premium items.

2.2 COMPARABLE PRODUCTS

- A. Conditions for Consideration: Architect will consider Contractor's request for comparable product when the following conditions are satisfied. If the following conditions are not satisfied, Architect may return requests without action, except to record noncompliance with these requirements:
1. Evidence that the proposed product does not require revisions to the Contract Documents, that it is consistent with the Contract Documents and will produce the indicated results, and that it is compatible with other portions of the Work.
 2. Detailed comparison of significant qualities of proposed product with those named in the Specifications. Significant qualities include attributes such as performance, weight, size, durability, visual effect, and specific features and requirements indicated.
 3. Evidence that proposed product provides specified warranty.
 4. List of similar installations for completed projects with project names and addresses and names and addresses of architects and owners, if requested.
 5. Samples, if requested.

PART 3 - EXECUTION (Not Used)

END OF SECTION 01 6000

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SECTION 01 7300 - EXECUTION

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes general administrative and procedural requirements governing execution of the Work including, but not limited to, the following:
 - 1. Construction layout.
 - 2. Field engineering and surveying.
 - 3. Installation of the Work.
 - 4. Cutting and patching.
 - 5. Coordination of Owner-installed products.
 - 6. Progress cleaning.
 - 7. Starting and adjusting.
 - 8. Protection of installed construction.
 - 9. Correction of the Work.
- B. Related Requirements:
 - 1. Section 01 1000 "Summary" for limits on use of Project site.
 - 2. Section 01 7700 "Closeout Procedures" for submitting final property survey with Project Record Documents, recording of Owner-accepted deviations from indicated lines and levels, and final cleaning.
 - 3. Section 07 8413 "Penetration Firestopping" for patching penetrations in fire-rated construction.

1.2 INFORMATIONAL SUBMITTALS

- A. Certificates: Submit certificate signed by land surveyor certifying that location and elevation of improvements comply with requirements.
- B. Landfill Receipts: Submit copy of receipts issued by a landfill facility, licensed to accept hazardous materials, for hazardous waste disposal.
- C. Certified Surveys: Submit two copies signed by land surveyor.
- D. Final Property Survey: Submit 10 copies showing the Work performed and record survey data.

1.3 QUALITY ASSURANCE

- A. Land Surveyor Qualifications: A professional land surveyor who is legally qualified to practice in jurisdiction where Project is located and who is experienced in providing land-surveying services of the kind indicated.
- B. Cutting and Patching: Comply with requirements for and limitations on cutting and patching of construction elements.
 - 1. Structural Elements: When cutting and patching structural elements, notify Architect of locations and details of cutting and await directions from Architect before proceeding. Shore, brace, and support structural element during cutting and patching. Do not cut and patch structural elements in a manner that could change their load-carrying capacity or increase deflection.
 - 2. Operational Elements: Do not cut and patch operating elements and related components in a manner that results in reducing their capacity to perform as intended or that results in increased maintenance or decreased operational life or safety.
 - 3. Other Construction Elements: Do not cut and patch other construction elements or components in a manner that could change their load-carrying capacity, that results in reducing their capacity to perform as intended, or that results in increased maintenance or decreased operational life or safety.
 - 4. Visual Elements: Do not cut and patch construction in a manner that results in visual evidence of cutting and patching. Do not cut and patch exposed construction in a manner that would, in Architect's opinion, reduce the building's aesthetic qualities. Remove and replace construction that has been cut and patched in a visually unsatisfactory manner.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. General: Comply with requirements specified in other Sections.
- B. In-Place Materials: Use materials for patching identical to in-place materials. For exposed surfaces, use materials that visually match in-place adjacent surfaces to the fullest extent possible.
 - 1. If identical materials are unavailable or cannot be used, use materials that, when installed, will provide a match acceptable to Architect for the visual and functional performance of in-place materials.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Existing Conditions: The existence and location of underground and other utilities and construction indicated as existing are not guaranteed. Before beginning sitework, investigate and verify the existence and location of underground utilities, mechanical and electrical systems, and other construction affecting the Work.
 - 1. Before construction, verify the location and invert elevation at points of connection of sanitary sewer, storm sewer, and water-service piping; underground electrical services, and other utilities.
 - 2. Furnish location data for work related to Project that must be performed by public utilities serving Project site.
- B. Examination and Acceptance of Conditions: Before proceeding with each component of the Work, examine substrates, areas, and conditions, with Installer or Applicator present where indicated, for compliance with requirements for installation tolerances and other conditions affecting performance. Record observations.
 - 1. Examine roughing-in for mechanical and electrical systems to verify actual locations of connections before equipment and fixture installation.
 - 2. Examine walls, floors, and roofs for suitable conditions where products and systems are to be installed.
 - 3. Verify compatibility with and suitability of substrates, including compatibility with existing finishes or primers.
- C. Proceed with installation only after unsatisfactory conditions have been corrected. Proceeding with the Work indicates acceptance of surfaces and conditions.

3.2 PREPARATION

- A. Existing Utility Information: Furnish information to local utility and Owner that is necessary to adjust, move, or relocate existing utility structures, utility poles, lines, services, or other utility appurtenances located in or affected by construction. Coordinate with authorities having jurisdiction.
- B. Field Measurements: Take field measurements as required to fit the Work properly. Recheck measurements before installing each product. Where portions of the Work are indicated to fit to other construction, verify dimensions of other construction by field measurements before fabrication. Coordinate fabrication schedule with construction progress to avoid delaying the Work.
- C. Space Requirements: Verify space requirements and dimensions of items shown diagrammatically on Drawings.
- D. Review of Contract Documents and Field Conditions: Immediately on discovery of the need for clarification of the Contract Documents caused by differing field conditions outside the control of Contractor, submit a request for information to Architect according to requirements in Section 01 3100 "Project Management and Coordination."

3.3 CONSTRUCTION LAYOUT

- A. Verification: Before proceeding to lay out the Work, verify layout information shown on Drawings, in relation to the property survey and existing benchmarks. If discrepancies are discovered, notify Architect promptly.
- B. General: Engage a land surveyor to lay out the Work using accepted surveying practices.
 - 1. Establish benchmarks and control points to set lines and levels at each story of construction and elsewhere as needed to locate each element of Project.

2. Establish limits on use of Project site.
 3. Establish dimensions within tolerances indicated. Do not scale Drawings to obtain required dimensions.
 4. Inform installers of lines and levels to which they must comply.
 5. Check the location, level and plumb, of every major element as the Work progresses.
 6. Notify Architect when deviations from required lines and levels exceed allowable tolerances.
 7. Close site surveys with an error of closure equal to or less than the standard established by authorities having jurisdiction.
- C. Site Improvements: Locate and lay out site improvements, including pavements, grading, fill and topsoil placement, utility slopes, and rim and invert elevations.
- D. Building Lines and Levels: Locate and lay out control lines and levels for structures, building foundations, column grids, and floor levels, including those required for mechanical and electrical work. Transfer survey markings and elevations for use with control lines and levels. Level foundations and piers from two or more locations.
- E. Record Log: Maintain a log of layout control work. Record deviations from required lines and levels. Include beginning and ending dates and times of surveys, weather conditions, name and duty of each survey party member, and types of instruments and tapes used. Make the log available for reference by Architect.

3.4 FIELD ENGINEERING

- A. Reference Points: Locate existing permanent benchmarks, control points, and similar reference points before beginning the Work. Preserve and protect permanent benchmarks and control points during construction operations.
- B. Benchmarks: Establish and maintain a minimum of two permanent benchmarks on Project site, referenced to data established by survey control points. Comply with authorities having jurisdiction for type and size of benchmark.
1. Record benchmark locations, with horizontal and vertical data, on Project Record Documents.
- C. Certified Survey: On completion of foundation walls, major site improvements, and other work requiring field-engineering services, prepare a certified survey showing dimensions, locations, angles, and elevations of construction and sitework.
- D. Final Property Survey: Engage a land surveyor to prepare a final property survey showing significant features (real property) for Project. Include on the survey a certification, signed by land surveyor, that principal metes, bounds, lines, and levels of Project are accurately positioned as shown on the survey.
1. Recording: At Substantial Completion, have the final property survey recorded by or with authorities having jurisdiction as the official "property survey."

3.5 INSTALLATION

- A. General: Locate the Work and components of the Work accurately, in correct alignment and elevation, as indicated.
1. Make vertical work plumb and make horizontal work level.
 2. Where space is limited, install components to maximize space available for maintenance and ease of removal for replacement.
 3. Conceal pipes, ducts, and wiring in finished areas unless otherwise indicated.
- B. Comply with manufacturer's written instructions and recommendations for installing products in applications indicated.
- C. Install products at the time and under conditions that will ensure the best possible results. Maintain conditions required for product performance until Substantial Completion.
- D. Conduct construction operations so no part of the Work is subjected to damaging operations or loading in excess of that expected during normal conditions of occupancy.
- E. Sequence the Work and allow adequate clearances to accommodate movement of construction items on site and placement in permanent locations.
- F. Tools and Equipment: Do not use tools or equipment that produce harmful noise levels.

- G. Templates: Obtain and distribute to the parties involved templates for work specified to be factory prepared and field installed. Check Shop Drawings of other work to confirm that adequate provisions are made for locating and installing products to comply with indicated requirements.
- H. Attachment: Provide blocking and attachment plates and anchors and fasteners of adequate size and number to securely anchor each component in place, accurately located and aligned with other portions of the Work. Where size and type of attachments are not indicated, verify size and type required for load conditions.
 - 1. Mounting Heights: Where mounting heights are not indicated, mount components at heights directed by Architect.
 - 2. Allow for building movement, including thermal expansion and contraction.
 - 3. Coordinate installation of anchorages. Furnish setting drawings, templates, and directions for installing anchorages, including sleeves, concrete inserts, anchor bolts, and items with integral anchors, that are to be embedded in concrete or masonry. Deliver such items to Project site in time for installation.
- I. Joints: Make joints of uniform width. Where joint locations in exposed work are not indicated, arrange joints for the best visual effect. Fit exposed connections together to form hairline joints.
- J. Hazardous Materials: Use products, cleaners, and installation materials that are not considered hazardous.

3.6 CUTTING AND PATCHING

- A. Cutting and Patching, General: Employ skilled workers to perform cutting and patching. Proceed with cutting and patching at the earliest feasible time, and complete without delay.
 - 1. Cut in-place construction to provide for installation of other components or performance of other construction, and subsequently patch as required to restore surfaces to their original condition.
- B. Existing Warranties: Remove, replace, patch, and repair materials and surfaces cut or damaged during installation or cutting and patching operations, by methods and with materials so as not to void existing warranties.
- C. Temporary Support: Provide temporary support of work to be cut.
- D. Protection: Protect in-place construction during cutting and patching to prevent damage. Provide protection from adverse weather conditions for portions of Project that might be exposed during cutting and patching operations.
- E. Adjacent Occupied Areas: Avoid interference with use of adjoining areas or interruption of free passage to adjoining areas.
- F. Existing Utility Services and Mechanical/Electrical Systems: Where existing services/systems are required to be removed, relocated, or abandoned, bypass such services/systems before cutting to minimize interruption to occupied areas.
- G. Cutting: Cut in-place construction by sawing, drilling, breaking, chipping, grinding, and similar operations, including excavation, using methods least likely to damage elements retained or adjoining construction. If possible, review proposed procedures with original Installer; comply with original Installer's written recommendations.
 - 1. In general, use hand or small power tools designed for sawing and grinding, not hammering and chopping. Cut holes and slots neatly to minimum size required, and with minimum disturbance of adjacent surfaces. Temporarily cover openings when not in use.
 - 2. Finished Surfaces: Cut or drill from the exposed or finished side into concealed surfaces.
 - 3. Concrete and Masonry: Cut using a cutting machine, such as an abrasive saw or a diamond-core drill.
 - 4. Excavating and Backfilling: Comply with requirements in applicable Sections where required by cutting and patching operations.
 - 5. Mechanical and Electrical Services: Cut off pipe or conduit in walls or partitions to be removed. Cap, valve, or plug and seal remaining portion of pipe or conduit to prevent entrance of moisture or other foreign matter after cutting.
 - 6. Proceed with patching after construction operations requiring cutting are complete.
- H. Patching: Patch construction by filling, repairing, refinishing, closing up, and similar operations following performance of other work. Patch with durable seams that are as invisible as practicable. Provide materials and comply with installation requirements specified in other Sections, where applicable.

1. Inspection: Where feasible, test and inspect patched areas after completion to demonstrate physical integrity of installation.
 2. Exposed Finishes: Restore exposed finishes of patched areas and extend finish restoration into retained adjoining construction in a manner that will minimize evidence of patching and refinishing.
 3. Floors and Walls: Where walls or partitions that are removed extend one finished area into another, patch and repair floor and wall surfaces in the new space. Provide an even surface of uniform finish, color, texture, and appearance. Remove in-place floor and wall coverings and replace with new materials, if necessary, to achieve uniform color and appearance.
 4. Ceilings: Patch, repair, or rehang in-place ceilings as necessary to provide an even-plane surface of uniform appearance.
 5. Exterior Building Enclosure: Patch components in a manner that restores enclosure to a weathertight condition and ensures thermal and moisture integrity of building enclosure.
- I. Cleaning: Clean areas and spaces where cutting and patching are performed. Remove paint, mortar, oils, putty, and similar materials from adjacent finished surfaces.

3.7 PROGRESS CLEANING

- A. General: Clean Project site and work areas daily, including common areas. Enforce requirements strictly. Dispose of materials lawfully.
1. Comply with requirements in NFPA 241 for removal of combustible waste materials and debris.
 2. Do not hold waste materials more than seven days during normal weather or three days if the temperature is expected to rise above 80 deg F.
 3. Containerize hazardous and unsanitary waste materials separately from other waste. Mark containers appropriately and dispose of legally, according to regulations.
- B. Site: Maintain Project site free of waste materials and debris.
- C. Work Areas: Clean areas where work is in progress to the level of cleanliness necessary for proper execution of the Work.
1. Remove liquid spills promptly.
 2. Where dust would impair proper execution of the Work, broom-clean or vacuum the entire work area, as appropriate.
- D. Installed Work: Keep installed work clean. Clean installed surfaces according to written instructions of manufacturer or fabricator of product installed, using only cleaning materials specifically recommended. If specific cleaning materials are not recommended, use cleaning materials that are not hazardous to health or property and that will not damage exposed surfaces.
- E. Concealed Spaces: Remove debris from concealed spaces before enclosing the space.
- F. Exposed Surfaces in Finished Areas: Clean exposed surfaces and protect as necessary to ensure freedom from damage and deterioration at time of Substantial Completion.
- G. Waste Disposal: Do not bury or burn waste materials on-site. Do not wash waste materials down sewers or into waterways.
- H. During handling and installation, clean and protect construction in progress and adjoining materials already in place. Apply protective covering where required to ensure protection from damage or deterioration at Substantial Completion.
- I. Clean and provide maintenance on completed construction as frequently as necessary through the remainder of the construction period. Adjust and lubricate operable components to ensure operability without damaging effects.
- J. Limiting Exposures: Supervise construction operations to assure that no part of the construction, completed or in progress, is subject to harmful, dangerous, damaging, or otherwise deleterious exposure during the construction period.

3.8 STARTING AND ADJUSTING

- A. Start equipment and operating components to confirm proper operation. Remove malfunctioning units, replace with new units, and retest.
- B. Adjust equipment for proper operation. Adjust operating components for proper operation without binding.
- C. Test each piece of equipment to verify proper operation. Test and adjust controls and safeties. Replace damaged and malfunctioning controls and equipment.
- D. Manufacturer's Field Service: Comply with qualification requirements in Section 01 4000 "Quality Requirements"

3.9 PROTECTION OF INSTALLED CONSTRUCTION

- A. Provide final protection and maintain conditions that ensure installed Work is without damage or deterioration at time of Substantial Completion.
- B. Comply with manufacturer's written instructions for temperature and relative humidity.

END OF SECTION 01 7300

SECTION 01 7419 - CONSTRUCTION WASTE MANAGEMENT AND DISPOSAL

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes administrative and procedural requirements for the following:
 - 1. Disposing of nonhazardous construction waste.
- B. Related Requirements:
 - 1. Section 04 4313.13 "Anchored Stone Masonry Veneer" for disposal requirements for excess stone and stone waste.
 - 2. Section 31 1000 "Site Clearing" for disposition of waste resulting from site clearing and removal of above- and below-grade improvements.

1.2 DEFINITIONS

- A. Construction Waste: Building and site improvement materials and other solid waste resulting from construction, remodeling, renovation, or repair operations. Construction waste includes packaging.
- B. Disposal: Removal off-site of demolition and construction waste and subsequent sale, recycling, reuse, or deposit in landfill or incinerator acceptable to authorities having jurisdiction.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 DISPOSAL OF WASTE

- A. General: Except for items or materials to be salvaged, recycled, or otherwise reused, remove waste materials from Project site and legally dispose of them in a landfill or incinerator acceptable to authorities having jurisdiction.
 - 1. Except as otherwise specified, do not allow waste materials that are to be disposed of accumulate on-site.
 - 2. Remove and transport debris in a manner that will prevent spillage on adjacent surfaces and areas.
- B. Burning: Do not burn waste materials.
- C. Disposal: Remove waste materials from Owner's property and legally dispose of them.

END OF SECTION 01 7419

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SECTION 01 7700 - CLOSEOUT PROCEDURES

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes administrative and procedural requirements for contract closeout, including, but not limited to, the following:
 - 1. Substantial Completion procedures.
 - 2. Final completion procedures.
 - 3. Warranties.
 - 4. Final cleaning.
 - 5. Repair of the Work.
- B. Related Requirements:
 - 1. Section 01 7823 "Operation and Maintenance Data" for operation and maintenance manual requirements.
 - 2. Section 01 7839 "Project Record Documents" for submitting record Drawings, record Specifications, and record Product Data.
 - 3. Section 01 7900 "Demonstration and Training" for requirements for instructing Owner's personnel.

1.2 ACTION SUBMITTALS

- A. Product Data: For cleaning agents.
- B. Contractor's List of Incomplete Items: Initial submittal at Substantial Completion.
- C. Certified List of Incomplete Items: Final submittal at Final Completion.

1.3 CLOSEOUT SUBMITTALS

- A. Certificates of Release: From authorities having jurisdiction.
- B. Certificate of Insurance: For continuing coverage.
- C. Field Report: For pest control inspection.

1.4 MAINTENANCE MATERIAL SUBMITTALS

- A. Schedule of Maintenance Material Items: For maintenance material submittal items specified in other Sections.

1.5 SUBSTANTIAL COMPLETION PROCEDURES

- A. Contractor's List of Incomplete Items: Prepare and submit a list of items to be completed and corrected (Contractor's punch list), indicating the value of each item on the list and reasons why the Work is incomplete.
- B. Submittals Prior to Substantial Completion: Complete the following a minimum of 10 days prior to requesting inspection for determining date of Substantial Completion. List items below that are incomplete at time of request.
 - 1. Certificates of Release: Obtain and submit releases from authorities having jurisdiction permitting Owner unrestricted use of the Work and access to services and utilities. Include occupancy permits, operating certificates, and similar releases.
 - 2. Submit closeout submittals specified in other Division 01 Sections, including project record documents, operation and maintenance manuals, final completion construction photographic documentation, damage or settlement surveys, property surveys, and similar final record information.
 - 3. Submit closeout submittals specified in individual Sections, including specific warranties, workmanship bonds, maintenance service agreements, final certifications, and similar documents.
 - 4. Submit maintenance material submittals specified in individual Sections, including tools, spare parts, extra materials, and similar items, and deliver to location designated by Architect. Label with manufacturer's name and model number where applicable.

- a. Schedule of Maintenance Material Items: Prepare and submit schedule of maintenance material submittal items, including name and quantity of each item and name and number of related Specification Section. Obtain Architect's signature for receipt of submittals.
- 5. Submit test/adjust/balance records.
- 6. Submit changeover information related to Owner's occupancy, use, operation, and maintenance.
- C. Procedures Prior to Substantial Completion: Complete the following a minimum of 10 days prior to requesting inspection for determining date of Substantial Completion. List items below that are incomplete at time of request.
 - 1. Advise Owner of pending insurance changeover requirements.
 - 2. Make final changeover of permanent locks and deliver keys to Owner. Advise Owner's personnel of changeover in security provisions.
 - 3. Complete startup and testing of systems and equipment.
 - 4. Perform preventive maintenance on equipment used prior to Substantial Completion.
 - 5. Instruct Owner's personnel in operation, adjustment, and maintenance of products, equipment, and systems. Submit demonstration and training video recordings specified in Section 01 7900 "Demonstration and Training."
 - 6. Advise Owner of changeover in heat and other utilities.
 - 7. Participate with Owner in conducting inspection and walkthrough with local emergency responders.
 - 8. Terminate and remove temporary facilities from Project site, along with mockups, construction tools, and similar elements.
 - 9. Complete final cleaning requirements, including touchup painting.
 - 10. Touch up and otherwise repair and restore marred exposed finishes to eliminate visual defects.
- D. Inspection: Submit a written request for inspection to determine Substantial Completion a minimum of 10 days prior to date the work will be completed and ready for final inspection and tests. On receipt of request, Architect will either proceed with inspection or notify Contractor of unfulfilled requirements. Architect will prepare the Certificate of Substantial Completion after inspection or will notify Contractor of items, either on Contractor's list or additional items identified by Architect, that must be completed or corrected before certificate will be issued.
 - 1. Reinspection: Request reinspection when the Work identified in previous inspections as incomplete is completed or corrected.
 - 2. Results of completed inspection will form the basis of requirements for final completion.

1.6 FINAL COMPLETION PROCEDURES

- A. Preliminary Procedures: Before requesting final inspection for determining final completion, complete the following:
 - 1. Submit a final Application for Payment according to Section 01 2900 "Payment Procedures."
 - 2. Certified List of Incomplete Items: Submit certified copy of Architect's Substantial Completion inspection list of items to be completed or corrected (punch list), endorsed and dated by Architect. Certified copy of the list shall state that each item has been completed or otherwise resolved for acceptance.
 - 3. Certificate of Insurance: Submit evidence of final, continuing insurance coverage complying with insurance requirements.
 - 4. Submit pest-control final inspection report and warranty.
 - 5. Instruct Owner's personnel in operation, adjustment, and maintenance of products, equipment, and systems.
- B. Inspection: Submit a written request for final inspection to determine acceptance. On receipt of request, Architect will either proceed with inspection or notify Contractor of unfulfilled requirements. Architect will prepare a final Certificate for Payment after inspection or will notify Contractor of construction that must be completed or corrected before certificate will be issued.
 - 1. Reinspection: Request reinspection when the Work identified in previous inspections as incomplete is completed or corrected.

1.7 LIST OF INCOMPLETE ITEMS (PUNCH LIST)

- A. Organization of List: Include name and identification of each space and area affected by construction operations for incomplete items and items needing correction including, if necessary, areas disturbed by Contractor that are outside the limits of construction.
 - 1. Organize list of spaces in sequential order, starting with exterior areas first and proceeding from lowest floor to highest floor.
 - 2. Organize items applying to each space by major element, including categories for ceiling, individual walls, floors, equipment, and building systems.
 - 3. Submit list of incomplete items in the following format:

- a. MS Excel electronic file. Architect will return annotated copy.
- b. PDF electronic file. Architect will return annotated copy.
- c. Three paper copies unless otherwise indicated. Architect will return two copies.

1.8 SUBMITTAL OF PROJECT WARRANTIES

- A. Time of Submittal: Submit written warranties on request of Architect for designated portions of the Work where commencement of warranties other than date of Substantial Completion is indicated, or when delay in submittal of warranties might limit Owner's rights under warranty.
- B. Organize warranty documents into an orderly sequence based on the table of contents of the Project Manual.
 - 1. Bind warranties and bonds in heavy-duty, three-ring, vinyl-covered, loose-leaf binders, thickness as necessary to accommodate contents, and sized to receive 8-1/2-by-11-inch paper.
 - 2. Provide heavy paper dividers with plastic-covered tabs for each separate warranty. Mark tab to identify the product or installation. Provide a typed description of the product or installation, including the name of the product and the name, address, and telephone number of Installer.
 - 3. Identify each binder on the front and spine with the typed or printed title "WARRANTIES," Project name, and name of Contractor.
 - 4. Warranty Electronic File: Scan warranties and bonds and assemble complete warranty and bond submittal package into a single indexed electronic PDF file with links enabling navigation to each item. Provide bookmarked table of contents at beginning of document.
- C. Provide additional copies of each warranty to include in operation and maintenance manuals.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. Cleaning Agents: Use cleaning materials and agents recommended by manufacturer or fabricator of the surface to be cleaned. Do not use cleaning agents that are potentially hazardous to health or property or that might damage finished surfaces.
 - 1. Use cleaning products that comply with Green Seal's GS-37, or if GS-37 is not applicable, use products that comply with the California Code of Regulations maximum allowable VOC levels.

PART 3 - EXECUTION

3.1 FINAL CLEANING

- A. General: Perform final cleaning. Conduct cleaning and waste-removal operations to comply with local laws and ordinances and Federal and local environmental and antipollution regulations.
- B. Cleaning: Employ experienced workers or professional cleaners for final cleaning. Clean each surface or unit to condition expected in an average commercial building cleaning and maintenance program. Comply with manufacturer's written instructions.
 - 1. Complete the following cleaning operations before requesting inspection for certification of Substantial Completion for entire Project or for a designated portion of Project:
 - a. Clean Project site, yard, and grounds, in areas disturbed by construction activities, including landscape development areas, of rubbish, waste material, litter, and other foreign substances.
 - b. Sweep paved areas broom clean. Remove petrochemical spills, stains, and other foreign deposits.
 - c. Rake grounds that are neither planted nor paved to a smooth, even-textured surface.
 - d. Remove tools, construction equipment, machinery, and surplus material from Project site.
 - e. Remove snow and ice to provide safe access to building.
 - f. Clean exposed exterior and interior hard-surfaced finishes to a dirt-free condition, free of stains, films, and similar foreign substances. Avoid disturbing natural weathering of exterior surfaces. Restore reflective surfaces to their original condition.
 - g. Remove debris and surface dust from limited access spaces, including roofs, plenums, shafts, trenches, equipment vaults, manholes, attics, and similar spaces.
 - h. Sweep concrete floors broom clean in unoccupied spaces.
 - i. Vacuum carpet and similar soft surfaces, removing debris and excess nap; clean according to manufacturer's recommendations if visible soil or stains remain.

- j. Clean transparent materials, including mirrors and glass in doors and windows. Remove glazing compounds and other noticeable, vision-obscuring materials. Replace chipped or broken glass and other damaged transparent materials. Polish mirrors and glass, taking care not to scratch surfaces.
 - k. Remove labels that are not permanent.
 - l. Wipe surfaces of mechanical and electrical equipment, elevator equipment, and similar equipment. Remove excess lubrication, paint and mortar droppings, and other foreign substances.
 - m. Clean plumbing fixtures to a sanitary condition, free of stains, including stains resulting from water exposure.
 - n. Replace disposable air filters and clean permanent air filters. Clean exposed surfaces of diffusers, registers, and grills.
 - o. Clean light fixtures, lamps, globes, and reflectors to function with full efficiency.
 - p. Leave Project clean and ready for occupancy.
- C. Pest Control: Comply with pest control requirements in Section 01 5000 "Temporary Facilities and Controls." Prepare written report.

3.2 REPAIR OF THE WORK

- A. Complete repair and restoration operations before requesting inspection for determination of Substantial Completion.
- B. Repair or remove and replace defective construction. Repairing includes replacing defective parts, refinishing damaged surfaces, touching up with matching materials, and properly adjusting operating equipment. Where damaged or worn items cannot be repaired or restored, provide replacements. Remove and replace operating components that cannot be repaired. Restore damaged construction and permanent facilities used during construction to specified condition.
 - 1. Remove and replace chipped, scratched, and broken glass, reflective surfaces, and other damaged transparent materials.
 - 2. Touch up and otherwise repair and restore marred or exposed finishes and surfaces. Replace finishes and surfaces that already show evidence of repair or restoration.
 - a. Do not paint over "UL" and other required labels and identification, including mechanical and electrical nameplates. Remove paint applied to required labels and identification.
 - 3. Replace parts subject to operating conditions during construction that may impede operation or reduce longevity.
 - 4. Replace burned-out bulbs, bulbs noticeably dimmed by hours of use, and defective and noisy starters in fluorescent and mercury vapor fixtures to comply with requirements for new fixtures.

END OF SECTION 01 7700

SECTION 01 7823 - OPERATION AND MAINTENANCE DATA

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes administrative and procedural requirements for preparing operation and maintenance manuals, including the following:
 - 1. Operation and maintenance documentation directory.
 - 2. Emergency manuals.
 - 3. Operation manuals for systems, subsystems, and equipment.
 - 4. Product maintenance manuals.
 - 5. Systems and equipment maintenance manuals.

1.2 CLOSEOUT SUBMITTALS

- A. Manual Content: Operations and maintenance manual content is specified in individual Specification Sections to be reviewed at the time of Section submittals. Submit reviewed manual content formatted and organized as required by this Section.
 - 1. Architect will comment on whether content of operations and maintenance submittals are acceptable.
 - 2. Where applicable, clarify and update reviewed manual content to correspond to revisions and field conditions.
- B. Format: Submit operations and maintenance manuals in the following format:
 - 1. Three paper copies. Include a complete operation and maintenance directory. Enclose title pages and directories in clear plastic sleeves. Architect will return two copies.
- C. Manual Submittal: Submit each manual in final form prior to requesting inspection for Substantial Completion and at least 15 days before commencing demonstration and training. Architect will return copy with comments.
 - 1. Correct or revise each manual to comply with Architect's comments. Submit copies of each corrected manual within 15 days of receipt of Architect's comments and prior to commencing demonstration and training.

PART 2 - PRODUCTS

2.1 REQUIREMENTS FOR EMERGENCY, OPERATION, AND MAINTENANCE MANUALS

- A. Directory: Prepare a single, comprehensive directory of emergency, operation, and maintenance data and materials, listing items and their location to facilitate ready access to desired information.
- B. Organization: Unless otherwise indicated, organize each manual into a separate section for each system and subsystem, and a separate section for each piece of equipment not part of a system. Each manual shall contain the following materials, in the order listed:
 - 1. Title page.
 - 2. Table of contents.
 - 3. Manual contents.
- C. Title Page: Include the following information:
 - 1. Subject matter included in manual.
 - 2. Name and address of Project.
 - 3. Name and address of Owner.
 - 4. Date of submittal.
 - 5. Name and contact information for Contractor.
 - 6. Name and contact information for Construction Manager.
 - 7. Name and contact information for Architect.
 - 8. Name and contact information for Commissioning Authority.
 - 9. Names and contact information for major consultants to the Architect that designed the systems contained in the manuals.
 - 10. Cross-reference to related systems in other operation and maintenance manuals.

- D. Table of Contents: List each product included in manual, identified by product name, indexed to the content of the volume, and cross-referenced to Specification Section number in Project Manual.
- E. Manual Contents: Organize into sets of manageable size. Arrange contents alphabetically by system, subsystem, and equipment. If possible, assemble instructions for subsystems, equipment, and components of one system into a single binder.
- F. Manuals, Paper Copy: Submit manuals in the form of hard copy, bound and labeled volumes.
 - 1. Binders: Heavy-duty, three-ring, vinyl-covered, loose-leaf binders, in thickness necessary to accommodate contents, sized to hold 8-1/2-by-11-inch paper; with clear plastic sleeve on spine to hold label describing contents and with pockets inside covers to hold folded oversize sheets.
 - a. Identify each binder on front and spine, with printed title "OPERATION AND MAINTENANCE MANUAL," Project title or name, and subject matter of contents, and indicate Specification Section number on bottom of spine. Indicate volume number for multiple-volume sets.
 - 2. Dividers: Heavy-paper dividers with plastic-covered tabs for each section of the manual. Mark each tab to indicate contents. Include typed list of products and major components of equipment included in the section on each divider, cross-referenced to Specification Section number and title of Project Manual.
 - 3. Protective Plastic Sleeves: Transparent plastic sleeves designed to enclose diagnostic software storage media for computerized electronic equipment.
 - 4. Drawings: Attach reinforced, punched binder tabs on drawings and bind with text.
 - a. If oversize drawings are necessary, fold drawings to same size as text pages and use as foldouts.
 - b. If drawings are too large to be used as foldouts, fold and place drawings in labeled envelopes and bind envelopes in rear of manual. At appropriate locations in manual, insert typewritten pages indicating drawing titles, descriptions of contents, and drawing locations.

2.2 EMERGENCY MANUALS

- A. Content: Organize manual into a separate section for each of the following:
 - 1. Type of emergency.
 - 2. Emergency instructions.
 - 3. Emergency procedures.
- B. Type of Emergency: Where applicable for each type of emergency indicated below, include instructions and procedures for each system, subsystem, piece of equipment, and component:
 - 1. Fire.
 - 2. Flood.
 - 3. Gas leak.
 - 4. Water leak.
 - 5. Power failure.
 - 6. Water outage.
 - 7. System, subsystem, or equipment failure.
 - 8. Chemical release or spill.
- C. Emergency Instructions: Describe and explain warnings, trouble indications, error messages, and similar codes and signals. Include responsibilities of Owner's operating personnel for notification of Installer, supplier, and manufacturer to maintain warranties.
- D. Emergency Procedures: Include the following, as applicable:
 - 1. Instructions on stopping.
 - 2. Shutdown instructions for each type of emergency.
 - 3. Operating instructions for conditions outside normal operating limits.
 - 4. Required sequences for electric or electronic systems.
 - 5. Special operating instructions and procedures.

2.3 OPERATION MANUALS

- A. Content: In addition to requirements in this Section, include operation data required in individual Specification Sections and the following information:
 - 1. System, subsystem, and equipment descriptions. Use designations for systems and equipment indicated on Contract Documents.
 - 2. Performance and design criteria if Contractor is delegated design responsibility.

3. Operating standards.
4. Operating procedures.
5. Operating logs.
6. Wiring diagrams.
7. Control diagrams.
8. Piped system diagrams.
9. Precautions against improper use.
10. License requirements including inspection and renewal dates.

B. Descriptions: Include the following:

1. Product name and model number. Use designations for products indicated on Contract Documents.
2. Manufacturer's name.
3. Equipment identification with serial number of each component.
4. Equipment function.
5. Operating characteristics.
6. Limiting conditions.
7. Performance curves.
8. Engineering data and tests.
9. Complete nomenclature and number of replacement parts.

C. Operating Procedures: Include the following, as applicable:

1. Startup procedures.
2. Equipment or system break-in procedures.
3. Routine and normal operating instructions.
4. Regulation and control procedures.
5. Instructions on stopping.
6. Normal shutdown instructions.
7. Seasonal and weekend operating instructions.
8. Required sequences for electric or electronic systems.
9. Special operating instructions and procedures.

D. Systems and Equipment Controls: Describe the sequence of operation, and diagram controls as installed.

E. Piped Systems: Diagram piping as installed, and identify color-coding where required for identification.

2.4 PRODUCT MAINTENANCE MANUALS

A. Content: Organize manual into a separate section for each product, material, and finish. Include source information, product information, maintenance procedures, repair materials and sources, and warranties and bonds, as described below.

B. Source Information: List each product included in manual, identified by product name and arranged to match manual's table of contents. For each product, list name, address, and telephone number of Installer or supplier and maintenance service agent, and cross-reference Specification Section number and title in Project Manual.

C. Product Information: Include the following, as applicable:

1. Product name and model number.
2. Manufacturer's name.
3. Color, pattern, and texture.
4. Material and chemical composition.
5. Reordering information for specially manufactured products.

D. Maintenance Procedures: Include manufacturer's written recommendations and the following:

1. Inspection procedures.
2. Types of cleaning agents to be used and methods of cleaning.
3. List of cleaning agents and methods of cleaning detrimental to product.
4. Schedule for routine cleaning and maintenance.
5. Repair instructions.

E. Repair Materials and Sources: Include lists of materials and local sources of materials and related services.

- F. Warranties and Bonds: Include copies of warranties and bonds and lists of circumstances and conditions that would affect validity of warranties or bonds.

2.5 SYSTEMS AND EQUIPMENT MAINTENANCE MANUALS

- A. Content: For each system, subsystem, and piece of equipment not part of a system, include source information, manufacturers' maintenance documentation, maintenance procedures, maintenance and service schedules, spare parts list and source information, maintenance service contracts, and warranty and bond information, as described below.
- B. Source Information: List each system, subsystem, and piece of equipment included in manual, identified by product name and arranged to match manual's table of contents. For each product, list name, address, and telephone number of Installer or supplier and maintenance service agent, and cross-reference Specification Section number and title in Project Manual.
- C. Manufacturers' Maintenance Documentation: Manufacturers' maintenance documentation including the following information for each component part or piece of equipment:
 - 1. Standard maintenance instructions and bulletins.
 - 2. Drawings, diagrams, and instructions required for maintenance, including disassembly and component removal, replacement, and assembly.
 - 3. Identification and nomenclature of parts and components.
 - 4. List of items recommended to be stocked as spare parts.
- D. Maintenance Procedures: Include the following information and items that detail essential maintenance procedures:
 - 1. Test and inspection instructions.
 - 2. Troubleshooting guide.
 - 3. Precautions against improper maintenance.
 - 4. Disassembly; component removal, repair, and replacement; and reassembly instructions.
 - 5. Aligning, adjusting, and checking instructions.
 - 6. Demonstration and training video recording, if available.
- E. Maintenance and Service Schedules: Include service and lubrication requirements, list of required lubricants for equipment, and separate schedules for preventive and routine maintenance and service with standard time allotment.
- F. Spare Parts List and Source Information: Include lists of replacement and repair parts, with parts identified and cross-referenced to manufacturers' maintenance documentation and local sources of maintenance materials and related services.
- G. Maintenance Service Contracts: Include copies of maintenance agreements with name and telephone number of service agent.
- H. Warranties and Bonds: Include copies of warranties and bonds and lists of circumstances and conditions that would affect validity of warranties or bonds.

PART 3 - EXECUTION

3.1 MANUAL PREPARATION

- A. Emergency Manual: Assemble a complete set of emergency information indicating procedures for use by emergency personnel and by Owner's operating personnel for types of emergencies indicated.
- B. Product Maintenance Manual: Assemble a complete set of maintenance data indicating care and maintenance of each product, material, and finish incorporated into the Work.
- C. Operation and Maintenance Manuals: Assemble a complete set of operation and maintenance data indicating operation and maintenance of each system, subsystem, and piece of equipment not part of a system.
- D. Manufacturers' Data: Where manuals contain manufacturers' standard printed data, include only sheets pertinent to product or component installed. Mark each sheet to identify each product or component incorporated into the Work. If data include more than one item in a tabular format, identify each item using appropriate references from the Contract Documents. Identify data applicable to the Work and delete references to information not applicable.

- E. Drawings: Prepare drawings supplementing manufacturers' printed data to illustrate the relationship of component parts of equipment and systems and to illustrate control sequence and flow diagrams. Coordinate these drawings with information contained in record Drawings to ensure correct illustration of completed installation.
 - 1. Do not use original project record documents as part of operation and maintenance manuals.
- F. Comply with Section 01 7700 "Closeout Procedures" for schedule for submitting operation and maintenance documentation.

END OF SECTION 01 7823

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SECTION 01 7839 - PROJECT RECORD DOCUMENTS

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes administrative and procedural requirements for project record documents, including the following:
 - 1. Record Drawings.
 - 2. Record Specifications.
 - 3. Record Product Data.
- B. Related Requirements:
 - 1. Section 01 7823 "Operation and Maintenance Data" for operation and maintenance manual requirements.

1.2 CLOSEOUT SUBMITTALS

- A. Record Drawings: Comply with the following:
 - 1. Number of Copies: Submit PDF electronic files of scanned record prints and one set of marked-up record prints.
- B. Record Specifications: Submit one paper copy and scanned PDF electronic files of Project's Specifications, including addenda and contract modifications.
- C. Record Product Data: Submit one paper copy and scanned PDF electronic files and directories of each submittal.

PART 2 - PRODUCTS

2.1 RECORD DRAWINGS

- A. Record Prints: Maintain one set of marked-up paper copies of the Contract Drawings and Shop Drawings, incorporating new and revised Drawings as modifications are issued.
 - 1. Preparation: Mark record prints to show the actual installation where installation varies from that shown originally. Require individual or entity who obtained record data, whether individual or entity is Installer, subcontractor, or similar entity, to provide information for preparation of corresponding marked-up record prints.
 - a. Give particular attention to information on concealed elements that would be difficult to identify or measure and record later.
 - b. Record data as soon as possible after obtaining it.
 - c. Record and check the markup before enclosing concealed installations.
 - 2. Mark the Contract Drawings and Shop Drawings completely and accurately. Use personnel proficient at recording graphic information in production of marked-up record prints.
 - 3. Mark record sets with erasable, red-colored pencil. Use other colors to distinguish between changes for different categories of the Work at same location.
 - 4. Note Construction Change Directive numbers, alternate numbers, Change Order numbers, and similar identification, where applicable.
- B. Record Digital Data Files: Immediately before inspection for Certificate of Substantial Completion, review marked-up record prints with Architect. When authorized, prepare a full set of corrected digital data files of the Contract Drawings, as follows:
 - 1. Format: Annotated PDF electronic file with comment function enabled.
 - 2. Incorporate changes and additional information previously marked on record prints. Delete, redraw, and add details and notations where applicable.
 - 3. Refer instances of uncertainty to Architect for resolution.
- C. Format: Identify and date each record Drawing; include the designation "PROJECT RECORD DRAWING" in a prominent location.
 - 1. Record Prints: Organize record prints and newly prepared record Drawings into manageable sets. Bind each set with durable paper cover sheets. Include identification on cover sheets.
 - 2. Format: Annotated PDF electronic file with comment function enabled.

3. Record Digital Data Files: Organize digital data information into separate electronic files that correspond to each sheet of the Contract Drawings. Name each file with the sheet identification. Include identification in each digital data file.
4. Identification: As follows:
 - a. Project name.
 - b. Date.
 - c. Designation "PROJECT RECORD DRAWINGS."
 - d. Name of Architect.
 - e. Name of Contractor.

2.2 RECORD SPECIFICATIONS

- A. Preparation: Mark Specifications to indicate the actual product installation where installation varies from that indicated in Specifications, addenda, and contract modifications.
 1. Give particular attention to information on concealed products and installations that cannot be readily identified and recorded later.
 2. Mark copy with the proprietary name and model number of products, materials, and equipment furnished, including substitutions and product options selected.
 3. Record the name of manufacturer, supplier, Installer, and other information necessary to provide a record of selections made.
 4. Note related Change Orders, record Product Data, and record Drawings where applicable.
- B. Format: Submit record Specifications as paper copy and scanned PDF electronic file(s) of marked-up paper copy of Specifications.

2.3 RECORD PRODUCT DATA

- A. Preparation: Mark Product Data to indicate the actual product installation where installation varies substantially from that indicated in Product Data submittal.
 1. Give particular attention to information on concealed products and installations that cannot be readily identified and recorded later.
 2. Include significant changes in the product delivered to Project site and changes in manufacturer's written instructions for installation.
 3. Note related Change Orders, record Specifications, and record Drawings where applicable.
- B. Format: Submit record Product Data as paper copy and scanned PDF electronic file(s) of marked-up paper copy of Product Data.

2.4 MISCELLANEOUS RECORD SUBMITTALS

- A. Assemble miscellaneous records required by other Specification Sections for miscellaneous record keeping and submittal in connection with actual performance of the Work. Bind or file miscellaneous records and identify each, ready for continued use and reference.
- B. Format: Submit miscellaneous record submittals as paper copy and scanned PDF electronic file(s) of marked-up miscellaneous record submittals.

PART 3 - EXECUTION

3.1 RECORDING AND MAINTENANCE

- A. Recording: Maintain one copy of each submittal during the construction period for project record document purposes. Post changes and revisions to project record documents as they occur; do not wait until end of Project.
- B. Maintenance of Record Documents and Samples: Store record documents and Samples in the field office apart from the Contract Documents used for construction. Do not use project record documents for construction purposes. Maintain record documents in good order and in a clean, dry, legible condition, protected from deterioration and loss. Provide access to project record documents for Architect's reference during normal working hours.

END OF SECTION 01 7839

SECTION 01 7900 - DEMONSTRATION AND TRAINING

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes administrative and procedural requirements for instructing Owner's personnel, including the following:
 - 1. Demonstration of operation of systems, subsystems, and equipment.
 - 2. Training in operation and maintenance of systems, subsystems, and equipment.

1.2 INFORMATIONAL SUBMITTALS

- A. Instruction Program: Submit outline of instructional program for demonstration and training, including a list of training modules and a schedule of proposed dates, times, length of instruction time, and instructors' names for each training module. Include learning objective and outline for each training module.
 - 1. Indicate proposed training modules using manufacturer-produced demonstration and training video recordings for systems, equipment, and products in lieu of video recording of live instructional module.

1.3 QUALITY ASSURANCE

- A. Facilitator Qualifications: A firm or individual experienced in training or educating maintenance personnel in a training program similar in content and extent to that indicated for this Project, and whose work has resulted in training or education with a record of successful learning performance.
- B. Instructor Qualifications: A factory-authorized service representative, complying with requirements in Section 01 4000 "Quality Requirements," experienced in operation and maintenance procedures and training.
- C. Preinstruction Conference: Conduct conference at Project site to comply with requirements in Section 01 3100 "Project Management and Coordination." Review methods and procedures related to demonstration and training.

1.4 COORDINATION

- A. Coordinate instruction schedule with Owner's operations. Adjust schedule as required to minimize disrupting Owner's operations and to ensure availability of Owner's personnel.
- B. Coordinate content of training modules with content of approved emergency, operation, and maintenance manuals. Do not submit instruction program until operation and maintenance data has been reviewed and approved by Architect.

PART 2 - PRODUCTS

2.1 INSTRUCTION PROGRAM

- A. Program Structure: Develop an instruction program that includes individual training modules for each system and for equipment not part of a system, as required by individual Specification Sections.
- B. Training Modules: Develop a learning objective and teaching outline for each module. Include a description of specific skills and knowledge that participant is expected to master. For each module, include instruction for the following as applicable to the system, equipment, or component:
 - 1. Basis of System Design, Operational Requirements, and Criteria: Include the following:
 - a. System, subsystem, and equipment descriptions.
 - b. Performance and design criteria if Contractor is delegated design responsibility.
 - c. Operating standards.
 - d. Regulatory requirements.
 - e. Equipment function.
 - f. Operating characteristics.
 - g. Limiting conditions.

- h. Performance curves.
- 2. Documentation: Review the following items in detail:
 - a. Emergency manuals.
 - b. Operations manuals.
 - c. Maintenance manuals.
 - d. Project record documents.
 - e. Identification systems.
 - f. Warranties and bonds.
 - g. Maintenance service agreements and similar continuing commitments.
- 3. Emergencies: Include the following, as applicable:
 - a. Instructions on meaning of warnings, trouble indications, and error messages.
 - b. Instructions on stopping.
 - c. Shutdown instructions for each type of emergency.
 - d. Operating instructions for conditions outside of normal operating limits.
 - e. Sequences for electric or electronic systems.
 - f. Special operating instructions and procedures.
- 4. Operations: Include the following, as applicable:
 - a. Startup procedures.
 - b. Equipment or system break-in procedures.
 - c. Routine and normal operating instructions.
 - d. Regulation and control procedures.
 - e. Control sequences.
 - f. Safety procedures.
 - g. Instructions on stopping.
 - h. Normal shutdown instructions.
 - i. Operating procedures for emergencies.
 - j. Operating procedures for system, subsystem, or equipment failure.
 - k. Seasonal and weekend operating instructions.
 - l. Required sequences for electric or electronic systems.
 - m. Special operating instructions and procedures.
- 5. Adjustments: Include the following:
 - a. Alignments.
 - b. Checking adjustments.
 - c. Noise and vibration adjustments.
 - d. Economy and efficiency adjustments.
- 6. Troubleshooting: Include the following:
 - a. Diagnostic instructions.
 - b. Test and inspection procedures.
- 7. Maintenance: Include the following:
 - a. Inspection procedures.
 - b. Types of cleaning agents to be used and methods of cleaning.
 - c. List of cleaning agents and methods of cleaning detrimental to product.
 - d. Procedures for routine cleaning
 - e. Procedures for preventive maintenance.
 - f. Procedures for routine maintenance.
 - g. Instruction on use of special tools.
- 8. Repairs: Include the following:
 - a. Diagnosis instructions.
 - b. Repair instructions.
 - c. Disassembly; component removal, repair, and replacement; and reassembly instructions.
 - d. Instructions for identifying parts and components.
 - e. Review of spare parts needed for operation and maintenance.

PART 3 - EXECUTION

3.1 PREPARATION

- A. Assemble educational materials necessary for instruction, including documentation and training module. Assemble training modules into a training manual organized in coordination with requirements in Section 01 7823 "Operation and Maintenance Data."

3.2 INSTRUCTION

- A. Facilitator: Engage a qualified facilitator to prepare instruction program and training modules, to coordinate instructors, and to coordinate between Contractor and Owner for number of participants, instruction times, and location.
- B. Engage qualified instructors to instruct Owner's personnel to adjust, operate, and maintain systems, subsystems, and equipment not part of a system.
 - 1. Architect will furnish an instructor to describe basis of system design, operational requirements, criteria, and regulatory requirements.
 - 2. Owner will furnish an instructor to describe Owner's operational philosophy.
 - 3. Owner will furnish Contractor with names and positions of participants.
- C. Scheduling: Provide instruction at mutually agreed on times. For equipment that requires seasonal operation, provide similar instruction at start of each season.
 - 1. Schedule training with Owner with at least seven days' advance notice.
- D. Training Location and Reference Material: Conduct training on-site in the completed and fully operational facility using the actual equipment in-place. Conduct training using final operation and maintenance data submittals.
- E. Evaluation: At conclusion of each training module, assess and document each participant's mastery of module by use of an oral and a demonstration performance-based test.

END OF SECTION 01 7900

TABLE OF CONTENTS

DIVISION 02 – EXISTING CONDITIONS

024119	SELECTIVE DEMOLITION
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SECTION 02 4119 - SELECTIVE DEMOLITION

PART 1 - GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Demolition and removal of selected portions of building or structure.
 - 2. Salvage of existing items to be reused or recycled.

1.2 MATERIALS OWNERSHIP

- A. Unless otherwise indicated, demolition waste becomes property of Contractor.
- B. Historic items, relics, antiques, and similar objects including, but not limited to, cornerstones and their contents, commemorative plaques and tablets, and other items of interest or value to Owner that may be uncovered during demolition remain the property of Owner.
 - 1. Carefully salvage in a manner to prevent damage and promptly return to Owner.

1.3 PREINSTALLATION MEETINGS

- A. Predemolition Conference: Conduct conference at Project site.

1.4 INFORMATIONAL SUBMITTALS

- A. Proposed Protection Measures: Submit report, including Drawings, that indicates the measures proposed for protecting individuals and property, for dust control. Indicate proposed locations and construction of barriers.
- B. Schedule of selective demolition activities with starting and ending dates for each activity.

1.5 CLOSEOUT SUBMITTALS

- A. Inventory of items that have been removed and salvaged.

1.6 FIELD CONDITIONS

- A. Owner will occupy portions of building immediately adjacent to selective demolition area. Conduct selective demolition so Owner's operations will not be disrupted.
- B. Conditions existing at time of inspection for bidding purpose will be maintained by Owner as far as practical.
- C. Notify Architect of discrepancies between existing conditions and Drawings before proceeding with selective demolition.
- D. Hazardous Materials: It is not expected that hazardous materials will be encountered in the Work.
 - 1. Hazardous materials will be removed by Owner before start of the Work.
 - 2. 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.
- E. Storage or sale of removed items or materials on-site is not permitted.
- F. Utility Service: Maintain existing utilities indicated to remain in service and protect them against damage during selective demolition operations.
 - 1. Maintain fire-protection facilities in service during selective demolition operations.
- G. Arrange selective demolition schedule so as not to interfere with Owner's operations.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

- A. Regulatory Requirements: Comply with governing EPA notification regulations before beginning selective demolition. Comply with hauling and disposal regulations of authorities having jurisdiction.
- B. Standards: Comply with ASSE A10.6 and NFPA 241.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Verify that utilities have been disconnected and capped before starting selective demolition operations.
- B. Perform an engineering survey of condition of building to determine whether removing any element might result in structural deficiency or unplanned collapse of any portion of structure or adjacent structures during selective building demolition operations.
- C. Inventory and record the condition of items to be removed and salvaged.

3.2 UTILITY SERVICES AND MECHANICAL/ELECTRICAL SYSTEMS

- A. Existing Services/Systems to Remain: Maintain services/systems indicated to remain and protect them against damage.
- B. Existing Services/Systems to Be Removed, Relocated, or Abandoned: Locate, identify, disconnect, and seal or cap off utility services and mechanical/electrical systems serving areas to be selectively demolished.
 - 1. Owner will arrange to shut off indicated services/systems when requested by Contractor.
 - 2. Arrange to shut off utilities with utility companies.
 - 3. If services/systems are required to be removed, relocated, or abandoned, provide temporary services/systems that bypass area of selective demolition and that maintain continuity of services/systems to other parts of building.
 - 4. Disconnect, demolish, and remove fire-suppression systems, plumbing, and HVAC systems, equipment, and components indicated on Drawings to be removed.
 - a. Piping to Be Removed: Remove portion of piping indicated to be removed and cap or plug remaining piping with same or compatible piping material.
 - b. Piping to Be Abandoned in Place: Drain piping and cap or plug piping with same or compatible piping material and leave in place.
 - c. Equipment to Be Removed: Disconnect and cap services and remove equipment.
 - d. Equipment to Be Removed and Reinstalled: Disconnect and cap services and remove, clean, and store equipment; when appropriate, reinstall, reconnect, and make equipment operational.
 - e. Equipment to Be Removed and Salvaged: Disconnect and cap services and remove equipment and deliver to Owner.
 - f. Ducts to Be Removed: Remove portion of ducts indicated to be removed and plug remaining ducts with same or compatible ductwork material.
 - g. Ducts to Be Abandoned in Place: Cap or plug ducts with same or compatible ductwork material and leave in place.

3.3 PROTECTION

- A. Temporary Protection: Provide temporary barricades and other protection required to prevent injury to people and damage to adjacent buildings and facilities to remain.
- B. Temporary Shoring: Design, 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.
- C. Remove temporary barricades and protections where hazards no longer exist.

3.4 SELECTIVE DEMOLITION

- A. General: 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 and as follows:
 - 1. 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. Use hand tools or small power tools designed for sawing or grinding, not hammering and chopping. Temporarily cover openings to remain.
 - 2. Cut or drill from the exposed or finished side into concealed surfaces to avoid marring existing finished surfaces.
 - 3. Do not use cutting torches until work area is cleared of flammable materials. At concealed spaces, such as duct and pipe interiors, verify condition and contents of hidden space before starting flame-cutting operations. Maintain portable fire-suppression devices during flame-cutting operations.
 - 4. Locate selective demolition equipment and remove debris and materials so as not to impose excessive loads on supporting walls, floors, or framing.
 - 5. Dispose of demolished items and materials promptly.
- B. Site Access and Temporary Controls: Conduct selective demolition and debris-removal operations to ensure minimum interference with roads, streets, walks, walkways, and other adjacent occupied and used facilities.
- C. 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. Protect items from damage during transport and storage.
 - 4. 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.
- D. 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 cleaned and reinstalled in their original locations after selective demolition operations are complete.

3.5 CLEANING

- A. Remove demolition waste materials from Project site and recycle or dispose of them according to Section 01 7419 "Construction Waste Management and Disposal."
 - 1. Do not allow demolished materials to accumulate on-site.
 - 2. Remove and transport debris in a manner that will prevent spillage on adjacent surfaces and areas.
 - 3. Remove debris from elevated portions of building by chute, hoist, or other device that will convey debris to grade level in a controlled descent.
 - 4. Comply with requirements specified in Section 01 7419 "Construction Waste Management and Disposal."
- B. Burning: Do not burn demolished materials.
- C. Clean adjacent structures and improvements of dust, dirt, and debris caused by selective demolition operations. Return adjacent areas to condition existing before selective demolition operations began.

END OF SECTION 02 4119

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DIVISION 05 - METALS

055000	METAL FABRICATIONS
055213	PIPE AND TUBE RAILINGS

SECTION 05 5000 - METAL FABRICATIONS

PART 1 - GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Loose steel lintels.
 - 2. Wall support columns.
- B. Products furnished, but not installed, under this Section include the following:
 - 1. Loose steel lintels.
 - 2. Anchor bolts.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

- A. Thermal Movements: Allow for thermal movements from ambient and surface temperature changes acting on exterior metal fabrications by preventing buckling, opening of joints, overstressing of components, failure of connections, and other detrimental effects.
 - 1. Temperature Change: 120 deg F, ambient; 180 deg F, material surfaces.

2.2 METALS

- A. Metal Surfaces, General: Provide materials with smooth, flat surfaces unless otherwise indicated. For metal fabrications exposed to view in the completed Work, provide materials without seam marks, roller marks, rolled trade names, or blemishes.
- B. Steel Plates, Shapes, and Bars: ASTM A 36/A 36M.
- C. Steel tubing: ASTM A500/A500M, cold-formed steel tubing.

2.3 FASTENERS

- A. General: Unless otherwise indicated, provide zinc-plated fasteners with coating complying with ASTM B633 or ASTM F1941/F1941M, Class Fe/Zn 5, at exterior walls. Select fasteners for type, grade, and class required.
- B. Post-Installed Anchors: .
 - 1. Material for Interior Locations: Carbon-steel components zinc plated to comply with ASTM B633 or ASTM F1941/F1941M, Class Fe/Zn 5, unless otherwise indicated.

2.4 MISCELLANEOUS MATERIALS

- A. Universal Shop Primer: Fast-curing, lead- and chromate-free, universal modified-alkyd primer complying with MPI#79 and compatible with topcoat.
- B. Galvanizing Repair Paint: High-zinc-dust-content paint complying with SSPC-Paint 20 and compatible with paints specified to be used over it.

2.5 FABRICATION, GENERAL

- A. Shop Assembly: Preassemble items in the shop to greatest extent possible. Use connections that maintain structural value of joined pieces.

2.6 MISCELLANEOUS FRAMING AND SUPPORTS

- A. Fabricate units from steel shapes, plates, and bars of welded construction unless otherwise indicated. Fabricate to sizes, shapes, and profiles indicated and as necessary to receive adjacent construction.
- B. Fabricate steel columns for supporting wood frame construction from steel tubes with steel baseplates and top plates as indicated. Drill or punch baseplates and top plates for anchor and connection bolts and weld to tube with fillet welds all around. Make welds the same size as tube wall thickness unless otherwise indicated.

2.7 LOOSE STEEL LINTELS

- A. Fabricate loose steel lintels from steel angles and shapes of size indicated for openings and recesses in masonry walls and partitions at locations indicated.
- B. Galvanize loose steel lintels located in exterior walls.

2.8 FINISHES, GENERAL

- A. Finish metal fabrications after assembly.

2.9 STEEL AND IRON FINISHES

- A. Galvanizing: Hot-dip galvanize items as indicated to comply with ASTM A 153/A 153M for steel and iron hardware and with ASTM A 123/A 123M for other steel and iron products.
- B. Shop prime iron and steel items not indicated to be galvanized.
 - 1. Shop prime with universal shop primer indicated.

PART 3 - EXECUTION

3.1 INSTALLATION, GENERAL

- A. Cutting, Fitting, and Placement: Perform cutting, drilling, and fitting required for installing metal fabrications. Set metal fabrications accurately in location, alignment, and elevation; with edges and surfaces level, plumb, true, and free of rack; and measured from established lines and levels.
- B. Fit exposed connections accurately together to form hairline joints. Weld connections that are not to be left as exposed joints but cannot be shop welded because of shipping size limitations. Do not weld, cut, or abrade surfaces of exterior units that have been hot-dip galvanized after fabrication and are for bolted or screwed field connections.
- C. Fastening to In-Place Construction: Provide anchorage devices and fasteners where metal fabrications are required to be fastened to in-place construction.
- D. Provide temporary bracing or anchors in formwork for items that are to be built into concrete, masonry, or similar construction.

3.2 ADJUSTING AND CLEANING

- A. Galvanized Surfaces: Clean field welds, bolted connections, and abraded areas and repair galvanizing to comply with ASTM A 780/A 780M.

END OF SECTION 05 5000

SECTION 05 5213 - PIPE AND TUBE RAILINGS

PART 1 - GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Stainless-steel tube railings.

1.2 ACTION SUBMITTALS

- A. Product Data: For the following:
 - 1. Railing brackets.
- B. Shop Drawings: Include plans, elevations, sections, details, and attachments to other work.
- C. Samples: For each type of exposed finish required.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

- A. Structural Performance: Railings, including attachment to building construction, shall withstand the effects of gravity loads and the following loads and stresses within limits and under conditions indicated:
 - 1. Handrails and Top Rails of Guards:
 - a. Uniform load of 50 lbf/ ft. applied in any direction.
 - b. Concentrated load of 200 lbf applied in any direction.
 - c. Uniform and concentrated loads need not be assumed to act concurrently.

2.2 METALS, GENERAL

- A. Brackets, Flanges, and Anchors: Cast or formed metal of same type of material and finish as supported rails unless otherwise indicated.
 - 1. Provide type of bracket with predrilled hole for exposed bolt anchorage and that provides 1-1/2-inch clearance from inside face of handrail to finished wall surface.

2.3 STAINLESS STEEL

- A. Tubing: ASTM A554, Grade MT 304.

2.4 FASTENERS

- A. General: Provide the following:
 - 1. Stainless-Steel Railings: Type 304 stainless-steel fasteners.
- B. Post-Installed Anchors: Torque-controlled expansion anchors or chemical anchors capable of sustaining, without failure, a load equal to 6 times the load imposed when installed in unit masonry and 4 times the load imposed when installed in concrete, as determined by testing according to ASTM E488/E488M, conducted by a qualified independent testing agency.
 - 1. Material for Interior Locations: Carbon-steel components zinc-plated to comply with ASTM B633 or ASTM F1941, Class Fe/Zn 5, unless otherwise indicated.

2.5 MISCELLANEOUS MATERIALS

- A. Welding Rods and Bare Electrodes: Select according to AWS specifications for metal alloy welded.
- B. Bituminous Paint: Cold-applied asphalt emulsion complying with ASTM D1187/D1187M.

- C. Nonshrink, Nonmetallic Grout: Factory-packaged, nonstaining, noncorrosive, nongaseous grout complying with ASTM C1107/C1107M. Provide grout specifically recommended by manufacturer for interior and exterior applications.

2.6 FABRICATION

- A. Cut, drill, and punch metals cleanly and accurately. Remove burrs and ease edges to a radius of approximately 1/32 inch unless otherwise indicated. Remove sharp or rough areas on exposed surfaces.
- B. Form work true to line and level with accurate angles and surfaces.
- C. Welded Connections: Cope components at connections to provide close fit, or use fittings designed for this purpose. Weld all around at connections, including at fittings.
 - 1. Use materials and methods that minimize distortion and develop strength and corrosion resistance of base metals.
 - 2. Obtain fusion without undercut or overlap.
 - 3. Remove flux immediately.
 - 4. At exposed connections, finish exposed surfaces smooth and blended so no roughness shows after finishing and welded surface matches contours of adjoining surfaces.
- D. Nonwelded Connections: Connect members with concealed mechanical fasteners and fittings. Fabricate members and fittings to produce flush, smooth, rigid, hairline joints.
- E. Form changes in direction by bending or by inserting prefabricated elbow fittings.
- F. For changes in direction made by bending, use jigs to produce uniform curvature for each repetitive configuration required. Maintain cross section of member throughout entire bend without buckling, twisting, cracking, or otherwise deforming exposed surfaces of components.
- G. Close exposed ends of railing members with prefabricated end fittings.
- H. Provide wall returns at ends of wall-mounted handrails unless otherwise indicated.
- I. Brackets, Flanges, Fittings, and Anchors: Provide wall brackets, flanges, miscellaneous fittings, and anchors to interconnect railing members to other work unless otherwise indicated.
 - 1. At brackets and fittings fastened to plaster or gypsum board partitions, provide crush-resistant fillers or other means to transfer loads through wall finishes to structural supports and prevent bracket or fitting rotation and crushing of substrate.

2.7 STAINLESS-STEEL FINISHES

- A. Stainless Steel Tubing Finishes:
 - 1. 320-Grit Polished Finish: Oil-ground, uniform, fine, directionally textured finish.

PART 3 - EXECUTION

3.1 INSTALLATION, GENERAL

- A. Set railings accurately in location, alignment, and elevation; measured from established lines and levels and free of rack.
 - 1. Do not weld, cut, or abrade surfaces of railing components that are coated or finished after fabrication and that are intended for field connection by mechanical or other means without further cutting or fitting.
 - 2. Set posts plumb within a tolerance of 1/16 inch in 3 feet.
 - 3. Align rails so variations from level for horizontal members and variations from parallel with rake of steps and ramps for sloping members do not exceed 1/4 inch in 12 feet.
- B. Control of Corrosion: Prevent galvanic action and other forms of corrosion by insulating metals and other materials from direct contact with incompatible materials.
 - 1. Coat, with a heavy coat of bituminous paint, concealed surfaces of aluminum that are in contact with grout, concrete, masonry, wood, or dissimilar metals.

3.2 ANCHORING POSTS

- A. Use metal sleeves preset and anchored into concrete for installing posts. After posts are inserted into sleeves, fill annular space between post and sleeve with nonshrink, nonmetallic grout or anchoring cement, mixed and placed to comply with anchoring material manufacturer's written instructions.
- B. Form or core-drill holes not less than 5 inches deep and 3/4 inch larger than OD of post for installing posts in concrete. Clean holes of loose material, insert posts, and fill annular space between post and concrete with nonshrink, nonmetallic grout or anchoring cement, mixed and placed to comply with anchoring material manufacturer's written instructions.
- C. Anchor posts to metal surfaces with oval flanges, angle type, or floor type as required by conditions, connected to posts and to metal supporting members.

3.3 ATTACHING RAILINGS

- A. Attach railings to wall with wall brackets, except where end flanges are used. Locate brackets as indicated or, if not indicated, at spacing required to support structural loads.
- B. Secure wall brackets and railing end flanges to building construction as follows:
 - 1. For concrete and solid masonry anchorage, use drilled-in expansion shields and hanger or lag bolts.
 - 2. For hollow masonry anchorage, use toggle bolts.
 - 3. For wood stud partitions, use hanger or lag bolts set into studs or wood backing between studs. Coordinate with carpentry work to locate backing members.

END OF SECTION 05 5213

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T A B L E O F C O N T E N T S

DIVISION 06 – WOOD, PLASTICS AND COMPOSITES

061000	ROUGH CARPENTRY
062023	INTERIOR FINISH CARPENTRY
064116	PLASTIC-LAMINATE-CLAD ARCHITECTURAL CABINETS
066400	PLASTIC PANELING

SECTION 06 1000 - ROUGH CARPENTRY

PART 1 - GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Framing with dimension lumber.
 - 2. Wood blocking and nailers.

PART 2 - PRODUCTS

2.1 WOOD PRODUCTS, GENERAL

- A. Lumber: DOC PS 20 and applicable rules of grading agencies indicated. If no grading agency is indicated, provide lumber that complies with the applicable rules of any rules-writing agency certified by the ALSC Board of Review. Provide lumber graded by an agency certified by the ALSC Board of Review to inspect and grade lumber under the rules indicated.
 - 1. Factory mark each piece of lumber with grade stamp of grading agency.
 - 2. For exposed lumber indicated to receive a stained or natural finish, mark grade stamp on end or back of each piece or omit grade stamp and provide certificates of grade compliance issued by grading agency.
 - 3. Provide dressed lumber, S4S, unless otherwise indicated.
- B. Maximum Moisture Content of Lumber: 19 percent unless otherwise indicated.

2.2 DIMENSION LUMBER FRAMING

- A. Non-Load-Bearing Interior Partitions: Construction or No. 2 grade.
 - 1. Application: All interior partitions.
 - 2. Species:
 - a. Western woods; WCLIB or WWP.
- B. Framing Other Than Non-Load-Bearing Interior Partitions: No. 2 grade.
 - 1. Application: Framing other than interior partitions.
 - 2. Species:
 - a. Douglas fir-larch; WCLIB or WWP.

2.3 MISCELLANEOUS LUMBER

- A. General: Provide miscellaneous lumber indicated and lumber for support or attachment of other construction, including the following:
 - 1. Blocking.
 - 2. Nailers.
- B. For items of dimension lumber size, provide Construction or No. 2 grade lumber of any species.
- C. For concealed boards, provide lumber with 19 percent maximum moisture content and the following species and grades:
 - 1. Western woods; Construction or No. 2 Common grade; WCLIB or WWP.

2.4 FASTENERS

- A. General: Provide fasteners of size and type indicated that comply with requirements specified in this article for material and manufacture.
 - 1. Where rough carpentry is exposed to weather, in ground contact, pressure-preservative treated, or in area of high relative humidity, provide fasteners with hot-dip zinc coating complying with ASTM A 153/A 153M.
- B. Power-Driven Fasteners: NES NER-272.

- C. Bolts: Steel bolts complying with ASTM A 307, Grade A; with ASTM A 563 hex nuts and, where indicated, flat washers.

2.5 METAL FRAMING ANCHORS

- A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
- B. Basis-of-Design Product: Subject to compliance with requirements, provide product indicated on Drawings or comparable product by one of the following:
 - 1. Cleveland Steel Specialty Co.
 - 2. KC Metals Products, Inc.
 - 3. Phoenix Metal Products, Inc.
 - 4. Simpson Strong-Tie Co., Inc.
 - 5. USP Structural Connectors.
- C. Galvanized-Steel Sheet: Hot-dip, zinc-coated steel sheet complying with ASTM A 653/A 653M, G60 coating designation.
 - 1. Use for interior locations unless otherwise indicated.
- D. Hot-Dip, Heavy-Galvanized Steel Sheet: ASTM A 653/A 653M; structural steel (SS), high-strength low-alloy steel Type A (HSLAS Type A), or high-strength low-alloy steel Type B (HSLAS Type B); G185 coating designation; and not less than 0.036 inch thick.
 - 1. Use for wood-preservative-treated lumber and where indicated.

PART 3 - EXECUTION

3.1 INSTALLATION, GENERAL

- A. Set rough carpentry to required levels and lines, with members plumb, true to line, cut, and fitted. Fit rough carpentry to other construction; scribe and cope as needed for accurate fit. Locate furring, nailers, blocking, grounds, and similar supports to comply with requirements for attaching other construction.
- B. Framing Standard: Comply with AF&PA's WCD 1, "Details for Conventional Wood Frame Construction," unless otherwise indicated.
- C. Metal Framing Anchors: Install metal framing anchors to comply with manufacturer's written instructions. Install fasteners through each fastener hole.
- D. Do not splice structural members between supports unless otherwise indicated.
- E. Comply with AWPA M4 for applying field treatment to cut surfaces of preservative-treated lumber.
- F. Securely attach rough carpentry work to substrate by anchoring and fastening as indicated, complying with the following:
 - 1. NES NER-272 for power-driven fasteners.
 - 2. Table 2304.9.1, "Fastening Schedule," in ICC's International Building Code.

END OF SECTION 06 1000

SECTION 06 2023 - INTERIOR FINISH CARPENTRY

PART 1 - GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Interior trim, including non-fire-rated interior door frames.
 - 2. Installation of building specialties.

1.2 ACTION SUBMITTALS

- A. Product Data: For each type of process and factory-fabricated product.

PART 2 - PRODUCTS

2.1 MATERIALS, GENERAL

- A. Lumber: DOC PS 20.
 - 1. Factory mark each piece of lumber with grade stamp of inspection agency indicating grade, species, moisture content at time of surfacing, and mill.
 - a. For exposed lumber, mark grade stamp on end or back of each piece, or omit grade stamp and provide certificates of grade compliance issued by inspection agency.

2.2 INTERIOR TRIM

- A. Hardwood Lumber Trim:
 - 1. Species and Grade: Alder; Clear; NHLA.
 - 2. Maximum Moisture Content: 13 percent.

2.3 MISCELLANEOUS MATERIALS

- A. Glue: Aliphatic-resin, polyurethane, or resorcinol wood glue recommended by manufacturer for general carpentry use.
 - 1. Wood glue shall have a VOC content of 30 g/L or less when calculated according to 40 CFR 59, Subpart D (EPA Method 24).

PART 3 - EXECUTION

3.1 PREPARATION

- A. Before installing interior finish carpentry, condition materials to average prevailing humidity in installation areas for a minimum of 24 hours unless longer conditioning is recommended by manufacturer.

3.2 INSTALLATION, GENERAL

- A. Install interior finish carpentry level, plumb, true, and aligned with adjacent materials. Use concealed shims where necessary for alignment.
 - 1. Scribe and cut interior finish carpentry to fit adjoining work. Refinish and seal cuts as recommended by manufacturer.
 - 2. Countersink fasteners, fill surface flush, and sand unless otherwise indicated.
 - 3. Install to tolerance of 1/8 inch in 96 inches for level and plumb. Install adjoining interior finish carpentry with 1/32-inch maximum offset for flush installation and 1/16-inch maximum offset for reveal installation.
 - 4. Install stairs with no more than 3/16-inch variation between adjacent treads and risers and with no more than 3/8-inch variation between largest and smallest treads and risers within each flight.

3.3 STANDING AND RUNNING TRIM INSTALLATION

- A. Install with minimum number of joints practical, using full-length pieces from maximum lengths of lumber available. Miter at returns, miter at outside corners, and cope at inside corners to produce tight-fitting joints with full-surface contact throughout length of joint. Use scarf joints for end-to-end joints.

END OF SECTION 06 2023

SECTION 06 4116 - PLASTIC-LAMINATE-CLAD ARCHITECTURAL CABINETS

PART 1 - GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Plastic-laminate-faced architectural cabinets.
 - 2. Wood furring, blocking, shims, and hanging strips for installing plastic-laminate-faced architectural cabinets that are not concealed within other construction.

1.2 ACTION SUBMITTALS

- A. Product Data: For each type of product.
- B. Shop Drawings: For plastic-laminate-faced architectural cabinets.
 - 1. Include plans, elevations, sections, and attachment details.
- C. Samples: For each exposed product and for each color and texture specified.

1.3 QUALITY ASSURANCE

- A. Fabricator Qualifications: Shop that employs skilled workers who custom fabricate products similar to those required for this Project and whose products have a record of successful in-service performance.
- B. Installer Qualifications: Fabricator of products.

PART 2 - PRODUCTS

2.1 PLASTIC-LAMINATE-FACED ARCHITECTURAL CABINETS

- A. Quality Standard: Unless otherwise indicated, comply with the "Architectural Woodwork Standards" for grades of cabinets indicated for construction, finishes, installation, and other requirements.
- B. Grade: Custom.
- C. Type of Construction: Frameless.
- D. Door and Drawer-Front Style: Flush overlay.
- E. High-Pressure Decorative Laminate: NEMA LD 3, grades as indicated or if not indicated, as required by quality standard.
 - 1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:
 - a. Formica Corporation.
 - b. Lamin-Art, Inc.
 - c. Pionite; a Panolam Industries International, Inc. brand.
 - d. Wilsonart.
- F. Laminate Cladding for Exposed Surfaces:
 - 1. Horizontal Surfaces: Grade HGS.
 - 2. Postformed Surfaces: Grade HGP.
 - 3. Vertical Surfaces: Grade HGS.
 - 4. Edges: PVC edge banding, 3mm, matching laminate in color, pattern, and finish.
- G. Concealed Backs of Panels with Exposed Plastic-Laminate Surfaces: High-pressure decorative laminate, NEMA LD 3, Grade BKL.

- H. Drawer Construction: Fabricate with exposed fronts fastened to subfront with mounting screws from interior of body.
 - 1. Join subfronts, backs, and sides with glued rabbeted joints supplemented by mechanical fasteners or glued dovetail joints.
- I. Colors, Patterns, and Finishes: Provide materials and products that result in colors and textures of exposed laminate surfaces complying with the following requirements:
 - 1. As indicated by laminate manufacturer's designations.
 - 2. Match Architect's sample.
 - 3. As selected by Architect from laminate manufacturer's full range in the following categories:
 - a. Solid colors, matte finish.
 - b. Solid colors with core same color as surface, matte finish.
 - c. Wood grains, matte finish.
 - d. Patterns, matte finish.

2.2 WOOD MATERIALS

- A. Wood Products: Provide materials that comply with requirements of referenced quality standard for each type of architectural cabinet and quality grade specified unless otherwise indicated.
 - 1. Wood Moisture Content: 5 to 10 percent.
- B. Composite Wood and Agrifiber Products: Provide materials that comply with requirements of referenced quality standard for each type of architectural cabinet and quality grade specified unless otherwise indicated.
 - 1. Medium-Density Fiberboard (MDF): ANSI A208.2, Grade 130.
 - 2. Particleboard: ANSI A208.1, Grade M-2-Exterior Glue.
 - 3. Softwood Plywood: DOC PS 1.
 - 4. Thermoset Decorative Panels: Particleboard or MDF finished with thermally fused, melamine-impregnated decorative paper and complying with requirements of NEMA LD 3, Grade VGL, for Test Methods 3.3, 3.4, 3.6, 3.8, and 3.10.

2.3 CABINET HARDWARE AND ACCESSORIES

- A. Wire Pulls: Back mounted, solid metal, 4 inches long, 5/16 inch in diameter.
- B. Drawer Slides: BHMA A156.9.
 - 1. Grade 1 and Grade 2: Side mounted and extending under bottom edge of drawer.
 - a. Type: Partial extension.
 - b. Material: Epoxy-coated steel with polymer rollers.
 - 2. Grade 1HD-100 and Grade 1HD-200: Side mounted; full-extension type; zinc-plated-steel ball-bearing slides.
 - 3. For drawers not more than 3 inches high and not more than 24 inches wide, provide Grade 1.
 - 4. For drawers more than 3 inches high, but not more than 6 inches high and not more than 24 inches wide, provide Grade 1HD-100.
 - 5. For drawers more than 6 inches high or more than 24 inches wide, provide Grade 1HD-200.
- C. Door and Drawer Silencers: BHMA A156.16, L03011.
- D. Exposed Hardware Finishes: For exposed hardware, provide finish that complies with BHMA A156.18 for BHMA finish number indicated.
 - 1. Satin Chromium Plated: BHMA 626 for brass or bronze base; BHMA 652 for steel base.
- E. For concealed hardware, provide manufacturer's standard finish that complies with product class requirements in BHMA A156.9.

2.4 MISCELLANEOUS MATERIALS

- A. Furring, Blocking, Shims, and Hanging Strips: Softwood or hardwood lumber, kiln-dried to less than 15 percent moisture content.
- B. Anchors: Select material, type, size, and finish required for each substrate for secure anchorage. Provide metal expansion sleeves or expansion bolts for post-installed anchors. Use nonferrous-metal or hot-dip galvanized anchors and inserts at inside face of exterior walls and at floors.

- C. Adhesive for Bonding Plastic Laminate: Unpigmented contact cement.
 - 1. Adhesive for Bonding Edges: Hot-melt adhesive.

2.5 FABRICATION

- A. Complete fabrication, including assembly and hardware application, to maximum extent possible before shipment to Project site. Disassemble components only as necessary for shipment and installation. Where necessary for fitting at site, provide ample allowance for scribing, trimming, and fitting.
- B. Shop-cut openings to maximum extent possible to receive hardware, appliances, electrical work, and similar items. Locate openings accurately and use templates or roughing-in diagrams to produce accurately sized and shaped openings. Sand edges of cutouts to remove splinters and burrs.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Before installation, condition cabinets to humidity conditions in installation areas for not less than 72 hours.
- B. Grade: Install cabinets to comply with quality standard grade of item to be installed.
- C. Anchor cabinets to anchors or blocking built in or directly attached to substrates. Secure with wafer-head cabinet installation screws.
- D. Install cabinets level, plumb, and true in line to a tolerance of 1/8 inch in 96 inches using concealed shims.
 - 1. Scribe and cut cabinets to fit adjoining work, refinish cut surfaces, and repair damaged finish at cuts.
 - 2. Install cabinets without distortion so doors and drawers fit openings and are accurately aligned. Adjust hardware to center doors and drawers in openings and to provide unencumbered operation. Complete installation of hardware and accessory items as indicated.
 - 3. Fasten wall cabinets through back, near top and bottom, and at ends not more than 16 inches o.c. with No. 10 wafer-head screws sized for not less than 1-1/2-inch penetration into wood framing, blocking, or hanging strips.

END OF SECTION 06 4116

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SECTION 06 6400 - PLASTIC PANELING

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes glass-fiber reinforced plastic (FRP) wall paneling and trim accessories.

1.2 ACTION SUBMITTALS

- A. Product Data: For each type of product.
- B. Samples: For each exposed product and for each color and texture specified.

1.3 QUALITY ASSURANCE

- A. Surface-Burning Characteristics: As determined by testing identical products according to ASTM E 84 by a qualified testing agency. Identify products with appropriate markings of applicable testing agency.
 - 1. Flame-Spread Index: 25 or less.
 - 2. Smoke-Developed Index: 450 or less.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - 1. Kemlite Company Inc.
 - 2. Marlite.
 - 3. Nudo Products, Inc.

2.2 PLASTIC SHEET PANELING

- A. General: Gelcoat-finished, glass-fiber reinforced plastic panels complying with ASTM D 5319.
- B. Nominal Thickness: Not less than 0.09 inch.
- C. Surface Finish: Molded pebble texture.
- D. Color: As selected by Architect from manufacturer's full range.

2.3 ACCESSORIES

- A. Trim Accessories: Manufacturer's standard one-piece vinyl extrusions designed to retain and cover edges of panels. Provide division bars, inside corners, and caps as needed to conceal edges.
 - 1. Color: Match panels.
- B. Adhesive: As recommended by plastic paneling manufacturer.
- C. Sealant: Single-component, mildew-resistant, neutral-curing silicone sealant recommended by plastic paneling manufacturer and complying with requirements in Division 07 Section "Joint Sealants."

PART 3 - EXECUTION

3.1 PREPARATION

- A. Clean substrates of substances that could impair bond of adhesive, including oil, grease, dirt, and dust.

- B. Condition panels by unpacking and placing in installation space before installation according to manufacturer's written recommendations.
- C. Lay out paneling before installing. Locate panel joints to provide equal panels at ends of walls not less than half the width of full panels.

3.2 INSTALLATION

- A. Install plastic paneling according to manufacturer's written instructions.
- B. Install panels in a full spread of adhesive.
- C. Install trim accessories with adhesive. Do not fasten through panels.
- D. Fill grooves in trim accessories with sealant before installing panels and bed inside corner trim in a bead of sealant.
- E. Maintain uniform space between panels and wall fixtures. Fill space with sealant.
- F. Remove excess sealant and smears as paneling is installed. Clean with solvent recommended by sealant manufacturer and then wipe with clean dry cloths until no residue remains.

END OF SECTION 06 6400

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DIVISION 07 - THERMAL AND MOISTURE PROTECTION

079200	JOINT SEALANTS
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SECTION 07 9200 - JOINT SEALANTS

PART 1 - GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Silicone joint sealants.
 - 2. Urethane joint sealants.
 - 3. Latex joint sealants.

1.2 PRECONSTRUCTION TESTING

- A. Preconstruction Compatibility and Adhesion Testing: Submit to joint-sealant manufacturers eight samples of materials that will contact or affect joint sealants. Use manufacturer's standard test method to determine whether priming and other specific joint preparation techniques are required to obtain rapid, optimum adhesion of joint sealants to joint substrates.
 - 1. Testing will not be required if joint sealant manufacturers submit joint preparation data that are based on previous testing of current sealant products for adhesion to, and compatibility with, joint substrates and other materials matching those submitted.
- B. Preconstruction Field-Adhesion Testing: Before installing sealants, field test their adhesion to Project joint substrates. Test joint sealants according to Method A, Field-Applied Sealant Joint Hand Pull Tab, in Appendix X1 in ASTM C 1193 or Method A, Tail Procedure, in ASTM C 1521.

1.3 ACTION SUBMITTALS

- A. Product Data: For each joint-sealant product indicated.
- B. Samples: For each kind and color of joint sealant required.
- C. Joint-Sealant Schedule: Include the following information:
 - 1. Joint-sealant application, joint location, and designation.
 - 2. Joint-sealant manufacturer and product name.
 - 3. Joint-sealant formulation.
 - 4. Joint-sealant color.

1.4 INFORMATIONAL SUBMITTALS

- A. Product test reports.
- B. Preconstruction compatibility and adhesion test reports.
- C. Preconstruction field-adhesion test reports.
- D. Field-adhesion test reports.
- E. Warranties.

1.5 QUALITY ASSURANCE

- A. Testing Agency Qualifications: Qualified according to ASTM C 1021 to conduct the testing indicated.
- B. Preinstallation Conference: Conduct conference at Project site.

1.6 WARRANTY

- A. Special Installer's Warranty: Manufacturer's standard form in which Installer agrees to repair or replace joint sealants that do not comply with performance and other requirements specified in this Section within specified warranty period.
 - 1. Warranty Period: Three years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 MATERIALS, GENERAL

- A. Liquid-Applied Joint Sealants: Comply with ASTM C 920 and other requirements indicated for each liquid-applied joint sealant specified, including those referencing ASTM C 920 classifications for type, grade, class, and uses related to exposure and joint substrates.
 - 1. Suitability for Immersion in Liquids: Where sealants are indicated for Use I for joints that will be continuously immersed in liquids, provide products that have undergone testing according to ASTM C 1247. Liquid used for testing sealants is deionized water, unless otherwise indicated.
- B. Stain-Test-Response Characteristics: Where sealants are specified to be nonstaining to porous substrates, provide products that have undergone testing according to ASTM C 1248 and have not stained porous joint substrates indicated for Project.
- C. Suitability for Contact with Food: Where sealants are indicated for joints that will come in repeated contact with food, provide products that comply with 21 CFR 177.2600.

2.2 SILICONE JOINT SEALANTS

- A. Neutral-Curing Silicone Joint Sealant: ASTM C 920.
 - 1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - a. BASF Building Systems, Sonneborn, Sonolastic 150.
 - b. Dow Corning Corporation, 791.
 - c. Polymeric Systems, Inc., PSI-631
 - d. Tremco Incorporated, Spectrem 2.
 - 2. Type: Single component (S).
 - 3. Grade: nonsag (NS).
 - 4. Class: 25.
 - 5. Uses Related to Exposure: Nontraffic (NT).
- B. Mildew-Resistant Silicone Joint Sealant: ASTM C 920.
 - 1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - a. BASF Building Systems, Sonneborn, Omnipus or Sonolastic 150.
 - b. Dow Corning Corporation, 786 Mildew Resistant.
 - c. GE Advanced Materials - Silicones, Sanitary 1700.
 - d. Tremco Incorporated, Tremsil 600 White.
 - 2. Type: Single component (S).
 - 3. Grade: nonsag (NS).
 - 4. Class: 25.
- C. Uses Related to Exposure: Nontraffic (NT).

2.3 URETHANE JOINT SEALANTS

- A. Multi-Component Pourable Urethane Joint Sealant: ASTM C 920.
 - 1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - a. BASF Building Systems, Sonneborn, NP1.
 - b. Mameco International, Vulkem 245.
 - c. Pecora Corporation, Dynatrol I.
 - d. Tremco Incorporated, DyMonic.
 - 2. Type: Single-component (S).
 - 3. Grade: Nonsag (NS).

4. Class: 25.
5. Uses Related to Exposure: Traffic (T) and Nontraffic (NT).

- B. Single-Component Nonsag Urethane Joint Sealant: ASTM C 920.
 1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - a. BASF Building Systems, Sonneborn, ChemRex, Inc., SL2.
 - b. Mameco International, Vulkem 921.
 - c. Pacific Polymers International, Inc., Elasto-Thane 920 Pourable.
 - d. Sika Corporation; Construction Products Division, Sikaflex – 2c SL.
 2. Type: multicomponent (M).
 3. Grade: Pourable (P).
 4. Class: 25.
 5. Uses Related to Exposure: Traffic (T) and Nontraffic (NT).

2.4 LATEX JOINT SEALANTS

- A. Latex Joint Sealant: Acrylic latex or siliconized acrylic latex, ASTM C 834, Type OP, Grade NF.
 1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - a. BASF Building Systems, Sonneborn, ChemRex, Inc., Sonolac.
 - b. Pecora Corporation, AC-20.
 - c. Tremco Incorporated, Tremflex 834.

2.5 JOINT SEALANT BACKING

- A. Cylindrical Sealant Backings: ASTM C 1330, Type C (closed-cell material with a surface skin), Type O (open-cell material), Type 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.
- B. Bond-Breaker Tape: Polyethylene tape or other plastic tape recommended by sealant manufacturer.

2.6 MISCELLANEOUS MATERIALS

- A. Primer: 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.
- B. Cleaners for Nonporous Surfaces: Chemical cleaners acceptable to manufacturers of sealants and sealant backing materials.
- C. Masking Tape: Nonstaining, nonabsorbent material compatible with joint sealants and surfaces adjacent to joints.

PART 3 - EXECUTION

3.1 PREPARATION

- A. Surface Cleaning of Joints: Clean out joints immediately before installing joint sealants to comply with joint-sealant manufacturer's written instructions.
 1. Remove laitance and form-release agents from concrete.
 2. Clean nonporous joint substrate surfaces with chemical cleaners or other means that do not stain, harm substrates, or leave residues capable of interfering with adhesion of joint sealants.
- B. Joint Priming: Prime joint substrates where recommended by joint-sealant manufacturer or as indicated by preconstruction joint-sealant-substrate tests or prior experience. Apply primer to comply with joint-sealant manufacturer's written instructions. Confine primers to areas of joint-sealant bond; do not allow spillage or migration onto adjoining surfaces.
- C. Masking Tape: Use masking tape where required to prevent contact of sealant or primer with adjoining surfaces that otherwise would be permanently stained or damaged by such contact or by cleaning methods required to remove sealant smears. Remove tape immediately after tooling without disturbing joint seal.

3.2 INSTALLATION

- A. Sealant Installation Standard: Comply with recommendations in ASTM C 1193 for use of joint sealants as applicable to materials, applications, and conditions indicated.
- B. Install sealant backings of kind indicated to support sealants during application and at position required to produce cross-sectional shapes and depths of installed sealants relative to joint widths that allow optimum sealant movement capability.
 - 1. Do not leave gaps between ends of sealant backings.
 - 2. Do not stretch, twist, puncture, or tear sealant backings.
 - 3. Remove absorbent sealant backings that have become wet before sealant application and replace them with dry materials.
- C. Install bond-breaker tape behind sealants where sealant backings are not used between sealants and backs of joints.
- D. Install sealants using proven techniques that comply with the following and at the same time backings are installed:
 - 1. Place sealants so they directly contact and fully wet joint substrates.
 - 2. Completely fill recesses in each joint configuration.
 - 3. Produce uniform, cross-sectional shapes and depths relative to joint widths that allow optimum sealant movement capability.
- E. Tooling of Nonsag Sealants: Immediately after sealant application and before skinning or curing begins, tool sealants according to requirements specified in subparagraphs below to form smooth, uniform beads of configuration indicated; to eliminate air pockets; and to ensure contact and adhesion of sealant with sides of joint.
 - 1. Remove excess sealant from surfaces adjacent to joints.
 - 2. Use tooling agents that are approved in writing by sealant manufacturer and that do not discolor sealants or adjacent surfaces.
 - 3. Provide concave joint profile per Figure 8A in ASTM C 1193, unless otherwise indicated.
- F. Acoustical Sealant Installation: Comply with ASTM C 919 and with manufacturer's written recommendations.
- G. Clean off excess sealant or sealant smears adjacent to joints as the Work progresses by methods and with cleaning materials approved in writing by manufacturers of joint sealants and of products in which joints occur.

3.3 FIELD QUALITY CONTROL

- A. Field-Adhesion Testing: Field test joint-sealant adhesion to joint substrates as follows:
 - 1. Extent of Testing: Test completed and cured sealant joints as follows:
 - a. Perform 10 tests for the first 1000 feet of joint length for each kind of sealant and joint substrate.
 - b. Perform 1 test for each 1000 feet of joint length thereafter or 1 test per each floor per elevation.
 - 2. Test Method: Test joint sealants according to Method A, Field-Applied Sealant Joint Hand Pull Tab, in Appendix X1 in ASTM C 1193 or Method A, Tail Procedure, in ASTM C 1521.
- B. Evaluation of Field-Adhesion Test Results: Sealants not evidencing adhesive failure from testing or noncompliance with other indicated requirements will be considered satisfactory. Remove sealants that fail to adhere to joint substrates during testing or to comply with other requirements. Retest failed applications until test results prove sealants comply with indicated requirements.

3.4 JOINT-SEALANT SCHEDULE

- A. Joint-Sealant Application: Interior joints in field-painted vertical surfaces and horizontal nontraffic surfaces.
 - 1. Joint Locations:
 - a. Control and expansion joints on exposed interior surfaces of exterior walls.
 - b. Perimeter joints of exterior openings where indicated.
 - c. Vertical joints on exposed surfaces of interior unit masonry, concrete, walls and partitions.
 - d. Perimeter joints between interior wall surfaces and frames of interior doors, windows and elevator entrances.
 - e. Other joints as indicated.
 - 2. Joint Sealant: Latex.
 - 3. Joint-Sealant Color: As selected by Architect from manufacturer's full range of colors.

- B. Joint-Sealant Application: Exterior joints in vertical surfaces and horizontal nontraffic surfaces.
 - 1. Joint Locations:
 - a. Perimeter joints at frames of doors, windows and louvers.
 - b. Control and expansion joints in ceilings and other overhead surfaces.
 - c. Other joints as indicated.
 - 2. Joint Sealant: Neutral-Curing Silicone.
- C. Joint-Sealant Color: As selected by Architect from manufacturer's full range of colors.
- D. Joint-Sealant Application: Mildew-resistant interior joints in vertical surfaces and horizontal nontraffic surfaces.
 - 1. Joint Sealant Location:
 - a. Joints between plumbing fixtures and adjoining walls, floors, and counters.
 - b. Tile control and expansion joints where indicated.
 - c. Other joints as indicated.
 - 2. Joint Sealant: Mildew Resistant Silicone.
 - 3. Joint-Sealant Color: As selected by Architect from manufacturer's full range of colors.

END OF SECTION 07 9200

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SECTION 08 1113 - HOLLOW METAL DOORS AND FRAMES

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes hollow-metal work.

1.2 DEFINITIONS

- A. Minimum Thickness: Minimum thickness of base metal without coatings according to NAAMM-HMMA 803 or SDI A250.8.

1.3 ACTION SUBMITTALS

- A. Product Data: For each type of product.
- B. Shop Drawings: Include elevations, door edge details, frame profiles, metal thicknesses, preparations for hardware, and other details.
- C. Samples for Initial Selection: For units with factory-applied color finishes.
- D. Samples for Verification: For each type of exposed finish required.
- E. Schedule: Prepared by or under the supervision of supplier, using same reference numbers for details and openings as those on Drawings.

1.4 INFORMATIONAL SUBMITTALS

- A. Product test reports.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - 1. Amweld International, LLC.
 - 2. Ceco Door Products; an Assa Abloy Group company.
 - 3. Curries Company; an Assa Abloy Group company.
 - 4. Kewanee Corporation (The).
 - 5. Mesker Door Inc.
 - 6. Pioneer Industries, Inc.
 - 7. Republic Doors and Frames.
 - 8. Steelcraft; an Ingersoll-Rand company.

2.2 INTERIOR FRAMES

- A. Heavy-Duty Doors and Frames: SDI A250.8, Level 2.
 - 1. Physical Performance: Level A according to SDI A250.4.
 - 2. Frames:
 - a. Materials: Uncoated, steel sheet, minimum thickness of 0.053 inch.
 - b. Construction: Face welded.
 - 3. Exposed Finish: Prime.

2.3 EXTERIOR HOLLOW-METAL DOORS AND FRAMES

- A. Maximum Duty Doors and Frames: SDI A250.8, Level 4.
 - 1. Physical Performance: Level A according to SDI A250.4.

2. Doors:
 - a. Type: As indicated in the Door and Frame Schedule.
 - b. Thickness: 1-3/4 inches.
 - c. Face: Metallic-coated steel sheet, minimum thickness of 0.067 inch, with minimum A40 coating.
 - d. Edge Construction: Model 2, Seamless.
 - e. Core: Manufacturer's standard insulation material.
3. Thermal-Rated Doors: Provide doors fabricated with thermal-resistance value (R-value) of not less than 2.1 deg F x h x sq. ft./Btu when tested according to ASTM C 1363.
4. Frames:
 - a. Materials: Metallic-coated steel sheet, minimum thickness of 0.067 inch, with minimum A40 coating.
 - b. Construction: Face welded.
5. Exposed Finish: Prime.

2.4 FRAME ANCHORS

- A. Jamb Anchors:
 1. Masonry Type: Adjustable strap-and-stirrup or T-shaped anchors to suit frame size, not less than 0.042 inch thick, with corrugated or perforated straps not less than 2 inches wide by 10 inches long; or wire anchors not less than 0.177 inch thick.
 2. Stud-Wall Type: Designed to engage stud, welded to back of frames; not less than 0.042 inch thick.
 3. Postinstalled Expansion Type for In-Place Concrete or Masonry: Minimum 3/8-inch-diameter bolts with expansion shields or inserts. Provide pipe spacer from frame to wall, with throat reinforcement plate, welded to frame at each anchor location.
- B. Floor Anchors: Formed from same material as frames, minimum thickness of 0.042 inch, and as follows:
 1. Monolithic Concrete Slabs: Clip-type anchors, with two holes to receive fasteners.
 2. Separate Topping Concrete Slabs: Adjustable-type anchors with extension clips, allowing not less than 2-inch height adjustment. Terminate bottom of frames at finish floor surface.

2.5 MATERIALS

- A. Cold-Rolled Steel Sheet: ASTM A 1008/A 1008M, Commercial Steel (CS), Type B; suitable for exposed applications.
- B. Hot-Rolled Steel Sheet: ASTM A 1011/A 1011M, Commercial Steel (CS), Type B; free of scale, pitting, or surface defects; pickled and oiled.
- C. Frame Anchors: ASTM A 879/A 879M, Commercial Steel (CS), 04Z coating designation; mill phosphatized.
 1. For anchors built into exterior walls, steel sheet complying with ASTM A 1008/A 1008M or ASTM A 1011/A 1011M, hot-dip galvanized according to ASTM A 153/A 153M, Class B.
- D. Inserts, Bolts, and Fasteners: Hot-dip galvanized according to ASTM A 153/A 153M.
- E. Power-Actuated Fasteners in Concrete: From corrosion-resistant materials.
- F. Grout: ASTM C 476, except with a maximum slump of 4 inches, as measured according to ASTM C 143/C 143M.
- G. Mineral-Fiber Insulation: ASTM C 665, Type I (blankets without membrane facing).
- H. Glazing: Section 08 8000 "Glazing."
- I. Bituminous Coating: Cold-applied asphalt mastic, compounded for 15-mil dry film thickness per coat.

2.6 FABRICATION

- A. Fabricate hollow-metal work to be rigid and free of defects, warp, or buckle. Accurately form metal to required sizes and profiles, with minimum radius for metal thickness. Where practical, fit and assemble units in manufacturer's plant. To ensure proper assembly at Project site, clearly identify work that cannot be permanently factory assembled before shipment.

- B. Hollow-Metal Doors:
 - 1. Exterior Doors: Provide weep-hole openings in bottoms of exterior doors to permit moisture to escape. Seal joints in top edges of doors against water penetration.
 - 2. Astragals: Provide overlapping astragal on one leaf of pairs of doors where required by NFPA 80 for fire-performance rating or where indicated.
- C. Hollow-Metal Frames: Where frames are fabricated in sections due to shipping or handling limitations, provide alignment plates or angles at each joint, fabricated of same thickness metal as frames.
 - 1. Sidelight and Transom Bar Frames: Provide closed tubular members with no visible face seams or joints, fabricated from same material as door frame. Fasten members at crossings and to jambs by butt welding.
 - 2. Provide countersunk, flat- or oval-head exposed screws and bolts for exposed fasteners unless otherwise indicated.
 - 3. Grout Guards: Weld guards to frame at back of hardware mortises in frames to be grouted.
 - 4. Floor Anchors: Weld anchors to bottoms of jambs with at least four spot welds per anchor; however, for slip-on drywall frames, provide anchor clips or countersunk holes at bottoms of jambs.
 - 5. Jamb Anchors: Provide number and spacing of anchors as follows:
 - a. Masonry Type: Locate anchors not more than 16 inches from top and bottom of frame. Space anchors not more than 32 inches o.c., to match coursing, and as follows:
 - 1) Two anchors per jamb up to 60 inches high.
 - 2) Three anchors per jamb from 60 to 90 inches high.
 - 3) Four anchors per jamb from 90 to 120 inches high.
 - 4) Four anchors per jamb plus one additional anchor per jamb for each 24 inches or fraction thereof above 120 inches high.
 - b. Stud-Wall Type: Locate anchors not more than 18 inches from top and bottom of frame. Space anchors not more than 32 inches o.c. and as follows:
 - 1) Three anchors per jamb up to 60 inches high.
 - 2) Four anchors per jamb from 60 to 90 inches high.
 - 3) Five anchors per jamb from 90 to 96 inches high.
 - 4) Five anchors per jamb plus one additional anchor per jamb for each 24 inches or fraction thereof above 96 inches high.
 - c. Postinstalled Expansion Type: Locate anchors not more than 6 inches from top and bottom of frame. Space anchors not more than 26 inches o.c.
 - 6. Door Silencers: Except on weather-stripped frames, drill stops to receive door silencers.
 - a. Single-Door Frames: Drill stop in strike jamb to receive three door silencers.
 - b. Double-Door Frames: Drill stop in head jamb to receive two door silencers.
- D. Hardware Preparation: Factory prepare hollow-metal work to receive templated mortised hardware; include cutouts, reinforcement, mortising, drilling, and tapping according to SDI A250.6, the Door Hardware Schedule, and templates.
 - 1. Reinforce doors and frames to receive nontemplated, mortised, and surface-mounted door hardware.
 - 2. Comply with applicable requirements in SDI A250.6 and BHMA A156.115 for preparation of hollow-metal work for hardware.
- E. Stops and Moldings: Provide stops and moldings around glazed lites and louvers where indicated. Form corners of stops and moldings with butted or mitered hairline joints.
 - 1. Single Glazed Lites: Provide fixed stops and moldings welded on secure side of hollow-metal work.
 - 2. Multiple Glazed Lites: Provide fixed and removable stops and moldings so that each glazed lite is capable of being removed independently.
 - 3. Provide fixed frame moldings on outside of exterior and on secure side of interior doors and frames.
 - 4. Provide loose stops and moldings on inside of hollow-metal work.
 - 5. Coordinate rabbet width between fixed and removable stops with glazing and installation types indicated.

2.7 STEEL FINISHES

- A. Prime Finish: Clean, pretreat, and apply manufacturer's standard primer.
 - 1. Shop Primer: SDI A250.10.

2.8 ACCESSORIES

- A. Grout Guards: Formed from same material as frames, not less than 0.016 inch thick.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Hollow-Metal Frames: Install hollow-metal frames of size and profile indicated. Comply with SDI A250.11 or NAAMM-HMMA 840 as required by standards specified.
 - 1. Set frames accurately in position; plumbed, aligned, and braced securely until permanent anchors are set. After wall construction is complete, remove temporary braces, leaving surfaces smooth and undamaged.
 - a. At fire-rated openings, install frames according to NFPA 80.
 - b. Where frames are fabricated in sections because of shipping or handling limitations, field splice at approved locations by welding face joint continuously; grind, fill, dress, and make splice smooth, flush, and invisible on exposed faces.
 - c. Install frames with removable stops located on secure side of opening.
 - d. Install door silencers in frames before grouting.
 - e. Remove temporary braces necessary for installation only after frames have been properly set and secured.
 - f. Check plumb, square, and twist of frames as walls are constructed. Shim as necessary to comply with installation tolerances.
 - g. Field apply bituminous coating to backs of frames that will be filled with grout containing antifreezing agents.
 - 2. Floor Anchors: Provide floor anchors for each jamb and mullion that extends to floor, and secure with postinstalled expansion anchors.
 - a. Floor anchors may be set with power-actuated fasteners instead of postinstalled expansion anchors if so indicated and approved on Shop Drawings.
 - 3. Metal-Stud Partitions: Solidly pack mineral-fiber insulation inside frames.
 - 4. Masonry Walls: Coordinate installation of frames to allow for solidly filling space between frames and masonry with grout.
 - 5. Concrete Walls: Solidly fill space between frames and concrete with mineral-fiber insulation.
 - 6. In-Place Concrete or Masonry Construction: Secure frames in place with postinstalled expansion anchors. Countersink anchors, and fill and make smooth, flush, and invisible on exposed faces.
 - 7. In-Place Metal or Wood-Stud Partitions: Secure slip-on drywall frames in place according to manufacturer's written instructions.
 - 8. Installation Tolerances: Adjust hollow-metal door frames for squareness, alignment, twist, and plumb to the following tolerances:
 - a. Squareness: Plus or minus 1/16 inch, measured at door rabbet on a line 90 degrees from jamb perpendicular to frame head.
 - b. Alignment: Plus or minus 1/16 inch, measured at jambs on a horizontal line parallel to plane of wall.
 - c. Twist: Plus or minus 1/16 inch, measured at opposite face corners of jambs on parallel lines, and perpendicular to plane of wall.
 - d. Plumbness: Plus or minus 1/16 inch, measured at jambs at floor.
- B. Hollow-Metal Doors: Fit hollow-metal doors accurately in frames, within clearances specified below. Shim as necessary.
 - 1. Non-Fire-Rated Steel Doors:
 - a. Between Door and Frame Jambs and Head: 1/8 inch plus or minus 1/32 inch.
 - b. Between Edges of Pairs of Doors: 1/8 inch to 1/4 inch plus or minus 1/32 inch.
 - c. At Bottom of Door: 5/8 inch plus or minus 1/32 inch.
 - d. Between Door Face and Stop: 1/16 inch to 1/8 inch plus or minus 1/32 inch.
 - 2. Fire-Rated Doors: Install doors with clearances according to NFPA 80.
 - 3. Smoke-Control Doors: Install doors and gaskets according to NFPA 105.

3.2 ADJUSTING AND CLEANING

- A. Final Adjustments: Check and readjust operating hardware items immediately before final inspection. Leave work in complete and proper operating condition. Remove and replace defective work, including hollow-metal work that is warped, bowed, or otherwise unacceptable.
- B. Remove grout and other bonding material from hollow-metal work immediately after installation.
- C. Prime-Coat Touchup: Immediately after erection, sand smooth rusted or damaged areas of prime coat and apply touchup of compatible air-drying, rust-inhibitive primer.

D. Touchup Painting: Cleaning and touchup painting of abraded areas of paint are specified in painting Sections.

END OF SECTION 08 1113

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SECTION 08 1416 - FLUSH WOOD DOORS

PART 1 - GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Solid-core doors with wood-veneer faces.
 - 2. Factory finishing flush wood doors.

1.2 ACTION SUBMITTALS

- A. Product Data: For each type of door. Include factory-finishing specifications.
- B. Shop Drawings: Indicate location, size, and hand of each door; elevation of each kind of door; construction details not covered in Product Data; and the following:
 - 1. Dimensions and locations of blocking.
 - 2. Dimensions and locations of mortises and holes for hardware.
 - 3. Dimensions and locations of cutouts.
 - 4. Undercuts.
 - 5. Requirements for veneer matching.
 - 6. Doors to be factory finished and finish requirements.
- C. Samples: For factory-finished doors.

1.3 INFORMATIONAL SUBMITTALS

- A. Sample Warranty: For special warranty.
- B. Quality Standard Compliance Certificates: AWI Quality Certification Program certificates.

1.4 QUALITY ASSURANCE

- A. Manufacturer Qualifications: A qualified manufacturer that is a certified participant in AWI's Quality Certification Program.

1.5 WARRANTY

- A. Special Warranty: Manufacturer agrees to repair or replace doors that fail in materials or workmanship within specified warranty period.
 - 1. Failures include, but are not limited to, the following:
 - a. Warping (bow, cup, or twist) more than 1/4 inch in a 42-by-84-inch section.
 - b. Telegraphing of core construction in face veneers exceeding 0.01 inch in a 3-inch span.
 - 2. Warranty shall also include installation and finishing that may be required due to repair or replacement of defective doors.
 - 3. Warranty Period for Solid-Core Interior Doors: Life of installation.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - 1. Algoma Hardwoods, Inc.
 - 2. Eggers Industries.
 - 3. Graham Wood Doors; an Assa Abloy Group company.
 - 4. Marshfield Door Systems, Inc.
 - 5. Oshkosh Door Company.
 - 6. Vancouver Door Company.

7. VT Industries, Inc.

2.2 FLUSH WOOD DOORS, GENERAL

- A. Quality Standard: In addition to requirements specified, comply with AWT's, AWMAC's, and WT's "Architectural Woodwork Standards."
- B. Mineral-Core Doors:
1. Core: Noncombustible mineral product complying with requirements of referenced quality standard and testing and inspecting agency for fire-protection rating indicated.
 2. Blocking: Provide composite blocking with improved screw-holding capability approved for use in doors of fire-protection ratings indicated as needed to eliminate through-bolting hardware.
 3. Edge Construction: At hinge stiles, provide laminated-edge construction with improved screw-holding capability and split resistance. Comply with specified requirements for exposed edges.

2.3 VENEER-FACED DOORS FOR TRANSPARENT FINISH

- A. Interior Solid-Core Doors:
1. Grade: Premium, with Grade A faces.
 2. Species: Birch to match existing.
 3. Cut: Rotary cut.
 4. Match between Veneer Leaves: Book match.
 5. Assembly of Veneer Leaves on Door Faces: Running match.
 6. Pair and Set Match: Provide for doors hung in same opening or separated only by mullions.
 7. Core: Particleboard.
 8. Construction: Five plies. Stiles and rails are bonded to core, then entire unit is abrasive planed before veneering.

2.4 FABRICATION

- A. Factory fit doors to suit frame-opening sizes indicated. Comply with clearance requirements of referenced quality standard for fitting unless otherwise indicated.

2.5 FACTORY FINISHING

- A. General: Comply with referenced quality standard for factory finishing. Complete fabrication, including fitting doors for openings and machining for hardware that is not surface applied, before finishing.
1. Finish faces, all four edges, edges of cutouts, and mortises. Stains and fillers may be omitted on bottom edges, edges of cutouts, and mortises.
- B. Factory finish doors that are indicated to receive transparent finish.
- C. Transparent Finish:
1. Grade: Premium.
 2. Finish: AWT's, AWMAC's, and WT's "Architectural Woodwork Standards" System 11, catalyzed polyurethane.
 3. Staining: Match Architect's sample.
 4. Sheen: Semigloss.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Hardware: For installation, see Section 08 7100 "Door Hardware."
- B. Installation Instructions: Install doors to comply with manufacturer's written instructions and referenced quality standard, and as indicated.

- C. Job-Fitted Doors: Align and fit doors in frames with uniform clearances and bevels as indicated below; do not trim stiles and rails in excess of limits set by manufacturer or permitted for fire-rated doors. Machine doors for hardware. Seal edges of doors, edges of cutouts, and mortises after fitting and machining.
 - 1. Clearances: Provide 1/8 inch at heads, jambs, and between pairs of doors. Provide 1/8 inch from bottom of door to top of decorative floor finish or covering unless otherwise indicated. Where threshold is shown or scheduled, provide 1/4 inch from bottom of door to top of threshold unless otherwise indicated.
 - a. Comply with NFPA 80 for fire-rated doors.
- D. Factory-Finished Doors: Restore finish before installation if fitting or machining is required at Project site.

3.2 ADJUSTING

- A. Operation: Rehang or replace doors that do not swing or operate freely.
- B. Finished Doors: Replace doors that are damaged or do not comply with requirements. Doors may be repaired or refinished if work complies with requirements and shows no evidence of repair or refinishing.

END OF SECTION 08 1416

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SECTION 08 7100 - DOOR HARDWARE

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. This Section includes the following:
 - 1. Commercial door hardware for the following:
 - a. Swinging doors.

1.3 SUBMITTALS

- A. Product Data: Include construction and installation details, material descriptions, dimensions of individual components and profiles, and finishes.
- B. Samples for Verification: For exposed door hardware of each type, in specified finish, full size. Tag with full description for coordination with the door hardware sets. Submit Samples before, or concurrent with, submission of the final door hardware sets, if requested.
 - 1. Samples will be returned to Contractor. Units that are acceptable and remain undamaged through submittal, review, and field comparison process may, after final check of operation, be incorporated into the Work, within limitations of keying requirements.
 - 2. Detail interface between electrified door hardware and fire alarm, access control, security, building control system.
- C. Qualification Data: For Installer.
- D. Product Test Reports: Based on evaluation of comprehensive tests performed by manufacturer and witnessed by a qualified testing agency, for locks, latches, and closers as requested.
- E. Maintenance Data: For each type of door hardware to include in maintenance manuals. Include final hardware and keying schedule.
- F. Warranty: Special warranty specified in this Section.
- G. Door Hardware Sets: Prepared by or under the supervision of Architectural Hardware Consultant, detailing fabrication and assembly of door hardware, as well as procedures and diagrams. Coordinate the final door hardware sets with doors, frames, and related work to ensure proper size, thickness, hand, function, and finish of door hardware.
 - 1. Format: Use same scheduling sequence and format and use same door numbers as in the Contract Documents.
 - 2. Content: Include the following information:
 - a. Identification number, location, hand, fire rating, and material of each door and frame.
 - b. Type, style, function, size, quantity, and finish of each door hardware item.
 - c. Complete designations of every item required for each door or opening including name and manufacturer.
 - d. Fastenings and other pertinent information.
 - e. Location of each door hardware set, cross-referenced to Drawings, both on floor plans and in door and frame schedule.
 - f. Explanation of abbreviations, symbols, and codes contained in schedule.
 - g. Mounting locations for door hardware.
 - h. Door and frame sizes and materials.
 - i. Description of each electrified door hardware function, including location, sequence of operation, and interface with other building control systems.

- 1) Sequence of Operation: Include description of component functions that occur in the following situations: authorized person wants to enter; authorized person wants to exit; unauthorized person wants to enter; unauthorized person wants to exit.
 - j. List of related door devices specified in other Sections for each door and frame.
 3. Submittal Sequence: Submit the final door hardware sets at earliest possible date, particularly where approval of the door hardware sets must precede fabrication of other work that is critical in Project construction schedule. Include Product Data, Samples, Shop Drawings of other work affected by door hardware, and other information essential to the coordinated review of the door hardware sets.
- H. Keying Schedule: Prepared by or under the supervision of Architectural Hardware Consultant, detailing Owner's final keying instructions for locks. Include schematic keying diagram and index each key set to unique door designations.

1.4 QUALITY ASSURANCE

- A. Installer Qualifications: An employer of workers trained and approved by lock manufacturer.
1. Installer's responsibilities include supplying and installing door hardware and providing a qualified Architectural Hardware Consultant available during the course of the Work to consult with Contractor, Architect, and Owner about door hardware and keying.
 2. Installer shall have warehousing facilities in Project's vicinity.
 3. Scheduling Responsibility: Preparation of door hardware and keying schedules.
- B. Architectural Hardware Consultant Qualifications: A person who is currently certified by DHI as an Architectural Hardware Consultant and who is experienced in providing consulting services for door hardware installations that are comparable in material, design, and extent to that indicated for this Project.
- C. Source Limitations: Obtain each type and variety of door hardware from a single manufacturer, unless otherwise indicated.
1. Provide electrified door hardware from same manufacturer as mechanical door hardware, unless otherwise indicated. Manufacturers that perform electrical modifications and that are listed by a testing and inspecting agency acceptable to authorities having jurisdiction are acceptable.
- D. Keying Conference: Conduct conference at Project site to comply with requirements in Division 01 Section "Project Management and Coordination." In addition to Owner, Construction Manager, Contractor, and Architect, conference participants shall also include Installer's Architectural Hardware Consultant and Owner's Security Consultant. Incorporate keying conference decisions into final keying schedule after reviewing door hardware keying system including, but not limited to, the following:
1. Function of building, flow of traffic, purpose of each area, degree of security required, and plans for future expansion.
 2. Preliminary key system schematic diagram.
 3. Requirements for key control system.
 4. Address for delivery of keys.
- E. Pre-installation Conference: Conduct conference at Project site to comply with requirements in Division 01 Section "Project Management and Coordination."

1.5 DELIVERY, STORAGE, AND HANDLING

- A. Inventory door hardware on receipt and provide secure lock-up for door hardware delivered to Project site.
- B. Tag each item or package separately with identification related to the final door hardware sets, and include basic installation instructions, templates, and necessary fasteners with each item or package.
- C. Deliver keys to Owner's Representative by registered mail or overnight package service.

1.6 COORDINATION

- A. Coordinate layout and installation of recessed hardware with floor construction. Cast anchoring inserts into concrete. Concrete, reinforcement, and formwork requirements are specified in Division 03.

- B. Templates: Distribute door hardware templates for doors, frames, and other work specified to be factory prepared for installing door hardware. Check Shop Drawings of other work to confirm that adequate provisions are made for locating and installing door hardware to comply with indicated requirements.
- C. Coordinate with aluminum entrance door supplier for door hardware installation.

1.7 WARRANTY

- A. Special Warranty: Manufacturer's standard form in which manufacturer agrees to repair or replace components of door hardware that fail in materials or workmanship within specified warranty period.
 - 1. Failures include, but are not limited to, the following:
 - a. Structural failures including excessive deflection, cracking, or breakage.
 - b. Faulty operation of operators and door hardware.
 - c. Deterioration of metals, metal finishes, and other materials beyond normal weathering and use.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - 1. Products:
 - a. Finish: Shall be US26D as indicated in hardware schedule, unless otherwise noted.
 - b. Manufacture Standard:
 - 1) Butts: Hager, McKinney*, Stanley, Ives
 - 2) Locksets: Schlage*
 - 3) Trim: BBW, Rockwood*, Hager, Ives

2.2 SCHEDULED HARDWARE

- A. Requirements for design, grade, function, finish, size, and other distinctive qualities of each type of finish hardware are indicated in the "Hardware Schedule" at the end of this Section. Products are identified by using hardware designation numbers of the following:
 - 1. Manufacturer's Product Designations: The product designation and name of one manufacturer are listed for each hardware type required for the purpose of establishing minimum requirements. Provide either the product designated or, where more than one manufacturer is specified under the Article "Manufacturers" in Part 2 for each hardware type, the comparable product of one of the other manufacturers that complies with requirements.
 - 2. ANSI/BHMA designations used elsewhere in this Section or in schedules to describe hardware items or to define quality or function are derived from the following standards. Provide products complying with these standards and requirements specified elsewhere in this Section.
 - a. Butts and Hinges: ANSI A156.1.
 - b. Bored and Preassembled Locks and Latches: ANSI/BHMA A156.2.
 - c. Architectural Door Trim: ANSI A156.6.
 - d. Template Hinge Dimensions: ANSI A156.7.
 - e. Auxiliary Hardware: ANSI A156.16.
 - f. Materials and Finishes: ANSI A156.18.
- B. Provide products for each door that comply with requirements indicated in Part 2 and door hardware schedule.
 - 1. Door hardware is scheduled in Part 3.

2.3 MATERIALS AND FABRICATION

- A. Base Metals: Produce hardware units of basic metal and forming method indicated, using manufacturer's standard metal alloy, composition, temper, and hardness, but in no case of lesser (commercially recognized) quality than specified for applicable hardware units by applicable ANSI/BHMA A156 series standards for each type of hardware item and with ANSI/BHMA A156.18 for finish designations indicated. Do not furnish "optional" materials or forming methods for those indicated, except as otherwise specified.

- B. Fasteners: Provide hardware manufactured to conform to published templates, generally prepared for machine screw installation. Do not provide hardware that has been prepared for self-tapping sheet metal screws, except as specifically indicated.
- C. Furnish screws for installation with each hardware item. Provide Phillips flat-head screws except as otherwise indicated. Finish exposed (exposed under any condition) screws to match hardware finish or, if exposed in surfaces of other work, to match finish of this other work as closely as possible including "prepared for paint" surfaces to receive painted finish.
- D. Provide concealed fasteners for hardware units that are exposed when door is closed except to the extent no standard units of type specified are available with concealed fasteners. Do not use thru-bolts for installation where bolt head or nut on opposite face is exposed in other work unless their use is the only means of reinforcing the work adequately to fasten the hardware securely. Where thru-bolts are used as a means of reinforcing the work, provide sleeves for each thru-bolt or use sex screw fasteners.

2.4 HINGES, GENERAL

- A. Quantity: Provide the following, unless otherwise indicated:
 - 1. Three Hinges: For doors with heights 61 to 90 inches.
- B. Template Requirements: Except for hinges and pivots to be installed entirely (both leaves) into wood doors and frames, provide only template-produced units.
- C. Hinge Weight: As indicated in hardware sets.
- D. Hinge Base Metal: Unless otherwise indicated, provide the following:
 - 1. Interior Hinges: Steel with steel pin.
- E. Hinge Options: Where indicated in door hardware sets or on Drawings:
 - 1. Corners: Square.
- F. Fasteners: Comply with the following:
 - 1. Machine Screws: For metal doors and frames. Install into drilled and tapped holes.
 - 2. Wood Screws: For wood doors and frames.

2.5 LOCKS, LATCHES, AND BOLTS

- A. Strikes: Provide manufacturer's standard wrought box strike for each latch or lock bolt, with curved lip extended to protect frame, finished to match hardware set, unless otherwise indicated.
- B. Lock Throw: Provide 5/8-inch minimum throw of latch on pairs of doors. Comply with UL requirements for throw of bolts and latch bolts on rated fire openings.
- C. Cylindrical Locks - ANSI A156.2 Series 4000, Grade 1 Strength and Operational requirements. Meets A117.1 Accessibility Codes. Latch bolts shall be steel with minimum ½" throw, deadlocking on keyed and exterior functions. ¾" throw anti-friction latchbolt on pairs of fire doors. Locksets to be tested to exceed 3,000,000 cycles. Lock case shall be steel. Lock shall incorporate one piece spring cage and spindle. Provide 5/8" minimum throw of latch and deadbolt used on pairs of doors. Provide Seven Year Warranty.

2.6 KEYING REQUIREMENTS

- A. General: Supplier will meet with Owner to finalize keying requirements and obtain final instructions in writing.
- B. Review the keying system with the Owner and provide a new Primus/Everest D master, grandmaster or great-grandmaster integrated with Owner's existing system. If key pinning charts are required, owner to furnish charts to hardware supplier.

- C. Furnish temporary keyed cores for the construction period, and remove these when directed. The construction cores remain property of the supplier and shall be returned to the supplier when they are removed. Contractor shall install the permanent cores in the presence of the owner's representative.
- D. Permanent Keys: Secured shipment direct from point of origination to Owner's Representative
 - 1. For estimate: 2 keys per change combination, 5 master keys per group, 5 grand-master keys, 3 control keys.

2.7 TRIM AND STOPS

- A. Doorstops shall be furnished for all doors to prevent damage to doors or hardware from striking adjacent walls or fixtures. Wall stops are preferred. Floor stops are used only where noted in hardware schedule. Where conditions prohibit the use wall type stops, furnish overhead stops either surface mounted or concealed as noted in hardware sets.

2.8 LOCK CYLINDERS

- A. Lock Cylinders: Tumbler type, constructed from brass or bronze, stainless steel, or nickel silver. Provide cylinder from same manufacturer of locking devices.
- B. Standard Lock Cylinders: BHMA A156.5; Grade 1 permanent cores; face finished to match lockset.

2.9 EXIT DEVICES

- A. Requirements:
 - 1. ANSI Grade: BHMA/ANSI A156.3, Grade 1.
 - 2. Device Construction:
 - a. Exit device(s) shall have a mechanism case constructed of extruded aluminum or wrought stainless steel, base plates constructed of cold rolled or cast steel, push pad of extruded aluminum with stainless steel covering or wrought stainless steel, and end caps with flush mounted, sloped design. At full-glass doors, provide exit devices with no exposed fasteners or rivets visible through glass. Where required by stile width, provide narrow-stile type device.
 - b. Latchbolt: Provide Pullman-type deadlocking latch bolts constructed of stainless steel. Where specified provide high security Pullman-type latchbolt that collapses to be square faced under high pull forces. Latch return springs shall be compression type. Tension and Torsion latch return springs are not acceptable.
 - c. Dogging Mechanism: where dogging or latch-retraction options are not specifically scheduled for non-fire rated doors, provide device with a hex-key activated hook-type dogging mechanism constructed of steel.
 - d. Plastic or nylon used for the push pad, or parts in the dogging mechanism or latchbolt mechanism are unacceptable.
 - e. Sound Dampening: Device shall be provided with factory-installed sound dampening materials.
 - f. Provide device type, function, and trim style as indicated in hardware schedules.
 - 3. Where exit device(s) are provided for fire rated door, provide with fire listing and label indicating "Fire Exit Hardware". If device is mounted on wood doors, provide sex nuts and bolts.
 - 4. Provide shim kits, filler plates, and other accessories as required for each opening.
 - 5. Unless otherwise indicated in the sets, provide device with roller-type strike.
 - 6. Where scheduled, provide removable mullions by same manufacturer as provided exit devices. Provide mullion stabilizers, key removable option, strike preps, and fire rating as indicated in sets.
 - 7. Concealed vertical exit devices shall be a cable-actuated concealed vertical latch system available in two-point and less bottom latch (LBL) configurations. Vertical rods are not acceptable.
 - a. Cable shall include color-coded stainless steel with polytetrafluoroethylene (Teflon®) liner and stainless steel core wire. Latches and center slides are color coded to aid in installation. Conduit and core wire ends snap into latch and center slides without the use of tools. Latchbolts and blocking cams shall be manufactured from sintered metal low carbon copper-infiltrated steel, with a molybdenum disulfide coating for low friction and consistent performance.
 - b. Top latchbolt shall have a minimum 0.382 inch and greater than 90 degree engagement with strike to prevent door and frame separation under high static load. Bottom latchbolt, when used, shall have a minimum of 0.44 inch engagement with strike.
 - c. Product cycle life shall exceed 1,000,000 cycles.
 - d. Latch release does not require separate trigger mechanism.

- e. Top and bottom latch must operate independently of each other. Top latch will fully engage top strike even when bottom latch is compromised.
- f. Cable and latching system shall have the ability to:
 - 1) Be assembled as a complete assembly and function prior to being installed in the door.
 - 2) Install into the door as a one-piece single assembly
 - 3) Be installed independently of device installation and function on door even prior to device and trim installation.
 - 4) Connect to the exit device at a single attachment point.
 - 5) Adjust bottom latch height from a single point, after the system is installed and connected to exit device, while the door is hanging
 - 6) Alter latch position up and down within two-inches without additional adjustment.
 - 7) Ability to remove the system while door is hanging.
 - 8) Configure latchbolt mounting: double or single tab mount for steel doors, and wood doors, face mount for aluminum doors, eliminating requirement of tabs.
 - 9) Provide adjustable exit device to latch center line adjustment. Ensures double tab mounting option for top latch, regardless of exit device centerline.

2.10 CLOSERS

- A. General:
 - 1. Valves: Closers shall have separate valves for latch speed, main speed, and back check. Valves shall be staked to prevent accidental removal.
 - 2. Provide the appropriate closer body, handing, and brackets to mount closer inside the building on the least-public side of the door.
 - 3. Where closers are to be mounted parallel arm, provide with heavy duty, fully forged arms.
 - 4. Where closers are to be mounted regular arm and the opening can otherwise be opened to 180 degrees, provide closer with the appropriate special templating to allow 180 degree door swing. Where a special template is not available for 180 degree swing, provide closer arm with integrated stop.
 - 5. Integrated Stop Closer Arms: Where a closer with integrated stop is required, provide the appropriate closer and arm as follows:
 - a. Parallel arm with spring-cushioned stop arm: Provide where door is otherwise able to open to 95 degrees and requires a parallel arm mount closer.
 - b. Parallel arm with dead stop arm: Provide where door is obstructed from opening to 95 degrees and requires a parallel arm mount closer.
 - c. Regular arm with push side surface-mounted overhead stop: Provide where door closer should mount on pull side of door.
 - 6. Hold Open Arms: Provide closer arms with mechanical hold-opens as scheduled.
 - 7. Provide closers with any special templates, brackets, plates, or other accessories required for interface with header, door, wall, and other hardware. Provide closers with screw packs containing thru-bolts, machine screws, and wood screws.
 - 8. Closers shall be provided with all-weather fluid and shall not require readjustment from 120 degrees F to -30 degrees F. Fluid shall be non-flaming and shall not fuel door or floor covering fires. Upon request, provide data indicating thermal properties of fluid.
 - 9. Closers shall close and latch door when adjusted to meet accessibility requirements for door opening force: 8.5 lbs at exterior doors, 5 lbs at interior doors, and 15 lbs at labeled fire doors.
- B. Heavy Duty Door Closers:
 - 1. Requirements:
 - a. ANSI Grade: BHMA/ANSI A156.4, Grade 1.
 - b. Closer Construction: Closer shall have cast iron or aluminum alloy body with 1-1/2 inch steel piston, double heat treated pinion, 5/8 inch bearing journals, and full complement needle or caged ball bearings. Closer shall be adjustable from sizes 1 through 6.
 - c. Provide closers with spring size adjustment dial for ease of adjusting.

2.11 HARDWARE FINISHES

- A. Match items to the manufacturer's standard color and texture finish for the latch and locksets (or push-pull units if no latch or lock sets).
- B. Provide finishes that match those established by BHMA or, if none established, match the Architect's sample.

- C. Provide quality of finish, including thickness of plating or coating (if any), composition, hardness, and other qualities complying with manufacturer's standards, but in no case less than specified by referenced standards for the applicable units of hardware.
- D. The designations used in schedules and elsewhere to indicate hardware finishes are those listed in ANSI/BHMA A156.18, "Materials and Finishes," including coordination with the traditional U.S. finishes shown by certain manufacturers for their products.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine doors and frames, with Installer present, for compliance with requirements for installation tolerances, labeled fire door assembly construction, wall and floor construction, and other conditions affecting performance.
- B. Examine roughing-in for electrical power systems to verify actual locations of wiring connections before electrified door hardware installation.
- C. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

- A. Wood Doors: Comply with DHI A115-W Series.

3.3 INSTALLATION

- A. Pre-installation conference shall be conducted prior to installation of hardware at Project site. Meet with the, Owner, Contractor, installer, and manufacturers representatives. A separate pre-installation conference shall be conducted prior to the installation of electronic security hardware with the electrical contractor Review catalogs, brochures, templates, installation instructions, and the approved hardware schedule. Survey installation procedures and workmanship, with special emphasis on unusual conditions, as to ensure correct technique of installation, and coordination with other work. Notify participants at least ten, 10 working days before conference.
- B. Hardware Installers must have a minimum of five (5) years experience in installation of hardware. Provide verification of installer's qualification to Consultant for approval. All installers to attend review meetings with the hardware distributor.
- C. Install hardware using only manufacturer supplied and approved fasteners in strict adherence with manufacturers published installation instructions.
- D. Mounting Heights: Mount door hardware units at heights indicated, as follows, unless otherwise indicated or required to comply with governing regulations.
 - 1. Wood Doors: DHI WDHS.3, "Recommended Locations for Architectural Hardware for Wood Flush Doors."
- E. Install each door hardware item to comply with manufacturer's written instructions. Where cutting and fitting are required to install door hardware onto or into surfaces that are later to be painted or finished in another way, coordinate removal, storage, and reinstallation of surface protective trim units with finishing work specified in Division 09 Sections. Do not install surface-mounted items until finishes have been completed on substrates involved.
 - 1. Set units level, plumb, and true to line and location. Adjust and reinforce attachment substrates as necessary for proper installation and operation.
 - 2. Drill and countersink units that are not factory prepared for anchorage fasteners. Space fasteners and anchors according to industry standards.

3.4 ADJUSTING

- A. Initial Adjustment: Adjust and check each operating item of door hardware and each door to ensure proper operation or function of every unit. Replace units that cannot be adjusted to operate as intended. Adjust door control devices to compensate for final operation of heating and ventilating equipment and to comply with referenced accessibility requirements.

- B. Occupancy Adjustment: Approximately six months after date of Substantial Completion, Installer's Architectural Hardware Consultant shall examine and readjust, including adjusting operating forces, each item of door hardware as necessary to ensure function of doors, door hardware, and electrified door hardware.

3.5 CLEANING AND PROTECTION

- A. Clean adjacent surfaces soiled by door hardware installation.
- B. Clean operating items as necessary to restore proper function and finish.
- C. Provide final protection and maintain conditions that ensure that door hardware is without damage or deterioration at time of Substantial Completion.

3.6 DOOR HARDWARE SETS

Hardware Set 1

Doors: Existing Toilet Room Doors

Each to Receive:

1	EA	PRIVACY	AL40S SAT	626	SCHLAGE
Remainder of hardware is existing					

Hardware Set 2

Doors: DR#-102 & 103

Each to Receive:

3	EA	HINGE	TA2714 4.5 X 4.5	626	MCKINNEY
1	EA	PASSAGE	AL10S SAT	626	SCHLAGE
1	EA	DOOR STOPS	406	626	ROCKWOOD

Hardware Set 3

Doors: DR#-101

Each to Receive:

3	EA	HINGE	TA2714 4.5 X 4.5	626	MCKINNEY
1	EA	EXIT DEVICE	98EO	626	VON
1	EA	CLOSER	4050 CUSH	AL	LCN
1	EA	THRESHOLD	655A	AL	ZER
1	SET	WEATHERSTRIP	429A	A	ZER
1	EA	SWEEP	39A	AL	ZER

END OF SECTION 08 7100

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SECTION 09 2900 - GYPSUM BOARD

PART 1 - GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Interior gypsum board.
 - 2. Texture finishes.

1.2 ACTION SUBMITTALS

- A. Product Data: For each type of product.
- B. Samples:
 - 1. Textured Finishes: Manufacturer's standard size for each textured finish indicated and on same backing indicated for Work.

PART 2 - PRODUCTS

2.1 INTERIOR GYPSUM BOARD

- A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - 1. American Gypsum.
 - 2. CertainTeed Corp.
 - 3. Georgia-Pacific Gypsum LLC.
 - 4. National Gypsum Company.
 - 5. PABCO Gypsum.
 - 6. USG Corporation.
- B. Gypsum Board, Type X: ASTM C 1396/C 1396M.
 - 1. Thickness: 5/8 inch.
 - 2. Long Edges: Tapered.
- C. Gypsum Ceiling Board: ASTM C 1396/C 1396M.
 - 1. Thickness: 1/2 inch.
 - 2. Long Edges: Tapered.

2.2 TRIM ACCESSORIES

- A. Interior Trim: ASTM C 1047.
 - 1. Material: Galvanized or aluminum-coated steel sheet or rolled zinc.
- B. Aluminum Trim: ASTM B 221, Alloy 6063-T5.

2.3 JOINT TREATMENT MATERIALS

- A. General: Comply with ASTM C 475/C 475M.
- B. Joint Tape:
 - 1. Interior Gypsum Board: Paper.
- C. Joint Compound for Interior Gypsum Board: For each coat use formulation that is compatible with other compounds applied on previous or for successive coats.

2.4 AUXILIARY MATERIALS

- A. Laminating Adhesive: Adhesive or joint compound recommended for directly adhering gypsum panels to continuous substrate.
- B. Steel Drill Screws: ASTM C 1002, unless otherwise indicated.

2.5 TEXTURE FINISHES

- A. Primer: As recommended by textured finish manufacturer.
- B. Aggregate Finish: Water-based, job-mixed, aggregated, drying-type texture finish for spray application.
 - 1. Products: Subject to compliance with requirements, provide one of the following:
 - a. CertainTeed Corp.; ProRoc Wall and Ceiling Spray Texture.
 - b. Georgia-Pacific Gypsum LLC; ToughRock Ceiling Textures/Vermiculite.
 - c. USG Corporation; SHEETROCK Wall and Ceiling Spray Texture (Aggregated).
 - 2. Ceiling Texture: Light stipple. Field verify and match existing.
 - 3. Wall Texture: Orange Peel. Field verify and match existing.

PART 3 - EXECUTION

3.1 APPLYING AND FINISHING PANELS

- A. Comply with ASTM C 840.
- B. Examine panels before installation. Reject panels that are wet, moisture damaged, and mold damaged.
- C. Isolate perimeter of gypsum board applied to non-load-bearing partitions at structural abutments, except floors. Provide 1/4- to 1/2-inch-wide spaces at these locations and trim edges with edge trim where edges of panels are exposed. Seal joints between edges and abutting structural surfaces with acoustical sealant.
- D. Install trim with back flanges intended for fasteners, attach to framing with same fasteners used for panels. Otherwise, attach trim according to manufacturer's written instructions.
 - 1. Interior Trim: Install in the following locations:
 - a. Cornerbead: Use at outside corners, unless otherwise indicated.
 - b. Bullnose Bead: Use where indicated.
 - c. LC-Bead: Use at exposed panel edges.
 - d. L-Bead: Use where indicated.
 - e. U-Bead: Use at exposed panel edges.
 - f. Curved-Edge Cornerbead: Use at curved openings.
 - 2. Aluminum Trim: Install in locations indicated on Drawings.
 - 3. Control Joints: Install control joints according to ASTM C 840 and in specific locations approved by Architect for visual effect.
- E. Prefill open joints and damaged surface areas.
- F. Apply joint tape over gypsum board joints, except for trim products specifically indicated as not intended to receive tape.
- G. Gypsum Board Finish Levels: Finish panels to levels indicated below and according to ASTM C 840:
 - 1. Level 1: Ceiling plenum areas, concealed areas, and where indicated.
 - 2. Level 2: Panels that are substrate for tile.
 - 3. Level 3: Panels that are substrates for wall coverings and wall panels..
 - 4. Level 4: At panel surfaces that will be exposed to view unless otherwise indicated.
 - a. Primer and its application to surfaces are specified in Section 09 9123 "Interior Painting."
 - 5. Level 5: In areas with oblique lighting such as painted marker board areas, corridors with a window at the end, lobby walls that end at windows and on wall surfaces to receive deep tone paints or satin or glossier paint coatings.
 - a. Primer and its application to surfaces are specified in Section 09 9123 "Interior Painting."

- H. Texture Finish Application: Prepare and apply primer to gypsum panels and other surfaces receiving texture finishes. Mix and apply finish using powered spray equipment, to produce a uniform texture matching approved mockup and free of starved spots or other evidence of thin application or of application patterns.
- I. Protect adjacent surfaces from drywall compound and texture finishes and promptly remove from floors and other non-drywall surfaces. Repair surfaces stained, marred, or otherwise damaged during drywall application.
- J. Remove and replace panels that are wet, moisture damaged, and mold damaged.

END OF SECTION 09 2900

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SECTION 09 5113 - ACOUSTICAL PANEL CEILINGS

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes acoustical panels and exposed suspension systems for ceilings.

1.2 ACTION SUBMITTALS

- A. Product Data: For each type of product.
- B. Samples: For each exposed product and for each color and texture specified.

1.3 INFORMATIONAL SUBMITTALS

- A. Product test reports.
- B. Evaluation reports.
- C. Field quality-control reports.

1.4 CLOSEOUT SUBMITTALS

- A. Maintenance data.

1.5 QUALITY ASSURANCE

- A. Testing Agency Qualifications: Qualified according to NVLAP.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

- A. Seismic Performance: Acoustical ceiling shall withstand the effects of earthquake motions determined according to ASCE/SEI 7, IBC-2012 Chapter 16, ASTM 635 and ASTM 636.
- B. Surface-Burning Characteristics: Comply with ASTM E 84; testing by a qualified testing agency. Identify products with appropriate markings of applicable testing agency.
 - 1. Flame-Spread Index: Comply with ASTM E 1264 for Class A materials.
 - 2. Smoke-Developed Index: 50 or less.

2.2 ACOUSTICAL PANEL CEILINGS, GENERAL

- A. Acoustical Panel Standard: Comply with ASTM E 1264.
- B. Metal Suspension System Standard: Comply with ASTM C 635.
- C. Attachment Devices: Size for five times the design load indicated in ASTM C 635, Table 1, "Direct Hung," unless otherwise indicated. Comply with seismic design requirements.

2.3 ACOUSTICAL PANELS

- A. WATER-FELTED, MINERAL-BASE ACOUSTICAL PANELS FOR ACOUSTICAL PANEL CEILINGS
 - 1. Classification: Provide panels complying with ASTM E 1264 for Type III, mineral base with painted finish;
Form 2, water felted; and pattern as follows:
 - a. Pattern: CD (perforated, small holes, fissured).

- b. Color: White.
- c. LR: Not less than 0.83.
- d. NRC: Not less than 0.55.
- e. CAC: Not less than 35.
- f. Edge Detail: Reveal sized to fit flange of exposed suspension system members.
- g. Thickness: 5/8 inch.
- h. Size: 24 by 48 inches.
- i. Location: All rooms with acoustical panel ceilings not otherwise noted.
- j. Products:
 - 1) Fine Fissured School Zone; Armstrong World Industries, Inc.
 - 2) Radar; USG Interiors, Inc.

B. WATER-FELTED, MINERAL-BASE ACOUSTICAL PANELS FOR ACOUSTICAL PANEL CEILINGS

- 1. Classification: Provide panels complying with ASTM E 1264 for Type IV, mineral base with painted finish; Form 2, water felted; and pattern as follows:
 - a. Pattern: E.
 - b. Color: White.
 - c. LR: Not less than 0.86.
 - d. NRC: Not less than 0.70.
 - e. CAC: Not less than 35.
 - f. Edge Detail: Square sized to fit flange of exposed suspension system members.
 - g. Thickness: 3/4 inch.
 - h. Size: 24 by 48 inches.
 - i. Location: Kitchen Areas.
 - j. Products:
 - 1) Ultima Health Zone 1938; Armstrong World Industries, Inc.

2.4 METAL SUSPENSION SYSTEM

- A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - 1. Armstrong World Industries, Inc.
 - 2. CertainTeed Corp.
 - 3. Chicago Metallic Corporation.
 - 4. USG Interiors, Inc.; Subsidiary of USG Corporation.
- B. Wide-Face, Capped, Double-Web, Steel Suspension System: Main and cross runners roll formed from cold-rolled steel sheet; prepainted, electrolytically zinc coated, or hot-dip galvanized according to ASTM A 653/A 653M, not less than G30 coating designation; with prefinished 15/16-inch-wide metal caps on flanges.
 - 1. Structural Classification: Heavy-duty system.
 - 2. End Condition of Cross Runners: butt-edge type.
 - 3. Face Design: Flat, flush.
 - 4. Cap Material: Steel or aluminum cold-rolled sheet.
 - 5. Cap Finish: Painted white.
- C. Roll-Formed, Sheet-Metal Edge Moldings and Trim: Type and profile indicated or, if not indicated, manufacturer's standard moldings for edges and penetrations that comply with seismic design requirements; formed from sheet metal of same material, finish, and color as that used for exposed flanges of suspension-system runners.
- D. Seismic Struts: Manufacturer's standard compression struts designed to accommodate seismic forces. Struts will be required at 12 feet on center both ways for all suspended ceilings according to UBC Standard 25-2. (Seismic calculations have been done which require rigid struts at 12 feet on center in order to allow for 7/8" perimeter wall molding in lieu of a 2" perimeter wall mold.) In lieu of compression struts provide a seismic clip with an ES Report number from ICC demonstrating that the compression struts and the 2" perimeter wall mold are not required. Equal to:
 - 1. BERC seismic clips as manufactured by Armstrong.
 - 2. 1496 Perimeter Clip as manufactured by Chicago Metallic Corp.
 - 3. ACM-7 clip as manufactured by USG.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Install acoustical panel ceilings to comply with ASTM C 636/C 636M and seismic design requirements indicated, according to manufacturer's written instructions and CISCA's "Ceiling Systems Handbook."
- B. Measure each ceiling area and establish layout of acoustical panels to balance border widths at opposite edges of each ceiling. Avoid using less-than-half-width panels at borders and comply with layout shown on reflected ceiling plans.
 - 1. Arrange directionally patterned acoustical panels as indicated on reflected ceiling plans.

END OF SECTION 09 5113

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SECTION 09 6513 - RESILIENT BASE AND ACCESSORIES

PART 1 - GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Resilient base.
 - 2. Resilient molding accessories.

1.2 ACTION SUBMITTALS

- A. Product Data: For each type of product indicated.
- B. Samples: For each type of product indicated, in manufacturer's standard-size Samples but not less than 12 inches long, of each resilient product color, texture, and pattern required.

1.3 QUALITY ASSURANCE

- A. Fire-Test-Response Characteristics: As determined by testing identical products according to ASTM E 648 or NFPA 253 by a qualified testing agency.
 - 1. Critical Radiant Flux Classification: Class I, not less than 0.45 W/sq. cm.

1.4 PROJECT CONDITIONS

- A. Maintain ambient temperatures within range recommended by manufacturer in spaces to receive resilient products.
- B. Until Substantial Completion, maintain ambient temperatures within range recommended by manufacturer.
- C. Install resilient products after other finishing operations, including painting, have been completed.

PART 2 - PRODUCTS

2.1 THERMOPLASTIC-RUBBER BASE

- A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - 1. Roppe Corporation, USA.
- B. Product Standard: ASTM F 1861, Type TP (rubber, thermoplastic).
 - 1. Group: I (solid, homogeneous).
 - 2. Style: Style B, Cove.
- C. Thickness: 0.125 inch.
- D. Height: 4 inches.
- E. Lengths: Manufacturer's standard length.
- F. Outside Corners: Pre-formed.
- G. Inside Corners: Job formed.
- H. Colors: As selected by Architect from full range of industry colors.

2.2 RESILIENT MOLDING ACCESSORY

- A. Resilient Molding Accessory:

1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - a. Burke Mercer Flooring Products; Division of Burke Industries, Inc.
 - b. Flexco, Inc.
 - c. Johnsonite; A Tarkett Company
 - d. Roppe Corporation, USA.

B. Description: Carpet edge for glue-down applications, transitions strips between tile and carpet.

C. Material: Rubber.

D. Profile and Dimensions: As indicated.

E. Colors and Patterns: As selected by Architect from full range of industry colors.

2.3 INSTALLATION MATERIALS

A. Trowelable Leveling and Patching Compounds: Latex-modified, portland cement based or blended hydraulic-cement-based formulation provided or approved by manufacturer for applications indicated.

B. Adhesives: Water-resistant type recommended by manufacturer to suit resilient products and substrate conditions indicated.

PART 3 - EXECUTION

3.1 PREPARATION

A. Prepare substrates according to manufacturer's written instructions to ensure adhesion of resilient products.

B. Fill cracks, holes, and depressions in substrates with trowelable leveling and patching compound and remove bumps and ridges to produce a uniform and smooth substrate.

C. Do not install resilient products until they are same temperature as the space where they are to be installed.

1. Move resilient products and installation materials into spaces where they will be installed at least 48 hours in advance of installation.

D. Sweep and vacuum clean substrates to be covered by resilient products immediately before installation.

3.2 RESILIENT BASE INSTALLATION

A. Comply with manufacturer's written instructions for installing resilient base.

B. Apply resilient base to walls, columns, pilasters, casework and cabinets in toe spaces, and other permanent fixtures in rooms and areas where base is required.

C. Install resilient base in lengths as long as practicable without gaps at seams and with tops of adjacent pieces aligned.

D. Tightly adhere resilient base to substrate throughout length of each piece, with base in continuous contact with horizontal and vertical substrates.

E. Do not stretch resilient base during installation.

3.3 RESILIENT ACCESSORY INSTALLATION

A. Comply with manufacturer's written instructions for installing resilient accessories.

B. Resilient Molding Accessories: Butt to adjacent materials and tightly adhere to substrates throughout length of each piece. Install reducer strips at edges of carpet and resilient floor covering that would otherwise be exposed.

3.4 CLEANING AND PROTECTION

- A. Comply with manufacturer's written instructions for cleaning and protection of resilient products.
- B. Cover resilient products until Substantial Completion.

END OF SECTION 09 6513

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SECTION 09 6516 - RESILIENT SHEET FLOORING

PART 1 - GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Vinyl sheet flooring with backing.

1.2 ACTION SUBMITTALS

- A. Product Data: For each type of product.
- B. Samples: For each exposed product and for each color, texture, and pattern specified.

1.3 CLOSEOUT SUBMITTALS

- A. Maintenance data.

1.4 QUALITY ASSURANCE

- A. Installer Qualifications: An entity that employs installers and supervisors who are competent in techniques required by manufacturer for resilient sheet flooring installation and seaming method indicated.
 - 1. Engage an installer who employs workers for this Project who are trained or certified by resilient sheet flooring manufacturer for installation techniques required.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

- A. Fire-Test-Response Characteristics: For resilient sheet flooring, as determined by testing identical products according to ASTM E648 or NFPA 253 by a qualified testing agency.
 - 1. Critical Radiant Flux Classification: Class I, not less than 0.45 W/sq. cm.

2.2 VINYL SHEET FLOORING WITH BACKING

- A. Basis-of-Design Product: Subject to compliance with requirements, provide Mannington, Entwined Collection Lino, Oyster ETW104.
- B. Product Standard: ASTM F1303.
 - 1. Type (Binder Content): Type I, minimum binder content of 90 percent.
 - 2. Wear-Layer Thickness: Grade 1.
 - 3. Overall Thickness: .080 inches.
 - 4. Backing Class: Class B (nonfoamed plastic).
- C. Wearing Surface: Smooth.
- D. Sheet Width: 12 feet.
- E. Seamless-Installation Method: Heat welded.
- F. Colors and Patterns: As indicated by manufacturer's designations.

2.3 INSTALLATION MATERIALS

- A. Trowelable Leveling and Patching Compounds: Latex-modified, portland-cement-based or blended hydraulic-cement-based formulation provided or approved by resilient sheet flooring manufacturer for applications indicated.

- B. Adhesives: Water-resistant type recommended by flooring and adhesive manufacturers to suit resilient sheet flooring and substrate conditions indicated.
- C. Seamless-Installation Accessories:
 - 1. Heat-Welding Bead: Manufacturer's solid-strand product for heat welding seams.
 - a. Colors: Match flooring.
- D. Integral-Flash-Cove-Base Accessories:
 - 1. Cove Strip: 1-inch radius provided or approved by resilient sheet flooring manufacturer.
 - 2. Cap Strip: Square metal, vinyl, or rubber cap provided or approved by resilient sheet flooring manufacturer.
 - 3. Corners: Metal inside and outside corners and end stops provided or approved by resilient sheet flooring manufacturer.
- E. Floor Polish: Provide protective, liquid floor-polish products recommended by resilient sheet flooring manufacturer.

PART 3 - EXECUTION

3.1 PREPARATION

- A. Prepare substrates according to resilient sheet flooring manufacturer's written instructions to ensure adhesion of resilient sheet flooring.
- B. Concrete Substrates: Prepare according to ASTM F710.
 - 1. Verify that substrates are dry and free of curing compounds, sealers, and hardeners.
 - 2. Remove substrate coatings and other substances that are incompatible with adhesives and that contain soap, wax, oil, or silicone, using mechanical methods recommended by resilient sheet flooring manufacturer. Do not use solvents.
 - 3. Alkalinity and Adhesion Testing: Perform tests recommended by resilient sheet flooring manufacturer. Proceed with installation only after substrate alkalinity falls within range on pH scale recommended by manufacturer in writing, but not less than 5 or more than 9 pH.
 - 4. Moisture Testing: Perform tests so that each test area does not exceed 200 sq. ft., and perform no fewer than three tests in each installation area and with test areas evenly spaced in installation areas.
 - a. Anhydrous Calcium Chloride Test: ASTM F1869. Proceed with installation only after substrates have maximum moisture-vapor-emission rate of 3 lb of water/1000 sq. ft. in 24 hours.
 - b. Relative Humidity Test: Using in-situ probes, ASTM F2170. Proceed with installation only after substrates have a maximum 75 percent relative humidity level measurement.
- C. Fill cracks, holes, and depressions in substrates with trowelable leveling and patching compound; remove bumps and ridges to produce a uniform and smooth substrate.
- D. Do not install resilient sheet flooring until materials are the same temperature as space where they are to be installed.
 - 1. At least 48 hours in advance of installation, move flooring and installation materials into spaces where they will be installed.
- E. Immediately before installation, sweep and vacuum clean substrates to be covered by resilient sheet flooring.

3.2 RESILIENT SHEET FLOORING INSTALLATION

- A. Comply with manufacturer's written instructions for installing resilient sheet flooring.
- B. Unroll resilient sheet flooring and allow it to stabilize before cutting and fitting.
- C. Lay out resilient sheet flooring as follows:
 - 1. Maintain uniformity of flooring direction.
 - 2. Minimize number of seams; place seams in inconspicuous and low-traffic areas, at least 6 inches away from parallel joints in flooring substrates.
 - 3. Match edges of flooring for color shading at seams.
 - 4. Avoid cross seams.

- D. Scribe and cut resilient sheet flooring to butt neatly and tightly to vertical surfaces and permanent fixtures including built-in furniture, cabinets, pipes, outlets, and door frames.
- E. Extend resilient sheet flooring into toe spaces, door reveals, closets, and similar openings.
- F. Maintain reference markers, holes, and openings that are in place or marked for future cutting by repeating on resilient sheet flooring as marked on substrates. Use chalk or other nonpermanent marking device.
- G. Install resilient sheet flooring on covers for telephone and electrical ducts and similar items in installation areas. Maintain overall continuity of color and pattern between pieces of flooring installed on covers and adjoining flooring. Tightly adhere flooring edges to substrates that abut covers and to cover perimeters.
- H. Adhere resilient sheet flooring to substrates using a full spread of adhesive applied to substrate to produce a completed installation without open cracks, voids, raising and puckering at joints, telegraphing of adhesive spreader marks, and other surface imperfections.
- I. Seamless Installation:
 - 1. 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.
- J. Integral-Flash-Cove Base: Cove resilient sheet flooring 6 inches up vertical surfaces. Support flooring at horizontal and vertical junction with cove strip. Butt at top against cap strip.
 - 1. Install metal corners at inside and outside corners.
- K. Floor Polish: Remove soil, adhesive, and blemishes from flooring surfaces before applying liquid floor polish.
 - 1. Apply one coat(s).

END OF SECTION 09 6516

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SECTION 09 9123 - INTERIOR PAINTING

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes surface preparation and the application of paint systems on the following interior substrates:
 - 1. Wood.
 - 2. Gypsum board.

1.2 DEFINITIONS

- A. MPI Gloss Level 1: Not more than five units at 60 degrees and 10 units at 85 degrees, according to ASTM D 523.
- B. MPI Gloss Level 2: Not more than 10 units at 60 degrees and 10 to 35 units at 85 degrees, according to ASTM D 523.
- C. MPI Gloss Level 3: 10 to 25 units at 60 degrees and 10 to 35 units at 85 degrees, according to ASTM D 523.
- D. MPI Gloss Level 4: 20 to 35 units at 60 degrees and not less than 35 units at 85 degrees, according to ASTM D 523.
- E. MPI Gloss Level 5: 35 to 70 units at 60 degrees, according to ASTM D 523.
- F. MPI Gloss Level 6: 70 to 85 units at 60 degrees, according to ASTM D 523.
- G. MPI Gloss Level 7: More than 85 units at 60 degrees, according to ASTM D 523.

1.3 ACTION SUBMITTALS

- A. Product Data: For each type of product. Include preparation requirements and application instructions.
 - 1. Include Printout of current "MPI Approved Products List" for each product category specified, with the proposed product highlighted.
- B. Samples: For each type of paint system and in each color and gloss of topcoat.

1.4 QUALITY ASSURANCE

- A. Mockups: Apply mockups of each paint system indicated and each color and finish selected to verify preliminary selections made under Sample submittals and to demonstrate aesthetic effects and set quality standards for materials and execution.
 - 1. Architect will select one surface to represent surfaces and conditions for application of each paint system.
 - a. Vertical and Horizontal Surfaces: Provide samples of at least 100 sq. ft..
 - b. Other Items: Architect will designate items or areas required.
 - 2. Final approval of color selections will be based on mockups.
 - a. If preliminary color selections are not approved, apply additional mockups of additional colors selected by Architect at no added cost to Owner.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - 1. Benjamin Moore & Co.
 - 2. Coronado Paint; Benjamin Moore Company.
 - 3. Dulux (formerly ICI Paints); a brand of AkzoNobel.
 - 4. Glidden Professional.
 - 5. Kelly-Moore Paint Company Inc.
 - 6. Kwal Paint; Comex Group.

- B. Products: Subject to compliance with requirements, provide one of the products listed in the Interior Painting Schedule for the paint category indicated.

2.2 PAINT, GENERAL

- A. MPI Standards: Products shall comply with MPI standards indicated and shall be listed in its "MPI Approved Products Lists."
- B. Material Compatibility:
 - 1. Materials for use within each paint system shall be compatible with one another and substrates indicated, under conditions of service and application as demonstrated by manufacturer, based on testing and field experience.
 - 2. For each coat in a paint system, products shall be recommended in writing by topcoat manufacturers for use in paint system and on substrate indicated.
- C. Colors: As selected by Architect from manufacturer's full range.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine substrates and conditions, with Applicator present, for compliance with requirements for maximum moisture content and other conditions affecting performance of the Work.
- B. Maximum Moisture Content of Substrates: When measured with an electronic moisture meter as follows:
 - 1. Wood: 15 percent.
 - 2. Gypsum Board: 12 percent.
- C. Verify suitability of substrates, including surface conditions and compatibility with existing finishes and primers.
- D. Proceed with coating application only after unsatisfactory conditions have been corrected.
 - 1. Application of coating indicates acceptance of surfaces and conditions.

3.2 PREPARATION

- A. Comply with manufacturer's written instructions and recommendations in "MPI Architectural Painting Specification Manual" applicable to substrates and paint systems indicated.
- B. Remove hardware, covers, plates, and similar items already in place that are removable and are not to be painted. If removal is impractical or impossible because of size or weight of item, provide surface-applied protection before surface preparation and painting.
 - 1. After completing painting operations, use workers skilled in the trades involved to reinstall items that were removed. Remove surface-applied protection if any.

3.3 APPLICATION

- A. Apply paints according to manufacturer's written instructions and recommendations in "MPI Architectural Painting Specification Manual."
- B. Apply paints to produce surface films without cloudiness, spotting, holidays, laps, brush marks, roller tracking, runs, sags, ropiness, or other surface imperfections. Cut in sharp lines and color breaks.

3.4 INTERIOR PAINTING SCHEDULE

- A. Wood Substrates: Architectural woodwork and Doors.
 - 1. Latex over Latex Primer System MPI INT 6.3T:
 - a. Prime Coat: Primer, latex, for interior wood, MPI #39.
 - b. Intermediate Coat: Latex, interior, matching topcoat.
 - c. Topcoat: Latex, interior, semi-gloss (MPI Gloss Level 5), MPI #54.

B. Gypsum Board Substrates:

1. Latex over Latex Sealer System MPI INT 9.2A:
 - a. Prime Coat: Primer sealer, latex, interior, MPI #50.
 - b. Intermediate Coat: Latex, interior, matching topcoat.
 - c. Topcoat: Latex, interior, semi-gloss (MPI Gloss Level 5), MPI #54.

END OF SECTION 09 9123

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DIVISION 10 - SPECIALITIES

102600	WALL AND DOOR PROTECTION
102800	TOILET, BATH, AND LAUNDRY ACCESSORIES

SECTION 10 2600 - WALL AND CORNER PROTECTION

PART 1 - GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Corner guards.

1.2 ACTION SUBMITTALS

- A. Product Data: For each type of product indicated.
- B. Shop Drawings: For each impact-resistant wall protection unit. Include sections, details, and attachments to other work.

1.3 QUALITY ASSURANCE

- A. Installer Qualifications: An employer of workers trained and approved by manufacturer.
- B. Surface-Burning Characteristics: As determined by testing identical products per ASTM E 84, NFPA 255, or UL 723 by UL or another qualified testing agency.
- C. Regulatory Requirements: Comply with applicable provisions in the U.S. Architectural & Transportation Barriers Compliance Board's ADA-ABA Accessibility Guidelines and ICC/ANSI A117.1.

PART 2 - PRODUCTS

2.1 CORNER GUARDS

- A. Surface-Mounted, Stainless Steel Corner Guards: Fabricated from 16 ga. Type 304 stainless steel sheet; with formed edges; fabricated with 90- or 135-degree turn to match wall condition; in dimensions and profiles indicated on Drawings.
 - 1. Mounting: Countersunk screws through factory-drilled mounting holes and Double-faced adhesive foam tape.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. General: Install impact-resistant wall protection units level, plumb, and true to line without distortions. Install impact-resistant wall protection units in locations and at mounting heights indicated on Drawings.
 - 1. Provide splices, mounting hardware, anchors, and other accessories required for a complete installation.
- B. Immediately after completion of installation, clean covers and accessories using a standard, ammonia-based, household cleaning agent.
- C. Remove excess adhesive using methods and materials recommended in writing by manufacturer.

END OF SECTION 10 2600

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SECTION 10 2800 - TOILET, BATH, AND LAUNDRY ACCESSORIES

PART 1 - GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Public-use washroom accessories.
 - 2. Custodial accessories.

1.2 ACTION SUBMITTALS

- A. Product Data: For each type of product indicated.
- B. Product Schedule: Indicating types, quantities, sizes, and installation locations by room of each accessory required.
 - 1. Identify locations using room designations indicated.
 - 2. Identify products using designations indicated.

1.3 CLOSEOUT SUBMITTALS

- A. Maintenance data.

1.4 WARRANTY

- A. Special Mirror Warranty: Manufacturer's standard form in which manufacturer agrees to replace mirrors that develop visible silver spoilage defects and that fail in materials or workmanship within specified warranty period.
 - 1. Warranty Period: 15 years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 PUBLIC-USE WASHROOM ACCESSORIES

- A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - 1. A & J Washroom Accessories, Inc.
 - 2. American Specialties, Inc.
 - 3. Bobrick Washroom Equipment, Inc.
 - 4. Bradley Corporation.
 - 5. GAMCO Specialty Accessories; a division of Bobrick Washroom Equipment, Inc.
 - 6. Tubular Specialties Manufacturing, Inc.
- B. Grab Bar:
 - 1. Basis-of-Design Product: Bobrick B-6206.
 - 2. Mounting: Flanges with concealed fasteners.
 - 3. Material: Stainless steel, 0.05 inch thick.
 - a. Finish: Smooth, No. 4 finish (satin).
 - 4. Outside Diameter: 1-1/4 inches.
 - 5. Configuration and Length: 1 ea. B-6206-36", 1 ea. B-6206-42" and 1 ea. B-6206-18".
 - 6. Locations:
 - a. 1 set in Room 104.
 - b. 1 set in Room 105.

2.2 CUSTODIAL ACCESSORIES

- A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - 1. A & J Washroom Accessories, Inc.
 - 2. American Specialties, Inc.
 - 3. Bobrick Washroom Equipment, Inc.
 - 4. Bradley Corporation.

5. GAMCO Specialty Accessories; a division of Bobrick Washroom Equipment, Inc.
6. Tubular Specialties Manufacturing, Inc.

B. Mop and Broom Holder:

1. Basis-of-Design Product: Bobrick B-239-36".
2. Description: Unit with shelf, hooks, holders, and rod suspended beneath shelf.
3. Length: 36 inches.
4. Hooks: Three.
5. Mop/Broom Holders: Four, spring-loaded, rubber hat, cam type.
6. Material and Finish: Stainless steel, No. 4 finish (satin).
 - a. Shelf: Not less than nominal 0.05-inch-thick stainless steel.
 - b. Rod: Approximately 1/4-inch-diameter stainless steel.
7. Location: 1 ea. B-239-36" in Room 103.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Install accessories according to manufacturers' written instructions, using fasteners appropriate to substrate indicated and recommended by unit manufacturer. Install units level, plumb, and firmly anchored in locations and at heights indicated.
- B. Grab Bars: Install to withstand a downward load of at least 250 lbf, when tested according to ASTM F 446.

END OF SECTION 10 2800

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DIVISION 11 - EQUIPMENT

114000	FOOD SERVICE EQUIPMENT
114000A	SHELLEY SENIOR CENTER KITCHEN
114000B	WALK-IN FREEZER SPECS

SECTION 11 4000 – FOOD SERVICE EQUIPMENT

PART 1 GENERAL

1.1 SUMMARY

- A. This section includes equipment for foodservice facilities indicated on the drawings.
- B. NIC-Not in Kitchen Equipment Contractors (KEC) contract.
- C. Kitchen Equipment Contractor to coordinate/relocate owner provided and/or existing equipment when applicable.

1.2 RELATED SECTIONS / DIVISIONS

- A. Refer to General Conditions, Supplementary Conditions, and applicable provisions of Division 1 for additional instructions.
- B. Refer to Divisions 5, 6, and 9 – Interior Design; for applicable provisions and sections regarding décor finishes, applications, details, and special instructions relating to items specified in this Section. Applicable to Projects with items specified in this Section, with décor finishes and/or constructions.
- C. Refer to Division 22 – Plumbing; for applicable sections regarding plumbing services and components necessary to complete final connections to individual items as specified in this Section. Not work of this Section.
- D. Refer to Division 23 – Heating Ventilating and Air Conditioning (HVAC); for applicable sections regarding HVAC services and components necessary to complete final connections to individual items as specified in this Section. Not work of this Section.
- E. Refer to Division 26 – Electrical; for applicable provisions and sections regarding electrical services and components necessary to complete final connections to individual items as specified in this Section. Not work of this Section.
- F. Work included in other Divisions – Provision of all wall, floor, and/or ceiling/roof openings, recesses, sleeves, and/or conduits; and equipment pads, and sealing thereof, as necessary for installation of items included in this section. Not work of this Section.
- G. Work included in other Divisions – Disconnection of existing equipment to be relocated and/or reused; and removal of existing equipment which will not be reused, as determined and designated by the Architect in other Divisions. Not work of this Section. (Applicable to projects with existing equipment.)

1.3 DEFINITIONS

- A. Furnish – Supply and deliver to Project Site.
- B. Provide (set in place) – Operations at Project Site including unloading, assembly, placing, leveling and similar operations; ready for final utility connections by other Divisions as appropriate.
- C. Install – Furnish and install complete; ready for final utility connections by other Divisions as appropriate.
- D. KEC – Refers to the Kitchen Equipment (Sub) Contractor in this Section. References to any other Contractor or Division will be specific; such as General contractor, Plumbing (Sub) Contractor / Division, Electrical (Sub) Contractor / Division, Architect designated, etc.
- E. KEC-ALT – ALTERNATE – Alternate equipment to be bid as an individual unit cost in a lined alternate form. Item to be procured in whole, part or not at all.
- F. OSCI – Owner Supplied, Contractor (KEC) Installed - Equipment item that is currently installed at facility and will be removed and re-installed in new plan as shown/defined. Equipment is not in KEC contract, however coordinating, relocating and setting in place is required by the Kitchen Equipment Contractor. Modifications to existing equipment as defined or shown within the documents and/or for the current operational intent of the documents will be the responsibility of the KEC.
- G. BY OWNER – Owner supplied and installed equipment.

1.4 QUALIFICATIONS

- A. Kitchen Equipment Contractor's requirements:
 - 1. Engaged in direct selling and installation to final user or user's agent of equipment specified in this section.
 - 2. Established in the foodservice/commercial kitchen equipment supply business for a minimum of five (5) years continuous operation under the same company name and ownership. Documentation supporting that experience must be provided upon request.
 - 3. Financially stable and have the ability to complete this project.
 - 4. Comparable size and scope projects completed in the last five (5) years.
 - 5. Have manufacturer's authorization to purchase, distribute, and install all items specified.
 - 6. Not engaged in conflicting installations at time of completion of this project. A complete list of projects and installation dates must be provided upon request.
- B. Any sub-contractor employed by Kitchen Equipment Contractor, is to comply with the same qualifications.
- C. Kitchen Equipment Contractor to disclose any discrepancies with qualifications on the initial bid document.

1.5 SUBMITTALS

- A. Kitchen Equipment Contractor's use of any Design Teams' AutoCAD or Revit contract drawings for basis of producing their submittal drawings, is with the following conditions and understanding:
 - 1. Kitchen Equipment Contractor assumes total liability and responsibility for accuracy, and for conformance and verification with the latest Architectural and Engineering drawings, actual field conditions, and all equipment provided.
 - 2. Kitchen Equipment Contractor further assumes responsibility for coordination of their submittals with those of other Contractors and Sub-Contractors, as required.
 - 3. Submittals to have Kitchen Equipment Contractor's title block and information.
 - 4. A pdf copy of all associated submittal sheets can be substituted for hard copies when coordinated with architect and overall project written conditions.
- B. Product Data Manuals:
 - 1. Submit six (6) three ring bound sets with cover sheets and detailed information on every item included in this Section for review by the Design Team. After review process, Kitchen Equipment Contractor to reproduce and supply six (6) bound sets of distribution prints for record and construction purposes.
 - 2. The six (6) three ring bound sets with cover sheets and detailed information on every item included in this Section. Detailed information is to include, but not be limited to, item number, description, quantity, model numbers, options and accessories provided, N.E.M.A. plug and receptacle configuration for applicable items, clearance requirements for access and maintenance, exact utility requirements, manufacturer's cut-sheets, reference to specific shop drawings, and etc. General cut sheets with multiple model numbers are to have the specific specified item identified in an obvious manner. Distribute one additional copy of installation and start-up instructions to the Installer.
 - 3. Every cover sheet and associated detailed submittal is to provide sufficient and complete information for the Design Team to verify that the Kitchen Equipment Contractor understands the Contract requirements, and is providing each item in compliance with the Contract documents. Cover sheets to also include associated items as listed on the Equipment Plan, but provided by others; and are to be noted as "Not in Contract -114000".
 - 4. Reproduction of any part of the Contract Specifications will not be acceptable as part or total of Kitchen Equipment Contractor's Product Data Submittal Manuals. These manuals are to be produced and assembled entirely by the Kitchen Equipment Contractor.
- C. Shop Drawings:
 - 1. Submit six (6) sets in reproducible transparency form (24"x 36"min) for review by the Design Team. After review process, Kitchen Equipment Contractor to adjust, reproduce (if necessary) and supply six (6) sets for distribution prints of record and construction purposes.
 - 2. For any equipment requiring field assembly, including but not limited to, cooking suite assemblies, custom stainless steel products, pulper/extractor assemblies, remote refrigeration systems, walk-in coolers and/or freezers, exhaust hoods/ventilators, fire suppression system, utility distribution systems, pot/utility/ware washing assemblies/machines, and conveyors. Include plans, elevations, sections, roughing-in dimensions, fabrication details, utility service requirements, and attachments to other work.
 - 3. Before proceeding with the fabrication or manufacture of any item, Kitchen Equipment Contractor is responsible for verifying and coordinating all dimensions and details, with site dimensions, conditions, and adjacent equipment. The Kitchen Equipment Contractor is responsible for coordinating and reviewing all shop drawings with owner/owner's representative.

4. Reproduction of any part of the Contract Drawings will not be acceptable as part or total of Kitchen Equipment Contractor's Shop Drawing Package. These drawings are to be prepared and assembled entirely by the Kitchen Equipment Contractor.
- D. Rough-In Drawings for Non-Altered Plans:
1. Rough-in locations have been prepared before the award of this contract; Kitchen Equipment Contractor is to examine the plans and facility.
 2. Indicate locations for additional wall backing for foodservice equipment.
 3. Key equipment using same designations as indicated on Drawings.
 4. Include plans and elevations; clearance requirements for equipment access and maintenance; details of support for equipment; and utility service characteristics.
- E. Equipment Plan & Rough-In Drawings for Altered Plans:
1. Submit six (6) sets in reproducible transparency form for review by the Design Team. After review process, Kitchen Equipment Contractor to adjust, reproduce (if necessary) and supply six (6) sets for distribution prints of record and construction purposes.
 2. Submit 1/4"=1' scale drawings. These drawings are to include complete information on the work included in the Contract, with references to equipment as provided by others; and are to provide sufficient information for associated trades, contractors, and/or sub-contractors to complete their division of work associated with food service equipment included in this Contract. They are to be dimensioned; showing locations of ducts, stubs, floor and wall sleeves, for ventilation, plumbing, stem, electrical, refrigeration lines, and concrete base and curb dimensions, as required for equipment so supported, and any additional information pertinent to the installation of this equipment.
 3. Drawings to also include equipment plan(s) with detailed equipment list, similar to Food Service Equipment Plans included in the Contract Drawings. Item numbers are to be the same as shown in the contract Documents, and are to include Spare Numbers and associated items as provided by others.
 4. In the event rough-ins have been accomplished before award of this contract, Kitchen Equipment Contractor is to examine the existing facility and make adjustments to their equipment to suit building conditions and utilities, where possible. If not possible, so state in a letter, with reasons and an alternate method and pricing for their equipment, to the Architect.
- F. Operation and Maintenance Data:
1. Two (2) bound sets of manuals are to be furnished for items of standard manufacture on/or before the date of the first event to occur of the following: demo/start-up, start-up for intended use by the Owner/Operator, completion of installation of kitchen equipment contract package, or final acceptance of installation by Owner. Manuals are to be in alphabetical order with tabbed dividers per manufacturer. Manufacturer's info is to include Tech Services telephone number, email, and web site address, where available.
 2. Provide single index sheet with unit model and unit serial number for each item to be located at front of O&M book prior to local service agency sheet.
 3. Two (2) pdf copies in CD/Compact Disk, DVD or thumb/flash drive format to be furnished for items of standard manufacture in addition to the hard bound copies.
 4. Provide a complete list of local service agencies for included manufacturers, complete with address and telephone numbers. Also provide email and web site addresses, where available.
 5. All warranty cards for completion from owner/ Owners representative to be at front of O&M book and noted to be completed swiftly, when provided by manufacturer.
 6. Provide DVD's for maintenance, training, operation, etc, where available.
- G. Product samples that are required for examination to verify color or finish style are to be furnished at no expense to Owner.
- H. Design Team's review of submittal drawings, shop details, product data brochures, and operation and maintenance manuals is for general conformance with the design concept and contract documents. Review markings or comments are not to be construed as relieving Kitchen Equipment Contractor from compliance with the contract documents, or departures there from. Kitchen Equipment Contractor remains responsible for details and accuracy, confirming and correlating all quantities and dimensions, selecting fabrication processes, techniques of assembly, and performing their work in a safe, satisfactory, and professional manner.
- I. Cost for Re-Submissions:
1. The Kitchen Equipment Contractor is responsible for ensuring that all shop drawings, product data, samples, and submittals contain all information required by the Contract Documents to allow the Design Consultant to take action. The Kitchen Equipment Contractor shall pay the Design Consultant's cost for any re-submission of any rejected item. Such costs shall be deducted from the contract sum by Change Order. The Kitchen Equipment Contractor agrees that any action taken by the Design Consultant is

solely in the Design Consultant's discretion and is non-negotiable for the purposes of the Design Consultant's cost recovery for multiple (i.e. more than one) review.

1.6 SCHEDULE

- A. Time management is critical and acceptance constitutes assurance that the Kitchen Equipment Contractor can and will obtain materials, equipment and manpower, to permit installation of the items included in this Section, on schedule. Kitchen Equipment Contractor is to coordinate their work with the progress schedules and updated periodically by the General Contractor or Construction Manager.
- B. Anticipated delays, not within the control of the Kitchen Equipment Contractor, are to be noted in a written notification to the Architect, immediately upon the Kitchen Equipment Contractor's realization that delays are imminent.
- C. Failure of manufacturers to meet promised delivery dates will not grant relief to the Kitchen Equipment Contractor for failure to meet schedules; unless the Kitchen Equipment Contractor can establish, in writing, that orders were received by the manufacturer, with reasonable lead times.
- D. Extra charges resulting from special handling or air shipment in order to meet the schedule will be paid by the Kitchen Equipment Contractor, if insufficient time was allowed in placing factory orders.

1.7 QUALITY ASSURANCE

- A. Compliance with the following:
 - 1. Air Conditioning and Refrigeration Institute (A.R.I.): applicable regulations and references of the latest edition of standards for remote refrigeration systems(s), components and installation.
 - 2. American Gas Association (A.G.A.): standards for gas heated equipment. Automatic safety pilots to be provided on all equipment, where available. (Canadian Gas Association or alternate testing lab's seals accepted if acceptable to local code jurisdictions.)
 - 3. American National Standards Institute (A.N.S.I.): Z21-Series for gas-burning equipment. Provide labels indicating name of testing agency.
 - 4. American National Standards Institute (A.N.S.I.): B57.1 for compressed gas cylinder connections, and with applicable standards of the Compressed Gas Association for compressed gas piping.
 - 5. American National Standards Institute (A.N.S.I.): A40.4 and A40.6 for water connection air gaps and vacuum breakers.
 - 6. American Society of Heating, Refrigeration and Air Conditioning Engineers (A.S.H.R.A.E.): applicable regulations and references of the latest edition of standards for remote refrigeration system(s), components and installation.
 - 7. American Society of Mechanical Engineers (A.S.M.E): Boiler Code requirements for steam generating and steam heated equipment.
 - 8. American Society of Testing and Materials (A.S.T.M.): C1036 for flat glass.
 - 9. American Society of Testing and Materials (A.S.T.M.): C1048 for heat-treated flat glass-Kind HS, Kind FT coated and uncoated glass.
 - 10. American Welding Society (A.W.S.): D1.1 structural welding code.
 - 11. National Electric Code (N.E.C.): N.F.P.A. Volume 5 for electrical wiring and devices included with foodservice equipment, A.N.S.I. C2 and C73, and applicable N.E.M.A. and N.E.C.A. standards.
 - 12. National Electrical Manufacturers Association (N.E.M.A.): LD3 for high-pressure decorative laminates.
 - 13. National Fire Protection Association (N.F.P.A.): applicable sections for exhaust hoods, ventilators, duct and fan materials, hoods fire suppression systems, construction and installation.
 - 14. National Sanitation Foundation (N.S.F.): latest Standards and Revisions. Provide N.S.F. Seal of Approval on each applicable item. (UL Sanitation approval and seal accepted if acceptable to local code jurisdictions.)
 - 15. U. S. Department of Health and Human Service Food Code: Latest Standards and Revisions.
 - 16. Sheet Metal and Air Conditioning Contractor's National Association (S.M.A.C.N.A.): latest edition of guidelines for seismic restraint of kitchen equipment, as applicable to project location.
 - 17. Underwriters Laboratories (U.L.): as applicable for electrical components and assemblies. (Canadian Standards Association or alternate testing lab's seals accepted if acceptable to local code jurisdictions.)
 - 18. Intertek ETL SEMKO (E.T.L.): as applicable for electrical components and assemblies. Listed Mark is an accepted alternative to UL. (Canadian Standards Association or alternate testing lab's seals accepted if acceptable to local code jurisdictions.)
 - 19. UL 300 Standard: for wet chemical fire suppression systems for exhaust hoods/ventilators.
 - 20. American with Disabilities Act (A.D.A.): as applicable to this Project.

21. Refrigeration Service Engineers Society (R.S.E.S.): applicable regulations and references of the latest edition of standards for remote refrigeration system(s), components and installation.
22. All refrigerants used for any purpose is to comply with the 1995 requirements of the Montreal Protocol Agreement, and subsequent revisions and amendments. No DFC refrigerants will be permitted on this Project.
23. All refrigeration components installation, repairs, and/or associated work on any refrigeration system, is to be performed by a Certified Refrigeration Mechanic.
24. All Applicable local codes, standards and regulations.
25. For detention facilities projects: applicable Correctional Standards. Verify the level of security and construction required with the Architect, and provide all items in compliance.
26. Uniform Mechanical Code (UMC): Comply with requirements of the current UMC.

1.8 MANUFACTURERS

- A. Basis-of-Design Product: The design for foodservice equipment item is based on the product named. Subject to compliance with requirements, provide either the named product or submit a substitution request for comparable equipment, see section 1.9. Manufacturers not approved as substitutions, or included as a Listed Alternates will not be permitted.
- B. Equipment models, accessories, utility requirements and dimensions are based on the latest manufacturer/fabricators data available at time of document preparation. It is possible that some or all the manufacturers' information could change between time of preparation of these documents and final construction. It is the responsibility of the Kitchen Equipment Contractor to verify that all revised equipment being provided meets the specification data, and if changed, notify appropriate trade contractors.
- C. Existing Equipment Coordination: It is the sole responsibility of the KEC to locate and verify existing equipment sizes, dimensions and loads prior to ordering any and/or all components intended for use with existing items.

1.9 SUBSTITUTIONS

- A. The foodservice equipment for this project has been closely coordinated with the owner/operator. All requests for alternatives or substitutions will be coordinated through the architect. Comparable products to have prior approval and any substitution must meet or exceed the performance, style, materials, utility savings, manufacturing materials and/or operating techniques of the specified equipment. Owner reserves the right to approve or disapprove any items that are submitted for substitution, and is not required to give the reasons for the decision.
- B. Substitution request forms available upon request.
- C. Completed substitution request forms to be filed ten (10) business days prior to bid date. Substitution requests made after the project addendum closing date will not be accepted. Substitutions made after the bid closing date will not be accepted.
- D. Submit itemized bids with the primary manufacturers and models specified. Unless otherwise noted, substitutions may be submitted for consideration, but must be itemized at the end of the bid proposal.
- E. Substitutions must be approved in writing by the Architect and/or Owner, prior to utilization in this Contract. A copy of the approval must be included with any submittals by Kitchen Equipment Contractor.

1.10 APPROVED SUBSTITUTIONS AND/OR LISTED ALTERNATES

- A. Substitutions approved as noted in article 1.9. and/or any Listed Alternate manufacturers included in the Itemized Specifications, or added by Addendum, may be utilized, in lieu of the primary specified manufacturer with the following conditions:
 1. These Contract Documents are designed and engineered using the primary specified manufacturer and model. Kitchen Equipment Contractor assumes total responsibility for any deviations required, due to utilization of a substitution/alternate manufacturer or model; including, but not limited to, fitting alternates into available space, providing directions for required changes, and assuming any associated cost for utility, building, architectural, or engineering changes.
 2. Kitchen Equipment Contractor is responsible for supplying the model, which is equal to the primary specified model in regards to general function, features, options, sizes, accessories, utility requirements, finish, operation, and listing approvals. If it is determined by the Owner or their appointed representative at any time during the construction and installation, and prior to the final acceptance of the Project, that the substitution/alternate model submitted is not equal to the primary specified model,

- the Kitchen Equipment Contractor will assume all associated cost and implications required to replace the model submitted, with the correct model.
- 3. The bid proposal is to clearly state any substitutions/alternates, which will be utilized including the manufacturer and model number. Also include product cut sheet for each substitution/alternate, with any and all deviations between the primary specified manufacturer and the substitution/alternate manufacturer. Complex alternates such as utility distribution systems, exhaust hoods, ventilators, etc. are to include a shop drawing specific to the Project.
- 4. Inclusion of an alternate manufacturer in Itemized Specifications article 2.1 is not intended to indicate that there is an equal alternate unit to match every primary specified unit. It is the responsibility of the Kitchen Equipment Contractor to insure that the alternate unit submitted matches the primary specified unit; and meets the conditions as stated above.
- 5. Manufacturers not approved as substitutions, or included as a Listed Alternates will not be permitted.

1.11 DISCREPANCIES

- A. Where discrepancies are discovered between the drawings and the specifications, regarding quality or quantity, the higher quality or the greater quantity is to be included in the Bid Proposal.
- B. Kitchen Equipment Contractor is responsible for verifying and coordinating all items provided in this Section, with the drawings, specifications, manufacturer's requirements, submittals, actual site conditions, adjacent items, and associated (Sub-) Contractors; to assure that there are no discrepancies or conflicts. This is to include, but not be limited to, quantities, dimensions, clearances required, direction of operation, door swings, utilities, gas type, elevation calibration, fabrication details and methods, installation requirements, etc.
- C. Kitchen Equipment Contractor to notify the Architect, in writing, of any discrepancies discovered; await written clarification prior to proceeding with the items or areas in question.
- D. Kitchen Equipment Contractor will be solely responsible for any unauthorized foodservice related changes. All foodservice related changes/ alterations are to have written approval from H-C Design & Consulting prior to ordering, manufacture or implementation.

1.12 PROJECT CONDITIONS

- A. Field Measurements: Take field measurements to assure accurate fit of fabricated equipment. Do not fabricate equipment until site dimensions have been field verified by fabricator or Kitchen Equipment Contractor. Indicate measurements on Coordination Drawings for all custom fabricated or critical dimensioned equipment.
- B. Check electrical characteristic and water, steam, and gas pressure. Provide pressure regulating valves and appropriate orifices where required for proper operation of equipment. It is the sole responsibility of the Kitchen Equipment Contractor to coordinate with General Contractor, verify and adjust equipment gas type and elevation requirements (regulator and orifices) for optimal performance to site specifications regardless of original gas type/elevation provision. Extra charges resulting from KEC not confirming gas type and elevation prior to foodservice equipment ordering will be paid by the Kitchen Equipment Contractor.
- C. Water Conditions: For projects with steam equipment (steamers, combi-ovens -boiler less or boiler based), booster heaters, sink heaters, hot water dispensers, warewashing equipment, glasswashers, soda systems or ice machines - an independent water test is to be performed by the Kitchen Equipment Contractor to check attributes of potable water. Total Dissolved Solids, Total Hardness, Chlorides, Chloramines, Ammonia, Chlorine, Silica, pH, Iron and all applicable agents that can adversely affect equipment are to be checked and cataloged by the Kitchen Equipment Contractor. Test results to be distributed to the general contractor then design team and engineers for review of project conditions and requirements prior to installation of any applicable foodservice equipment. Coordination and verification of specified in line filtration equipment prior to sourcing or installation.
- D. Kitchen Equipment Contractor to coordinate size and location requirements with appropriate trade contractors who are responsible for outside wall and roof penetrations required to accommodate refrigeration lines, ventilation ducting, etc.

1.13 COORDINATION

- A. Kitchen Equipment Contractor is responsible for obtaining any documents referenced in this Section and on any associated drawings, which contains information relative to the performance of this contract; and disseminating and coordinating the pertinent information contained in them, with the appropriate sub-contractors, manufacturers, fabricators, and/or installers.

- B. Coordinate foodservice equipment layout and installation with other work, including lighting fixtures, HVAC equipment, and fire-suppression system components.
- C. Coordinate location and requirements of utility service connections if deemed different than plan set.
- D. Coordinate size, location, and requirements of the following:
 - 1. Overhead equipment supports
 - 2. Equipment to be field welded
 - 3. Custom stainless steel tables
 - 4. Insulated floors and/or slab depressions
 - 5. Floor areas with positive slopes to drains
 - 6. Floor sinks and drains serving foodservice equipment
 - 7. Roof curbs, equipment supports, and penetrations
- E. Coordinate, relocate and install owner provided/existing equipment as applicable.
- F. Kitchen Equipment Contractor to attend any conference meetings at Project site, Architecture office, or General Contractor's office to comply with requirements in Division 1.

1.14 WARRANTY

- A. Unless otherwise noted in Related Divisions / Sections 2.1, items furnished are to be fully guaranteed against defects in workmanship, materials and functionality for one (1) full year from the date of the first event to occur of the following: date of issue of Certificate of Occupancy (or the equivalent), start-up for intended use by the Owner/Operator, completion of installation of kitchen equipment contract package, or final acceptance of installation by Owner. Should a Temporary Certificate of Occupancy be issued for partial completion of work, the items furnished within that designated area are to be under warranty from the date of issue of the Certificate. Kitchen Equipment Contractor or their service agent will make necessary repairs and replacements without charge to the Owner, and within a reasonable time.
- B. Refrigeration Warranty: in addition to the one (1) year warranty requirements as stated above, provide start-up, and parts and labor for the first year; plus additional (4) four-year extended warranty on compressors. Extended warranty is for provision of replacement compressor, determined to be defective by a Certified Refrigeration Mechanic. However verification of defective compressor, installation of replacement compressor, recharging and repairs of system will be the responsibility of the Owner. This includes all items with built-in or remote refrigeration system.
- C. Periodic routine maintenance, servicing, adjustments, cleaning, etc., as required by the manufacturers included in this Project, are the responsibility of the Owner.
- D. Any and all parts or requirements for manufacturer's warranties to be in effect, whether or not noted in the itemized specifications, are to be provided or complied with by the Kitchen Equipment Contractor. This is to include, but not be limited to, particular parts, accessories, or installation; installation supervision, start-up, and/or follow-up inspections required by factory trained, Certified, and/or authorized personnel. Factory training, Certification, and/or authorization are to be in effect at the time of bidding, installation, start-up, and warranty period of Project.
- E. Manufacturer's warranties which comply with the requirements of this Warranty article 1.14 are to be provided in lieu of Kitchen Equipment Contractor's own warranties, where available. Copies of the written warranties are to be included in Section 1.5.F, the Operation & Maintenance manuals.
- F. Kitchen Equipment Contractor to perform (11) eleven month warranty inspection. Correct items noted by reviewing agent, issue report for all equipment and areas pertaining to the foodservice equipment and design intent.

PART 2 PRODUCTS

2.1 FOOD SERVICE EQUIPMENT

- A. Stainless Steel Countertop: 14 gauge, type 304 stainless steel top with rolled edges front & back, square turndown ends.

- B. See attached equipment cut-sheets from Bar Store Restaurant Design & Supplies (BSR) for equipment list. Refer to manufacturer's directions for additional information not shown on the drawing or specifications. Specified manufacturer establishes quality and function.

2.2 FABRICATION, GENERAL

- A. Fabricate food service equipment according to NSF 2 requirements. Fabricate equipment to greatest extent possible.
- B. Plastic-Laminate and Wood Casework: Fabricate according to requirements specified in Division 6 Section "Interior Architectural Woodwork."
- C. Welding: Use welding rod of same composition as metal being welded. Use methods that minimize distortion and develop strength and corrosion resistance of base metal. Provide ductile welds free of mechanical imperfections such as gas holes, pits, or cracks.
- D. Welded Butt Joints: Provide full-penetration welds for full-joint length. Make joints flat, continuous, and homogenous with sheet metal without relying on straps under seams, filling in with solder, or spot welding.
- E. Grind exposed welded joints flush with adjoining material and polish to match adjoining surfaces.
- F. Where fasteners are welded to underside of equipment, finish reverse side of weld smooth and not depressed.
- G. Coat unexposed stainless-steel welded joints with suitable metallic-based paint to prevent corrosion.
- H. After zinc-coated steel is welded, clean welds and abraded areas and apply SSPC-Paint 20, high-zinc-dust-content, galvanizing repair paint to comply with ASTM A 780.
- I. Fabricate field-assembled equipment prepared for field-joining methods indicated. For metal butt joints, comply with referenced SMACNA standard, unless otherwise indicated.
- J. Where stainless steel is joined to a dissimilar metal, use stainless steel welding material or fastening devices.
- K. Form metal with break bends that are not flaky, scaly, or cracked in appearance; where breaks mar uniform surface appearance of material, remove marks by grinding, polishing, and finishing.
- L. Sealants shall only be used to seal joints and seams that are structurally sound and are less than 1/8 in (0.13 in, 3.2 mm) wide before sealing. Sealants may be used to fill spaces around collars, grommets, and service connections.
- M. Equipment shall be designed and manufactured to prevent the harborage of vermin and the accumulation of dirt and debris, and to permit the inspection, maintenance, servicing, and cleaning of the equipment and its components.
- N. Sheared Metal Edges: Finish free of burrs, fins, and irregular projections.
- O. Provide surfaces in food zone, as defined in NSF 2, free from exposed fasteners.
- P. Cap exposed fastener threads, including those inside cabinets, with stainless-steel lock washers and stainless-steel cap (acorn) nuts.
- Q. Provide pipe slots on equipment with turned-up edges and sized to accommodate service and utility lines and mechanical connections.
- R. Provide enclosures, including panels, housings, and skirts, to conceal service lines, operating components, and mechanical and electrical devices including those inside cabinets, unless otherwise indicated.
- S. Seismic Restraints: Fabricate to comply with referenced SMACNA standard, unless otherwise indicated.

2.3 MATERIALS

- A. Stainless-Steel Sheet, Strip, Plate, and Flat Bar: ASTM A 666, Type 304, stretcher leveled, and in finish specified in "Stainless-Steel Finishes" Article.
- B. Stainless-Steel Tube: ASTM A 554, Grade MT-304, and in finish specified in "Stainless-Steel Finishes" Article.

- C. Zinc-Coated Steel Sheet: ASTM A 653, G115 (ASTM A 653M, Z350) coating designation; commercial quality; cold rolled; stretcher leveled; and chemically treated.
- D. Zinc-Coated Steel Shapes: ASTM A 36 (ASTM A 36M), zinc-coated according to ASTM A 123 requirements.
- E. Plastic Laminate: Complying with NEMA LD 3 and NSF 35 requirements; NSF certified for end-use application indicated; 0.050 inch (1.27mm) thick for horizontal and vertical surfaces and 0.042 inch (1.07mm) thick for post-formed surfaces; smooth texture; and easily cleanable.
- F. Color: As selected by Architect from manufacturer's full range of colors.
- G. Plywood and Lumber: Provide plywood and lumber as specified in Division 6 Section "Interior Architectural Woodwork."
- H. Sealant: ASTM C 920; Type S, Grade NS, Class 25, Use NT. Provide elastomeric sealant NSF certified for end-use application indicated. Provide sealant that, when cured and washed, meets requirements of Food and Drug Administration's 21 CFR, Section 177.2600 for use in areas that come in contact with food.
- I. Color: As selected by Architect from manufacturer's full range of colors.
- J. Backer Rod: Close-cell polyethylene, in diameter larger than joint width.
- K. Tempered Glass: ASTM C 1048, Kind FT (fully tempered), Condition A (uncoated surfaces), Type I (transparent), Class 1 (clear), Quality q3 (glazing select). Provide products complying with ANSI Z97.1, manufactured by horizontal (roller-hearth) process, and 6mm thick, unless otherwise indicated. Provide exposed safety edges, if any, seamed before tempering.
- L. Plastic: Except for plastic laminate, provide plastic materials and components complying with NSF 51.
- M. Sound Dampening: NSF-certified, nonabsorbent, hard drying, sound-deadening coating. Provide coating compounded for permanent adhesions to metal in 1/8-inch (3mm) thickness that does not chip, flake, or blister.
- N. Gaskets: NSF certified for end-use application indicated, of resilient rubber, neoprene, or PVC that is nontoxic, stable, odorless, nonabsorbent, and unaffected by exposure to foods and cleaning compounds.
- O. Installation Accessories, General: NSF certified for end-use application indicated.
- P. Public Health and Safety Requirements:
 - 1. Sealant is certified for compliance with NSF standards for end-use application indicated.
 - 2. Washed and cured sealant complies with the FDA's regulations for use in areas that come in contact with food.
- Q. Cylindrical Sealant Backing: ASTM C 1330, Type C, closed-cell polyethylene, in diameter larger than joint width

2.4 ACCESSORIES

- A. Cabinet Hardware: Provide NSF-certified, stainless steel hardware for equipment items as indicated.
- B. Casters: NSF-certified, standard-duty, stainless-steel, swivel stem casters with 5-inch (125mm) diameter wheels, polyurethane tires with 1-inch (25mm) tread width, and 200-lb (90kg) load capacity per caster. Provide brakes on 2 casters per unit unless otherwise stated.

PART 3 EXECUTION

3.1 PRODUCT HANDLING

- A. Kitchen Equipment Contractor is responsible for receiving and warehousing equipment and fixtures, until ready for installation. Store materials, equipment and fixtures in sealed containers, where possible. Store off the ground and under cover, protected from damage.
- B. Receive all equipment, inspect and warehouse until scheduled installation. If any damage is noted; return to manufacturer, and replace with new undamaged equipment. All equipment replacements to not affect the final delivery and installation schedule.
- C. Do not install equipment that has been damaged either in manufacture, shipment or storage.

3.2 INSTALLATION

- A. Kitchen Equipment Contractor to verify and coordinate conditions at the building site, particularly door and/or wall openings, and passages, to assure access for all equipment. Pieces too bulky for existing facilities are to be hoisted or otherwise handles with apparatus as required. All special handling equipment charges will be arranged for and paid for by Kitchen Equipment Contractor.
- B. The Kitchen Equipment Contractor to coordinate, relocate and install owner provided/existing equipment, if applicable.
- C. The Kitchen Equipment Contractor will provide and install all refrigeration lines for remote refrigeration.
- D. A photocopy of drain line routing details for walk in coolers/ freezer as detailed on General Construction Details page FS5.0, detail 1 & 2 to route outside of box and utilize drain line cover to be posted in an obvious location at walk ins. KEC to verbally notify General Contractor and Plumbing Contractor of detail.
- E. Install foodservice equipment level and plumb, according to manufacturer's written instructions.
 - 1. Provide cutouts in equipment, neatly formed, where required to run service lines through equipment to make final connections.
- F. Complete equipment assembly where field assembly is required.
 - 1. Provide closed butt and contact joints that do not require filler.
 - 2. Grind field welds on stainless-steel equipment smooth, and polish to match adjacent finish.
 - 3. Metal tops to be one-piece welded construction, including field joints.
 - 4. Field joints that are required because of size of fixture: butt joint, reinforce on underside with angles of same material, bolt together with non-corrosive bolts and nuts, field weld, grind and polish to same finish as top surface.
- G. Verify equipment access and maintenance clearance requirements of authorities having jurisdiction and of local sanitation and health codes; reflect minimum clearances on drawings.
- H. Install closure-trim strips and similar items requiring fasteners in a bed of sealant.
- I. Install joint sealant in joints between equipment and abutting surfaces with continuous joint backing, unless otherwise indicated. Produce airtight, watertight, vermin-proof, sanitary joints.
- J. Equipment to be left ready for final electrical and plumbing connection by others.
- K. Install equipment with access and maintenance clearances that comply with manufacturer's written installation instructions and requirements of authorities having jurisdiction.
- L. Uni-strut not to be utilized or fastened to flooring surface in any instance. Galvanized uni-strut to be used and secured to underside of fixed equipment or walls to help in routing of water connections or drains. Routing to not impede the access, functionality or maintenance of equipment.
- M. Remove all packaging, pallets, cardboard and trashes related to the foodservice equipment and properly dispose.
- N. All work to be done in a neat workman like manner.

3.3 REFRIGERATION INSTALLATION

- A. Provide and install refrigerant piping, hard drawn, Type K or L, ASTM B88. Fittings for copper tubing shall be wrought copper. Piping to run from compressor to evaporator coil. Provide and install fittings, control devices, line insulation, sight glass and other components required for a complete and operational system. Charge with refrigerant.
- B. Provide and install s/s trim without gaps or buckles. Silicone in place in lieu of metal fasteners when applicable. Silicone seams of trim of walk in with like colored silicone.
- C. Provide and install s/s trim as shown on drawings and as needed at walls and coordinate with ceiling.
- D. Fasten drain line cover per detail on FS5.0 to conceal drain lines.

3.4 CLEANING AND PROTECTING

- A. After completing installation of equipment, repair any/all damaged finishes. Alert General Contractor of any observed damage.

- B. Clean and adjust equipment as required to produce ready-for-use condition.
- C. Use all means reasonable to protect the materials of this Section before, during, and after installation; and to protect the associated work and materials of the other trades.
- D. Protect equipment from theft or damage during remainder of the construction period and final acceptance by the Owner.

3.5 TESTING, START-UP, AND DEMONSTRATION

- A. Prior to testing/start up, inform Architect/ Design Consultant of intent to proceed with start up. Subsequent to testing/start up, provided a report of results to Architect and H-C Design and Consulting.
- B. Engage a qualified technician to test each item of operational equipment to demonstrate that it is operating properly, and the controls and safety devices are functioning. Repair or replace equipment which is found to be defective in its operation, including units which are below capacity or operating with excessive noise or vibration.
- C. Appoint a factory-authorized service representative or a qualified technician to instruct Owner's operating personnel in proper operation and maintenance procedures for each item of operational foodservice equipment. This instruction to be coordinated with the owner at least five (5) working days ahead of the demonstration.

END OF SECTION 11 4000

ATTACHMENT

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Project:
Shelley Senior Center

From:

BS & R Equipment Co.
Andrew Carroll
925 Turnbull Dr
Idaho Falls, ID 83401
208-733-4221
208-320-0557 (Contact)

To:

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***Submittal Sheet***

09/19/2018

ITEM# 3 - WIRE SHELVING (10 EA REQ'D)

Olympic J2448C

Shelf, wire, 24" x 48", chromate finish, NSF

ACCESSORIES

Mfr	Qty	Model	Spec
Olympic	4	J86C	Post 86", stationary, grooved at 1" intervals, includes leveling bolt & cap, chrome finish, NSF
Olympic	10	J9995Z	"S" Hooks, two required for each storage level

OLYMPIC

STORAGE COMPANY

Reliable space . . . economically.

Item # _____

Job _____

OLYMPIC™ WIRE SHELVING CHROMATE FINISH

- **Unique Design:** The open wire design of these carbon-steel shelves minimizes dust accumulation and allows a free circulation of air, greater visibility of stored items and greater light penetration.
- **Versatile Construction:** Olympic wire shelving can change as quickly as your needs change.
- **Fast, Secure Assembly:** Posts have circular grooves at 1" (25mm) intervals. A tapered split sleeve snaps together around each post. Tapered openings in the shelf corners slide over the tapered split sleeves providing a positive lock. Shelf is assembled in minutes without the use of any special tools.
- **Shelf Wires:** Run front to back, allowing you to slide items on and off shelves smoothly.
- **Shelf Accessibility:** Shelves can be loaded/unloaded easily from all sides. This open construction allows use of maximum storage space of cube.
- **Adjustability:** Shelves can be adjusted at 1" (25mm) intervals along the entire length of the post.
- **Finish:** Chromate finish
- **Posts:** Bolt levelers compensate for surface irregularities on stationary posts. Posts also available for mobile application.



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Wire Shelving Chromate Finish

OLYMPIC

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OLYMPIC™ WIRE SHELVING

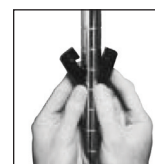
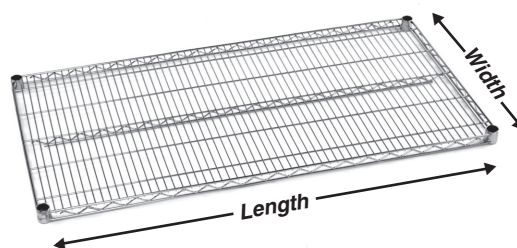
CHROMATE FINISH

Wire Shelves

Width/Length		Approx. Weight Per Shelf		Pack Quantity	Model No. Chromate
(in.)	(mm)	(lbs.)	(kg)		
14 x 24	355 x 610	6	2.7	4	J1424C
14 x 30	355 x 760	7	3.2	4	J1430C
14 x 36	355 x 914	8	3.6	4	J1436C
14 x 42	355 x 1066	9.5	4.3	4	J1442C
14 x 48	355 x 1219	10.5	4.7	4	J1448C
14 x 60	355 x 1524	14	6.3	2	J1460C
14 x 72	355 x 1829	17	7.7	2	J1472C
18 x 24	457 x 610	7	3.2	4	J1824C
18 x 30	457 x 760	8	3.6	4	J1830C
18 x 36	457 x 914	9.5	4.3	4	J1836C
18 x 42	457 x 1066	11	5	4	J1842C
18 x 48	457 x 1219	12	5.4	4	J1848C
18 x 54	457 x 1370	14.5	6.6	2	J1854C
18 x 60	457 x 1524	17	7.7	2	J1860C
18 x 72	457 x 1829	20	9.1	2	J1872C
21 x 24	530 x 610	8	3.6	4	J2124C
21 x 30	530 x 760	9	4.1	4	J2130C
21 x 36	530 x 914	11	5	4	J2136C
21 x 42	530 x 1066	12	5.4	4	J2142C
21 x 48	530 x 1219	14	6.4	4	J2148C
21 x 54	530 x 1370	16	7.3	2	J2154C
21 x 60	530 x 1524	18	8.2	2	J2160C
21 x 72	530 x 1829	24	10.9	2	J2172C
24 x 24	610 x 610	9	4.1	4	J2424C
24 x 30	610 x 760	11	5.0	4	J2430C
24 x 36	610 x 914	13	5.9	4	J2436C
24 x 42	610 x 1066	15	6.8	4	J2442C
24 x 48	610 x 1219	16	7.3	4	J2448C
24 x 54	610 x 1370	19	8.6	2	J2454C
24 x 60	610 x 1524	21	9.5	2	J2460C
24 x 72	610 x 1829	26	11.8	2	J2472C

Load Capacity:

Up to 48" (1220mm) Length = 800 lbs. (363kg), evenly distributed.
54"-72" (1829mm) Length = 600 lbs. (272kg), evenly distributed.



Split Sleeves

Posts

Approx. Weight Per Post		Pack Quantity	Height*		Model No. Stationary Post Chromate	Height**		Model No. Mobile Post Chromate
(lbs.)	(kg)		Stationary Post (in.)	(mm)		Mobile Post (in.)	(mm)	
2	0.9	8	34 ¹ / ₂	875	J33C	34 ³ / ₄	857	J33UC
3	1.4	8	54 ⁹ / ₁₆	1385	J54C	53 ¹³ / ₁₆	1366	J54UC
3 ¹ / ₂	1.6	8	62 ⁹ / ₁₆	1590	J63C	61 ¹³ / ₁₆	1570	J63UC
4	1.8	8	75 ⁵ / ₈	1895	J74C	73 ⁷ / ₈	1873	J74UC
5	2.3	8	86 ⁵ / ₈	2200	J86C	85 ⁷ / ₈	2181	J86UC

*Height includes leveling bolt and cap.

**Mobile posts come without leveling bolt assembly and accommodate stem casters.
Height is for post only.



Posts are grooved at 1" (25mm) increments and numbered at 2" (50mm) increments. Posts are double-grooved every 8" (203mm) for easy identification.

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For Product Information, Call 1-888-889-9048

OLY-002E - Chromate Shelving
Rev. 7/11

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Wire Shelving Accessories

WIRE SHELVING ACCESSORIES NSF

Direct Wall Mounts

Each consists of one shelf support and mounting plate. Use single support at shelf ends; double support for adjoining shelves. (Single — Two required per shelf.)



SINGLE



DOUBLE

Shelf Width (in.)	(mm)	Approx. Pkd. Wt. (lbs.) (kg)		Model No.		Approx. Pkd. Wt. (lbs.) (kg)		Model No.	
				Chrome	Green Epoxy			Chrome	Green Epoxy
14	355	1.5	0.7	J1WD14C	J1WD14K	3	1.4	J2WD14C	J2WD14K
18	457	2	0.9	J1WD18C	J1WD18K	4	1.8	J2WD18C	J2WD18K
24	610	3	1.4	J1WD24C	J1WD24K	4.5	2.0	J2WD24C	J2WD24K

Stem Casters — Resilient Rubber (Order By Each)

Use with posts to create a mobile shelving unit to meet your special needs. Each caster is constructed of resilient rubber wheels and plated components. Load rating is 200 lbs. (90kg) per caster. Sold by the piece.

Wheel Diameter (in.)	(mm)	Face (in.)	(mm)	Load Rating (lbs.) (kg)		Type	Wheel Tread	Approx. Pkd. Wt. (lbs.) (kg)		Model No.
5	127	1 1/4	32	200	90	Stem/Swivel	Resilient	2 1/2	1.1	J5
5	127	1 1/4	32	200	90	Stem/Brake	Resilient	2 5/8	1.2	J5B



Stem Caster Kit — High Modulus Rubber (One Kit = Four Casters)

Kit consists of four swivel casters with brakes. Each caster is constructed of durable, non-marking high modulus rubber. Load rating is 300 lbs. (136kg) per caster.

Wheel Diameter (in.)	(mm)	Face (in.)	(mm)	Load Rating (lbs.) (kg)		Type	Wheel Tread	Approx. Pkd. Wt. (lbs.) (kg)		Model No.
5	127	1 1/4	32	300	136	Stem/Brake	Flat High Modulus Rubber	9	4.1	J5FBA-4



Stackable Shelf Ledges

4" (100mm) High.

Shelf Width (in.)	(mm)	Approx. Pkd. Wt. (lbs.) (kg)		Model No.
14	355	0.83	0.36	JL14-4C
18	457	1.5	0.68	JL18-4C
24	610	2	0.9	JL24-4C
30	760	2.25	1.03	JL30-4C
36	914	2.75	1.25	JL36-4C
48	1219	3.75	1.68	JL48-4C
60	1524	4	1.81	JL60-4C
72	1828	5	2.25	JL72-4C

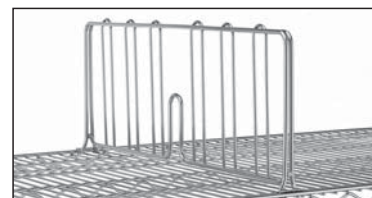
NOTE: Actual ledge length is approximately 1" (25mm) shorter than nominal shelf length/width.



Shelf Dividers for Shelves

Keep shelf contents orderly with these 8" (203mm) high, pressure-fit dividers.

Shelf Width (in.)	(mm)	Approx. Pkd. Wt. (lbs.) (kg)		Model No.
18	457	2.25	1	JDD18C
24	610	2.75	1.3	JDD24C



Replacement Plastic Split Sleeves

One bag required per shelf; 4 pairs per bag. Model No. J9985



"S" Hook

Two are required for each storage level. Model No. J9995Z



Foot Plate

Use to bolt units to the floor, or when a broader, more stable foot is desired. Zinc Finish. Model No. J9993Z



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OLY-005E • Rev. 7/11



Submittal Sheet

09/19/2018

ITEM# 7 - SELF CONTAINED (1 EA REQ'D)

Custom BSR WALK-IN FREEZER

Walk-In Freezer, 7'-6.25" H, 7'-9" W, 7'-9" L, with Era floor, 1-1/2 hp. low temp (-10F) top mounted unit, 26 gauge embossed galvalume interior & exterior, .10 smooth aluminum Era floor,, 2" dial thermometer

ACCESSORIES

Mfr	Qty	Model	Spec
Custom	1	VOLTAGE	208-230v/60/1ph, 13.5 amps, 1-1/2 hp. (standard voltage)
Custom	1	DOOR UPGRADE	34" X 78" Door (net)
Custom	1	RH HINGE	RH Hinge Door
Custom	1	RAMP	Heavy Duty Ramp

***Submittal Sheet***

09/19/2018

ITEM# 7.1 - LABOR/DELIVERY (1 EA REQ'D)

BSR ASSEMBLY WALK-IN

Quick Ship Only

BSR is responsible for:

1. Receiving the Walk-in Cooler/Freezer without damage
2. Delivery of Walk-In Cooler/Freezer
3. Assembly Walk-In Cooler/Freezer up to 10x12
4. Hanging the Evaporator in MFG suggested Location
5. Sealing Walk-in according MFG recommendations with NSF approved Sealant
6. Train end user on cleaning, adjustments, scheduled maintenance found in Owner's manual
7. Follow-up phone call by installer to ensure proper function
8. Add for dropping in Refrigeration for Self-contained; If not self-contained treated wood utilized for the platform (\$125 value- included)
9. Does not include Crane (If over 15' Man-lift or Crane required- please see sales associate for quote typically \$175-\$250 depending on location)
10. Refrigeration (including line-sets, Evaporator plumbing); or Electrical not included

***Submittal Sheet***

09/19/2018

ITEM# 7.2 - STAINLESS PANEL (2 EA REQ'D)

Custom STAINLESS WALL PANEL

Stainless wall panel to bridge gap on either side of walk-in



Submittal Sheet

09/19/2018

ITEM# 7.3 - WIRE SHELVING (1 EA REQ'D)

Olympic J2460K

Shelf, wire, 24" x 60", green epoxy finish with chromate substrate, NSF

ACCESSORIES

Mfr	Qty	Model	Spec
Olympic	10	J86K	Post 86", stationary, grooved at 1" intervals, includes leveling bolt & cap, green epoxy finish with chromate substrate, NSF
Olympic	4	J2448K	Shelf, wire, 24" x 48", green epoxy finish with chromate substrate, NSF
Olympic	4	J2436K	Shelf, wire, 24" x 36", green epoxy finish with chromate substrate, NSF

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Wire Shelving Green Epoxy



OLYMPIC WIRE SHELVING GREEN EPOXY

- **Unique Design:** The open wire design of these carbon-steel shelves minimizes dust accumulation and allows a free circulation of air, greater visibility of stored items and greater light penetration.
- **Versatile Construction:** Olympic wire shelving can change as quickly as your needs change.
- **Fast, Secure Assembly:** Posts have circular grooves at 1" (25mm) intervals. A tapered split sleeve snaps together around each post. Tapered openings in the shelf corners slide over the tapered split sleeves providing a positive lock. Shelf is assembled in minutes without the use of any special tools.
- **Shelf Wires:** Run front to back, allowing you to slide items on and off shelves smoothly.
- **Shelf Accessibility:** Shelves can be loaded/unloaded easily from all sides. This open construction allows use of maximum storage space of cube.
- **Adjustability:** Shelves can be adjusted at 1" (25mm) intervals along the entire length of the post.
- **Finish:** Green epoxy finish with chromate substrate.
- **Posts:** Bolt levelers compensate for surface irregularities on stationary posts. Posts also available for mobile application.
- **Warranty:** Olympic green epoxy coated shelves and posts carry a 7 year limited warranty against rust and corrosion.

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OLYMPIC WIRE SHELVING GREEN EPOXY

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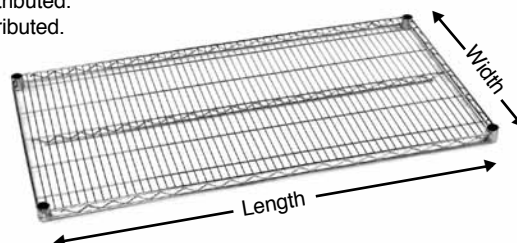
WIRE SHELVES

Width/Length		Approx. Weight Per Shelf		Pack Quantity	Green Epoxy
(in.)	(mm)	(lbs.)	(kg)		
14 x 30	355 x 760	7	3.2	4	J1430K
14 x 36	355 x 914	8	3.6	4	J1436K
14 x 42	355 x 1066	9.5	4.3	4	J1442K
14 x 48	355 x 1219	10.5	4.7	4	J1448K
14 x 60	355 x 1524	14	6.3	2	J1460K
14 x 72	355 x 1829	17	7.7	2	J1472K
18 x 24	457 x 610	7	3.2	4	J1824K
18 x 30	457 x 760	8	3.6	4	J1830K
18 x 36	457 x 914	9.5	4.3	4	J1836K
18 x 42	457 x 1066	11	5	4	J1842K
18 x 48	457 x 1219	12	5.4	4	J1848K
18 x 54	457 x 1370	14.5	6.6	2	J1854K
18 x 60	457 x 1524	17	7.7	2	J1860K
18 x 72	457 x 1829	20	9.1	2	J1872K
21 x 24	530 x 610	8	3.6	4	J2124K
21 x 30	530 x 760	9	4.1	4	J2130K
21 x 36	530 x 914	11	5	4	J2136K
21 x 42	530 x 1066	12	5.4	4	J2142K
21 x 48	530 x 1219	14	6.4	4	J2148K
21 x 54	530 x 1370	16	7.3	2	J2154K
21 x 60	530 x 1524	18	8.2	2	J2160K
21 x 72	530 x 1829	24	10.9	2	J2172K
24 x 24	610 x 610	9	4.1	4	J2424K
24 x 30	610 x 760	11	5.0	4	J2430K
24 x 36	610 x 914	13	5.9	4	J2436K
24 x 42	610 x 1066	15	6.8	4	J2442K
24 x 48	610 x 1219	16	7.3	4	J2448K
24 x 54	610 x 1370	19	8.6	2	J2454K
24 x 60	610 x 1524	21	9.5	2	J2460K
24 x 72	610 x 1829	26	11.8	2	J2472K

Load Capacity:

Up to 48" (1220mm) Length = 800 lbs. (363kg), evenly distributed.

54" - 72" (1829mm) Length = 600 lbs. (272kg), evenly distributed.



Split Sleeves

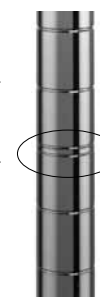
POSTS

Approx. Weight Per Post (lbs.)	Pack Quantity	Height* Stationary Post (in.)	Height* Stationary Post (mm)	Cat. No. Stationary Post Green Epoxy	Height** Mobile Post (in.)	Height** Mobile Post (mm)	Cat. No. Mobile Post Green Epoxy	
2	0.9	8	34 1/2	875	J33K	34 3/4	857	J33UK
3	1.4	8	54 9/16	1385	J54K	53 13/16	1366	J54UK
3 1/2	1.6	8	62 9/16	1590	J63K	61 13/16	1570	J63UK
4	1.8	8	75 5/8	1895	J74K	73 7/8	1873	J74UK
5	2.3	8	86 5/8	2200	J86K	85 7/8	2181	J86UK

*Height includes leveling bolt and cap.

**Mobile posts come without leveling bolt assembly and accommodate stem casters.

Height is for post only.



Posts are grooved at 1" (25mm) increments and numbered at 2" (50mm) increments. Posts are double-grooved every 8" (203mm) for easy identification.

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OLY-001E - Epoxy Wire Shelving
 Rev. 3/10

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Wire Shelving Green Epoxy

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Submittal Sheet

09/19/2018

ITEM# 10 - DISHWASHER, DOOR TYPE, VENTLESS (1 EA REQ'D)

Jackson WWS TEMPSTAR HH-E VENTLESS

TempStar® Dishwasher, high hood, door-type with ventless & energy recovery, high temperature electric tank heat with built-in 70° F booster, approximately (37) racks/hour, 0.72 gallons of water per rack, multi-cycle timer, field convertible from straight through to corner, stainless steel exterior, electromechanical controls, pressure regulator, Sani-Sure, dishtable not included, cETLus, ETL-Sanitation, ENERGY STAR®

ACCESSORIES

Mfr	Qty	Model	Spec
Jackson WWS	1		70 degree rise booster heater, standard
Jackson WWS	1		Voltage to be verified with jobsite
Jackson WWS	1	05700-002-61-29	Water Hammer Arrestor, 3/4"
Jackson WWS	1	04730-003-05-76	Scaltrol Water Treatment
Jackson WWS	1	RSC-100	Replacement Cartridge for Scaltrol Water Treatment
Jackson WWS	1	05700-002-52-89	False panel, for Conserver® XL HH, TempStar® HH & TempStar® HH GPX (door type HH models)

ELECTRICAL

	VOLTS	CYCLE	PHASE	CONN	AFF	NEMA	AMPS	KW	HP	MCA	MOCP
1									2		
2											

ELECTRICAL 2 REMARKS

Voltage to be verified with jobsite

WATER

	HOT SIZE	HOT AFF	HOT GPH	COLD SIZE	COLD AFF	FILTERED SIZE	FILTERED AFF	CONDENSER INLET SIZE	CONDENSER OUTLET SIZE
1				3/4"					

WASTE

	INDIRECT SIZE	DIRECT SIZE
1	1-1/2"	



TempStar® with optional Ventless and Energy Recovery

Project _____
 Item _____
 Quantity _____
 CSI Section 11400 _____
 Approval _____
 Date _____

TempStar® with optional Ventless and Energy Recovery

Models

☐ TempStar® VER ☐ TempStar® HH-E VER



Standard Features*

- Ventless: Does not require a hood
- Energy Recovery
- Internal condensing system minimizes water vapor
- Sani-Sure™ feature ensures proper rinse water temperature
- Multi-cycle timer (Extra Heavy, Heavy, Medium, Normal)
- Specially designed stainless steel nozzles provide superior cleaning action
- Auto-fill/auto-start
- Door switch
- Built-in pressure regulator and door interlock are standard
- Delime/manual wash switch
- Hi-limit thermostat and low water protection
- Uses standard 20" X 20" (508 mm X 508 mm) racks
- Detergent/rinse additive signal connection fuse box
- Self-draining stainless steel pump
- Built-in 70° F (38.9° C) rise booster heater
- Field convertible from straight through to corner and vice versa

Mandatory Specs

Specify voltage _____

Specify booster size _____

Options

- ☐ 480V Electrical
- ☐ Single Phase
- ☐ Drain Quench System
- ☐ Scaltrol
- ☐ Water Hammer Arrestor
- ☐ Flanged Feet
- ☐ False Panel
- ☐ Security Package

Accessories

- ☐ 36-Compartment Rack
 - ☐ 4-1/8" tall (105 mm)
 - ☐ 5-5/8" tall (143 mm)
 - ☐ 7" tall (178 mm)
- ☐ Combination Rack
- ☐ Peg Rack

Specifications

TempStar uses 0.89 gallons (3 liters) of water per rack; TempStar HH-E uses 0.72 gallons (2.73 liters) of water per rack

TempStar (normal) cycle time - 87 seconds*

TempStar HH-E (normal) cycle time - 90 seconds*

TempStar - 39 racks per hour (normal cycle)*

TempStar HH-E - 37 racks per hour (normal cycle)*

Single point connections for all utilities

Cold water connection only*

Durable stainless steel construction

TempStar - 17.25" (438 mm) door opening accepts 18" (457 mm) trays

TempStar HH-E - 20.75" wide x 27" high (527 mm x 686 mm) opening accommodates 18"x 26" (457 mm x 660 mm) sheet pans and 60-quart mixing bowls

TempStar is field phase convertible

TempStar ships fully assembled



Intertek



Intertek

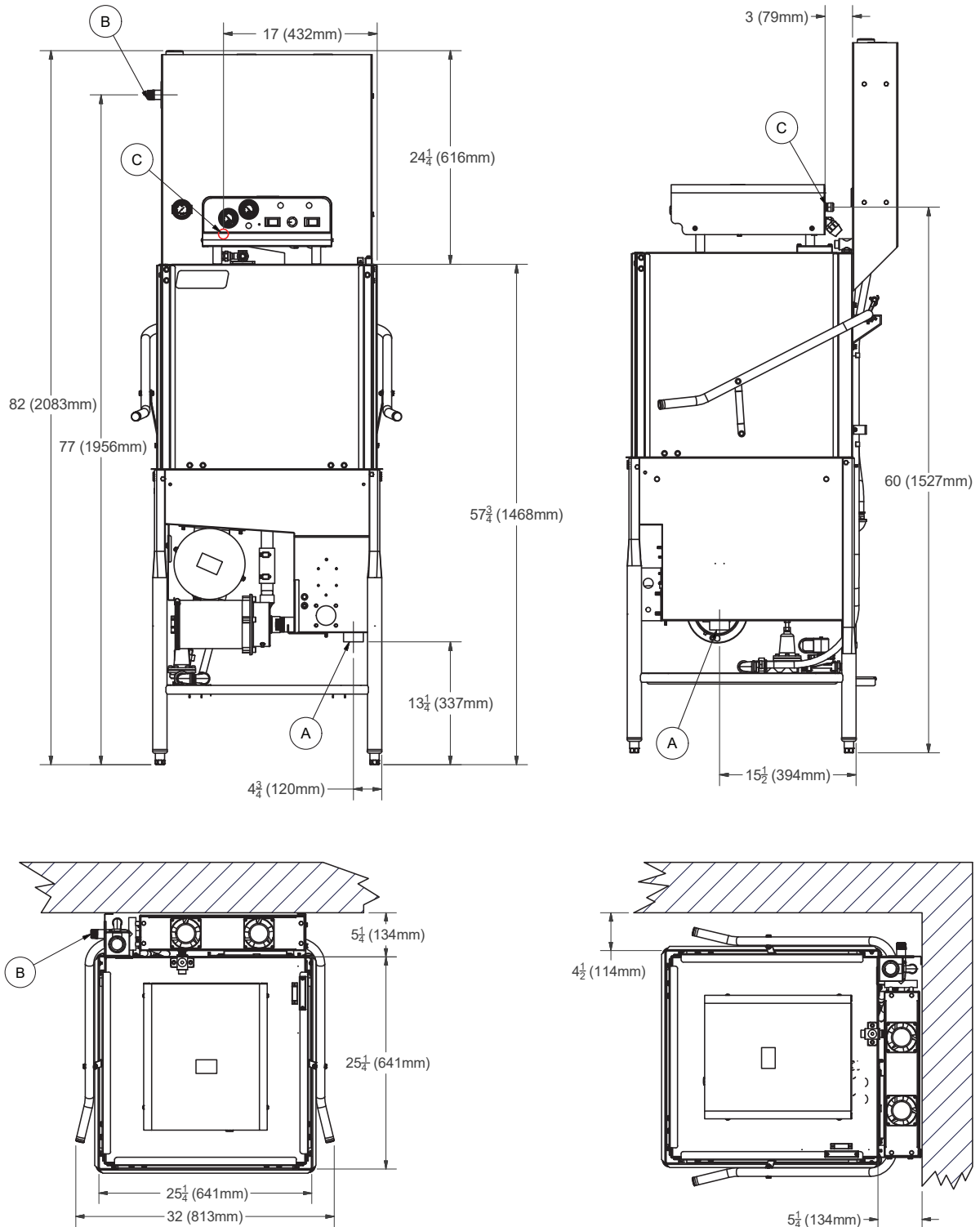


*Specs shown for TempStar / TempStar HH-E with optional Ventless and Energy Recovery

www.jacksonwws.com

TempStar® with optional Ventless
and Energy Recovery

TempStar



LEGEND

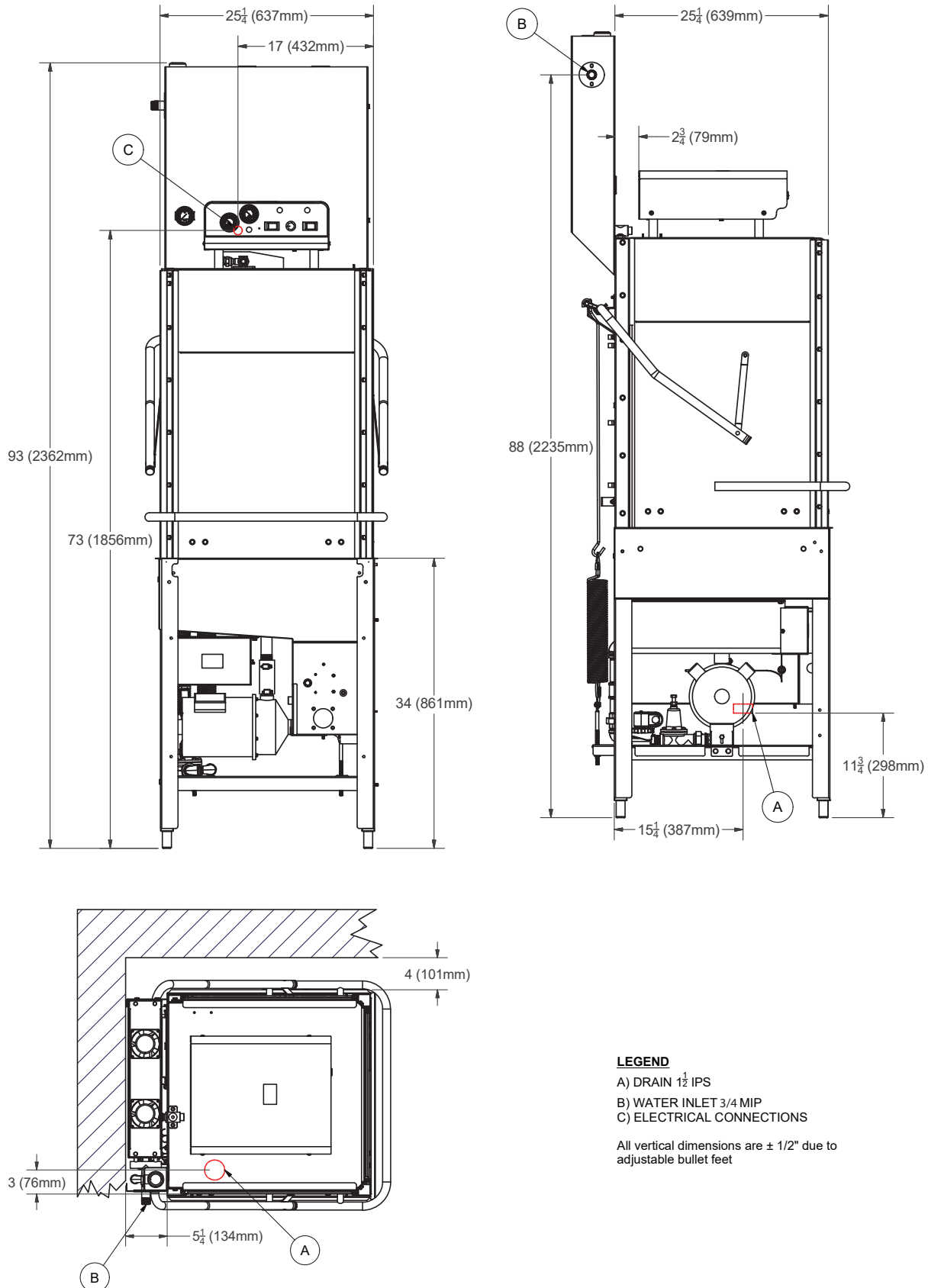
- A) DRAIN 1 $\frac{1}{2}$ IPS
- B) WATER INLET $\frac{3}{4}$ MIP
- C) ELECTRICAL CONNECTIONS

All vertical dimensions are $\pm 1/2"$ due to adjustable bullet feet

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TempStar HH-E

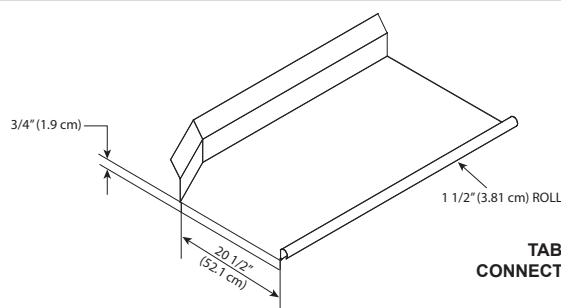
TempStar® with optional Ventless
and Energy Recovery



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TempStar® with optional Ventless and Energy Recovery



**TABLE DIMENSIONS
CONNECTION TO DISHMACHINE**

MODEL NO.	MACHINE DIMENSIONS*			DRAIN HEIGHT	SHIPPING INFORMATION*					
	HEIGHT	WIDTH	DEPTH		WEIGHT	CLASS	CUBE	HEIGHT	WIDTH	DEPTH
TempStar*	82" (2083 mm)	25-1/4" (641 mm)	30-1/2" (775 mm)	13-1/4" (337 mm)	358 lbs (163 kg)	200	87.79 cu. ft.	86" (2185 mm)	42" (1067 mm)	42" (1067 mm)
TempStar HH-E*	93" (2362 mm)	25-1/4" (641 mm)	30-1/2" (775 mm)	11-3/4" (298 mm)	451 lbs (205 kg)	200	84.35 cu. ft.	82.625" (2099 mm)	42" (1067 mm)	42" (1067 mm)

DIMENSION REQUIREMENTS

Wall Clearance (minimum)*	0" (0 mm)
Clearance above Heat Exchanger (minimum)*	6" (152 mm)
Standard Table Height	34" (864 mm)
Inside Vertical Clearance - TempStar	17-1/4" (438 mm)
Inside Vertical Clearance - TempStar HH-E	27" (686 mm)
Machine Height with Door Open - TempStar	76" (1933 mm)
Machine Height with Door Open - TempStar HH-E	86-3/4" (2202 mm)

OPERATING CAPACITY*

	Normal	Medium	Heavy	Extra Heavy
Racks per Hour - TempStar	39	24	17	11
Racks per Hour - TempStar HH-E	37	23	17	11

OPERATING TEMPERATURES

Wash (minimum)	150° F (66° C)
Rinse (minimum)	180° F (82° C)

TANK HEATER SPECIFICATIONS

	Volts	KW
Electric Wash Tank Heater	208V	4.1
	230V	5.0
	460V	5.0
Electric Rinse Tank Heater - 70°F (38.9°C) Rise	208V	10.5
	230V	12.9
	460V	12.9

WASH PUMP MOTOR

Wash Pump Motor - TempStar	1 hp
Wash Pump Motor - TempStar HH-E	2 hp

*Specs shown for TempStar / TempStar HH-E with optional Ventless and Energy Recovery

HOW TO SPECIFY: TempStar® with Ventless & Energy Recovery

HOW TO SPECIFY: TempStar® HH-E with Ventless & Energy Recovery

WATER REQUIREMENTS

	TempStar	TempStar HH-E
Inlet Temperature*	40 - 90° F (4.4 - 32.2° C)	
Gallons per Hour*	35 gal (133 L)	39.6 gal (150 L)
Gallons per Rack	0.89 gal (3 L)	0.72 gal (2.73 L)
Waterline Size MIP (minimum)*	3/4"	3/4"
Drainline Size IPS (minimum)	1- 1/2"	1- 1/2"
Flow Pressure (PSI) Connection	40	40
Operating Flow Pressure (PSI)	10	10
Wash Tank Capacity	8 gal (30 L)	8 gal (30 L)
Booster Tank Capacity	3 gal (11 L)	3 gal (11 L)

APPROXIMATE LOAD AMPS

	TempStar	TempStar HH
Power Supply	AMPS	AMPS
208V/60HZ/1PH	75.8	87
208V/60HZ/3PH	46.3	55
230V/60HZ/1PH	83.6	96
230V/60HZ/3PH	50.7	61
460V/60HZ/3PH	24.1	28

OPERATING CYCLE FOR TEMPSTAR*

	Wash	Rinse	Dwell	Condensate Removal	Total Cycle
Normal	40	13	4	30	87
Medium	100	13	4	30	147
Heavy	160	13	4	30	207
Extra Heavy	280	13	4	30	327

OPERATING CYCLE FOR TEMPSTAR HH-E*

	Wash	Rinse	Dwell	Condensate Removal	Total Cycle
Normal	40	10	10	30	90
Medium	103	10	10	30	153
Heavy	163	10	10	30	213
Extra Heavy	283	10	10	30	333

AMBIENT HEAT LOAD (as tested on standard height model)

Latent Heat (BTU)	5300
Sensible Heat (BTU)	4500

Jackson WWS, Inc.

Shipping Address: 6209 North U.S. Highway 25E, Gray, KY 40734

Mailing Address: P.O. Box 1060, Barbourville, KY 40906

Telephone: 888-800-5672 • Fax: 606-523-1799

Email: info@jacksonwws.com

07610-002-66-59B [02/05/18]

www.jacksonwws.com




Compact Catalog

UNDERCOUNTERS

Coffee Shops • Bars • Quick Service Restaurants • Convenience Stores • Up to 80-Seat Restaurants • Small Nursing Care Facilities • Day Care Centers

DishStar® HT & LT




24

1.1 (HT)
1.2 (LT)

24 $\frac{3}{16}$ " x 25 $\frac{3}{8}$ " x 33 $\frac{1}{16}$ "

DishStar® HT-E

standard or SEER (steam elimination & energy recovery)



27 (HT-E)
20 (HT-E SEER)

0.65 (HT-E)
0.65 (HT-E SEER)

24 $\frac{3}{16}$ " x 25 $\frac{3}{8}$ " x 33 $\frac{1}{16}$ " (HT-E)
24 $\frac{3}{16}$ " x 26 $\frac{1}{8}$ " x 33 $\frac{1}{16}$ " (HT-E SEER)

GLASSWASHERS

Restaurants • Coffee Shops • Hotel and Casino Bars • Hotel Housekeeping Areas

Delta® 5-E



40

1.16

25 $\frac{1}{4}$ " x 24 $\frac{1}{2}$ " x 39"

Delta® 1200 / 115



1200

10

25 $\frac{1}{4}$ " x 25 $\frac{1}{4}$ " x 39"

DOOR-TYPE

Coffee Shops • Quick Service Restaurants • Extended Living Facilities • Up to 100-Seat Full Service Restaurants • Up to 125-Bed Health Care Facilities • Small Middle & High Schools • Elementary Schools

DynaTemp®

electric or steam
standard or ventless



58 (Standard)
39 (Ventless)

0.69

30 $\frac{5}{16}$ " x 29 $\frac{1}{2}$ " x 61" (Standard)
30 $\frac{5}{16}$ " x 29 $\frac{1}{2}$ " x 63 $\frac{1}{8}$ " (Ventless)

TempStar®

electric or steam
standard or ventless



58 (Standard)
39 (Ventless)

0.89

25 $\frac{1}{4}$ " x 25 $\frac{1}{4}$ " x 64 $\frac{3}{8}$ " (Standard)
25 $\frac{1}{4}$ " x 30 $\frac{1}{2}$ " x 82" (Ventless)

TempStar® HH-E

electric or steam
standard or ventless



55 (Standard)
37 (Ventless)

0.72

25 $\frac{1}{4}$ " x 25 $\frac{1}{4}$ " x 76 $\frac{3}{4}$ " (Standard)
25 $\frac{1}{4}$ " x 30 $\frac{1}{2}$ " x 93" (Ventless)

TempStar® GPX

standard or tall chamber



57 (Standard)
53 (Tall Chamber)

1.00 (Standard)
1.36 (Tall Chamber)

25 $\frac{1}{4}$ " x 25 $\frac{1}{4}$ " x 64 $\frac{1}{2}$ " (Standard)
25 $\frac{1}{4}$ " x 25 $\frac{1}{4}$ " x 76 $\frac{3}{4}$ " (Tall Chamber)

Conserver® XL-E



39

1.02

30 $\frac{3}{8}$ " x 29 $\frac{1}{2}$ " x 68 $\frac{1}{2}$ "

Conserver® XL-E-LTH



39

1.02

30 $\frac{3}{8}$ " x 29 $\frac{1}{2}$ " x 68 $\frac{1}{2}$ "

Conserver® XL HH




39

1.61

29 $\frac{1}{4}$ " x 31" x 79"

Conserver® XL2



74

1.17

50 $\frac{1}{2}$ " x 25" x 68 $\frac{1}{2}$ "

www.jacksonwws.com

We reserve the right to change specifications in this bulletin without incurring any obligation for equipment previously or subsequently sold.

***Submittal Sheet***

09/19/2018

ITEM# 10.1 - ASSEMBLY (1 EA REQ'D)

Custom ASSEMBLY OF DISHMACHINE

Assembly of High hood Jackson Dishmachine, Plumber to hookup plumbing, electrician to hook up electrical, Startup by chemical company provider, If startup requested by BSR; ADD 300\$; Chemical company will provide chemical, startup and proper chemical metering for no charge



Submittal Sheet

09/19/2018

ITEM# 11 - CORNER SINK (1 EA REQ'D)

John Boos 3PBCS1620-2D18

Pro-Bowl Corner Sink, 3-compartment, 58-1/2"W x 58-1/2"D x 44-1/16"H overall size, (2) 16"W x 20" front-to-back x 12" deep compartments & (1) 20"W x 20" front-to-back x 12" deep compartment in corner, (2) 18" left & right drainboards, 10"H boxed backsplash with 45° top and 2" return, (2) sets of splash mount faucet holes with 8" centers, 3-1/2" die-stamped drain opening, 16/300 stainless steel construction, stainless steel legs, bracing, & adjustable bullet feet, NSF, CSA-Sanitation

ACCESSORIES

Mfr	Qty	Model	Spec
Krowne	1	14-814L	Krowne Royal Series Faucet, splash-mounted, 8" centers, 14" swing spout, quarter-turn ceramic cartridge valve, low lead compliant, NSF

WATER

	HOT SIZE	HOT AFF	HOT GPH	COLD SIZE	COLD AFF	FILTERED SIZE	FILTERED AFF	CONDENSER INLET SIZE	CONDENSER OUTLET SIZE
1									
2									
3									
4	1/2"			1/2"					

WASTE

	INDIRECT SIZE	DIRECT SIZE
1		
2		
3		
4		

PLUMBING 1 REMARKS

(2) sets of 1-1/8" faucet holes, 8" centers, 3-1/2" drain opening

PLUMBING 2 REMARKS

3-1/2" drain opening

PLUMBING 3 REMARKS

3-1/2" drain opening



**John
BOOS**
Since 1887

ITEM #: _____ QTY: _____
MODEL #: _____
PROJECT NAME: _____

112217

3601 S. Banker St. Effingham, IL 62401 • P.O. BOX 609 • Ph: (888) 431-2667 • Fax: (800) 433-2667

"3PBCS" PRO-BOWL CORNER SINK - 16GA



FEATURES:

- 16GA STAINLESS STEEL
- TYPE 300 STAINLESS STEEL WITH #4 POLISH, SATIN FINISH
- 12" OR 14" DEEP BOWLS
- ALL CORNERS, BOTH VERTICAL AND HORIZONTAL, COVED AT 3/4" RADIUS
- BOTTOMS OF BOWLS FORMED FOR DRAINAGE TO 3-1/2" DIAMETER DIE STAMPED OPENING
- FULL LENGTH **10" HIGH BOXED BACKSPLASH**, WITH 2" RETURN TO WALL AT 45 DEGREE AND 1" TURNED DOWN REAR LIP
- 1" FAUCET HOLES IN BACKSPLASH
- 8" ON-CENTER FAUCET HOLES IN BACKSPLASH
- ALL OUTSIDE CORNERS OF ASSEMBLY ARE BULLNOSED TO PROVIDE SAFE, CLEAN, AND POLISHED EDGE
- STANDARD STAINLESS STEEL LEGS 1-5/8" DIAMETER
- FRONT TO BACK AND LEFT TO RIGHT LOWER BRACING

CONSTRUCTION:

- TOP: STAINLESS STEEL SINKS ARE TIG WELDED, EXPOSED WELDS ARE POLISHED TO MATCH ADJACENT SURFACE
- BASE: STAINLESS STEEL FRAME IS TIG WELDED

MATERIAL:

- BOWLS & TOP: 16GA TYPE 300 STAINLESS STEEL WITH #4 POLISH, SATIN FINISH
- LEGS: 1-5/8" ROUND O.D. STAINLESS STEEL
- BRACING: 1-1/4" ROUND O.D. STAINLESS STEEL
- GUSSETS: STAINLESS STEEL
- FEET: 1" ADJUSTABLE STAINLESS STEEL BULLET FEET

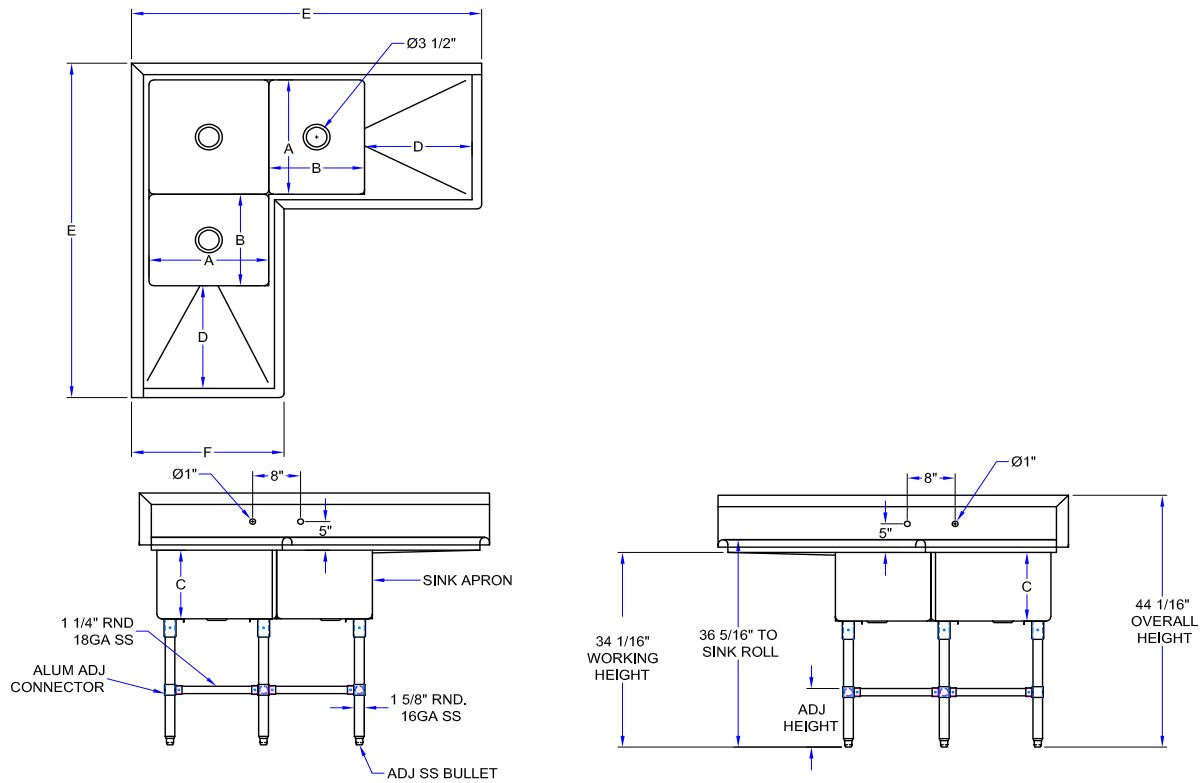


PRO-BOWL CORNER SINK - 16GA

12" DEEP BOWLS	QTY	14" DEEP BOWLS	QTY	12" DEEP BOWLS	QTY	14" DEEP BOWLS	QTY
3PBCS18-2D18		3PBCS184-2D18		3PBCS1620-2D18		3PBCS16204-2D18	
3PBCS18-2D24		3PBCS184-2D24		3PBCS1620-2D24		3PBCS16204-2D24	
3PBCS18-2D30		3PBCS184-2D30		3PBCS1620-2D30		3PBCS16204-2D30	
3PBCS18-2D36 *		3PBCS184-2D36 *		3PBCS1620-2D36 *		3PBCS16204-2D36 *	
3PBCS20-2D18		3PBCS204-2D18		3PBCS1824-2D18		3PBCS18244-2D18	
3PBCS20-2D24		3PBCS204-2D24		3PBCS1824-2D24		3PBCS18244-2D24	
3PBCS20-2D30		3PBCS204-2D30		3PBCS1824-2D30		3PBCS18244-2D30	
3PBCS20-2D36 *		3PBCS204-2D36 *		3PBCS1824-2D36 *		3PBCS18244-2D36 *	
3PBCS24-2D18		3PBCS244-2D18					
3PBCS24-2D24		3PBCS244-2D24					
3PBCS24-2D30		3PBCS244-2D30					
3PBCS24-2D36 *		3PBCS244-2D36 *					

* 36" DRAINBOARDS STANDARD WITH ADDITIONAL LEG SUPPORT

DETAILED SPECIFICATIONS



PRO-BOWL CORNER SINK - 16GA

BOWL DIMENSIONS (A X B)	DIMENSIONS (E X E)	DB (D)	F	12" DEEP BOWLS (C)	WT. (LBS)	14" DEEP BOWLS (C)	WT. (LBS)
20" X 16"	58-1/2" X 58-1/2"	18"	25-1/2"	3PBCS1620-2D18	128	3PBCS16204-2D18	136
20" X 16"	64-1/2" X 64-1/2"	24"	25-1/2"	3PBCS1620-2D24	136	3PBCS16204-2D24	145
20" X 16"	70-1/2" X 70-1/2"	30"	25-1/2"	3PBCS1620-2D30	144	3PBCS16204-2D30	152
20" X 16"	76-1/2" X 76-1/2"	36"	25-1/2"	3PBCS1620-2D36 *	166	3PBCS16204-2D36 *	174
24" X 18"	64-1/2" X 64-1/2"	18"	29-1/2"	3PBCS1824-2D18	156	3PBCS18244-2D18	165
24" X 18"	70-1/2" X 70-1/2"	24"	29-1/2"	3PBCS1824-2D24	165	3PBCS18244-2D24	174
24" X 18"	76-1/2" X 76-1/2"	30"	29-1/2"	3PBCS1824-2D30	174	3PBCS18244-2D30	183
24" X 18"	82-1/2" X 82-1/2"	36"	29-1/2"	3PBCS1824-2D36 *	183	3PBCS18244-2D36 *	192
18" X 18"	58-1/2" X 58-1/2"	18"	23-1/2"	3PBCS18-2D18	127	3PBCS184-2D18	135
18" X 18"	64-1/2" X 64-1/2"	24"	23-1/2"	3PBCS18-2D24	134	3PBCS184-2D24	143
18" X 18"	70-1/2" X 70-1/2"	30"	23-1/2"	3PBCS18-2D30	142	3PBCS184-2D30	150
18" X 18"	76-1/2" X 76-1/2"	36"	23-1/2"	3PBCS18-2D36 *	164	3PBCS184-2D36 *	172
20" X 20"	62-1/2" X 62-1/2"	18"	25-1/2"	3PBCS20-2D18	139	3PBCS204-2D18	148
20" X 20"	68-1/2" X 68-1/2"	24"	25-1/2"	3PBCS20-2D24	147	3PBCS204-2D24	156
20" X 20"	74-1/2" X 74-1/2"	30"	25-1/2"	3PBCS20-2D30	156	3PBCS204-2D30	165
20" X 20"	80-1/2" X 80-1/2"	36"	25-1/2"	3PBCS20-2D36 *	178	3PBCS204-2D36 *	187
24" X 24"	70-1/2" X 70-1/2"	18"	29-1/2"	3PBCS24-2D18	166	3PBCS244-2D18	176
24" X 24"	76-1/2" X 76-1/2"	24"	29-1/2"	3PBCS24-2D24	175	3PBCS244-2D24	185
24" X 24"	82-1/2" X 82-1/2"	30"	29-1/2"	3PBCS24-2D30	184	3PBCS244-2D30	194
24" X 24"	88-1/2" X 88-1/2"	36"	29-1/2"	3PBCS24-2D36 *	207	3PBCS244-2D36 *	217

* 36" DRAINBOARDS STANDARD WITH ADDITIONAL LEG SUPPORT

SOME UNITS SHIP UNASSEMBLED FOR REDUCED SHIPPING COST. ALL DIMENSIONS ARE TYPICAL. TOLERANCE +/- .500"

John Boos & Co. is constantly engaged in a program of improving products and therefore reserves the right to change specifications without prior notice.



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112217

Boos

AutoQuotes

www.johnboos.com

575



ROYAL SERIES PLUMBING

8" CENTER WALL MOUNT FAUCETS

MODEL: _____ PROJECT: _____ ITEM #: _____ QTY: _____

PRODUCT IMAGE



14-812 SHOWN

**ALSO AVAILABLE IN LOW LEAD BY
ADDING "L" TO MODEL NUMBER**

STANDARD FEATURES

- 1/4 turn high performance ceramic cartridge valve with built-in back flow preventers
- Heavy-Duty flanges with eccentric fittings for quick installations
- Heavy-Duty spout with double O-Ring construction and welded shoulder for durability
- High precision machining and polished nickel chromium finish
- Color-coded handles
- Optional wrist blade handles available
- Mounting kit included (1/2" NPT x 1 1/2" male nipples with locknuts)
- Full replacement parts available
- 1 Year Warranty
- **Low Lead Compliance**

"L" Models meet California AB-1953 and Vermont S152 standards
(Faucet models already listed with the "L" suffix (i.e. 12-806L) are only available in Low Lead Compliant model)

SPECIFICATIONS

- 8" on center wall mount with 1/2" NPT male inlets
- Rough in: Two 7/8" round holes on 8" centers
- Temperature Range: 40°F to 180°F
- Flow rate: 2 GPM max
- Shipping weight: 5 1/2 lbs.
- Quantity per case: 6



APPROVED BY:

Due to our commitment to continued product improvement, specifications are subject to change without notice.

CERTIFICATIONS:

Printed in the USA

Krowne Metal Corporation

100 Haul Rd. Wayne, NJ 07470 • Toll Free: (800) 631-0442 • Fax: (973) 872-1129

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Shelley Senior Center

BS & R Equipment Co.

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Rev. 05/2012
No. 14-8XX



ROYAL SERIES PLUMBING

8" CENTER WALL MOUNT FAUCETS

MODEL: _____ PROJECT: _____ ITEM #: _____ QTY: _____

MODELS

STANDARD SPOUTS

Model Numbers	Ⓐ	Ⓑ	Ⓒ
14-806	6"	2 ³ / ₈ "	4 ⁷ / ₈ "
14-808	8"	2 ³ / ₈ "	4 ⁷ / ₈ "
14-810	10"	2 ⁵ / ₈ "	5 ¹ / ₄ "
14-812	12"	3 ¹ / ₈ "	5 ⁵ / ₈ "
14-814	14"	3 ¹ / ₂ "	6"
14-816	16"	4 ¹ / ₂ "	7"
12-818L*	18"	5 ¹ / ₂ "	8"

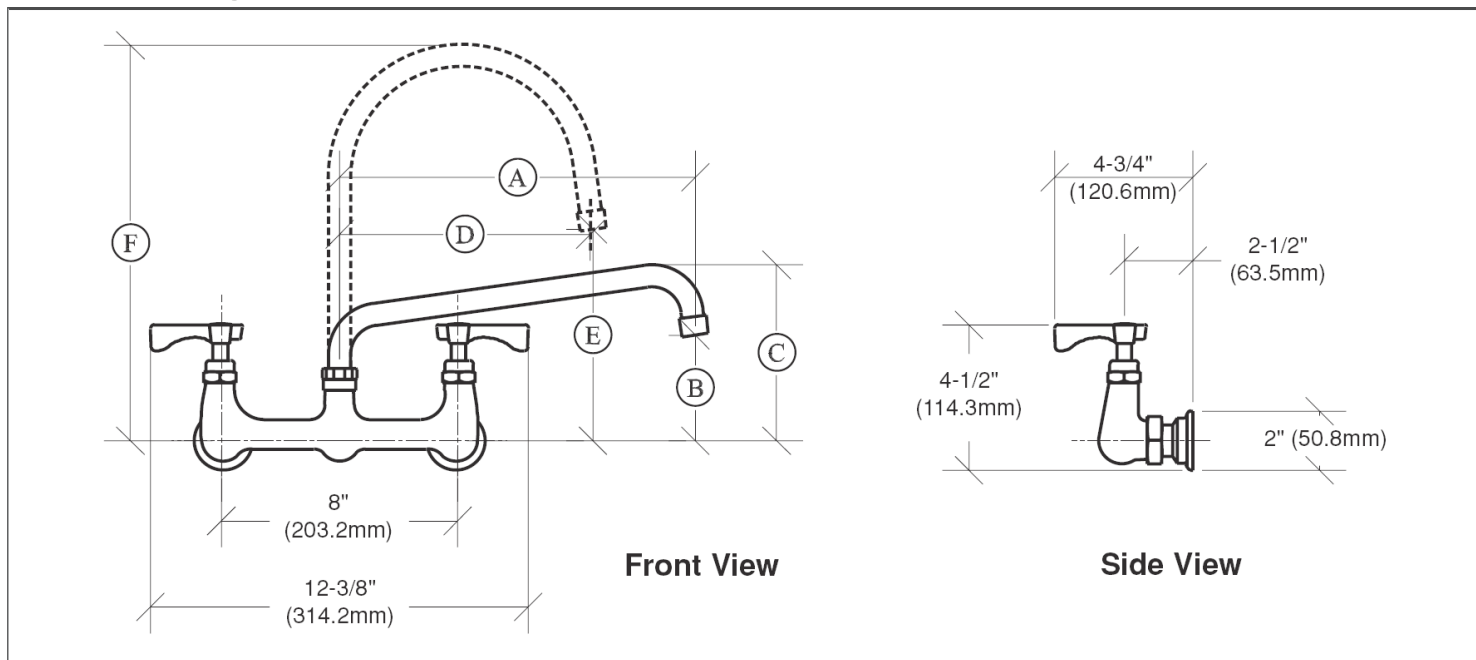
NOTE: Add "L" to end of Model Number for Low Lead Model

*Double Jointed Spout

GOOSENECK SPOUTS

Model Numbers	Ⓓ	Ⓔ	Ⓕ
14-801L	6"	6"	10"
14-802L	8 ¹ / ₂ "	7 ¹ / ₂ "	12 ⁷ / ₈ "

DRAWING



APPROVED BY:

CERTIFICATIONS:

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Rev. 05/2012

No. 14-8XX

Shelley Senior Center

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Submittal Sheet

09/19/2018

ITEM# 12 - HAND SINK (2 EA REQ'D)

Krowne HS-2L

Hand Sink, wall mount, 15-3/4"W x 15-1/4"D x 13-3/8"H OA, 7-3/4"H backsplash, 12-1/2" wide x 9-3/4" front-to-back x 5-5/8" deep bowl, 4" OC splash mount gooseneck faucet (low lead compliant), includes mounting bracket, stainless steel construction, NSF

WATER

	HOT SIZE	HOT AFF	HOT GPH	COLD SIZE	COLD AFF	FILTERED SIZE	FILTERED AFF	CONDENSER INLET SIZE	CONDENSER OUTLET SIZE
1									

WASTE

	INDIRECT SIZE	DIRECT SIZE
1		1-1/2"



Model: _____ Item #: _____ Date: _____

Project: _____ Qty: _____ Approved By: _____

16" Wide Standard Hand Sinks

HAND SINKS

Product Images

HS-2L 16" Wide Hand Sink 	HS-2-LS/RS Side Splash on one side  HS-2-RS shown	HS-2-LF Faucet Not Included  8: O.C. Faucet Holes
HS-4 w/ Overflow Drain & P-Trap 	HS-10 w/ Side Support Brackets 	HS-18 w/ Deck Mount Faucet 
HS-22 w/ Heavy Duty Faucet 	HS-34 Hands Free Sink w/ Push Back Activation 	HS-36 Eyewash Station 

Standard Features

Fabrication	20 gauge stainless steel
Bowl	9-3/4"W x 12-1/2"L x 6" Deep drawn bowl with stamped rim to prevent spillage
Wall Mount Bracket	Offset design for added strength
Faucet	4" center wall mount faucet included on most models
Drain	Stainless steel
Drain with Overflow	Stainless Steel with plastic overflow tube and inlet
Plumbing	1/2" IPS hot and cold water. 1-1/2" IPS drain outlet. Install at 36" working height. 1/2" faucet supply 12" from floor. 1-1/2" drain line 23-1/4" from floor.
Lead Free	Products are certified to NSF/ANSI 61 and 372 and conforms with the lead content requirements for lead free plumbing as defined by the U.S. Safe Drinking Water Act.

Optional Accessories

21-311L	Wrist Blade Handle Kit
H-100	Chrome Plated 1-1/2" IPS P-Trap
H-104	Wall Mount Soap Dispenser
H-105	Wall Mount Towel Dispenser
H-106L	Left Side Splash
H-106R	Right Side Splash
H-107	Left and Right Side Splashes
H-108	Stainless Steel Skirt
H-109	Upgrade: Royal Series Faucet
H-110	Side Support Brackets
H-111	Soap & Towel Dispenser





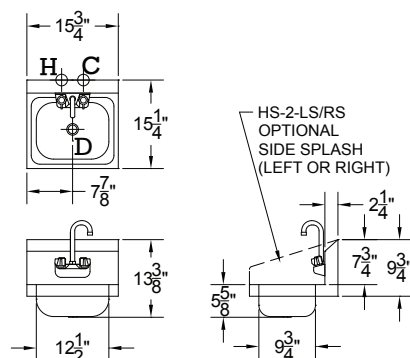
Model: _____ Item #: _____ Date: _____

Project: _____ Qty: _____ Approved By: _____

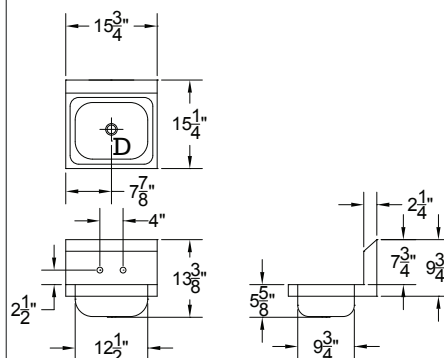
16" Wide Standard Hand Sinks

HAND SINKS

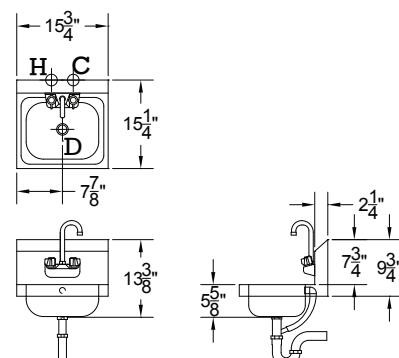
HS-2L or HS-2-LS/RS



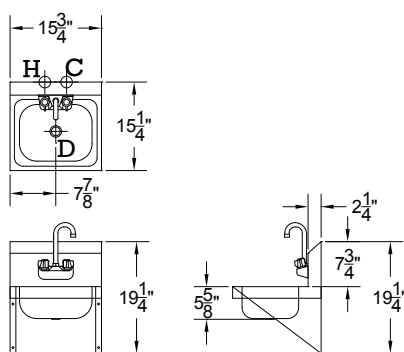
HS-2-LF



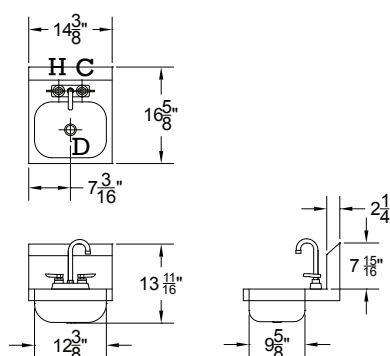
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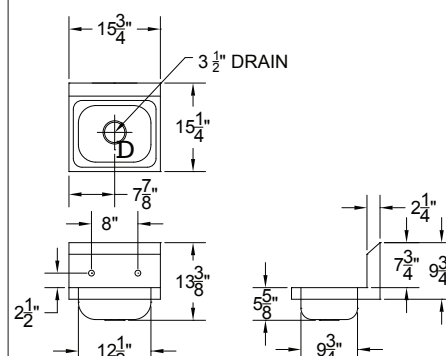
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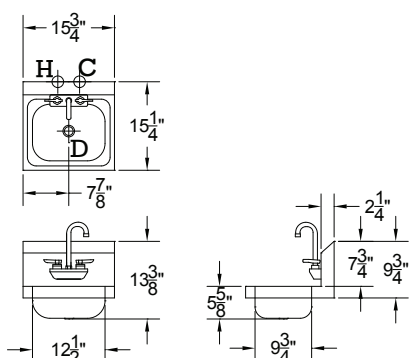
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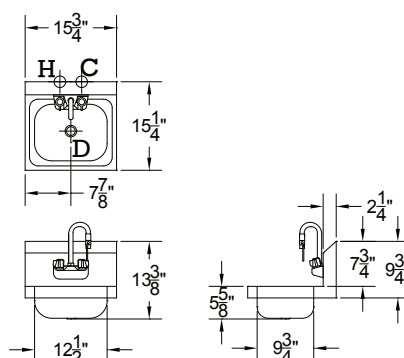
HS-20-LF



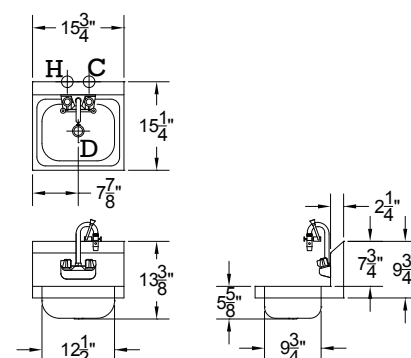
HS-22



HS-34



HS-36



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Rev. 1/2017 • No. 2.2



Submittal Sheet

09/19/2018

ITEM# 13 - ONE (1) COMPARTMENT SINK (1 EA REQ'D)

John Boos E1S8-1620-12L18-X

E-Series Sink, 1-compartment, 36-1/2"W x 25-1/2"D x 43-3/4"H overall size, (1) 16"W x 20" front-to-back x 12" deep compartment, (1) 18" left drainboard, 10"H boxed backsplash with 45° top and 2" return, (1) set of splash mount faucet holes with 8" centers, 3-1/2" die-stamped drain openings, 18/300 stainless steel, galvanized legs & gussets, adjustable plastic bullet feet, NSF, CSA-Sanitation (FLYER NET PRICING FOR EFFINGHAM AND NEVADA)

ACCESSORIES

Mfr	Qty	Model	Spec
John Boos	1		Standard flyer accessories only, NO modifications to flyer items allowed or their accessories
Krowne	1	14-812L	Krowne Royal Series Faucet, splash-mounted, 8" centers, 12" swing spout, quarter-turn ceramic cartridge valve, low lead compliant, NSF

WATER

	HOT SIZE	HOT AFF	HOT GPH	COLD SIZE	COLD AFF	FILTERED SIZE	FILTERED AFF	CONDENSER INLET SIZE	CONDENSER OUTLET SIZE
1									
2	1/2"			1/2"					

WASTE

	INDIRECT SIZE	DIRECT SIZE
1		
2		

PLUMBING 1 REMARKS

(1) set of 1" faucet holes, 8" centers, 3-1/2" drain opening



**John
BOOS**
Since 1887

ITEM #: _____ QTY: _____
MODEL #: _____
PROJECT NAME: _____

012218

3601 S. Banker St. Effingham, IL 62401 • P.O. BOX 609 • Ph: (888) 431-2667 • Fax: (800) 433-2667

"E1S8-1D" - 1 COMPARTMENT "E-SERIES" SINKS **WITH 1 DRAIN BOARD AND GALVANIZED LEGS**



FEATURES:

- 18GA STAINLESS STEEL
- TYPE 300 STAINLESS STEEL WITH #4 POLISH, SATIN FINISH
- 12" AND 14" DEEP BOWLS
- ALL CORNERS, BOTH VERTICAL AND HORIZONTAL, COVED AT 3/4" RADIUS
- BOTTOMS OF BOWLS FORMED FOR DRAINAGE TO 3-1/2" DIAMETER DIE STAMPED OPENING
- FULL LENGTH 10" HIGH BOXED BACKSPLASH, WITH 2" RETURN TO WALL AT 45 DEGREE AND 1" TILE EDGE
- 1" FAUCET HOLES IN BACKSPLASH
- ALL OUTSIDE CORNERS OF ASSEMBLY ARE BULLNOSED TO PROVIDE SAFE, CLEAN, AND POLISHED EDGE
- STANDARD GALVANIZED LEGS 1-5/8" DIAMETER

CONSTRUCTION:

- TOP: STAINLESS STEEL SINKS ARE TIG WELDED, EXPOSED WELDS ARE POLISHED TO MATCH ADJACENT SURFACE
- BASE: GALVANIZED STEEL

MATERIAL:

- BOWLS & TOP: 18GA TYPE 300 STAINLESS STEEL WITH #4 POLISH, SATIN FINISH
- LEGS: 1-5/8" ROUND O.D. GALVANIZED STEEL
- GUSSETS: GALVANIZED STEEL
- FEET: 1" PLASTIC BULLET FEET

12" DEEP - 1 COMP SINKS - 18GA

MODEL	BOWL SIZE (W ₁ X L ₁ X D ₁)	QTY
E1S8-1620-12L18	16" X 20" X 12"	
E1S8-1620-12R18	16" X 20" X 12"	
E1S8-18-12L18	18" X 18" X 12"	
E1S8-18-12R18	18" X 18" X 12"	

14" DEEP - 1 COMP SINKS - 18GA

MODEL	BOWL SIZE (W ₁ X L ₁ X D ₁)	QTY
E1S8-15-14L15	15" X 15" X 14"	
E1S8-15-14R15	15" X 15" X 14"	
E1S8-1824-14L24	18" X 24" X 14"	
E1S8-1824-14R24	18" X 24" X 14"	
E1S8-24-14L24	24" X 24" X 14"	
E1S8-24-14R24	24" X 24" X 14"	



E1S8-1824-14L24

DETAILED SPECIFICATIONS

12" DEEP - SINK DIMENSIONS

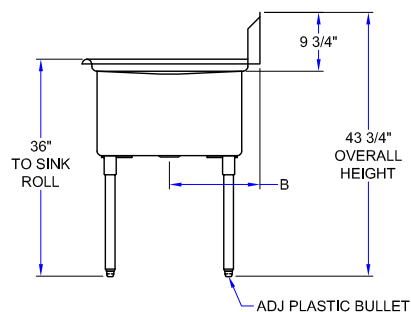
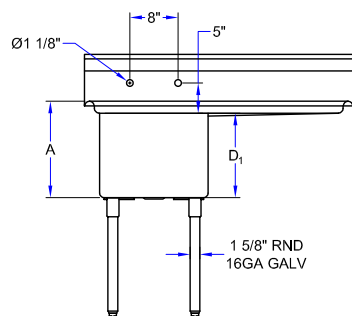
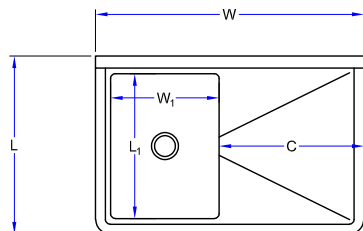
A	D ₁
14"	12"

14" DEEP - SINK DIMENSIONS

A	D ₁
16"	14"

BOWL DIMENSIONS

W ₁ X L ₁	L	B	W
15" X 15"	20-1/2"	10-1/2"	32-1/2"
16" X 20"	25-1/2"	13"	36-1/2"
18" X 18"	23-1/2"	12"	38-1/2"
18" X 24"	29-1/2"	15"	44-1/2"
24" X 24"	29-1/2"	15"	50-1/2"



12" DEEP - 1 COMP SINKS - 18GA

MODEL	BOWL SIZE (W ₁ X L ₁ X D ₁)	DIMENSIONS (W X L)	DRAIN BOARDS (C)	WEIGHT (LBS)
E1S8-1620-12L18	16" X 20" X 12"	36-1/2" X 25-1/2"	18"	47
E1S8-1620-12R18	16" X 20" X 12"	36-1/2" X 25-1/2"	18"	47
E1S8-18-12L18	18" X 18" X 12"	38-1/2" X 23-1/2"	18"	47
E1S8-18-12R18	18" X 18" X 12"	38-1/2" X 23-1/2"	18"	47

14" DEEP - 1 COMP SINKS - 18GA

MODEL	BOWL SIZE (W ₁ X L ₁ X D ₁)	DIMENSIONS (W X L)	DRAIN BOARDS (C)	WEIGHT (LBS)
E1S8-15-14L15	15" X 15" X 14"	32-1/2" X 20-1/2"	15"	36
E1S8-15-14R15	15" X 15" X 14"	32-1/2" X 20-1/2"	15"	36
E1S8-1824-14L24	18" X 24" X 14"	44-1/2" X 29-1/2"	24"	58
E1S8-1824-14R24	18" X 24" X 14"	44-1/2" X 29-1/2"	24"	58
E1S8-24-14L24	24" X 24" X 14"	50-1/2" X 29-1/2"	24"	64
E1S8-24-14R24	24" X 24" X 14"	50-1/2" X 29-1/2"	24"	64

SOME UNITS SHIP UNASSEMBLED FOR REDUCED SHIPPING COST. ALL DIMENSIONS ARE TYPICAL. TOLERANCE +/- .500"

John Boos & Co. is constantly engaged in a program of improving products and therefore reserves the right to change specifications without prior notice.



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***Submittal Sheet***

09/19/2018

ITEM# 16 - WORK TABLE, 48", STAINLESS STEEL TOP (1 EA REQ'D)

John Boos FBLG4824-X

Economy Work Table, 48"W x 24"D, 18/430 stainless steel flat top, 1-1/2" Stallion Safety Edge on front & back, 90° turndown on sides, galvanized legs & adjustable undershelf, adjustable 1" plastic bullet feet, NSF, CSA-Sanitation, KD (FLYER NET PRICING FOR EFFINGHAM AND NEVADA)



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ITEM #: _____ QTY: _____
MODEL #: _____
PROJECT NAME: _____

052118

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"FBLG" STAINLESS STEEL TOP WORK TABLES

18GA TOP AND GALV LEGS AND ADJUSTABLE UNDERSHELF

BUDGET E-SERIES

FEATURES:

- 18 GAUGE STAINLESS STEEL TOP
- TYPE 430 STAINLESS STEEL WITH SATIN FINISH
- TOP IS SOUND DEADENED
- REINFORCED WITH 1"X2" CHANNEL RUNNING ENTIRE LENGTH OF TABLE
- 1-1/2" STALLION EDGE ON FRONT AND REAR WITH SIDE EDGES 90 DEGREE BEND DOWN FOR TABLE LINE-UP
- GALVANIZED BASE AND ADJUSTABLE UNDERSHELF
- ADJUSTABLE BULLET FEET
- SHIPPED KNOCKED-DOWN, EASY-TO-ASSEMBLE
- NSF AND CSA CERTIFIED



FBLG4830

CONSTRUCTION:

- TOP: STAINLESS STEEL TOPS ARE TIG WELDED, EXPOSED WELDS ARE POLISHED TO MATCH ADJACENT SURFACE.

MATERIAL:

- TOP: 18 GAUGE STAINLESS STEEL TYPE 430 STAINLESS STEEL WITH SATIN FINISH
- SHELF: 18 GAUGE GALVANIZED STEEL
- LEGS: 1-5/8" ROUND O.D. 16 GAUGE TUBULAR GALVANIZED STEEL
- GUSSETS: GALVANIZED STEEL
- FEET: 1" ADJUSTABLE PLASTIC BULLET FEET

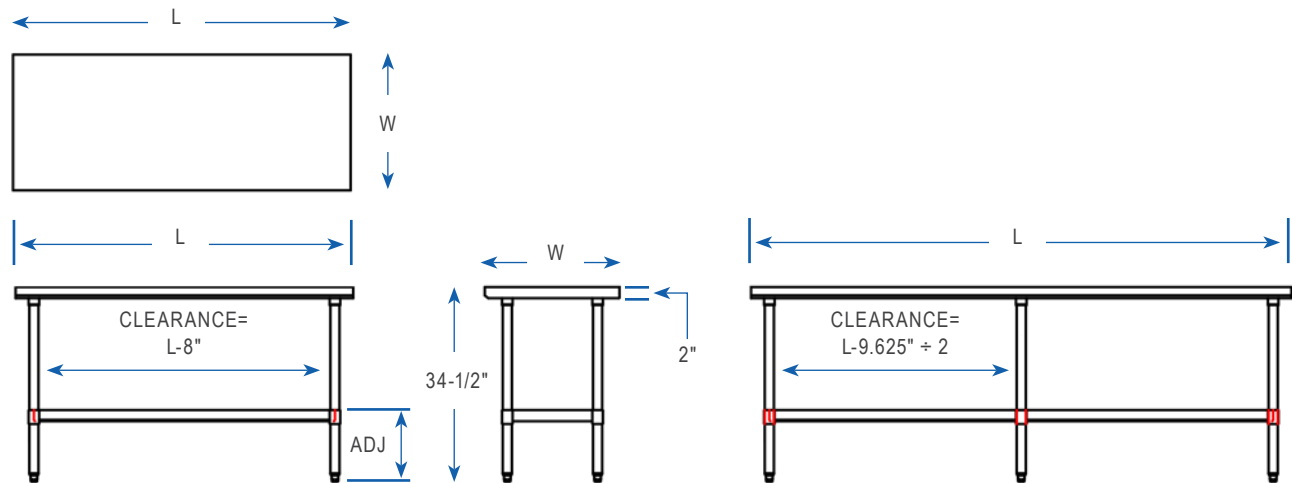


ADJUSTABLE SHELF

18 GAUGE TOP W/ ADJUSTABLE UNDERSHELF

18" WIDE	QTY	24" WIDE	QTY	30" WIDE	QTY
-		FBLG2424		-	
-		FBLG3024		FBLG3030	
FBLG3618		FBLG3624		FBLG3630	
FBLG4818		FBLG4824		FBLG4830	
FBLG6018		FBLG6024		FBLG6030	
FBLG7218		FBLG7224		FBLG7230	
-		FBLG8424		FBLG8430	
FBLG9618		FBLG9624		FBLG9630	

DETAILED SPECIFICATIONS



- UNITS 7 FT. AND LARGER ARE FURNISHED WITH SIX LEGS.
- FINISHED SIZE OF UNDERSHELF.
 $\text{SHELF LENGTH} = \text{LENGTH MINUS } 4.875"$
 $\text{SHELF WIDTH} = \text{WIDTH MINUS } 4.25"$

18 GAUGE TOP W/ ADJUSTABLE UNDERSHELF

LENGTH	18" WIDE	WT. (LBS)	24" WIDE	WT. (LBS)	30" WIDE	WT. (LBS)
24"	-	-	FBLG2424	44	-	-
30"	-	-	FBLG3024	48	FBLG3030	50
36"	FBLG3618	40	FBLG3624	50	FBLG3630	56
48"	FBLG4818	56	FBLG4824	64	FBLG4830	69
60"	FBLG6018	66	FBLG6024	71	FBLG6030	82
72"	FBLG7218	77	FBLG7224	83	FBLG7230	94
84"	-	-	FBLG8424	103	FBLG8430	116
96"	FBLG9618	98	FBLG9624	114	FBLG9630	128

SOME UNITS SHIP UNASSEMBLED FOR REDUCED SHIPPING COST. ALL DIMENSIONS ARE TYPICAL. TOLERANCE +/- .500"

John Boos & Co. is constantly engaged in a program of improving products and therefore reserves the right to change specifications without prior notice.



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***Submittal Sheet***

09/19/2018

ITEM# 17 - BUN / SHEET PAN RACK (1 EA REQ'D)

Winholt AL-1820B

Pan Rack, mobile, full height, open sides, with slides for (40) 14" x 18" or (20) 18" x 26" sheet pans capacity, welded angle-type aluminum frame, end loading, 5" casters, NSF

Heavy Duty Pan Racks

ITEM NO. _____
 QUANTITY NO. _____
 JOB NO. _____
 SPEC NO. _____

Specifications:

- For proofing, storage and transporting of 18" x 26" and 14" x 18" pans and trays.
- Heavy duty Aluminum or Stainless Steel frame with welded angle slides. Rolls easily on heavy duty 5" polyurethane swivel stem casters.
- Knock-down design offered on all aluminum models at no additional charge.
- Models AL-1818B and SS-1818B are designed for Roll-in Refrigerators.

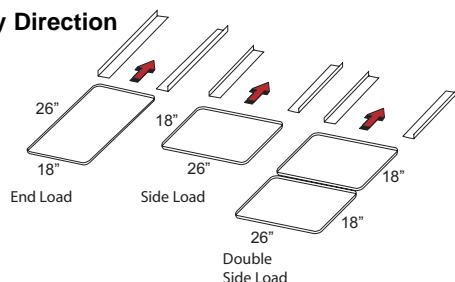
Options for Heavy Duty Pan Racks

Specify options by adding suffix to Model Numbers

- B** Bumpers (4)
BP Plate Casters with 4" rubber wheels
LC Locking Casters
RTG-AL .Removable Tray Guard/Aluminum
RTS-SS .Removable Tray Guard/Stainless Steel
TG-AL ... Tray Guard/Aluminum
TG-SS ... Tray Guard/Stainless Steel
PU Polyurethane Wheels
KD Knock-Down Design
SB Aluminum Solid Bottom

**1½" Wide Angle Slides Hold
 Trays Securely**

Tray Direction



AL-1830B



**AL-1820B
 End Loading**



**1½" Size
 Pan Racks
 AL-1810H
 End Loading**

LABORATORY CERTIFICATION AND APPROVAL SYMBOLS:



Heavy Duty Pan Racks



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ITEM NO. _____

JOB NO. _____

SPEC NO. _____

Heavy Duty Pan Racks

EXPRESS

Model Number	Ordering Number	Material	Tray Direction	Overall Dimensions						Pan Cap.	Space Bet. Runners		Approx. Ship Weight		
				Width		Length		Height			(in)	(mm)	(in)	(mm)	(lb)
				(in)	(mm)	(in)	(mm)	(in)	(mm)	18"x26"					
AL-1810B	109840	Aluminum	End Loading	21	533	26	660	69¾	1,772	10	6	152	35	16	
SS-1810B	110470	Stainless Steel											80	36	
AL-1812B	109882	Aluminum	End Loading	21	533	26	660	69¾	1,772	12	5	127	37	17	
SS-1812B	110488	Stainless Steel											85	39	
AL-1815B	109938	Aluminum	End Loading	21	533	26	660	69¾	1,772	15	4	102	41	19	
AL-1818B	109989	Aluminum	End Loading	21	533	26	660	65	1,651	18	3	76	42	19	
SS-1818B	110525	Stainless Steel											97	44	
AL-1820B	110023	Aluminum	End Loading	21	533	26	660	69¾	1,772	20	3	76	48	22	
SS-1820B	110541	Stainless Steel											110	50	
AL-1830B	110120	Aluminum	End Loading	21	533	26	660	69¾	1,772	30	2	51	60	27	
SS-1830B	110568	Stainless Steel											138	63	
AL-2610B	110251	Aluminum	Side Loading	28	711	18	457	69¾	1,772	10	6	152	33	15	
SS-2610B	110584	Stainless Steel											76	34	
AL-2612B	110269	Aluminum	Side Loading	28	711	18	457	69¾	1,772	12	5	127	35	16	
AL-2615B	110293	Aluminum	Side Loading	28	711	18	457	69¾	1,772	15	4	102	37	17	
AL-2618B	110322	Aluminum	Side Loading	28	711	18	457	69¾	1,772	18	3	76	38	17	
SS-2618B	156339	Stainless Steel											87	39	
AL-2620B	110349	Aluminum	Side Loading	28	711	18	457	69¾	1,772	20	3	76	42	19	
SS-2620B	110605	Stainless Steel											97	44	
Half Size Bun Pan Racks															
AL-1806 / H	206797	Aluminum	End Loading	21	533	26	660	38	955	6	5	127	23	10	
AL-1810 / H	206800	Aluminum								10	3	76	29	13	
Replacement Caster Information															
757	123684	Swivel Square Stem Caster with 5" Polyurethane Wheel												—	
7112	122180	5" Polyurethane Wheel												—	

Freight Class: 125

Win-Holt Equipment Group is a leading manufacturer of material & food handling equipment. Since 1946, retailers and restaurant chains have trusted Win-Holt's equipment to ensure increased productivity and efficiency in their operation. Multiple locations reduce logistics and transportation costs. All Win-Holt associates are dedicated to customer satisfaction.

For general sales and engineering information only. All units are subject to change without notice. Please consult factory for certified specifications.

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***Submittal Sheet***

09/19/2018

ITEM# 23 - WORK TABLE, 15", STAINLESS STEEL TOP (1 EA REQ'D)

John Boos EFT8-3015-X

Filler Table, 15"W x 30"D, 18/430 stainless steel top with 1-1/2" backsplash, Stallion Safety Edge front, 90° turndown on sides, galvanized legs & adjustable undershelf, plastic bullet feet, NSF, KD (FLYER NET PRICING FOR EFFINGHAM AND NEVADA)



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ITEM #: _____ QTY: _____
MODEL #: _____
PROJECT NAME: _____

012018

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"EFT8" FILLER TABLES - 18GA



STAINLESS STEEL TOP W/ GALVANIZED BASE AND ADJUSTABLE UNDERSHELF

FEATURES:

- 18 GAUGE STAINLESS STEEL TOP
- TYPE 430 STAINLESS STEEL MECHANICALLY POLISHED WITH SATIN FINISH
- TOP IS SOUND DEADENED
- REINFORCED WITH 1"X2" CHANNEL RUNNING ENTIRE LENGTH OF TABLE
- 1 1/2" STALLION EDGE ON FRONT WITH 90 DEGREE BEND DOWN FOR TABLE LINE-UP
- GALVANIZED STEEL BASE AND ADJUSTABLE UNDERSHELF
- SHIPPED KNOCKED-DOWN, EASY-TO-ASSEMBLE
- NSF CERTIFIED

CONSTRUCTION:

- TOP: STAINLESS STEEL TOPS ARE TIG WELDED, EXPOSED WELDS ARE POLISHED TO MATCH ADJACENT SURFACE.

MATERIAL:

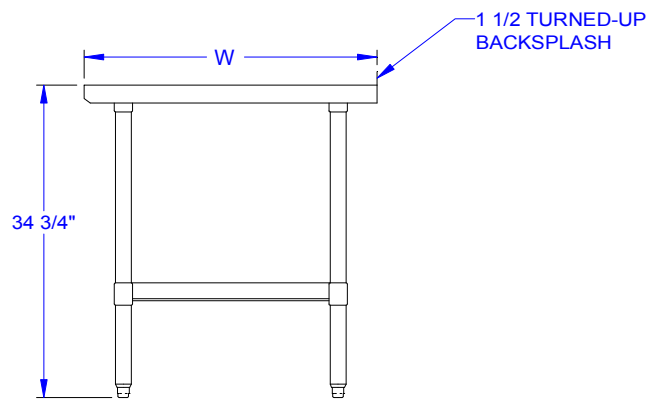
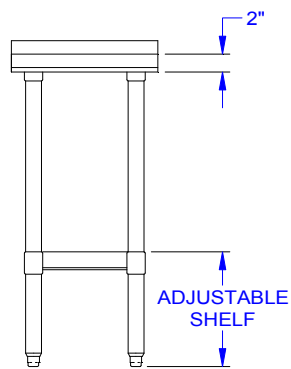
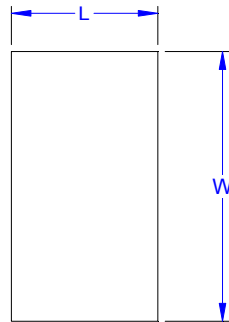
- TOP: 18 GAUGE STAINLESS STEEL TYPE 430 MECHANICALLY POLISHED STAINLESS STEEL WITH SATIN FINISH
- SHELF: 18 GAUGE GALVANIZED STEEL,
- LEGS: 1-5/8" ROUND O.D. 16 GAUGE TUBULAR GALVANIZED STEEL
- GUSSETS: GALVANIZED STEEL
- FEET: 1" PLASTIC BULLET FEET



FILLER TABLES - 18GA

30" WIDE	QTY	36" WIDE	QTY
EFT8-3012		EFT8-3612	
EFT8-3015		EFT8-3615	
EFT8-3018		EFT8-3618	
EFT8-3024		EFT8-3624	

DETAILED SPECIFICATIONS



- UNITS 7 FT. AND LARGER ARE FURNISHED WITH SIX LEGS.
- FINISHED SIZE OF UNDERSHELF:
SHELF LENGTH = LENGTH MINUS 4.875"
SHELF WIDTH = WIDTH MINUS 4.25"

FILLER TABLES - 18GA

LENGTH	30" WIDE	WEIGHT (LBS)	36" WIDE	WEIGHT (LBS)
12"	EFT8-3012	32	EFT8-3612	35
15"	EFT8-3015	36	EFT8-3615	39
18"	EFT8-3018	39	EFT8-3618	43
24"	EFT8-3024	46	EFT8-3624	52

SOME UNITS SHIP UNASSEMBLED FOR REDUCED SHIPPING COST. ALL DIMENSIONS ARE TYPICAL. TOLERANCE +/- .500"

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***Submittal Sheet***

09/19/2018

ITEM# 24 - WORK TABLE, 30", STAINLESS STEEL TOP (1 EA REQ'D)

John Boos FBLG3024-X

Economy Work Table, 30"W x 24"D, 18/430 stainless steel flat top, 1-1/2" Stallion Safety Edge on front & back, 90°
turndown on sides, galvanized legs & adjustable undershelf, adjustable 1" plastic bullet feet, NSF, CSA-Sanitation,
KD (FLYER NET PRICING FOR EFFINGHAM AND NEVADA)

The spec sheet for this item can be viewed on item 16)

***Submittal Sheet***

09/19/2018

ITEM# 25 - WIRE SHELVING (5 EA REQ'D)

Olympic J2436K

Shelf, wire, 24" x 36", green epoxy finish with chromate substrate, NSF

The spec sheet for this item can be viewed on item 7.3)

ACCESSORIES

Mfr	Qty	Model	Spec
Olympic	4	J86K	Post 86", stationary, grooved at 1" intervals, includes leveling bolt & cap, green epoxy finish with chromate substrate, NSF

***Submittal Sheet***

09/19/2018

ITEM# 26 - WORK TABLE, 30", STAINLESS STEEL TOP (1 EA REQ'D)

John Boos FBLS3018-X

Budget Work Table, 30"W x 18"D, 18/430 stainless steel top, Stallion Safety Edge both faces, straight turn down on sides, adjustable stainless steel undershelf, stainless steel legs & plastic bullet feet, NSF, KD (FLYER NET PRICING)



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ITEM #: _____ QTY: _____
MODEL #: _____
PROJECT NAME: _____

070317

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"FBLS" STAINLESS STEEL TOP WORK TABLES



18GA TOP AND STAINLESS LEGS AND ADJUSTABLE UNDERSHELF

BUDGET E-SERIES

FEATURES:

- 18 GAUGE STAINLESS STEEL TOP
- TYPE 430 STAINLESS STEEL WITH SATIN FINISH
- TOP IS SOUND DEADENED
- REINFORCED WITH 1"X2" CHANNEL RUNNING ENTIRE LENGTH OF TABLE
- 1-1/2" STALLION EDGE ON FRONT AND REAR WITH SIDE EDGES 90 DEGREE BEND DOWN FOR TABLE LINE-UP
- STAINLESS STEEL BASE AND ADJUSTABLE UNDERSHELF
- SHIPPED KNOCKED-DOWN, EASY-TO-ASSEMBLE
- NSF AND CSA CERTIFIED

CONSTRUCTION:

- TOP: STAINLESS STEEL TOPS ARE TIG WELDED, EXPOSED WELDS ARE POLISHED TO MATCH ADJACENT SURFACE.

MATERIAL:

- TOP: 18 GAUGE STAINLESS STEEL TYPE 430 STAINLESS STEEL MECHANICALLY POLISHED, SATIN FINISH
- SHELF: 18 GAUGE STAINLESS STEEL
- LEGS: 1-5/8" ROUND O.D. 16 GAUGE TUBULAR STAINLESS STEEL
- GUSSETS: STAINLESS STEEL
- FEET: 1" ADJUSTABLE PLASTIC BULLET FEET



FBLS4830

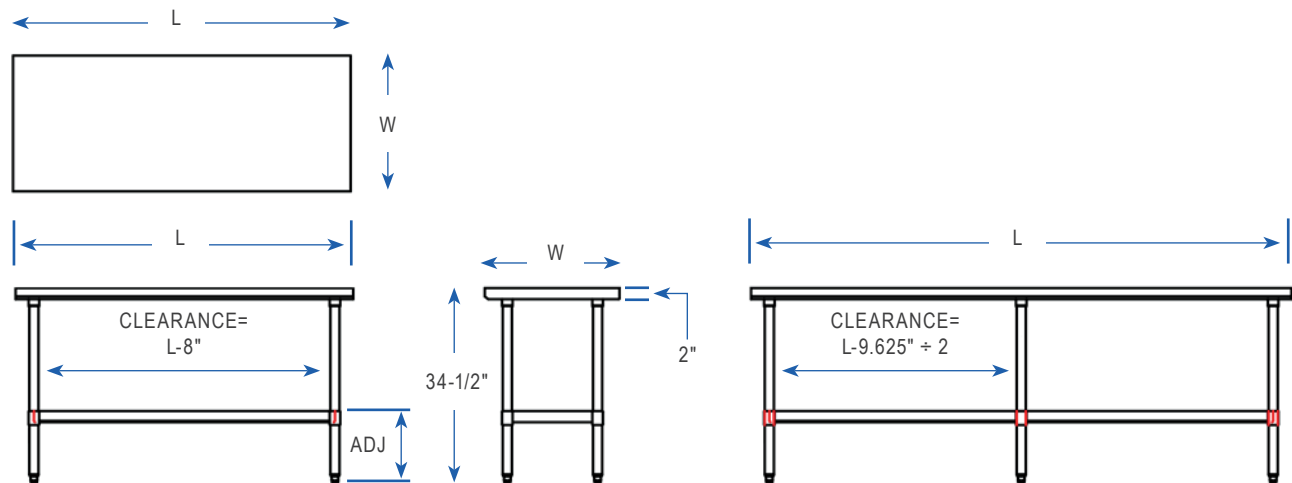


ADJUSTABLE SHELF

STAINLESS STEEL TOP WORK TABLES

18" WIDE	QTY	24" WIDE	QTY	30" WIDE	QTY
FBLS2418		FBLS2424		-	
FBLS3018		FBLS3024		FBLS3030	
FBLS3618		FBLS3624		FBLS3630	
FBLS4818		FBLS4824		FBLS4830	
FBLS6018		FBLS6024		FBLS6030	
FBLS7218		FBLS7224		FBLS7230	
FBLS9618		FBLS9624		FBLS9630	

DETAILED SPECIFICATIONS



- UNITS 7 FT. AND LARGER ARE FURNISHED WITH SIX LEGS.
- FINISHED SIZE OF UNDERSHELF.
 $\text{SHELF LENGTH} = \text{LENGTH MINUS } 4.875"$
 $\text{SHELF WIDTH} = \text{WIDTH MINUS } 4.25"$

STAINLESS STEEL TOP WORK TABLES

LENGTH	18" WIDE	WT. (LBS)	24" WIDE	WT. (LBS)	30" WIDE	WT. (LBS)
24"	FBLS2418	35	FBLS2424	40	-	-
30"	FBLS3018	38	FBLS3024	45	FBLS3030	50
36"	FBLS3618	41	FBLS3624	50	FBLS3630	56
48"	FBLS4818	44	FBLS4824	61	FBLS4830	69
60"	FBLS6018	47	FBLS6024	71	FBLS6030	82
72"	FBLS7218	50	FBLS7224	83	FBLS7230	94
96"	FBLS9618	56	FBLS9624	111	FBLS9630	128

SOME UNITS SHIP UNASSEMBLED FOR REDUCED SHIPPING COST. ALL DIMENSIONS ARE TYPICAL. TOLERANCE +/- .500"

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BUDGET WORK TABLES



Phone: (888) 431-2667

FFSFO916

"E-Series" Budget Work Tables

- 18GA Type 430 Stainless Steel Flat Top Tables
- Stallion Edge Both Faces, Straight Turn Down On Sides
- Adjustable Lower Shelf
- Legs And Plastic Bullet Feet
- Shipped Knocked-Down, Easy-To-Assemble



Flat Top Tables Galvanized Legs & Adjustable Undershelf

Model #	Length	Width
FBLG3618	36"	18"
FBLG4818	48"	18"
FBLG6018	60"	18"
FBLG7218	72"	18"
FBLG9618	96"	18"
FBLG2424	24"	24"
FBLG3024	30"	24"
FBLG3624	36"	24"
FBLG4824	48"	24"
FBLG6024	60"	24"
FBLG7224	72"	24"
FBLG8424	84"	24"
FBLG9624	96"	24"
FBLG3030	30"	30"
FBLG3630	36"	30"
FBLG4830	48"	30"
FBLG6030	60"	30"
FBLG7230	72"	30"
FBLG8430	84"	30"
FBLG9630	96"	30"

Flat Top Tables Stainless Steel Legs & Adjustable Undershelf

Model #	Length	Width
FBLS2418	24"	18"
FBLS3018	30"	18"
FBLS3618	36"	18"
FBLS4818	48"	18"
FBLS6018	60"	18"
FBLS7218	72"	18"
FBLS9618	96"	18"
FBLS2424	24"	24"
FBLS3024	30"	24"
FBLS3624	36"	24"
FBLS4824	48"	24"
FBLS6024	60"	24"
FBLS7224	72"	24"
FBLS9624	96"	24"
FBLS3030	30"	30"
FBLS3630	36"	30"
FBLS4830	48"	30"
FBLS6030	60"	30"
FBLS7230	72"	30"
FBLS9630	96"	30"

Wall Corner Guards

- 16GA Stainless Steel
- 2" x 2" and 4" x 4" Sizes
- Available For Inside Or Outside Corners
- Sold Individually

Model #	Size (L x W x H)	Description
CORNER482-OUT	2" x 2" x 48"	Outside Corner
CORNER602-OUT	2" x 2" x 60"	Outside Corner
CORNER962-OUT	2" x 2" x 96"	Outside Corner
CORNER484-OUT	4" x 4" x 48"	Outside Corner
CORNER484-IN	4" x 4" x 48"	Inside Corner



***Submittal Sheet***

09/19/2018

DELETE - NOT USED**ITEM# 30 - WORK TABLE, 72", STAINLESS STEEL TOP (1 EA REQ'D)**

John Boos FBLG7224-X

Economy Work Table, 72"W x 24"D, 18/430 stainless steel flat top, 1-1/2" Stallion Safety Edge on front & back, 90°
turndown on sides, galvanized legs & adjustable undershelf, adjustable 1" plastic bullet feet, NSF, CSA-Sanitation,
KD (FLYER NET PRICING FOR EFFINGHAM AND NEVADA)

The spec sheet for this item can be viewed on item 16)

***Submittal Sheet***

09/19/2018

ITEM# 31 - WORK TABLE, 96", STAINLESS STEEL TOP (1 EA REQ'D)

John Boos FBLG9624-X

Economy Work Table, 96"W x 24"D, 18/430 stainless steel flat top, 1-1/2" Stallion Safety Edge on front & back, 90°
turndown on sides, galvanized legs & adjustable undershelf, adjustable 1" plastic bullet feet, NSF, CSA-Sanitation,
KD (FLYER NET PRICING)

The spec sheet for this item can be viewed on item 16)

***Submittal Sheet***

09/19/2018

ITEM# 32 - WORK TABLE, 72", STAINLESS STEEL TOP (1 EA REQ'D)

John Boos FBLG7224-X

Economy Work Table, 72"W x 24"D, 18/430 stainless steel flat top, 1-1/2" Stallion Safety Edge on front & back, 90°
turndown on sides, galvanized legs & adjustable undershelf, adjustable 1" plastic bullet feet, NSF, CSA-Sanitation,
KD (FLYER NET PRICING FOR EFFINGHAM AND NEVADA)

The spec sheet for this item can be viewed on item 16)

***Submittal Sheet***

09/19/2018

ITEM# 32.1 - OVERSHELF (1 EA REQ'D)

John Boos OS-ES-1272-X

Economy Overshelf, single, 72"W x 12"D, square turndown edge, 18/300 stainless steel, NSF (FLYER NET PRICING FOR EFFINGHAM AND NEVADA)



**John
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ITEM #: _____ QTY: _____

MODEL #: _____

PROJECT NAME: _____

063017

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"OS-E" 18GA - STAINLESS STEEL OVERSHELVES



FEATURES:

- 18 GAUGE, TYPE 300 STAINLESS STEEL W/ #4 POLISH, SATIN FINISH
- UPRIGHTS ARE 1-1/4" 18 GAUGE ROUND O.D. STAINLESS STEEL
- SQUARE TURNDOWN EDGE ON ALL FOUR SIDES
- SINGLE OVERSHELVES ARE MOUNTED 18" ABOVE TABLE TOP
- DOUBLE OVERSHELF ARE MOUNTED 18" ABOVE TABLE TOP W/ TOP SHELF 12" ABOVE MID SHELF
- MID SHELF OF DOUBLE SHELF UNITS ARE ADJUSTABLE
- NSF AND CSA CERTIFIED



OS-ES-1248
(Does Not Include Table)

CONSTRUCTION:

- STAINLESS STEEL OVERSHELVES ARE TIG WELDED
- EXPOSED WELDS ARE POLISHED TO MATCH ADJACENT SURFACES

MATERIAL:

- SHELF: 16 GAUGE TYPE 300 STAINLESS STEEL W/ #4 POLISH, SATIN FINISH
- UPRIGHTS: 1-1/4" ROUND O.D. 18 GAUGE TYPE 300 TUBULAR STAINLESS STEEL W/ #4 POLISH, SATIN FINISH



OS-ED-1248
(Does Not Include Table)

DOUBLE OVER SHELF WITH
ADJUSTABLE MID SHELF

STAINLESS STEEL OVERSHELVES SINGLE SHELF

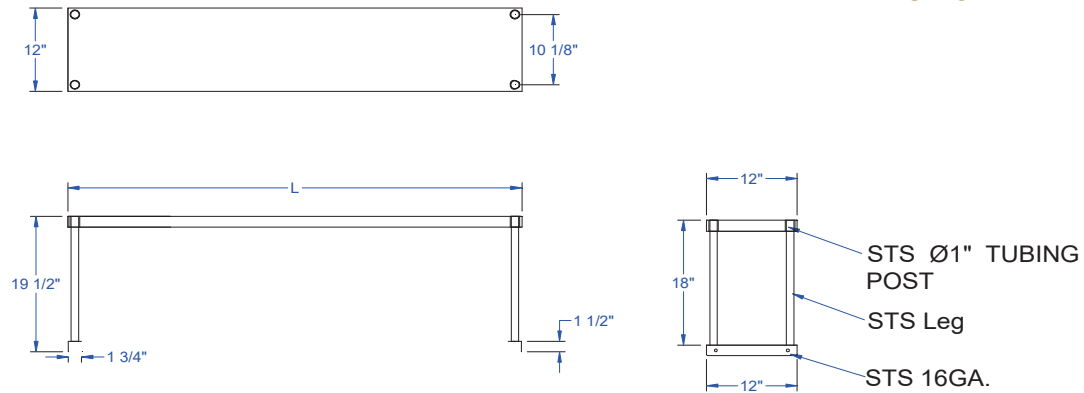
SIZE (WXL)	MODEL	QTY
12" X 36"	OS-ES-1236	
12" X 48"	OS-ES-1248	
12" X 60"	OS-ES-1260	
12" X 72"	OS-ES-1272	
12" X 96"	OS-ES-1296	
18" X 36"	OS-ES-1836	
18" X 48"	OS-ES-1848	
18" X 60"	OS-ES-1860	
18" X 72"	OS-ES-1872	
18" X 96"	OS-ES-1896	

STAINLESS STEEL OVERSHELVES DOUBLE SHELF

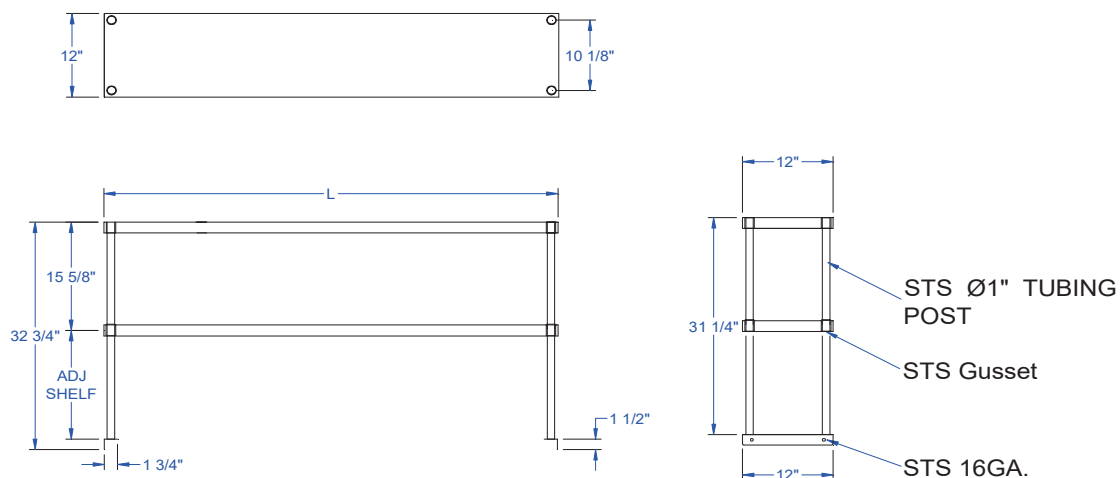
SIZE (WXL)	MODEL	QTY
12" X 36"	OS-ED-1236	
12" X 48"	OS-ED-1248	
12" X 60"	OS-ED-1260	
12" X 72"	OS-ED-1272	
12" X 96"	OS-ED-1296	
18" X 36"	OS-ED-1836	
18" X 48"	OS-ED-1848	
18" X 60"	OS-ED-1860	
18" X 72"	OS-ED-1872	
18" X 96"	OS-ED-1896	

DETAILED SPECIFICATIONS

SINGLE



DOUBLE



STAINLESS STEEL OVERSHELVES SINGLE SHELF

SIZE (WXL)	MODEL	WEIGHT (LBS)
12" X 36"	OS-ES-1236	15
12" X 48"	OS-ES-1248	17
12" X 60"	OS-ES-1260	21
12" X 72"	OS-ES-1272	24
12" X 96"	OS-ES-1296	40
18" X 36"	OS-ES-1836	23
18" X 48"	OS-ES-1848	24
18" X 60"	OS-ES-1860	29
18" X 72"	OS-ES-1872	34
18" X 96"	OS-ES-1896	56

STAINLESS STEEL OVERSHELVES DOUBLE SHELF

SIZE (WXL)	MODEL	WEIGHT (LBS)
12" X 36"	OS-ED-1236	24
12" X 48"	OS-ED-1248	31
12" X 60"	OS-ED-1260	36
12" X 72"	OS-ED-1272	40
12" X 96"	OS-ED-1296	56
18" X 36"	OS-ED-1836	33
18" X 48"	OS-ED-1848	43
18" X 60"	OS-ED-1860	50
18" X 72"	OS-ED-1872	56
18" X 96"	OS-ED-1896	68

SOME UNITS SHIP UNASSEMBLED FOR REDUCED SHIPPING COST. ALL DIMENSIONS ARE TYPICAL. TOLERANCE +/- .500"

John Boos & Co. is constantly engaged in a program of improving products and therefore reserves the right to change specifications without prior notice.



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063017

401



Submittal Sheet

09/19/2018

ITEM# 33 - WIRE SHELVING (5 EA REQ'D)

Olympic J2472C

Shelf, wire, 24" x 72", chromate finish, NSF

The spec sheet for this item can be viewed on item 3)

ACCESSORIES

Mfr	Qty	Model	Spec
Olympic	4	J86C	Post 86", stationary, grooved at 1" intervals, includes leveling bolt & cap, chrome finish, NSF
Olympic	10	J2436C	Shelf, wire, 24" x 36", chromate finish, NSF
Olympic	8	J86C	Post 86", stationary, grooved at 1" intervals, includes leveling bolt & cap, chrome finish, NSF

***Submittal Sheet***

09/19/2018

ITEM# 34 - WIRE SHELVING (5 EA REQ'D)

Olympic J2430C

Shelf, wire, 24" x 30", chromate finish, NSF

The spec sheet for this item can be viewed on item 3)

ACCESSORIES

Mfr	Qty	Model	Spec
Olympic	4	J86C	Post 86", stationary, grooved at 1" intervals, includes leveling bolt & cap, chrome finish, NSF



Submittal Sheet

09/19/2018

ITEM# 35 - WIRE SHELVING (15 EA REQ'D)

Olympic J1460C

Shelf, wire, 14" x 60", chromate finish, NSF

The spec sheet for this item can be viewed on item 3)

ACCESSORIES

Mfr	Qty	Model	Spec
Olympic	10	J86C	Post 86", stationary, grooved at 1" intervals, includes leveling bolt & cap, chrome finish, NSF
Olympic	5	J2436C	Shelf, wire, 24" x 36", chromate finish, NSF
Olympic	5	J1436C	Shelf, wire, 14" x 36", chromate finish, NSF
Olympic	1	J9995Z	"S" Hooks, two required for each storage level

***Submittal Sheet***

09/19/2018

ITEM# 35.1 - WIRE SHELVING (1 EA REQ'D)

Custom 35.1

Wire Shelving Assembly- Includes Item# 3,7,3,25,33,34, 35

***Submittal Sheet***

09/19/2018

ITEM# 37 - CLEAN DISHTABLE (1 EA REQ'D)

John Boos EDTC8-S30-R26-X

Dishtable, clean, straight design, 26"W x 30"D x 44"H overall size, for left-to-right operation, 10" boxed backsplash with 45° top & 2" return, rolled front & side rims, 18/300 stainless steel top, galvanized legs & gussets, adjustable plastic bullet feet, NSF (FLYER NET PRICING FOR EFFINGHAM AND NEVADA)



**John
BOOS**
Since 1887

ITEM #: _____ QTY: _____
MODEL #: _____
PROJECT NAME: _____

073118

3601 S. Banker St. Effingham, IL 62401 • P.O. BOX 609 • Ph: (888) 431-2667 • Fax: (800) 433-2667

"EDTC8" CLEAN STRAIGHT DISHTABLES E-SERIES



18GA STAINLESS STEEL TOP AND GALV BASE

FEATURES:

- STANDARD 18 GAUGE TYPE 300 STAINLESS STEEL WITH #4 POLISH, SATIN FINISH
- FULL LENGTH **10" HIGH BOXED BACKSPASH**, WITH 2" RETURN TO WALL AT 45 DEGREE AND 1/2" TURNED DOWN REAR LIP
- ALL OUTSIDE CORNERS OF ASSEMBLY ARE BULLNOSED TO PROVIDE SAFE, CLEAN, AND POLISHED EDGE
- STANDARD 1-5/8" DIAMETER LEGS

CONSTRUCTION:

- TOP: STAINLESS STEEL TOPS ARE TIG WELDED, EXPOSED WELDS ARE POLISHED TO MATCH ADJACENT SURFACE.

MATERIAL:

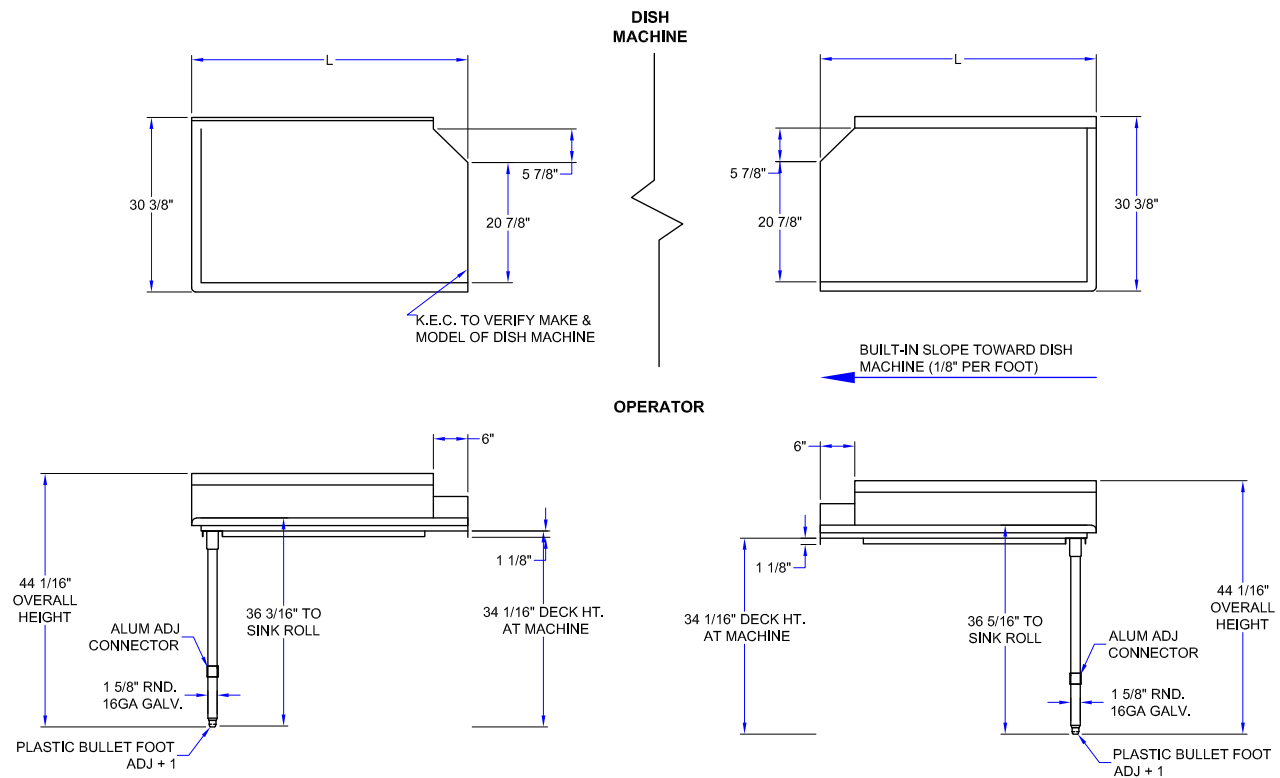
- TOP & BOWLS: 18 GAUGE STAINLESS STEEL TYPE 300 STAINLESS STEEL WITH #4 POLISH, SATIN FINISH
- LEGS: 1-5/8" ROUND O.D. GALVANIZED STEEL
- GUSSETS: GALVANIZED STEEL
- FEET: 1" ADJUSTABLE PLASTIC BULLET FEET



18 GAUGE - CLEAN DISHTABLES "E-SERIES"

PREMIUM	QTY
EDTC8-S30-L26	
EDTC8-S30-R26	
EDTC8-S30-L36	
EDTC8-S30-R36	
EDTC8-S30-L48	
EDTC8-S30-R48	
EDTC8-S30-L60	
EDTC8-S30-R60	
EDTC8-S30-L72	
EDTC8-S30-R72	

DETAILED SPECIFICATIONS



- UNITS 7 FT. AND LARGER ARE FURNISHED WITH SIX LEGS.

18 GAUGE - CLEAN DISHTABLES "E-SERIES"

DIMENSIONS (LXW)	DESCRIPTION	MODEL #	BOWL SIZE	WT. (LBS)
26" X 30"	LEFT SIDE	EDTC8-S30-L26	-	29
26" X 30"	RIGHT SIDE	EDTC8-S30-R26	-	29
36" X 30"	LEFT SIDE	EDTC8-S30-L36	-	45
36" X 30"	RIGHT SIDE	EDTC8-S30-R36	-	45
48" X 30"	LEFT SIDE	EDTC8-S30-L48	-	60
48" X 30"	RIGHT SIDE	EDTC8-S30-R48	-	60
60" X 30"	LEFT SIDE	EDTC8-S30-L60	-	74
60" X 30"	RIGHT SIDE	EDTC8-S30-R60	-	74
72" X 30"	LEFT SIDE	EDTC8-S30-L72	-	89
72" X 30"	RIGHT SIDE	EDTC8-S30-R72	-	89

SOME UNITS SHIP UNASSEMBLED FOR REDUCED SHIPPING COST. ALL DIMENSIONS ARE TYPICAL. TOLERANCE +/- .500"

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Submittal Sheet

09/19/2018

ITEM# 38 - SOILED DISHTABLE (1 EA REQ'D)

John Boos JDTS-20-60L-X

Dishtable, soiled, straight design, 60"W x 30"D x 44"H overall size, for left-to-right operation, (1) 20"W x 20" front-to-back x 8" deep pre-rinse sink, 10" boxed backsplash with 45° top & 2" return, (1) set of splash mount faucet holes with 8" centers, rolled front & side rims, 16/300 stainless steel top, stainless steel legs, adjustable bracing, & bullet feet, NSF, CSA-Sanitation (FLYER NET PRICING FOR EFFINGHAM AND NEVADA)

ACCESSORIES

Mfr	Qty	Model	Spec
Krowne	1	17-108WL	Krowne Royal Series pre-rinse Assembly, wall mount, 8" centers, spring action flexible gooseneck, 35"H stainless steel hose with 15" overhang & 1.2 GPM spray head, built in check valves, includes wall bracket & mounting kit, chrome plated brass base, low lead compliant, ships pre-assembled, NSF (interchangeable with most brands)
John Boos	1		Standard flyer accessories only, NO modifications to flyer items allowed or their accessories

WATER

	HOT SIZE	HOT AFF	HOT GPH	COLD SIZE	COLD AFF	FILTERED SIZE	FILTERED AFF	CONDENSER INLET SIZE	CONDENSER OUTLET SIZE
1									
2	1/2"			1/2"					

WASTE

	INDIRECT SIZE	DIRECT SIZE
1		
2		

PLUMBING 1 REMARKS

1" faucet holes, 8" centers, 3-1/2" drain opening



**John
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Since 1887

ITEM #: _____ QTY: _____
MODEL #: _____
PROJECT NAME: _____

073118

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"JDTS" SOILED STRAIGHT DISHTABLES PRO-BOWL

16GA STAINLESS STEEL TOP AND STAINLESS STEEL BASE



FEATURES:

- STANDARD 16 GAUGE TYPE 300 STAINLESS STEEL WITH #4 POLISH, SATIN FINISH
- FULL LENGTH **10" HIGH BOXED BACKSPLASH**, WITH 2" RETURN TO WALL AT 45 DEGREE AND 1/2" TURNED DOWN REAR LIP
- 1" FAUCET HOLES IN BACKSPLASH
- ALL OUTSIDE CORNERS OF ASSEMBLY ARE BULLNOSED TO PROVIDE SAFE, CLEAN, AND POLISHED EDGE
- STANDARD 1-5/8" DIAMETER STAINLESS STEEL LEGS

CONSTRUCTION:

- TOP: STAINLESS STEEL TOPS ARE TIG WELDED, EXPOSED WELDS ARE POLISHED TO MATCH ADJACENT SURFACE.

MATERIAL:

- TOP & BOWLS: 16 GAUGE STAINLESS STEEL TYPE 300 STAINLESS STEEL WITH #4 POLISH, SATIN FINISH
- LEGS: 1-5/8" ROUND O.D. 16 GAUGE STAINLESS STEEL
- BRACING: 1-1/4" ROUND O.D. 16 GAUGE STAINLESS STEEL TYPE 300 STAINLESS STEEL WITH #4 POLISH, SATIN FINISH
- GUSSETS: STAINLESS STEEL
- FEET: 1" ADJUSTABLE STAINLESS STEEL BULLET FEET



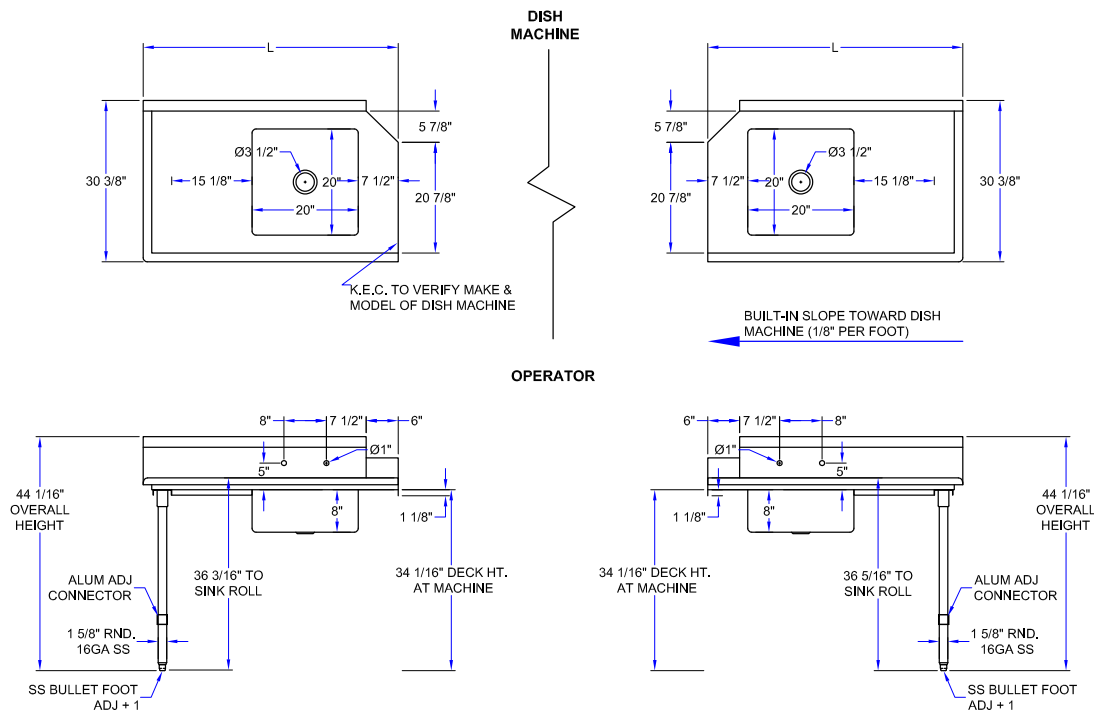
16 GAUGE - SOILED STRAIGHT DISHTABLES PRO-BOWL

MODEL #	QTY
JDTS-20-36L	
JDTS-20-36R	
JDTS-20-48L	
JDTS-20-48R	
JDTS-20-60L	
JDTS-20-60R	
JDTS-20-72L	
JDTS-20-72R	

OPTIONAL ACCESSORIES

DESCRIPTION	MODEL #	QTY
ADD-A-FAUCET		
PRE-RINSE-UNITS		
LEVEL WASTE		
OVER SHELF		
UNDER SHELF		
POT RACK		

DETAILED SPECIFICATIONS



- UNITS 7 FT. AND LARGER ARE FURNISHED WITH SIX LEGS.

16 GAUGE - SOILED STRAIGHT DISHTABLES PRO-BOWL

L	MODEL #	WT. (LBS)
36"	JDTS-20-36L	45
36"	JDTS-20-36R	45
48"	JDTS-20-48L	60
48"	JDTS-20-48R	60
60"	JDTS-20-60L	70
60"	JDTS-20-60R	70
72"	JDTS-20-72L	85
72"	JDTS-20-72R	85

SOME UNITS SHIP UNASSEMBLED FOR REDUCED SHIPPING COST. ALL DIMENSIONS ARE TYPICAL. TOLERANCE +/- .500"

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327



Model: **17-108WL** Item #: _____ Date: _____
 Project: _____ Qty: _____ Approved By: _____

8" Center Wall Mount Pre-Rinse

ROYAL SERIES PLUMBING



Standard Features

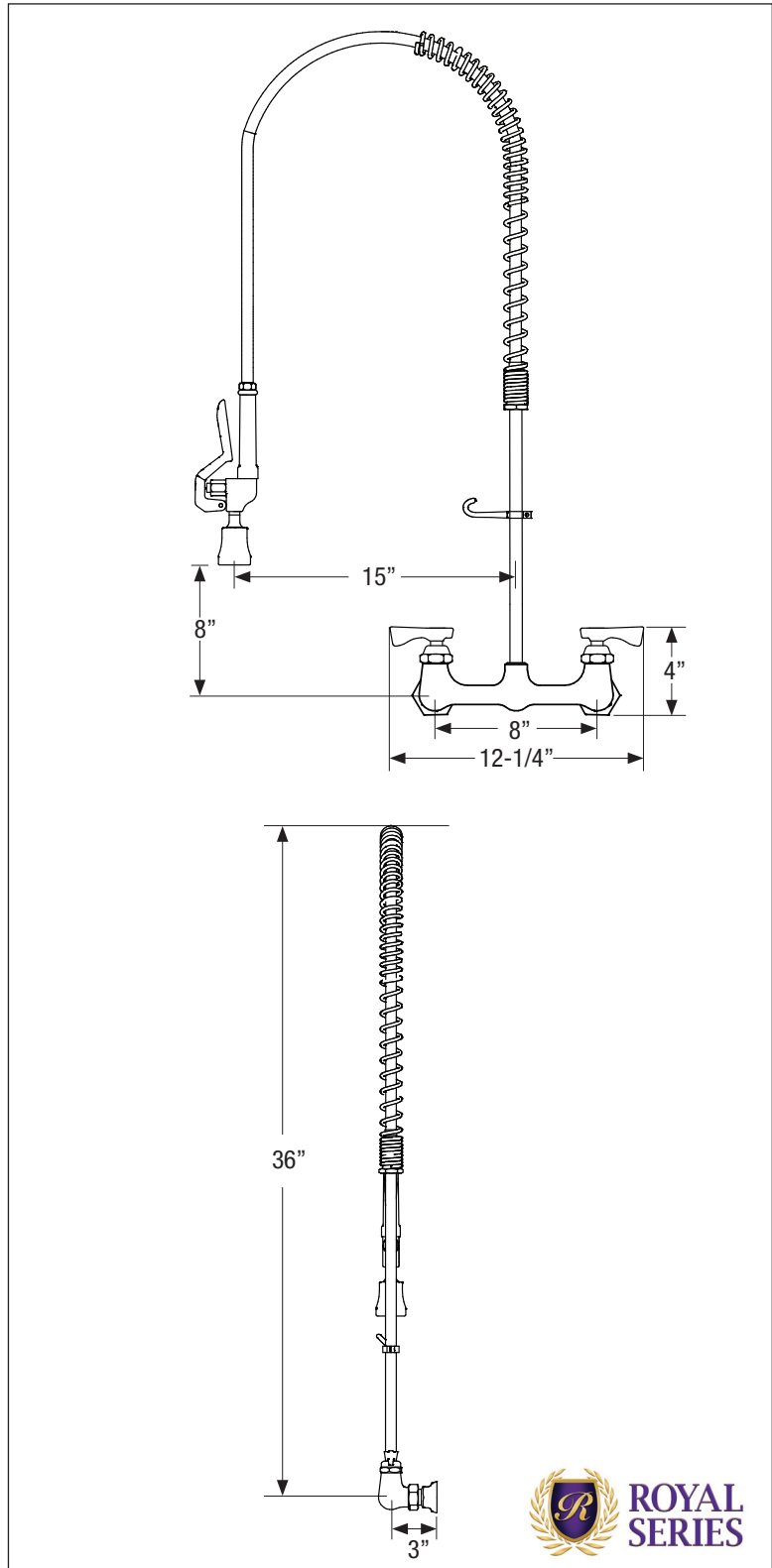
- Pre-assembled to cut installation time
- Includes wall bracket with mounting hardware
- 1/4 turn ceramic cartridge valves
- 44" stainless steel hose with grip
- Interchangeable with most brands
- Built-in check valves
- Built for high volume
- Full replacement parts available

Specifications

- 8" Center Wall Mount with 1/2" NPT female inlets
- 36" high w/ 15" overhang
- 1.2 GPM spray head
- Temperature range of 40° to 180°
- Riser Pipe with Hook: 3/8" NPT x 18"
- Mounting Kit Included:
1/2" NPT x 1-1/2" male nipples with locknuts
- Shipping Weight: 15 lbs.
- Case Quantity: 3

Product Compliance

- NSF/ANSI 61-G
- ASME A112.18.1/CSA B125.1
- City of Los Angeles
- CEC Listed
- Commonwealth of Massachusetts



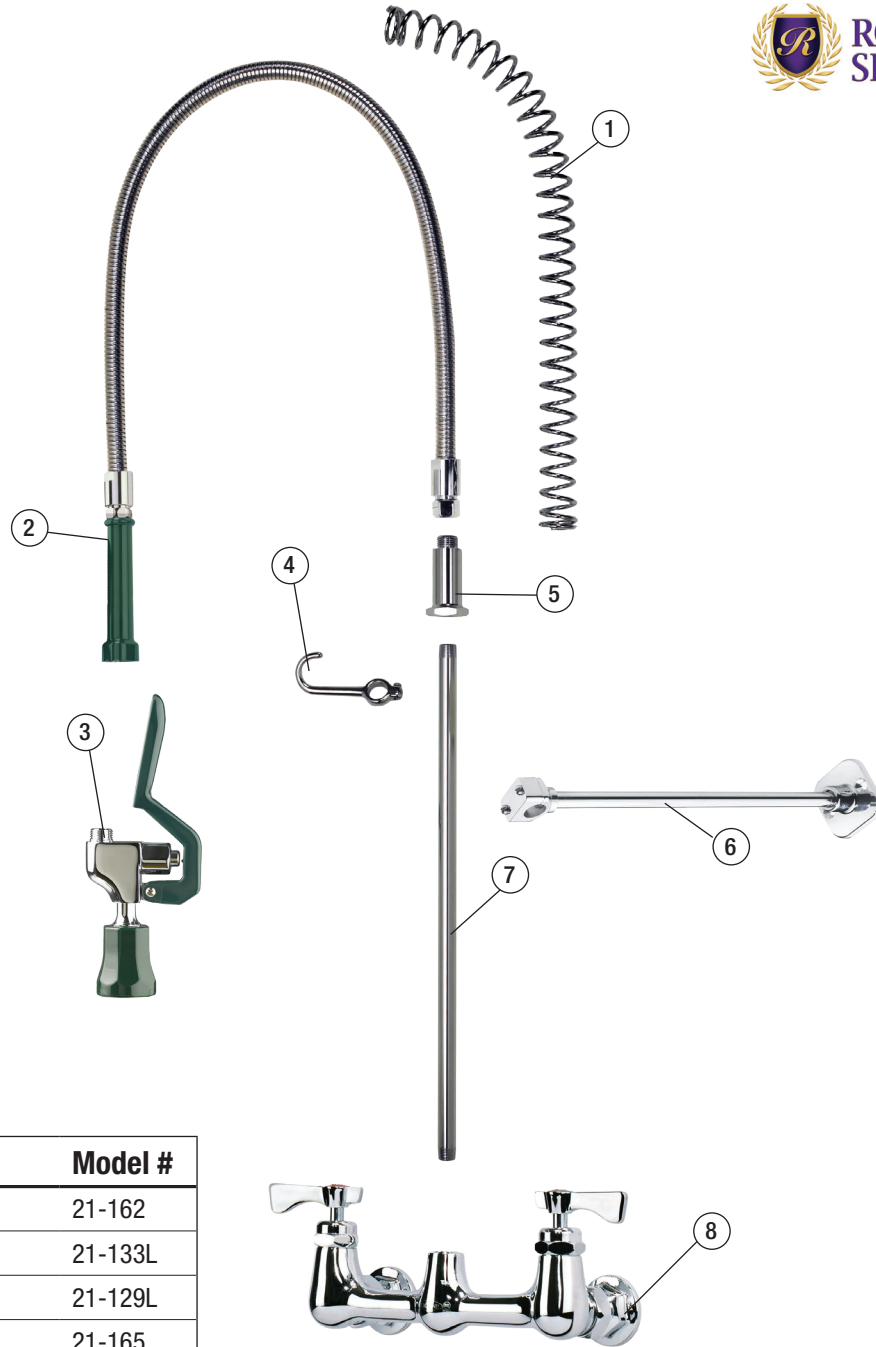
Warning: This product can expose you to chemicals including lead and lead compounds which are known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.P065Warnings.ca.gov.



Model: **17-108WL** Item #: _____ Date: _____
 Project: _____ Qty: _____ Approved By: _____

8" Center Wall Mount Pre-Rinse

ROYAL SERIES PLUMBING



Replacement Parts

NO.	Item	Model #
1	24" Spring	21-162
2	44" Hose w/ Grip	21-133L
3	Spray Head	21-129L
4	Hook Assembly	21-165
5	Spring Retainer	21-161L
6	Wall Bracket	21-137
7	18" Riser	21-160L
8	8" Center Pre-Rinse Body	21-108L



***Submittal Sheet***

09/19/2018

ITEM# 39 - STAINLESS CORNERS/CAPS (1 EA REQ'D)

Custom STAINLESS WALL CAP/CORNERS

13 corners/caps shown, installation and parts



Submittal Sheet

09/19/2018

ITEM# 40 - DAVIS BACON (1 EA REQ'D)

Custom

ADD 5% DAVIS BACON



Submittal Sheet

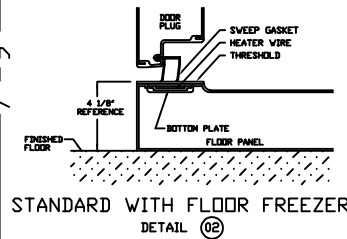
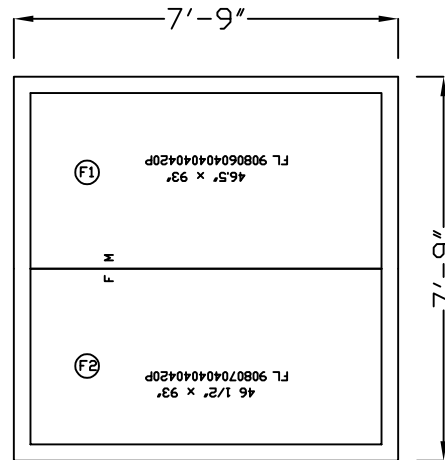
09/19/2018

ITEM# 35.2 - LABOR/DELIVERY (1 EA REQ'D)

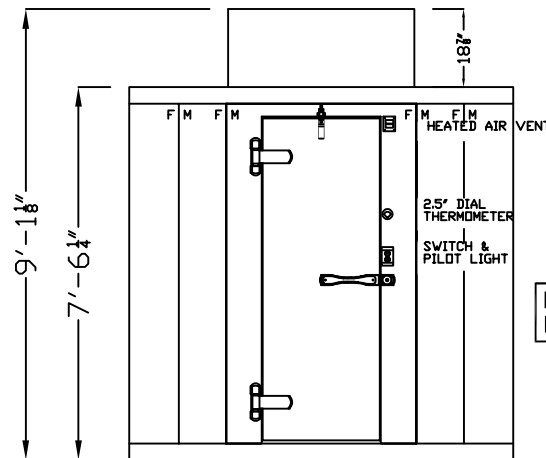
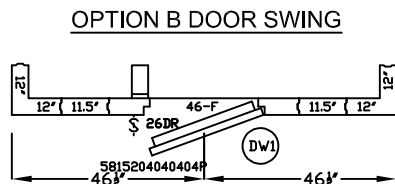
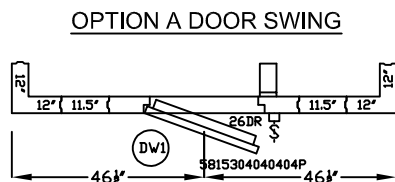
BSR DELIVERY, RECEIVING, WAREHOUSING, ASSEMBLY

Is Responsible for:

1. Receiving: BSR will Receive all ordered equipment without damage from the mfg(s); if damage is present BSR will either refuse delivery and notify the factory immediately so that a new undamaged piece is sent Or if damage is superficial BSR will contact the factory to replace the part.
2. Warehousing: BSR will warehouse all items for up to 3 months (unless other arrangements have been made) until a delivery date is agreed upon. After 3 months have passed 200\$ warehouse fee will be assessed until the delivery date. All BSR facilities are properly insured.
3. Assembly: BSR will assemble all equipment, including peeling plastic, assembly of legs, shelves, ect. (Walk-ins/kitchen hoods, ice machines, wall shelves, power cords and other equipment that require installation vs assembly do not apply, a separate quote can be requested for installation). Electrical, plumbing are not included.
4. Delivery: BSR will deliver all items without damage to a commercial address agreed upon
5. Set into Place Ready for utility connections: BSR will set into place all assembled equipment ****Gas, Water, and Electrical connections are not included*****



ORDER# _____



LH SHOWN
RH OPPOSITE

PF144T3 208/230-60-1 12.9 AMPS



- 1) ALLOW MINIMUM 1" CLEARANCE ALL AROUND WALK-IN.
- 2) WALK-IN CEILING IS NOT DESIGNED FOR FOOT TRAFFIC OR STORAGE.
- 3) GENERAL CONTRACTOR TO REFER TO DESIGN AND SPECIFICATIONS MANUAL FOR FLOOR DETAIL INFORMATION.
- 4) SPECIAL NOTE TO GENERAL CONTRACTOR AND SUBCONTRACTOR FOR QUARRY TILE OR CONCRETE WEARING FLOOR - THE SHEET METAL PANEL FACINGS MAY BE SUSCEPTABLE TO STAINING DUE TO EXCESSIVE MOISTURE CREATED BY THE HYDRATION OF CONCRETE TYPE MATERIALS. THEREFORE, IT IS ABSOLUTELY NECESSARY THAT EACH ROOM BE PROPERLY VENTILATED. ALSO NOTE THAT SPECIAL PRECAUTIONS MUST BE TAKEN WHEN USING MURIC ACID DUE TO EFFECTS HYDROCHLORIC ACID FUMES HAVE ON ALUMINUM AND STAINLESS STEEL MATERIALS.

SCALE:	3/8"=1'-0"
DRAWING NO.	P7-088-FT

DRAWN BY:
DDC
DATE:
08/05/15

DEALER: _____

PROJECT: 7'-9"X7'-9"X7'-6 1/4"

2915 TENNESSEE AVENUE NORTH
P.O. BOX 550
PARSONS, TN. 38363
(901) 847-6361

KOLPAK
WALK - INS

TABLE OF CONTENTS

DIVISION 22 - PLUMBING

22 0501	COMMON PLUMBING REQUIREMENTS
22 0502	DEMOLITION AND REPAIR
22 0503	PIPE, PIPE FITTINGS, PIPE HANGERS & VALVES
22 0553	IDENTIFICATION FOR PLUMBING PIPES AND EQUIPMENT
22 0703	MECHANICAL INSULATION AND FIRE STOPPING
22 0710	POTABLE WATER PIPE INSULATION
22 0711	HANDICAPPED FIXTURES INSULATION
22 0800	FIRE STOPPING
22 1116	DOMESTIC WATER PIPING SYSTEMS (PEX)
22 1313	SOIL WASTE & VENT PIPING SYSTEMS
22 3500	KITCHEN EQUIPMENT CONNECTIONS
22 4001	PLUMBING FIXTURES

SECTION 220501 - COMMON PLUMBING REQUIREMENTS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and General Provisions of Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Furnish labor, materials, and equipment necessary for completion of work as described in Contract Documents.
- B. It is the intent of these specifications that the systems specified herein are to be complete and operational before being turned over to the owner. During the bidding process, the contractor is to ask questions or call to the engineer's attention any items that are not shown or may be required to make the system complete and operational. Once the project is bid and the contractor has accepted the contract, it is his responsibility to furnish and install all equipment and parts necessary to provide a complete and operational system without additional cost to the owner.
- C. Furnish and install fire stopping materials to seal penetrations through fire rated structures and draft stops.

1.3 SUBMITTALS

- A. Substitutions: By specific designation and description, standards are established for specialties and equipment. Other makes of specialties and equipment of equal quality will be considered provided such proposed substitutions are submitted to the Architect for his approval, complete with specification data showing how it meets the specifications, at least 5 working days prior to bid opening. A list of approved substitutions will be published as an addendum, but does not relieve Contractor from meeting all requirements of the specifications.
 - 1. Submit a single copy of Manufacturer's catalog data including Manufacturer's complete specification for each proposed substitution.
 - 2. The Architect or Engineer is to be the sole judge as to the quality of any material offered as an equal.
- B. Product Data, Shop Drawings: Within 30 days after award of contract, submit 10 sets of Manufacturer's catalog data for each manufactured item.
 - 1. Literature shall include enough information to show complete compliance with Contract Document requirements.
 - 2. Mark literature to indicate specific item with applicable data underlined.
 - 3. Information shall include but not be limited to capacities, ratings, type of material used, guarantee, and such dimensions as are necessary to check space requirements.
 - 4. When accepted, submittal shall be an addition to Contract Documents and shall be in equal force. No variation shall be permitted.
 - 5. Even though the submittals have been accepted by the Engineer, it does not relieve the contractor from meeting all of the requirements of the plans and specifications and providing a complete and operational system.
- C. Drawings of Record: One complete set of blue line mechanical drawings shall be provided for the purpose of showing a complete picture of the work as actually installed.
 - 1. These drawings shall serve as work progress report sheets. Contractor shall make notations neat and legible therein daily as the work proceeds.
 - 2. The drawings shall be kept at the job at a location designated by the Mechanical Engineer.
 - 3. At completion of the project these "as-built" drawings shall be signed by the Contractor, dated, and returned to the Architect.
- D. Operating Instructions and Service Manual: The Mechanical Contractor shall prepare 2 copies of an Operation and Maintenance Manual for all mechanical systems and equipment used in this project. Manuals shall be bound in hard-backed binders and the front cover and spine of each binder shall indicate the name and location of the project. Use plastic tab indexes for all sections. Provide a section for each different type of equipment item. The following items shall be included in the manual, together with any other pertinent data. This list is not complete and is to be used as a guide.
 - 1. Provide a master index at the beginning of the manual showing all items included.
 - 2. The first section of the manual shall contain:
 - a. Names, addresses, and telephone numbers of Architect, Mechanical Engineer, Electrical Engineer, General Contractor, Plumbing Contractor, Sheet Metal Contractor, and Temperature Control Contractor.

- b. List of Suppliers which shall include a complete list of each piece of equipment used with the name, address, and telephone number of vendor.
- c. General Description of Systems including –
 - 1) Location of all major equipment
 - 2) Description of the various mechanical systems
 - 3) Description of operation and control of the mechanical systems
 - 4) Suggested maintenance schedule
- d. Copy of contractor's written warranty
- 3. Provide a copy of approved submittal literature for each piece of equipment.
- 4. Provide maintenance and operation literature published by the manufacturer for each piece of equipment which includes: oiling, lubrication and greasing data; belt sizes, types and lengths; wiring diagrams; step-by-step procedure to follow in putting each piece of mechanical equipment in operation.
- 5. Include parts numbers of all replaceable items.
- 6. Provide control diagram and operation sequence, along with labeling of control piping and instruments to match diagram.
- 7. Include a valve chart indicating valve locations.
- 8. Include air balance and/or water balance reports.

1.4 QUALITY ASSURANCE

- A. Requirements of Regulatory Agencies:
 - 1. Perform work in accordance with applicable provisions of local and state Plumbing Code, Gas Ordinances, and adoptions thereof. Provide materials and labor necessary to comply with rules, regulations, and ordinances.
 - 2. In case of differences between building codes, state laws, local ordinances, utility company regulations, and Contract Documents, the most stringent shall govern. Promptly notify Architect in writing of such differences.
- B. Applicable Specifications: Referenced specifications, standards, and publications shall be of the issues in effect on date of Advertisement for Bid.
 - 1. "Heating, Ventilating and Air Conditioning Guide" published by the American Society of Heating and Air Conditioning Engineers.
 - 2. "Engineering Standards" published by the Heating, Piping, and Air Conditioning Contractors National Association.
 - 3. "2015 International Building Code", "2015 International Mechanical Code", and "2015 International Fire Code" as published by the International Conference of Building Officials.
 - 4. "2015 Idaho Plumbing Code" as published by the International Association of Plumbing and Mechanical Officials.
 - 5. "National Electrical Code" as published by the National Fire Protection Association.
 - 6. "2015 International Energy Conservation Code".

1.5 INSPECTIONS AND PERMITS

- A. Pay for permits, fees, or charges for inspection or other services. Local and state codes and ordinances must be properly executed without expense to Owner and are considered as minimum requirements. Local and state codes and ordinances do not relieve the Contractor from work shown that exceeds minimum requirements.

1.6 ADDITIONAL WORK:

- A. Design is based on equipment as described in the drawing equipment schedule. Any change in foundation bases, electrical wiring, conduit connections, piping, controls and openings required by alternate equipment submitted and approved shall be paid for by this division. All work shall be in accordance with the requirements of the applicable sections.

PART 2 - NOT USED

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Site Inspection:
 - 1. Examine premises and understand the conditions which may affect performance of work of this Division before submitting proposals for this work.
 - 2. No subsequent allowance for time or money will be considered for any consequence related to failure to examine site conditions.

- B. Drawings:
1. Plumbing drawings show general arrangement of piping, equipment, etc, and do not attempt to show complete details of building construction which affect installation. This Contractor shall refer to architectural, structural, mechanical, and electrical drawings for additional building detail which affect installation of his work.
 - a. Follow plumbing drawings as closely as actual building construction and work of other trades will permit.
 - b. No extra payments will be allowed where piping and/or ductwork must be offset to avoid other work or where minor changes are necessary to facilitate installation.
 - c. Everything shown on the plumbing drawings shall be the responsibility of Plumbing Contractor unless specifically noted otherwise.
 2. Consider architectural and structural drawings part of this work insofar as these drawings furnish information relating to design and construction of building. These drawings take precedence over mechanical drawings.
 3. Because of small scale plumbing drawings, it is not possible to indicate all offsets, fittings, and accessories which may be required. Investigate structural and finish conditions affecting this work and arrange work accordingly, providing such fittings, valves, and accessories required to meet conditions. Do not scale drawings for locations of equipment or piping. Refer to large scale dimensioned drawings for exact locations.
- C. Insure that items to be furnished fit space available. Make necessary field measurements to ascertain space requirements including those for connections and furnish and install equipment of size and shape so final installation shall suit true intent and meaning of Contract Documents.
1. If approval is received to use other than specified items, responsibility for specified capacities and insuring that items to be furnished will fit space available lies with this Division.
 2. If non-specified equipment is used and it will not fit job site conditions, this Contractor assumes responsibility for replacement with items named in Contract Documents.

3.2 PREPARATION

- A. Cut carefully to minimize necessity for repairs to existing work. Do not cut beams, columns, or trusses.
1. Patch and repair walls, floors, ceilings, and roofs with materials of same quality and appearance as adjacent surfaces unless otherwise shown. Surface finishes shall exactly match existing finishes of same materials.
 2. Each Section of this Division shall bear expense of cutting, patching, repairing, and replacing of work of other Sections required because of its fault, error, tardiness, or because of damage done by it.
 3. Cutting, patching, repairing, and replacing pavements, sidewalks, roads, and curbs to permit installation of work of this Division is responsibility of Section installing work.

3.3 INSTALLATION

- A. Arrange pipes, ducts, and equipment to permit ready access to valves, unions, traps, starters, motors, control components, and to clear openings of doors and access panels.

3.4 STORAGE AND PROTECTION OF MATERIALS:

- A. Provide storage space for storage of materials and assume complete responsibility for losses due to any cause whatsoever. Storage shall not interfere with traffic conditions in any public thoroughfare.
- B. Protect completed work, work underway, and materials against loss or damage.
- C. Close pipe openings with caps or plugs during installation. Cover fixtures and equipment and protect against dirt, or injury caused by water, chemical, or mechanical accident.

3.5 EXCAVATION AND BACKFILL

- A. Perform necessary excavation of whatever substance encountered for proper laying of all pipes and underground ducts.
1. Excavated materials not required for fill shall be removed from site as directed by Engineer.
 2. Excavation shall be carried low enough to allow a minimum coverage over underground piping of 5'-0" or to be below local frost level.
 3. Excess excavation below required level shall be backfilled at Contractor's expense with earth, sand, or gravel as directed by Engineer. Tamp ground thoroughly.
 4. Ground adjacent to all excavations shall be graded to prevent water running into excavated areas.
- B. Backfill pipe trenches and allow for settlement.
1. Backfill shall be mechanically compacted to same density as surrounding undisturbed earth.
 2. Cinders shall not be used in backfilling where steel or iron pipe is used.

3. No backfilling shall be done until installation has been approved by the Engineer.

3.6 COOPERATION

- A. Cooperate with other crafts in coordination of work. Promptly respond when notified that construction is ready for installation of work under Division 22. Contractor will be held responsible for any delays which might be caused by his negligence or failure to cooperate with the other Contractors or crafts.

3.7 SUPERVISION

- A. Provide a competent superintendent in charge of the work at all times. Anyone found incompetent shall be removed at once and replaced by someone satisfactory, when requested by the Architect.

3.8 INSTALLATION CHECK:

- A. An experienced, competent, and authorized representative of the manufacturer or supplier of each item of equipment indicated in the equipment schedule shall visit the project to inspect, check, adjust if necessary, and approve the equipment installation. In each case, the equipment supplier's representative shall be present when the equipment is placed in operation. The equipment supplier's representative shall revisit the project as often as necessary until all trouble is corrected and the equipment installation and operation is satisfactory to the Engineer.
- B. Each equipment supplier's representative shall furnish to the Owner, through the Engineer, a written report certifying the following:
 1. Equipment has been properly installed and lubricated.
 2. Equipment is in accurate alignment.
 3. Equipment is free from any undue stress imposed by connecting piping or anchor bolts.
 4. Equipment has been operated under full load conditions.
 5. Equipment operated satisfactorily.
- C. All costs for this installation check shall be included in the prices quoted by equipment suppliers.

3.9 CLEANING EQUIPMENT AND PREMISES

- A. Properly lubricate equipment before Owner's acceptance.
- B. Clean exposed piping, equipment, and fixtures. Repair damaged finishes and leave everything in working order.
- C. Remove stickers from fixtures and adjust flush valves.
- D. Trap elements shall be removed during cleaning and flushing period. Replace trap elements and adjust after cleaning and flushing period.

3.10 TESTS

- A. No piping work, fixtures, or equipment shall be concealed or covered until they have been inspected and approved by the inspector. Notify inspector when the work is ready for inspection.
- B. All work shall be completely installed, tested as required by Contract Documents and the city and county ordinances and shall be leak-tight before the inspection is requested.
- C. Tests shall be repeated to the satisfaction of those making the inspections.
- D. Water piping shall be flushed out, tested at 100 psi and left under pressure of supply main or a minimum of 40 psi for the balance of the construction period.

3.11 WARRANTY

- A. Contractor shall guarantee work under Division 22 to be free from inherent defects for a period of one year from acceptance.
 1. Contractor shall repair, revise or replace any and all such leaks, failure or inoperativeness due to defective work, materials, or parts free of charge for a period of one year from final acceptance, provided such defect is not due to carelessness in operation or maintenance.

- B. In addition to warrantee specified in General Conditions and plumbing systems are to be free from noise in operation that may develop from failure to construct system in accordance with Contract Documents.

3.12 ONE YEAR PERIOD OF CORRECTIONS

- A. Contractor shall warrant work as provided by the General Conditions of the contract, (AIA Document A201, 1997 edition). The contractor shall specifically reference paragraph 3.5 WARRANTY and Paragraph 12.2, CORRECTION OF WORK.
- B. Contractor shall certify work under Division 22 to be free from inherent defects for a period of one year from the date of substantial completion.
- C. Contractor shall repair, revise or replace any and all such leaks, failure or inoperativeness due to defective work, materials, or parts free of charge for a period of one year from final substantial completion , provided such defect is not due to carelessness in operation or maintenance.

3.13 SYSTEM START-UP, OWNER'S INSTRUCTIONS

- A. Owner's Instructions
 - 1. Instruct building maintenance personnel and Owner Representative in operation and maintenance of mechanical systems utilizing Operation & Maintenance Manual when so doing.
 - 2. Minimum instruction periods shall be as follows –
 - a. Plumbing - Four hours.
 - 3. Instruction periods shall occur after Substantial Completion inspection when systems are properly working and before final payment is made.
 - 4. None of these instructional periods shall overlap another.

END OF SECTION 220501

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SECTION 220502 - DEMOLITION AND REPAIR

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings, General Provisions of Contract, including General and Supplementary Conditions and Section 22 0501 apply to this Section.

1.2 SUMMARY

- A. Under this section remove obsolete piping and mechanical equipment and relocate, reconnect or replace existing piping affected by demolition or new construction. Remove concealed piping abandoned due to demolition or new construction, or cap piping flush with existing surfaces.

1.3 DRAWINGS AND EXISTING CONDITIONS

- A. All relocations, reconnections and removals are not necessarily indicated on the drawings. As such, the Contractor shall make adequate allowance in his proposal for this work as no extra charges will be allowed for these items.

PART 2 - NOT USED

PART 3 - EXECUTION

3.1 TEMPORARY CONNECTIONS

- A. Where existing piping must remain in service to supply occupied areas during construction, provide temporary piping, connections, and equipment to maintain service to such areas. All shall be performed in a neat and safe manner to prevent injury to the building or its occupants.

3.2 EXISTING TO BE ABANDONED

- A. All Required drilling, cutting, block-outs and demolition work required for the removal and/or installation of the mechanical system is the responsibility of this Contractor.
- B. No joists, beams, girders, trusses or columns shall be cut by any Contractor without written permission from the Architect.
- C. The patching, repair, and finishing to existing or new surfaces is the responsibility of this Contractor, unless specifically called for under sections of specifications covering these materials.
- D. Disconnect all equipment that is to be removed or relocated. Relocate any existing equipment that obstructs new construction.

3.3 EXISTING TO REMAIN IN USE

- A. Where affected by demolition or new construction, relocate, replace, extend, or repair piping and equipment to allow continued use of same. Use methods and materials as specified for new construction.

3.4 MATERIALS AND EQUIPMENT REMOVED

- A. All obsolete materials, piping, and equipment shall become the property of the Contractor and be removed from the site promptly.

END OF SECTION 220502

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SECTION 220503 - PIPE, PIPE FITTINGS, PIPE HANGERS & VALVES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings, General Provisions of Contract, including General and Supplementary Conditions and Section 22 05 01 apply to this Section.

1.2 SUMMARY

- A. General piping and valve materials and installation procedures for all piping systems.

1.3 QUALITY ASSURANCE

- A. Manufacture:
 - 1. Use domestic made valves, pipe and pipe fittings.
- B. General: Support components shall conform to Manufacturer's Standardization Society Specification SP-58.

PART 2 - PRODUCTS

2.1 VALVES

- A. Ball Valves:
 - 1. 2" and smaller for domestic water service:
 - a. Milwaukee BA-100, bronze, screwed, 600# WOG ball valve with Teflon seats
 - b. Victaulic S/722.
- B. Use ball valves or butterfly valves everywhere unless noted otherwise.
- C. Approved Manufacturers:
 - 1. Crane
 - 2. Nibco
 - 3. Hammond
 - 4. Stockham
 - 5. Milwaukee
 - 6. Victaulic

2.2 PIPE

- A. Exposed waste, vent and water piping connections to fixtures shall be chrome plated.
- B. Condensate Drain Piping: Type "M" copper with sweat fittings or Schedule 40 PVC pipe and fittings.

2.3 PIPE HANGERS

- A. Adjustable, malleable iron clevis type of a diameter adequate to support pipe size.
- B. Approved Manufacturers:
 - 1. B-Line Systems Fig. B3100
 - 2. Grinnell No. 260
 - 3. Kin-Line 455
 - 4. Superstrut CL-710

2.4 INSULATING COUPLINGS

- A. Suitable for at least 175 PSIG WP at 250 deg F.
- B. Approved Manufacturers:
 - 1. Central Plastics Co
 - 2. Victaulic Co
 - 3. Watts Regulator Co

2.5 EXPANSION JOINTS

- A. Install at all building expansion joints and as shown on the drawings, flexible, or nipple/flexible coupling combinations for added expansion/deflection. Submit Manufacturer's data.
- B. Approved Manufacturers
 - 1. Victaulic Style 155, 150
 - 2. Grinnell - Gruv-Lok
 - 3. Garlock Garlflex 8100
 - 4. Vibration Mountings & Controls, Inc.

2.6 SLEEVES

- A. Sleeves shall be standard weight galvanized iron pipe, Schedule 40 PVC, or 14 gauge galvanized sheet metal two sizes larger than pipe or insulation.
- B. Steel or heavy steel metal of the telescoping type of a size to accommodate pipe and covering wherever it passes through floors, walls, or ceilings.

2.7 INTERMEDIATE ATTACHMENTS

- A. Continuous threaded rod may be used wherever possible.
- B. No chain, wire, or perforated strap shall be used.

2.8 FLOOR AND CEILING PLATES

- A. Brass chrome plated

2.9 APPROVED MANUFACTURERS - Grinnell and Fee/Mason

- A. Concrete Inserts: Grinnell Fig. 282
- B. Pipe Hanger Flange: Grinnell Fig. 163
- C. Vertical Pipe: Grinnell Fig. 261 or equal.
- D. Cast Iron Pipe: Grinnell Fig. 260 clevis hanger or equal
- E. Pipe Attachments for steel pipe with 1" or less of insulation:
 - 1. Grinnell Fig. 108 ring
 - 2. Grinnell Fig. 114 turnbuckle adjuster
 - 3. Or equal

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Furnish and install complete system of piping, valved as indicated or as necessary to completely control entire apparatus. Pipe drawings are diagrammatic and indicate general location and connections. Piping may have to be offset, lowered, or raised as required or directed at site. This does not relieve this Contractor from responsibility for proper erection of systems of piping in every respect.
- B. Properly support piping and make adequate provisions for expansion, contraction, slope, and anchorage.
 - 1. Cut piping accurately for fabrication to measurements established at site and work into place without springing or forcing.
 - 2. Do not use pipe hooks, chains, or perforated metal for pipe support.
 - 3. Remove burr and cutting slag from pipes.
 - 4. Make changes in direction with proper fittings.
 - 5. Insulate hangers for copper pipe from piping by means of at least two layers of Scotch 33 plastic tape.
 - 6. Support piping at 8 feet on center maximum for pipe 1-1/4 inches or larger and 6 feet on center maximum for pipe one inch or less. Provide support at each elbow. Install additional support as required.
 - 7. Suspend piping from roof trusses or clamp to vertical walls using Unistrut and clamps (except underground pipe). Laying of piping on any building member is not allowed.

- C. Arrange piping to not interfere with removal of other equipment, ducts, or devices, or block access to doors, windows, or access openings. Provide accessible, ground joint unions in piping at connections to equipment.
- D. Make connections of dissimilar metals with insulating couplings.
- E. Provide sleeves around pipes passing through floors, walls, partitions, or structural members.
 - 1. Seal sleeves with plastic or other acceptable material.
 - 2. Do not place sleeves around soil, waste, vent, or roof drain lines passing through concrete floors on grade.
- F. Cap or plug open ends of pipes and equipment to keep dirt and other foreign materials out of system. Do not use plugs of rags, wool, cotton waste, or similar materials.
- G. Install piping systems so they may be easily drained.
- H. Grade soil and waste lines within building perimeter 1/4 inch fall per ft in direction of flow.
- I. Insulate water piping buried within building perimeter.
 - 1. Do not use reducing bushings, street elbows, or close nipples.
 - 2. Bury water piping 6 inches minimum below bottom of slab and encase in 2 inches minimum of sand.
 - 3. Do not install piping in shear walls.

3.2 HORIZONTAL PIPING INSTALLATION

- A. Locate hangers, supports, and anchors near or at changes in piping direction and concentrated loads.
- B. Provide for vertical adjustment to maintain pitch required for proper drainage.
- C. Allow for expansion and contraction of the piping.

3.3 PIPE SLEEVES AND INSERTS

- A. Set sleeves before concrete is poured or floors finished.
- B. Inserts for units should be placed in the concrete or masonry during construction to avoid cutting of finished work. When and if cutting becomes necessary, it must be done in accordance with the cutting and patching specifications.

3.4 FLOOR AND CEILING PLATES

- A. Install on all pipes passing through floors, partitions, and ceilings.

3.5 UNIONS AND CONNECTIONS

- A. Install malleable ground joint unions in hot and cold water piping throughout the system so that any portion can be taken down for repairs or inspections without injury to same or covering.
- B. Running threads or long screws will not be permitted in jointing any pipe.
- C. Provide dielectric waterways Style #47 between ferrous and non-ferrous metals.

3.6 FIRE STOPPING

- A. Fire stop all penetrations of fire walls, fire barriers, fire partitions, and other fire rated walls and ceilings and floors as per IBC Section 711. See Specification 22 0800.

END OF SECTION 220503

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SECTION 22 0553 - IDENTIFICATION FOR PLUMBING PIPES AND EQUIPMENT

PART 1 - GENERAL

1.1 SUMMARY

- A. Includes But Not Limited To:
 - 1. Furnish and install identification of plumbing piping and equipment as described in Contract Documents.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. Paint:
 - 1. One Coat Primer:
 - a. 6-2 Quick Drying Latex Primer Sealer over fabric covers.
 - b. 6-205 Metal Primer under dark color paint.
 - c. 6-6 Metal Primer under light color paint.
 - 2. Finish Coats: Two coats 53 Line Acrylic Enamel.
 - 3. Performance Standard: Paints specified are from Pittsburgh Paint & Glass (PPG), Pittsburgh, PA www.pittsburghpaints.com or PPG Canada Inc, Mississauga, ON (800) 263-4350 or (905) 238-6441.
 - 4. Type Two Acceptable Products. See Section 01 6200.
 - a. Paint of equal wuality from following Manufacturers may be submitted for Architect's approval before use. Maintain specified colors, shades, and contrasts.
 - 1) Benjamin Moore, Montvale, NJ www.benjaminmoore.com or Toronto, ON (800) 304-0304 or (416) 766-1176.
 - 2) ICI Dulux, Cleveland, OH or ICI Paints Canada Inc, Concord, ON www.dulux.com.
 - 3) Sherwin Williams, Cleveland, OH www.sherwin-williams.com.

2.2 VALVE IDENTIFICATION

- A. Make a list of and tag all valves installed in this work.
 - 1. Valve tags shall be of brass, not less than 1"x2" size, hung with brass chains.
 - 2. Tag shall indicate plumbing or heating service.

PART 3 - EXECUTION

3.1 SCHEDULES

- A. Pipe Identification Schedule:
 - 1. Apply stenciled symbols as follows:

Pipe Use	Abbreviation
Domestic Cold Water	CH
Domestic Hot Water	HW

END OF SECTION 220553

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SECTION 220703 - MECHANICAL INSULATION AND FIRE STOPPING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings, General Provisions of Contract, including General and Supplementary Conditions and Section 22 05 01 apply to this Section.

1.2 SUMMARY

- A. Furnish and install mechanical insulation and fire stopping as described in Contract Documents including but not limited to the following:
 - 1. Cold Water Piping Insulation
 - 2. Hot Water Piping Insulation (Domestic)
 - 3. Fire Stopping

1.3 QUALITY ASSURANCE

- A. Insulation shall have composite (insulation, jacket or facing and adhesive used to adhere facing or jacket to insulation) fire and smoke hazard ratings as tested by Procedure ASTM E-84, NFPA 255 and UL 723 not exceeding: Flame Spread of 25 and Smoke Developed of 50.
- B. Insulation Contractor shall certify in writing, prior to installation, that all products to be used will meet the above criteria.
- C. Accessories, such as adhesives, mastics, cements, and tapes, for fittings shall have the same component ratings as listed above.
- D. Products, or their shipping cartons, shall bear a label indicating that flame and smoke ratings do not exceed above requirements.
- E. Any treatment of jacket or facings to impart flame and smoke safety shall be permanent.
- F. The use of water-soluble treatments is prohibited.

END OF SECTION 220703

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SECTION 220710 - POTABLE WATER PIPE INSULATION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings, General Provisions of Contract, including General and Supplementary Conditions and Section 22 05 01 apply to this Section.

1.2 SUMMARY

- A. Furnish and install insulation on above ground hot and cold water lines, fittings, valves, pump bodies, flanges, and accessories as described in Contract Documents.

PART 2 - PRODUCTS

2.1 INSULATION

- A. One inch thick snap-on glass fiber pipe insulation.
- B. Heavy density pipe insulation with factory vapor jacket equal to Fiberglass ASJ may be used.
- C. Approved Manufacturers:
 - 1. CTM
 - 2. Manville
 - 3. Owens-Corning
 - 4. Knauf

2.2 PVC FITTING, VALVE, & ACCESSORY COVERS

- A. Approved Manufacturers:
 - 1. Knauf
 - 2. Zeston

PART 3 - EXECUTION

3.1 APPLICATION

- A. Piping:
 - 1. Apply insulation to clean, dry piping with joints tightly butted.
 - 2. Adhere "factory applied vapor barrier jacket lap" smoothly and securely at longitudinal laps with a white vapor barrier adhesive.
 - 3. Adhere 3 inch wide self-sealing butt joint strips over end joints.
- B. Fittings, Valves, & Accessories:
 - 1. Insulate with same type and thickness of insulation as pipe, with ends of insulation tucked snugly into throat of fitting and edges adjacent to pipe insulation tufted and tucked in.
 - 2. Cover insulation with one piece fitting cover secured by stapling or taping ends to adjacent pipe covering.
- C. Pipe Hangers:
 - 1. Do not allow pipes to come in contact with hangers.
 - 2. Provide 16 ga x 6 inch long galvanized shields at each pipe hanger to protect pipe insulation from crushing by clevis hanger.

END OF SECTION 220710

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SECTION 220711 - HANDICAPPED FIXTURES INSULATION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings, General Provisions of Contract, including General and Supplementary Conditions and other Division-1 Specification Sections, and Section 22 05 00 apply to this Section.

1.2 SUMMARY

- A. Furnish and install handicapped fixtures insulation as described in Contract Documents.

1.3 QUALITY ASSURANCE

- A. Insulating device must comply with UBC-85 and federal accessibility standards.
- B. Cover must meet federal standards for protection from burns and abrasions.

PART 2 - PRODUCTS

2.1 MANUFACTURED UNITS

- A. Insulating device shall be molded fire resistant foam, to encapsulate hot water piping, stop, and P-trap.
 - 1. Approved Manufacturers:
 - a. TCI Products' Skal+Gard SG-100B
- B. Safety cover with recloseable sealing strips which allow for removal and replacement for line maintenance may be used on drain and supply lines under lavatories.
 - 1. Approved Manufacturers:
 - a. Handy-Shield
 - b. Plumberex
- C. Color shall be white.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Install tamper-proof locking strap to discourage pilferage.

END OF SECTION 220711

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SECTION 220800-- FIRE STOPPING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings, General Provisions of Contract, including General and Supplementary Conditions and Section 22 05 01 apply to this Section.

1.2 SUMMARY

- A. Furnish and install fire stopping as described in Contract Documents.

1.3 QUALITY ASSURANCE

- A. Fire stopping material shall meet ASTM E814, E84 and be UL listed.

PART 2 - PRODUCTS

2.1 MANUFACTURED UNITS

- A. Material shall be flexible, long lasting, intumescent acrylic seal to accommodate vibration and building movement.
- B. Caulk simple penetrations with gaps of 1/4" or less with:
 - 1. Dow Corning Fire Stop Sealant
 - 2. Pensil 300
- C. Caulk multiple penetrations and/or penetrations with gaps in excess of 1/4" with:
 - 1. Dow Corning Fire Stop Foam
 - 2. Pensil 200
 - 3. IPC flame safe FS-1900
 - 4. Tremco "Tremstop 1A"

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Follow manufacturer's installation instructions explicitly.
- B. Seal penetrations of ductwork, piping, and other mechanical equipment through one-hour and two-hour rated partitions as shown on Architectural and Mechanical Drawings.
- C. Install fire stopping material on clean surfaces to assure adherence.

END OF SECTION 220800

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SECTION 221116-- POTABLE WATER PIPING SYSTEMS (PEX)

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes ASTM F877 cross-linked polyethylene (PEX) tubing hot and cold water distribution systems, ASTM F876 cross-linked polyethylene (PEX) tube, ASTM F1807 fittings and ASTM F2159 fittings

1.2 REFERENCES

- A. ASTM International
 - 1. ASTM E84 Standard Test Method for Surface Burning Characteristics of Building Materials.
 - 2. ASTM F876 Standard Specification for Cross-linked Polyethylene (PEX) Tubing.
 - 3. ASTM F877 Standard Specification for Cross-linked Polyethylene (PEX) Plastic Hot and Cold Water Distribution Systems
 - 4. ASTM F1807 Standard Specification for Metal Insert Fittings Utilizing a Copper Crimp Ring for SDR9 Cross-linked Polyethylene (PEX) Tubing
 - 5. ASTM F2159 Standard Specification for Plastic Insert Fittings Utilizing a Copper Crimp Ring for SDR9 Cross-linked Polyethylene (PEX) Tubing
- B. National Sanitation Foundation (NSF)
 - 1. Standard 14 Plastics Piping System Components and Related Materials
 - 2. Standard 61 Drinking Water System Components – Health Effects
- C. International Code Council (ICC)
 - 1. International Mechanical Code
 - 2. International Plumbing Code
- D. International Association of Plumbing Officials (IAPMO)
 - 1. Uniform Plumbing Code
 - 2. Uniform Mechanical Code
- E. Plastic Pipe Institute (PPI)
 - 1. Technical Report TR-3 Policies and Procedures for Developing Recommended Hydrostatic Design Stresses for Thermoplastic Pipe Materials.
 - 2. Technical Report TR-4 Recommended Hydrostatic Strengths and Design Stresses for Thermoplastic Piping and Fitting Compounds

1.3 SYSTEM DESCRIPTION

- A. A. Design Requirements
 - 1. Standard Grade hydrostatic pressure ratings from the Plastic Pipe Institute in accordance with TR-3 and listed in TR-4. The following three standard-grade hydrostatic ratings are required;
 - a. 200 degrees F at 80 psi
 - b. 180 degrees F at 100 psi
 - c. 73 degrees F at 160 psi
 - 2. Tubing tested in general accordance with ASTM E84 for a flame spread/smoke developed index of 25/50 or less for the following PEX tube sizes encased with ½ inch fiberglass insulation;
 - a. 1 ¼ inch
 - b. 1 ½ inch
 - c. 2 inch
 - 3. Tubing tested in general accordance with ASTM E84 for a flame spread/smoke developed index of 25/50 or less for the following PEX tube sizes;
 - a. 3/8 inch
 - b. ½ inch
 - c. 5/8 inch
 - d. ¾ inch
 - e. 1 inch
- B. Performance Requirements

1. To provide a PEX tubing hot and cold potable water distribution system, which is manufactured, fabricated and installed to comply with regulatory agencies and to maintain performance criteria stated by the PEX tubing manufacturer without defects, damage or failure
 - a. Comply with NSF Standard 14
 - b. Comply with NSF Standard 61
 - c. Show compliance with ASTM F877

1.4 SUBMITTALS

- A. General
 1. Upon request, submit listed submittals in accordance with Conditions of the Contract and Division 1 Submittal Procedures Section
- B. Product Data
 1. Upon request, submit manufacturer's product submittal data and installation instructions
 2. Upon request, submit manufacturer's Professional Installation Limited Warranty
- C. Shop Drawings
 1. Upon request, provide installation drawings indicating tubing layout, manifold locations, plumbing fixtures supported and schedules with details required for installation of the system
- D. Samples
 1. Upon request, submit selection and verification samples of piping
- E. Listing Certifications
 1. Upon request, submit manufacturers third party listings

1.5 QUALITY ASSURANCE

- A. Installer Qualifications
 1. Utilize an installer having demonstrated experience on projects of similar size and complexity and possesses the skills and knowledge to install a PEX potable water distribution system
 2. Installer will utilize skilled workers holding a trade qualification license or equivalent or apprentices under the supervision of a licensed tradesperson
- B. Pre-installation Meetings
 1. Verify project timeline requirements
 2. Manufacturer's installation instruction
 3. Manufacturer's warranty requirements

1.6 DELIVERY, STORAGE AND HANDLING

- A. General
 1. Comply with Division 1 Product Requirement Section
- B. Delivery
 1. Deliver materials in manufacture's original, unopened, undamaged containers with identification labels intact until ready for installation
- C. Storage and Protection
 1. Store materials protected from exposure to harmful environmental conditions and at temperature and humidity conditions recommended by the manufacturer
 2. Store PEX tubing indoors, in cartons or under cover to avoid dirt or foreign material from entering the tubing
 3. Do not expose PEX tubing to direct sunlight for more than six months. If construction delays are encountered, cover the tubing that is exposed to direct sunlight

1.7 WARRANTY

- A. Project Warranty
 1. Refer to Conditions of the Contract for project warranty provisions
- B. Manufacturer's Warranty
 1. Shall cover the repair or replacement of properly installed tubing and fittings proven defective as well as incidental damages

2. Warranty period for PEX tubing and subsequent system shall be 25 year non-prorated warranty against failure due to defect in material or workmanship, beginning with the date of installation
3. It is the installer's responsibility to avoid mixing fittings manufactured by others as it will reduce the owner's warranty

PART 2 - PRODUCTS

2.1 PRODUCT MANUFACTURERS

- A. Zurn
- B. Uponor
- C. Vanguard
- D. Rehau
- E. Viega

2.2 MATERIALS

- A. Tubing
 1. Cross-linked polyethylene (PEX).
 2. Non-barrier type.
 - a. Shall have a pressure and temperature rating of 160 PSI at 73°F, 100 PSI at 180°F and 80 PSI at 200°F.
 - b. Tubing shall have a minimum of 6 months UV protection.
 3. Manufactured in accordance with ASTM F876 and ASTM F877 and tested for compliance by an independent third-party agency.
- B. Fittings
 1. Manufactured in accordance with ASTM F1807 or ASTM F2159 and/or comply with ASTM F877 system standard as identified on the fitting
- C. Manifold
 1. Preassembled Manifold
 2. Copper Manifold System
 3. Multi Port Fittings
 4. Copper Manifold Header
- D. Valves
 1. Shall be of the metal type, meeting the requirements of ASTM F877, identified as such with the appropriate mark on the product

PART 3 - EXECUTION

3.1 MANUFACTURER'S INSTRUCTIONS

- A. A. Comply with manufacture's product data, including product technical bulletins, technical memo's, installation instructions and design drawings.

3.2 EXAMINATION

- A. Site Verification of Conditions
 1. Verify that site conditions are acceptable for the installation of the PEX potable water system
 2. Do not proceed with installations of the PEX potable water system until unacceptable conditions are corrected

3.3 INSTALLATION

- A. Install PEX tubing in accordance with tubing manufacturer's recommendations and as indicated in the PEX Plumbing Installation Guide
- B. Do not install PEX tubing within 6 inches of gas appliance vents or within 12 inches of any recessed light fixtures
- C. Do not solder within 18 inches of PEX tubing in the same waterline. Make sweat connections prior to making PEX connections

- D. Ensure no glues, solvents, sealants or chemicals come in contact with the tubing without prior permission from the tubing manufacturer
- E. Do not expose PEX tubing to direct sunlight for more than 6 months
- F. Use grommets or sleeves at the penetration for PEX tubing passing through metal studs
- G. Use a PEX manufacturer recommended fire stop sealant manufacturer
- H. Protect PEX tubing with sleeves where abrasion may occur
- I. Use nail plates where PEX tubing penetrates wall stud or joists and has the potential for being struck with a screw or nail
- J. Allow slack of approximately 1/8 inch per foot of tube length to compensate for expansion and contraction
- K. Minimum horizontal supports are to be installed not less than 32 inches between hangers in accordance with model plumbing codes.
- L. Pressurize PEX tubing in accordance with applicable codes or in the absence of applicable codes, test pressure shall be at least equal to normal system working pressure, but not less than 40 PSI water or air and not greater than 225 PSI water, 125 PSI air

3.4 FIELD QUALITY CONTROL

- A. Site Tests
 - 1. To ensure system integrity, pressure test the system before covering tubing in concrete and after other trades have worked in the vicinity of the tubing
 - 2. Repair and replace any product that has been damaged according to manufacturer's recommendation

3.5 PROTECTION

- A. Protect installed work from damage due to subsequent construction activity on the site

END OF SECTION 221116

SECTION 221313 – SOIL, WASTE, & VENT PIPING SYSTEMS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings, General Provisions of Contract, including General and Supplementary Conditions and Section 22 05 01 apply to this Section.

1.2 SUMMARY

- A. Furnish and install soil, waste, and vent piping systems within building and connect with outside utility lines 5 feet out from building where applicable.
- B. Perform excavation and backfill required by work of this Section.

PART 2 - PRODUCTS

2.1 BURIED LINES

- A. Service weight, single-hub type cast iron soil pipe and fittings meeting requirements of ASTM A 74-87, "Specification for Cast Iron Soil Pipe & Fittings".
 - 1. Joint Material:
 - a. Rubber gaskets meeting requirements of ASTM C 564-88, "Specification for Rubber Gaskets for Cast Iron Soil Pipe and Fittings".
 - b. No hub stainless steel clamps with neoprene gasket.
- B. ABS-DWV or PVC-DWV plastic waste pipe and fittings as permitted by state and local plumbing code.

2.2 ABOVE GRADE PIPING & VENT LINES

- A. Same as specified for buried lines except no-hub pipe may be used.
- B. Vent lines 2-1/2 inches or smaller may be Schedule 40 galvanized steel.
- C. Joint Material:
 - 1. Bell & Spigot Pipe - rubber gaskets meeting requirements of ASTM C 564-88, "Specification for Rubber Gaskets for Cast Iron Soil Pipe and Fittings".
 - 2. No-Hub Pipe - Neoprene gaskets with stainless steel cinch bands.
 - 3. Galvanized Pipe - Screwed Durham tarred drainage fittings, or Victaulic.
 - 4. ABS-DWV solvent weld fittings

2.3 TRAP PRIMERS

- A. Components:
 - 1. Drains And Drain Accessories:
 - a. Floor Drain FD-1:
 - 1) Approved types with deep seal trap and chrome plated strainer.
 - 2) Provide trap primer connection and trap primer equal to Sioux Chief 695-01.
 - 3) Category Four Approved Products. See Section 01 6200 for definitions of Categories:
 - a) Josam: 30000-50-Z-5A.
 - b) J. R. Smith: 2010-A.
 - c) Sioux Chief: 832.
 - d) Wade: 1100.
 - e) Watts: FD-200-A.
 - f) Zurn: Z-415.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Do not caulk threaded work.

- B. Slope horizontal pipe at 1/4 in/ft.
- C. Cleanouts:
 - 1. Provide and set full size cleanouts at foot of each riser, and ends of branches from toilets, at points where a change of direction occurs, on exposed and accessible traps, at points where required to remove rust accumulation or other obstructions and as shown on plans. Set screw cap in cleanout with graphite paste. Cleanouts in walls shall be flush and covered with a chrome plated cleanout cover screwed into the cleanout plug. Cleanouts in floors shall be flush using Zurn, Josam, or Wade floor level cleanout fittings. Location of all cleanouts subject to approval of inspector.
- D. Each fixture and appliance discharging water into sanitary sewer or building sewer lines shall have seal trap in connection with complete venting system so gasses pass freely to atmosphere with no pressure or syphon condition on water seal.
- E. Vent entire waste system to atmosphere. Discharge 14 inches above roof. Join lines together in fewest practicable number before projecting above roof. Set back vent lines so they will not pierce roof near edge or valley.
- F. Use torque wrench to obtain proper tension in cinch bands when using hubless cast iron pipe. Butt ends of pipe against centering flange of coupling.
- G. Flash pipes passing through roof with 16 oz sheet copper flashing fitted snugly around pipes and calk between flashing and pipe with flexible waterproof compound. Flashing base shall be at least 24 inches square.
 - 1. Flashing may be 4 lb per sq ft lead flashing fitted around pipes and turned down into pipe 1/2 inch with turned edge hammered against pipe wall.

3.2 FIELD QUALITY CONTROL

- A. Before piping is covered, conduct tests for leaks and defective work. Notify Architect prior to testing. Correct leaks and defective work. Fill waste and vent system to roof level with water, 10 feet minimum, and show no leaks for two hours.

END OF SECTION 221313

SECTION 223500 – KITCHEN EQUIPMENT CONNECTIONS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings, General Provisions of Contract, including General and Supplementary Conditions and Section 22 05 01 apply to this Section.

1.2 SUMMARY

- A. Furnish and install materials and labor necessary to make all required steam, hot water, cold water, waste, and vent rough-ins and to make all final connections for kitchen equipment as described in Contract Documents.
- B. Kitchen equipment, unless specifically noted otherwise, shall be furnished by Kitchen Equipment Contractor.
- C. Kitchen Equipment Contractor shall provide complete roughing-in drawings showing exact location of stub-ups in floor and in walls. It will be Plumbing Contractor's responsibility to install all sleeves through walls and floor and to connect all plumbing services. Floors shall be core drilled. Plumbing Contractor shall request this roughing-in information well in advance of installation of equipment.
- D. Each hot water, cold water, and steam connection to kitchen equipment shall include a valve and union and shall be capped for connection after equipment has been installed.
- E. Pipe sleeves shall be installed where piping rises through floors and shall be caulked with waterproof compound.
- F. Kitchen Equipment Contractor shall provide and install all kitchen equipment, including faucets and sink wastes, swing faucets at kettles and ranges, strainers, and tailpieces.
- G. Plumbing Contractor shall provide cold water and hot water services, all interconnection pipes, vacuum breakers, traps, etc., and shall make all final connections.
- H. Mechanical contractor shall provide a pressure reducing valve at hot water connection to dishwasher.

END OF SECTION 223500

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SECTION 224001 – PLUMBING FIXTURES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings, General Provisions of Contract, including General and Supplementary Conditions and Section 22 0501 apply to this Section.

1.2 SUMMARY

- A. Furnish and install plumbing fixtures as described in Contract Documents.
- B. Before fixtures are ordered, the Contractor shall submit a complete list of plumbing fixtures, giving the catalog number, cut and make, for approval. Fixtures shall not be ordered until this list is approved.

PART 2 - PRODUCTS

2.1 GENERAL

- A. Interior exposed pipe, valves, and fixture trim shall be chrome plated.
- B. Do not use flexible water piping.
- C. Flow Control Fittings:
 - 1. Vandal proof type and fit faucet spout of fixture used. Flow shall be controlled as required by local codes.
- D. Furnish and install the necessary plumbing fixtures in quantity as shown on plans. Provide all necessary valves, chrome plated 17 gauge or cast "P" traps, stops with risers, fittings, and accessories to make the job complete with the fixtures specified on the drawings. Exposed stops to be equal to Brasscraft with compression inlet, chrome plated nipples, cross handles, ¼ turn ball valves and flexible risers.
- E. Fixtures shall be PROFLO, Kohler, Crane, Briggs, Eljer, American Standard, or an approved equal. Specialties shall be Zurn, Josam, MiFab, J. R. Smith, Wade, or Watts.
- F. Toilet seat manufacturers shall be Beneke, Church, Olsonite, or Bemis.
- G. Carrier and wall hydrant manufacturers shall be Smith, Zurn, Wade, Josam, or Watts.
- H. Stainless steel sink manufacturers shall be Elkay or Just.
- I. Drinking fountain manufacturers shall be Elkay, Halsey Taylor, Haws, Cordley, Sunroc, or Oasis.
- J. Pressure balance mixing valves shall be Powers, Lawler, Leonard, or Symmons.
- K. Thermostatic mixing valves shall be Powers.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Install fixtures including traps and accessories with accessible stop or control valve in each hot and cold water branch supply line.
- B. Make fixture floor connections with approved brand of cast iron floor flange, soldered or calked securely to waste pipe.
- C. Make joints between fixtures and floor flanges tight with approved fixture setting compound or gaskets.
- D. Caulk between fixtures and wall and floor with white butyl rubber non-absorbent caulking compound. Point edges.

- E. Cleanouts: Provide and set full size cleanouts at foot of each riser, and ends of branches from toilets, at points where a change of direction occurs, on exposed and accessible traps, at points where required to remove rust accumulation or other obstructions and as shown on plans. Set screw cap in cleanout with graphite paste. Location of all cleanouts subject to approval of inspector.
- F. Traps: Install "P" traps in branch lines from floor drains or where required. Traps installed in connection with threaded pipe shall be recess drainage pattern. Traps installed in connection with cast iron pipe shall be of the same quality and grade as the pipe. Traps installed in connection with fixtures shall have a seal of not less than 2" nor more than 4". Exposed traps shall be chrome plated cast brass or chrome plated 17 gauge tubular type. Provide trap primers as required by Code.

3.2 FIXTURE INSTALLATION

- A. Provide stop valves and 18" minimum air chambers on all water connections to fixtures. Furnish and install wall carriers for wall mounted fixtures, wood backing, where necessary, to be installed by General Contractor at the direction of this Contractor. Provide exact locations, including proper mounting heights, obtained from details on drawings and from manufacturer's specifications. Provide hudee rims for countertop installations.
- B. Interior exposed pipe, valves, and fixtures trim shall be chrome plated.
- C. Complete installation of each fixture including trap and accessories with accessible stop or control valve in each hot and cold water branch supply line. Make fixture floor connections with approved brand of cast iron floor flange, soldered or caulked securely to waste pipe. Make joint between fixture and floor flange tight with approved fixture setting compound or gaskets.
- D. Polish chrome finish at completion of project.
- E. Caulk between fixtures and wall and floor with white butyl rubber non-absorbent caulking compound. Paint all edges.
- F. Install fixtures and fittings as per local codes and manufacturer's instructions.

END OF SECTION 224001

END OF DIVISION 22

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SECTION 230501 – COMMON HVAC REQUIREMENTS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and General Provisions of Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Furnish labor, materials, and equipment necessary for completion of work as described in Contract Documents.
- B. It is the intent of these specifications that the systems specified herein are to be complete and operational before being turned over to the owner. During the bidding process, the contractor is to ask questions or call to the engineer's attention any items that are not shown or may be required to make the system complete and operational. Once the project is bid and the contractor has accepted the contract, it is his responsibility to furnish and install all equipment and parts necessary to provide a complete and operational system without additional cost to the owner.
- C. Furnish and install fire stopping materials to seal penetrations through fire rated structures and draft stops.
- D. Includes But Not Limited To:
 - 1. General procedures and requirements for HVAC.
- E. Related Sections:
 - 1. Section 23 0593: Testing, Adjusting, and Balancing for HVAC.

1.3 SUBMITTALS

- A. Substitutions: By specific designation and description, standards are established for specialties and equipment. Other makes of specialties and equipment of equal quality will be considered provided such proposed substitutions are submitted to the Architect for his approval, complete with specification data showing how it meets the specifications, at least 5 working days prior to bid opening. A list of approved substitutions will be published as an addendum.
 - 1. Submit a single copy of Manufacturer's catalog data including Manufacturer's complete specification for each proposed substitution.
 - 2. The Architect or Engineer is to be the sole judge as to the quality of any material offered as an equal.
- B. Product Data, Shop Drawings: Within 30 days after award of contract, submit 10 sets of Manufacturer's catalog data for each manufactured item.
 - 1. Literature shall include enough information to show complete compliance with Contract Document requirements.
 - 2. Mark literature to indicate specific item with applicable data underlined.
 - 3. Information shall include but not be limited to capacities, ratings, type of material used, guarantee, and such dimensions as are necessary to check space requirements.
 - 4. When accepted, submittal shall be an addition to Contract Documents and shall be in equal force. No variation shall be permitted.
 - 5. Even though the submittals have been accepted by the Engineer, it does not relieve the contractor from meeting all of the requirements of the plans and specifications and providing a complete and operational system.
- C. Drawings of Record: One complete sets of blue line mechanical drawings shall be provided for the purpose of showing a complete picture of the work as actually installed.
 - 1. These drawings shall serve as work progress report sheets. Contractor shall make notations neat and legible therein daily as the work proceeds.
 - 2. The drawings shall be kept at the job at a location designated by the Mechanical Engineer.
 - 3. At completion of the project these "as-built" drawings shall be signed by the Contractor, dated, and returned to the Architect.
- D. Operating Instructions and Service Manual: The Mechanical Contractor shall prepare 2 copies of an Operation and Maintenance Manual for all mechanical systems and equipment used in this project. Manuals shall be bound in hard-backed binders and the front cover and spine of each binder shall indicate the name and location of the project. Use plastic tab indexes for all sections. Provide a section for each different type of equipment item. The following items shall be included in the manual, together with any other pertinent data. This list is not complete and is to be used as a

guide.

1. Provide a master index at the beginning of the manual showing all items included.
 2. The first section of the manual shall contain:
 - a. Names, addresses, and telephone numbers of Architect, Mechanical Engineer, Electrical Engineer, General Contractor, Plumbing Contractor, Sheet Metal Contractor, and Temperature Control Contractor.
 - b. List of Suppliers which shall include a complete list of each piece of equipment used with the name, address, and telephone number of vendor.
 - c. General Description of Systems including –
 - 1) Location of all major equipment
 - 2) Description of the various mechanical systems
 - 3) Description of operation and control of the mechanical systems
 - 4) Suggested maintenance schedule
 - d. Copy of contractor's written warranty
 3. Provide a copy of approved submittal literature for each piece of equipment.
 4. Provide maintenance and operation literature published by the manufacturer for each piece of equipment which includes: oiling, lubrication and greasing data; belt sizes, types and lengths; wiring diagrams; step-by-step procedure to follow in putting each piece of mechanical equipment in operation.
 5. Include parts numbers of all replaceable items.
 6. Provide control diagram and operation sequence, along with labeling of control piping and instruments to match diagram.
 7. Include a valve chart indicating valve locations.
- E. Include air balance and/or water balance reports.

1.4 SUBMITTALS FOR COMMON HVAC REQUIREMENTS

- A. Samples: Sealer and gauze proposed for sealing ductwork.
- B. Quality Assurance / Control:
1. Manufacturer's installation manuals providing detailed instructions on assembly, joint sealing, and system pressure testing for leaks.
 2. Specification data on sealer and gauze proposed for sealing ductwork.
- C. Quality Assurance
1. Requirements: Construction details not specifically called out in Contract Documents shall conform to applicable requirements of SMACNA HVAC Duct Construction Standards.
 2. Pre-Installation Conference: Schedule conference immediately before installation of ductwork.

1.5 QUALITY ASSURANCE

- A. Requirements of Regulatory Agencies:
1. Perform work in accordance with applicable provisions of local and state Plumbing Code, Gas Ordinances, and adoptions thereof. Provide materials and labor necessary to comply with rules, regulations, and ordinances.
 2. In case of differences between building codes, state laws, local ordinances, utility company regulations, and Contract Documents, the most stringent shall govern. Promptly notify Architect in writing of such differences.
- B. Applicable Specifications: Referenced specifications, standards, and publications shall be of the issues in effect on date of Advertisement for Bid.
1. "Heating, Ventilating and Air Conditioning Guide" published by the American Society of Heating and Air Conditioning Engineers.
 2. "Engineering Standards" published by the Heating, Piping, and Air Conditioning Contractors National Association.
 3. "2015 International Building Code", "2015 International Mechanical Code", "2015 International Plumbing Code" and "2015 International Fire Code" as published by the International Conference of Building Officials.
 4. "National Electrical Code" as published by the National Fire Protection Association.
 5. "2015 International Energy Conservation Code".
- C. Identification: Motor and equipment name plates as well as applicable UL and AGA labels shall be in place when Project is turned over to Owner.

1.6 INSPECTIONS AND PERMITS

- A. Pay for permits, fees, or charges for inspection or other services. Local and state codes and ordinances must be

properly executed without expense to Owner and are considered as minimum requirements. Local and state codes and ordinances do not relieve the Contractor from work shown that exceeds minimum requirements.

1.7 ADDITIONAL WORK:

- A. Design is based on equipment as described in the drawing equipment schedule. Any change in foundation bases, electrical wiring, conduit connections, piping, controls and openings required by alternate equipment submitted and approved shall be paid for by this division. All work shall be in accordance with the requirements of the applicable sections.

PART 2 - PRODUCTS FOR COMMON HVAC REQUIREMENTS

- A. Finishes, Where Applicable: Colors as selected by Architect.
- B. Duct Hangers:
 - 1. One inch 25 mm by 18 ga 1.27 mm galvanized steel straps or steel rods as shown on Drawings, and spaced not more than 96 inches 2 400 mm apart. Do not use wire hangers.
 - 2. Attaching screws at trusses shall be 2 inch 50 mm No. 10 round head wood screws. Nails not allowed.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Site Inspection:
 - 1. Examine premises and understand the conditions which may affect performance of work of this Division before submitting proposals for this work.
 - 2. No subsequent allowance for time or money will be considered for any consequence related to failure to examine site conditions.
- B. Drawings:
 - 1. Mechanical drawings show general arrangement of piping, ductwork, equipment, etc, and do not attempt to show complete details of building construction which affect installation. This Contractor shall refer to architectural, structural, and electrical drawings for additional building detail which affect installation of his work.
 - a. Follow mechanical drawings as closely as actual building construction and work of other trades will permit.
 - b. No extra payments will be allowed where piping and/or ductwork must be offset to avoid other work or where minor changes are necessary to facilitate installation.
 - c. Everything shown on the mechanical drawings shall be the responsibility of Mechanical Contractor unless specifically noted otherwise.
 - 2. Consider architectural and structural drawings part of this work insofar as these drawings furnish information relating to design and construction of building. These drawings take precedence over mechanical drawings.
 - 3. Because of small scale of mechanical drawings, it is not possible to indicate all offsets, fittings, and accessories which may be required. Investigate structural and finish conditions affecting this work and arrange work accordingly, providing such fittings, valves, and accessories required to meet conditions. Do not scale drawings for locations of equipment or piping. Refer to large scale dimensioned drawings for exact locations.
- C. Insure that items to be furnished fit space available. Make necessary field measurements to ascertain space requirements including those for connections and furnish and install equipment of size and shape so final installation shall suit true intent and meaning of Contract Documents.
 - 1. If approval is received to use other than specified items, responsibility for specified capacities and insuring that items to be furnished will fit space available lies with this Division.
 - 2. If non-specified equipment is used and it will not fit job site conditions, this Contractor assumes responsibility for replacement with items named in Contract Documents.

3.2 PREPARATION

- A. Cut carefully to minimize necessity for repairs to existing work. Do not cut beams, columns, or trusses.
 - 1. Patch and repair walls, floors, ceilings, and roofs with materials of same quality and appearance as adjacent surfaces unless otherwise shown. Surface finishes shall exactly match existing finishes of same materials.
 - 2. Each Section of this Division shall bear expense of cutting, patching, repairing, and replacing of work of other Sections required because of its fault, error, tardiness, or because of damage done by it.
 - 3. Cutting, patching, repairing, and replacing pavements, sidewalks, roads, and curbs to permit installation of work of this Division is responsibility of Section installing work.

3.3 INSTALLATION

- A. Arrange pipes, ducts, and equipment to permit ready access to valves, unions, traps, starters, motors, control components, and to clear openings of doors and access panels.

3.4 STORAGE AND PROTECTION OF MATERIALS:

- A. Provide storage space for storage of materials and assume complete responsibility for losses due to any cause whatsoever. Storage shall not interfere with traffic conditions in any public thoroughfare.
- B. Protect completed work, work underway, and materials against loss or damage.
- C. Close pipe openings with caps or plugs during installation. Cover fixtures and equipment and protect against dirt, or injury caused by water, chemical, or mechanical accident.

3.5 EXCAVATION AND BACKFILL

- A. Perform necessary excavation of whatever substance encountered for proper laying of all pipes and underground ducts.
 - 1. Excavated materials not required for fill shall be removed from site as directed by Engineer.
 - 2. Excavation shall be carried low enough to allow a minimum coverage over underground piping of 5'-0" or to be below local frost level.
 - 3. Excess excavation below required level shall be backfilled at Contractor's expense with earth, sand, or gravel as directed by Engineer. Tamp ground thoroughly.
 - 4. Ground adjacent to all excavations shall be graded to prevent water running into excavated areas.
- B. Backfill pipe trenches and allow for settlement.
 - 1. Backfill shall be mechanically compacted to same density as surrounding undisturbed earth.
 - 2. Cinders shall not be used in backfilling where steel or iron pipe is used.
 - 3. No backfilling shall be done until installation has been approved by the Engineer.

3.6 COOPERATION

- A. Cooperate with other crafts in coordination of work. Promptly respond when notified that construction is ready for installation of work under Division 23000. Contractor will be held responsible for any delays which might be caused by his negligence or failure to cooperate with the other Contractors or crafts.

3.7 SUPERVISION

- A. Provide a competent superintendent in charge of the work at all times. Anyone found incompetent shall be removed at once and replaced by someone satisfactory, when requested by the Architect.

3.8 INSTALLATION CHECK:

- A. An experienced, competent, and authorized representative of the manufacturer or supplier of each item of equipment indicated in the equipment schedule shall visit the project to inspect, check, adjust if necessary, and approve the equipment installation. In each case, the equipment supplier's representative shall be present when the equipment is placed in operation. The equipment supplier's representative shall revisit the project as often as necessary until all trouble is corrected and the equipment installation and operation is satisfactory to the Engineer.
- B. Each equipment supplier's representative shall furnish to the Owner, through the Engineer, a written report certifying the following:
 - 1. Equipment has been properly installed and lubricated.
 - 2. Equipment is in accurate alignment.
 - 3. Equipment is free from any undue stress imposed by connecting piping or anchor bolts.
 - 4. Equipment has been operated under full load conditions.
 - 5. Equipment operated satisfactorily.
- C. All costs for this installation check shall be included in the prices quoted by equipment suppliers.

3.9 CLEANING EQUIPMENT AND PREMISES

- A. Properly lubricate equipment before Owner's acceptance.

- B. Clean exposed piping, ductwork, equipment, and fixtures. Repair damaged finishes and leave everything in working order.
- C. Remove stickers from fixtures and adjust flush valves.
- D. At date of Substantial Completion, air filters shall be new, clean, and approved by Owner's representative.
- E. Trap elements shall be removed during cleaning and flushing period. Replace trap elements and adjust after cleaning and flushing period.

3.10 TESTS

- A. No piping work, fixtures, or equipment shall be concealed or covered until they have been inspected and approved by the inspector. Notify inspector when the work is ready for inspection.
- B. All work shall be completely installed, tested as required by Contract Documents and the city and county ordinances and shall be leak-tight before the inspection is requested.
- C. Tests shall be repeated to the satisfaction of those making the inspections.
- D. Water piping shall be flushed out, tested at 100 psi and left under pressure of supply main or a minimum of 40 psi for the balance of the construction period.

3.11 WARRANTY

- A. Contractor shall guarantee work under Division 23 to be free from inherent defects for a period of one year from acceptance.
 - 1. Contractor shall repair, revise or replace any and all such leaks, failure or inoperativeness due to defective work, materials, or parts free of charge for a period of one year from final acceptance, provided such defect is not due to carelessness in operation or maintenance.
 - 2. In addition, the Contractor shall furnish all refrigeration emergency repairs, emergency service and all refrigerant required due to defective workmanship, materials, or parts for a period of one year from final acceptance at no cost to the Owner, provided such repairs, service and refrigerant are not caused by lack of proper operation and maintenance.
- B. In addition to warranty specified in General Conditions, heating, cooling, and plumbing systems are to be free from noise in operation that may develop from failure to construct system in accordance with Contract Documents.

3.12 SYSTEM START-UP, OWNER'S INSTRUCTIONS

- A. Off-Season Start-up
 - 1. If Substantial Completion inspection occurs during heating season, schedule spring start-up of cooling systems. If inspection occurs during cooling season, schedule autumn start-up for heating systems.
 - 2. Notify Owner 7 days minimum before scheduled start-up.
 - 3. Time will be allowed to completely service, test, check, and off-season start systems. During allowed time, train Owner's representatives in operation and maintenance of system.
 - 4. At end of off-season start-up, furnish Owner with letter confirming that above work has been satisfactorily completed.
- B. Owner's Instructions
 - 1. Instruct building maintenance personnel and Owner Representative in operation and maintenance of mechanical systems utilizing Operation & Maintenance Manual when so doing.
 - 2. Minimum instruction periods shall be as follows –
 - a. Mechanical - Four hours.
 - b. Temperature Control - Four hours.
 - c. Refrigeration - Two hours.
 - 3. Instruction periods shall occur after Substantial Completion inspection when systems are properly working and before final payment is made.
 - 4. None of these instructional periods shall overlap another.

3.13 PROTECTION

- A. Do not run heat pump, air handling units, fan coil units, or other pieces of equipment used for moving supply air without proper air filters installed properly in system.

- B. The mechanical systems are not designed to be used for temporary construction heat. If any equipment is to be started prior to testing and substantial completion, such equipment will be returned to new condition with full one year warranties, from date of substantial completion after any construction use. This includes, but is not necessarily limited to: Equipment, filters, ductwork, fixtures, etc.

3.14 COMMON HVAC REQUIREMENTS:

A. INSTALLATION

1. During installation, protect open ends of ducts by covering with plastic sheet tied in place to prevent entrance of debris and dirt.
2. Make necessary allowances and provisions in installation of sheet metal ducts for structural conditions of building. Revisions in layout and configuration may be allowed, with prior written approval of Architect. Maintain required airflows in suggesting revisions.
3. Hangers And Supports:
 - a. Install pair of hangers close to each transverse joint and elsewhere as required by spacing indicated in table on Drawings.
 - b. Install upper ends of hanger securely to floor or roof construction above by method shown on Drawings.
 - c. Attach strap hangers to ducts with cadmium-plated screws. Use of pop rivets or other means will not be accepted.
 - d. Where hangers are secured to forms before concrete slabs are poured, cut off flush all nails, strap ends, and other projections after forms are removed.
 - e. Secure vertical ducts passing through floors by extending bracing angles to rest firmly on floors without loose blocking or shimming. Support vertical ducts, which do not pass through floors, by using bands bolted to walls, columns, etc. Size, spacing, and method of attachment to vertical ducts shall be same as specified for hanger bands on horizontal ducts.

B. CLEANING

1. Clean interior of duct systems before final completion.

END OF SECTION 230501

SECTION 230502 - DEMOLITION AND REPAIR

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings, General Provisions of Contract, including General and Supplementary Conditions and Section 23 0501 apply to this Section.

1.2 SUMMARY

- A. Under this section remove obsolete piping and mechanical equipment and relocate, reconnect or replace existing piping affected by demolition or new construction. Remove concealed piping abandoned due to demolition or new construction, or cap piping flush with existing surfaces.

1.3 DRAWINGS AND EXISTING CONDITIONS

- A. All relocations, reconnections and removals are not necessarily indicated on the drawings. As such, the Contractor shall make adequate allowance in his proposal for this work as no extra charges will be allowed for these items.

PART 2 - NOT USED

PART 3 - EXECUTION

3.1 TEMPORARY CONNECTIONS

- A. Where existing piping must remain in service to supply occupied areas during construction, provide temporary piping, connections, and equipment to maintain service to such areas. All shall be performed in a neat and safe manner to prevent injury to the building or its occupants.

3.2 EXISTING TO BE ABANDONED

- A. All required drilling, cutting, block-outs and demolition work required for the removal and/or installation of the mechanical system is the responsibility of this Contractor.
- B. No joists, beams, girders, trusses or columns shall be cut by any Contractor without written permission from the Architect.
- C. The patching, repair, and finishing to existing or new surfaces is the responsibility of this Contractor, unless specifically called for under sections of specifications covering these materials.
- D. Disconnect all equipment that is to be removed or relocated. Relocate any existing equipment that obstructs new construction.

3.3 EXISTING TO REMAIN IN USE

- A. Where affected by demolition or new construction, relocate, replace, extend, or repair piping and equipment to allow continued use of same. Use methods and materials as specified for new construction.

3.4 MATERIALS AND EQUIPMENT REMOVED

- A. All obsolete materials, piping, and equipment shall become the property of the Contractor and be removed from the site promptly.

END OF SECTION 230502

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SECTION 230593 - TESTING, ADJUSTING, AND BALANCING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Division 23 0501 - Common HVAC Requirements and Basic Mechanical Materials and Methods Sections apply to work of this section.

1.2 SUMMARY SCOPE

- A. This Section includes TAB to produce design objectives for the following:
 - 1. Air Systems.
 - a. Rooftop Units.
 - b. Exhaust Fans.

1.3 SUBMITTALS

- A. Agency Data:
 - 1. Submit proof that the proposed testing, adjusting, and balancing agency meets the qualifications specified below. The firm or individuals performing the work herein specified may not be the installing firm.
- B. Engineer and Technicians Data:
 - 1. Submit proof that the Test and Balance Engineer assigned to supervise the procedures, and the technicians proposed to perform the procedures meet the qualifications specified below.
- C. Procedures and Agenda: Submit a synopsis of the testing, adjusting, and balancing procedures and agenda proposed to be used for this project.
- D. Sample Forms: Submit sample forms, if other than those standard forms prepared by the AABC or NEBB are proposed.
- E. Certified Reports: Submit testing, adjusting, and balancing reports bearing the seal and signature of the Test and Balance Engineer. The reports shall be certified proof that the systems have been tested, adjusted, and balanced in accordance with the referenced standards; are an accurate representation of how the systems have been installed; are a true representation of how the systems are operating at the completion of the testing, adjusting, and balancing procedures; and are an accurate record of all final quantities measured, to establish normal operating values of the systems. Follow the procedures and format specified below.
 - 1. Draft Reports: Upon completion of testing, adjusting, and balancing procedures, prepare draft reports on the approved forms. Draft reports may be hand written, but must be complete, factual, accurate, and legible. Organize and format draft reports in the same manner specified for the final reports. Submit 2 complete sets of draft reports. Only 1 complete set of draft reports will be returned.
 - 2. Final Report: Upon verification and approval of draft reports, prepare final reports, type written, and organized and formatted as specified below. Submit 4 complete sets of final reports.
 - 3. Report Format: Report forms shall be those standard forms prepared by the referenced standard for each respective item and system to be tested, adjusted, and balanced. Bind report forms complete with schematic systems diagrams and other data. Divide the contents of the binder into the below listed divisions, separated by divider tabs:
 - a. General Information and Summary
 - b. Air Systems
 - c. Temperature Control System Verification.
- F. Report Contents: Provide the following minimum information, forms, and data:
 - 1. General information and Summary: Inside cover sheet to identify testing, adjusting, balancing agency, Contractor, Owner, Engineer, and Project. Include addresses and contact names and telephone numbers. Also include a certification sheet containing the seal and name, address, telephone number, and signature of the Certified Test and Balance Engineer. Include in this division a listing of the instrumentation used for the procedures along with the instrument calibration sheet.
 - 2. The remainder of the report shall contain the appropriate forms containing as a minimum, the information indicated on the standard report forms prepared by the AABC or NEBB, for each respective item and system. Prepare a schematic diagram for each item of equipment and system to accompany each respective report form. The report shall contain the following information, and all other data resulting from the testing, adjusting, and balancing work:
 - a. All nameplate and specification data for all air handling equipment and motors.

- b. Actual metered running amperage for each phase of each motor on all pumps and air handling equipment.
 - c. Actual metered voltage at air handling equipment (phase-to-phase for all phases).
 - d. Fan RPM for each piece of air handling equipment.
 - e. Total actual CFM being handled by each piece of air handling equipment.
 - f. Actual CFM of systems by rooms.
 - 3. Certify that all smoke and fire dampers operate properly and can be reset under actual system operating conditions.
- G. Calibration Reports:
- 1. Submit proof that all required instrumentation has been calibrated to tolerances specified in the referenced standards, within a period of six months prior to starting the project.

1.4 CERTIFICATION

- A. Agency Qualifications:
- 1. Employ the services of a certified testing, adjusting, and balancing agency meeting the qualifications specified below, to be the single source of responsibility to test, adjust, and balance the building mechanical systems identified above, to produce the design objectives. Services shall include checking installations for conformity to design, measurement, and establishment of the fluid quantities of the mechanical systems as required to meet design specifications, recording and reporting the results, and operation of all systems to demonstrate satisfactory performance to the owner.
 - 2. The testing, adjusting, and balancing agency certified by National Environmental Balancing Bureau (NEBB) or Associated Air Balance Council (AABC) in those testing and balancing disciplines required for this project, and having at least one person certified by NEBB or AABC as a Test and Balance supervisor, and a registered professional mechanical engineer, licensed in the state where the work will be performed.
- B. Codes and Standard:
- 1. NEBB: "Procedural Standards for Testing, Adjusting, and Balancing of Environmental Systems."
 - 2. AABC: "National Standards for Total System Balance."
 - 3. ASHRAE: ASHRAE Handbook, 1984 Systems Volume, Chapter 37, Testing, Adjusting, and Balancing.

1.5 PROJECT CONDITIONS

- A. Systems Operation: Systems shall be fully operation and clean prior to beginning procedures.

1.6 SEQUENCING AND SCHEDULING

- A. Test, adjust, and balance the air systems before hydronic, steam, and refrigerant systems within +10% to -5% of contract requirements.
- B. The report shall be approved by the Engineer. Test and balance shall be performed prior to substantial completion.

PART 2 - NOT USED

PART 3 - EXECUTION

3.1 PRELIMINARY PROCEDURES FOR AIR SYSTEM BALANCING

- A. Before operating the system, perform these steps.
- 1. Obtain design drawings and specifications and become thoroughly acquainted with the design intent.
 - 2. Obtain copies of approved shop drawings of all air handling equipment, outlets (supply, return, and exhaust) and temperature control diagrams.
 - 3. Compare design to installed equipment and field installations.
 - 4. Walk the system from the system air handling equipment to terminal units to determine variations of installation from design.
 - 5. Check filters for cleanliness and to determine if they are the type specified.
 - 6. Check dampers (both volume and fire) for correct and locked position. Check automatic operating and safety controls and devices to determine that they are properly connected, functioning, and at proper operating setpoint.
 - 7. Prepare report test sheets for both fans and outlets. Obtain manufacturer's outlet factors and recommended procedures for testing. Prepare a summation of required outlet volumes to permit a cross-check with required fan volumes.
 - 8. Determine best locations in main and branch ductwork for most accurate duct traverses.
 - 9. Place outlet dampers in the full open position.

10. Prepare schematic diagrams of system "As-Built" ductwork and piping layouts to facilitate reporting.
11. Lubricate all motors and bearings.
12. Check fan belt tension.
13. Check fan rotation.

3.2 MEASUREMENTS

- A. Provide all required instrumentation to obtain proper measurements, calibrated to the tolerances specified in the referenced standards. Instruments shall be properly maintained and protected against damage.
- B. Provide instruments meeting the specifications of the referenced standards.
- C. Use only those instruments which have the maximum field measuring accuracy and are best suited to the function being measured.
- D. Apply instrument as recommended by the manufacturer.
- E. Use instruments with minimum scale and maximum subdivisions and with scale ranges proper for the value being measured.
- F. When averaging values, take a sufficient quantity of readings which will result in a repeatability error of less than 5%. When measuring a single point, repeat readings until 2 consecutive identical values are obtained.
- G. Take all readings with the eye at the level of the indicated value to prevent parallax.
- H. Use pulsation dampeners where necessary to eliminate error involved in estimating average of rapidly fluctuation readings.
- I. Take measurements in the system where best suited to the task.

3.3 PERFORMING TESTING, ADJUSTING, AND BALANCING

- A. Perform testing and balancing procedures on each system identified, in accordance with the detailed procedures outlined in the referenced standards. Balancing of the air systems and hydronic systems shall be achieved by adjusting the automatic controls, balancing valves, dampers, air terminal devices, and the fan/motor drives within each system.
- B. Cut insulation, ductwork, and piping for installation of test probes to the minimum extent necessary to allow adequate performance of procedures.
- C. Patch insulation, ductwork, and housings, using materials identical to those removed.
- D. Seal ducts and piping, and test for and repair leaks.
- E. Seal insulation to re-establish integrity of the vapor barrier.
- F. Adjust timing relays of environmental equipment motor reduced voltage starters to the optimum time period for the motor to come up to the maximum reduced voltage speed and then transition to the full voltage speed to prevent damage to motor, and to limit starting current spike to the lowest possible and practical.
- G. Mark equipment settings, including damper control positions, valve indicators, fan speed control levers, and similar controls and devices, to show final settings. Mark with paint or other suitable, permanent identification materials.
- H. Retest, adjust, and balance systems subsequent to significant system modifications, and resubmit test results.

3.4 RECORD AND REPORT DATA

- A. Record all data obtained during testing, adjusting, and balancing in accordance with, and on the forms recommended by the referenced standards, and as approved on the sample report forms.
- B. Prepare report of recommendations for correcting unsatisfactory mechanical performances when system cannot be successfully balanced.
- C. Report shall be certified and stamped by a registered professional mechanical engineer employed by the agency and

licensed in the state where the work will be performed.

- D. Engineer is to provide a floor plan and test and balance contractor to include the plan in test and balance report and identify actual cfm on drawing or number the diffusers to match report.

3.5 DEMONSTRATION

- A. If requested, testing, adjusting, and balancing agency shall conduct any or all of the field tests in the presence of the engineer.
- B. Agency shall include a maximum of one (1) call back to the project within the one year warranty period to make additional adjustments if requested by the engineer.

END OF SECTION 230593

SECTION 230712 - MECHANICAL INSULATION AND FIRE STOPPING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings, General Provisions of Contract, including General and Supplementary Conditions and Section 23 0501 apply to this Section.

1.2 SUMMARY

- A. Furnish and install mechanical insulation and fire stopping as described in Contract Documents including but not limited to the following:
 - 1. Fire Stopping

1.3 QUALITY ASSURANCE

- A. Insulation shall have composite (insulation, jacket or facing and adhesive used to adhere facing or jacket to insulation) fire and smoke hazard ratings as tested by Procedure ASTM E-84, NFPA 255 and UL 723 not exceeding: Flame Spread of 25 and Smoke Developed of 50.
- B. Insulation Contractor shall certify in writing, prior to installation, that all products to be used will meet the above criteria.
- C. Accessories, such as adhesives, mastics, cements, and tapes, for fittings shall have the same component ratings as listed above.
- D. Products, or their shipping cartons, shall bear a label indicating that flame and smoke ratings do not exceed above requirements.
- E. Any treatment of jacket or facings to impart flame and smoke safety shall be permanent.
- F. The use of water-soluble treatments is prohibited.

END OF SECTION 230712

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SECTION 230800 – FIRE STOPPING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings, General Provisions of Contract, including General and Supplementary Conditions and Section 23 0501 apply to this Section.

1.2 SUMMARY

- A. Furnish and install fire stopping as described in Contract Documents.

1.3 QUALITY ASSURANCE

- A. Fire stopping material shall meet ASTM E814, E84 and be UL listed.

PART 2 - PRODUCTS

2.1 MANUFACTURED UNITS

- A. Material shall be flexible, long lasting, intumescent acrylic seal to accommodate vibration and building movement.
- B. Caulk simple penetrations with gaps of 1/4" or less with:
 - 1. Dow Corning Fire Stop Sealant
 - 2. Pensil 300
- C. Caulk multiple penetrations and/or penetrations with gaps in excess of 1/4" with:
 - 1. Dow Corning Fire Stop Foam
 - 2. Pensil 200
 - 3. IPC flame safe FS-1900
 - 4. Tremco "Tremstop 1A"

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Follow manufacturer's installation instructions explicitly.
- B. Seal penetrations of ductwork, piping, and other mechanical equipment through one-hour and two-hour rated partitions as shown on Architectural and Mechanical Drawings.
- C. Install fire stopping material on clean surfaces to assure adherence.

END OF SECTION 230800

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SECTION 233400 - EXHAUST FANS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings, General Provisions of Contract, including General and Supplementary Conditions and Section 23 0501 apply to this Section.

1.2 SUMMARY

- A. Furnish and install exhaust fans as described in Contract Documents.

1.3 QUALITY ASSURANCES

- A. Requirements of Regulatory Agencies:
 - 1. Bear AMCA seal and UL label.

PART 2 - PRODUCTS

2.1 CEILING MOUNTED EXHAUST FANS

- A. Acoustically insulated housings.
- B. Sound level rating of 4.6 sones maximum for fan RPM and CFM listed on Drawings.
- C. Include chatterproof integral back-draft damper with no metal to metal contact.
- D. True centrifugal wheels.
- E. Entire fan, motor, and wheel assembly shall be easily removable without disturbing housing.
- F. Suitably ground motors and mount on rubber-in shear vibration isolators.
- G. Provide wall or roof cap, as required.
- H. Approved Manufacturers:
 - 1. Cook-Gemini
 - 2. Greenheck Sp
 - 3. Pace
 - 4. Penn Zephyr
 - 5. Broan

2.2 WALL MOUNTED EXHAUST FANS

- A. Direct drive or have adjustable pitch V-belt as noted on Drawings.
- B. Wheels shall be backward curved and housing shall be removable or hinged aluminum.
- C. Isolate motor with vibration dampeners.
- D. Provide quiet type back-draft dampers.
- E. Insulated, pre-fabricated metal wall curb.
- F. Approved Manufacturers:
 - 1. Fans:
 - a. Penn
 - b. Centri-Master
 - c. Cook
 - d. Greenheck G, GB

- e. Broan

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Anchor fan units securely to structure or curb.

END OF SECTION 233400

SECTION 236220 – ROOFTOP HEATING-COOLING UNIT

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings, General Provisions of Contract, including General and Supplementary Conditions and Section 23 0501 apply to this Section.

1.2 QUALITY ASSURANCE

- A. Unit shall be AGA certified.

1.3 WARRANTY

- A. Provide five-year warranty on compressors.

PART 2 - PRODUCTS

2.1 MANUFACTURED UNITS

- A. Unit shall be one piece combination air-to-air DX mechanical cooling system and gas fired heating system complete with automatic controls.
- B. Equipment shall be shipped completely assembled, pre-charged, piped and wired internally ready for field connections.
- C. Roof mounting frame shall be furnished and installed. Frame shall be steel and mate to bottom perimeter of equipment. When flashed into roof, it shall make a unit mounting curb and provide weather-proof duct connection and entry into conditioning area.
- D. Power Saver: (Fresh Air Dampers)
 - 1. Provide complete with all controls and air mixing damper assembly, including fresh air, recirculated air, and exhaust air dampers.
 - 2. Fresh air section shall be equipped with air filters.
 - 3. Mixing box sections shall contain low leakage dampers with edge seals and inflatable blade seals.
- E. Cooling System:
 - 1. Coils shall be non-ferrous construction with aluminum fins mechanically bonded to seamless copper tubes.
 - 2. Condenser coil shall have sub-cooling rows.
 - 3. Compressor shall be resiliently mounted, have built-in 3-mode crankshaft lubrication, crankcase heater, discharge temperature limiter, current and temperature sensing motor overloads.
 - 4. Cooling system shall be protected by high and low pressure switches and compressor timed off control.
 - 5. Provide with hail guard over condenser coil.
- F. Heating System:
 - 1. Automatic controls furnished to give 50/50 2-stage operation.
 - 2. Cylindrical tube and drum exchanger constructed of Duraglas coated steel or stainless steel.
 - 3. Stainless steel burner listed for operation at low outdoor air temperatures.
 - 4. Visual inspection of burner flame possible through observation port at rear of heat exchanger.
 - 5. Power vented.
- G. Air Movers:
 - 1. Twin centrifugal conditioned air blowers with permanently lubricated ball bearings, adjustable belt drive or direct drive as shown on drawings.
 - 2. Condenser fans shall be direct driven.
 - 3. Motors shall have inherent protection devices.
- H. Frame and Casing:
 - 1. Frame shall be welded construction.
 - 2. Casing shall be galvanized panels with baked-on outdoor enamel finish.
 - 3. Entire cabinet shall be insulated with 1" thick fiberglass.
 - 4. Provide coil guards on exposed condenser coils.

- I. Furnish two sets of 2" throw away filters.
- J. Approved Manufacturers:
 - 1. Lennox
 - 2. Trane
 - 3. Carrier

PART 3 - EXECUTION

3.1 FIELD QUALITY CONTROL

- A. Provide manufacturer's startup and warranty.

END OF SECTION 236220

END OF DIVISION 23

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DIVISION 26 – ELECTRICAL

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SECTION 26 0501 - COMMON ELECTRICAL REQUIREMENTS

PART 1 - GENERAL

1.1 SUMMARY

- A. Includes But Not Limited To:
 - 1. General electrical system requirements and procedures.
 - 2. Perform excavating and backfilling work required by work of this Division as described in Contract Documents.
 - 3. Make electrical connections to equipment provided under other Sections.
 - 4. Furnish and install Penetration Firestop Systems at electrical system penetrations as described in Contract Documents.
- B. Related Sections:
 - 1. Division 07: Quality of Penetration Firestop Systems to be used on Project and submittal requirements.

1.2 SUBMITTALS

- A. Product Data:
 - 1. Provide following information for each item of equipment:
 - a) Catalog Sheets.
 - b) Assembly details or dimension drawings.
 - c) Installation instructions.
 - d) Manufacturer's name and catalog number.
 - e) Name of local supplier.
 - 2. Furnish such information for following equipment:
 - a) Section 26 2417: Panelboards
 - b) Section 26 2726: Wiring devices.
 - c) Section 26 2816: Enclosed switches and circuit breakers.
 - d) Section 26 5100: Interior lighting fixtures.
 - e) Section 26 5600: Exterior lighting fixtures
 - 3. Do not purchase equipment before approval of product data.
 - 4. Submit in three-ring binder with hard cover (six sets)
- B. Quality Assurance / Control:
 - 1. Report of site tests, before Substantial Completion.

1.3 QUALITY ASSURANCE

- A. Requirements of Regulatory Agencies:
 - 1. NEC and local ordinances and regulations shall govern unless more stringent requirements are specified.
 - 2. Material and equipment provided shall meet standards of NEMA or UL, or ULC, CSA, or EEMAC and bear their label wherever standards have been established and label service is available.
- B. Materials and equipment provided under following Sections shall be by same Manufacturer:
 - 1. Sections 26 2416, 26 2816, and 26 2913: Panelboards, Enclosed Switches And Circuit Breakers, and Enclosed Controllers.
- C. Contractor shall obtain all permits and arrange all inspections required by local codes and ordinances applicable to this Division.

1.4 OWNER'S INSTRUCTIONS

- A. Provide competent instructor for time required to adequately train maintenance personnel in operation and maintenance of electrical equipment and systems. Factory representatives shall assist this instruction as necessary. Schedule instruction period at time of final inspection.

1.5 OPERATION AND MAINTENANCE MANUALS

- A. Prepare and submit (4) four complete copies of the O & M Manuals—manuals to contain information listed below. Place each manual in a tabbed three-ring binder upon completion of the project.
 - 1. Operation and Maintenance manual must contain the following items:
 - a) Copies of reviewed shop drawings.
 - b) Letter of 1-year guarantee of workmanship.
 - c) Copy of voltage and ammeter readings.
 - d) Copy of letter verifying owner's receipt of spare parts.

1.6 GUARANTEE

- A. The following guarantee is a part of this specification and shall be binding on the part of the Contractor:

"The Contractor guarantees that this installation is free from mechanical defects. He agrees to replace or repair, to the satisfaction of the Owner's Representative, any part of this installation which may fail or be determined unacceptable within a period of one (1) year after final acceptance."

1.7 RECORD DRAWINGS

- A. During the course of construction, the Electrical Contractor shall maintain a set of drawings upon which all deviations from the original layout are recorded. These marked-up prints shall be turned over to the Architect/Engineer at the conclusion of the work.

PART 2 - PRODUCTS: Not Used

PART 3 - EXECUTION

3.1 EXAMINATION

- A. All relocations, reconnections, and removals are not necessarily indicated on Drawings. All such work shall be included without additional cost to Owner.
- B. Confirm dimensions, ratings, and specifications of equipment to be installed and coordinate these with site dimensions and with other Sections.

3.2 INSTALLATION

- A. General:
 - 1. Locations of electrical equipment shown on Drawings are approximate only. Field verify actual locations for proper installation.
 - 2. Coordinate electrical equipment locations and conduit runs with those providing equipment to be served before installation or rough-in.
 - a. Notify Architect of conflicts before beginning work.
 - b. Coordinate locations of power and lighting outlets in mechanical rooms and other areas with mechanical equipment, piping, ductwork, cabinets, etc, so they will be readily accessible and functional.
 - 3. Work related to other trades which is required under this Division, such as cutting and patching, trenching, and backfilling, shall be performed according to standards specified in applicable Sections.

- B. Install Penetration Firestop System appropriate for penetration at electrical system penetrations through walls, ceilings, and top plates of walls.

3.3 FIELD QUALITY CONTROL

- A. Site Tests: Test systems and demonstrate equipment as working and operating properly. Notify Architect before test. Rectify defects at no additional cost to Owner.
- B. Measure current for each phase of each motor under actual final load operation, i.e. after air balance is completed for fan units, etc. Record this information along with full-load nameplates current rating and size of thermal overload unit installed for each motor.

END OF SECTION

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SECTION 26 0502 - ELECTRICAL DEMOLITION REQUIREMENTS

PART 1 - GENERAL

1.1 SUMMARY

- A. Drawings and general provisions of Contract, including General and Supplementary Conditions and Division 1 Specification sections, apply to work of this section.
- B. Includes But Not Limited To
 - 1. Demolition involving electrical system as described in Contract Documents.
- C. Related Sections
 - 1. Section 260501 – Common Electrical Requirements
 - 2. New and replacement work specified in appropriate specification Section.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. All relocations, reconnections, and removals are not necessarily indicated on Drawings. All such work shall be included without additional cost to Owner.

3.2 PREPARATION

- A. Disconnect equipment that is to be removed or relocated. Carefully remove, disassemble, or dismantle as required, and store in approved location on site, existing items to be reused in completed work.
- B. Where affected by demolition or new construction, relocate, extend, or repair raceways, conductors, outlets, and apparatus to allow continued use of electrical system. Use methods and materials as specified for new construction.

3.3 PERFORMANCE

- A. Perform drilling, cutting, block-offs, and demolition work required for removal of necessary portions of electrical system. Do not cut joists, beams, girders, trusses, or columns without prior written permission from Architect.
- B. Remove concealed wiring abandoned due to demolition or new construction. Remove circuits, conduits, and conductors that are not to be re-used back to next active fixture, device, or junction box.
- C. Patch, repair, and finish surfaces affected by electrical demolition work, unless work is specifically called for under other Sections of the specifications.

3.4 CLEANING

- A. Remove obsolete raceways, conductors, apparatus, and lighting fixtures promptly from site and dispose of legally.

END OF SECTION

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SECTION 26 0519 - LINE VOLTAGE CONDUCTORS AND CABLES

PART 1 - GENERAL

1.1 SUMMARY

- A. Includes But Not Limited To:
 - 1. Quality of conductors used on Project except as excluded below.
- B. Related Sections:
 - 1. Section 26 0501: Common Electrical Requirements.

1.2 DEFINITIONS

- A. Line Voltage: Over 70 Volts.

PART 2 - PRODUCTS

2.1 COMPONENTS

- A. Line Voltage Conductors:
 - 1. Copper with AWG sizes as shown:
 - a. Minimum size shall be No. 12 except where specified otherwise.
 - b. Conductor size No. 8 and larger.
 - 2. Insulation:
 - a. Standard Conductor Size No. 10 And Smaller: 600V type THWN or XHHW (75 deg C).
 - b. Standard Conductor Size No. 8 And Larger: 600V Type THW, THWN, or XHHW (75 deg C).
 - c. Higher temperature insulation as required by NEC or local codes.
 - d. Type TC cable is acceptable for use in cable trays only.
 - 3. Colors:
 - a. Refer to Section 26 0553 Electrical Identification for colors for conductors.
 - b. Conductors size No. 10 and smaller shall be colored full length. Tagging or other methods for coding of conductors size No. 10 and smaller not allowed.
 - c. For feeder conductors larger than No. 10 at pull boxes, gutters, and panels, use painted or taped band or color tag color-coded as specified above.
- B. Standard Connectors:
 - 1. Conductors No. 8 And Smaller: Steel spring wire connectors.
 - 2. Conductors Larger Than No. 8: Pressure type terminal lugs.
 - 3. Connections Outside Building: Watertight steel spring wire connections with waterproof, non-hardening sealant.
- C. Terminal blocks for tapping conductors:
 - 1. Terminals shall be suitable for use with 75 deg C copper conductors.
 - 2. Acceptable Products:
 - a. 16323 by Cooper Bussmann, St Louis, MO www.bussmann.com
 - b. LBA363106 by Square D Co, Palatine, IL www.squared.com.
 - c. Equal as approved by Engineer before bidding.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. General:
 - 1. Conductors and cables shall be continuous from outlet to outlet.
 - 2. Do not use direct burial cable.
- B. Line Voltage Conductors (Over 70 Volts):
 - 1. Install conductors in raceway except where specifically indicated otherwise. Run conductors of different voltage systems in separate conduits.
 - 2. Route circuits at own discretion, however, circuiting shall be as shown in Panel Schedules. Group circuit homeruns to panels as shown on Drawings.
 - 3. Multi-wire Branch Circuits (Common Neutral) shall **NOT** be utilized, a dedicated neutral shall be ran with every homerun circuit.
 - 4. Pulling Conductors:
 - a. Do not pull conductors into conduit until raceway system is complete and cabinets and outlet boxes are free of foreign matter and moisture.
 - b. Do not use heavy mechanical means for pulling conductors.
 - c. Use only listed wire pulling lubricants.

END OF SECTION

SECTION 26 0533 - RACEWAY AND BOXES FOR ELECTRICAL SYSTEMS

PART 1 - GENERAL

1.1 SUMMARY

- A. Includes But Not Limited To:
 - 1. Quality of material and installation procedures for raceway, boxes, and fittings used on Project but furnished under other Divisions.
 - 2. Furnish and install raceway, conduit, and boxes used on Project not specified to be installed under other Divisions.
 - 3. Furnish and install main telephone service raceway as described in Contract Documents and to comply with telephone company requirements.
 - 4. Furnish and install main electrical service raceway to comply with electrical utility company requirements.
- B. Related Sections
 - 1. Section 26 0501: General Electrical Requirements.

PART 2 - PRODUCTS

2.1 COMPONENTS

- A. Raceway And Conduit:
 - 1. Minimum Sizes:
 - a. 3/4 inch for exterior underground use.
 - b. 3/4 inch minimum Homeruns, 1/2" minimum elsewhere, unless indicated otherwise.
 - 2. Types: Usage of each type is restricted as specified below by product.
 - a. Galvanized rigid steel (RMC) or galvanized intermediate metal conduit (IMC) is allowed for use in all areas. Where in contact with earth or concrete, wrap buried galvanized rigid steel and galvanized IMC conduit and fittings completely with vinyl tape.
 - b. Galvanized Electrical Metallic Tubing (EMT):
 - 1) Allowed for use only in indoor dry locations where it is:
 - a) Not subject to damage.
 - b) Not in contact with earth.
 - c) Not in concrete.
 - 2) Flexible steel conduit or metal-clad cable required for final connections to indoor mechanical equipment.
 - 3) Flexible steel conduit or metal-clad cable required for final connections to indoor mechanical equipment.
 - c. Schedule 40 Polyvinyl Chloride (PVC) Conduit:
 - 1) Allowed for use only underground or below concrete with galvanized rigid steel or IMC elbows and risers.
 - d. Listed, Liquid-Tight Flexible Metal Conduit:
 - 1) Use in outdoor final connections to mechanical equipment, length not to exceed 36 inches.
 - 3. Prohibited Raceway Materials:
 - a. Aluminum conduit.
 - b. Armored cable type AC (BX) cable.
- B. Raceway And Conduit Fittings:
 - 1. Rigid Steel Conduit And IMC: Threaded and designed for conduit use.
 - 2. EMT:
 - a. Compression type where exposed.
 - b. Steel set screw housing type, interior dry, concealed locations.
 - 3. PVC Conduit:

- a. PVC type. Use PVC adapters at all boxes.
 - b. PVC components, (conduit, fittings, cement) shall be from same Manufacturer.
- 4. Flexible Steel Conduit: Screw-in type.
- 5. Liquid-tight Flexible Metal Conduit: Sealite type.
- 6. Expansion fittings shall be equal to OZ Type AX sized to raceway and including bonding jumper.
- 7. Prohibited Fitting Materials:
 - a. Crimp-on, tap-on, indenter type fittings.
 - b. Cast set-screw fittings for EMT.
 - c. Spray (aerosol) PVC cement.
- C. Sheet Metal Outlet and Device Boxes: Comply with NEMA OS 1 and UL 514A.
 - 1. Provide metal supports and other accessories for installation of each box.
 - 2. Equip ceiling and bracket fixture boxes with fixture studs where required.
 - 3. Equip outlets in plastered, paneled, and furred finishes with plaster rings and extensions to bring box flush with finish surface.
 - 4. Telephone / data outlet boxes shall be 4sq. deep boxes with single-gang mudring where two or more cables come to one box.

2.2 MANUFACTURERS

- A. Contact Information:
 - 1. Cooper B-Line, Highland, IL www.bline.com.
 - 2. Hubbell Incorporated, Milford, CT www.hubbell-wiring.com.
 - 3. Square D, Palatine, IL www.squared.com.
 - 4. Steel City, Div Thomas & Betts, Memphis, TN www.tnb.com.
 - 5. Thomas & Betts, Memphis, TN www.tnb.com.
 - 6. Walker Systems Inc, Williamstown, www.wiremold.com.
 - 7. Wiremold Co, West Hartford, CT www.wiremold.com.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Confirm dimensions, ratings, and specifications of materials to be installed and coordinate these with site dimensions and with other Sections.

3.2 INSTALLATION

- A. Interface With Other Work:
 - 1. Coordinate with Divisions 22 and 23 for installation of raceway for control of plumbing and HVAC equipment.
 - 2. Before rough-in, verify locations of boxes with work of other trades to insure that they are properly located for purpose intended.
 - a. Coordinate location of outlet for water cooler with Division 22.
 - b. Coordinate location of outlets adjacent to or in millwork with Division 06 before rough-in. Refer conflicts to Architect and locate outlet under his direction.
 - 3. Coordinate installation of floor boxes in carpeted areas with carpet installer to obtain carpet for box doors.
 - 4. Install pull wires in raceways installed under this Section where conductors or cables are to be installed under other Divisions.
- B. Conduit And Raceway:
 - 1. Conceal raceways within ceilings, walls, and floors, except at Contractor's option, conduit may be exposed on walls or ceilings of mechanical equipment areas and above acoustical panel suspension ceiling systems. Install exposed raceway runs parallel to or at right angles to building structure lines.
 - 2. Keep raceway runs 6 inches minimum from hot water pipes.
 - 3. Make no more than four quarter bends, 360 degrees total, in any conduit run between outlet and outlet, fitting and fitting, or outlet and fitting.

- a. Make bends and offsets so conduit is not injured and internal diameter of conduit is not effectively reduced.
 - b. Radius of curve shall be at least minimum indicated by NEC.
4. Cut conduit smooth and square with run and ream to remove rough edges. Cap raceway ends during construction. Clean or replace raceway in which water or foreign matter have accumulated.
5. Install insulated bushings on each end of raceway 1-1/4 inches in diameter and larger, and on all raceways where low voltage cables emerge. Install expansion fittings where raceways cross building expansion joints.
6. Run two spare conduits from each new panelboard to ceiling access area or other acceptable accessible area and cap for future use.
7. Route conduit through roof openings for piping and ductwork where possible; otherwise. All roof penetrations shall be flashed, counter flashed and sealed per Roofing Contractor. Coordinate all roof penetrations with the Roofing Contractor.
8. Provide nylon pull string with printed footage indicators secured at each end of each empty conduit, except sleeves and nipples. Identify with tags at each end the origin and destination of each empty conduit, and indicate same on all empty or spare conduits on the as-built drawings.
9. Install expansion-deflection joints where conduit crosses building expansion, seismic, or structural isolation break (SIB) joints.
10. Where conduit penetrates fire-rated walls and floors, seal opening around conduit with UL-listed foamed silicone elastomer compound. Fill void around perimeter of conduits with nonmetallic nonshrink grout in all concrete or masonry walls.
11. Bend PVC conduit by hot box bender and, for PVC 2 inches in diameter and larger, expanding plugs. Apply PVC adhesive only by brush.
12. Installation In Framing:
 - a. Do not bore holes in joists or beams outside center 1/3 of member depth or within 24 inches of bearing points. Do not bore holes in vertical framing members outside center 1/3 of member width.
 - b. Holes shall be one inch diameter maximum.
13. Underground Raceway And Conduit:
 - a. Bury underground raceway installed outside building 24 inches deep minimum.
 - b. Bury underground conduit in planting areas 18 inches deep minimum. It is permissible to install conduit directly below concrete sidewalks, however, conduit must be buried 18 inches deep at point of exit from planting areas.
14. Conduit And Raceway Support:
 - a. Securely support raceway with approved straps, clamps, or hangers, spaced as required.
 - b. Do not support from mechanical ducts or duct supports without Architect's written approval. Securely mount raceway supports, boxes, and cabinets in an approved manner by:
 - 1) Expansion shields in concrete or solid masonry.
 - 2) Toggle bolts on hollow masonry units.
 - 3) Wood screws on wood.
 - 4) Metal screws on metal.
15. Prohibited Procedures:
 - a. Use of wooden plugs inserted in concrete or masonry units for mounting raceway, supports, boxes, cabinets, or other equipment.
 - b. Installation of raceway that has been crushed or deformed.
 - c. Use of torches for bending PVC.
 - d. Spray applied PVC cement.
 - e. Boring holes in truss members.
 - f. Notching of structural members.
 - g. Supporting raceway from ceiling system support wires.

C. Boxes:

1. Boxes shall be accessible and installed with approved cover.
2. Do not locate device boxes that are on opposite sides of framed walls in the same stud space. In other wall construction, do not install boxes back to back.
3. Locate boxes so pipes, ducts, or other items do not obstruct outlets.
4. Install outlets flush with finished surface and level and plumb.
5. Support switch boxes larger than two-gang with side brackets and steel bar hangers in framed walls.
6. At time of substantial completion, install blank plates on uncovered outlet boxes that are for future use.
7. Install air / vapor barrier back boxes behind outlet boxes that penetrate vapor barrier.
8. Location:
 - a. Install boxes at door locations on latch side of door, unless explicitly shown otherwise on Drawings. Verify door swings shown on electrical drawings with architectural drawings, and report discrepancies

to Architect before rough-in. Distance of switch boxes from jamb shall be within 6 inches of door jamb.

- b. Arrange boxes for ceiling light fixtures symmetrically with respect to room dimensions and structural features.
- c. Properly center boxes located in walls with respect to doors, panels, furring, trim and consistent with architectural details. Where two or more outlets occur, space them uniformly and in straight lines with each other, if possible.
- d. Center ceramic tile boxes in tile.

END OF SECTION

SECTION 26 0553-ELECTRICAL IDENTIFICATION

PART 1 - GENERAL

1.01 WORK INCLUDED

- A. Nameplates and labels.
- B. Wire and cable markers.

1.02 RELATED WORK

- A. This Section shall be used in conjunction with the following other specifications and related Contract Documents to establish the total requirements for electrical identification.
 - 1. Section 26 0501 - Basic Electrical Requirements
- B. In the event of conflict regarding electrical identification requirements between this Section and any other section, the provisions of this Section shall govern.

PART 2 - PRODUCTS

2.01 MATERIALS

- A. Nameplates: Engraved three-layer laminated plastic, minimum 3/16 inch high white letters on a black background.
- B. Nameplates (Emergency Equipment): Engraved three-layer laminated plastic, minimum 3/16 inch high white letters on a red background.
- C. Wire and Cable Markers: Split sleeve or tubing type. Cloth or wraparound adhesive types not approved.
- D. Conductor-color Tape: Colored vinyl electrical tape.

PART 3 - EXECUTION

3.01 INSTALLATION

- A. Degrease and clean surfaces to receive nameplates.
- B. Install nameplates and labels parallel to equipment lines.
- C. Secure nameplates to equipment fronts. Secure nameplate to outside face of panelboard doors.
- D. Embossed tape will not be permitted for any application.
- E. Electrical Contractor shall write the circuit number to which each device is connected on the inside of the box (clearly visible when device is removed) and on the backside of each coverplate. Use a permanent black marker.

3.02 WIRE IDENTIFICATION

- A. Conductors for power circuits to be identified per the following schedule.

<u>Conductor</u>	<u>System Voltage</u>	
	<u>480Y/277V</u>	<u>208Y/120V</u>
Phase A	Brown	Black
Phase B	Orange	Red
Phase C	Yellow	Blue
Neutral	Grey	White
Grounding	Green	Green
Isolated Ground	Green with yellow stripe	Green with yellow stripe
Switchleg (lighting)	Purple	Pink

3.03 NAME PLATE ENGRAVING SCHEDULE

- A. Provide nameplates of minimum letter height as scheduled below.

- B. Panelboards, Switchboards and Motor Control Centers:
- 1st Line - Equipment Name: 1/4 inch Lettering.
 - 2nd Line - Voltage Rating: 3/16 inch Lettering
 - 3rd Line - Feed Source: 3/16 inch Lettering
 - Nameplate Examples:

PANEL: HA
480Y/277V
FEED FROM:
MSB-2

SWBD: MSB
480Y/277V
FEED FROM:
UTIL.

MCC-A: SEC. 1
480V-3P
FEED FROM:
MSB-2

- C. Individual Circuit Breakers, Switches, and Motor Starters in Switchboards, and Motor Control Centers:
- 1st Line - Load Served: 1/4 inch Lettering.
 - 2nd Line - Location of Load: 3/16 inch Lettering
 - Nameplate Examples:

PUMP: P-1
MECH. RM 112

- D. Individual Circuit Breakers, Enclosed Switches, and Motor Starters:
- 1st Line - Load Served: 1/4 inch Lettering.
 - 2nd Line - Voltage Rating: 3/16 inch Lettering
 - 3rd Line - Feed Source: 3/16 inch Lettering
 - Nameplate Examples:

FAN: F-1
480V-3P
FEED FROM: HM-
1,3,5

- E. Transformers: 3/16 inch; identify equipment designation. 1/8 inch; identify primary and secondary voltages, primary source, and secondary load and location.
1. 1st Line - Equipment Name: 3/16 inch Lettering.
 2. 2nd Line - Voltage Rating: 1/8 inch Lettering
 3. 3rd Line - Feed Source: 1/8 inch Lettering
 4. Nameplate Example:

<p>XFMR:TA</p> <p>480-208Y/120V</p> <p>FEED FROM: HA-2</p> <p>SUPPLIES: PNL</p> <p>LA</p>
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END OF SECTION

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SECTION 26 2726 - WIRING DEVICES

PART 1 - GENERAL

1.01 WORK INCLUDED

- A. Wall switches.
- B. Receptacles.
- C. Device plates and box covers.
- D. Cords and caps.

1.02 RELATED WORK

- A. This Section shall be used in conjunction with the following other specifications and related Contract Documents to establish the total requirements for wiring devices.
 - 1. Section 26 0501 - Basic Electrical Requirements.
- B. In the event of conflict regarding requirements for wiring devices between this Section and any other section, the provisions of this Section shall govern.

1.03 DESIGN REQUIREMENTS

- A. FS W-C-596 - Electrical Power Connector, Plug, Receptacle, and Cable Outlet.
- B. FS W-S-896 - Switch, Toggle.
- C. NEMA WD 1 - General Requirements for Wiring Devices.
- D. NEMA WD 6 - Wiring Devices - Dimensional Requirements.

PART 2 - PRODUCTS

2.01 WALL SWITCHES

- A. Acceptable Manufacturers:

MFG.	1-Pole	3-Way	4-Way	Pilot Light
Hubbell	1221-*	1223-*	1234-*	1221-P1 *
P & S	PS20AC1-*	PS20AC3-*	PS20AC4-*	
Leviton	1221-*	1223-*	1224-*	
Cooper	AH1221-*	AH1223-*	AH1224-*	AH1221LT

- B. Wall Switches for Lighting Circuits shall meet Federal Spec WS-896.
 - 1. AC general use snap switch with toggle rocker handle, Screw type terminals only.
 - 2. 20 Amperes and 120-277 Volts AC rated .
 - 3. *Color: As selected by Owner/Architect, Red if connected to an Emergency Circuit. (Standard colors shall include brown, gray, ivory, black or a white for all devices.)
- C. Pilot Light Type: Red pilot handle; handle lighted when switch is ON.
- D. Provide 3-way and 4-way switches of matching style, appearance and specification as indicated on drawings.

2.02 RECEPTACLES

- A. Acceptable Manufacturers:

STANDARD

MFG	Duplex	GFI	USB	Tamper
Hubbell	HBL5352*	GF20*L	USB20X2*	BR20*TR
P & S	5362*	2095-*		TR5362*
Leviton	5362*			
Cooper	5352*	VGF20*-AG	TR7746*	TR5362*

HOSPITAL GRADE				
MFG	Duplex	GFI	USB	Tamper
Hubbell	HBL8300H*	GFR8300H*L	USB8300*	
P & S	8300H*	2095HG*		TR63H*
Leviton	8300-H*			
Cooper	8300*	VGFH20*	TR8345*	TR8300*

- B. Convenience and Straight-blade Receptacles: NEMA WD 1, Heavy Duty Specification Grade.
- C. Locking-Blade Receptacles: NEMA WD 5.
- D. Convenience Receptacle Configuration: NEMA WD 1; Type 5-20R.
 - 1. *Color: As selected by Owner/Architect. Receptacles on Emergency circuit shall be Red in color. (Standard colors shall include brown, gray, ivory, black and white for all devices.)
- E. Weatherproof Receptacles: GFI, UL weather-resistant listed Receptacle mounted in a cast steel box with gasketed, weatherproof device plate and In-Use Cover.
- F. Specific-use Receptacle Configuration: NEMA WD 1 or WD 5; type as indicated on Drawings, brown nylon face.
- G. GFCI Receptacles: Duplex convenience receptacle with integral ground fault current interrupter. NEMA Type 5-20R.
 - 1. *Color: As selected by Owner/Architect. Receptacles on Emergency circuit shall be Red in color. (Standard colors shall include brown, gray, ivory, black and white for all devices.)
 - 2. Feed-through type for downstream device protection.
 - 3. All receptacles indicated to be installed in a toilet room, bathroom, roof top, and outdoors or within 6 feet of a sink, basin, tub or floor sink shall be GFCI protected

2.03 SPECIFIC PURPOSE RECEPTACLES

- A. NEMA WD 1 or WD 5; type as indicated on Drawings.
- B. Isolated Ground Type: Straight blade type 5-20R as indicated on the Drawings. Grey nylon face.
- C. Twist lock type. NEMA configuration as shown on the Drawings.

2.04 WALL PLATES

- A. Color shall match device: As selected by Owner/Architect. Receptacles on Emergency circuit shall be Red in color. (Standard colors shall include brown, gray, ivory, black and white for all devices.)
- B. Material:
 - 1. Finished Spaces: Stainless Steel
 - 2. Unfinished Spaces: Galvanized Steel
- C. All isolated ground receptacle covers shall bear the engraved phrase "ISOLATED GROUND".
- D. Engraved Plates: Same plate as specified herein. Provide with engraved characters 1/8 inch high characters (all letters in upper case) with filler of black color.

- E. Weatherproof Cover Plate: Gasketed cast metal with hinged gasketed device covers.

2.05 CORDS AND CAPS

- A. Acceptable Manufacturers:
 - 1. Hubbell.
 - 2. Leviton.
 - 3. Pass and Seymour.
 - 4. Cooper
- B. Straight-blade Attachment Plug: NEMA WD 1.
- C. Locking-blade Attachment Plug: NEMA WD 5.
- D. Attachment Plug Configuration: Match receptacle configuration at outlet provided for equipment.
- E. Cord Construction: Oil-resistant thermoset insulated Type SO multiconductor flexible cord with identified equipment grounding conductor, suitable for hard usage in damp locations.
- F. Cord Size: Suitable for connected load of equipment and rating of branch circuit overcurrent protection.

PART 3 - EXECUTION

3.01 INSTALLATION

- A. Install wall switches 48 inches AFF, OFF position down.
- B. Install convenience receptacles 18 inches AFF, 4 inches above backsplash, or as noted, in a vertical position with grounding pole down.
- C. Install specific-use receptacles at heights shown on Contract Drawings.
- D. Install convenience receptacles in 4 square box in a vertical position with the ground pole down.

END OF SECTION

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SECTION 26 5100 - INTERIOR LIGHTING

PART 1 GENERAL

1.1 SUMMARY

A. SECTION INCLUDES

1. Interior luminaires and accessories
2. Lamps
3. Ballasts

B. DEFINITIONS:

1. Luminaire: A luminaire is a complete lighting unit including light source(s) and parts required to distribute the light, position and protect the light source(s), and connect the light source(s) to the power supply.
2. Average Life: The time after which 50 percent will have failed and 50 percent will have survived under specified operating and starting condition.
3. Total harmonic distortion (THD): The root mean square (RMS) of all the harmonic components divided by the fundamental current.

1.2 SUBMITTALS

A. Submit the following in accordance with project submittal procedures:

1. Catalog Data: Submit catalog data describing luminaires, lamps, and ballasts. Include data substantiating that materials comply with specified requirements. Arrange data for luminaires in the order of fixture designation.
2. Performance Curves/Data:
 - a. Submit certified photometric data for each type of luminaire.
 - b. Submit supply-air, return-air, heat-removal, and sound performance data for air handling luminaires.
3. Drawings: Submit shop drawings for non-standard luminaires.

1.3 QUALITY ASSURANCE

- A. Comply with the *National Electrical Code* (NEC) and the *International Building Code* (IBC) for components and installation.
- B. Provide luminaires listed and labeled by a nationally recognized testing laboratory (NRTL) for the application, installation condition, and the environments in which installed.
- C. Use manufacturers that are experienced in manufacturing luminaires, lamps and ballasts similar to those indicated for this Project and have a record of successful in-service performance.
- D. Coordinate luminaires, mounting hardware and trim with the ceiling system.

1.4 WARRANTY

- A. Electronic Ballasts: Submit a warranty, mutually executed by the ballast manufacturer and the installer, agreeing to replace electronic ballasts that fail in materials or workmanship within five years, beginning on the date of substantial completion of project.

- B. LED Luminaires: Submit a warranty, mutually executed by the LED luminaire manufacturer and the installer, agreeing to replace LED luminaires that fail in materials or workmanship within five years, beginning on the date of substantial completion of project.

1.5 RECEIVING, STORING AND PROTECTING

- A. Receive, store, and protect, and handle products according to the following NECA National Electrical Installation Standards:
 - 1. NECA/IESNA 500, *Recommended Practice for Installing Indoor Commercial Lighting Systems* (ANSI)
 - 2. NECA/IESNA 502, *Recommended Practice for Installing Industrial Lighting Systems* (ANSI)

PART 2 PRODUCTS

2.1 INTERIOR LUMINAIRES

- A. Furnish interior luminaires that comply with requirements specified below, indicated on the Drawings, and as required to meet conditions of installation.
- B. Metal parts shall be free from burrs and sharp corners and edges.
- C. Metal components shall be formed and supported to prevent sagging and warping.
- D. Steel parts shall be finished with manufacturer's standard finish applied over a corrosion-resistant primer. Finish shall be free from runs, streaks, stains, holidays or defects.
- E. Doors and frames shall be smooth operating and free from light leakage under operating conditions. Relamping shall be possible without the use of tools. Doors, frames, lenses and diffusers shall be designed to prevent accidental falling during relamping and when secured in the operating position.
- F. Pulse-start metal-halide luminaires shall be sufficiently enclosed to prevent escape of lamp parts in the event of catastrophic lamp failure.
- G. Lenses, diffusers, covers and globes shall be 100 percent virgin acrylic unless specified otherwise on the Drawings. Lenses shall have 0.125 inches minimum thickness. Lenses for fluorescent troffers shall be injection molded.
- H. Luminaires shall conform to UL 1598 - *Luminaires*. Provide product with damp location listing or wet location listing as required by installation location.
- I. Light diffusers, other than those made of metal or glass, used in air-handling light fixtures shall be listed and marked "Fixture Light Diffusers for Air-Handling Fixtures."

2.2 LED LUMINAIRES

- A. For LED lighting in interior spaces, use NRTL-listed 120V or 277V luminaires with the performance characteristics listed below:
 - 1. Minimum luminaire efficacy per IES LM-79-08, *Approved Method: Electrical and Photometric Measurement of Solid-State Lighting Products*:
 - a. 90 lumens/watt for general lighting,
 - b. 50 lumens/watt for accent and display lighting, down-lighting, and special purpose lighting.
 - 2. Correlated color temperature (CCT) per IES LM-79-08 and ANSI/NEMA/ANSI C78.377-2008, *Specification for the Chromaticity of Solid-State Lighting (SSL) Products*:
 - a. [3500 °K] for general lighting and down-lighting,
 - b. [3500 °K] for accent and display lighting, and special purpose lighting.

3. Color rendering index (CRI): 90 or better per IES LM-79-08.
4. LED Design life (L70): Not less than 50,000 hours per IES LM-80-08, *Approved Method: Measuring Lumen Maintenance of LED Light Sources*.
5. Driver System Design Life: Not less than the LED design life; note that the driver system includes all associated components, not just the driver integrated circuit. Driver system design life is defined as when 2 percent of the systems would have failed.
6. Power factor: 0.90 or better.
7. Design ambient temperature: 35 °C (95 °F); note that this is the ambient temperature surrounding the luminaire, not the LED or driver heat-sink temperature.
8. EMI/RFI: Meet FCC 47 CFR Part 15.
9. Minimum dimming provisions or capability:
 - a. 50% step for general lighting,
 - b. Down to 20% for accent and display lighting, and special purpose lighting.

2.3 LAMPS

- A. Furnish lamps that comply with requirements specified below and the luminaire schedule on the Drawings.
- B. Conform to the NEMA C78 standard applicable to each type of lamp.
- C. For fluorescent general lighting in interior spaces use T8, T5, or T5HO lamps as indicated on the Drawings with the following characteristics:

Characteristic	T8 Lamps	T5 Lamps	T5HO Lamps
Nominal length:	48 inches	46 inches	46 inches
Actual length (base face to base face):	47.2 inches	45.2 inches	45.2 inches
Base type:	Medium bi-pin	Miniature bi-pin	Miniature bi-pin
Initial Light Output (after 100 hours of operation):	2700 - 2850 lumens	2900 - 3050 lumens	5000 lumens
Mean Light Output (at 40 percent of rated life):	2440 - 2710 lumens	2660 - 2900 lumens	4600 - 4740 lumens
Nominal Lamp Efficacy:	87 lumens per watt at 77 °F	103 lumens per watt at 95 °F	93 lumens per watt at 95 °F
Color temperature:	3500 °K	3500 °K	4100 °K
Minimum Average Life (based on 3-hour switching cycle):	20,000 hours	20,000 hours	30,000 hours

Color rendering index (CRI)	75	85	85
Minimum Starting Temperature:	50 °F	-4 °F	-4 °F
EPA TCLP Compliant:	Yes	Yes	Yes
Ballast Type:	Electronic programmed start	Electronic programmed start with end-of-life shutdown.	Electronic programmed start with end-of-life shutdown.

- D. For pulse-start metal-halide general lighting in interior spaces use lamps with 3700 to 4000 K color temperatures and color rendering index (CRI) of at least 65.
- E. All linear fluorescent lamps, fluorescent compact lamps, and high pressure sodium lamps shall pass the EPA Toxic Characteristic Leachate Procedure (TCLP) test for mercury by using the lamp sample preparation procedure described in NEMA LL 1, *Procedure for Linear Fluorescent LAMP Sample Preparation and TCLP Extraction*.
- F. Manufacturers: GE Lighting, North American Phillips, Sylvania

2.4 FLUORESCENT LAMP BALLASTS

- A. For fluorescent luminaires provide NRTL-listed electronic fluorescent ballasts that have the following characteristics:
 1. Conform to UL 935 - *Fluorescent Lamp Ballasts* and NEMA C82.11 – *High Frequency Electronic Lamp Ballasts* (ANSI)
 2. Ballast protection: Class P
 3. Starting method: programmed rapid-start
 4. Power factor: at least 95 percent
 5. Ballast factor: at least 0.87
 6. Crest factor: 1.7 or less
 7. Line current total harmonic distortion (THD): less than 15 percent
 8. Minimum operating frequency: 40 kHz
 9. Sound rating: Class A
 10. Minimum starting temperature: 0 degrees F with T5 and T8 lamps
 11. Transient voltage protection: ANSI C62.41 location A2
 12. EMI/RFI compliance: FCC 47 CFR Part 18, Non-Consumer
 13. Ballasts for T5 and T5HO lamps shall have circuitry to shut down the system when lamps reach end-of-life.
- B. Manufacturers: Advance, GE Lighting, Universal, Sylvania
- C. Three and four lamp luminaires shall have two ballasts per luminaire for multilevel switching.
- D. Provide NRTL-listed luminaire disconnect assembly for each ballast. Manufacturer: IDEAL “PowerPlug”, Thomas & Betts “Sta-Con.”

2.5 HIGH INTENSITY DISCHARGE LAMP BALLASTS

- A. Pulse-start metal-halide ballasts shall comply with requirements specified below for lamps specified in this Section and the luminaire schedule on the Drawings:
 - 1. Conform to UL 1029 - *High-Intensity-Discharge Lamp Ballasts* and NEMA C82.4 - *Ballasts for High-Intensity-Discharge and Low-Pressure Sodium Lamps*.
 - 2. Constant wattage auto-transformer (CWA) or regulator, high-power-factor type, minimum 90 percent.
 - 3. Ballasts shall incorporate a solid-state igniter/starter with an average life in the pulsing mode of 4,000 hours at a case temperature of 90 C.
- B. Manufacturers: Advance, GE Lighting, Universal

2.6 LUMINAIRE ACCESSORIES

- A. Provide stud supports, mounting brackets, frames, plaster rings and other accessories required for luminaire installation.
- B. Furnish hangers as specified below and as required by conditions of installation:
 - 1. Stem hangers shall be made of 1/2-inch steel tubing with 45 degrees swivel ball hanger fitting and ceiling canopy. Finish the same as the luminaire.
 - 2. Rod hangers shall be made of 1/4 inch threaded zinc-plated steel rod.
 - 3. For HID luminaires provide hook hangers that are integrated assemblies matched to the luminaire and line voltage; equip with threaded attachment, power cord and locking type plug. Provide a safety chain or cable for each luminaire that will attach to the building structure, the ballast housing, and to the reflector/diffuser assembly.
- C. Use NRTL-listed T-bar safety clips for lay-in fluorescent luminaires.
- D. Where indicated on the Drawings or where lamp breakage is detrimental, such as above food counters, provide open fluorescent luminaires with:
 - 1. Self-locking sockets or lamp retainers, two per lamp, and
 - 2. Clear polycarbonate protective lamp sleeves with end caps over each lamp. Sleeve shall have a light transmission of 95 percent and shall be rated for the thermal profile of the lamp and ballast.

PART 3 EXECUTION

3.1 INSTALLATION

- A. Install interior lighting system in accordance with the NEC, manufacturer's installation instructions, approved shop drawings, and the following NECA National Electrical Installation Standards:
 - 1. NECA/IESNA 500, *Recommended Practice for Installing Indoor Commercial Lighting Systems* (ANSI)
 - 2. NECA/IESNA 502, *Recommended Practice for Installing Industrial Lighting Systems* (ANSI).
- B. Have the manufacturer's installation instructions available at the Project site.
- C. Mounting heights specified or indicated on the Drawings are to the bottom of the luminaire for ceiling-mounted fixtures and to the center of the luminaire for wall-mounted fixtures.
- D. Where the ceiling forms the protective membrane of a fire resistive assembly, install protective coverings over luminaires in accordance with NRTL requirements.
- E. Install slack safety wires as described below for luminaires in or on suspended ceilings.
 - 1. Wire shall be minimum 12 gage galvanized soft annealed steel wire conforming to ASTM A641.
 - 2. Attach wire to the building structure directly above the attachment point on the box or luminaire; make trapezes of framing channel material as required to span obstacles

3. Secure wire(s) at each end with not less than three tight turns in 1-1/2 inches.
- F. Install fluorescent emergency luminaires in suspended ceilings as follows:
1. Fasten the four corners of each luminaire to the suspended ceiling main channels or framing members.
 - a. Use sheet metal screws or bolts to fasten luminaires above exit pathways.
 - b. Use NRTL listed clips, sheet metal screws, or bolts to fasten luminaires that are not above exit pathways.
 2. Install two independent slack safety wires per luminaire with dimensions not exceeding 2 ft x 4 ft. Install four independent slack safety wires per luminaire with dimensions exceeding 2 ft x 4 ft. Attach wires to the luminaire not more than 6 inches from the luminaire corners.
- G. Support pendant-mounted or cable-supported luminaires directly from the structure above using a 9 gage wire or an approved alternate support without using the ceiling suspension system for direct support.
1. Install seismic restraints for pendant-mounted and cable-supported luminaires.
 2. Pendants, rods, cables, or chains 4 ft or longer shall be braced to prevent swaying using three cables at 120 degrees separation.
- H. Connect luminaires in suspended ceilings using 6 ft. lengths of flexible wiring method arranged to accommodate not less than 4 inches of differential seismic movement in any direction. Refer to Section 26 0533 - Raceways and Boxes for Electrical Systems.

3.2 LUMINAIRE MAINTENANCE MARKING

- A. Each luminaire shall be clearly and permanently marked with a field-applied pressure-sensitive label indicating specific replacement lamps and ballasts. The following information shall be noted in the format "Use Only _____":
1. Lamp diameter code (T5, T5HO, T8), tube configuration (twin tube, quad, triple), base type, and nominal wattage for fluorescent and compact fluorescent luminaires.
 2. Lamp type, wattage, bulb type (ED17, B56, etc.) and coating (clear or coated) for HID luminaires.
 3. Start type (preheat, rapid start, programmed start) for fluorescent and compact fluorescent luminaires.
 4. ANSI ballast type (M98, M57, etc.) for HID luminaires.
 5. Correlated color temperature (CCT) and color rendering index (CRI) for all lamps].
- B. Markings shall be located to be readily visible to service personnel, but unseen from normal viewing angles when lamps are in place.
- C. Pressure-sensitive labels shall be in accordance with UL 969 – *Marking and labeling Systems*.

3.3 FIELD QUALITY CONTROL

- A. Make electrical connections, clean interiors and exteriors of luminaires, install lamps, energize and test luminaires, inspect interior lighting system, and deliver spare parts in accordance with manufacturer's instructions and the following NECA National Electrical Installation Standards:
1. NECA/IESNA 500, *Recommended Practice for Installing Indoor Commercial Lighting Systems* (ANSI)
 2. NECA/IESNA 502, *Recommended Practice for Installing Industrial Lighting Systems* (ANSI)
- B. Test electronic dimming ballasts for full range dimming capability.
1. Burn-in dimmer controlled fluorescent lamps at full output for not less than 100 hours before dimming.
 2. Check for visually detectable flicker over the full dimming range.

END OF SECTION

SECTION 26 5200 - EMERGENCY LIGHTING

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Fluorescent emergency ballasts.
- B. LED exit signs.

1.2 SUBMITTALS

- A. Submit the following in accordance with project submittal procedures:
 - 1. Catalog Data: Submit catalog data describing emergency lighting. Include data substantiating that materials comply with specified requirements. Arrange data for luminaires in the order of fixture designation.
 - 2. Maintenance Instructions: Submit maintenance instructions for inclusion in the operating and maintenance manuals.

1.3 SPARE MATERIALS

- A. Furnish the following extra materials matching products installed. Package the extra materials with protective covering for storage and identify with labels describing contents.
- B. Lamps: Provide 10 percent of quantity of lamps of each type, but no fewer than two lamps of each type.

1.4 QUALITY ASSURANCE

- A. Comply with ANSI/NFPA 70 - *National Electrical Code* (NEC), NFPA 101 - *Life Safety Code*, and the *International Building Code (IBC)* for components and installation.
- B. Emergency lighting units and exit signs shall be NRTL-listed and labeled for their indicated use and location on this project by a Nationally Recognized Testing Laboratory (NRTL) in accordance with UL 924 – *Emergency Lighting and Power Equipment*.
- C. Use manufacturers that are experienced in manufacturing emergency lighting units similar to those indicated for this Project and have a record of successful in-service performance.

1.5 WARRANTY

- A. Submit warranties, mutually executed by the manufacturer and the Subcontractor, agreeing to replace emergency lighting products that fail in materials or workmanship within the period specified for each product, beginning on the date of substantial completion of project.

PART 2 PRODUCTS

2.6 FLUORESCENT EMERGENCY BALLAST

- A. Furnish an NRTL-listed, self-diagnostic, fully automatic, fluorescent emergency ballast in each luminaire indicated on the Drawings.
- B. The normal fluorescent luminaire ballast will operate the lamps during normal conditions; during emergency conditions the fluorescent emergency ballast shall operate one or two of the lamps in the luminaire.
- C. Fluorescent emergency ballast shall be connectable for operation at either 120 or 277 volts and suitable for indoor dry locations with a temperature range of 32 to 130 degrees F.
- D. Fluorescent emergency ballast shall contain a maintenance-free, sealed high-temperature nickel-cadmium or nickel-metal hydride battery with an expected service life of not less than 7 years.

- E. Upon interruption of normal AC power, the internal controller shall automatically switch the emergency lighting load to the battery. The battery shall supply the ballast with power to produce 1100 to 1400 lumens of emergency light output for a minimum of 90 minutes.
- F. Fluorescent emergency ballast shall have a self-diagnostic system that meets the requirements of NFPA 101 and includes the following features:
 - 1. Automatically perform a self-test of battery and lamps for at least 30 seconds at intervals not exceeding 30 days.
 - 2. Automatically perform a self-test of battery and lamps for at least 90 minutes once per year.
 - 3. Any failure shall be indicated by a status indicator.
- G. Fluorescent emergency ballast shall have an LED charging indicator lamp and a push to test switch for installation on the luminaire at locations and positions that will be visible from the floor and operable without removing or opening luminaire lenses or covers.
- H. Fluorescent emergency ballasts shall have not less than a 5 year full warranty.
- I. Manufacturer: Bodine "B50ST" or approved equal.

2.7 LED EXIT SIGN

- A. Furnish an NRTL-listed, self-diagnostic, fully automatic, LED illuminated emergency exit sign at each location indicated on the Drawings.
- B. LED emergency exit sign shall be connectable for operation at either 120 or 277 volts and suitable for indoor dry locations with a temperature range of 32 to 104 degrees F.
- C. Exit sign shall have universal mounting capability with all necessary components for each wall, ceiling, or end mounting application.
- D. Exit sign shall be single face or double face with arrows as indicated on the Drawings or as required for each location.
- E. Exit sign shall have a maintenance-free battery, either nickel-cadmium or nickel-metal hydride. Battery shall be field-replaceable and shall have an expected service life of not less than 7 years.
- F. Upon interruption of normal AC power, or brownout conditions exceeding a 20% drop from nominal voltage, the internal controller shall automatically switch the emergency exit sign lighting load to the battery. Emergency power will be provided for a minimum of 90 minutes. During emergency operation, the battery shall be protected from deep discharge by a low-voltage battery disconnect circuit.
- G. Visibility of exit sign during normal or emergency operation shall be not less than that required in UL 924.
- H. LED-illuminated emergency exit sign shall have at least a 5-year full warranty on the unit and electronics and a 5-year full warranty plus additional 5-year pro-rata warranty on the battery.

PART 3 PART 3 EXECUTION

3.1 INSTALLATION

- A. Install emergency lighting system in accordance with the NEC, NECA/IESNA 500, *Recommended Practice for Installing Indoor Commercial Lighting Systems* (ANSI), the manufacturer's instructions, and approved shop drawings. Have the manufacturer's installation instructions available at the construction site.
- B. Mount exit signs and unit emergency lights with bottom of fixture not less than 6'-8" or more than 12'-0" above finished floor.
- C. Connect each emergency power system outlet box using a minimum 2 ft length of flexible wiring method to accommodate not less than 4 inches of differential seismic movement in any direction between the outlet box and the non-flexible raceway system. Refer to Section 26 0533 - Raceways and Boxes for Electrical Systems.
- D. Install slack safety wires as described below for emergency luminaires and exit signs on suspended ceilings.

1. Wire shall be minimum 12 gage galvanized soft annealed steel wire conforming to ASTM A641.
 2. Attach wire to the building structure directly above the attachment point on the box or luminaire; make trapezes of framing channel material as required to span obstacles
 3. Secure wire(s) at each end with not less than three tight turns in 1-1/2 inches.
 4. Use connection devices at the supporting structure, outlet box, and luminaire that are capable of carrying not less than 100 pounds.
- E. Connect fluorescent emergency ballasts to operate two lamps in multi-lamp emergency luminaires.
- F. Install branch circuits for emergency lighting and exit signs in accordance with Article 700 of the National Electrical Code.
1. Connect unit emergency lighting equipment to a branch circuit that serves the general lighting in the area and ahead of any local or remote switches.

3.2 ADJUSTING

- A. Aim lamps on wall-mounted emergency lighting units to obtain the following illumination of exit pathway:
1. 1 ft-candle average
 2. 0.1 ft-candle minimum
 3. Maximum-to-minimum uniformity ratio not exceeding 40 to 1.
- B. Test emergency lighting equipment in accordance with the manufacturer's instructions and NECA/IESNA 500.

END OF SECTION

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