

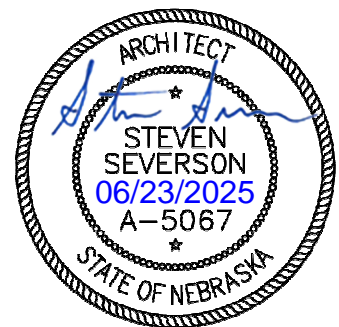
Specifications for:



York County
Jail Fire Suppression
510 North Lincoln Avenue
York, Nebraska

June 23, 2025

I, Steven Severson, am the
Coordinating Professional on the
*York County, Jail Fire
Suppression* project.



Davis Design's NBEA
Certificate of Authorization #CA0539

architecture engineering interior design

1221 'N' Street, Suite 600, Lincoln, Nebraska 68508 402.476.9700 davisdesign.com

130 South 5th Street, Norfolk, Nebraska 68701

15 East Main Street, Suite 201, Vermillion, South Dakota 57069

SPECIFICATIONS FOR

York County
Jail Fire Suppression
510 North Lincoln Avenue
York, Nebraska

June 23, 2025

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DESIGN TEAM CONTACT INFORMATION

PROJECT OWNER: York County

PROJECT TITLE: Jail Fire Suppression

PROJECT LOCATION: 510 North Lincoln Avenue
York, Nebraska 68467

ARCHITECT: Davis Design, Inc.
1221 N Street, Suite 600
Lincoln, Nebraska 68508
Contact: Steve Severson (402) 476-9700

FIRE PROTECTION ENGINEER: Farris Engineering
12700 West Dodge Road
Omaha, Nebraska 68154
Contact: Donna Kohlan (402) 952-4375

NOTICE TO BIDDERS

Notice is hereby given, that York County, 510 N Lincoln Ave, York, Nebraska 68467, will receive sealed bids for the Fire Suppression, located at the Courthouse in the County Jail.

Specifications & Requirements: can be viewed on the Counties website at yorkcountyne.gov on June 24, 2025.

A Preconstruction meeting will be held on Monday, July 7, 2025 at 9:00 a.m. at the Courthouse in the York County Jail. All Prospective bidders are required to attend and provide a photo identification card.

No alternative items will be considered. Sealed bids must be received by the York County Clerk, Mary Melby, 510 N Lincoln Ave, York Nebraska 68467, no later than 5:00 P.M. on Monday, July 21, 2025. Bids received after such hour will be returned unopened.

Bids shall be opened at the next regular meeting of the York County Board of Commissioners on Tuesday, July 22, 2025 and publicly read.

The York County Board of Commissioners reserves the right to accept or reject any or all bids.

York County is an equal opportunity employer.

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DOCUMENT 000107 - SEALS PAGE

1.1 DESIGN PROFESSIONALS OF RECORD

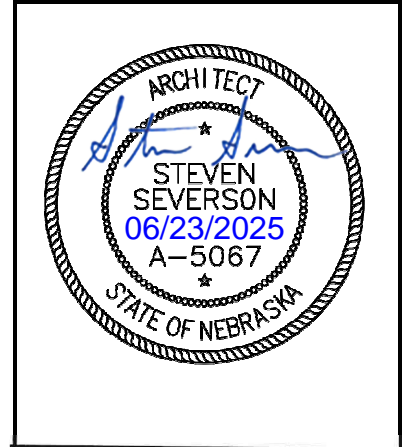
Davis Design NBEA Certificate of Authorization #CA0539

ARCHITECT:

**Steven Severson, AIA
License No. A-5067**

Davis Design, Inc.
1221 N Street, Suite 600
Lincoln, Nebraska 68508
Phone: (402) 476-9700

Divisions 01 - 32 Sections, except
where indicated as prepared by other
design professionals of record.

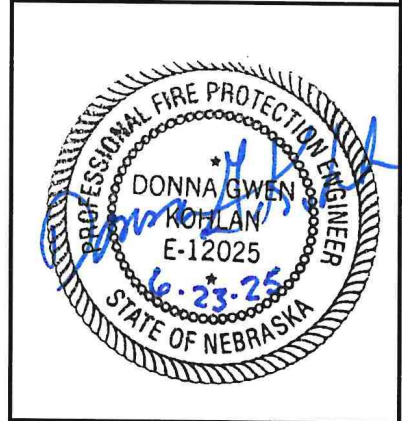


FIRE-PROTECTION
ENGINEER

**Donna G. Kohlan, FPE
License No. E-12025**

Farris Engineering
12700 West Dodge Road
Omaha, Nebraska 68154
Phone: (402) 952-4375

**Sections 210000, 210500, and
210511.**



END OF DOCUMENT 000107

**YORK COUNTY
JAIL FIRE SUPPRESSION
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DOCUMENT 001116 - INVITATION TO BID

1.1 PROJECT INFORMATION

- A. Notice to Bidders: Qualified bidders are invited to submit bids for Project as described in this Document according to the Instructions to Bidders.
- B. Project Identification:
 - 1. York County
Jail Fire Suppression
York, Nebraska
- C. Owner:
 - 1. York County
510 North Lincoln Avenue
York, Nebraska 68467

Owner's Representative: Randy Obermier
- D. Architect:
 - 1. Davis Design, Inc.
1221 N Street, Suite 600
Lincoln, Nebraska 68508
Phone: (402) 476-9700

Architect / Engineer's Representative: Steve Severson, AIA.
- E. Project Description: Project consists of the expansion of the fire suppression for the York County jail.
- 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 bids until the bid time and date at the location indicated below. Owner will consider bids prepared in compliance with the Instructions to Bidders issued by Owner, and delivered as follows:
 - 1. Bid Date: Monday, July 21, 2025.
 - 2. Bid Time: 5:00 p.m., local time.
 - 3. Location:

York County Clerk, Mary Melby
510 North Lincoln Avenue
York, Nebraska 68467

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- B. Bids will be opened and publicly read at the Tuesday, July 22, 2025, York County Board of Commissioners meeting.

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 CONFERENCE

- A. A prebid conference for all bidders will be held at the Courthouse in the York County Jail located at 510 North Lincoln Avenue in York, Nebraska on Monday, July 7, 2025, beginning at 9:00 a.m. local time. Prospective bidders are required to attend. Photo identification must be shown to enter the meeting.

1.5 DOCUMENTS

- A. Online Procurement and Contracting Documents: Bidders may obtain access after June 24, 2025 by accessing the county website (www.yorkcountyne.gov).

1.6 TIME OF COMPLETION

- A. Bidders shall begin the Work on receipt of the Notice to Proceed and shall complete the Work within the Contract Time.

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, a separate Labor and Material Payment Bond, and Insurance in a form acceptable to Owner will be required of the successful Bidder.

END OF DOCUMENT 001116

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DOCUMENT 002110 - GENERAL CONDITIONS AND SUPPLEMENTARY GENERAL CONDITIONS

PART 1 - GENERAL CONDITIONS

1.1 AIA DOCUMENT A201:

- A. The General Conditions of this Contract are those contained in the American Institute of Architects Document A201-2017, Electronic Format "General Conditions of the Contract for Construction," Articles 1 through 15, hereinafter referred to as the AIA General Conditions. These conditions are hereby incorporated by reference into this document and, except as hereafter modified by the Supplementary General Conditions, their provisions are just as binding as if fully repeated herein. Copies of the AIA General Conditions will be furnished by the Architect upon request.

PART 2 - SUPPLEMENTARY GENERAL CONDITIONS

2.1 AIA DOCUMENT A201 MODIFICATIONS:

- A. The following supplements modify, change, delete from or add to the "General Conditions of the Contract for Construction," AIA Document A201 – 2017, Electronic Format. Where any Article of the General Conditions is modified or any Paragraph, Subparagraph or Clause thereof is modified or deleted by these supplements, the unaltered provisions of that Article, Paragraph, Subparagraph or Clause shall remain in effect.

1. Article 3 – Contractor:

a. Add the following new paragraph:

- 1) 3.6.2 Sales and Use Taxes on tangible personal property to be incorporated into the Project are to be *excluded*. The Owner will appoint the Contractor as purchasing agent for the Owner which will authorize the Contractor to issue exempt sales certificates to Subcontractors and vendors when purchasing personal tangible property to be incorporated into the Project.

b. Add the following under Paragraph 3.7.1:

- 1) 3.7.1.1 The Contractor for general construction shall make application and file the necessary plans and specifications with the building officials and pay all fees necessary to obtain the permits.

2. Article 7 – Changes in Work:

a. Add the following new paragraphs:

- 1) 7.2.2 Cost shall be limited to the following: cost of materials, including cost of delivery, cost of labor, including social security, old age and unemployment

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insurance, and fringe benefits under collective bargaining agreements; Workers' Compensation insurance; bond premiums; and rental value of power tools and equipment. Overhead shall include the following:

- a) Project management.
 - b) Supervision.
 - c) Superintendence.
 - d) Wages of time keepers, watchmen and clerks.
 - e) Hand tools, incidentals, general office expense, and all other expenses not included in "cost."
- 2) 7.2.3 Itemized contract change proposals prepared by Contractors shall remain valid for a period of forty-five (45) days after the receipt of such proposal by the Architect.
 - 3) 7.2.4 The maximum percent which shall be allowed for Contractor's combined overhead and profit shall be as follows:
 - a) 7.2.4.1 For the Contractor, 5% of the net extra cost of the work performed by Subcontractors. For the Contractor, 10% of the net extra cost of the work the Contractor performs with the Contractor's own forces.
 - b) 7.2.4.2 For the Subcontractor, 10% of the net extra cost of the Work the Subcontractor performs.
 - c) 7.2.4.3 The Contractors or Sub-subcontractors overhead and profit must not exceed a total aggregate of 15%.
3. Article 8 – Time:
- a. Change Paragraph 8.1.2 to read as follows:
 - 1) 8.1.2 The Contractor shall commence Work under the Contract upon receipt of the authorized "Notice to Proceed" and shall substantially complete the entire Project not later than the time in calendar days indicated on the proposal form.
 - b. Add the following Paragraph 8.1.5 to read as follows:
 - 1) 8.1.5 The Contract Time is the time period in calendar days to achieve Substantial Completion of the Work as defined in Subparagraph 8.1.3, stipulated as such by the Contractor in his proposal. In thus establishing the Date of Substantial Completion, the Contractor agrees that he has considered all necessary matters including, but not limited to, the climatic conditions which normally prevail at the Project location during the Project Contract Time, the industrial conditions of the locality, including the availability of manpower and materials, and his capacity as well as the capacity of each and all of his Subcontractors to complete their work within the Contract Time.
 - c. Add the following to the end of Paragraph 8.3.1:
 - 1) . . . The Contractor's sole remedy for any of the above described delays shall be an extension of Contract Time.

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- 2) Subparagraph 8.3.1. Subparagraph 8.3.1. shall be amended by deleting the words "(4) by delay authorized by the Owner pending mediation and binding dispute resolution; or (5) by other causes that the Contractor asserts, and the Architect determines, justify delay," and the following additional sentence shall be added at the end of Subparagraph 8.3.1.:
 - a) "Contractor acknowledges and agrees that adjustments in Contract Time will be permitted for a delay only to the extent such delay (1) is not caused, or could have been reasonably avoided by Contractor, and (2) could not be limited or avoided by Contractor's notice to Owner of delay."
 - b) Add the following new Paragraph 8.3.1.1.:

8.3.1.1 It shall be recognized by the Contractor that he may reasonably anticipate that as construction progresses, the construction schedule will be changed and updated. Therefore, no claim for an increase in the Contract sum for either acceleration or delay, for extensions of Contract Time pursuant to Paragraph 8.3.1, or for any other changes in the construction schedules which are of the type ordinarily experienced in projects of similar size and complexity, will be allowed.
- d. Change Paragraph 8.3.2 to read as follows:
 - 1) 8.3.2 Any claim for extension of time shall be made in writing to the Architect not more than twenty-one days after the commencement of the delay; otherwise, it shall be waived. In the case of a continuing delay, only one claim is necessary. The Contractor shall provide an estimate of the probable effect of such delay on the progress of the Work at the time written notice is given to the Architect of such delay. Under no circumstances are extension of Contract Time claims retroactive.
- e. Delete in its entirety Paragraph 8.3.3.
 - 1) Subparagraph 8.3.3. Subparagraph 8.3.3. shall be deleted in its entirety and the following new Subparagraph 8.3.3 inserted in place thereof:
 - a) "8.3.3. Notwithstanding anything to the contrary in Contract Documents, an extension in Contract Time, to the extent permitted under Subparagraph 8.3.1., shall be the sole remedy of Contractor for any (1) delay in commencement, prosecution or completion of Work, (2) hindrance or obstruction in performance of Work, (3) loss of productivity, or (4) other similar claims (collectively referred to in this Subparagraph 8.3.3. as "Delays") whether or not such Delays are foreseeable, unless a Delay is caused by acts of Owner, Owner's Architect, or Owner's separate contractor, constituting active interference with construction damages Contractor's performance of Work, and only to the extent such acts continue after Contractor furnishes Owner with notice of such interference. In no event shall Contractor be entitled to any increase in the Contract Sum in connection with any Delay, unless caused by the active interference of Owner, Owner's Architect, or Owner's separate contractor."

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- f. Add a new Paragraph 8.3.4 as follows:
 - 1) 8.3.4 The Contractor's sole remedy for any delays shall be an extension of Contract Time.

- 4. Article 9 – Payments and Completion:
 - a. Add the following new paragraphs:
 - 1) 9.3.4 The Owners will make payments on account of the Contract as follows:
 - a) 9.3.4.1 95% of the Schedule of Values value, proportionate to the amount of the Contract, of labor and materials incorporated in the work and material on the premises, at approximately thirty (30) day intervals, as estimated by the Architect, less the aggregate of previous payments. On Substantial Completion of the entire Work, a sum will be paid in the discretion of the Architect, and the final balance will be paid upon final completion of the Work and issuance of the final certificate by the Architect.
 - b) 9.3.4.2 The 5% retainage on the plumbing, heating, and ventilating (mechanical) work will not be released until all air distribution systems are completely balanced and delivering the specified volumes of air at each outlet, and until all systems and equipment, including controls, have been operating satisfactorily for a period of 30 days.

- 5. Article 11 – Insurance:
 - a. Add the following under Paragraph 11.1.2:
 - 1) A. Workers’ Compensation Insurance and Employer's Liability Insurance:
 - a) The Contractor shall take out and maintain during the life of this Contract the applicable statutory Workers’ Compensation Insurance with an insurance company authorized to write such insurance in this state covering all the Contractor’s employees, and in the case of any work sublet, the Contractor shall require the Subcontractor similarly to provide statutory Workers’ Compensation Insurance for the latter's employees. The Contractor shall take out and maintain during the life of this Contract, Employer's Liability Insurance with a limit of \$100,000 in an insurance company authorized to write such insurance in all states where the Contractor will have employees located in the performance of this Contract, and the Contractor shall require each of his/her Subcontractor's similarly to maintain common law liability insurance on his/her employees. Coverage shall be provided for not less than the following amounts or greater where required by laws and regulations:

State	Statutory
Applicable Federal	Statutory
Employer’s Liability	

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

2) Commercial General Liability Insurance: (Occurrence Form)

- a) The Contractor and Subcontractors shall maintain, during the life of this Contract, Commercial General Liability Insurance. Contractors and Subcontractors shall name Owner as additional insured and hold the owner harmless. The minimum acceptable limits of liability to be provided by such insurance shall be as follows:

General Aggregate	\$2,000,000
Products - Completed Operations Aggregate	\$2,000,000
Personal and Advertising Injury	\$1,000,000
Each Occurrence (Bodily Injury & Property Damage)	\$1,000,000
Fire Damage OR Damage to Rented Premises	\$ 50,000
Medical Expense	\$ 5,000

3) Automobile Liability Insurance:

- a) The Contractor shall take out and maintain, during the life of the Contract, such Automobile Liability Insurance as shall protect the Contractor against claims for damages resulting from (a) bodily injury, including wrongful death, and (b) property damage which may arise from the operations of any owned, hired, or non-owned automobiles used by or for the Contractor in any capacity in connection with the carrying out of this Contract. The minimum acceptable limits of liability to be provided by such Automobile Liability Insurance shall be as follows:

Liability Limit	\$1,000,000
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- b. Delete Paragraph 11.2.2 and substitute with the following:

1) D. Builders Risk:

- a) Owner shall not be responsible for purchase and maintaining of any property insurance to protect the interests of the Contractor, Subcontractors, or others in the work. Unless otherwise agreed in writing between the Owner and the Contractor, and until final completion of the work and acceptance of the work, all risk of loss with no right of recovery against the Owner, Architect / Engineer, Architect / Engineer’s consultants (and the officers, directors, partners, employees, agents, and other consultants and Subcontractors of each and any of them) will be borne by the Contractor, Subcontractors, or others suffering any such loss, and if any of them wishes property insurance coverage, each may purchase it and maintain it at the purchaser’s own expense.
- b) If property insurance is purchased, Owner, Architect / Engineer, Architect / Engineer’s consultants, Contractor, and Subcontractors shall be named insureds or as additional insureds.

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- c) All the policies of insurance (and the certificates or other evidence thereof) required to be purchased and maintained will contain a provision or endorsement that the coverage afforded will not be cancelled or materially changed or renewal refused until at least 30 days prior written notice has been given to Owner and Architect / Engineer and to each other additional insured to whom a certificate of insurance has been issued and will contain waiver provisions.

- c. Add Paragraph 11.3.3 reading as follows:
 - 1) "The policies shall be endorsed to include such waivers of subrogation."

- d. Delete Paragraph 11.4.1 and substitute the following:
 - 1) 11.4.1 The Contractor shall furnish the Owner with a certificate of insurance evidencing policies required in above stated Article 11 paragraphs. Such certificate shall specifically indicate that the Public Liability Insurance includes all extensions of coverage required in paragraphs above. Such certificate shall specifically state that insurance policies shall give the Owner at least thirty (30) days written notice in the event of cancellation of or material change in any of the policies.

END OF SECTION 002110

**YORK COUNTY
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DOCUMENT 002113 - 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 at the end of this section.

END OF DOCUMENT 002113

DRAFT AIA® Document A701™ - 1997

Instructions to Bidders

for the following PROJECT:

(Name and location or address):

DRAFT

THE OWNER:

(Name and address):

THE ARCHITECT:

(Name and address):

Davis Design, Inc.
1221 N Street, Suite 600
Lincoln, Nebraska 68508

TABLE OF ARTICLES

- 1 DEFINITIONS
- 2 BIDDER'S REPRESENTATIONS
- 3 BIDDING DOCUMENTS
- 4 BIDDING PROCEDURES
- 5 CONSIDERATION OF BIDS
- 6 POST-BID INFORMATION
- 7 PERFORMANCE BOND AND PAYMENT BOND
- 8 FORM OF AGREEMENT BETWEEN OWNER AND CONTRACTOR

ADDITIONS AND DELETIONS:

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

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

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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.

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DOCUMENT 002213 - SUPPLEMENTARY INSTRUCTIONS TO BIDDERS

1.1 INSTRUCTIONS TO BIDDERS

- A. Instructions to Bidders for Project consist of the following:
 - 1. AIA Document A701, "Instructions to Bidders, a copy of which is bound after Section 002113 "Instrucrs."
 - 2. The following Supplementary Instructions to Bidders that modify and add to the requirements of the Instructions to Bidders.

1.2 SUPPLEMENTARY INSTRUCTIONS TO BIDDERS, GENERAL

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

1.3 ARTICLE 2 - BIDDER'S REPRESENTATIONS

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

1.4 ARTICLE 3 – BIDDING DOCUMENTS

- A. 3.1.1. Revise deposit refund reference in second sentence from 10 days to 45 days.
- B. 3.1.2. Delete Section 3.1.2.

1.5 ARTICLE 4 - BIDDING PROCEDURES

- A. 4.1 - Preparation of Bids:
 - 1. Add Section 4.1.8:
 - a. 4.1.8 - The Bid shall include unit prices when called for by the Procurement and Contracting Documents. Owner may elect to consider unit prices in the determination of award. Unit prices will be incorporated into the Contract.

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2. Add Section 4.1.9:
 - a. 4.1.9 - Owner may elect to disqualify a bid due to failure to submit a bid in the form requested, failure to bid requested alternates or unit prices, failure to complete entries in all blanks in the Bid Form, or inclusion by the Bidder of any alternates, conditions, limitations or provisions not called for.

3. Add Section 4.1.10:
 - a. 4.1.10 - Bids shall include sales and use taxes unless noted otherwise.

B. 4.2 Bid Security:

1. 4.2.1.1 Each bid proposal must be accompanied by Bid Bond payable to Owner in the amount of five percent (5%) of the base bid proposal submitted as a guarantee that, if awarded the contract, the bidder will promptly enter into a contract and execute such bonds as may be required. If bid security is not received with the Proposal, the Bid will not be considered.

1.6 ARTICLE 6 - POSTBID INFORMATION

A. 6.3 - Submittals:

1. Add Section 6.3.1.4:
 - a. 6.3.1.4 – Submit a statement of costs for each major item of work included in the bid.

1.7 ARTICLE 7 - PERFORMANCE BOND AND PAYMENT BOND

A. 7.1 - Bond Requirements:

1. Remove Section 7.1.1 and replace with the following:
 - a. 7.1.1 - Both a Performance Bond and a Payment Bond will be required, each in an amount equal to 100 percent of the Contract Sum.
 - b. 7.1.2 - Delete Section 7.1.2.
 - c. 7.1.3 - Delete Section 7.1.3.

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

1. Delete Section 7.2.1 and replace with the following:
 - a. 7.2.1 - The Bidder shall deliver the required bonds to Owner (through the Architect) no later than 7 days after the date of Notice of Intent to Award and no later than the date of execution of the Contract, whichever occurs first.

END OF DOCUMENT 002213

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DOCUMENT 003119 - EXISTING CONDITION INFORMATION

1.1 EXISTING CONDITION INFORMATION

- A. This Document with its referenced attachments is part of the Procurement and Contracting Requirements for Project. They provide Owner's information for Bidders' convenience and are intended to supplement rather than serve in lieu of the Bidders' own investigations. They are made available for Bidders' convenience and information, but are not a warranty of existing conditions. This Document and its attachments are not part of the Contract Documents.
- B. Existing drawings that include information on existing conditions including previous construction at Project site are available for viewing at the office of Architect, upon Contractor's request.
- C. Related Requirements:
 - 1. Document 002113 "Instructions to Bidders" for the Bidder's responsibilities for examination of Project site and existing conditions.

END OF DOCUMENT 003119

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DOCUMENT 004113 - BID FORM - STIPULATED SUM (SINGLE-PRIME CONTRACT)

1.1 BID INFORMATION

A. Bidder: _____.

B. Project Identification:

1. York County
Jail Fire Suppression
York, Nebraska

C. Owner:

1. York County
510 North Lincoln Avenue
York, Nebraska 68467
2. Owner's Representative: Randy Obermier.

D. Architect:

1. Davis Design, Inc.
1221 N Street, Suite 600
Lincoln, Nebraska 68508
Phone: (402) 476-9700
2. Architect / Engineer's Representative: Steve Severson, AIA.

E. Architect Project Number: 25-0026.

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 Davis Design, Inc., 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 base bid sum of:

BID AMOUNT

1. _____

_____ Dollars \$ _____.

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1.3 BID GUARANTEE

- A. The undersigned Bidder agrees to execute a contract for this Work in the above amount and to furnish surety as specified within 10 days after a written Notice of Award, if offered within 45 days after receipt of bids, and on failure to do so agrees to forfeit to Owner the attached cash, cashier's check, certified check, U.S. money order, or bid bond, as liquidated damages for such failure, in the following amount constituting five percent (5%) of the Base Bid amount above:

1. _____ Dollars \$_____.

- 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 TIME OF COMPLETION

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

1.5 ACKNOWLEDGEMENT OF ADDENDA

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

1. Addendum No. 1, dated _____.
2. Addendum No. 2, dated _____.

1.6 BIDDER ACKNOWLEDGEMENTS

- A. Bidder acknowledges that all specified allowances (if any) and unit costs (if any) are included in the base bid amount.

_____ YES _____ NO

1.7 SUBMISSION OF BID

Respectfully submitted this ____ day of _____, 20__.

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

Authorized
Signature: _____
(Handwritten signature)

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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 004113

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SECTION 011000 - SUMMARY

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes:

1. Project information.
2. Work covered by Contract Documents.
3. Phased construction.
4. Access to site.
5. Coordination with occupants.
6. Work restrictions.
7. Specification and drawing conventions.

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:

1. York County
Jail Fire Suppression
York, Nebraska

B. Owner:

1. York County
510 North Lincoln Avenue
York, Nebraska 68467
2. Owner's Representative: Randy Obermier.

C. Architect:

1. Davis Design, Inc.
1221 N Street, Suite 600
Lincoln, Nebraska 68508
Phone: (402) 476-9700
2. Architect / Engineer's Representative: Steve Severson, AIA.

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1.3 WORK COVERED BY CONTRACT DOCUMENTS

- A. The Work of the Project is defined by the Contract Documents and consists of the following:
 - 1. Expansion of the fire suppression.
- 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 one phase.
- B. Before commencing Work of each phase, submit an updated copy of Contractor's construction schedule showing the sequence, commencement and completion dates, and move-out and -in dates of Owner's personnel for all phases of the Work.

1.5 ACCESS TO SITE

- A. General: The York County Courthouse is an occupied judicial facility. The York County Jail is an occupied correctional facility. Therefore, the Contractor shall have limited use of Project site for construction operations during construction period. Contractor shall coordinate with Owner to minimize disruption.
- B. General: Contractor shall have limited use of Project site for construction operations as indicated on Drawings and by the Contract limits and as indicated by requirements of this Section.
- C. 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. Limits: Confine construction operations to the York County Jail and portions of the courthouse defined on the fire protection sheets. The affected courthouse spaces include the riser room in the basement, basement corridor, basement maintenance office, basement exercise room, and potentially the assessor's office on first floor.
 - 2. Driveways, Walkways and Entrances: Aside from the space designated at the drive in front of the west bay of the garage, entrances serving premises shall remain 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.
- D. Condition of Existing Building: Maintain portions of existing building affected by construction operations in a weathertight condition throughout construction period. Repair damage caused by construction operations.

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1.6 COORDINATION WITH OCCUPANTS

- A. Jail Occupancy: Owner will occupy the jail facility during the entire construction period. Cooperate with Owner during construction operations to minimize conflicts and facilitate Owner usage. At a minimum, two cells will be released at a time for contractor construction. If jail operations permit, York County Corrections may allow for additional cells to be released at a time. Perform the Work so as not to interfere with Owner's day-to-day operations. Maintain existing exits unless otherwise indicated.
 - 1. Coordinate all work with York County Corrections.
 - 2. Notify York County Corrections not less than 72 hours in advance of activities that will affect Owner's operations.

- B. Courthouse Occupancy: Owner will occupy the courthouse during the entire construction period. Owner will conduct court throughout construction. Limit noise and vibration while court is in session.
 - 1. Notify the county court clerk and district court clerk not less than 72 hours in advance of activities that will affect Owner's operations.
 - 2. Coordinate all fire suppression and fire alarm outage requirements with the county court clerk and district court clerk not less than 72 hours in advance of required outage. Every effort shall be made to ensure the fire suppression system for the currently protected area is put back into service within 8 hours of rendering it inactive. Fire alarm system outage is not anticipated. Owner shall be advised of the need for a fire watch while either fire system is out of service.

- C. Assessor Occupancy: If chase demolition at the assessor's office is required to complete work, coordinate disruption with assessor's office.

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. On-Site Work Hours: Limit work to hours after 6:00AM and before 10:00PM.
 - 1. Work involving noise and vibration, such as core drilling, to be scheduled when court is not in session. Coordinate with both the county court clerk and district court clerk. Generally, but not always, court starts no earlier than 8:30AM. Generally, but not always, court ends before 4:00PM. Court is not in session on Saturdays and Sundays. Court schedules vary, so there may be weekdays without any court in session.
 - 2. At a minimum, two cells will be released at a time for contractor construction. If jail operations permit, York County Corrections may allow for additional cells to be released at a time

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- C. 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 three days in advance of proposed utility interruptions.
 - 2. Obtain Owner's written permission before proceeding with utility interruptions.

- D. Noise, Vibration, and Odors: Coordinate operations that may result in high levels of noise and vibration, odors, or other disruption to Owner occupancy with Owner.
 - 1. Notify Owner not less than three days in advance of proposed disruptive operations.
 - 2. Obtain Owner's written permission before proceeding with disruptive operations.

- E. Background Checks:
 - 1. Personnel will be subject to security background checks prior to accessing project site.
 - 2. Owner reserves the right to limit access based on security background checks.

- F. Screening / Inventory of Tools, Equipment, and Materials:
 - 1. Work items, tools, and all personnel will be subject to screening for access to the work area.
 - 2. Contractor shall inventory all tools, equipment and cell phones prior to entering the secure perimeter. Verify removal of all tools, equipment and cell phones prior to leaving secure perimeter.
 - 3. In addition to the inventory at the secure perimeter, Contractor is responsible for recording all tools, equipment, and cell phones that enter and exit each cell block.
 - 4. All tools, equipment, and uninstalled materials to be removed from the secure perimeter at the end of each work day. Storage space will be provided at the west bay of the maintenance garage.
 - 5. Contractor is responsible for ensuring no tools, equipment, or cell phones are left unattended, lost, or forgotten. Loss or misplacement of tools or equipment shall be immediately reported to York County Corrections.

- G. Inmate Communication:
 - 1. Any inmate instructions or information should be directed to the Correctional staff.
 - 2. Refrain from having conversations with inmates.

- H. Cell Phones / Electronic Communication Devices:
 - 1. Personnel shall keep cell phones or any other electronic communication devices on their person. Use of electric communication devices shall be limited to work related tasks. Aside from work related tasks, electric devices shall remain locked. Providing inmate access to electronic devices is strictly prohibited.
 - 2. Only photographs of work-related locations or items is permitted. Photographing inmates or jail staff is prohibited.

- I. Nonsmoking: Smoking or the use of any tobacco products is not permitted within the building or Project Site. This applies to all contractors, sub-contractors, and their personnel

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- J. Controlled Substances: Use of tobacco products and other controlled substances on Project site is not permitted. This applies to contractors, sub-contractors, and their personnel.

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.
 - 3. Keynoting: Materials and products are identified by reference keynotes referencing Specification Section numbers found in this Project Manual.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 011000

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SECTION 012500 - SUBSTITUTION PROCEDURES

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes administrative and procedural requirements for substitutions.
- B. Related Requirements:
 - 1. Section 016000 "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. Timing: Architect will consider requests for substitution if received within 60 days after the Notice to Proceed. Requests received after that time may be considered or rejected at discretion of Architect.
- B. 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 form included at the end of this Section.
 - 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.

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- 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 through Construction Manager 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.

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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.

PART 3 - EXECUTION (Not Used)

END OF SECTION 012500

SUBSTITUTION REQUEST FORM (DURING CONSTRUCTION)

PROJECT: _____

 FROM: _____
 (Contractor) _____

SUBSTITUTION REQUEST NO.: _____
 CONTRACT FOR: _____
 DATE: _____
 DAVIS DESIGN
 PROJECT NO.: _____

Specification Title: _____ Description: _____
 Section Number: _____ Page: _____ Article/Paragraph: _____

Proposed Substitution: _____ Manufacturer: _____
 Model No.: _____ Address: _____
 Phone: _____

History: New Product 1-4 years old 5-10 years old More than 10 years old

Differences between proposed substitution and specified product:

Point-by-point comparative data attached – REQUIRED

Supporting Data Attached: Drawings Product Data Samples Tests Reports Other _____

Reason for not providing specified item:

Proposed substitution affects other parts of Work: No Yes; explain: _____

Savings to Owner for accepting substitution: _____ (\$ _____).

Proposed substitution changes Contract Time: No Yes: [Add] [Deduct] _____ days.

A/E's REVIEW AND ACTION

- Substitution approved - Make submittals in accordance with Specification Section 01 25 00 Procurement Substitution Procedures.
- Substitution approved as noted - Make submittals in accordance with Specification Section 01 25 00 Procurement Substitution Procedures.
- Substitution rejected - Use specified materials.
- Substitution request received too late - Use specified materials.

Signed by: _____ Date: _____

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SECTION 012600 - CONTRACT MODIFICATION PROCEDURES

PART 1 - GENERAL

1.1 SUMMARY

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

1.2 ARCHITECT'S SUPPLEMENTAL INSTRUCTIONS (ASI)

- A. Architect will issue through Construction Manager clarifications or supplemental instructions authorizing minor changes in the Work, not involving adjustment to the Contract Sum or the Contract Time, on Architect's standard form.

1.3 CHANGE PROPOSAL REQUESTS (CPR)

- A. Change 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. Change Proposal Requests issued by Architect are not instructions either to stop work in progress or to execute the proposed change.
 - 2. Change Proposal Requests will be signed by the Owner and the Architect.

1.4 CONTRACT CHANGE PROPOSAL (CCP)

- A. Within time specified in Change Proposal Request or 21 days, when not otherwise specified, after receipt of Change Proposal Request, contractor shall submit a Contract Change Proposal quotation cost adjustment to the Contract Sum and the Contract Time necessary to execute the change.
 - 1. 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.
 - 2. Indicate applicable taxes (if applicable), delivery charges, equipment rental, allowable overhead and profit mark-ups, and amounts of trade discounts. Overhead shall include the following:
 - a. Project management.
 - b. Supervision.
 - c. Superintendence.
 - d. Wages of time keepers, watchmen and clerks.
 - e. Hand tools, incidentals, general office expense, and all other expenses not included in "cost."

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3. The maximum percent which shall be allowed for Contractor's combined overhead and profit shall be as follows:
 - a. For the Contractor, 5% of the net extra cost of the work performed by subcontractors. For the Contractor, 10% of the net extra cost of the work the Contractor performs with the Contractor's own forces.
 - b. For the subcontractor, 10% of the net extra cost of the work the subcontractor performs.
 - c. The Contractors or Sub-subcontractors overhead and profit must not exceed a total aggregate of 15%.
4. Include unit costs of labor rates and hours and supervision and total hours of each directly attributable to the change.
5. Include any adjustments to the Contract Time.
6. Contract Change Proposal Form: Use form provided by Architect. Sample copy included at the end of this section.

- B. Contractor may initiate a claim by submitting a Contract Change Proposal (CCP) to the Architect. Include a statement outlining reasons for the change and a complete description. Include all cost data as in Item 1.4.A.1 above.
- C. Contract Change Proposal's must be signed by the Owner, Architect, and Contractor to be valid.
- D. A fully executed Contract Change Proposal constitutes authorization for the Contractor to proceed with the work described therein.
- E. Refer to Section 002110 "General Conditions and Supplementary General Conditions" for additional information.

1.5 ADMINISTRATIVE CHANGE ORDERS

- A. Allowance Adjustment: See Section 012100 "Allowances" for administrative procedures for preparation of Change Order Proposal for adjusting the Contract Sum to reflect actual costs of allowances.
- B. Unit Price Adjustment: See Section 012200 "Unit Prices" for administrative procedures for preparation of Change Order Proposal for adjusting the Contract Sum to reflect measured scope of unit-price work.

1.6 CHANGE ORDER PROCEDURES (CO)

- A. The Architect will periodically issue a Change Order altering the contract sum and contract time based on approved Contract Change Proposals.
- B. Change Orders must be signed by the Owner, Architect, and Contractor to be valid.
- C. A fully executed Change Order constitutes authorization for the Contractor to include costs on an Application for Payment.

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1.7 CONSTRUCTION CHANGE DIRECTIVE (CCD)

- A. Construction Change Directive: Architect may issue a Construction Change Directive. 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: As required, maintain detailed records on a time and material basis of work required by the Construction Change Directive.
 - 1. Within 14 days of 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 012600

CONTRACT CHANGE PROPOSAL (CCP)

PROJECT: _____

CCP NO.: _____

REFERENCE
 ASI/CPR/RFI/Other _____

CONTRACT DATE: _____

DAVIS DESIGN
 PROJECT NO. _____

FROM: _____
(Contractor) _____

OWNER: _____

Description of proposed change(s):

AMOUNT:	
<p>All work shall be in accordance with the terms, stipulations, and conditions of the original contract. No change in time shall be considered unless requested herein. Attach all supporting documentation as required.</p>	

By: _____
 Contractor

Date: _____

By: _____
 Davis Design, Inc.

Date: _____

By: _____
 Owner

Date: _____

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SECTION 012900 - 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 012100 "Allowances" for procedural requirements governing the handling and processing of allowances, if any.
 - 2. Section 012200 "Unit Prices" for administrative requirements governing the use of unit prices, if any.
 - 3. Section 012600 "Contract Modification Procedures" for administrative procedures for handling changes to the Contract.
 - 4. Section 013200 "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 through Construction Manager at earliest possible date but no later than seven days before the date scheduled for submittal of initial Applications for Payment.
 - 3. Subschedules for Phased Work: Where the Work is separated into phases requiring separately phased payments, provide subschedules showing values coordinated with each phase of 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. Large dollar value line items may require further breakdowns; provide to Architect as requested.
 - 1. Identification: Include the following Project identification on the schedule of values:
 - a. Project name and location.

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- b. Name of Architect.
 - c. Architect's project number.
 - d. Contractor's name and address.
 - e. Date of submittal.
 - f. Application number.
2. Arrange schedule of values consistent with format of AIA Document G703.
 3. Provide a breakdown of the Contract Sum in enough detail on each schedule of values 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.
 - a. Include separate line items under Contractor and principal subcontracts for Project closeout requirements in an amount totaling five percent of the Contract Sum and subcontract amount.
 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 Construction Manager 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.

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- C. Application for Payment Forms: Use AIA Document G702 and AIA Document G703 AIA Document G702/CMA and AIA Document G703 as form for Applications for Payment.
- D. 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.
 3. Certificate(s) of Insurance for off-site stored materials or equipment. Certificate of insurance must list the Owner as additional insured.
 4. Stored Materials: Include in Application for Payment amounts applied for materials or equipment purchased or fabricated and stored, but not yet installed. Photos of stored materials must be included with the list of materials. This should include the dollar amount being claimed and must equal amounts claimed within the Certificate of Insurance and each Application for Payment.
 - a. Provide certificate of insurance and consent of surety to payment for stored materials.
 - b. Provide supporting documentation that verified amount requested, such as paid invoices. Match amount requested with amounts indicated on documentation; do not include overhead and profit on stored materials.
- E. Transmittal: Submit each Application for Payment as PDF electronic files directly to the Architect via email. Include waivers of lien and similar attachments if required. If requested by Owner, hardcopies to be provided.
1. Subject line of email must include full project name and Application for Payment number.
- F. 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.
- G. Initial Application for Payment: Administrative actions and submittals that must precede or coincide with submittal of first Application for Payment must be submitted seven days prior and include the following:
1. List of subcontractors.

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2. Schedule of values.
 3. Contractor's construction schedule (preliminary if not final).
 4. Schedule of unit prices.
 5. Submittal schedule (preliminary if not final).
 6. Copies of building permits.
 7. Copies of authorizations and licenses from authorities having jurisdiction for performance of the Work.
 8. Certificates of insurance and insurance policies.
- H. 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.
- I. 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 (if applicable), 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 012900

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SECTION 013100 - 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.
 - 4. Above-ceiling review.
 - 5. Rough-in (penetrations) review.
- B. Related Requirements:
 - 1. Section 017300 "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.

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2. Coordinate installation of different components with other contractors to ensure maximum performance and accessibility for required maintenance, service, and repair.
 3. Make adequate provisions to accommodate items scheduled for later installation.
 4. Where availability of space is limited, coordinate installation of different components to ensure maximum performance and accessibility for required maintenance, service, and repair of all components, including mechanical and electrical.
- 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. Startup and adjustment of systems.

1.5 COORDINATION DRAWINGS

- A. Coordination Drawings, General: Coordination drawings for this project are required. 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 reproductions of the Contract Documents or 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 Contract 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.

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2. Submit coordination drawings in the following format:
 - a. PDF electronic file.
3. Refer to individual Sections for Coordination Drawing requirements for Work in those Sections.

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.
 - a. Only one question per RFI submitted. RFI's submitted with multiple questions will be returned to the Contractor.

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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 included at the end of this section.
- 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 012600 "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. Log with not less than 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.
 8. Identification of related Minor Change in the Work, Construction Change Directive, and Proposal Request, as appropriate.
 9. Identification of related Field Order, Work Change Directive, and Proposal Request, as appropriate.

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- 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.

1.7 PROJECT MEETINGS

- A. General: Contractor to 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: Contractor 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: Architect will schedule and conduct a preconstruction conference before starting construction, at a time convenient to Owner and Architect, but no later than 15 days after execution of the Agreement. Hold the conference at Project site or another convenient location. Conduct the meeting to review responsibilities and personnel assignments.
 - 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. All 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 and existing building.
 - 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.

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- u. Office, work, and storage areas.
 - v. Equipment deliveries and priorities.
 - w. First aid.
 - x. Security.
 - y. Progress cleaning.
3. Minutes: Contractor 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.

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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: Contractor to 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.
 - 19) Work Hours.
 - 20) Hazards and risks.

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3. Minutes: Contractor 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.
4. Progress Meetings / Reporting: In addition to specific coordination and pre-installation meetings for each element of work, and other regular project meetings held for other purposes, the Prime Contractor shall attend a general progress meeting every two weeks. This meeting will be scheduled and chaired by the Contractor. Require each entity then involved in planning, coordination or performance of work to be properly represented at each meeting. Review each entity's present and future needs including interface requirements, time, sequences, deliveries, access, site utilization, temporary facilities and services, hours of work, hazards and risks, housekeeping, change orders, and documentation of information for payment requests.

1.8 ABOVE-CEILING (PENETRATIONS) REVIEW

- A. Contractor to notify Architect 7 days prior to ceiling tile installation to schedule this review. The Architect shall visit the site after the ceiling grid has been installed, lights and diffusers in place, etc., and approximately 2 - 3 days prior to ceiling tiles being installed to perform an above-ceiling inspection. Architect will note findings in written form and distribute to Contractor for review and correction of necessary items.

1.9 ROUGH-IN REVIEW

- A. Contractor to notify Architect 7 days prior to framing completion and all rough-in's complete to schedule this review. The Architect shall visit the site after framing is complete and all rough-in's done, but 2 - 3 days prior to the scheduled installation of sheetrock to perform a rough-in inspection. Architect will note findings in written form and distribute to Contractor for review and correction of necessary items.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 013100

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SECTION 013200 - 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.
- B. Related Requirements:
 - 1. Section 011200 "Multiple Contract Summary" for preparing a combined Contractor's construction schedule.

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.

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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.
- 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 the Notice to Proceed until most recent Application for Payment.
- E. Construction Schedule Updating Reports: Submit with Applications for Payment.
- F. Daily Construction Reports: Submit at weekly 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.

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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.
 2. Delays: Contractor to include three days per month for delays such as noise shutdowns, inclement weather, and etcetera. Days shall be cumulative throughout the project, no contract time extension will be granted until it is evident that actual days will exceed the cumulative totals available. The Contractor's sole remedy for the above described delays shall be an extension of Contract Time.
- 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 the following 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 013300 "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 and Construction Manager'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. Phasing: Arrange list of activities on schedule by phase.
 2. Work under More Than One Contract: Include a separate activity for each contract.
 3. Work by Owner: Include a separate activity for each portion of the Work performed by Owner.
 4. 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.

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- f. Provisions for future construction.
 - g. Seasonal variations.
 - h. Environmental control.
 - 5. 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 (GANTT CHART)
- A. Gantt-Chart Schedule: Submit a comprehensive, fully developed, horizontal, Gantt-chart-type, Contractor's construction schedule within 30 days of date established for commencement of the Work.
 - B. Preparation: Indicate each significant construction activity separately. Identify first workday of each week with a continuous vertical line.
 - 1. For construction activities that require three months or longer to complete, indicate an estimated completion percentage in 10 percent increments within time bar.
- 2.3 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.

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- C. CPM Schedule: Prepare Contractor's construction schedule using a cost- and resource-loaded, 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.
 - 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.

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- 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.
 - 9. Average size of workforce.
 - 10. Dollar value of activity (coordinated with the schedule of values).

- 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.

2.4 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.

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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 bi-weekly 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 013200

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SECTION 013233 - PHOTOGRAPHIC DOCUMENTATION

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes administrative and procedural requirements for the following:
 - 1. Preconstruction photographs.
 - 2. Periodic construction photographs.
- B. Related Requirements:
 - 1. Section 017700 "Closeout Procedures" for submitting photographic documentation as Project Record Documents at Project closeout.

1.2 INFORMATIONAL SUBMITTALS

- A. Key Plan: Submit key plan of Project site and building with notation of vantage points marked for location and direction of each photograph. Indicate elevation or story of construction. Include same information as corresponding photographic documentation.
- B. Digital Photographs: Submit unaltered, original, full-size image files within three days of taking photographs.
 - 1. Digital Camera: Minimum sensor resolution of 8 megapixels.
 - 2. Identification: Provide the following information with each image description in file metadata tag:
 - a. Name of Project.
 - b. Name and contact information for photographer.
 - c. Date photograph was taken.
 - d. Description of vantage point, indicating location, direction (by compass point), and elevation or story of construction.

1.3 QUALITY ASSURANCE

- A. Photographer Qualifications: An individual who has been regularly engaged as a professional photographer of construction projects for not less than three years.

1.4 USAGE RIGHTS

- A. Obtain and transfer copyright usage rights from photographer to Owner for unlimited reproduction of photographic documentation.

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PART 2 - PRODUCTS

2.1 PHOTOGRAPHIC MEDIA

- A. Digital Images: Provide images in JPG format, with minimum size of 8 megapixels.

PART 3 - EXECUTION

3.1 CONSTRUCTION PHOTOGRAPHS

- A. Photographer: Engage a qualified photographer to take construction photographs.
- B. General: Take photographs using the maximum range of depth of field, and that are in focus, to clearly show the Work. Photographs with blurry or out-of-focus areas will not be accepted.
 - 1. Maintain key plan with each set of construction photographs that identifies each photographic location.
- C. Digital Images: Submit digital images exactly as originally recorded in the digital camera, without alteration, manipulation, editing, or modifications using image-editing software.
 - 1. Date and Time: Include date and time in file name for each image.
 - 2. Field Office Images: Maintain one set of images accessible in the field office at Project site, available at all times for reference. Identify images in the same manner as those submitted to Architect.
- D. Preconstruction Photographs: Before commencement of demolition and starting construction, take photographs of Project site and surrounding properties, including existing items to remain during construction, from different vantage points, as directed by Architect.
 - 1. Take 20 photographs to show existing conditions adjacent to property before starting the Work.
- E. Periodic Construction Photographs: Take 20 photographs weekly, with timing each month adjusted to coincide with the cutoff date associated with each Application for Payment. Select vantage points to show status of construction and progress since last photographs were taken.
- F. Final Completion Construction Photographs: Take 20 color photographs after date of Substantial Completion for submission as Project Record Documents. Architect will inform photographer of desired vantage points.

END OF SECTION 013233

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SECTION 013300 - 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 013100 "Project Management and Coordination" for information regarding project web-site.
 - 2. Section 013200 "Construction Progress Documentation" for submitting schedules and reports, including Contractor's construction schedule.
 - 3. Section 017823 "Operation and Maintenance Data" for submitting operation and maintenance manuals.
 - 4. Section 017839 "Project Record Documents" for submitting record Drawings, record Specifications, and record Product Data.
 - 5. Section 017900 "Demonstration and Training" for submitting video recordings of demonstration of equipment and training of Owner's personnel.

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 will be provided by Architect for Contractor's use in preparing submittals.
 - 1. Following the award of the Contract, the successful Contractor or Supplier may, at their

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option, obtain electronic digital CAD files from the Architect / Engineer of the drawings contained within the Construction Drawing set at a charge of \$100 (one hundred dollars) per sheet plus any additional costs for shipping or handling.

- a. Architect makes no representations as to the accuracy or completeness of digital data drawing files as they relate to the Contract Drawings.
 - b. Digital Data Format: The digital data files are available in RVT (Revit), DWG, or PDF format.
 - c.
2. -The electronic documentation cannot be modified, duplicated, or utilized for any other purpose other than preparation of bids, preparation of shop drawings, facilities management services, or other direct services to the specific client identified in the documentation.
 3. The electronic documentation is considered to be an “instrument of service” of the Architect and is subject to all copyright laws and protections.
 4. The recipient of the electronic documentation acknowledges that by accepting the documentation, he or she recognizes that electronic information can be altered or changed. The Architect expresses no guarantee that information contained herein is complete or accurate.
 5. The only legally recognized documentation is the original documentation that contains the signature of the Architect.
- 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 re-submittals, 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 re-submittals.
1. Initial Review: Allow 10 business days from receipt of submittal 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. Re-submittal Review: Allow 10 business days from receipt of submittal for review of each re-submittal.

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- D. Electronic Submittals: Identify and incorporate information in each electronic submittal file as follows:
1. Assemble complete submittal package into a single indexed file incorporating submittal requirements of a single Specification Section and transmittal form with links enabling navigation to each item.
 2. Name file with submittal number or other unique identifier, including revision identifier.
 - a. File name shall use project name identifier followed by an underscore and Specification Section number followed by an underscore and then a sequential number (e.g., YorkCoFire_061000_001). Re-submittals shall include an alphabetic suffix after another underscore (e.g., YorkCoFire_061000_001_A).
 3. For emailed submittals, subject line of email shall include project name as it reads on the drawings and submittal number (i.e. 061000_001).
 4. Transmittal Form for Electronic Submittals: Use form provided by the Architect at the end of this Section, containing the following information:
 - a. Include the following information on the transmittal form:
 - 1) Name and address of Contractor submitting.
 - 2) Submittal number, including revision identifier.
 - a) Submittal number on top right of form shall use Specification Section number followed by a hyphen and then a sequential number (e.g., 061000-01). Re-submittals shall include an alphabetic suffix after a hyphen (e.g., 061000-01-A). Sequential number after specification section shall start over for each specification section (e.g., Rebar Shop drawings would be 033000-01; Cast Stone Masonry Shop drawings would be 047200-01, and etc.)
 - 3) Date of submission.
 - 4) Project name.
 - 5) Davis Design project number.
 - 6) Indicate if initial submittal or re-submittal by placing an "X" in the appropriate location.
 - 7) Complete blocks 1 - 5:
 - a) Number of appropriate Specification Section.
 - b) Item description.
 - c) Manufacturer or supplier name.
 - d) Drawing number and detail references, as appropriate.
 - e) Indicate with an "X" if sample is to be delivered to the Architect for review.
 - 8) Other necessary identification.
 - 9) Utilize indicated location on Architect's transmittal form to permanently record Contractor's review and approval markings.

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- E. Options: Identify options requiring selection by Architect.
- F. Deviations: Identify deviations from the Contract Documents on submittals.
- G. Re-submittals: Make re-submittals 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 "Remarks" section of transmittal and clearly indicate extent of revision.
 - 3. Re-submit submittals until they are marked either "A – No Exceptions Taken" or "B – Furnish as Corrected."
- 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 either "A – No Exceptions Taken" or "B – Furnish as Corrected" on approval notation from Architect's action stamp.

PART 2 - PRODUCTS

2.1 SUBMITTAL PROCEDURES

- A. General Submittal Procedure Requirements:
 - 1. Submit electronic submittals via email as PDF electronic files.
 - a. Architect will return annotated file. Annotate and retain one copy of file as an electronic Project record document file.
 - 2. 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.

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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. PDF electronic file.
- 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. PDF electronic file.
- 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.

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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. Submittal number.
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. Physical samples shall be delivered to the Architect within 48 hours of the product data being emailed. Physical sample shall be accompanied by a printed copy of the same Submittal Transmittal used when emailing the product data to the Project Web-site.
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 three 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 retain one Sample set; remaining sets will be returned 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 three sets of Samples. Architect will retain one Sample set; 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.

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- 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 format:
 - a. PDF electronic file.
- F. Coordination Drawings Submittals: Comply with requirements specified in Section 013100 "Project Management and Coordination."
- G. Contractor's Construction Schedule: Comply with requirements specified in Section 013200 "Construction Progress Documentation."
- H. Application for Payment and Schedule of Values: Comply with requirements specified in Section 012900 "Payment Procedures."
- I. Test and Inspection Reports and Schedule of Tests and Inspections Submittals: Comply with requirements specified in Section 014000 "Quality Requirements."
- J. Closeout Submittals and Maintenance Material Submittals: Comply with requirements specified in Section 017700 "Closeout Procedures."
- K. Maintenance Data: Comply with requirements specified in Section 017823 "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.

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- 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 014000 "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 filepaper 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.

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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 017700 "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, as follows:
 - 1. "A – No Exceptions Taken" - Final Unrestricted Release: Work may proceed, provided it complies with the contract documents.
 - 2. "B - Furnish as Corrected" - Final-But-Restricted Release: Work may proceed, provided it complies with the notations and corrections on the submittal and with the contract documents.
 - 3. "C-Revise and Re-submit" - Returned for Re-submittal: Do not proceed with the work. Revise the submittal in accordance with the notations thereon, and re-submit without delay to obtain a different marking. Do not allow submittals with the following marking (or unmarked submittals where a marking is required) to be used in connection with performance of the work.
 - a. Where it is necessary that work on certain items covered by the submittal must proceed to avoid delays in the coordination and integration of such items with related work, the Architect may mark submittals with marking "B-Approved as Noted" and marking "C-Revise and Re-submit." In this instance, work may proceed, at the Contractor's risk, providing it complies with all notations on the submittal and with the contract documents.
 - 4. "D-Rejected – Re-submit (See Remarks)" - Rejected – Re-submittal Required: Do not proceed with the work. Items submitted do not comply with project requirements. Re-submit for indicated items in accordance with notations and remarks thereon. Do not allow submittals with the following marking (or unmarked submittals where a marking is required) to be used in connections with performance of the work.

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5. "E-No Action Taken (See Remarks)" - Other Action: Where submittal is returned for other reasons, as explained thereon.
- 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 re-submittal without review.
- E. Submittals not required by the Contract Documents may not be reviewed and may be discarded.

END OF SECTION 013300

SUBMITTAL FORM

PROJECT: _____

SUBMITTAL NO.: _____ *(ex. 033000-001)*
Section Number - sequential number within section

1STSUBMITTAL _____ *(indicated by "X")*

RE-SUBMITTAL _____ *(indicated by "X")*

FROM: _____
(Contractor) _____

DATE: _____

DAVIS DESIGN
 PROJECT NO.: _____

CONTRACTOR SHALL FILL IN BLOCKS 1 - 5 BELOW.

1. SPEC SECTION	2. ITEM DESCRIPTION	3. MANUFACTURER OR SUPPLIER	4. DRAWING NO..	5. SAMPLE TO FOLLOW (MARK X)

THE ABOVE DATA HAS BEEN REVIEWED IN ACCORDANCE WITH THE PROVISIONS OF THE PROJECT SPECIFICATIONS AND IS RETURNED WITH ACTION DESIGNATED BELOW ON THE ARCHITECT'S REVIEW STAMP:

Contractor Review Stamp	Architect Review Stamp
Remarks:	

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SECTION 014000 - 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.

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- 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.
- 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.

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- 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, to Architect, all 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. 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.

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- 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.

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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.

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. 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.

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- D. 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.
- E. 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. Preliminary design mix proposed for use for material mixes that require control by testing agency.
 6. Security and protection for samples and for testing and inspecting equipment at Project site.
- F. 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: Engage a qualified special inspector 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.

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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 017300 "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 014000

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SECTION 014200 - 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.

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- 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 Gale's "Encyclopedia of Associations: National Organizations of the U.S." or in Columbia Books' "National Trade & Professional Associations of the United States."

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 014200

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SECTION 015000 - 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 011000 "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, occupants of Project, testing agencies, and authorities having jurisdiction.
- B. Water and Sewer Service from Existing System: Water from Owner's existing water system is available for use without metering and without payment of use charges. Provide connections and extensions of services as required for construction operations.
- C. Electric Power Service from Existing System: Electric power from Owner's existing system is available for use without metering and without payment of use charges. Provide connections and extensions of services as required for construction operations.

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.

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- 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 TEMPORARY FACILITIES

- A. Field Offices, General: Prefabricated or mobile units with serviceable finishes, temperature controls, and foundations adequate for normal loading.
- B. Storage and Fabrication Sheds: Provide sheds sized, furnished, and equipped to accommodate materials and equipment for construction operations.

2.2 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 017700 "Closeout Procedures."

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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 011000 "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. Water Service: Connect to Owner's existing water service facilities. Clean and maintain water service facilities in a condition acceptable to Owner. At Substantial Completion, restore these facilities to condition existing before initial use.
- E. 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.
 - 1. Toilets: Use of Owner's existing toilet facilities will be permitted, as long as facilities are cleaned and maintained in a condition acceptable to Owner. At Substantial Completion, restore these facilities to condition existing before initial use.
- F. Heating and Cooling: Provide temporary heating and cooling 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. All utility costs are the responsibility of the General Contractor.

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- G. 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.
- H. Electric Power Service: Connect to Owner's existing electric power service. Maintain equipment in a condition acceptable to Owner.

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 (9 m) 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. 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.
- C. Parking: Use designated areas of Owner's existing parking areas for construction personnel.
- D. Project Signs: Provide Project signs as indicated. Unauthorized signs are not permitted.
 - 1. Identification Signs: Provide Project identification signs as indicated on Drawings.
 - 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.
- E. Waste Disposal Facilities: Comply with requirements specified in Section 017419 "Construction Waste Management and Disposal."
- F. 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 017300 "Execution."

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- G. Existing Stair Usage: Use of Owner's existing stairs will be permitted, provided stairs are cleaned and maintained in a condition acceptable to Owner. At Substantial Completion, restore stairs to condition existing before initial use.
 - 1. Provide protective coverings, barriers, devices, signs, or other procedures to protect stairs and to maintain means of egress. If stairs become damaged, restore damaged areas so no evidence remains of correction work.
- H. 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. Contractor shall verify and document pre-existing damage.
- 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. 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.
- D. Barricades, Warning Signs, and Lights: Comply with requirements of authorities having jurisdiction for erecting structurally adequate barricades, including warning signs and lighting.
- E. Temporary Egress: Maintain temporary egress from existing occupied facilities as indicated and as required by authorities having jurisdiction.
- F. 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.
- G. Temporary Partitions: Provide floor-to-structure dustproof partitions to limit dust and dirt migration and to separate areas occupied by Owner and tenants from fumes and noise.
 - 1. Construct dustproof partitions with gypsum wallboard with joints taped on occupied side, and fire-retardant-treated plywood on construction operations side or as required by the local code authority having jurisdiction.

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2. Where applicable, construct dustproof partitions with two layers of 6-mil (0.14-mm) fire-rated polyethylene sheet on each side. Cover floor with two layers of 6-mil (0.14-mm) polyethylene sheet, extending sheets 18 inches (460 mm) up the sidewalls. Overlap and tape full length of joints. Cover floor with fire-retardant-treated plywood.
 - a. Construct vestibule and airlock at each entrance through temporary partition with not less than 48 inches (1219 mm) between doors. Maintain water-dampened foot mats in vestibule.
 3. Where fire-resistance-rated temporary partitions are indicated or are required by authorities having jurisdiction, construct partitions according to the rated assemblies.
 4. Insulate partitions to control noise transmission to occupied areas.
 5. Seal joints and perimeter. Equip partitions with gasketed dustproof doors and security locks where openings are required.
 6. Protect air-handling equipment.
 7. Provide walk-off mats at each entrance through temporary partition.
- H. 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 on Project Site. Refer to Division 01 Section "Summary".
 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.
- I. Maintain existing smoke detection system throughout Project. Cover detectors when contractors and subcontractors are present and working; uncover before leaving the project at the end of each work day.

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.

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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 017700 "Closeout Procedures."

END OF SECTION 015000

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SECTION 016000 - 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 012500 "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

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request. Architect will notify Contractor through Construction Manager 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 013300 "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 013300 "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.

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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 017700 "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.

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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 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 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 012500 "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.

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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. Architect will consider requests within 60 days after Notice to Proceed.
 2. 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.
 3. 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.
 4. Evidence that proposed product provides specified warranty.
 5. List of similar installations for completed projects with project names and addresses and names and addresses of architects and owners, if requested.
 6. Samples, if requested.

PART 3 - EXECUTION (Not Used)

END OF SECTION 016000

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SECTION 017300 - 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 011000 "Summary" for limits on use of Project site.
 - 2. Section 017700 "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 078413 "Penetration Firestopping" for patching penetrations in fire-rated construction.

1.2 INFORMATIONAL SUBMITTALS

- A. Landfill Receipts: Submit copy of receipts issued by a landfill facility, licensed to accept hazardous materials, for hazardous waste disposal.

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

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2. 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.

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- 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 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 013100 "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. 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.

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- 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.

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.

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- 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 prevent 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.

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- 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. Coordinate progress cleaning for joint-use areas where more than one installer has worked. 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 (27 deg C)**.
 - 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.

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- 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 014000 "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 017300

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SECTION 017419 - CONSTRUCTION WASTE MANAGEMENT AND DISPOSAL

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes administrative and procedural requirements for the following:
 - 1. Salvaging nonhazardous demolition and construction waste.
 - 2. Recycling nonhazardous demolition and construction waste.
 - 3. Disposing of nonhazardous demolition and construction waste.
- B. Related Requirements:
 - 1. Section 024119 "Selective Demolition" for disposition of waste resulting from partial demolition of buildings, structures, and site improvements, and for disposition of hazardous waste.

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. Demolition Waste: Building and site improvement materials resulting from demolition or selective demolition operations.
- C. Disposal: Removal off-site of demolition and construction waste and subsequent sale, recycling, reuse, or deposit in landfill acceptable to authorities having jurisdiction.
- D. Recycle: Recovery of demolition or construction waste for subsequent processing in preparation for reuse.
- E. Salvage: Recovery of demolition or construction waste and subsequent sale or reuse in another facility.
- F. Salvage and Reuse: Recovery of demolition or construction waste and subsequent incorporation into the Work.

1.3 WASTE MANAGEMENT PLAN

- A. General: Develop a waste management plan according to ASTM E 1609 and requirements in this Section. Plan shall consist of waste identification, waste reduction work plan, and cost/revenue analysis. Distinguish between demolition and construction waste. Indicate quantities by weight or volume, but use same units of measure throughout waste management plan.

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- B. Waste Identification: Indicate anticipated types and quantities of demolition and construction waste generated by the Work. Include estimated quantities and assumptions for estimates.
- C. Waste Reduction Work Plan: List each type of waste and whether it will be salvaged, recycled, or disposed of in landfill or incinerator. Include points of waste generation, total quantity of each type of waste, quantity for each means of recovery, and handling and transportation procedures.
 - 1. Salvaged Materials for Reuse: For materials that will be salvaged and reused in this Project, describe methods for preparing salvaged materials before incorporation into the Work.
 - 2. Salvaged Materials for Sale: For materials that will be sold to individuals and organizations, include list of their names, addresses, and telephone numbers.
 - 3. Salvaged Materials for Donation: For materials that will be donated to individuals and organizations, include list of their names, addresses, and telephone numbers.
 - 4. Recycled Materials: Include list of local receivers and processors and type of recycled materials each will accept. Include names, addresses, and telephone numbers.
 - 5. Disposed Materials: Indicate how and where materials will be disposed of. Include name, address, and telephone number of each landfill and incinerator facility.
 - 6. Handling and Transportation Procedures: Include method that will be used for separating recyclable waste including sizes of containers, container labeling, and designated location where materials separation will be performed.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 PLAN IMPLEMENTATION

- A. General: Implement approved waste management plan. Provide handling, containers, storage, signage, transportation, and other items as required to implement waste management plan during the entire duration of the Contract.
- B. Waste Management Coordinator: Engage a waste management coordinator to be responsible for implementing, monitoring, and reporting status of waste management work plan.
- C. Training: Train workers, subcontractors, and suppliers on proper waste management procedures, as appropriate for the Work occurring at Project site.
 - 1. Distribute waste management plan to everyone concerned within three days of submittal return.
 - 2. Distribute waste management plan to entities when they first begin work on-site. Review plan procedures and locations established for salvage, recycling, and disposal.

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- D. Site Access and Temporary Controls: Conduct waste management operations to ensure minimum interference with roads, streets, walks, walkways, and other adjacent occupied and used facilities.
 - 1. Designate and label specific areas on Project site necessary for separating materials that are to be salvaged, recycled, reused, donated, and sold.
 - 2. Comply with Section 015000 "Temporary Facilities and Controls" for controlling dust and dirt, environmental protection, and noise control.

3.2 SALVAGING DEMOLITION WASTE

A. Salvaged Items for Reuse in the Work:

- 1. Clean salvaged items.
- 2. Pack or crate items after cleaning. Identify contents of containers.
- 3. Store items in a secure area until installation.
- 4. Protect items from damage during transport and storage.
- 5. Install salvaged items to comply with installation requirements for new materials and equipment. Provide connections, supports, and miscellaneous materials necessary to make items functional for use indicated.

B. Salvaged Items for Owner's Use:

- 1. Clean salvaged items.
- 2. Pack or crate items after cleaning. Identify contents of containers.
- 3. Store items in a secure area until delivery to Owner.
- 4. Transport items to Owner's storage area designated by Owner.
- 5. Protect items from damage during transport and storage.

3.3 RECYCLING DEMOLITION AND CONSTRUCTION WASTE, GENERAL

A. General: Recycle paper and beverage containers used by on-site workers.

B. Procedures: Separate recyclable waste from other waste materials, trash, and debris. Separate recyclable waste by type at Project site to the maximum extent practical according to approved construction waste management plan.

- 1. Provide appropriately marked containers or bins for controlling recyclable waste until they are removed from Project site. Include list of acceptable and unacceptable materials at each container and bin.
 - a. Inspect containers and bins for contamination and remove contaminated materials if found.
- 2. Stockpile processed materials on-site without intermixing with other materials. Place, grade, and shape stockpiles to drain surface water. Cover to prevent windblown dust.
- 3. Stockpile materials away from construction area. Do not store within drip line of remaining trees.

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4. Store components off the ground and protect from the weather.
5. Remove recyclable waste from Owner's property and transport to recycling receiver or processor.

3.4 RECYCLING DEMOLITION WASTE

- A. Concrete: Remove reinforcement and other metals from concrete and sort with other metals.
- B. Masonry: Remove metal reinforcement, anchors, and ties from masonry and sort with other metals.
 1. Clean and stack undamaged, whole masonry units on wood pallets.
- C. Wood Materials: Sort and stack members according to size, type, and length. Separate lumber, engineered wood products, panel products, and treated wood materials.
- D. Metals: Separate metals by type.
 1. Structural Steel: Stack members according to size, type of member, and length.
 2. Remove and dispose of bolts, nuts, washers, and other rough hardware.
- E. Gypsum Board: Stack large clean pieces on wood pallets or in container and store in a dry location. Remove edge trim and sort with other metals. Remove and dispose of fasteners.
- F. Acoustical Ceiling Panels and Tile: Stack large clean pieces on wood pallets and store in a dry location.
- G. Metal Suspension System: Separate metal members including trim, and other metals from acoustical panels and tile and sort with other metals.
- H. Piping: Reduce piping to straight lengths and store by type and size. Separate supports, hangers, valves, sprinklers, and other components by type and size.
- I. Conduit: Reduce conduit to straight lengths and store by type and size.

3.5 RECYCLING CONSTRUCTION WASTE

- A. Packaging:
 1. Cardboard and Boxes: Break down packaging into flat sheets. Bundle and store in a dry location.
 2. Polystyrene Packaging: Separate and bag materials.
 3. Pallets: As much as possible, require deliveries using pallets to remove pallets from Project site. For pallets that remain on-site, break down pallets into component wood pieces and comply with requirements for recycling wood.
 4. Crates: Break down crates into component wood pieces and comply with requirements for recycling wood.

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- B. Wood Materials:
 - 1. Clean Cut-Offs of Lumber: Grind or chip into small pieces.
 - 2. Clean Sawdust: Bag sawdust that does not contain painted or treated wood.

- C. Gypsum Board: Stack large clean pieces on wood pallets or in container and store in a dry location.
 - 1. Clean Gypsum Board: Grind scraps of clean gypsum board using small mobile chipper or hammer mill. Screen out paper after grinding.

3.6 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 and dispose of at designated spoil areas on Owner's property.

- D. Disposal: Remove waste materials from Owner's property and legally dispose of them.

END OF SECTION 017419

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SECTION 017700 - 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 017823 "Operation and Maintenance Data" for operation and maintenance manual requirements.
 - 2. Section 017839 "Project Record Documents" for submitting record Drawings, record Specifications, and record Product Data.
 - 3. Section 017900 "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.

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1.5 SUBSTANTIAL COMPLETION PROCEDURES

- A. Contractor's Punch List: Prepare a list of items to be completed and corrected, indicating the value of each item on the list and reasons why the Work is incomplete. Submit to the Architect prior to requesting a substantial completion punch list.

- 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, record shop drawings, damage or settlement surveys, property surveys, and similar final record information.
 - 3. Provide submittals requested by the Architect for use in preparing submission to Department of Health & Human Services for projects requiring state license (e.g. Medical Gas Certification, Nurse Call Certification, etc.)
 - 4. Submit closeout submittals specified in individual Sections, including specific warranties, workmanship bonds, maintenance service agreements, final certifications, and similar documents.
 - 5. 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.
 - 6. Submit test/adjust/balance records.
 - 7. 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 017900 "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.

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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 (punch list) 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 (Final Inspection): 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.
3. Architect will provide a maximum total of two (2) visits; one (1) visit for substantial completion (punch list) and one (1) visit for re-inspection (final). If additional re-inspection(s) are required due to incompleteness of work identified in previous inspection, cost of the re-inspection(s) by the Architect / Engineer will be billed to the Owner and deducted from the Contractor's final Application for Payment.

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 012900 "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. Submit demonstration and training video recordings.

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 items applying to each space by major element, including categories for ceiling, individual walls, floors, equipment, and building systems.

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2. Submit list of incomplete items in the following format:
 - a. PDF electronic file. Architect, through Construction Manager, will return annotated copy.

1.8 SUBMITTAL OF PROJECT WARRANTIES

- A. Time of Submittal: Submit written warranties 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.

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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. (if applicable)
 - 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 (including window treatments). 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.

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- C. Pest Control: Comply with pest control requirements in Section 015000 "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 017700

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SECTION 017823 - 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. PDF electronic file. Assemble each manual into a composite electronically indexed file. Submit on digital media acceptable to Architect.
 - a. Name each indexed document file in composite electronic index with applicable item name. Include a complete electronically linked operation and maintenance directory.
 - b. Enable inserted reviewer comments on draft submittals.
 - 2. 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.

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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, Electronic Files: Submit manuals in the form of a multiple file composite electronic PDF file for each manual type required.
 - 1. Electronic Files: Use electronic files prepared by manufacturer where available. Where scanning of paper documents is required, configure scanned file for minimum readable file size.
 - 2. File Names and Bookmarks: Enable bookmarking of individual documents based on file names. Name document files to correspond to system, subsystem, and equipment names used in manual directory and table of contents. Group documents for each system and subsystem into individual composite bookmarked files, then create composite manual, so that resulting bookmarks reflect the system, subsystem, and equipment names in a readily navigated file tree. Configure electronic manual to display bookmark panel on opening file.

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- G. 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 (215-by-280-mm) 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.

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- 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.

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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.

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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.

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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 017700 "Closeout Procedures" for schedule for submitting operation and maintenance documentation.

END OF SECTION 017823

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SECTION 017839 - 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.
- B. Related Requirements:
 - 1. Section 017823 "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 one set of marked-up record prints.

OR
 - 2. Number of Copies: Submit copies of record Drawings as follows:
 - a. Initial Submittal:
 - 1) Submit one paper-copy set of marked-up record prints.
 - 2) Architect will indicate whether general scope of changes and additional information recorded are acceptable.
 - b. Final Submittal:
 - 1) Submit electronically annotated PDF files of drawings.
 - 2) Submit each drawing, whether or not changes and additional information were recorded.
- B. Record Specifications: Submit electronically annotated PDF files of Project's Specifications, including addenda and contract modifications.

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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 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 and Construction Manager. When authorized, prepare a full set of corrected digital data files of the Contract Drawings, as follows:
1. Format: Same digital data software program, version, and operating system as the original Contract Drawings.
 2. Format: Electronically annotated PDF electronic file.
 3. Incorporate changes and additional information previously marked on record prints. Delete, redraw, and add details and notations where applicable.
 4. Refer instances of uncertainty to Architect for resolution.
 5. Architect will furnish Contractor one set of digital data files of the Contract Drawings for use in recording information.
- 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: Electronically annotated PDF electronic file.
 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.

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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 and record Drawings where applicable.
- B. Format: Submit record Specifications as electronically annotated PDF file.

2.3 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 electronically annotated PDF file.

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 017839

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SECTION 017900 - 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.
 - 3. Demonstration and training video recordings.

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.
- B. Routine Maintenance Schedule: Submit routine maintenance schedule developed prior to training. Routine maintenance schedule shall be included in final training manual for Owner's use at completion of training.

1.3 CLOSEOUT SUBMITTALS

- A. Demonstration and Training Video Recordings: Submit three copies within seven days of end of each training module.
- B. At completion of training, submit complete training manual(s) for Owner's use prepared and bound in format matching operation and maintenance manuals and in PDF electronic file format on compact disc.
 - 1. On each copy, provide an applied label with the following information:
 - a. Name of Project.
 - b. Name and address of videographer.
 - c. Name of Architect.
 - d. Name of Contractor.
 - e. Date videotape was recorded.

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1.4 QUALITY ASSURANCE

- A. Instructor Qualifications: A factory-authorized service representative, complying with requirements in Section 014000 "Quality Requirements," experienced in operation and maintenance procedures and training.
- B. Preinstruction Conference: Conduct conference at Project site to comply with requirements in Section 013100 "Project Management and Coordination." Review methods and procedures related to demonstration and training.
- C. Videographer Qualifications: A professional videographer who is experienced videotaping construction projects.

1.5 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. Training shall not be performed prior to Architect approval of Operation and Maintenance manuals.

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. Training modules shall be identified by their corresponding specification section.
- B. Routine Maintenance Schedule: Provide a routine maintenance schedule identifying, by specification section, each item requiring routine maintenance followed with a brief description of the monthly, quarterly, yearly, etc maintenance requirements. Items shall be identified by their equipment tag if applicable. This document shall be a short summary prepared by the contractor from the operation and maintenance data and shall only identify the maintenance item, not the full procedures which are identified in the operations and maintenance manuals. An example of the expected format is as follows:

- 1. 232123 – Hydronic Pumps
 - a. HPWP-1 and HPWP-2
 - 1) Every 3 months – Grease Motor Bearings
 - 2) Every 6 months – Grease Pump Bearings

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- C. 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.

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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 017823 "Operation and Maintenance Data."

3.2 INSTRUCTION

- A. Engage qualified instructors to instruct Owner's personnel to adjust, operate, and maintain systems, subsystems, and equipment not part of a system.
 1. Owner will furnish an operator to describe Owner's operational philosophy.
 2. Owner will furnish Contractor with names and positions of participants.
 3. Commissioning Agent shall be present at training meetings.

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- B. 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 14 days' advance notice.
- C. 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.
- D. Evaluation: At conclusion of each training module, assess and document each participant's mastery of module by use of a performance-based test.

3.3 DEMONSTRATION AND TRAINING VIDEO RECORDINGS

- A. General: Engage a qualified commercial videographer to record demonstration and training video recordings. Record each training module separately. Include classroom instructions and demonstrations, board diagrams, and other visual aids, but not student practice.
 - 1. At beginning of each training module, record each chart containing learning objective and lesson outline.
- B. Video Recording Format: Provide high-quality color video recordings with menu navigation in DVD format.
- C. Narration: Describe scenes on video recording by audio narration by microphone while video recording is recorded. Include description of items being viewed.
- D. Transcript: Provide a typewritten transcript of the narration. Display images and running time captured from video opposite the corresponding narration segment.
- E. Preproduced Video Recordings: Provide video recordings used as a component of training modules in same format as recordings of live training.

END OF SECTION 017900

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SECTION 024119 - SELECTIVE DEMOLITION

PART 1 - GENERAL

1.1 SUMMARY

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

1.2 DEFINITIONS

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

1.3 INFORMATIONAL SUBMITTALS

- A. Qualification Data: For refrigerant recovery technician.
- B. Predemolition Photographs or Video: Submit before Work begins.
- C. Statement of Refrigerant Recovery: Signed by refrigerant recovery technician.

1.4 CLOSEOUT SUBMITTALS

- A. Landfill Records: Indicate receipt and acceptance of hazardous wastes by a landfill facility licensed to accept hazardous wastes.

1.5 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. Submit proposed detailed demolition schedule to Owner and Architect showing locations and length of time for demolition.

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- 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. Any discrepancies not brought to the attention of the Architect will be Contractor's responsibility.
- 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. Hazardous Materials: Hazardous materials are present in buildings and structures to be selectively demolished. A report on the presence of hazardous materials is on file for review and use. Examine report to become aware of locations where hazardous materials are present.
 - 1. Do not disturb hazardous materials or items suspected of containing hazardous materials except under procedures specified elsewhere in the Contract Documents.
- F. Storage or sale of removed items or materials on-site is not permitted.
- G. 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.

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 ANSI/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.

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- B. Survey existing conditions and correlate with requirements indicated to determine extent of selective demolition required.
- C. When unanticipated mechanical, electrical, or structural elements that conflict with intended function or design are encountered, investigate and measure the nature and extent of conflict. Promptly submit a written report to Architect.
- D. Notify Architect to 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.
- E. Survey of Existing Conditions: Record existing conditions by use of measured drawings and preconstruction photographs.
 - 1. Comply with requirements specified in Section 013233 "Photographic Documentation."

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.
 - 1. Comply with requirements for existing services/systems interruptions specified in Section 011000 "Summary."
- B. Existing Services/Systems to Be Removed, Relocated, or Abandoned: Locate, identify, disconnect, and seal or cap off indicated utility services and mechanical/electrical systems serving areas to be selectively demolished. Conform with mechanical / electrical drawings and specification requirements.
 - 1. Building manager will arrange to shut off indicated services/systems when requested by Contractor.
 - 2. Arrange to shut off indicated 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 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.
 - 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.

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- 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.
- C. Refrigerant: Remove refrigerant from mechanical equipment to be selectively demolished according to 40 CFR 82 and regulations of authorities having jurisdiction.

3.3 PREPARATION

- A. 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.
- 1. Comply with requirements for access and protection specified in Section 015000 "Temporary Facilities and Controls."
- B. Temporary Facilities: Provide temporary barricades, dust and fire-rated barriers, and other protection required to prevent injury to people and damage to adjacent occupied buildings and facilities to remain.
- C. Temporary Shoring: Contractor to provide and maintain all shoring, bracing, and structural supports as required to preserve stability and prevent movement, settlement, or collapse of construction and finishes to remain, and to prevent unexpected or uncontrolled movement or collapse of construction being demolished.

3.4 SELECTIVE DEMOLITION, GENERAL

- 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, to minimize disturbance of adjacent surfaces. 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 fire watch and 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.
 - 6. Provide dust control throughout demolition process.

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B. Removed and Salvaged Items:

1. Clean salvaged items.
2. Pack or crate items after cleaning. Identify contents of containers.
3. Store items in a secure area until delivery to Owner.
4. Transport items to Owner's storage area designated by Owner.
5. Protect items from damage during transport and storage.

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, cleaned, and reinstalled in their original locations after selective demolition operations are complete.

3.5 DISPOSAL OF DEMOLISHED MATERIALS

A. General: Except for items or materials indicated to be recycled, reused, salvaged, reinstalled, or otherwise indicated to remain Owner's property, remove demolished materials from Project site and legally dispose of them in an EPA-approved landfill.

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 017419 "Construction Waste Management and Disposal."

B. Burning: Do not burn demolished materials.

C. Disposal: Transport demolished materials off Owner's property and legally dispose of them.

3.6 CLEANING

A. 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 024119

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SECTION 078413 - PENETRATION FIRESTOPPING

PART 1 - GENERAL

1.1 SUMMARY

- A. Section Includes:
1. Penetrations in fire-resistance-rated walls.
 2. Penetrations in horizontal assemblies.
 3. Penetrations in smoke barriers.

1.2 ACTION SUBMITTALS

- A. Product Data: For each type of product indicated.
- B. Product Schedule: For each penetration firestopping system. Include location and design designation of qualified testing and inspecting agency.
1. Where Project conditions require modification to a qualified testing and inspecting agency's illustration for a particular penetration firestopping condition, submit illustration, with modifications marked, approved by penetration firestopping manufacturer's fire-protection engineer as an engineering judgment or equivalent fire-resistance-rated assembly.

1.3 INFORMATIONAL SUBMITTALS

- A. Installer Certificates: From Installer indicating penetration firestopping has been installed in compliance with requirements and manufacturer's written recommendations.
- B. Product test reports.

1.4 QUALITY ASSURANCE

- A. Fire-Test-Response Characteristics: Penetration firestopping shall comply with the following requirements:
1. Penetration firestopping tests are performed by a qualified testing agency acceptable to authorities having jurisdiction.
 2. Penetration firestopping is identical to those tested per testing standard referenced in "Penetration Firestopping" Article. Provide rated systems bearing marking of qualified testing and inspection agency.
- B. Preinstallation Conference: Conduct conference at Project site.

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PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. **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:
1. [A/D Fire Protection Systems Inc.](#)
 2. [Grace Construction Products.](#)
 3. [Hilti, Inc.](#)
 4. [Johns Manville.](#)
 5. [Nelson Firestop Products.](#)
 6. [NUCO Inc.](#)
 7. [Passive Fire Protection Partners.](#)
 8. [RectorSeal Corporation.](#)
 9. [Specified Technologies Inc.](#)
 10. [3M Fire Protection Products.](#)
 11. [Tremco, Inc.; Tremco Fire Protection Systems Group.](#)
 12. [USG Corporation.](#)

2.2 PENETRATION FIRESTOPPING

- A. Provide penetration firestopping that is produced and installed to resist spread of fire according to requirements indicated, resist passage of smoke and other gases, and maintain original fire-resistance rating of construction penetrated. Penetration firestopping systems shall be compatible with one another, with the substrates forming openings, and with penetrating items if any.
- B. Penetrations in Fire-Resistance-Rated Walls: Ratings determined per ASTM E 814 or UL 1479, based on testing at a positive pressure differential of **0.01-inch wg (2.49 Pa)**.
1. F-Rating: Not less than the fire-resistance rating of constructions penetrated.
- C. Penetrations in Horizontal Assemblies: Ratings determined per ASTM E 814 or UL 1479, based on testing at a positive pressure differential of **0.01-inch wg (2.49 Pa)**.
1. F-Rating: At least 1 hour, but not less than the fire-resistance rating of constructions penetrated.
 2. T-Rating: At least 1 hour, but not less than the fire-resistance rating of constructions penetrated except for floor penetrations within the cavity of a wall.
- D. Penetrations in Smoke Barriers: Provide penetration firestopping with ratings determined per UL 1479.
1. L-Rating: Not exceeding **5.0 cfm/sq. ft. (0.025 cu. m/s per sq. m)** of penetration opening at **0.30-inch wg (74.7 Pa)** at both ambient and elevated temperatures.

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- E. Exposed Penetration Firestopping: Provide products with flame-spread and smoke-developed indexes of less than 25 and 450, respectively, as determined per ASTM E 84.
- F. VOC Content: Penetration firestopping sealants and sealant primers shall comply with the following limits for VOC content when calculated according to 40 CFR 59, Subpart D (EPA Method 24):
 - 1. Sealants: 250 g/L.
 - 2. Sealant Primers for Nonporous Substrates: 250 g/L.
 - 3. Sealant Primers for Porous Substrates: 775 g/L.
- G. Low-Emitting Materials: Penetration firestopping sealants and sealant primers shall comply with the testing and product requirements of the California Department of Health Services' "Standard Practice for the Testing of Volatile Organic Emissions from Various Sources Using Small-Scale Environmental Chambers."
- H. Accessories: Provide components for each penetration firestopping system that are needed to install fill materials and to maintain ratings required. Use only those components specified by penetration firestopping manufacturer and approved by qualified testing and inspecting agency for firestopping indicated.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Examine substrates and conditions, with Installer present, for compliance with requirements for opening configurations, penetrating items, substrates, and other conditions affecting performance of the Work.
- B. Install penetration firestopping to comply with manufacturer's written installation instructions and published drawings for products and applications indicated.
- C. Install forming materials and other accessories of types required to support fill materials during their application and in the position needed to produce cross-sectional shapes and depths required to achieve fire ratings indicated.
 - 1. After installing fill materials and allowing them to fully cure, remove combustible forming materials and other accessories not indicated as permanent components of firestopping.
- D. Install fill materials for firestopping by proven techniques to produce the following results:
 - 1. Fill voids and cavities formed by openings, forming materials, accessories, and penetrating items as required to achieve fire-resistance ratings indicated.
 - 2. Apply materials so they contact and adhere to substrates formed by openings and penetrating items.
 - 3. For fill materials that will remain exposed after completing the Work, finish to produce smooth, uniform surfaces that are flush with adjoining finishes.

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3.2 IDENTIFICATION

- A. Identify penetration firestopping with preprinted metal or plastic labels. Attach labels permanently to surfaces adjacent to and within **6 inches (150 mm)** of firestopping edge so labels will be visible to anyone seeking to remove penetrating items or firestopping. Use mechanical fasteners or self-adhering-type labels with adhesives capable of permanently bonding labels to surfaces on which labels are placed. Include the following information on labels:
1. The words "Warning - Penetration Firestopping - Do Not Disturb. Notify Building Management of Any Damage."
 2. Contractor's name, address, and phone number.
 3. Designation of applicable testing and inspecting agency.
 4. Date of installation.
 5. Manufacturer's name.
 6. Installer's name.

3.3 FIELD QUALITY CONTROL

- A. Owner will engage a qualified testing agency to perform tests and inspections.
- B. Where deficiencies are found or penetration firestopping is damaged or removed because of testing, repair or replace penetration firestopping to comply with requirements.
- C. Proceed with enclosing penetration firestopping with other construction only after inspection reports are issued and installations comply with requirements.

END OF SECTION 078413

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DOCUMENT 210000 - FIRE PROTECTION GENERAL PROVISIONS

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 SECTION INCLUDES

- A. Pipe, fittings, valves, and connections for sprinkler systems.

1.3 REFERENCES

- A. ASME (BPV IX) – Boiler and Pressure Vessel Code, Section IX – Welding and Brazing Qualifications; The American Society of Mechanical Engineers; 1998.
- B. ASME B16.1 – Cast Iron Pipe Flanges and Flanged Fittings; The American Society of Mechanical Engineers; 1998.
- C. ASME B16.3 – Malleable Iron Threaded Fittings; The American Society of Mechanical Engineers; 1998.
- D. ASME B16.9 – Factory-made Wrought Steel Buttwelding Fittings; The American Society of Mechanical Engineers; 1993.
- E. ASTM A 47/A 47M – Standard Specification for Ferritic Malleable Iron Castings; 1999.
- F. ASTM A 53/A 53M – Standard Specification for Pipe, Steel, Black and Hot-Dipped, Zinc-Coated, Welded and Seamless; 2000.
- G. ASTM A 795 – Standard Specification for Black and Hot-Dipped Zinc-Coated (Galvanized) Welded and Seamless Steel Pipe for Fire Protection Use; 2000.
- H. AWS A5.8 – Specification for Filler Metals for Brazing and Braze Welding; American Welding Society; 1992.
- I. NFPA 13 – Standard for the Installation of Sprinkler Systems; National Fire Protection Association; Current State Adopted Edition.
- J. UL (FPED) – Fire Protection Equipment Directory; Underwriters Laboratories Inc.; Current Edition.
- K. UL 262 – Gate Valves for Fire-Protection Service; Underwriters Laboratories Inc.; Current Edition.
- L. UL 312 – Check Valves for Fire-Protection Service; Underwriters Laboratories Inc.; Current Edition.

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1.4 SUBMITTALS

- A. General: Do not submit under this specification. Specification is for information only.
- B. Product Data: Provide manufacturers catalogue information with the exception at pipe and pipe fittings. When more than one (1) model, size, finish, accessory, etc. are provided on a single vendor's catalog cut sheet, mark or highlight all that apply and/or mark through all that do not apply.
- C. Shop Drawings: Provide shop drawing that is in compliance with the "Working Drawings" description in NFPA 13. Indicate pipe materials used, jointing methods, supports, and floor and wall penetration seals. Indicate installation, layout, pipe elevations, pipe sizes, mounting and support details, piping connections, all ceiling devices and all exposed obstructions. If more than one pipe material is being used, shop drawing shall provide unique line types (color or line style) to indicate each material type. Provide detailed symbols legend for all symbols used on drawing. Drawings shall be provided using computerized drafting. Hand drawings shall not be permitted. Drawings shall not be created from PDF's or have PDF's imbedded with the CAD files.
- D. Project Record Documents: Record actual locations of components and tag numbering.
- E. Operation and Maintenance Data: Prepare and submit operation and maintenance instructions for all fire sprinkler data, quantity and delivery method as defined in Division 01. Each manual shall be tabbed with tabs for: product data, include installation instructions and spare parts lists; warranties; testing certifications, include both above ground piping and underground piping certifications; final hydraulic calculations; "AS BUILT" drawings folded and placed in plastic pouches with holes for insertion into a three-ring binder; and system maintenance requirements. Include contact information for emergency response. As with original submittal, product data shall be marked to reflect marked, model, size and finish(es) used on project.
 - 1. Content: Operations and maintenance manual content is specified in individual Specification Sections to be reviewed at the time of Section submittals. Submit reviewed content formatted and organized as required by this Section. Engineer will comment on content of operations and maintenance submittals and indicate where revisions or re-submittals are required. Clarify and update reviewed content to correspond to revisions and field conditions.
 - 2. Organization: Organize each manual into tabbed sections as noted above. Manual shall contain the following materials, in the order listed:
 - a. Title Page, including name and address of project and Owner, and contact information for Contractor, Construction Manager and Architect.
 - b. Table of Contents, including 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.
 - c. 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.

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- d. Electronic Files: Use electronic files prepared by manufacturer where available. Where scanning of paper documents is required, configure scanned file for minimum readable file size.
3. Format: Assemble each manual into a composite electronically indexed file. Submit on digital media acceptable to Architect/Engineer. Name each indexed document file in composite electronic index with applicable item name. Include a complete electronically linked operation and maintenance directory. Enable inserted reviewers' comments on draft submittals.
- 1.5 QUALITY ASSURANCE
- A. Conform to UL and FM requirements.
 - B. Valves: Bear UL label or marking. Provide manufacturer's name and pressure rating marked on valve body.
 - C. All grooved couplings, fittings, valves, and specialties shall be the products of a single manufacturer. Grooving tools shall be of the same manufacturer as the grooved components.
 - 1. All castings used for couplings housings, fittings, or valve and specialty bodies shall be date stamped for quality assurance and traceability.
 - D. Products Requiring Electrical Connection: Listed and classified as suitable for the purpose specified and indicated.
- 1.6 AUTOCAD DRAWING FILE REQUESTS
- A. As an instrument of service to aid in Shop Drawing Submittals, Farris Engineering (FEI) will provide AutoCAD drawing files upon request. The files will be sent upon return receipt of the "Request for Drawings" agreement signed by an officer of the requesting firm. FEI does not assure that the drawings represent all changes, addenda items, change orders or modifications that may have occurred. The drawings are simply a tool for use in producing shop drawing submittals.
 - B. The drawing files will be "cleaned-up" by having the FEI logo, Professional Engineer seal, and all extraneous notes and details removed. FEI must be compensated for this additional service by the requesting firm. A minimum fee of \$400.00 for up to eight (8) sheets and \$50.00 per sheet for each additional requested drawing will be invoiced to the requesting firm once the signed agreement is received.
- 1.7 DELIVERY, STORAGE AND PROTECTION
- A. Deliver and store valves and sprinklers in shipping containers, with labeling in place.

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- B. Extreme care shall be exercised by the Contractor to prevent dirt and other foreign matter from entering pipe or components of system during construction. Pipe stored outside on the site of the project shall have open ends capped and equipment shall have all openings fully protected. Before erection, each piece of pipe, fitting or valve shall be visually examined and all dirt removed.
- C. Provide temporary end caps and closures on piping and fittings. Maintain in place until installation.

1.8 EXTRA MATERIALS

- A. Provide NFPA 13 required quantity of spare stock of sprinklers and provide two (2) spare sprinkler wrenches and any other specialty wrench necessary to provide maintenance on the system for each size/style used on the project. Add notation to box cover that sprinklers are for jail riser zone only.

PART 2 - PRODUCTS

2.1 GENERAL SYSTEM AND PRODUCT REQUIREMENTS

- A. Sprinkler Systems: Conform work to NFPA 13.
- B. Welding Materials and Procedures: Conform to ASME Code.

2.2 PIPE HANGERS AND SUPPORTS

- A. Hangers for Pipe Sizes 1/2 to 3 inch: Carbon steel, adjustable swivel, split ring.
- B. Hangers for Pipe Sizes Over 3 inches: Carbon Steel, adjustable, clevis.
- C. Multiple or Trapeze Hangers: Steel channels with welded spacers and hanger rods.
- D. Wall Support for Pipe Sizes to 3 inches: Cast iron hook.
- E. Wall Support for Pipe Sizes 4 inches and Over: Welded steel bracket and wrought steel clamp.
- F. Vertical Support: Steel riser clamp.
- G. Floor Support: Cast iron adjustable pipe saddle, lock nut, nipple, floor flange, and concrete pier or steel support.

2.3 BUTTERFLY VALVES

- A. Bronze Body, up to and including 12":
 - 1. Stainless steel disc, resilient replaceable seat, threaded or grooved ends, extended neck, handwheel and gear drive and integral indicating device, and built-in tamper proof switch rated 10 amp at 115 volt AC.

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B. Cast or Ductile Iron Body:

1. Cast or ductile iron, chrome or nickel plated ductile iron or aluminum bronze disc, resilient replaceable EPDM seat, wafer, lug, or grooved ends, extended neck, handwheel and gear drive and integral indicating device, and internal tamper switch rated 10 amp at 125 volt AC. Basis of Design: Victaulic Series 705.

2.4 CHECK VALVES

A. 2 inches and Over:

1. Ductile iron body, bronze disc, stainless steel spring, resilient seal, threaded, grooved, wafer, or flanged ends. Basis of Design: Victaulic Series 717.

2.5 DRAIN VALVES

A. Compression Stop:

1. Bronze with hose thread nipple and cap.

B. Ball Valve:

1. Brass with cap and chain, 3/4 inch hose thread.

2.6 EXPANSION COMPENSATION LOOPS

A. Manufacturers:

1. Metraflex, Metraloop Fireloop Model MLUG.

B. Two 90° elbows, braided connectors, 180° return, and factory installed drain/air release plug.

C. Victaulic flexible couplings may be used to accommodate thermal growth and contraction, and for the elimination of expansion loops (as approved by the engineer). If loops are required, use flexible couplings on the loop.

PART 3 - EXECUTION

3.1 PREPARATION

A. Ream pipe and tube ends. Remove burrs. Bevel or groove plain end ferrous pipe.

B. Remove scale and foreign material, from inside and outside, before assembly.

C. Prepare piping connections to equipment with flanges or unions.

D. Unions or flanges for servicing and disconnect are not required in installations using grooved joint couplings.

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3.2 INSTALLATION

- A. Install sprinkler system and service main piping, hangers, and supports in accordance with NFPA 13.
- B. Route wet piping in orderly manner, plumb and parallel to building structure. Maintain gradient.
- C. Install piping to conserve building space, to not interfere with use of space and other work.
- D. Install components having pressure rating equal to or greater than system operating pressure.
- E. Install piping in concealed locations, except in equipment rooms and service areas where ceilings are not provided. Institutional cover-line shall be used in jail area, as noted on plans.
- F. Install piping free of sags and bends.
- G. Install exposed piping at right angles or parallel to building walls. Diagonal runs are prohibited, except where indicated. Rolling offsets are prohibited.
- H. Install piping tight to slabs, beams, joists, columns, walls, and other building elements. Allow sufficient space above removable ceiling panels to allow for ceiling panel removal.
- I. Group piping whenever practical at common elevations.
- J. Sleeve pipes passing through partitions, walls, and floors.
- K. All sprinkler pipe welding shall be conducted in a controlled shop environment using weld-o-lets for all branch take-offs. Upon completion of pipe welds, scrape, brush, clean and apply one (1) coat of zinc rich primer to all pipe welds.
- L. Install piping to allow for expansion and contraction without stressing pipe, joints, or connected equipment.
- M. Inserts:
 - 1. Provide inserts for placement in concrete formwork.
 - 2. Provide inserts for suspending hangers from reinforced concrete slabs and sides of reinforced concrete beams.
 - 3. Provide hooked rod to concrete reinforcement section for inserts carrying pipe over 4 inches.
 - 4. Where concrete slabs form finished ceiling, locate inserts flush with slab surface.
 - 5. Where inserts are omitted, drill through concrete slab from below and provide through-bolt with recessed square steel plate and nut recessed into and grouted flush with slab.

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- N. Pipe Hangers and Supports:
1. General: Install hangers, supports, clamps and attachments to support piping properly from building structure; comply with MSS SP-69. Install support with maximum spacing complying with MSS SP-69. Do not use wire or perforated metal to support piping, and do not support piping from other piping. Piping shall not be supported from bottom cord of bar joist or from metal roof deck, unless approved by Structural Engineer. Piping may be supported at panel points of bar joists.
 2. Install in accordance with NFPA 13.
 3. Install hangers to provide minimum 1/2 inch space between finished covering and adjacent work.
 4. Place hangers within 12 inches of each horizontal elbow.
 5. Use hangers with 1-1/2 inch minimum vertical adjustment. Design hangers for pipe movement without disengagement of supported pipe.
 6. Support vertical piping at every other floor. Support riser piping independently of connected horizontal piping.
- O. Prepare pipe, fittings, supports, and accessories for finish painting. Where pipe support members are welded to structural building framing, scrape, brush clean, and apply one coat of zinc rich primer to welding.
- P. Do not penetrate building structural members unless specifically indicated on contract drawings.
- Q. Sleeves are not required for core drilled holes.
- R. Permanent sleeves are not required for holes formed by PE plastic (removable) sleeves.
- S. Install sleeves for pipes passing through concrete and masonry walls, concrete floor and roof slabs, and where indicated.
1. Cut sleeves to length for mounting flush with both surfaces.
 - a. Exception: Extend sleeves installed in floors of mechanical equipment areas or other wet areas 2-inches above finished floor level. Extend cast-iron sleeve fittings below floor slab as required to secure clamping ring where specified.
 2. Build sleeves into new walls and slabs as work progresses.
 3. Install large enough sleeves to provide 1/4-inch annular clear space between sleeve and pipe or pipe insulation. Use the following sleeve materials:
 - a. Steel Pipe Sleeves: For pipes smaller than 6-inches.
 - b. Steel Sheet-Metal Sleeves: For pipes 6-inches and larger that penetrate gypsum-board partitions.
 - c. Cast-Iron Sleeve Fittings: For floors having membrane waterproofing. Secure flashing between clamping flanges. Install section of cast-iron soil pipe to extend sleeve to 2-inches above finished floor level.
 4. Except for below-grade wall penetrations, seal annular space between sleeve and pipe or pipe insulation, using elastomeric joint sealants.

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- T. Fire Barrier Penetrations: Maintain indicated fire rating of walls, partitions, ceilings, and floors at pipe penetrations. Seal pipe penetrations with firestopping sealant material.
- U. Piping Joint Construction: Join pipe and fittings as follows and as specifically required in individual piping system Sections.
 - 1. Threaded Joints: Thread pipe with tapered pipe threads according to ASME B1.20.1. Cut threads full and clean using sharp dies. Ream threaded pipe ends to remove burrs and restore full inside diameter. Join pipe fittings and valves as follows:
 - a. Note the internal length of threads in fittings or valve ends, and proximity of internal seat or wall, to determine how far pipe should be threaded into joint.
 - b. Apply appropriate tape or thread compound to external pipe threads (except where dry seal threading is specified).
 - c. Align threads at point of assembly.
 - d. Tighten joint with wrench. Apply wrench to valve end into which pipe is being threaded.
 - e. Damaged Threads: Do not use pipe or pipe fittings having threads that are corroded or damaged. Do not use pipe sections that have cracked or open welds.
 - 2. Welded Joints: Construct joints according to AWS D10.12 "Recommended Practices and Procedures for Welding Low Carbon Steel Pipe" using qualified processes and welding operators according to the "Quality Assurance" Article.
 - 3. Flanged Joints: Align flange surfaces parallel. Select appropriate gasket material, size, type, and thickness for service application. Install gasket concentrically positioned. Assemble joints by sequencing bolt tightening to make initial contact of flanges and gaskets as flat and parallel as possible. Use suitable lubricants on bolt threads. Tighten bolts gradually and uniformly using torque wrench.
 - 4. Grooved joints shall be installed in accordance with the manufacturer's latest published instructions. The gasket style and elastomeric material (grade) shall be verified as suitable for the intended service. Gaskets shall be molded and produced by the grooved coupling manufacturer. Grooved ends shall be clean and free from indentations, projections, and roll marks in the area from pipe end to groove. Grooved coupling manufacturer's factory trained field representative shall provide on-site training for contractor's field personnel in the proper use of grooving tools, application of groove, and installation of grooved piping products. Factory trained representative shall periodically inspect the product installation. Contractor shall remove and replace any improperly installed products.
- V. When installing more than one piping system material, ensure system components are compatible and joined to ensure the integrity of the system. Provide necessary joining fittings. Ensure flanges, union, and couplings for servicing are consistently provided.
- W. Die cut threaded joints with full cut standard taper pipe threads with red lead and linseed oil or other non-toxic joint compound applied to male threads only.
- X. Install valves with stems upright or horizontal, not inverted. Remove protective coatings prior to installation.

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- Y. Provide gate or ball valves for shut-off or isolating service.
- Z. Provide drain valves at main shut-off valves and at all low points of piping. System main drain located at main riser shall route to building exterior and be equipped with a 45 degree threaded elbow to allow for pipe extension during testing.
- AA. Provide steel wall plate on both sides of wall for all pipe penetrations. If exposed in public space, plate shall match wall surface color.

3.3 SELECTIVE DEMOLITION

- A. General: Demolish, remove, demount, and disconnect sprinkler piping, pipe fittings, pipe supports and equipment indicated to be removed.
- B. Disposal and Cleanup: Remove from the site and legally dispose of demolished materials and equipment.

3.4 CUTTING AND PATCHING

- A. Cut, channel, chase, and drill floors, walls, partitions, ceilings, and other surfaces necessary for mechanical installations. Perform cutting by skilled mechanics of the trades involved.
- B. Repair cut surfaces to match adjacent surfaces.

END OF DOCUMENT 210000

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DOCUMENT 210500 - FIRE PROTECTION

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 WORK INCLUDED

- A. This Section specifies automatic sprinkler systems and standpipe and hose systems for buildings and structures. Materials and equipment specified in this Section include:
 - 1. Pipe, fittings, valves, and specialties.
 - 2. Sprinklers, and accessories.
- B. Products furnished and installed shall include sprinkler cabinet with spare sprinklers and sprinkler wrenches.
- C. Related Sections: The following Sections contain requirements that relate to this Section:
 - 1. Fire alarm system.
 - 2. Institutional cover system for securing sprinkler piping installed below security ceilings.
- D. Electrical Work: Protective or signal devices required for the operation specified herein shall be provided under this section in accordance with Electrical Specifications. Any wiring required for the operation specified herein, but not shown on the electrical plans, shall be provided under this section in accordance with Electrical Specifications.

1.3 DEFINITIONS

- A. Pipe sizes used in this Specification are Nominal Pipe Size (NPS).
- B. Other definitions for fire protection systems are listed in NFPA Standards 13 and 24.
- C. Working Plans, as used in this Section, mean those documents (including drawings and calculations) prepared pursuant to the requirements contained in NFPA 13 for obtaining approval of the authority having jurisdiction.

1.4 SYSTEM DESCRIPTION

- A. Fire protection system in areas not subject to freezing shall be a "Wet-Pipe" system employing automatic sprinklers attached to a piping system containing water and connected to a water supply so that water discharges immediately from sprinklers opened by fire.

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- B. Sprinkler System Protection Limits: All spaces within existing building remodel areas. Include closets, toilet and locker room areas, each landing of each stair, and special applications areas.

1.5 SYSTEM PERFORMANCE REQUIREMENTS

- A. Design and obtain approval from authority having jurisdiction for fire protection systems specified.
- B. Conduct fire hydrant flow tests as required to obtain hydraulic data needed to prepare design for hydraulically calculated systems. Tests shall be within 1 year of date shop drawing submittal. Building is currently partially protected with an automatic, wet-pipe, sprinkler system.

- C. Hydraulically design sprinkler systems according to:

1. Sprinkler System Occupancy Hazard Classifications: As shown on plans. When plans do not specify, Sprinkler Contractor shall determine hazard classifications per local and/or any other governing fire codes, latest NFPA codes, and applicable Building Codes. As a minimum, provide hazard classifications as follows:
 - a. Detention, Office and Public Areas: Light hazard.
 - b. Storage Areas: Ordinary hazard (Group Number as defined on plans).
 - c. Equipment Rooms: Ordinary hazard (Group Number as defined on plans).
 - d. Service Areas: Ordinary hazard (Group Number as defined on plans).
2. Minimum Density Requirements for Automatic Sprinkler System Hydraulic Design: Sprinkler Contractor shall provide densities as noted on plans. In absence of guidance, Contractor shall provide density requirements per local and/or any other governing fire codes, latest NFPA codes, and applicable Building Codes. Area reductions may be used where listed quick response including quick response extended coverage sprinklers, are used throughout the system or portion of system having same design area in accordance with NFPA 13 guidelines. As a minimum, provide density requirements as follows:
 - a. Light Hazard Occupancy: 0.10 GPM per square foot over 1500 square feet area.
 - b. Ordinary Hazard, Group 1 Occupancy: 0.15 GPM per square foot over 1500 square feet area.
 - c. Ordinary Hazard, Group 2 Occupancy: 0.20 GPM per square foot over 1500 square feet area.
3. Maximum Sprinkler Spacing: Sprinkler Contractor shall provide sprinkler spacing per local and/or any other governing fire codes, latest NFPA codes, applicable Building Codes, and sprinkler UL listing. As a minimum, provide sprinkler spacing as follows:
 - a. Detention and Office Space: 225 square feet/sprinkler.
 - b. Storage Areas: 130 square feet/sprinkler.
 - c. Mechanical Equipment Rooms: 130 square feet/sprinkler.
 - d. Electrical Equipment Rooms: 130 square feet/sprinkler.
 - e. Other Areas: According to NFPA 13.

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D. Components and Installation: Capable of producing piping systems with the following minimum working pressure ratings except where indicated otherwise.

1. Sprinkler Systems: 175 PSIG.

1.6 SUBMITTALS

A. General: See submittal requirements in "Fire Protection General Provisions". Provide additional items as noted below.

B. Product Data: Include each type sprinkler, valve, piping specialty, fire protection specialty, NFPA 13 required signs, fire department connection, hose and rack, and hose cabinet specified. With the exception of pipe and pipe fittings, when more than one model, finish, size, etc. are provided on a single vendor cut sheet, mark or highlight all that apply to this project, and/or mark through all that do not apply.

1. Sprinklers shall be referred to by the sprinkler identification and Model number as specifically published in the appropriate agency listing or approval. Trade names or other abbreviated designations shall not be allowed.

C. Sprinkler Layout Plans prepared in accordance with NFPA 13 guidelines identified as "Working Plans," including hydraulic calculations where applicable, and which have been approved by the authority having jurisdiction. Hydraulic calculations shall accompany shop drawings and shall include calculations for all required design areas. Calculations shall begin at the remote design area sprinklers and end at the test hydrant where the hydrant flow test was conducted. Include remote area design placard information adjacent to each area that hydraulic calculations are being provided for. Provide hydraulic calculations for all of the following design areas: most hydraulically demanding area on each floor of project and, if applicable, the most hydraulically demanding of each occupancy hazard type. Include room name and number on the cover page for each hydraulic calculation and on the corresponding design placard. Include design placard data by each design area on the drawings. Include updated "AS BUILT" drawings and calculations with final project operations and maintenance manual.

1. Sprinkler layout plans shall include a sprinkler legend. Sprinklers on the legend shall be referred to by the sprinkler identification or Model number as specifically published in the appropriate agency listing or approval. Trade names or other abbreviated designations shall not be allowed.

2. Sprinkler layout plans shall include a symbols legend for all symbols used on the project. If more than one pipe type is used (i.e. existing vs new, or steel vs. CPVC), provide a unique line type for each pipe style. If plotting in color, use different colors in lieu of different line types.

D. Maintenance Data for each type sprinkler, valve, piping specialty, fire protection specialty, fire department connection, for inclusion in operating and maintenance manual.

E. Welders' Qualification Certificates.

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- F. Grooved joint couplings and fittings shall be shown on drawings and product submittals and be specifically identified with the applicable style number.
- G. Test Reports and Certificates include "Contractor's Material & Test Certificate for Aboveground Piping" as described in NFPA 13, backflow prevention certification and full forward-flow backflow testing. Reports shall be included as part of project operations and maintenance manual. (Note: Sprinkler Contractor shall not connect to underground piping prior to receiving underground pipe certification documentation.
- H. Operations and Maintenance Manual: Include all product data used on project except pipe and pipe fittings, project "AS BUILT" drawings, final hydraulic calculations, copies of all test reports, warranties, and owner training verification. See specification 21 00 00 for additional information.

1.7 QUALITY ASSURANCE

A. System Contractor Certification:

- 1. If requested, provide proof of fire extinguishing system contractor's certification for the layout, installation, repair, alteration, addition, maintenance or maintenance inspection of the automatic fire extinguishing systems. Certification may be in the form of one of the following:
 - a. Current certification by the National Institute for Certification of Engineering Technologies, Level III or above;
 - b. Current licensure as a professional engineer with competence in fire extinguisher system design.

B. System Designer Qualifications:

- 1. Provide engineering services to design the system in accordance with NFPA 13, the drawings, and the specifications. Where the drawings and specifications impose requirements that are more severe than the requirements of NFPA 13, the drawings and specifications shall prevail.

C. Installer Qualifications: Installation and alterations of fire protection piping, equipment, specialties, and accessories, and repair and servicing of equipment shall be performed only by a qualified installer. The term qualified means experienced in such work (experienced shall mean having a minimum of five (5) previous projects similar in size and scope to this project), familiar with all precautions required, and has complied with all the requirements of the authority having jurisdiction. Upon request, submit evidence of such qualifications to the Architect.

D. Qualifications for Welding Processes and Operators: Comply with the requirements of AWS D10.9, "Specifications for Qualifications of Welding Procedures and Welders for Piping and Tubing, Level AR-3."

E. All grooved couplings, fittings, valves and specialties shall be the products of a single manufacturer. Grooving tools shall be of the same manufacturer as the grooved components.

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1. All castings used for couplings, housings, fittings, or valves and specialty bodies shall be date stamped for quality assurance and traceability.
- F. Regulatory Requirements: Comply with the requirements of the following codes and standards:
1. NFPA 13 - Standard for the Installation of Sprinkler Systems.
 2. NFPA 26 - Recommended Practice for the Supervision of Valves Controlling Water Supplies for Fire Protection.
 3. NFPA 70 - National Electrical Code.
 4. ASME A17.1 - Safety Code for Elevators and Escalators.
 5. Local Fire Department Requirements.
 6. UL and FM Compliance: Fire protection system materials and components shall be Underwriter's Laboratories listed and labeled, and Factory Mutual approved for the application anticipated.
 7. Local Permits and Inspection Requirements.
 8. Local utility requirements.

1.8 SEQUENCING AND SCHEDULING

- A. Schedule rough-in installations with installations of other building components.

1.9 EXTRA MATERIALS

- A. Sprinkler Wrenches: Furnish to Owner, two (2) sprinkler wrenches for each type/size of sprinkler head installed. Wrenches shall be provided by the sprinkler manufacturer and will directly engage the hex-shaped wrench boss integrally cast in the sprinkler body.
- B. Sprinklers and Cabinets: Furnish spare sprinklers in quantities as outlined in NPFA 13 and shall include each style included in the project or as detailed in NFPA 13. Furnish special wrenches as specified in this Section. Furnish and install a sprinkler cabinet or cabinets sized to house the NFPA 13 quantity of spare sprinklers listed above.

PART 2 - PRODUCTS

2.1 SPRINKLER DESIGNERS/INSTALLERS:

- A. Company shall be a licensed sprinkler contractor in the state where the project is located.
- B. Company shall have a NICET level III or above certified designer or a registered fire protection engineer with a minimum of 5 years' experience designing fire protection systems on staff.

2.2 MANUFACTURERS

- A. Manufacturer: Subject to compliance with requirements, provide fire protection system products from one (1) of the following:
1. Specialty Valves, Water Motor Alarms, and Air-Pressure Maintenance Devices:

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- a. Firematic Sprinkler Devices, Inc.
 - b. Globe Fire Sprinkler Corp, Victaulic Corp.
 - c. Reliable Automatic Sprinkler Co., Inc.
 - d. Tyco-Grinnell
 - e. Victaulic Company
 - f. Viking Corp.
2. Backflow Preventers:
- a. Ames Co., Inc.
 - b. Cla-Val Co.
 - c. Conbraco Industries, Inc.
 - d. Febco.
 - e. Hersey Products, Inc., Grinnell Corp.
 - f. Watts Regulator Co.
 - g. Wilkins Regulator Div., Zurn Industries, Inc.
3. Waterflow Indicators and Supervisory Switches:
- a. Gamewell Co.
 - b. Potter Electric Signal Co.
 - c. Reliable Automatic Sprinkler Co., Inc.
 - d. System Sensor Div., Pittway Corp.
 - e. Victaulic Company of America.
 - f. Watts Regulator Co.
4. Sprinklers:
- a. Firematic Sprinkler Devices, Inc.
 - b. Globe Fire Sprinkler Corp.
 - c. Reliable Automatic Sprinkler Co., Inc.
 - d. Tyco-Grinnell
 - e. Firelock; Victaulic Company.
 - f. Victaulic Company of America
 - g. Viking Corp.
5. Flexible Hose Sprinkler Connections:
- a. VicFlex; Victaulic Company.
 - b. Rascoflex; Reliable Automatic Sprinkler Co., Inc.
6. Hose Valves:
- a. Badger-Powhatan, Figgie International Co.
 - b. Croker Div., Fire-End and Croker Corp.
 - c. Elkhart Brass Mfg. Co., Inc.
 - d. Guardian Fire Equipment, Inc.
 - e. Potter-Roemer Div., Smith Industries, Inc.

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- f. Sierra Fire Equipment Co.
 - 7. Indicator Valves:
 - a. Grinnell Supply Sales Co., Grinnell Corp.
 - b. Kennedy Valve Div., McWane, Inc.
 - c. Milwaukee Valve Co., Inc.
 - d. Nibco, Inc.
 - e. Sprink-Line by Sprink, Inc.
 - f. Victaulic Company of America.
 - 8. Fire Protection Service Gate and Check Valves:
 - a. Kennedy Valve Div., McWane, Inc.
 - b. Nibco, Inc.
 - c. Stockham Valves and Fittings, Inc.
 - d. Victaulic Company of America.
 - 9. Grooved Couplings for Steel Piping:
 - a. Gruvlok; Anvil Industries.
 - b. Shurjoint.
 - c. Tyco-Grinnell
 - d. Victaulic Company of America.
 - 10. Press-Seal Fittings for Steel Piping:
 - a. Victaulic Company of America.
- 2.3 PIPE AND TUBING MATERIALS (SELECTION AS PER LOCAL CODE REQUIREMENTS)
- A. Refer to Part 3 Article "Piping Applications" for identification of systems where pipe and fitting materials specified below are used.
 - B. Steel Pipe: ASTM A 53, Schedule 40 in sizes 6-inch and smaller and Schedule 30 in sizes 8-inch and larger, black and galvanized, plain and threaded ends, for welded, threaded, cut-groove, and rolled-groove joints.
 - C. Steel Pipe: ASTM A 135, Schedule 10 through 5-inch sizes and NFPA 13 specified wall thickness for 6-inch through 10-inch sizes, with plain ends, black and galvanized, for rolled-groove and welded joints.
 - D. Galvanized Steel Pipe: ASTM A 53/A 53M, Schedule 40 Standard weight, plain and threaded ends.
 - E. Galvanized-Steel Pipe: ASTM A 135 or ASTM A 795/A 795M, Schedule 10, plain or threaded ends.
 - F. Galvanized Steel Pipe: ASTM 53/A 53M, Schedule 40 Standard weight, plain and threaded.

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- G. Galvanized-Steel Pipe: ASTM A 135 or ASTM A 795/A 795M, Schedule 10, plain or threaded ends.
- H. Steel Pipe: ASTM A 135, threadable lightwall, black and galvanized, for threaded joints.
- I. Steel Pipe: ASTM A 795, black and galvanized, for joints listed and for use with fittings for plain-end steel pipe.
 - 1. Type: Standard-weight pipe, Schedules 40, for cut-groove, rolled-groove, threaded, and welding joints.
 - 2. Type: Lightweight pipe, Schedule 10, for rolled-groove and welding joints.

2.4 PIPE AND TUBE FITTINGS

- A. All grooved joint couplings and fittings shall be the products of a single manufacturer. Grooving tools shall be of the same manufacturer as the grooved components.
- B. Cast-Iron Threaded Flanges: ASME B16.1, Class 150, raised ground face, bolt holes spot faced.
- C. Cast-Iron Threaded Fittings: ASME B16.4, Class 150, standard pattern, with threads according to ASME B 1.20.1.
- D. Malleable-Iron Threaded Fittings: ASME B16.3, Class 150, standard pattern, with threads according to ASME B1.20.1.
- E. Steel Fittings: ASTM A 234, seamless or welded; ASME B16.9, buttwelding; or ASME B16.11, socket-welding type for welded joints.
- F. Steel Flanges and Flanged Fittings: ASME B16.5.
- G. Grooved-End Fittings for Steel Pipe: UL-listed and FM-approved, ASTM A 536, Grade 65-45-12 ductile-iron, with grooves or shoulders designed to accept grooved couplings.
 - 1. Basis of Design: Installation-Ready™ fittings for Schedule [40] [10] grooved end steel piping in fire protection applications sizes 1-1/4 thru 2-1/2-inch. Fittings shall consist of a ductile iron housing conforming to ASTM A-536, Grade 65-45-12, with Installation-Ready™ ends, [orange enamel coated] [red enamel coated] [galvanized]. Fittings complete with pre-lubricated Grade E” EPDM Type ‘A’ gasket; and ASTM A449 electroplated steel bolts and nuts. UL listed for working pressure of 300 psi and FM approved for working pressure to 365 psi.
- H. Galvanized, Grooved-End Fittings for Steel Piping: ASTM A 536, ductile-iron casting; with dimensions matching steel pipe. In applicable sizes, fittings shall be short pattern, with flow equal to standard pattern fittings. Basis of Design: Victaulic Firelock.
- I. Cast-Bronze Flanges: ASME B16.24, Class 300, raised ground face, bolt holes spot faced.

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- J. Galvanized-Steel Piping Nipples: ASTM A 733, made of ASTM A 53/A 53M, standard weight seamless steel pipe with threaded ends.
- K. Galvanized, Steel Couplings: ASTM A 865, threaded.
- L. Galvanized, gray-Iron Threaded Fittings: ASME B16.4, Class 125, standard pattern.

2.5 JOINING MATERIALS

- A. Flanged Joints for Ductile-Iron Pipe and Ductile-Iron or Cast-Iron Fittings: AWWA C 115 ductile-iron or gray-iron pipe flanges, rubber gaskets, and high-strength steel bolts and nuts.
- B. Brazing Filler Metals: AWS A5.8, Classification BcuP-3 or BcuP-4.
- C. Couplings for Grooved-End Steel Pipe and Grooved-End Ferrous Fittings: UL 213, AWWA C 606, ASTM A 536 ductile-iron housing, with enamel finish. Include synthetic-rubber gasket with central-cavity, pressure-responsive design; ASTM A449 or A183 carbon-steel bolts and nuts to secure grooved pipe and fittings.
 - 1. Rigid Type: Housings cast with offsetting, angle-pattern, bolt pads to provide system rigidity and support and hanging in accordance with NFPA 13, fully installed at visual pad-to-pad offset contact. Installation-ready for complete installation without field disassembly. Basis of Design: Victaulic Style 009-EZ and 107N.
 - 2. Flexible Type: For use in locations where vibration attenuation and stress relief are required. Basis of Design: Victaulic Installation-Ready Style 177 or Style 77.
- D. Couplings for Grooved-End Ductile-Iron Pipe and Fittings: UL 213, AWWA C 606, ASTM A 536 ductile-iron housing, with enamel finish. Include FlushSeal® synthetic-rubber gasket with central-cavity, pressure-responsive design, and ASTM A 449 and A 183 carbon-steel bolts and nuts to secure grooved pipe and fittings. Basis of Design: Victaulic Style 31.
 - 1. For direct connection between IPS/steel pipe and AWWA/ductile iron pipe, Victaulic Style 307 transition coupling, or approved equal.

2.6 FIRE PROTECTION SERVICE VALVES

- A. General: UL-listed and FM-approved, with 175 PSIG non-shock minimum working pressure rating.
 - 1. Option: Valves for use with grooved piping may be grooved type.
- B. Gate Valves, 2-Inch and Smaller: UL 262, cast-bronze, threaded ends, solid wedge, outside screw and yoke, rising stem.

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C. Indicating Valves:

1. 2-Inch and Smaller: Butterfly or ball type, bronze body with threaded or grooved ends, and integral indicating device. Basis of Design: Victaulic Series 728.
2. 2-1/2-Inch and Larger: Ductile iron, electroless-nickel plated ductile iron disc, pressure-responsive EPDM seat, and stainless steel stem, grooved ends and extended neck. Basis of Design: Victaulic Series 705.
3. Indicator: Weatherproof actuator housing with handwheel and two electrical 125-VAC, prewired, single-circuit, supervisory switches.

D. Gate Valves, 2-1/2-Inch and Larger: UL 262, iron body, bronze mounted, taper wedge, outside screw and yoke, rising stem. Include replaceable, bronze, wedge facing rings and grooved or flanged ends. Basis of Design: Victaulic Series 771.

E. Spring-Assisted Swing Check Valves, 2-Inch and Larger: UL 312; cast ductile-iron body and bolted cap; with bronze, stainless steel, or elastomer-coated ductile-iron disc; with stainless steel spring and shaft for vertical or horizontal installation; and grooved or flanged ends. Basis of Design: Victaulic Series 717.

F. Butterfly Check Valves, 4-Inch and Larger: UL 213, split-clapper style, cast-iron body with rubber seal, bronze alloy discs, stainless-steel spring and hinge pin.

2.7 SPECIALTY VALVES

A. Backflow Preventer Valve: Provide double check backflow preventers. Backflow preventers shall meet the requirements of A.S.S.E. Std. 1015; AWWA Std. C506-78 or USCFCCC Manual for Cross Connection Control. Watts Regulator Company Series 709 or equal.

2.8 SPRINKLERS

A. Automatic Sprinklers: With heat-responsive element conforming to:

1. UL 199, for applications except residential.

B. Sprinklers shall be glass bulb type, with hex-shaped wrench boss integrally cast into the sprinkler body to reduce the risk of damage during installation. Sprinklers shall be institutional style with flat face where noted on plans.

1. Wrenches shall be provided by the sprinkler manufacturer that directly engage the hex-shaped wrench boss integrally cast into the sprinkler body.

C. Sprinkler types and categories are as indicated and as required by application. Furnish automatic sprinklers with nominal 1/2-inch orifice for "Ordinary" temperature classification rating except where otherwise indicated and required by application.

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D. Sprinkler Finishes:

1. Sprinklers in finished ceiling areas shall be installed within 3-inches of center of ceiling tile and shall be semi-recessed type with white factory finish unless otherwise noted on drawings.
2. Sprinklers in exposed construction areas shall have factory white finish where piping is noted to be painted white on plans otherwise they shall have brass finish.

E. Sprinkler Cabinet and Wrenches: Finished steel cabinet suitable for wall mounting with hinged cover and space for quantity of supplied spare sprinklers plus sprinkler wrenches. Provide extra cabinets as necessary to meet the storage requirements of NFPA 13.

F. Escutcheons and guards shall be listed, supplied, and approved for use with the sprinkler by the sprinkler manufacturer.

2.9 FLEXIBLE HOSE COMMERCIAL SPRINKLER CONNECTIONS

A. Flexible stainless steel hose assemblies and elbow hose assemblies consisting of lengths from 2 feet to 6 feet as required for project conditions. Hangers not required for up to 6 feet of hose assembly. Sprinkler Drop System, braided, leak-tested with minimum 1 inch internal corrugated hose diameter fabricated with 304 stainless steel, including end fittings. The drop shall include a UL approved braided radius to 2-inches to allow for proper installation in confined spaces. Complete system shall allow for a total of 270° total bending per flexible drop unless listed for more bends. Flexible assemblies shall be UL listed and FM approved. Union joints shall be provided for ease of installation. The flexible drop shall attach to the ceiling grid using a one-piece open gate bracket listed for use with the flexible drop. The bracket shall allow installation before the ceiling tile is in place. Basis of Design: VicFlex Model AH2/AH2CC with AB1 or AB2 bracket.

1. Outlet Connection: 1/2 or 3/4 inch.
2. Maximum Rated Pressure: 175 PSI.

B. System shall only be authorized for installation in light hazard and ordinary hazard occupancies.

C. Direct attachment flexible hose ceiling bracket with integrated snap-on clip or screw-fastened ends positively attached to the ceiling using tamper-resistant screws and removable attachment hub or open gate clamp with set screw for attaching and adjusting flexible hose.

D. Flexible hose shall be installed with a maximum of three (3) 90 degree bends, regardless of manufacturer's listing unless VicFlex is used and is equipped with the identification label that is visible from ground level.

2.10 ALARM DEVICES

A. Alarm Devices: Types and sizes that will match piping and equipment connections.

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- B. Electrically Operated Alarm Bells: UL listed exterior, weatherproof, wall mounted combination bell/strobe/sign, electric fire alarm bells. Provide all conduit and wiring necessary for electrical connection. Size wiring according to manufacturer's recommendations. Outside device shall be SASH Series by Potter Electric Signal Company, or approved equal.
 - C. Waterflow Indicators: UL 346, electrical-supervision type, vane-type waterflow detector, rated to 250 PSIG and designed for horizontal or vertical installation. Include two (2) SPDT (single-pole, double-throw) circuit switches to provide isolated alarm and auxiliary contacts, 7 A, 120-VAC and 0.25 A, 24-VDC. complete with factory-set, field-adjustable retard element to prevent false signals and tamper-proof cover that sends a signal when cover is removed.
 - D. Pressure Switches: UL 753, waterflow switch with retard, electrical-supervision type, SPDT normally closed contacts, designed to operate on rising pressure and signal water flow.
 - E. Supervisory Switches: UL 753, for valves, electrical-supervision type, SPDT, normally closed contacts, designed to signal controlled valve in other than full open position.
 - F. Supervisory Switches: UL 753, for indicator posts, electrical-supervision type, SPDT, normally closed contacts, designed to signal controlled valve in other than full open position.
- 2.11 PRESSURE GAUGES
- A. Pressure Gauges: UL 393, 3-1/2 to 4-1/2 inches diameter dial with dial range of 0-250 PSIG.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine areas and conditions under which fire protection materials and products are to be installed. Do not proceed until satisfactory conditions have been corrected.

3.2 PIPE APPLICATIONS

- A. Aboveground Pipe:
 - 1. Black Steel Pipe: Install Schedule 40 for less than 8-inch; Schedule 30 for 8-inch and larger; Class 150, cast-iron threaded fittings, threaded joints.
 - 2. Black Steel Pipe: Install Schedule 40 for less than 8-inch; Schedule 30 for 8-inch and larger; mechanical grooved pipe couplings and fittings; cut-groove type.
 - 3. Black Steel Pipe: Install Schedule 10 for 5-inch and smaller; 0.134-inch wall thickness for 6-inch; and 0.188-inch wall thickness for 8-inch and 10-inch; wrought-steel buttwelding fittings, welded joints.
 - 4. Black Steel Pipe: Install Schedule 10 for 5-inch and smaller; 0.134-inch wall thickness for 6-inch; and 0.188-inch wall thickness for 8-inch and 10-inch mechanical grooved pipe couplings and fittings; roll-groove or mechanical locking type.

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3.3 PIPING INSTALLATIONS

- A. Extreme care shall be exercised by the Contractor to prevent dirt and other foreign matter from entering pipe or components of system during construction. Pipe stored on Project shall have open ends capped and equipment shall have all openings fully protected. Before erection, each piece of pipe, fitting or valve shall be visually examined and all dirt removed.
- B. Locations and Arrangements: Drawings (plans, schematics, and diagrams) indicate the general location and arrangement of piping systems. So far as practical, install piping as indicated.
 - 1. Deviations from approved "Working Plans" for sprinkler piping require written approval of the authority having jurisdiction. Written approval shall be on file with the Architect prior to deviating from the approved "Working Plans."
- C. Install sprinkler piping to provide for system drainage in accordance with NFPA 13.
- D. Use approved fittings to make all changes in direction, branch takeoffs from mains, and reductions in pipe sizes. Reducing flanges and reducing couplers shall not be used. When pipe reduction is required, provide a concentric reducer or other approved fitting such as a reducing elbow.
- E. Install unions in pipes 2-inch and smaller, adjacent to each valve. Unions are not required on flanged devices or in piping installations using grooved mechanical couplings.
- F. Install flanges or flange adapters on valves, apparatus, and equipment having 2-1/2-inch and larger connections.
- G. Hangers and Supports: Comply with the requirements of NFPA 13 and NFPA 14. Hanger and support spacing and locations for piping joined with grooved mechanical couplings shall be in accordance with the grooved mechanical coupling manufacturer's written instructions, for rigid systems. Provide protection from damage where subject to earthquake in accordance with NFPA 13.
- H. Make connections between underground and above-ground piping using an approved transition piece strapped or fastened to prevent separation.
- I. Install test connections sized and located in accordance with NFPA 13 complete with shutoff valve. Test connections shall be in combination with system main drain valves.
- J. Install pressure gauge on the riser or feed main and at or near each test connection. Provide gauge with a connection not less than 1/4-inch and having a soft metal seated globe valve, arranged for draining pipe between gauge and valve. Install gauges to permit removal, and where they will not be subject to freezing.
- K. Install automatic (ball drip) drain valves to drain piping between fire-department connections and check valves. Drain to floor drain or to outside building.
- L. Install pressure venting in accordance with 2016 Ed. of NFPA 13.

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- M. Install alarm devices in piping systems.
- N. Install hangers and supports for sprinkler system piping according to NFPA 13. Comply with requirements in NFPA 13 for hanger materials.
- O. Install sleeve seals for piping penetrations of concrete walls and slabs. Seal all wall penetrations and provide a wall plate on each side of wall.
- P. Install escutcheons for piping penetrations of walls, ceilings and floors.

3.4 PIPE JOINT CONSTRUCTION

A. Aboveground Piping:

1. Welded Joints: AWS D10.9, Level AR-3.
2. Threaded Joints: conform to ANSI B1.20.1, tapered pipe threads for field cut threads. Join pipe, fittings, and valves as follows:
 - a. Note the internal length of threads in fittings or valve ends, and proximity of internal seat or wall, to determine how far pipe should be threaded into joint.
 - b. Align threads at point of assembly.
 - c. Apply appropriate tape or thread compound to the external pipe threads.
 - d. Assemble joint to appropriate thread depth. When using a wrench on valves place the wrench on the valve end into which the pipe is being threaded.
 - e. Damaged Threads: Do not use pipe with threads which are stripped, chipped, corroded, or otherwise damaged. If a weld opens during cutting or threading operations, that portion of pipe shall not be used.
3. Flanged Joints: Align flanges surfaces parallel. Assemble joints by sequencing bolt tightening to make initial contact of flanges and gaskets as flat and parallel as possible. Use suitable lubricants on bolt threads. Tighten bolts gradually and uniformly to appropriate torque specified by the bolt manufacturer.
4. Mechanical Grooved Joints: cut or roll grooves on pipe ends dimensionally compatible with the couplings. Grooved joints shall be installed in accordance with the manufacturer's latest published instructions. The gasket style and elastomeric material shall be verified as suitable for the intended service. Gaskets shall be molded and produced by the grooved coupling manufacturer. Grooved ends shall be clean and free from indentation, projections, and roll marks in the area from pipe end to groove. Grooved coupling manufacturer's factory trained field representative shall provide on-site training for a contractor's field personnel in the proper use of grooving tools, application of groove, and installation of grooved piping products. Factory trained representative shall periodically inspect the product installation. Contractor shall remove and replace any improperly installed products.
5. End Treatment: After cutting pipe lengths, remove burrs and fins from pipe ends.

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3.5 VALVE INSTALLATIONS

- A. General: Install fire protection specialty valves, fittings, and specialties in accordance with the manufacturer's written instructions, NFPA 13 and 14, and the authority having jurisdiction.
- B. Gate Valves: Install supervised-open gate valves so located to control all sources of water supply except fire department connections. Where there is more than one control valve, provide permanently marked identification signs indicating the portion of the system controlled by each valve. Provide tamper switch connected to building fire alarm system on all control valves that, when closed, will prevent the flow of water to a sprinkler.
- C. Install double check backflow prevention device in each water supply connection. Install in accordance with manufacturer's instructions and all local code requirements.

3.6 SPRINKLER INSTALLATIONS

- A. Use proper tools to prevent damage during installations.
- B. Do not install sprinklers that have been dropped, damaged, show a visible loss of fluid, or a cracked bulb.
- C. The sprinkler bulb protector shall be removed by hand, without tools or devices that may damage the bulb.
- D. The sprinkler bulb protector shall remain in place until system is ready to be tested and placed into service.

3.7 FLEXIBLE HOSE COMMERCIAL SPRINKLER INSTALLATIONS

- A. Limit stainless steel hose assemblies and elbow hose assemblies to no greater than 270° total bending per each drop regardless of manufacturer's listing. For FM-approved systems maximum bend radius shall not exceed 7 times braided hose diameter.
- B. Manufacturer shall provide written procedures for proper installation of flexible hose sprinkler systems.

3.8 IDENTIFICATION

- A. Install labeling and pipe markers on equipment and piping according to requirements in NFPA 13.
- B. Identify system components, wiring, cabling, and terminals. Comply with requirements for identification specified in Division 26 Section Identification for Electrical Systems.

3.9 FIRE SPRINKLER SYSTEM COORDINATION AND WARRANTY

- A. The General Contractor and Sprinkler Subcontractor shall meet with the Architect/Engineer to coordinate routing of all piping and sprinkler placement in exposed areas prior to submittal of Shop Drawings to ascertain the aesthetic requirements in such areas.

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- B. The General Contractor shall take full responsibility for locating all fire sprinkler piping and sprinklers within the building at locations not subject to freezing conditions. For areas of the building where that is not deemed possible, a "dry" system shall be substituted. The Contractor, in locating such piping and sprinkler, shall take into account the possibility that the interior space temperature may be reduced to approximately 60°F through the Owner's off-hours temperature control setback.
- C. In areas where concealment of the sprinkler is required, if the General Contractor and/or Sprinkler Contractor determine that additional chases, bulkheads and other architectural modifications are required in order to conceal the piping while complying with the above freeze protection requirements, they shall coordinate such concerns with the Architect/Engineer prior to submittal of Shop Drawings.
- D. All entry vestibules and other minimally conditioned spaces, where system piping, sprinklers and/or drop nipples are subject to freezing, dry style sprinklers shall be used.
- E. The General Contractor shall coordinate installation of the fire sprinkler system with the insulation characteristics of the building, and warrant the fire sprinkler system against freezing for a period of two (2) years from date of Substantial Completion. Such warranty shall cover the cost of repair including damaged building materials. Such warranty shall not cover freezing in the event of a loss of heat due to malfunction or shut down of mechanical heating system beyond normal setbacks previously stated.

3.10 FIELD QUALITY CONTROL

- A. Flush, test, and inspect both underground fire main and aboveground sprinkler piping systems in accordance with NFPA 13 and NFPA 24. Provide certification of both underground and above ground flushing. Include copies of both certificates in the project O&M manual.
- B. Replace piping system components which do not pass the test procedures specified, and retest repaired portion of the system.
- C. Provide a plastic pouch attached to system riser large enough to house the following: copy of underground flushing certification, aboveground flushing certification, copy of "As-Built" drawings, a copy of 2-hour pressure test and system certification and a copy of NFPA 25.
- D. Provide copies of all testing and certification documents/reports, warranties, hydraulic calculations, product data and a copy of "As-Built" drawings in the project O & M Manual. O&M manual shall also include a parts list at the beginning of the manual.
- E. Maintain a contractor marked up set of record drawings at the project site. Contractor shall keep record drawing current with all field changes made to A/E and AHJ reviewed set of plans. Upon completion of project, contractor shall deliver marked-up set of plans to A/E.

END OF DOCUMENT 210500

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**DOCUMENT 21 05 01 - INSTITUTIONAL COVER SYSTEM FOR CONCEALMENT OF FIRE
SPRINKLER SYSTEMS**

PART 1 - GENERAL

1.1 DESCRIPTION

- A. The soffit/cover system shall incorporate a concealed snap-lock connection, which, once assembled, renders the cover essentially irremovable with the use of ordinary tools.

1.2 SUBMITTALS

- A. Submit copies of manufacturer's specifications, installation instructions, and product data.

1.3 JOB CONDITIONS

- A. Coordinate installation soffit/cover system with all other trades.

PART 2 - PRODUCTS

2.1 MATERIAL

- A. A factory-fabricated steel cover support system with concealed surface-mounted attachment clamps, in dimensions as shown on the drawings for concealment of Fire Sprinkler Systems, Piping.

- 1. Approved sources: JG Innovations, Inc.
121 E Burbank Ave
P.O. Box 8128
Janesville, WI 53547-8128
Phone #: 888-933-2248
Fax #: 608-314-8712

In-Ex Systems, Inc.
4473 Cavallon Way
Acworth, GA 30101
Phone #: 800-483-8201
Fax #: 678-766-8202

- B. Support/Attachment Devices:

- 1. Spring steel shield clips of the size recommended by manufacturer, for securement of the cover. Clips shall be produced from 21 Gauge minimum zinc-plated spring steel and shall have a reverse curvature design such that the clips soundly secure the soffit from easy removal. Each clip must be demonstrated as being able to resist a force of 200 lbs. uplift at the free end. Test results shall be available upon request.

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C. Soffit/Cover:

1. The soffit/cover shall be smooth in appearance and shall be made of 16 Gauge A60/G90 galvanized steel, with a paint grip finish and factory painted of a color to be specified by the owner's representative. The cover shall have a snap-lock interfacing with the clips such that once assembled, it is rendered virtually irremovable with the use of ordinary tools.
2. The soffit and related fittings shall be factory painted with Sherwin Williams epoxy polyester hybrid powder coating of a color to be specified by the owner's representative. Matching touch-up paint shall be supplied to the owner by the manufacturer.
3. Cover manufacturer shall be staffed with a licensed engineer having a minimum of five years experience with such systems.
4. The soffit/cover shall be sized in accordance with requirements to accommodate the specific application size as specified by the project documents, specifications and blue prints, provided to the cover manufacturer prior to bid date.
5. L-Shield soffit profile for sidewall installations and/or U-Shield soffit profile for sidewall and/or pendant installations respectively.
6. Cover joints shall be interlocking integral joints with provision for securement utilizing stainless steel rivets. Rivet spacing shall be at no greater than 2" intervals along the joint and positioned at a distance no greater than 1" from the end of the overlapping section. External couplings will NOT be allowed.
7. Cover design shall include a roll-formed "groove" at the interfacing of the cover and the adjacent construction surface to facilitate the application of sealant/adhesive compounds and enhance the security of such compounds from dislodging.

D. Accessories:

1. The system shall include tamper-resistant end caps, prefabricated corners, wall flanges, couplings, and other items, which may be necessary to complete the system, and shall be installed in accordance with manufacturer recommendations.
2. Spare Parts - The installing contractor shall supply the owner with quantities of spare parts equal to a minimum of five percent (5%) of the total quantities of each soffit part utilized in this installation.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Installation of system shall be in strict accordance with approved shop drawings and manufacturer's printed instructions.

**YORK COUNTY
JAIL FIRE SUPPRESSION
YORK, NEBRASKA**

1. If used to conceal fire sprinkler systems, the sprinkler contractor/engineer must determine the piping and sprinkler layout, including sprinkler head locations and pipe support locations (based on pipe manufacturer's specifications). Indicate areas on drawings where cover system is to be used.
2. Select appropriate fasteners for the substrate encountered to adequately secure the pipe and cover system.
3. To insure that the cover is linear and snug-fitting when installed, it is imperative that its support devices are anchored squarely and firmly against the structural surface in a straight line.
4. All penetrations to the soffit/cover system must be field cut to prevent misalignment with intended protrusion. The exceptions to this are that access doors will be factory furnished and installed and perforations, if required, for ventilation purposes will be factory perforated.
5. Guidelines for installation of modular soffit/cover system shall be supplied by the manufacturer of said system and the installing contractor shall adhere to the manufacturer's guidelines.
6. All field cut ends and scratches shall be "touched up" (spray or brush) with a matching paint.
7. Manufacturer shall supply on-site installation instruction, upon installer's request, by a qualified installation instructor for a minimum of one day for the project start-up (1,500 lineal feet minimum.)
8. The completed installation shall be visibly searched for voids between the interfacing of the cover and construction surface. Voids shall be sealed with a color matching siliconized caulk or urethane caulk.

END OF DOCUMENT 210501

**YORK COUNTY
JAIL FIRE SUPPRESSION
YORK, NEBRASKA**

DOCUMENT 000107 - SEALS PAGE

1.1 DESIGN PROFESSIONALS OF RECORD

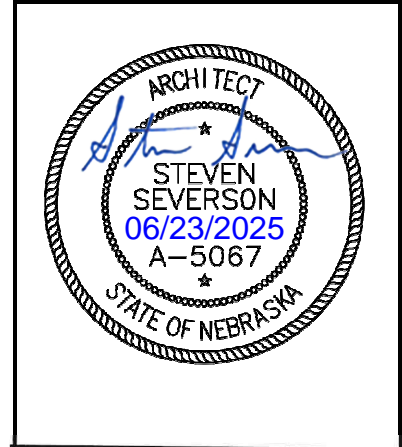
Davis Design NBEA Certificate of Authorization #CA0539

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Divisions 01 - 32 Sections, except
where indicated as prepared by other
design professionals of record.

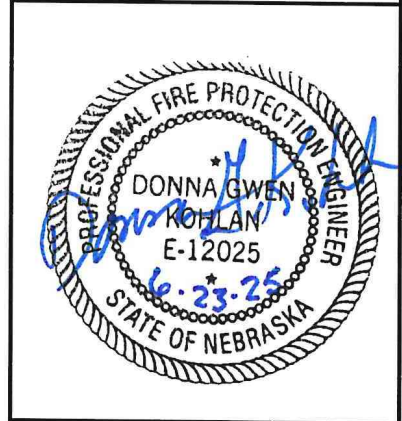


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END OF DOCUMENT 000107

Davis Design Project No.: 25-0026

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