



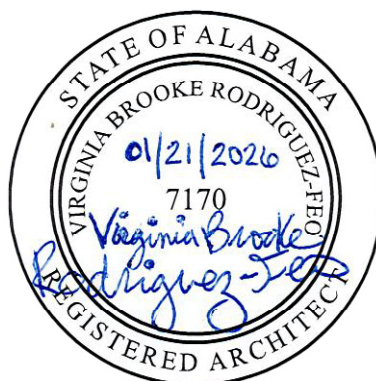
INVITATION TO BID

Welcome Center Envelope Repairs

BID NO. 26-024-2025-PWI-021
PROJECT NO. 2025-PWI 021

CITY OF FAIRHOPE
SHERRY SULLIVAN, MAYOR

January 21, 2026





**CITY OF FAIRHOPE
INVITATION TO BID**

SEALED BIDS will be received by the City of Fairhope of Baldwin County, Alabama, in the City of Fairhope's City Services and Public Utilities Building located at, 555 South Section St. Fairhope, Alabama, until **2:00 P.M. February, 24, 2026**, and then publicly opened thereafter, for furnishing all labor and materials, and performing all work required by the City of Fairhope and described as follows:

Bid Number 26-024-2025-PWI-021
Welcome Center Envelope Repairs
Project Number 2025-PWI 021

The City of Fairhope is requesting responses from qualified contractors to provide all material, equipment, labor, incidentals, overhead and profit. This City of Fairhope Welcome Center Envelope Repairs project includes The project includes a full exterior envelope repair project for the existing Welcome Center building. Review the contract documents including the drawings and specifications for more information.

Bid documents will be posted on the City of Fairhope Website: www.FairhopeAL.gov or a copy may be obtained by e-mailing: Purchasing@FairhopeAL.gov.

Questions or comments pertaining to this bid must be presented in writing, sent as e-mail to the attention of the Purchasing Manager, Erin Wolfe, 555 South Section St., Fairhope, AL 36532, e-mail: Purchasing@FairhopeAL.gov by February 16, 2026, at 2 P.M. or will be forever waived.

There will be a MANDATORY pre-bid meeting on February 10, 2026, at 10 A.M. at the Welcome Center located at 20 North Section Street, Fairhope, AL.

The City of Fairhope is an Equal Opportunity Employer and requires that all BIDDERS comply with the Equal Employment Opportunity laws and the provisions of the CONTRACT Documents in this regard. The CITY also encourages and supports the utilization of Minority Business Enterprises on this and all public bids.

All bids must be on blank bid forms provided in the Bid Documents. All bids, with their guarantee (when required), must be enclosed in a sealed, opaque envelope, clearly identified on the outside as a "Sealed Bid" with Item Name, Bid Number, City of Fairhope's Name and Address and CONTRACTOR's Name and Address. Each bid must be in a separate envelope. Bids made out in pencil will not be accepted. Failure to observe the instructions contained herein will constitute grounds for rejection of your bid. The City reserves the right to accept or reject all bids or any portion thereof, and to waive informalities and to furnish any item of material or work to change the amount of the CONTRACT, whichever is in the best interest of the City of Fairhope.

No bids will be considered unless the CONTRACTOR, whether resident or non-resident of Alabama, is properly qualified to submit a proposal for this type of work in accordance with all applicable laws of the State of Alabama. Where applicable, this shall include evidence of holding a current license from the State Licensing board for General BIDDERS, Montgomery, Alabama, as required by Chapter 8 of Title 34, of the Code of Alabama, 1975. In addition, the Awarded Vendor, if non-resident of the State, and if a corporation, shall show evidence of having qualified with the Secretary of State to do business in the State of Alabama. CONTRACTOR must have a current business license or purchase a business license with the City of Fairhope prior to work performed. No bids shall be withdrawn for the period of sixty (60) days subsequent to the opening of proposals without the consent of the City of Fairhope, Baldwin County, Alabama. Once completed, a tabulation of the responsive and responsible bids will be available for public viewing by visiting the following web address: www.FairhopeAL.gov.

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ITEM I
INVITATION AND INSTRUCTIONS TO BIDDERS

1.00 BID INVITATION

Notice is hereby given that the **City of Fairhope ("CITY")** will receive bids on the project described herein. Qualified **BIDDERS** are invited to bid on this CONTRACT.

1.01 BID NO.: 26-024-2025-PWI-021
NAME: Welcome Center Envelope Repairs
LOCATION: City of Fairhope
City Services and Public Utilities Building
555 South Section Street
Fairhope, AL 36532

1.02 SUMMARY

The City of Fairhope is requesting responses from qualified contractors to provide all material, equipment, labor, incidentals, overhead and profit. This City of Fairhope Welcome Center Envelope Repairs includes a full exterior envelope restoration repair project for the existing building. Review the contract documents including the drawings and specifications for more information.

1.03 BID DEADLINE

Bids will be received until **2:00 P.M. February 24, 2026**, at the City Services and Public Utilities Building, 555 South Section St., Fairhope, Alabama, and publicly opened shortly thereafter.

1.04 AVAILABILITY OF DOCUMENTS

Bid Documents may be obtained on the City's website at www.FairhopeAL.gov/departments/purchasing/bids or at the City Services and Public Utilities Building, 555 South Section Street., Fairhope, Alabama. One set of Bid Documents can be obtained free of charge.

1.05 INQUIRIES

Questions or comments pertaining to this bid must be presented in writing, sent as e-mail to the attention of the Purchasing Manager, Erin Wolfe, 555 South Section St., Fairhope, AL 36532, e-mail: Purchasing@FairhopeAL.gov, by **February 16, 2026 at 2:00 P.M.** or will be forever waived.

1.06 SITE EXAMINATION

There will be a MANDATORY pre-bid meeting on **February 10, 2026 at 10:00 A.M.** at the Museum next door to the Welcome Center located at 24 North Section Street, Fairhope, AL. This mandatory pre-bid meeting will serve as an opportunity for potential bidders to engage project stakeholders, review plans and ask questions.

The City of Fairhope will not furnish any labor, material, or supplies unless specifically stated in the CONTRACT Documents. **BIDDERS** must be properly licensed to perform the work as outlined in the Scope of Work. Awarded Vendor must have a current business license or purchase a business license with the City of Fairhope prior to bid being awarded.

Except for CONTRACTS funded in whole or in part by funds received from a federal agency, preference shall be given to resident **BIDDERS** on the same basis as the nonresident **BIDDERS** state awards CONTRACT to Alabama **BIDDERS** bidding under similar circumstances. Therefore, non-resident **BIDDERS** shall submit with their bid a written opinion of an attorney at law licensed to practice law in the non-resident **BIDDERS** state of domicile as to preferences granted by that state to entities doing business in that state when letting public contracts.

1.07 **BID SECURITY**

Bids shall be accompanied by a Bid Security equal to 5% (percent) of the bid price, but in no event more than \$10,000.00. Bid Security shall be in the form of a Bid Bond or a cashier's check payable to The City of Fairhope. No Bid Security is required on bids less than \$10,000.00.

1.08 **PERFORMANCE ASSURANCE AND INSURANCE**

The **BIDDER** to whom award is made shall provide a Performance Bond equal to 100% of the CONTRACT Amount and a Labor and Material Bond equal to 50% of the CONTRACT amount.

The accepted **BIDDER** shall also provide insurance as required in ITEM V.

1.09 **DURATION OF OFFER**

Bids may be withdrawn in written or telegraphic request received from **BIDDER** prior to the time fixed for opening. No bid shall be withdrawn for a period of thirty (60) days subsequent to the opening of bids without the consent of the City Council of the City of Fairhope.

1.10 **EQUAL OPPORTUNITY**

The City of Fairhope is an Equal Opportunity Employer and requires that all **BIDDERS** comply with the Equal Employment Opportunity laws and the provisions of the CONTRACT Documents in this regard. The City of Fairhope also encourages and supports the utilization of Minority Business Enterprises on this and all public bids.

1.11 **BID SUBMISSION AND PREPARATION**

Sealed Bids, signed, executed, and dated, will be received by the City of Fairhope as noted in section 1.03 above. Submit one copy of the executed offer on the Bid Form provided, signed, and with the required Bid Security. **The bid shall be enclosed in a sealed opaque envelope approximately 9x12 inches or larger, clearly identified on the outside as a SEALED BID with the BID NAME, BID NUMBER, CITY'S NAME AND ADDRESS, CONTRACTOR'S NAME AND ADDRESS.**

Forms furnished, or copies thereof, shall be used, and strict compliance with the requirements of the invitation, these instructions, and the instructions printed on the forms is necessary. Special care should be exercised in the preparation of bids. **BIDDERS** must make their own estimates of the facilities and difficulties attending the performance of the proposed CONTRACT, including local conditions, uncertainty of weather, and all other contingencies. All designations and prices shall be fully and clearly set forth. The proper space in the bid and guaranty forms shall be suitably filled in.

Fill in all blanks on the bid form with non-erasable ink or type. Erasers or other changes must be explained or noted over the signature of the **BIDDER**.

The Bid Form may have a Contingency Allowance listed. Add this amount to the Base Bid to derive the Total Bid. The Contingency Allowance covers unforeseen conditions and shall not be used by the **BIDDER** without the written authorization of the **CITY**. At the conclusion of the project, the unused portion of the Contingency Allowance shall revert to the **CITY**.

Each bid must give the full business address of the **BIDDER** and must be signed by him with his usual signature. Bids by partnerships must furnish the full names of all partners and must be signed with the partnership name by one of the members of the partnership, or by an authorized representative, followed by the signature and designation of the person signing. Bids by corporations must be signed with the legal name of the corporation followed by the name of the State of Incorporation and by the signature and designation of the president, secretary, or other person authorized to bind it in the matter. The name of each person shall also be typed or printed below the signature. A bid by a person who affixes to this signature the word "president," "secretary," "agent," or other designation without disclosing his principal, may be held to be the bid of the individual signing. When requested by the **CITY** satisfactory evidence of the authority of the officer signing in behalf of the corporation shall be furnished.

Each project will be bid separately unless otherwise expressly requested in the CONTRACT document. Combination bids, that is bids on separate projects lumped together as a single bid or on all or none basis, will not be accepted unless the CONTRACT document expressly requests or permits same.

1.12 **BID INELIGIBILITY**

Bids that contain irregularities of any kind may be declared unacceptable at the discretion of the **CITY**. The **CITY** may waive any irregularities and may reject any or all bids. Bids received after the deadline will be returned to the **BIDDER** unopened.

1.13 **CONTRACT TIME**

The **BIDDER** agrees to provide all material, equipment, labor, incidentals, overhead and profit to this City of **Fairhope Welcome Center Envelope Repairs**. The project includes a full exterior envelope restoration repair project for the existing building. Review the contract documents including the drawings and specifications for more information. It is expected that the winning bidder can complete this project in **(120)** calendar days, no exceptions for holidays following a fifteen (15) day Notice to Proceed Period.

1.14 **INQUIRIES/ADDENDA**

All Addenda are part of the CONTRACT Documents. Include resultant costs in the Bid. Addenda will be issued by E-MAIL and posted on the City's website: www.FairhopeAL.gov. It is the responsibility of the **BIDDER** to verify that all Addenda have been received.

Questions or comments pertaining to this bid must be presented in writing, sent via email to Purchasing@FairhopeAL.gov by **February 16, 2026 at 2:00 P.M.** or will be forever waived.

1.15 **BID ACCEPTANCE**

Bid with lowest Total Bid amount from a responsive and responsible **BIDDER** may be accepted if within the CONTRACT Budget. In the event that alternates are listed on the Bid Form, the lowest combination of Total Bid and Alternate Bids accepted by the **CITY** shall be the accepted bid. Alternates shall be awarded in the order in which they are listed on the Bid Form.

1.16 **BIDDERS INTERESTED IN MORE THAN ONE BID**

If more than one bid is offered by any one party, by or in a name of his clerk, partner, corporation in which he has a substantial interest, or in which he is an officer, or other person, all such bids may be rejected. A party who has quoted prices on materials to a **BIDDER** is not thereby disqualified from quoting prices to other **BIDDERS** or from submitting a bid directly for the materials or work. The **CITY** reserves the right to determine in its discretion whether the provisions of this clause have been violated by any **BIDDER**.

1.17 **ERRORS IN BIDS**

BIDDERS or their authorized agents are expected to examine the maps, drawings, specifications and all other instructions pertaining to the work, which will be open to their inspection. Failure to do so will be at the **BIDDER'S** own risk. In case of error, in the extension of prices, the unit price will govern.

1.18 **CONTRACT AND BOND**

The **BIDDER** to whom award is made must, when requested, enter into written CONTRACT on the standard form as set out herein, with satisfactory security in the amount required, within the period specified, or, if no period be specified, within 15 days after the required forms are presented to him for signature.

1.19 **COLLUSION**

If there is any reason for believing that collusion exists among the **BIDDERS** any or all bids may be rejected, and those participating in such collusion may be barred from submitting bids on the same or other work with the **CITY**.

1.20 **SUBLETTING OR ASSIGNING OF CONTRACT**

Limitations: The **CONTRACTOR** shall not sublet, assign, transfer, convey, sell, or otherwise dispose of any portion of the **CONTRACT**, his right, title or interest therein, or his power to execute such **CONTRACT**, to any person, firm or corporation without written consent of the **CITY**, and such written consent shall not be construed to relieve the **BIDDER** of any responsibility for the fulfillment of the **CONTRACT**. Unless otherwise stipulated in the proposal or special provisions, the **BIDDER** shall perform with his own organization, and with the assistance of workmen under his immediate superintendence and reported on his payroll, all **CONTRACT** work of a value not less than 50 percent of the total **CONTRACT** amount, except that any items designated in the **CONTRACT** as "Specialty Items" so performed by **SUB-CONTRACT** may be deducted from the total **CONTRACT** amount before computing the amount of work required to be performed by the **BIDDER** with his own organization.

SUB-CONTRACTOR'S Status:

A **SUB-CONTRACTOR** shall be recognized only in the capacity of an employee or agent of the **CONTRACTOR** and the **CONTRACTOR** will be responsible to the **CITY** for all of the **SUB-CONTRACTOR's** work, including failures or omissions; and his removal may be required by the Project Manager, as in the case of an employee.

1.21 **PROSECUTION OF WORK**

The **BIDDER** shall prosecute the work continuously and diligently in the order and manner set out in his schedule as approved by the **CITY**. He shall provide sufficient satisfactory materials, labor, and equipment to ensure that the work will be completed in a satisfactory manner within the time specified in the **CONTRACT**.

Should the **BIDDERS** fail to maintain a satisfactory rate of progress, the **CITY** may require that additional forces and/or equipment be placed on the work to bring the project up to schedule and maintain it at that level.

Should the **BIDDER** fail to furnish sufficient satisfactory equipment and/or labor for maintaining the quality and progress of the work at satisfactory level, the **CITY** may withhold all estimates that may become due until satisfactory quality and progress are maintained; or the **CONTRACT** may be annulled.

ITEM II
SCOPE OF WORK
Bid No. 26-024-2025-PWI-021
Welcome Center Envelope Repairs
Project No. 2025-PWI 021

PART 1 GENERAL

1.1 SCOPE

This Section provides a general description of the Work to be performed by the Contractor under this Contract for the Welcome Center Envelope Repairs Project. All Work shall be performed in accordance with the Contract Documents and in close coordination with the Architect/ Engineer and the City of Fairhope (hereinafter referred to as the Owner or the City).

1.2 PROJECT DESCRIPTION

The Welcome Center Envelope Repairs project consists of a full exterior envelope restoration repair project for the existing building. Major components of the Work include:

- a. The existing exterior insulation finish system and existing plywood sheathing are to be removed and replaced.
- b. New exterior rated fire retardant treated plywood sheathing system, new air and water barrier system, and new fiber cement horizontal lap siding system are to be installed over on the existing building framing.
- c. Next, the existing roofing system and roof plywood will be removed and replaced. Provide and install new fire retardant treated plywood sheathing, new self adhering flashing membrane and architectural asphalt shingles system.
- d. Lastly, a new separated metal balcony system with a new covered roof system and foundations shall be provided and installed with new guardrails and 16 new metal columns.

The Work will be performed under a Form of Agreement with the City of Fairhope and administered by the Architect/Engineer, Goodwyn Mills Cawood, LLC.

1.3 LOCATION OF WORK

All the Work of this Contract is located within parcels owned by the State of Alabama and the City of Fairhope.

1.4 WORK TO BE DONE

- A. The Contractor shall furnish all labor, materials, plant, equipment, tools, supervision, and services required to complete the Work shown and described in the Drawings and Specifications.

- B. The Work shall be performed complete, in place, and ready for continuous service, including all incidentals and restoration required as a result of construction.
- C. All materials and workmanship shall conform to the requirements stated or implied in the Contract Documents.
- D. The Contractor shall comply with all applicable City, County, State, and Federal codes and regulations governing the Work.

Refer to the "General Requirements" section shown in this specification for detailed provisions governing sequence of work, site coordination, construction areas, substitutions, examination of site, and Contractor responsibilities.

1.5 GENERAL DESCRIPTION OF WORK TO BE PERFORMED

- A. The Work described herein is further detailed in the General Requirements, Technical Specifications and shown on the Contract Drawings.
- B. The intent of the Contract Documents is to require the Contractor to perform all work necessary for a complete and properly constructed Project.
- C. Any item of work not specifically indicated but reasonably inferable as necessary for completion shall be performed without additional compensation.

See the "General Requirements" section shown in this specification for additional description of the Contractor's obligations and the Engineer's authority regarding Work intent, interpretation, and conflicts between Drawings and Specifications.

1.6 BASIS OF CONTRACT

Payment for Work under this Contract shall be made as set forth in the Bid Form and in accordance with the provisions shown in the "Measurement and Payment" section of the "General Requirements" shown in this specification. No separate or additional payment will be made for items not specifically listed in the Bid Form; all such costs shall be considered incidental to the applicable pay items.

**ITEM III
BID RESPONSE FORM**

Date: _____ / ____ / _____

Bid No: 26-024-2025-PWI-021

Project: Welcome Center Envelope Repairs Bids Due:

February 24, 2026

CONTRACT BID ITEMS

ITEM DESCRIPTION	Dollars \$
BASE BID: For construction complete as shown and specified, the sum of _____ _____ _____	Dollars (\$ _____)
ALTERNATES: If alternates as set forth in the Bid Documents are accepted, the following adjustments are to be made to the Base Bid:	
For Alternate No. 1 (.) (add) (deduct) \$ _____ (Insert key word for Alternate)	
For Alternate No. 2 (.) (add) (deduct) \$ _____	
For Alternate No. 3 (.) (add) (deduct) \$ _____	
For Alternate No. 4 (.) (add) (deduct) \$ _____	
For Alternate No. 5 (.) (add) (deduct) \$ _____	
For Alternate No. 6 (.) (add) (deduct) \$ _____	

Bid will include all labor, materials, equipment, shipping and postage, overhead, profit, bonds, insurance and all other costs necessary to provide the complete services outlined within this CONTRACT and scope of work.

Receipt of the following Addenda to these documents is hereby acknowledged by the undersigned (CONTRACTOR to complete below):

ADDENDUM NO.	DATE ISSUED	ADDENDUM NO.	DATE ISSUED
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

Each bid must give the full business address of the CONTRACTOR and must be signed by him with his usual signature. Bids by partnerships must furnish the full names of all partners and must be signed with the partnership name by one of the members of the partnership, or by an authorized representative, followed by the signature and designation of the person signing. Bids by corporations must be signed with the legal name of the corporation followed by the name of the State of Incorporation and by the signature and designation of the president, secretary, or other person authorized to bind it in the matter. The name of each person shall also be typed or printed below the signature. A bid by a person who affixes to this signature the word "president," "secretary," "agent," or other designation without disclosing his principal, may be held to be the bid of the individual signing. When requested by the City of Fairhope, Baldwin County, Alabama, satisfactory evidence of the authority of the officer signing in behalf of the corporation shall be furnished.

The undersigned agrees to furnish the goods/services as requested by you for the City of Fairhope, Baldwin County, Alabama in your invitation to bid, and certifies that they will meet or exceed the specifications called for. The undersigned has read all information pertaining to this bid and has resolved all questions. It is also understood and agreed that all prices quoted are F.O.B. described in the bid documents and specifications. The undersigned also affirms he/she has not been in any CONTRACT or collusion among BIDDERS or prospective BIDDERS in restraint of freedom of competition, by CONTRACT to bid at a fixed price or to refrain from bidding or otherwise.

Witness our hands and seals this _____ day of _____, 202__.

If Individual or Partnership

(Name of Individual or Partnership)

(Name of Partner Print)

(Name of Representative Authorized to sign Bids and
CONTRACTs for the firm Print)

(Name of Partner Print)

Address _____

Phone Number () _____ Fax Number () _____

E-mail address _____ Alabama Contractor's License No. _____

Foreign Entity ID (if outside of Alabama) _____

If Corporation or LLC

Company _____

State of Incorporation _____

Company Representative _____
(Representative Authorized to sign Bids and CONTRACTs for the firm Print)

Company Representative _____
(Representative Authorized to sign Bids and CONTRACTs for the firm Signature)

Address _____

Phone Number () _____ Fax Number() _____

E-mail address _____ AL Contractor's License No. _____

Foreign Vendor Id _____

BID PROPOSAL NOTARIZATION:

STATE OF _____}

COUNTY OF _____}

I, the undersigned authority in and for said State and County, hereby certify that _____,
as _____ respectively, of _____, whose name is signed to
the foregoing document and who is known to me, acknowledged before me on this day, that, being informed of the contents
of the document they executed the same voluntarily on the day the same bears date.

Given under my hand and Notary Seal on this _____ day of _____, 202__.

NOTARY PUBLIC _____

MY COMMISSION EXPIRES ____ / ____ / ____

ATTACHMENT A

TO BID RESPONSE FORM

1.1 UNIT PRICES:

- A. The following items of work are anticipated during the performance of this contract; however the exact quantity of each work item may not be determinable prior to bidding. These Allowance Unit Prices include all charges for labor and materials, shoring, fee, layout, supervision (field and home office), general expenses, taxes, insurance, overhead and profit, but not limited to, for the accomplishment of the Allowance item(s).

Clarification Note: The Unit Prices quoted by the Contractor shall apply to increases (additive change orders) and to decreases (deductive change orders). This requirement shall supplement the requirements of the General Conditions and Instruction to Bidders. Changes in the Contract amount that are computed using the Stated Allowances and Unit Prices shall be figured at the same unit price whether additive or deductive.

- B. Refer to Section 010260 - "Unit Prices", and to the respective sections of the Specifications for the complete Unit Price Item description.
- C. Submit the following Unit Prices with the Proposal Form on Bid Date.

<u>ITEM</u>	<u>UNIT QTY</u>	<u>UNIT</u>	<u>UNIT PRICE</u>
1. Moisture Resistant Board	1	SF	\$
2. R-19 Batt Insulation	1	SF	\$
3. 1 x 6 Fire Retardant Treated Wood Trim	1	SF	\$
4. 2 x 6 Fire Retardant Treated Wood Framing	1	SF	\$
UNIT PRICE TOTAL:			\$

(*) Legend to "Unit" quantity abbreviations: SF Square Foot

Note: Failure to complete and submit this attachment with proposal shall be grounds for rejections of bid.

END OF ATTACHMENT A TO PROPOSAL FORM

ITEM IV
CONTRACTOR INFORMATION

This Section must be printed, completed, and turned in with your bid response to
Bid No. 26-024-2025-PWI-021
Project No. 2025-PWI 021

Business Organization

Name of CONTRACTOR (exactly as it appears on W-9):

Doing-Business-As Name of CONTRACTOR: _____

Principal Office Address: _____

LOCAL Telephone Number: _____ Toll- Free _____
LOCAL Fax Number: _____
Email address: _____
Website: _____

Form of Business Entity [check one ("X")]

Corporation _____
Partnership _____
Individual _____
Joint Venture _____
Other (describe): _____

Corporation Statement

If a corporation, answer the following:

Date of incorporation: _____
Location of incorporation: _____
The corporation is held: Publicly _____
Privately _____

Partnership Statement

If a partnership, answer the following:

Date of organization: _____
Location of organization: _____
The partnership is: General _____
Limited _____

Joint Venture Statement

If a Joint Venture, answer the following:

Date of organization: _____
Location of organization: _____
JV CONTRACT recorded? Yes _____ No _____

Contact: _____ Email _____

Phone _____ Fax _____

END OF CONTRACTOR INFORMATION SECTION

ITEM V INSURANCE

1.0 INSURANCE REQUIREMENTS

Awarded **CONTRACTOR**, at its sole expense, shall obtain and maintain in full force the following insurance to protect the **CONTRACTOR** and the City of Fairhope at limits and coverages specified herein. The City of Fairhope will be listed as an additional insured under the **CONTRACTOR'S** general liability insurance and automobile liability insurance policies, and all other applicable policies and certificates of insurance. These limits and coverages specified are the minimum to be maintained and are not intended to represent the correct insurance needed to fully and adequately protect the awarded **CONTRACTOR**.

1.1 All insurance will be provided by insurers by admitted carriers in the State of Alabama, shall have a minimum A.M. Best rating of A-VII and must be acceptable to the City. Self-insured plans and/or group funds not having an A.M. Best rating must be submitted to the City for prior approval.

1.2 NO WORK IS TO BE PERFORMED UNTIL PROOF OF COMPLIANCE WITH THE INSURANCE REQUIREMENTS HAS BEEN RECEIVED BY THE CITY.

1.3 Worker's Compensation and Employers Liability

Part One: Statutory Benefits as required by the State of Alabama

Part Two: Employers Liability	\$100,000 Each Accident
	\$100,000 Each Employee
	\$500,000 Policy Limit

1.4 U.S. Longshoreman & Harbor workers Act (USL&H)-

Required if CONTRACT involves work near a navigable Waterway that may be subject to the USL&H law.

1.5 Maritime Endorsement (Jones Act)-

Endorsement required if CONTRACT involves the use of a Vessel. Or include coverage for "Master or Members or Crew" under "Protection and Indemnity" coverage (P&I), unless crew is covered under Workers Compensation.

Bodily injury by accident	\$1,000,000 Each Accident
Bodily injury by disease	\$1,000,000 Aggregate

1.6 Commercial General Liability

Coverage on an Occurrence form with a combined single limit of (Bodily Injury and Property Damage combined as follows:

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

Coverage to include:

- Premises and operations
- Personal Injury and Advertising Injury
- Products/Completed Operations
- Independent BIDDERS
- Blanket Contractual Liability
- Explosion, Collapse and Underground hazards
- Broad Form Property Damage
- Railroad Protective Liability Insurance if work involves construction, demolition or maintenance operations on or within 50 feet of a railroad.

1.7 Automobile Liability

Covering all Owned, Non-Owned, and Hired vehicles with a limit of no less than \$1,000,000 combined single limit of Bodily Injury and property damage per occurrence.

1.8 Certificate of Insurance

A Certificate of Insurance evidencing the above minimum requirements must be provided to and accepted by the City PRIOR to commencement of any work on the CONTRACT. Each policy shall be endorsed to provide ten (10) days written notice of cancellation to the CITY

Such insurance as is afforded by the above policies covers the operations undertaken by the insured with respect to the construction of the project above designated. The insurance afforded by the above designated policies, specimen copies of which have been filed with the **CITY**, and to each of which is attached for following endorsement.

The insurer agrees with the insured as follows:

- 1.8.1 That it will furnish to said City of Fairhope a certificate of insurance in triplicate on a form approved for such purpose by said **CITY**, setting forth the pertinent information regarding the policy to which this endorsement is attached, for each project of said **CITY** to which the policy applies.
- 1.8.2 That it will attach to each said certificate of insurance executed copies of any endorsement other than this endorsement which are attached to said policy at the time said policy is issued, provided only that said endorsements affect the coverage of said policy in respect of operations involved in the construction of the projects of said **CITY** to which the policy applies.
- 1.8.3 That it will mail to the City Council of the City of Fairhope three executed copies of each endorsement subsequently issued to become a part of said policy provided only that endorsement affects the coverages of said policy in respect of operations involved in the construction of the project of said **CITY** which the policy applies, and provided further that such endorsement shall not be effective unless such notice is given to the **CITY** at the same time that notice thereof is given to the insured.
- 1.8.4 That it will mail to the City Council of the **CITY** of Fairhope at least ten days before the effective date thereof notice of cancellation of said policy, provided no cancellation shall be effective unless such notice is given to the **CITY**.

END OF INSURANCE REQUIREMENTS

ITEM VI



City of Fairhope CONTRACT

This **CONTRACT** is made this _____ day of _____, 202_, by and between the City of Fairhope (hereinafter referred to as the "**OWNER**") and _____ (hereinafter referred to as the "**CONTRACTOR**"), for

Bid Number 26-024-2025-PWI-021 Welcome Center Envelope Repairs

The **OWNER** and the **CONTRACTOR** agree as set forth below:

1. The **CONTRACT** consists of all the items contained within this **CONTRACT**, The Proposal Package, Proposal, Scope of Work and Specifications, drawings (if applicable), Addenda, Amendments, and City of Fairhope Standard Terms and Conditions, which are attached hereto and made a part hereof, as if fully contained herein; for the performance of all work and the furnishing of all labor and materials required for completion of the **WORK**.
2. The **CONTRACTOR** shall perform all the **WORK** described herein.
3. The **WORK** to be performed under this **CONTRACT** shall be commenced upon execution of this **CONTRACT** within number (DAYS) days of the date specified in the *Notice to Proceed* (NTP) to be issued to the **CONTRACTOR** by the **OWNER**, or its authorized representative. The work shall be completed, subject to authorized adjustments, within (DAYS) consecutive calendar days from and after the commencement date stipulated in said *Notice to Proceed*. Liquidated damages for non-completion of the work within this time limit will be assessed at the rate of (DOLLARS) per working day.
4. The **OWNER** shall pay the **CONTRACTOR** in current funds for the performance of the **WORK**, the **CONTRACT SUM** of _____ DOLLARS (\$ _____). This represents a LUMP SUM payment for performance of the **WORK**, which payment shall be issued after the Contract is fully performed and the **OWNER** has inspected the **WORK**.
5. **General Conditions**
 - a. **Indemnity:** The **CONTRACTOR** hereby agrees to indemnify and save harmless the **OWNER**, its officers, agent, and employees, from and against any and all liabilities, claims, demands, damages, fines, fees, expenses, penalties, suits, proceedings, actions and cost of actions, including reasonable attorneys' fees for trial and on appeal, of any kind and nature, arising or growing out of, or in any way connected with the performance of this **CONTRACT**, to the extent caused by a negligent act or omission of the **CONTRACTOR**, their agents, servants, employees, SUB-**CONTRACTORS**, or others associated with the **CONTRACTOR**. The **CONTRACTOR** shall be responsible for damage to any elevator equipment excluded from this agreement, or damage or injury caused by any equipment excluded from this agreement, to the extent that the damage or injury is caused by a negligent act or omission of the **CONTRACTOR**.
 - b. **Notification and Accident Reports:** In the event of accidents of any kind, the **CONTRACTOR** shall notify the **OWNER** immediately and furnish, without delay, copies of all such accident reports to the **OWNER**. If in the performance of their Work, the **CONTRACTOR** fails to immediately report an accident to the **OWNER**, of which the **CONTRACTOR** has knowledge of and which results in a fine

levied against the **OWNER** then the **CONTRACTOR** shall be responsible for all fines levied against the **OWNER**.

6. Termination of Agreement

- a. Termination for Default: Performance of Work under this Agreement may be terminated by the OWNER, in whole or in part, in writing, whenever the OWNER determines that the CONTRACTOR has failed to meet the requirements of this Agreement.
 - i. The Owner has a right to terminate for default if the contractor fails to make delivery of material or does not perform the work, or if the Contractor fails to perform the Work within the time specified in the Agreement, or if the Contractor fails to perform any other provision of the Agreement.
 - ii. Failure on the part of the Contractor to deliver or perform the Work within the time specified, or within a reasonable time as determined by the Owner, or failure on the part of the Contractor to make replacements of rejected articles, or Work when so requested, immediately or as directed by the Owner, shall constitute authority for the Owner to purchase in the open market, articles or Work of comparable grade to replace the articles or Work rejected, not delivered or completed. On all such purchases, the Contractor shall reimburse the Owner within a reasonable time specified by the Owner for any expense incurred in excess of Agreement prices.
 - iii. Such purchases shall be deducted from the Agreement sum. If public necessity demands it, the Owner reserves the right to utilize services or use and/or consume articles delivered, which are standard in quality, subject to an adjustment of price to be determined by the Owner.
- b. Termination for Convenience: The OWNER has the absolute right to terminate the Agreement upon "Award of Contract" another CONTRACTOR, to perform work referenced herein. In such event, payment of the monthly contract fee shall cease on the date of cancellation of the CONTRACT by the OWNER.

7. Warranty

- a. The CONTRACTOR warrants that the Work including equipment and materials provided shall conform to the professional standards of care and practice in effect at the time the Work is performed, be of the highest quality, and be free from all faults, defects, or errors. If the CONTRACTOR is notified in writing of a fault, deficiency or error in the Work, the CONTRACTOR shall at the OWNER's option, either re-perform such portions of the Work to correct such fault, defect, or error, at no additional cost to the OWNER, or refund to the OWNER the charge paid by the OWNER, which is attributable to such portions of the faulty, defective or erroneous Work, including costs for re-performance or Work provided by other CONTRACTORS. All equipment and materials provided by the CONTRACTOR shall be merchantable and for the purpose intended and meet all industry quality standards.

8. Time of Completion

The OWNER and CONTRACTOR understand and agree that time is of the essence in the performance of this Agreement. The CONTRACTOR or OWNER, respectively, shall not be liable for any loss or damage, resulting from any delay or failure to perform its contractual obligations within the time specified, due to acts of God, actions or regulations by any governmental entity or representative, strikes, fire, water damage, loss of power, loss of funding or any other causes, contingencies, or circumstances not subject to the OWNER or CONTRACTOR'S control, respectively, whether of a similar or dissimilar nature, which prevent or hinder the performance of the OWNER'S or CONTRACTOR'S contractual obligations,

respectively. Any such causes of delay, even though existing on the date of the CONTRACT, or on the day of the start of Work, shall extend the time of the OWNER'S or CONTRACTOR'S performance respectively, by the length of the delays occasioned thereby, including delays reasonably incident to the resumption of normal Work schedules.

However, under such circumstances as described herein, the OWNER may, at their discretion, cancel this CONTRACT for their own convenience.

9. Insurance Requirements

See **ATTACHMENT B**

10. Acceptance of Work

The OWNER will be deemed to have accepted the Work after the OWNER agrees the Work is completed. In the event Work furnished under the CONTRACT is found to be defective or does not conform to the intent of the CONTRACT, the CONTRACTOR shall, within ten (10) days from receipt of notice from the OWNER, correct the deficiencies. Failure on the part of the CONTRACTOR to properly correct the deficiencies within the time period allowed will constitute the OWNER'S right to cancel the CONTRACT immediately, upon written notice to the CONTRACTOR.

11. Correction of Work

The CONTRACTOR shall promptly correct all Work rejected by the OWNER as faulty, defective or failing to conform to the CONTRACT, whether observed before or after completion of the Work. The CONTRACTOR shall bear all costs of correcting such rejected Work.

12. Right to Audit

The CONTRACTOR shall maintain documentation of all work performed. The CONTRACTOR shall make any and all documentation available to the OWNER at all reasonable times, for inspections and audit by the OWNER, during the entire term of the CONTRACT, and for a period of three (3) years after the expiration of this CONTRACT.

13. CONTRACT Rights and Remedies

The CONTRACTOR shall maintain documentation of all work performed. The CONTRACTOR shall make any and all documentation available to the OWNER at all reasonable times, for inspections and audit by the OWNER, during the entire term of the CONTRACT, and for a period of three (3) years after the expiration of this CONTRACT.

14. Time is of the Essence

The Owner and CONTRACTOR agree that time is of the essence in the performance of Work called for under this CONTRACT. The CONTRACTOR agrees that all work will be accomplished regularly, diligently and uninterrupted at such a rate of progress as will ensure full completion thereof within reasonable time periods.

15. Safety Measures

The CONTRACTOR shall take all necessary precautions for the safety of the OWNER'S and CONTRACTOR'S employees at the Work site, and shall erect and properly maintain at all times, all necessary safeguards for the protection of the workmen and the public. The CONTRACTOR shall post signs warning against hazards in and around the Work site.

16. Extra Work and Associated Costs

- a. Changes in the Work: The OWNER, without invalidating the CONTRACT, may order changes in the Work within the general scope of this CONTRACT, consisting of additions, deletions, or other revision, the CONTRACT price and time for execution of the Work being adjusted accordingly.
- b. All such changes in the Work shall be authorized by a written Amendment to the CONTRACT or a separate Change Order and shall be executed under the applicable conditions of the CONTRACT.

17. Familiarity with the Work

The CONTRACTOR, by executing this CONTRACT, acknowledges full understanding of the extent and character of the Work required and the conditions surrounding the performance thereof. The OWNER will not be responsible for any alleged misunderstanding of conditions surrounding the performance thereof. It is understood that execution of the CONTRACT by the CONTRACTOR serves as his stated commitment to fulfill all requirements and conditions referred to in this CONTRACT.

18. Scope of Work

See **ATTACHMENT B**

19. Contractor Liability

Nothing in this CONTRACT shall be construed to mean that the CONTRACTOR assumes any liability for damages or otherwise, on account of accidents to persons or property, except those resulting from negligence on the part of the CONTRACTOR or its agents, servants, employees, and subcontractors.

20. Miscellaneous Provisions

- a. The CONTRACTOR shall not employ SUB-CONTRACTORS without the express written permission of the OWNER.
- b. The CONTRACTOR shall not assign the CONTRACT or sublet it as a whole without the express written permission of the OWNER. The OWNER may assign the CONTRACT, or sublet it as a whole, without the consent of the CONTRACTOR.
- c. No waiver, alteration, consent, or modification of any of the provisions of the CONTRACT shall be binding unless in writing and signed by the OWNER and CONTRACTOR.
- d. The CONTRACTOR is to procure all permits, licenses, and certificates, or any approvals of plans or specifications as may be required by Federal, State, Local Laws, ordinances, rules, and regulations, for the proper execution and completion of Work covered under this CONTRACT.
- e. The CONTRACTOR shall at all times keep the Work area free from accumulation of waste materials or rubbish caused by his operations, and promptly remove any such materials to an area designated by the OWNER or remove to a waste site as directed by the OWNER. If the CONTRACTOR fails to clean up the Work site, the OWNER will complete the task and charge the CONTRACTOR for such services.
- f. This CONTRACT is considered a non-exclusive Agreement between the parties.
- g. This CONTRACT is deemed to be under and shall be governed by and construed according to the laws of the State of Alabama.

- h. Any litigation arising out of the CONTRACT shall be heard in the Courts of Baldwin County, Alabama.
- i. This CONTRACT contains all terms and conditions agreed upon by the OWNER and CONTRACTOR. No other agreement, oral or otherwise, regarding the subject matter of this CONTRACT shall be deemed to exist or to bind either party hereto.
- j. This CONTRACT shall not be construed against the party or parties preparing it. It shall be construed as if all the parties and each of them jointly prepared this CONTRACT, and any uncertainty or ambiguity shall not be interpreted against one or more parties.

Section 41-16-5, Code of Alabama 1975, requires that public contracts over \$15,000 include the following language:

By signing this Contract, _____ represents and agrees
COMPANY NAME
that it is not currently engaged in, nor will it engage in, any boycott of a person or entity based in or doing business with a jurisdiction with which the State of Alabama can enjoy open trade

IN WITNESS WHEREFORE, the parties hereto have executed this **CONTRACT** as of the day and year first above written.

THE CITY OF FAIRHOPE, ALABAMA

Sherry Sullivan, Mayor

ATTEST: _____
Lisa A. Hanks, MMC, City Clerk

NOTARY FOR OWNER (CITY OF FAIRHOPE)

STATE OF ALABAMA _____}
COUNTY OF BALDWIN _____}

I, the undersigned authority in and for said State and County, hereby certify that SHERRY SULLIVAN, Mayor of the City of Fairhope whose name is signed to the foregoing document and who is known to me, acknowledged before me on this day, that, being informed of the contents of the document she executed the same voluntarily on the date the same bears date.

Given under my hand and Notary Seal on this _____ day of _____, 202__.

NOTARY PUBLIC _____

MY COMMISSION EXPIRES _____

IF INDIVIDUAL OR PARTNERSHIP

Individual or Partnership

Print Name of Partner

Print Name of Representative Authorized to Sign
Contracts for the firm

Print Name of Partner

Signature of Representative Authorized to Sign
Contracts for the firm

Print Name of Partner

Address

Address

City, State, Zip Code

Phone Number

Fax Number

Primary E-mail Address

AL General Contractor License No. (Attach Copy)

AL General Contractor License Major Categories

AL General Contractor Specialties

AL Foreign Corporation Entity ID (Required of Out of State Vendors)

IF CORPORATION OR LLC

Company

State of Incorporation

Company Representative

Print Name of Representative Authorized to Sign
Contracts for the firm

Signature of Representative Authorized to Sign
Contracts for the firm

Address

Address

City, State, Zip Code

Phone Number

Fax Number

Primary E-mail Address

AL General Contractor License No. (Attach Copy)

AL General Contractor License Major Categories

AL General Contractor Specialties

AL Foreign Corporation Entity ID (Required of Out of State Vendors)

NOTARY FOR INDIVIDUAL, PARTNERSHIP, CORPORATION, OR LLC

STATE OF _____}
COUNTY OF _____}

I, the undersigned authority in and for said State and County, hereby certify that _____ As
Name

_____ respectively of _____
Title Company Name

Whose name is signed in the foregoing document and who is known to me, acknowledged before me on this day,
being informed of the contents of the document they executed the same voluntarily on the day the same bears
date.

Given under my hand and Notary Seal on this _____ day of _____, 202__.

NOTARY PUBLIC _____

MY COMMISSION EXPIRES _____

ITEM VII

SALES TAX EXEMPTION REQUIREMENTS AND PROCEDURE

At the time of Bid, provide an accounting of sales tax on the form provided in ITEM III BID RESPONSE FORM. Failure to provide an accounting of sales tax shall render the bid non-responsive. Other than **determining responsiveness**, sales tax accounting shall not affect the bid pricing nor be considered in the determination of the lowest responsible and responsive bidder.

1.0 BACKGROUND

Legislative Act 2013-205, Code of Alabama (1975) Section 40-9-14.1, is applicable to certain construction contracts with the City of Fairhope, Alabama. This law allows a sales and use tax exemption. When applicable, all business entities entering into construction contracts with the City of Fairhope, Alabama, will comply with the requirements of Section 40-9-14.1.

Code of Alabama (1975) Section 40-9-14.1

Certificates of exemption to governmental entities, contractors, etc., for certain tax exempt projects.

- (a) For the purposes of this section, the term governmental entity means the State of Alabama and its political subdivisions, including a county, a municipality, and an industrial or economic development board or authority. A governmental entity shall also include an educational institution of any of the foregoing Alabama political subdivisions including a public college or university, a county or city board of education, and the State Board of Education.
- (b)(1) The Department of Revenue shall issue a certificate of exemption to the governmental entity for each tax exempt project.
- (2) The Department of Revenue shall grant a certificate of exemption from state and local sales and use taxes to any contractor licensed by the State Licensing Board for General Contractors, or any subcontractor working under the same contract, for the purchase of building materials, construction materials and supplies, and other tangible personal property that becomes part of the **structure** that is the subject of a written contract for the construction of a building or other project, not to include any contract for the construction of any highway, road, or bridge, for and on behalf of a governmental entity which is **exempt** from the payment of sales and use taxes.
- (c) The use of a certificate of exemption for the purchase of tangible personal property pursuant to this section shall include only **tangible** personal property that **becomes** part of the structure that is the subject of the construction contract. Any contractor or subcontractor purchasing any tangible personal property pursuant to a certificate of exemption shall maintain an accurate cost accounting of the purchase and use of the property in the construction of the project.

- (d) A contractor who has an exemption from sales and use tax for the purchase of materials to use on a government project shall file, in a manner as prescribed by the department, reports of all exempt purchases. The reports shall be filed as a prerequisite to **renewal** of a certificate of exemption.
- (e)(1) The **department** may assess any contractor or subcontractor with state and local sales or use taxes on any item purchased with a certificate of exemption not properly accounted for and reported as required.
- (2) Any contractor or **sub-contractor** who intentionally uses a certificate of exemption in violation of this section shall, in addition to the actual sales or use tax liability due, be subject to a civil penalty levied by the department in the amount of not less than a minimum of two thousand dollars (\$2,000) or two times any state and local sales or use tax due for the property and, based on the contractor's or subcontractor's willful misuse of the certificate of exemption, may be barred from the use of any certificate of exemption on any project for up to two years.
- (f) The department may adopt rules to **implement** this section in order to effectuate the purposes of this section and to provide for **accurate** accounting and enforcement of this section.
- (g) In bidding the work on a tax exempt project, the bid form shall provide for an accounting for the tax savings.
- (h) The intent of this section is to lower the administrative cost for the governmental entity, contractor, and subcontractor for public works projects. It is not the intent of this section to change the basis for determining professional services from fair market value, which may include sales and use taxes.
- (i) This section shall be operative for contracts entered into January 1, 2014, or thereafter, and shall not apply to any contract entered into prior to January 1, 2014. In addition, this section shall not apply to any contract change orders or contract extensions, including revised, renegotiated, or altered contracts, when the original contract was entered into prior to January 1, 2014. The Department of Revenue may adopt rules to implement this section after October 1, 2013. (*Act 2013-205, §1.*)

2.0 PROCEDURE

- 2.0.1** Each contractor and subcontractor must make application for qualification of the Sales and Use Tax exemption using Alabama Dept. of Revenue Form ST: EXC-01 for each tax-exempt project. The application is available on the Alabama Dept. of Revenue's website at <http://revenue.alabama.gov/salestax/ST-EXC-01.pdf>. Applications should be submitted directly to the Sales and Use Tax Division Central Office, P.O Box 327710, Montgomery, AL 36132-7710.

- 2.0.2** Legislative Act 2013-205 requires the Department of Revenue to issue Form STC-1, Sales and Use Tax Certificate of Exemption for Government Entity Projects, to all contractors and subcontractors working on qualifying governmental entity projects once the Form ST: EXC-01 is approved.
- 2.0.3** Contractors and sub-contractors for qualifying projects will be required to file monthly consumers use tax returns and report all exempt purchases for ongoing projects, as well as all taxable purchases on one return. These returns are required to be filed through the Alabama Dept of Revenue's online tax return filing and payment portal, My Alabama Taxes (<https://myalabamataxes.alabama.gov>).

END OF SALES TAX EXEMPTION REQUIREMENTS AND PROCEDURES



ALABAMA DEPARTMENT OF REVENUE
SALES AND USE TAX DIVISION
P.O. Box 327710 • Montgomery, AL 36132-7710

Reset

ST: EXC-01
8/16

Application For Sales and Use Tax Certificate of Exemption

FOR GOVERNMENT ENTITY PROJECT

This Certificate of Exemption will be limited to purchases which qualify for an exemption of sales and use taxes pursuant to Rule No. 810-6-3-.77

PROJECT INFORMATION:

PROJECT NAME			PROJECT OWNER'S FEIN (EXEMPT ENTITY)		
STREET ADDRESS OF PROJECT (CITY AND COUNTY INCLUDED)		CITY	ZIP	COUNTY	

APPLICANT'S INFORMATION:

RELATION: (CHOOSE ONE)					
☐ Government Entity		☐ General Contractor		☐ Sub-Contractor	
APPLICANT'S LEGAL NAME				FEIN	
DBA				CONSUMER'S USE TAX ACCOUNT NUMBER	
MAILING ADDRESS: STREET		CITY	STATE	ZIP	COUNTY
CONTACT PERSON				BUSINESS TELEPHONE NUMBER ()	
EMAIL ADDRESS					

PROJECT START DATE (PROVIDED BY GENERAL CONTRACTOR)		PROJECT COMPLETION DATE (PROVIDED BY GENERAL CONTRACTOR)	
ESTIMATED START DATE (FOR APPLICANT)		ESTIMATED COMPLETION DATE (FOR APPLICANT)	
WILL THE APPLICANT HAVE ANY SUB-CONTRACTORS ON THIS JOB? ☐ Yes ☐ No If yes, please attach list.		NAME OF PARTY WITH WHOM YOUR CONTRACT IS WITH	
JOB DESCRIPTION			

WILL ANY POLLUTION CONTROL EXEMPTION BE APPLICABLE? ☐ Yes ☐ No		ESTIMATED POLLUTION CONTROL COST \$	
TOTAL PROJECT BID AMOUNT (APPLICANT'S PORTION OF PROJECT) \$	LABOR COST (APPLICANT'S PORTION OF PROJECT) \$	MATERIAL COST (APPLICANT'S PORTION OF PROJECT) \$	

REVENUE DEPARTMENT USE ONLY

PENDING DOCUMENTATION / INFORMATION:

☐ GCL ☐ SBL ☐ Contract / NTP / LOI ☐ LOS ☐ Project Dates / Breakdown of Costs

Contact Dates: _____ Received Date: _____

Forwarded for Denial: _____

PROJECT NAME

PROJECT OWNER'S FEIN (EXEMPT ENTITY)

FORM OF OWNERSHIP:

☐ Individual ☐ Partnership ☐ Corporation ☐ Multi member LLC ☐ Single member LLC ☐ Government Entity

If applicant is a corporation, a copy of the certified certificate of incorporation, amended certificate of incorporation, certificate of authority, or articles of incorporation should be attached. If the applicant is a limited liability company or a limited liability partnership, a copy of the certified articles of organization should be attached.

OWNERSHIP INFORMATION:

Corporations – give name, title, home address, and Social Security Number of each officer.

Partnerships – give name, home address, Social Security Number or FEIN of each partner.

Sole Proprietorships – give name, home address, Social Security Number of owner.

LLC – give name, home address, and Social Security Number or FEIN of each member.

LLP – give name, home address, and Social Security Number or FEIN of each partner.

NAME (PLEASE PRINT)

SIGNATURE

TITLE

DATE

REVENUE DEPARTMENT USE ONLY

PENDING OTHER:

☐ Government Entity ☐ General Contractor ☐ Not on LOS

Contact Dates: _____ Received Date: _____

Forwarded for Denial: _____

Examiner's Remarks _____

Examiner _____ Date _____

Instructions For Preparation of Form ST: EXC-01 Sales and Use Tax Certificate of Exemption for Government Entity Project

NOTE: Exemption Certificates will be issued as of the project start date or the received date of the application. If, upon receipt of the application, the project has already commenced, the certificate will be issued as of the received date of the application. Any purchases made prior to the issuance of a certificate will not be exempt.

***** Please allow 10 to 14 business days for your application to be processed. *****

In order to expedite the processing of your application, please include the following documentation when submitting your application:

Exempt Entity:

1. Signed Application
2. Copy of Executed/Signed Contract, Letter of Intent, Notice of Award, and/or Notice to Proceed

General Contractor:

1. Signed Application
2. Copy of Executed/Signed Contract, Letter of Intent, Notice of Award, and/or Notice to Proceed
3. List of Sub-Contractors
4. Alabama Board of General Contractor's License
5. State/County Business License (usually obtained through county probate office)
6. Any other municipal business licenses associated with the project

Sub-Contractor:

1. Signed Application
2. Alabama Board of General Contractor's License
3. State/County Business License (usually obtained through county probate office)
4. Any other municipal business licenses associated with the project
5. List of Sub-Contractors (if any)

General contractors and sub-contractors:

- Any additions and/or deletions to the list of sub-contractors working on a project must be submitted to the Department within 30 days of occurrence.
- If an extension is needed for a project, please contact the Department of Revenue at the address, numbers, or emails listed below.
- Sub-Contractor's Estimated Start Date should be the date they will begin working on the project and ordering materials instead of the General Contractor's Estimated Start Date for the project.

THERE IS A FILING REQUIREMENT IF YOUR APPLICATION IS APPROVED. The return will be filed through the Consumer's Use Tax account. Please see the following page for detailed instructions and general information regarding the reporting requirements.

The application and required documentation may be mailed, faxed, or emailed to the following:

Fax: (334) 353-7867

Emails: STExemptionUnit@revenue.alabama.gov

Mailing Address: ATTN: Contractor's Exemption
Alabama Department of Revenue
Sales & Use Tax Division
Room 4303
PO Box 327710
Montgomery, AL 36132-7710

General Information and Instructions Regarding the Reporting Requirements for Contractors Awarded an Exemption Certificate

A contractor's exemption certificate for a Government Entity project is needed in order to purchase materials tax exempt for the qualified project. Once the exemption certificate has been applied for and awarded, there is a monthly filing requirement to report the purchases that have been made for each exempt project. The Consumer's Use (CNU) tax account is used to report the tax-exempt purchases made with each certificate for each exempt project for each month.

The consumer's use tax return must be filed for each of the months covered by the exemption certificate. (For example, if the certificate's effective date is June 29, 2014 and the expected completion date is October 1, 2014, a consumer's use tax return must be filed for each of the following months: June, July, August, September, and October.) A return **MUST** be filed each month to report the monthly purchases. Therefore, all active exemption certificates must be included on the monthly report even if the monthly purchases for a specific project was \$0..

If a CNU tax account is not already open under the taxpayer/business name, one will automatically be assigned at the time the exemption certificate is generated. Electronic filing is required through the Department's online filing system, My Alabama Taxes (MAT). A letter containing the online filing information will be mailed to the address on file within a few days after the new CNU tax account has been assigned. This letter will contain all the information needed to create your online filing account in MAT. For questions relating to setting up the account on www.myalabamataxes.alabama.gov, please contact Business Registration at 334-242-1584 or the Sales Tax Division at 1-866-576-6531.

Once the MAT account is set up, please log in and file the monthly CNU tax return. There is a table located at the bottom left hand corner labeled "Contractor's Exemption for Government Construction Projects." All three fields in the table are required to be completed: exemption number, project number, and total amount of purchases for that specific project for the month. Additional projects may be added on the additional rows that appear as data is added; the table will allow the addition of more projects.

***Please do not use lines 1 through 9 of the return for reporting exempt project information. Leave these lines blank unless taxable purchases were made outside of the state of Alabama that need to be reported and tax remitted. (Lines 1 through 9 do not have anything to do with the exemption reporting requirements).

When the certificate expires (upon the project's completion) and the CNU tax account is no longer needed, please contact the Business Registration Unit at 334-242-1584 and close the CNU tax account. Please be advised that if there are multiple government entity projects open, the consumer's use tax account should remain open until the last project completion date. For example, if Project EXC00ABCD ends in June of 2014 but Project EXC00EFGH ends January of 2015, the CNU tax account must remain open until the end of January 2015. A return for Project EXC00EFGH must be filed all the way through January 2015.

If the applicant already has a CNU tax account and it is currently set up online, please use this account to report exempt project purchases through www.myalabamataxes.alabama.gov using the instructions provided above. The return may then be filed as usual.

***All Consumer's Use Tax returns are due on the 20th of the month following the month in which purchases were made (i.e., the return for the month of June is due July 20th, etc. There are 20 days to file the return before it is deemed late.)

***Any penalty waiver requests may be directed to the Sales and Use Tax Division at 1-866-576-6531. Only one waiver per 18 month period is allowed.



ITEM VIII

CITY OF FAIRHOPE

STANDARD TERMS AND CONDITIONS

1. ACCEPTANCE OF AGREEMENT

This Agreement contains all terms and conditions agreed upon by the Owner and Winning bidder. No other agreement, oral or otherwise, regarding the subject matter of this Agreement shall be deemed to exist or to bind either party hereto. The Winning Bidder shall not employ Subcontractors without the express written permission of the Owner. No waiver, alteration, consent or modification of any of the provisions of the Agreement shall be binding unless in writing and signed by the Owner and Contractor. This Agreement shall not be construed against the party or parties preparing it. It shall be construed as if all the parties and each of them jointly prepared this Agreement, and any uncertainty or ambiguity shall not be interpreted against one or more parties.

2. ACCEPTANCE OF WORK

The City of Fairhope will be deemed to have accepted the Work after the City of Fairhope agrees the Work is completed by signature on delivery or service tickets. In the event Work furnished under the Contract / Agreement / Purchase Order is found to be defective or does not conform to the intent of the Contract / Agreement / Purchase Order, the awarded vendor shall, after receipt of notice from the City of Fairhope, correct the deficiencies. Failure on the part of the awarded vendor to properly correct the deficiencies within the time period allowed will constitute the City of Fairhope's right to cancel the Contract / Agreement / Purchase Order immediately, upon written notice to the awarded vendor.

3. ADDENDA

All Addenda are part of the Contract Documents. Include resultant costs in the Bid. Addenda will be issued by email to all Bidders on record and posted to the City of Fairhope website www.FairhopeAL.gov. It is the responsibility of the bidder to verify that all addenda have been received, and to include all signed addenda in the bid submission

4. ADDITIONAL ORDERS

Unless it is specifically stated to the contrary in the bid response, the City of Fairhope reserves the option to place additional orders against a contract awarded as a result of this solicitation at the same terms and conditions; to extend the renewal date until a new bid is in place, if it is mutually agreeable.

5. APPLICABLE LAW

This Agreement is deemed to be under and shall be governed by and construed according to the laws of the State of Alabama. Any litigation arising out of the Agreement shall be heard in the Courts of Baldwin County, Alabama.

6. ASSIGNMENT

The awarded vendor shall not assign the Contract / Agreement / Purchase Order or sublet it as a whole without the express written permission of the City of Fairhope. The awarded vendor shall not assign any payment due them hereunder, without the express written permission of City of Fairhope. The City of Fairhope may assign the Contract / Agreement / Purchase Order, or sublet it as a whole, without the consent of the awarded vendor.

7. ASSURANCE OF NON-CONVICTION OF BRIBERY

The bidder hereby declares and affirms that, to its best knowledge, none of its officers, directors, or partners and none of its employees directly involved in obtaining contracts has been convicted of bribery, attempted bribery, or conspiracy to bribe under the laws of any state or Federal government.

8. AWARD CONSIDERATION

The following factors will be considered in determining the lowest **responsible** bidder: Overall quality, Conformity with specifications both general and specific, Purposes for which materials or services are required, Delivery dates and time required for delivery, Unit acquisition cost, financial ability to meet the contract, previous performance, facilities and equipment, availability of repair parts, experience, delivery promise, terms of payments, compatibility as required, other costs, and other objective and accountable factors which are reasonable.

9. AWARD OR REJECTION OF BIDS

The Bid will be awarded to the lowest responsible bidder complying with conditions of the invitation for bids, provided his bid is reasonable and it is in the interest of the City of Fairhope to accept it. The bidder to whom the award is made will be notified at the earliest possible date. The City of Fairhope, however, reserves the right to reject any and all bids and to waive any informality in bids received whenever such rejection or waiver is in the interest to the City of Fairhope.

10. BACK ORDERS

If it is necessary to back order any items, the vendor must notify the Purchasing Department and advise as to the expected shipping or delivery date. If this date is not acceptable, the City of Fairhope may seek remedies for default.

11. BID AND PERFORMANCE SECURITY

If bid security is required, a bid bond or cashier's check in the amount indicated on the bid cover must accompany the bid and be made payable to The City of Fairhope of Baldwin County, AL. Corporate or certified checks are not acceptable. Bonds must be in a form satisfactory to the City and underwritten by a company licensed to issue bonds in the State of Alabama. If bid security fails to accompany the bid, it shall be deemed unresponsive, unless the Purchasing Manager deems the failure to be non-substantial. All checks will be returned to the bidders after the contract has been approved. If a performance bond is required, the successful bidder will be notified after the awarding of the contract.

12. BRAND NAMES

Reference to brand names and numbers is descriptive, but not restrictive, unless otherwise specified. Bids on equivalent items meeting the standards of quality thereby indicated will be considered, providing the bid clearly describes the article offered and indicates how it differs from the referenced brands. Descriptive literature or manufacturers specifications plus any supplemental information necessary for comparison purposes should be submitted with the bid or the bid on that item may be rejected. Reference to literature submitted with a previous bid or on file with the Division of Purchasing will not satisfy this requirement. The burden is on the bidder to demonstrate that the item bid is equivalent to the item specified in the ITB. Bids without sufficient documentation to fully support equality, may be considered non-responsive. Reference by the City of Fairhope in the ITB to available existing specifications shall be sufficient to make the terms of such specifications binding on the bidder. Unless the bidder specifies otherwise in its bid, it is understood the bidder is offering a referenced brand item as specified in the ITB or is bidding as specified when no brand is referenced. Failure to examine drawings, specifications and instructions will be at the bidder's risk.

13. BUSINESS LICENSE

The vendor selected to enter into a Contract / Agreement with the City of Fairhope must be licensed to do business in the City of Fairhope prior to commencement of any work under the contract. Delivery of goods or services to the City of Fairhope by Purchase Order have detailed and varied Business License requirements. In all instances that require a business license. Awarded vendor will provide proof of possessing a current City of Fairhope Business License. Prospective bidders will not be required to possess a City of Fairhope Business License prior to award.

14. CANCELLATION OF / CONTRACT / AGREEMENT / PURCHASE ORDER / LEASE

A purchase order can be canceled in whole or in part when awarded vendor fails to deliver or perform as specified. Cancellation of a purchase order can only be made by a written purchase order change (POC) from the City of Fairhope. A term contract, lease or agreement can be canceled by the City of Fairhope, for justifiable cause, or convenience, by written notice.

15. CERTIFICATION PURSUANT TO ACT NO. 2006-557

Alabama law (section 41-4-116, code of Alabama 1975) provides that every bid submitted and contract executed shall contain a certification that the vendor, contractor, and all of its affiliates that make sales for delivery into Alabama or leases for use in Alabama are registered, collecting, and remitting Alabama state and local sales, use, and/or lease tax on all taxable sales and leases into Alabama. By submitting this bid, the bidder is hereby certifying that they are in full compliance with act no. 2006-557, they are not barred from bidding or entering into a contract pursuant to 41-4-116, and acknowledges that the awarding authority may declare the contract void if the certification is false. All corporations must register to do business in Alabama with the Office of the Secretary of State. Their address is:

Office of the Secretary of State

P.O. Box 5616

Montgomery, AL 36103

(334) 242-5324

Fax: (334) 240-3138

<http://www.sos.state.al.us/index.aspx>

The Foreign Corporation form is online at
<http://www.sos.state.al.us/downloads/dl1.cfm>.

16. COST OF REMEDYING DEFECTS

All defects, indirect and consequential costs of correcting, removing, or replacing any or all of the defective materials or equipment will be charged against the awarded vendor.

17. DELIVERY OF BID

Bids must be received in the Purchasing Office by the date and time specified on the bid cover. All bids will be accepted until the time and date stated on the bid cover. No bids will be accepted that extend past the time and date on the bid cover. The time of receipt shall be determined by the time clock stamp in the Purchasing Department. Bids submitted by U.S. Mail must be received by the City of Fairhope of Baldwin County, Alabama, in the City of Fairhope offices, 555 South Section St., Fairhope, AL., unless otherwise specified.

18. DELIVERY

The number of calendar days required for delivery after receipt of a purchase order shall be stated in the RFQ / ITB / RFP and /or Purchase Orders. When no time is stated in the document, the time shall be fourteen (14) calendar days after receipt of order. If a shipment is not made within the time period specified, the Purchase Order may be canceled.

19. ENVIRONMENTAL REQUIREMENTS

All products will be clearly labeled for their intended use. Each delivery of product or materials will include a Material Safety Data Sheet (MSDS) for all materials that require an MSDS. All manufacturers/distributors of hazardous substances, including any of the items listed on this bid/quote/ contract and subsequent award must include completed material safety data sheet (MSDS) for each hazardous material. Additionally, each container of hazardous materials must be appropriately labeled with:

- a) The identity of the hazardous material,
- b) Appropriate hazard warnings, and manufacturer, importer, or other responsible party.

20. EQUIPMENT DEMONSTRATION

The City of Fairhope may require equipment/ product materials or service techniques to be demonstrated at a time, date, and location to be specified by the City of Fairhope.

21. EQUIPMENT ELECTRICAL CERTIFICATION

All electrical equipment purchased shall conform to, and be identified in, the applicable standard(s), or otherwise be certified as applicable, as of the bid opening date and time, by Underwriters Laboratories, Inc., or other recognized laboratory facility. Bidder must provide satisfactory documentation with returned bid that all such equipment meets the applicable product standard or has otherwise been certified as outlined above. Unless indicated in the bid document, the above certification shall apply to the equipment itself, not the individual components of that equipment.

22. ERRORS IN BID

Bidders are assumed to be informed regarding conditions, requirements, and specifications prior to submitting bids. Failure to do so will be at the bidder's risk. Bids already submitted may be withdrawn without penalty prior to bid opening. Errors discovered after the bid opening may not be corrected.

23. FORCE MAJEURE

Neither the City nor the awarded vendor shall be deemed in breach of any contract / Purchase Order or Agreement which may result from this proposal submission if it is prevented from performing any of the obligations hereunder by reason of Acts of God, acts of the public enemy, acts of superior governmental authority, strikes or labor disputes, floods, riots, rebellion, sabotage, or any similar other unforeseeable causes beyond its control and not due to its fault or negligence. Each party shall notify the other immediately in writing of the cause of such after the beginning period thereof. The awarded vendor may request cancellation and the City of Fairhope may grant the request if performance is prevented by any of the above referenced causes, or other unavoidable circumstances not attributable to the fault or negligence of the vendor. The burden of proof for such relief rests with the vendor. All correspondence pertaining to cancellation of a purchase order or term contract must be addressed to the City of Fairhope Purchasing Manager.

24. HAZARDOUS AND TOXIC SUBSTANCES

Bidder must comply with all applicable Federal, State, County and City laws, ordinances and regulations relating to hazardous and toxic substances, including such laws, ordinances and regulations pertaining to information hazardous and toxic substances, and as amended from time to time. Bidder shall provide the City of Fairhope with a "Material Safety Data Sheet" for all goods that carry one.

25. INDEMNITY

Indemnity: The awarded vendor hereby agrees to indemnify and save harmless the City of Fairhope, its officers, agent, and employees, from and against any and all liabilities, claims, demands, damages, fines, fees, expenses, penalties, suits, proceedings, actions and cost of actions, including reasonable attorney fees for trial and on appeal, of any kind and nature, arising or growing out of, or in any way connected with the performance of this Contract / Agreement / Purchase Order, to the extent caused by a negligent act or omission of the awarded vendor, their agents, servants, employees, Subcontractors, or others associated with the awarded vendor. The awarded vendor shall be responsible for damage to any equipment excluded from this agreement, or damage or injury caused by any equipment excluded from this agreement, only to the extent that the damage or injury is caused by a negligent act or omission of the awarded vendor or caused by failure of the awarded vendor's supplied product to perform as specified.

26. INSPECTION

All materials, workmanship, equipment, and supplies are subject to inspection and test at any source or time. Final inspection, acceptance or rejection will be made at delivery destination. Goods that do not meet specifications will be rejected unless substitutions have been approved by the City of Fairhope. Failure to inspect or to reject upon receipt, however, does not relieve the awarded vendor of liability. When subsequent tests, after receipt, are conducted and when such tests reveal a failure to meet specifications, the City of Fairhope will reject the goods and the awarded vendor shall immediately supply goods meeting specifications or the City of Fairhope may seek damages including but not limited to the testing expense, regardless of whether a part of or all of the goods have been consumed through the testing process. Rejected goods shall be removed by the awarded vendor promptly after rejection, at his expense. If not removed in fourteen (14) calendar days, they may be disposed of at the discretion of the City of Fairhope. Disposal costs will be the awarded vendor's responsibility.

27. INSPECTION OF PREMISES

At reasonable times, the City may inspect those areas of the awarded vendor's place of business that are related to the performance of a Contract / Agreement / Purchase Order. If the City makes such an inspection, the awarded vendor must provide reasonable assistance. The City of Fairhope reserves the right on demand and without notice all the vendor's files associated with a subsequent Contract / Agreement / Purchase Order where payments are based on the awarded vendor's record of time, salaries, materials, or actual expenses. This same clause will apply to any subcontractors assigned to the Contract / Agreement / Purchase Order.

28. INSURANCE

If a Contract / Agreement / Purchase Order results from this RFQ / ITB / RFP, or other form of solicitation, the awarded vendor shall maintain such insurance as will indemnify and hold harmless the City of Fairhope from Workmen's Compensation and Public Liability claims from property damage and personal injury, including death, which may arise from the awarded vendor's operations under this Contract / Agreement / Purchase Order, or by anyone directly or indirectly employed by him/her.

29. INVITATION TO BID

Any provisions made in the RFQ / ITB / RFP, or other form of solicitation, supersedes any provisions outlined here in the General Terms and Conditions.

30. INVOICING, DELIVERY, PACKAGING

Invoices shall be prepared only after ordered materials have been delivered. All invoices must show the purchase order number. Unless otherwise specified in writing, vendors shall not ship any material without an authorized Purchase Order from the City of Fairhope Purchasing Department. All packages delivered must show the purchase order number. The awarded vendor will be required to furnish all materials, equipment and/or service called for at the bid price quoted. In the event the awarded vendor fails to deliver within a reasonable period of time, as determined by the City of Fairhope, the right is reserved to cancel the award and subsequent purchase order and purchase from the next lowest responsible bidder the items needed. The original awarded vendor will be back charged the difference between the original contract price and the price the City of Fairhope has to pay as a result of the failure to perform by the original awarded vendor. All bids will remain firm for acceptance for 60 days from the date of bid opening. Prices shall be net F.O.B., Prepaid and Allow, City of Fairhope chosen site, Baldwin County, AL. The title and risk of loss of the goods will not pass to the City of Fairhope until receipt and acceptance takes place at the F.O.B. point.

31. LABELING

Individual shipping cartons shall be labeled with the name "City of Fairhope", Purchase Order Number, and where applicable, Contract Number, date of manufacture, batch number, storage requirements, conditions, and recommended shelf life. Bidders are encouraged to offer product packaging with recycled content.

32. LOSS OR DAMAGE IN TRANSIT

Delivery by a vendor to a common carrier does not constitute delivery to the City of Fairhope. Any claim for loss or damage incurred during delivery shall be between the vendor and the carrier. The City of Fairhope accepts title only after satisfactory receipt at the delivery point. The City of Fairhope shall note all visible damages on the freight bill and may refuse the damaged goods. The vendor shall make immediate replacement of the damaged merchandise or be subject to damages for breach of contract. If damage is to a small portion of a total shipment and the City of Fairhope will not be inconvenienced because of the shortage, the vendor may be permitted by the Purchasing Manager to deduct the amount of damage or loss from its invoice, in lieu of replacement. Risk of loss during delivery is borne by the vendor until the goods have been accepted by the City of Fairhope, unless otherwise specified in the RFQ / ITB / RFP or other form of solicitation.

33. MANDATORY SITE VISIT

If the RFQ / ITB / RFP or other form of solicitation requires a mandatory site visit, bidders must inspect the site where installation or service is to take place to obtain a full understanding of scope of work outlined therein. Date of site visit will be determined by the City of Fairhope.

34. MONITORING OF SERVICES

Performance of services will be monitored by the requisitioning department and/or the Purchasing Department, and evaluation reports may be filed with the Purchasing Department. Performance not meeting specifications will result in cancellation of Contract / Agreement / Purchase Order and may result in vendor being removed from the vendor list.

35. NONCONFORMING MERCHANDISE

When merchandise received from the lowest responsible bidder is not in accordance with the purchase order, it will be returned to the bidder, at bidder's expense.

36. NON-DESCRIMINATION

The City of Fairhope is an Equal Opportunity Employer and requires that all contractors comply with the Equal Employment Opportunity laws and the provisions of the Contract / Agreement / Purchase Order documents in this regard. The City also encourages and supports the utilization of Minority Business Enterprises on this and all public bids.

37. NON-EXCLUSIVE

Unless otherwise specified, this Contract / Agreement / Purchase Order is considered a non-exclusive Contract / Agreement / Purchase Order between the parties.

38. NOTIFICATION AND ACCIDENT REPORTS

In the event of accidents of any kind, in the performance of a Contract / Agreement / Purchase Order, the awarded vendor shall notify the City of Fairhope immediately and furnish, without delay, copies of all such accident reports to the City of Fairhope. If in the performance of their Work, the awarded vendor fails to immediately report an accident to the City of Fairhope, of which the awarded vendor has knowledge of and which results in a fine levied against the City of Fairhope then the awarded vendor shall be responsible for all fines levied against the City of Fairhope.

39. PACKAGING

All goods must be packaged in new packing containers. Packing that meets the requirements of common carriers is acceptable, unless otherwise required. A packing slip or invoice must accompany all shipments and must reference the purchase order number. Unless otherwise specified, goods are to be packaged in cartons meeting federal specifications and shipped on non-returnable pallets.

40. PATENTS

Awarded Vendor guarantees that the sale and / or use of goods will not infringe upon any U.S. or foreign patent. Awarded vendor will at his / her own expense, indemnify, protect and save harmless the City of Fairhope, on any patent claims arising from the purchase of goods or services.

41. PAYMENT

Invoices -- Upon completion of service and delivery of materials specified in the applicable Contract / Agreement / Purchase Order, awarded vendor will submit an invoice and signed delivery ticket to:

City of Fairhope
Accounts Payable Department
P.O. Box 429
Fairhope, AL 36533

All invoices must reference appropriate Purchase Order Numbers Payment of Invoice: All invoices received by the City of Fairhope are payable within thirty (30) days from the date of receipt by the City of Fairhope, provided they are approved by the City of Fairhope.

42. PAYMENT WITHHELD

Payment may be withheld until all items have been delivered and all requirements of the Contract / Agreement / Purchase Order have been fulfilled

43. PRODUCT TESTING

Vendor shall incur all cost involved in obtaining an Independent Laboratory Test if the City deems necessary during the term of the Contract / Agreement / Purchase Order. The City of Fairhope reserves the right to request a demonstration of any and all items bid before making the award.

44. PERMITS LICENSES AND CERTIFICATES

The awarded vendor is to procure all permits, licenses, and certificates, or any approvals of plans or specifications as may be required by Federal, State, Local Laws, ordinances, rules, and regulations, for the proper execution and completion of Work covered under the Contract / Agreement / Purchase Order.

45. PREPARATION OF BID

All bids / proposals shall be typewritten or in ink on the form(s) prepared by the City of Fairhope. Bids / proposals prepared in pencil will not be accepted. All bids / proposals must be signed by officials of the corporation or company duly authorized to sign bids / proposals. Any bid / proposal submitted without being signed will automatically be rejected. All corrections or erasures shall be initialed and dated by the person authorized to sign quotations /bids / proposals. If there are discrepancies between unit prices quoted and extensions, the unit price will prevail.

46. QUESTIONS / CONTACT

Commencing with the issuance of the RFQ / ITB / RFP, or other form of solicitation, no vendor or anyone acting on a vendor's behalf, shall make direct or indirect contact with City personnel or undertake any activities or take any action to otherwise promote its quotation / bid / proposal to the City or its personnel. All communications shall be made to the contact identified in the quotation / bid / proposal documents. Violation of this requirement may, at the City's sole and absolute discretion, be grounds for disqualifying a vendor from further consideration.

47. RECEIPT BY CITY OF FAIRHOPE

If not otherwise stated in the order, the City of Fairhope will be said to have received goods when they have been delivered, unloaded, and placed on the agency's dock or if there is no dock, inside an accessible building, and signed for by an authorized City employee. Shipments will be checked against the receiving copy of the Purchase Order. If the purchase order requires grading certificates, USDA Stamps, or any proof of quality, such proof must accompany the shipment.

48. REJECTION OF BIDS

The City of Fairhope reserves the right to accept or reject any or all bids in whole or in part for any reason, to waive technicalities or informalities, or to advertise for new proposals, if, in the judgment of the awarding authority, the best interest of the City of Fairhope will be promoted thereby. Bidders may be disqualified and rejection of proposals may be recommended for any of (but not limited to) the following causes: Failure to use the bid forms furnished by the City of Fairhope, Lack of signature by an authorized representative on the bid form, Failure to properly complete the bid form and vendor compliance, Evidence of collusion among bidders, Unauthorized alteration of the bid form.

49. RIGHT TO AUDIT

The awarded vendor shall maintain documentation of all work performed. The awarded vendor shall make any and all documentation available to the City of Fairhope at all reasonable times, for inspections and audit by the City of Fairhope for a period of Three (3) years after expiration of the Contract / Agreement / Purchase Order.

50. SAMPLES

Bidders will not be required to furnish samples at the time of bid opening, unless specifically called for. The City of Fairhope reserves the right to request samples after bid opening to assist in the evaluation of proposals submitted.

51. SAFETY MEASURES

The awarded vendor shall take all necessary precautions for the safety of the City of Fairhope's and awarded vendor's employees at the Work site, and shall erect and properly maintain at all times, all necessary safeguards for the protection of the workmen and the public. The awarded vendor shall post signs warning against hazards in and around the Work site.

52. SET-UP AND INSTALLATION

Unless otherwise specified, bid / quotation to include cost of all uncrating, disposal of shipping materials, set-up, testing and initial instruction to agency personnel.

53. SPILL CLEAN UP

The awarded vendor shall be responsible for spillage caused by their negligence, which occurs during transit or unloading operations. The awarded vendor shall immediately report and clean up any spillage. Upon failure to do so, the awarded vendor shall remain responsible for all actual related costs.

54. SUBSTITUTIONS

Substitutions on a purchase order shall require the approval of the Originating Buyer. The City of Fairhope reserves the right to reject at destination and hold at the vendor's risk and expense any goods supplied by the vendor which do not conform to the specification or description embodied in the order or are inferior in any respect to the good specified. Any good bought by sample which is inferior in quality to the sample submitted by vendor will be rejected. Any goods delivered that do not meet specifications may be returned to the vendor at its expense. When a good is returned, the vendor must make immediate replacement with acceptable merchandise, or the City of Fairhope may seek remedies for default.

55. TABULATION

Bid results are posted on The City of Fairhope's web site: www.FairhopeAL.gov. The awarded vendor will be sent a written notification.

56. TAXES

Prices quoted shall be delivered prices, exclusive of all federal or state excise, sales, and manufacturer's taxes. The City will assume no transportation or handling charges other than specified in the RFQ, ITB, RFP or other form of solicitation. The City is tax exempt by law – Code of Alabama 1975.

57. TERMINATION FOR CONVENIENCE

Any Contract / Agreement / Purchase Order may be terminated for convenience by the City of Fairhope, in whole or in part, by written notification to the awarded vendor.

58. TERMINATION FOR DEFAULT

Performance of Work under the Contract / Agreement / Purchase Order Agreement may be terminated by the City of Fairhope, in whole or in part, in writing, whenever the City of Fairhope determines that the awarded vendor has failed to meet the requirements of the Contract / Agreement / Purchase Order.

59. TERMINATION FOR NON-APPROPRIATION

Termination for Non-appropriation – The continuation of any financial obligation beyond the current fiscal year is subject to and contingent upon sufficient funds being appropriated, budgeted, and otherwise made available by the local source, State Legislature and/or federal sources. The City of Fairhope may terminate any financial obligation, and awarded vendor waives any and all claim(s) for damages, effective immediately upon receipt of written notice (or any date specified therein) if for any reason the City of Fairhope's funding from local, State and/or federal sources is not appropriated, withdrawn or limited.

60. TIME IS OF THE ESSENCE

The City of Fairhope and awarded vendor agree that time is of the essence in the performance of work called for under this Contract / Agreement / Purchase Order. The awarded vendor agrees that all work will be accomplished regularly, diligently, and uninterrupted at such a rate of progress as will ensure full completion thereof within reasonable time periods.

61. TITLE

All titles, fees, as well as other charges, are to be paid by awarded vendor. Awarded vendor is to furnish prepaid certificate of title in the name of the City of Fairhope. Title shall change upon acceptance of delivery at the City of Fairhope approved delivery location.

62. VENDOR LIST

A vendor may be removed from the City of Fairhope's Bidders List if a vendor fails to respond to three (3) consecutive ITB's. A properly submitted "No Bid" is considered as a response and the vendor will receive credit for the response.

63. WARRANTY

The awarded vendor expressly warrants that all articles, materials, and work offered shall conform to each and every specification, drawing, sample, or other description which is furnished to or adopted by the City of Fairhope, and that it will be fit and sufficient for the purpose intended, merchantable, of good material and workmanship, and free from defects. The awarded vendor further warrants all items for a period of one year, unless otherwise stated, from the date of acceptance of the items delivered and installed or work completed. All repairs, replacements, or adjustments during the warranty period will be at the awarded vendor's sole expense. Awarded vendor will provide written warranty for all parts and labor for a period of (1) one year commencing from date of written acceptance of delivery by City of Fairhope. Awarded vendor will provide written copies of all other applicable warranties, such as, Manufacturer's warranty. Those warranties, if any, will be in addition to the awarded vendor's warranty, and the terms of which will not be altered by the awarded vendor's warranty.

64. IMMIGRATION LAW

The Contractor agrees that it shall comply with all of the requirements of the **Beason-Hammon Alabama Taxpayer and Citizen Protection Act, Act No 2011-535**, Alabama Code (1975) Section 31-13-1, et. Seq., (also known as the Alabama Immigration Act) see Section 31-13-9, and the provisions of said Act, including all penalties for violation thereof, are incorporated herein.

ITEM IX

ALABAMA IMMIGRATION ACT CONTRACT REQUIREMENTS

1.0 Background

The **Beason-Hammon Alabama Taxpayer and Citizen Protection Act, Act No 2011-535, as amended by Act No 2012-491, Code of Alabama (1975) Section 31-13-1 through Section 31-13-30** (also known as and hereinafter referred to as “the Alabama Immigration Act”) is applicable to CONTRACTs with the City of Fairhope, Alabama. All business entities entering into CONTRACTs with the City of Fairhope, Alabama will comply with the Alabama Immigration Act.

2.0 Definitions

ALIEN. Any person who is not a citizen or national of the United States, as described in 8 U.S.C. § 1101, et seq., and any amendments thereto.

BUSINESS ENTITY. Any person or group of persons employing one or more persons performing or engaging in any activity, enterprise, profession, or occupation for gain, benefit, advantage, or livelihood, whether for profit or not for profit. Business entity shall include but not be limited to the following:

- a. Self-employed individuals, business entities filing articles of incorporation, partnerships, limited partnerships, limited liability companies, foreign corporations, foreign limited partnerships, foreign liability companies authorized to transact business in this state, business trusts, and any business entity that registers with the Secretary of State.
- b. Any business entity that possesses a business license, permit, certificate, approval, registration, charter, or similar form of authorization issued by the state, any business entity that is exempt by law from obtaining such a business license, an any business entity that is operating unlawfully without a business license.

CONTRACTOR. A person, employer, or business entity that enters into a CONTRACT to perform any service or work or to provide a certain product in exchange for valuable consideration. This definition shall include, but not be limited to, a general CONTRACTOR, SUB-CONTRACTOR, independent CONTRACTOR, CONTRACT employee, project manager, or a recruiting or staffing entity.

EMPLOYEE. Any person directed, allowed, or permitted to perform labor or service of any kind by an employer. The employees of an independent CONTRACTOR working for a business entity shall not be regarded as the employees of the business entity, for the purposes of this chapter. This term does not include any inmate in the legal custody of the state, a county, or a municipality.

EMPLOYER. Any person, firm, corporation, partnership, joint stock association, agent, manager, representative, foreman, or other person having control or custody of any employment, place of employment, or of any employee, including any person or entity employing any person for hire within the State of Alabama, including a public employer. This term shall not include the occupant of a household contracting with another person to perform casual domestic labor within the household.

E-VERIFY. The electronic verification of federal employment authorization program of the Illegal Immigration Reform and Immigrant Responsibility Act of 1996, P.L. 104-208, Division c, Section 403 (a); 8 U.S.C. §1324(a) and operated by the United States Department of Homeland Security, or its successor program.

STATE-FUNDED ENTITY. Any governmental entity of the state or a political subdivision thereof or any other entity that receives any monies from the state or a political subdivision thereof; provided, however, an entity that merely provides a service or a product to any governmental entity of the state or a political subdivision thereof, and receives compensation for the same, shall not be considered a state-funded entity.

SUB-CONTRACTOR. A person, business entity, or employer who is awarded a portion of an existing CONTRACT by a CONTRACTOR, regardless of its tier.

UNAUTHORIZED ALIEN. An alien who is not authorized to work in the United States as defined in 8 U.S.C. § 1324a (h) (3) .

3.0 Mandatory Clause

All CONTRACTS or CONTRACTS to which the state, a political subdivision, or state-funded entity are a party shall include the following clause:

"By signing this CONTRACT, the CONTRACTING parties affirm, for the duration of the CONTRACT, that they will not violate federal immigration law or knowingly employ, hire for employment, or continue to employ an unauthorized alien within the state of Alabama. Furthermore, a CONTRACTING party found to be in violation of this provision shall be deemed in breach of the CONTRACT and shall be responsible for all damages resulting therefrom."

For purposes of this section, "CONTRACT" shall mean a CONTRACT awarded by the state, any political subdivision thereof, or any state-funded entity that was competitively bid or would, if entered into by the state or an agency thereof, be required to be submitted to the CONTRACT Review Permanent Legislative Oversight Committee.

4.0 CONTRACTs Involving Business Entity, or Employer

As a condition for the award of any CONTRACT, grant, or incentive by the state, any political subdivision thereof, or any state-funded entity to a business entity or employer that employs one or more employees, the business entity or employer shall not knowingly employ, hire for employment, or continue to employ an unauthorized alien within the State of Alabama.

As a condition for the award of any CONTRACT, grant, or incentive by the state, any political subdivision thereof, or any state-funded entity to a business entity or employer that employs one or more employees within the state of Alabama, **the business entity or employer shall provide documentation establishing that the business entity or employer is enrolled in the E-Verify program.** During the performance of the CONTRACT, the business entity or employer shall participate in the E-Verify program and shall verify every employee that is required to be verified according to the applicable federal rules and regulations.

5.0 CONTRACTS Involving Subcontracting

Any SUB-CONTRACTOR on a project paid for by CONTRACT, grant, or incentive by the state, any political subdivision thereof, or any state-funded entity shall not knowingly employ, hire for employment, or continue to employ an unauthorized alien within the State of Alabama and shall also enroll in the E-Verify program prior to performing any work on the project. Furthermore, during the performance of the CONTRACT, the SUB-CONTRACTOR shall participate in the E-Verify program and shall verify every employee that is required to be verified according to the applicable federal rules and regulations. This subsection shall only apply to SUB-BIDDERS performing work on a project subject to the provisions of this section and not to collateral persons or business entities hired by the SUB -CONTRACTOR.

6.0 Proof of E-Verify documentation will be in the form of a copy of the signed Memorandum Of Understanding (MOU) generated upon completion of the E-Verify program.

END OF ALABAMA IMMIGRATION ACT CONTRACT REQUIREMENTS

ITEM X

INVITATION SUMMARY

Bid No. 26-024-2025-PWI-021
Welcome Center Envelope Repairs
Project No. 2025-PWI 021

Bid Name:	BID Welcome Center Envelope Repairs
Issue Date:	January 21, 2026
Certificate of Insurance Requirements:	See Item V
MANDATORY Pre-Bid Meeting:	February 10, 2026
Deadline for Questions Date:	February 16, 2026
Bid Due Date:	February 24, 2026
City Internet Site:	www.FairhopeAL.gov
SEALED Bid Response Copies to submit:	One (1) Original Paper Copy
Purchasing Department Contact for questions:	Purchasing@FairhopeAL.gov (251) 928-8003

END OF INVITATION SUMMARY

ITEM XI
BID BOND INFORMATION

Bids shall be accompanied by a Bid Security equal to 5% (percent) of the bid price, but in no event more than \$10,000.00. Bid Security shall be in the form of a Bid Bond or a cashier's check payable to The City of Fairhope. All bonds and/or cashier's check will be made payable to the City of Fairhope for an amount not less than five (5) percent of the City's or its engineers or architects estimated cost of the Project or of the total bid in the proposal, but in no event more than \$10,000.00.

Return of Bid Bonds: All bid bonds, except those of the three lowest bona fide bidders, will be returned immediately after bids have been checked, tabulated and the relation of the bids established. The bid bonds of the three lowest bidders may be retained and if so, will be returned as soon as the contract bonds and the contract documents of the successful bidder have been approved and properly executed.

In the event it is necessary to defer a contract award for longer than fifteen (15) days, after opening of bids, then all bid bonds, except that of the potential successful bidders will be returned.

Award of the contract will be made within the time specified after the opening of bids. In the event no award is made within such time, all bids may be rejected, and all bonds returned.

Provided; however, the potentially successful bidder may enter into a written agreement with the City for an extension of time for consideration of its bid, in which case, the bidder's bond shall remain in full force and effect, or the City may permit said bidder to substitute a satisfactory surety for the cashier's check if submitted as a guaranty to the bid bond.

Forfeiture of Bid Bonds: Should the successful bidder or bidders to whom a contract is awarded fail to execute a contract(s) and furnish acceptable contract securities and evidence of insurance, as required, within sixty (60) days after the prescribed forms have been presented to him/her, the City may retain from the proposal guaranty, if it is a cashier's check or recovered from the principal or the sureties, if the guaranty is a bid bond, the difference between the amount of the contract as awarded, and the amount of the proposals of the new lowest bidder. If no other bids are received, the full amount of the proposal guaranty may be so retained and recovered as liquidated damages for such default. Any sum so retained or recovered shall be the property of the awarding authority.

END OF BID BOND INFORMATION

ITEM XI

BID BOND

The PRINCIPAL (Bidder's name and address)

The OWNER

City of Fairhope
P.O. Drawer 429
Fairhope, AL 36533

The PROJECT for which the Principal's Bid is submitted: (Project name as it appears in the Bid Documents)

PROJECT NO. 2025-PWI 021

PROJECT NAME: Welcome Center Envelope Repairs

KNOW ALL MEN BY THESE PRESENTS, that we, the undersigned Principal and Surety, jointly and severally, hereby bind ourselves, our heirs, executors, administrators, successors, and assigns to the OWNER in the PENAL SUM of five percent (5%) of the amount of the Principal's bid, but in no event more than TEN THOUSAND DOLLARS (\$10,000.00).

THE CONDITION OF THIS OBLIGATION is that the Principal has submitted to the OWNER the attached bid, which is incorporated herein by reference, for the Project identified above.

NOW, THEREFORE, if, within the terms of the Bid Document, the OWNER accepts the Principal's bid and the Principal thereafter either:

- (a) executes and delivers a Construction Contract with the required Performance and Payment Bonds (each in the for contained in the Bid Documents and properly completed in accordance with the bid) and delivers evidence of insurance as prescribed in the Bid Documents, or fails to execute and deliver such Construction Contract with such Bonds and evidence of insurance, but pays the OWNER the difference, not to exceed the Penal Sum of this Bond, between the amount of the Principal's Bid and the larger amount for which the OWNER may award a Construction Contract for the same Work to another Bidder, then, this obligation shall be null and void, otherwise it shall remain in full force and effect.

The Surety, for value received, hereby stipulates and agrees that the obligation of the Surety under this Bond shall not in any manner be impaired or affected by any extension of the time within which the OWNER may accept the Principal's bid, and the Surety does hereby waive notice of any such extension.

SIGNED AND SEALED this _____ day of _____, 202_____.

(Principal (Company))

ATTEST

By _____

Print Name and Title

**SURETY
ATTEST**

Surety Company

By _____

Print Name and Title

CORPORATION

Name of Corporation, Partnership, or Joint Venture

Business Mailing Address: _____

email _____ phone _____

BY: _____
(Signature of Officer Authorized to sign Bids
and Contracts for the Firm)

(Position or Title)

(General Contractor's License Number)
vendors)

Foreign Corporation Entity Id (Required of out-of-state-

Attest:

(Secretary)

(Name of State under the laws of which incorporated)

(Name of Surety)

BY: _____
(Attorney in Fact)

**ITEM XII
PERFORMANCE BOND**

KNOW ALL MEN: That _____ as Principal,
(name & address of legal title of contractor)

and _____ and
(name & address of legal title of one or more sureties)

(name & address of legal title of one or more sureties)

Hereinafter called the Surety or Sureties, are held and firmly bound unto the CITY OF FAIRHOPE, ALABAMA, hereinafter called the OWNER in the sum of _____ Dollars (\$_____), for the payment whereof the Principal and the Surety or Sureties bind themselves, their heirs, executors, administrators, successors, and assigns, jointly and severally, firmly by these presents.

WHEREAS, The Principal has, by means of a written agreement, dated __/__/__, entered into a contract with the OWNER for **Bid No. 26-024-2025-PWI-021 Welcome Center Envelope Repairs Project**, which agreement is by reference made a part hereof.

NOW THEREFORE, the conditions of this obligation is such that if the Principal shall faithfully perform the contract on his part, and satisfy all claims and demands, incurred for the same, and shall fully indemnify and save harmless the OWNER from all cost and damage which he may suffer by reason of failure to do so, and shall reimburse and repay OWNER all outlay and expense which the OWNER may incur in making good for any such default thence this obligation shall be null and void: otherwise, it shall remain in full force and effect.

PROVIDED, HOWEVER, that no suit, action or proceedings, by reason of any default whatever be brought on his Bond after twelve months from the day on which the final payment under the Contract falls due.

PROVIDED, further, that the said surety or sureties, for value received hereby stipulate and agree that no change, extension of time, or addition to the terms of the Contract or to the work to be performed thereunder of the specifications thereof shall in any way effect their obligations on this bond, and they do hereby waive notice of any such change, extension of time, alteration or addition to the terms of the contract, or to the work, or to the Specifications.

WITNESS our hands this _____ day of _____, 202_____.

IF INDIVIDUAL

_____, Doing Business As, _____
(SIGNATURE of Individual Bidder) (Business Name)

Business Mailing Address _____

IF CORPORATION

(Name of Corporation, Partnership, or Joint Venture)

Business Mailing Address _____

By: _____
(SIGNATURE of officer authorized to sign Bids and Contracts for the company) (Position or Title)

ATTEST:

(Secretary) (Name of State of incorporation)

(Name of Surety) By: _____
(Attorney in Fact)

ITEM XIII

LABOR AND MATERIAL BOND

KNOWN ALL MEN BY THESE PRESENTS, that we, _____ (hereinafter called the "Contractor") of _____ as principal and _____ (hereinafter called the "Surety"), as Surety, do hereby acknowledge ourselves indebted and firmly bound and held unto the City of Fairhope, Alabama, (hereinafter called the "**City**"), a municipal corporation, existing under and by virtue of the Laws of the State of Alabama, for the use and benefit of those entitled thereto, in the penal sum of _____ (\$ _____) for the payment of which well and truly to be made in lawful money of the United States, we do hereby bind ourselves, or successors, assigns and personal representatives, jointly and severally, firmly by these presents.

BUT THE CONDITION OF THE FOREGOING OBLIGATION OR BOND IS THIS:

WHEREAS, the **City** has entered into a certain written contract with said Contractor for for **Bid No. 26-024-2025-PWI-021 Welcome Center Envelope Repairs Project**, in accordance with contract documents heretofore on file in the Office of the **City of Fairhope** at the price of, to-wit: _____ (\$ _____) as more fully appears in said written Contract bearing date of _____, 20____, which Contract is hereby referred to and made a part hereof to the same extent as if set out herein in full.

NOW, THEREFORE, if said Principal and all subcontractors to whom any portion of the work provided for in said contract is sublet and all assignees of said Principal and of such subcontractors shall promptly make payment to all persons supplying him or them with labor, foodstuffs, or supplies for or in the prosecution of the work provided for in such contract, or in any amendment or extension of or addition to said contract, and for the payment of reasonable attorney's fees, incurred by the claimant or claimants in suits on said bond, then the above obligation shall be void; otherwise, it shall remain in full force and effect.

PROVIDED, however, that this bond is subject to the following conditions and limitations:

(a) Any person, firm or corporation that has furnished labor, foodstuffs, or supplies for or in the prosecution of the work provided for in said contract, payment for which has not been made, shall have a direct right of action in his or their name or names against the principal and surety on this bond, which right of action shall be asserted in a proceeding, instituted in the county in which the work provided for in said contract is to be performed and in any county in which said Principal or Surety does business. Such right of action shall be asserted in a proceeding instituted in the name of the claimant or claimants for his or their use and benefit against said Principal and Surety or either of them (but not later than one year after the final settlement of said Contract) in which action such claim or claims shall be adjudicated and judgment rendered thereon.

(b) In addition to any other legal mode of service, service of summons and other process in suits on this bond brought in Baldwin County may be had on the Principal or the Surety in accordance with Title 27, Chapter 3, Section 24 of the Ala. Code (1975) by serving a copy of the summons and complaint or other pleading or process, with the Commissioner of Insurance of the State of Alabama or his/ her designee and the Principal and Surety agree to be bound by such mode of service above described and consents that such service shall be the same as personal service on the Principal or Surety.

(c) The Surety shall not be liable hereunder for any damages or compensation recoverable under any workmen's compensation or employer's liability statute.

(d) In no event shall the Surety be liable for a greater sum than the penalty of this bond, or subject to any suit, action or proceeding thereon that is instituted later than one year after the final settlement of said contract.

(e) This bond is given pursuant to the terms of Title 39, Chapter 1, Section 1 of the Ala. Code (1975), and all the provisions of law with reference to this character of bond as set forth in said section or as may hereinafter be enacted are hereby made a part hereof to the same extent as if set out herein in full.

IN WITNESS WHEREOF, the said Contractor has hereunder affixed its signature and said Surety has hereunto caused to be affixed its corporate signature and seal, by its duly authorized officers on the _____ day of _____, 20__.

Principal

By:

Title

Surety

ATTEST:

By:

Title

ITEM XIV



CITY OF FAIRHOPE CLOSEOUT DOCUMENTS

CONSENT OF SURETY COMPANY TO FINAL PAYMENT

CONTRACTOR'S AFFIDAVIT OF PAYMENT

FINAL RELEASE OF LIENS

NOTICE OF COMPLETION ADVERTISEMENT



CITY OF FAIRHOPE
CONSENT OF SURETY COMPANY TO FINAL PAYMENT

COF PROJECT NO: 2025-PWI-021

COF PROJECT NAME: Welcome Center Envelope Repairs

OWNER: City of Fairhope- Purchasing Department
555 S. Section Street
Fairhope, AL 36532

CONTRACTOR: _____

In accordance with the provision of the Contract between the OWNER and the CONTRACTOR as indicated above, the _____, Surety Company on bond of _____ CONTRACTOR, hereby approved the final payment to the CONTRACTOR and agrees that final payment to the CONTRACTOR shall not relieve the Surety Company of any of its obligations to the City of Fairhope as set forth in said Surety Company's bond dated the _____ day of _____, 202__.

IN WITNESS WHEREOF

The Surety Company has hereunto set its hand this _____ day of _____, 202__.

ATTEST
(Seal)

Surety Company

Signature of Authorized Representative

Title



***CITY OF FAIRHOPE
CONTRACTOR'S AFFIDAVIT OF PAYMENT
OF CLAIMS & DEBTS***

COF PROJECT NO: 2025-PWI-021

COF PROJECT NAME: Welcome Center Envelope Repairs Project

OWNER: City of Fairhope- Purchasing
555 S. Section Street
Fairhope, AL 36532

CONTRACTOR: _____

STATE OF: _____

COUNTY OF: _____

The undersigned hereby certified that, except as listed below, he has paid in full or otherwise satisfied all obligations for all materials and equipment furnished, for all work, Labor and services performed, and for all known indebtedness and claims against the CONTRACTOR for damages arising in any manner in connection with the performance of the Contract referenced above for which the OWNER or his property might in any way be held responsible.

EXCEPTION: (If none, write NONE) _____

CONTRACTOR

By:

Title:

Subscribed and sworn to and before me this ____ day of _____, 202__.

NOTARY PUBLIC

My Commission expires ____/____/____



CITY OF FAIRHOPE
FINAL RELEASE OF LIENS

KNOW ALL MEN BY THESE PRESENTS: In consideration of, and contingent upon the receipt of total payments in the amount of _____

Under and pursuant to the following contract:

COF PROJECT NO: 2025-PWI-021

COF PROJECT NAME: Welcome Center Envelope Repairs Project

The undersigned hereby releases _____, its officers, agents, and employees, of and from all liabilities, obligations, and claims whatsoever in law and in equity under or arising out of said contract. We do hereby certify that all labor, materials, equipment, supplies, etc. for this project have been paid in full and there is no outstanding indebtedness.

IN WITNESS WHEREOF, this release has been executed this _____ day of _____, 202__.

CONTRACTOR

By: SIGNATURE

PRINTED NAME

Title

STATE OF ALABAMA
COUNTY OF BALDWIN

I, the undersigned authority, a Notary Public in and for said County and State, hereby certify that _____, whose name is signed to the foregoing instrument and who is known to me, acknowledged before me on this day that, being informed of the contents of the within instrument, he executed the same voluntarily on the day the same bears date.

Given under my hand and seal on this the _____ day of _____, 202__.

NOTARY PUBLIC

My Commission Expires: ____/____/____



CITY OF FAIRHOPE
NOTICE OF COMPLETION LEGAL NOTICE

Bid Number: 26-024-2025-PWI-021

Bid Name: Welcome Center Envelope Repairs

In accordance with Chapter 1, Title 39, Code of Alabama, 1975, for contracts \$100,000 and over, notice is hereby given that _____, CONTRACTOR, has completed the Contract for the above referenced bid for the City of Fairhope, Alabama, OWNER, and has made request for final settlement of said Contract. Any claims for labor, materials or otherwise in connection with this project should be itemized, notarized, and presented to:

OWNER:

**CITY OF FAIRHOPE – Purchasing Department
555 South Section Street
Fairhope, AL 36532**

On or before (60 days) or same will be barred.

Contractor:

Newspaper(s) in which ad was run: _____

Dates ad was run (3 consecutive weeks): _____

Contractor to provide Proof of Publication of the Notice of Completion to the City by affidavit of the publisher and a printed copy of the notice published.

SECTION 01 030a

SPECIAL PROJECT REQUIREMENTS

The Instructions to Bidders, General Conditions, Modified General Conditions and Special Project Requirements as set forth herein are applicable to the work under every Division and Section of these Specifications.

1.0 TIME FOR COMPLETION

All work under this Contract shall be complete and ready for Owner occupancy within **120** calendar days. The work under this contract shall commence within Ten (10) calendar days from date of Notice to Proceed.

1.1 TIME IS OF THE ESSENCE

The Owner must occupy the work within the completion time indicated herein. Delivery time for equipment and material provided under this contract shall include lead time for storage and ready installation within time limits of the work. Coordination of Owner furnished / Contractor installed equipment and/or materials shall be considered within time limits of the work.

1.2 BID GUARANTY

The base bid proposal shall be guaranteed for a period of Thirty (30) days after date of proposal. Alternate proposals (additive or deductive), if requested, shall be guaranteed for a period of Ninety (90) days after date of signing contract. Unit prices, if requested, shall be guaranteed until the date of final acceptance of the project by the Owner.

1.3 OWNER

All papers shall be delivered to the Owner, unless otherwise specified in writing to the Contractor. Wherever the term "Owner" is used in the Specification it shall refer to:

CITY OF FAIRHOPE
555 SOUTH SECTION STREET
FAIRHOPE, AL 36532

1.4 CONSTRUCTION MANAGER

Not Applicable

1.5 ARCHITECT

Wherever the term "Architect" is used in the Specifications, it shall refer to:

GOODWYN MILLS CAWOOD, LLC
2039 MAIN STREET
DAPHNE, AL 36526

who by contract with the Owner, is authorized to prepare all drawings, details, and specifications for this work.

After the award of this contract, supervision of the work will be performed by the aforementioned Architect, his duly authorized representatives, or his duly appointed successor as may be designated in writing to the Contractor by the Owner.

1.6 APPLICABLE CODES AND AUTHORITIES

- A. Codes
 - 1. The work of this project shall be in accordance with the 2018 International Existing Building Code ADA Standards for Accessible Design - 2010, as well as with other applicable codes, laws, and ordinances.
 - 2. Promptly notify the Architect, in writing, if any of the contract documents are in conflict or variance with applicable codes, laws and ordinances. All changes will be made by written addenda or modifications.
- B. Authorities, including but not limited to:
 - 1. City of Fairhope Alabama
- C. If any work is performed knowing it to be contrary to such codes, law, ordinances, rules and regulations and without notice to the Architect, the Contractor assumes full responsibility therefore and shall bear all costs for compliance thereto.

1.7 NONRESIDENT BIDDERS

Nonresident bidders must accompany any written bid documents with a written opinion of an attorney at law licensed to practice law in such nonresident bidders' state of domicile, as to the preferences, if any or none, granted by the law of that state to its own business entities whose principal places of business are in that state in the letting of any or all public contracts.

1.8 PRE-BID CONFERENCE

A conference of intended bidders may be held by the Owner prior to the time for the opening of bids for the purpose of presenting and explaining the policies of the Board. Notification of date and place for conference shall be given by written addenda.

1.9 PRE-CONSTRUCTION CONFERENCE

A conference shall be held at the job site no later than two weeks following the date of "NOTICE TO PROCEED". The purpose of this conference is to define the duties and responsibilities of the Architect, Construction Manager, Owner, and Contractor. All forms, procedures, schedules and other pertinent requirements will be discussed.

1.10 LIST OF SUBCONTRACTORS AND PRINCIPAL MATERIAL SUPPLIERS

Five (5) copies shall be prepared by the successful Contractor and delivered to Construction Manager and Architect within Twenty-Four (24) hours after bid. List shall show following information on each Subcontractor and/or Supplier:

- A. Name of Subcontractor and/or Supplier
- B. Complete mailing address
- C. Telephone Number
- D. Person to contact and position in organization
- E. Scope of Work to be performed by Subcontractor and percent of total contract

1.11 CONTRACTOR'S CONSTRUCTION SCHEDULE

- A. Bar-Chart Schedule: Prepare a fully developed, horizontal bar-chart type Contractor's construction schedule. Submit within 30 days of the date established for "Commencement of the Work".
 - 1. Provide a separate time bar for each significant construction activity. Provide a continuous vertical line to identify the first working day of each week. Use the same breakdown of units of the work as indicated in the "Schedule of Values".
 - 2. Within each time bar indicate estimated completion percentage in 10 percent increments. As work progresses, place a contrasting mark in each bar to indicate Actual Completion.
 - 3. Prepare the schedule on a sheet, or series of sheets, of stable transparency, or other reproducible media, of sufficient width to show data for the entire construction period.
 - 4. Secure time commitments for performing critical elements of the work from parties involved. Coordinate each element on the schedule with other construction activities; include minor elements involved in the sequence of the work. Show each activity in proper sequence. Indicated graphically sequences necessary for completion of related portions of the work.
 - 5. Coordinate the Contractor's construction schedule with the schedule of values, list of subcontracts, submittal schedule, progress reports, payment requests and other schedules.
 - 6. Indicate completion in advance of the date established for Substantial Completion. Indicate Substantial Completion on the schedule to allow time for the Architect's procedures necessary for certification of Substantial Completion.

- B. Work Stages
Indicate important stages of construction for each major portion of the work, including testing and installation.
- C. Cost Correlation
At the head of the schedule, provide a two item cost correlation line, indicating "precalculated" and "actual" costs. On the line show dollar-volume of work performed as of the dates used for preparation of payment requests.
- D. Distribution
Following response to the initial submittal, print and distribute copies to the Architect, Owner, subcontractors, and other parties required to comply with scheduled dates. Post copies in the Project meeting room and temporary field office.
- E. Schedule Updating and Progress Photographs
Revise the schedule after each bi-weekly meeting or activity, where revisions have been recognized or made. Issue the copies of updated schedule concurrently with progress photographs and report of each meeting to the Owner and Architect.

1.12 NOTICE OF SALES AND USE TAX EXEMPTION

The Owner is a tax exempt agency. Materials incorporated into the Work are exempt from sales and use tax, therefore Contractor shall NOT include sales and use taxes in his Bid. Pursuant to Alabama Act No. 2013-205 (effective 5/9/2013), Contractors bidding the Work shall be required to attach "Accounting of Sales Tax" (ABC Form C-3A-Sales Tax - October 2013) to their Bid. **FAILURE OF THE CONTRACTOR TO COMPLETE THIS ATTACHMENT TO BID PROPOSAL FORM INDICATING THE SALES TAX AS REQUIRED BY ACT 2013-205, SECTION 1 (g) SHALL RENDER THE BID NON-RESPONSIVE.**

It shall be the responsibility of the successful Contractor and any Subcontractor working under the same contract to apply for a Certificate of Exemption from the Alabama Department of Revenue for this specific project and to comply with all ADOR rules and regulations. The Owner shall not consider claims for additional costs resultant of the Contractor's or its subcontractors' failure to comply with such rules and regulations.

However, the Owner may elect to issue Form ST:PAA1 Purchasing Agent Appointment which appoints the Contractor as Agent to purchase materials Tax-Exempt. In this case, invoices must be transmitted for direct payment by the Owner.

1.13 PERMIT FEE

Per City of Fairhope Permitting requirements; the permit fee is to be included in the contractor's bid and paid by the Contractor.

The Pre-construction Conference cannot be held until both (1) the permit fee and (2) the signed construction contract has been received by the Construction Manager.

1.14 INSPECTIONS

Scheduling - The contractor will contact the construction administrator by e-mail of the date the project

will be ready for an inspection.

- The Contractor will contact the City of Fairhope (COE) Inspector to schedule the first available date for the inspection. Inspections must be requested minimum 14 days in advance.

Minimum Requirements - The following minimum requirements listed below are provided to aid the contractors and architect in determining if a project is ready for a required inspection.

- Pre-Construction Conference
 - Required Attendees: Contractor, Owner, Construction Manager, Architect, Major Subcontractors.
 - Inspection Requirements:
 - Signed construction contract
 - Verification of payment of permit fee
 - Contractor's Statement of Responsibility and Quality Assurance Plan (for storm shelter)
 - Fire Alarm Contractor's Certification (from State Fire Marshal)
 - COM Land Disturbance Permit
- Life Safety Inspections and Final Inspections
 - Required Attendees: Contractor, Owner, Architect, Major Subcontractors.
 - Inspection Requirements:
 - General Contractor's 5-Year Roofing Warranty
 - Roofing manufacturer's guaranty .
 - Must have clear egress/access and emergency (for first responders) access to building
 - Must have ADA access completed
- Year-End Inspections
 - Required Attendees: Contractor, Owner, Construction Manager, Architect, Engineers, Building Commission Inspector and /or Major subcontractors may also be required to attend
 - Inspection Requirements:
 - Owner 's list of documented warranty items

1.15 MATERIALS

ALL MATERIALS FOR THIS PROJECT SHALL BE ASBESTOS FREE. All project materials are to be non-combustible or fire retardant treated materials.

1.16 PROTECTION OF WORK AND PROPERTY

Contractor shall confine his operations to the project work limits of this contract and shall maintain required exit and fire safety requirements as well as Owner's security requirements. Protect adjoining spaces and cause no damage to same; any damage to be immediately repaired.

A. Protection of Work and the Public

Provide adequate protection, in full accordance with local, State and Federal regulations, for the work in progress as well as for the public and others using the site, until the completion of all work.

Provide suitable signs, signals and barricades against trespassing by individual and take whatever steps necessary or required by law to protect workers and public from harm. Protect the work and the public from damage of any kind during all operations. Methods described herein are minimum standards acceptable except where exceeded by Federal, State or local requirements.

B. Safety and Traffic Control Devices During Construction

1. Within the limits of area designated for work under this contract, and any staging or traffic areas, this Contractor shall furnish, install and maintain all safety and traffic control devices during the construction period as described herein, and as required by law.
2. All safety and traffic control devices shall be in compliance with Federal, State and local laws and regulations, and to the requirements and approval of applicable local officials, State Highway Department and the Architect.
3. Wherever the work affects the normal flow of vehicular or pedestrian traffic, traffic control devices shall be in accordance with requirements and standards as set forth in the "Manual on the Uniform Traffic Control Devices for Streets and Highways", latest edition, as published by U.S. Department of Transportation, Federal Highway Administration, and Section "G" of the Alabama Manual on Uniform Traffic Control Devices, Volumes I and II, latest edition.
4. Traffic Control Devices. Traffic control devices shall be installed at the inception of the construction operations and shall be properly maintained during the periods of construction. They shall remain in place only as long as they are needed and shall be removed immediately thereafter.
5. All traffic control devices must be approved by the City, County and by all affected enforcing agencies.
6. Protective Construction Site Barricade.
 - a. Requirements: Contractor shall furnish, install and maintain throughout the life of the Contract, all necessary barricades, covers, scaffold guards, warning signs, warning lights, channelization markers and other protective devices, all as required by Owner, local rules, regulations and ordinances, and as necessary to protect the work from trespassing.
 - b. Barricades, enclosing devices and warning lights may be standard rental items of equipment in compliance with these requirements; and shall be of a type that affords security, is quite visible and is easily moved.
 - c. Materials for use in construction of site barricades and other protective devices shall be of new exterior plywood and not less than #2 pine structural lumber, all of good appearance, sound, square, straight, in line, braced and well-constructed. All materials, except those to be walked on, shall be painted.
 - d. Move barricades from one area to the next as the work progresses. Remove all upon completion.

- e. Lighting on Barricades: Furnish and install traffic warning lights or barricades, in areas of vehicular traffic. Install yellow traffic signal lamps complete with all wiring, switches, disconnects, fusing, sockets, guards and hanging provisions. These lights shall be turned on during all hours of darkness (dusk to dawn). Maintain in service during the construction period; move forward as site of work moves. Remove all upon completion of work.
- f. See also erosion control requirements of Earthwork Section 02300.
- g. **Unauthorized visitors not permitted within working and storage areas** - OSHA approved suitable personal safety devices are to be provided for authorized visitors within working areas. Suitable fire extinguishing equipment, readily accessible from any part of the work, to be provided and maintained. Erect any and all required additional protective barriers, lights, etc., as necessary for safety and protection. Keep area of work closed off when not in use.

C. Utilities

- 1. The Owner shall pay for electricity and water usage required for normal construction purposes.
- 2. Other utility bills caused by work of the contract are to be paid by Contractor as outlined in the SUMMARY OF THE WORK. Contractor to provide own telephone, temporary heat and pay costs for same. Contractor to pay for any sewer impact fee as related to this project. All project related sanitary conditions are the responsibility of the Contractor.
- 3. Contractor must investigate and verify the existence and location of all site utilities in the field before starting work. Flag on site all underground service lines in the construction area. Notify the Architect of any condition which, in the Contractor's opinion, may interfere with the completion of work as designated. Excavating in the vicinity of existing utilities shall be done carefully and by hand. Maintain and protect existing utilities.
- 4. The Contractor is responsible for all temporary utility connections to utilities.

D. Protection of Materials

Properly and effectively protect all materials and equipment, before, during and after their installation. Contractor will be allowed to store materials, equipment, etc., on the site. Security of the area(s) will be the sole responsibility of the Contractor. Protect materials such as Insulation and insulated duct from rain exposure.

E. Watchman

The Contractor, at his own expense and option, may employ a watchman at such time as he deems necessary to protect his work and/or materials.

1.17 DAMAGE TO PROPERTY

The contractor will be responsible for, and insure against, any damage to property, furnishings, and/or loss of revenue resulting from any damage to any part of the existing property caused by the work of this Contract.

1.18 SPECIAL SAFETY REQUIREMENTS

All exit ways shall be maintained free and clear of all stored materials, debris, etc.

No combustible construction materials shall be stored in the Project area after the day's work is complete. Remove any potentially hazardous materials immediately to prevent any fire hazards which may result from the construction of this Project. In addition, precautions shall be made by the General Contractor to prevent any other activities at the site which may constitute a fire hazard.

The General Contractor shall provide fire extinguishers during the construction as required.

Refer to the General Conditions for additional safety requirements.

1.19 USE OF PREMISES. SANITARY PROVISIONS

Refer to SECTION 01035, SPECIAL PROJECT PROCEDURES, for use of premises, sanitary provisions which are specifically related to this project. Note that sanitary conditions are the responsibility of the Contractor.

All personnel required on the job site must at all times be in possession of state issued photo identification subject to examination by Owner or their representative. Other security requirements may also be in place and is the responsibility of the General Contractor to abide by all school rules.

1.20 USE OF OCCUPIED PREMISES

During execution of this Contract, clear passages must be maintained as described along corridors. Owner will endeavor to keep personnel and visitors from work areas, but it will be the Contractor's responsibility to enforce all safety precautions. .

1.21 CUTTING AND PATCHING

All excavation and cutting of new work to accomplish the work shall be by the respective trades. It is to be noted that Divisions 21, 22, 23, 25, 26, 27, and 28 each are required to perform the necessary cutting of floors, walls, ceilings as necessary to install the work of their trade, all under the direct supervision of the General Contractor and in accordance with the construction schedule. The General Contractor is responsible for the repair, replacement and finish of pavement, sidewalks, roofs, floors, walls and ceiling (all finish work); and same shall be accomplished by competent workmen and finish up in a neat manner, by craftsmen skilled in their work, all to be equal in quality and appearance of adjacent work. Finished installation shall comply with specified tolerances and finishes. The Contractor shall not cut, excavate, or otherwise alter any work in a manner or : by a method or methods that will endanger the work, adjacent property, workmen , the public or the work of any other Contractor.

In acceptance or rejection of the work of the Sections involved in the application of finish materials, the Construction Manager will make no allowance for lack of skill on the part of the workmen.

When necessary to cut or alter completed work to accommodate subsequent work, the Contractor performing the work previously in place shall do such cutting and repairing.

Cost of cutting and repairs necessitated by fault of negligence, or for other reasons, shall be borne by the Contractor at fault in requiring such work.

If a Contractor or Subcontractor fails to do necessary cutting or fails to have restored any work of others damaged by him, for a period of time causing delay in project construction, the Owner may do so and cost thereof shall be charged to the General Contractor.

Cutting of structural members will not be permitted.

1.22 FIRE INTEGRITY OF CONSTRUCTION

Shall be maintained whenever components of rated assemblies are penetrated, jointed, cracked or compromised in any way either intentionally or unintentionally; including, but not limited to: walls, floors, ceilings and caps. Rated walls shall extend and key to floor, cap assembly or roof deck above using consistent materials.

Openings for "poke-through" pipe, conduit, etc., penetrations shall be of minimum size in accordance with UL published requirements for maintaining integrity of rated construction and fire sealed properly. Mortar or concrete in contact with copper will not be accepted. Expansive spray foam fill which is combustible shall not be allowed.

Opening shall be sealed full thickness of penetration, (i.e., grout solid up to within one (1) inch of finish surface then seal with rated sealant material). Any and all pipe and conduit penetrations of a finished wall, floor or ceiling materials shall be finished out with an approved escutcheon plate. Any penetration of rated walls or ceilings by mechanical ductwork shall be protected by use of rated fire damper system at point of penetration. Provide for collars as required at point of penetration through rated construction. Contractor shall provide fire integrity sign on rated wall construction (above ceiling) lines in accordance with the building code, and as outlined in PAINTING - SECTION 09 9000.

If specified under FIRESTOPPING - SECTION 07 2700, fire caulking and sealing shall be **single source** provided using same approved materials and certified technicians throughout the project. All applicable trades shall coordinate accordingly and make their work ready to properly receive fire sealant. If fire sealing is not specified under a separate section, then all applicable trades shall fire seal their own work using the same mutually agreed upon fire sealing materials consistently throughout the project installed by manufacturer's certified technician(s). Acceptable fire sealing materials include, but are not limited to: Dow-Coming, 3-M Brand, Tremco meeting ASTM 3-119, ASTM 3-814 and mineral wool fiber sating.

2.0 USE AND OCCUPANCY PRIOR TO ACCEPTANCE BY OWNER

- A. Contractor agrees to permit Owner to use and occupy portions of building or Project before formal acceptance by Owner, provided that Owner:

1. Secures written consent of Contractor (except in event that in the opinion of Architect, Contractor is chargeable with unwarranted delay in final completion of contract requirements).
 2. Secures endorsement from insurance carrier and consent of the surety, permitting occupancy and use of portions of project during remaining period of construction.
- B. Use and occupancy prior to formal acceptance shall not relieve Contractor of his responsibility to maintain insurance coverage, as called for in specifications, for benefit of Owner, Owner's Agent, Contractor and all Subcontractors until Project is completed and accepted by Owner. However, use and occupancy of any area by the Owner prior to project completion shall mean partial acceptance of that area and any equipment within that area used by the Owner, thereby requiring a substantial completion agreement between the Owner and the Contractor for said area and equipment.

2.1 REQUIREMENTS

As set forth herein are applicable to the Work under every Section or Division of this Specification, of the General Contractor and all Subcontractors.

2.2 COMPLETION DATE

Work under this contract shall be sufficiently completed to permit Owner to occupy the building, or a designated portion thereof, on or before date stipulated on the Proposal Form and accepted by Owner. See Paragraph entitled Time For Completion under SPECIAL PROJECT REQUIREMENTS, SECTION 01030A.

2.2 ACCEPTANCE OF PRECEDING WORK

Before starting any operation, Contractor and each Subcontractor shall examine existing work performed by others to which his work adjoins. Failure to remedy faults in or notify Architect of deficiencies or faults in preceding work will constitute acceptance thereof and waiver of any claim of its unsuitability.

2.3 LAYOUTS AND LEVELS

General Contractor shall establish principal lines, grades, levels and corners, and shall set and maintain adequate reference points therefore. Contractor shall lay out own work to dimension from principal lines and shall be responsible for layout of his subcontractor's work.

2.4 PRODUCT APPROVAL

- A In addition to items submitted for approval by Shop Drawings, Contractor to submit for approval within ten (10) days after receipt of Notice to Proceed a list of all products proposed for use in the work, listing manufacturer, make, model number, catalog listing subcontractors' and / or vendors' names, and other manufacturers' identification for each particular product

for each particular use. Submit in letter form in 3 copies, and approval obtained before material is ordered. Submit list of products requiring color selection.

Approved list of products manufacturer and / or vendor will be returned promptly in order to avoid any delay of ordering materials specified. General Contractor shall review with Construction Manager, Architect and the Owner the actual status of availability of all materials and schedule of work in the building, (including Alternates).

- B. Submit complete Product Data and testing results, if requested.

2.5 WEATHER PROTECTION

Contractor shall provide, maintain and pay all cost for all weather protection required to properly protect all parts of the building and structure from damage during construction.

2.6 MANUFACTURER'S DIRECTIONS

- A. Apply, install, connect and erect manufactured items or materials according to recommendations of manufacturer when such recommendations are not in conflict with Contract Documents.
- B. Furnish to Construction Manager or Architect, on request, copies of manufacturer's recommendations. Secure approval of recommendations before proceeding with work.

2.7 COORDINATION BETWEEN TRADES: CONTRACTOR'S PRE-CONSTRUCTION COORDINATION MEETING

- A. Plumbing, Heating, Ventilating, Air Conditioning and Electrical Drawings are diagrammatic.
- B. BEFORE COMMENCING WORK UNDER THIS CONTRACT, GENERAL CONTRACTOR IS TO ARRANGE FOR A MEETING OF ALL MAJOR SUBCONTRACTORS (AND SEPARATE CONTRACTS AS APPLICABLE) TO DETERMINE THAT ALL ITEMS WILL FIT INTO SPACES PROVIDED, HEADROOMS MAINTAINED. CONCEALMENT REQUIRED. WALL THICKNESS SUFFICIENT FOR RECESS OF ITEMS, PRIORITIES ESTABLISHED IN INSTALLATION OF DUCTS.PIPING, ETC. EACH SUBCONTRACTOR MUST HAVE THEIR RESPECTIVE ON-SITE JOB FOREMAN PRESENT. Each Subcontractor to have drawings of all trades, and to be completely aware of and fully informed of, requirements and locations of work to be installed by other Subcontractors. In case of disagreements in locations, General Contractor is to settle same, giving preference to ductwork and larger items, except where grading of pipe may require preference. All decisions to be recorded on each Subcontractor's drawings and on jobsite set of drawings and fully inform all Subcontractors. No changes to be made which affect finish locations or alter requirements of contract without approval of the Construction Manager and Architect. Do not cover or block previously installed alarm devices, valves, etc., without providing for access to same.

- C. If, in any location, it is impossible to install required items and maintain requirements as to ceiling heights, clearances dimensions, etc., or due to structural interference, General Contractor is to advise Construction Manager and Architect for a decision.

2.8 CITY ORDINANCES

- A. Comply with all City rules, regulations and ordinances in regard to parking, unloading, blocking of street, sidewalk or alley; and provide all lights, barriers, temporary walkways, protection, etc., as necessary for complete compliance.
- B. Comply with applicable Code and all local and Federal laws and ordinances in regard to safeguards during construction and fire protection, and all governing regulations pertaining to requirements during construction.

2.9 OPERATING AND MAINTENANCE INSTRUCTIONS

- A. Contractor shall instruct Owner's operating personnel in proper operation, lubrication and maintenance of all equipment items installed under this contract.
- B. At completion of job, Contractor shall provide three (3) copies of a brochure containing manufacturer's operating, lubricating and maintenance instructions and parts lists for each item of equipment furnished under this contract. Each copy shall be assembled and bound under a substantial hardboard cover with title and index. Provide a complete set of approved manufacturer's and contractor's shop and equipment "setting" drawings for major systems and equipment furnished under this contract.

One (1) copy of the Operating and Maintenance instructions shall be hand delivered to the Construction manager at the final inspection and the remaining copies shall be provided to the Owner prior to issuance of the Certificate of Substantial Completion.

2.10 SITE LIMITATION AND USE

- A. General Contractor and each Subcontractor shall note the extent of site available for access and storage. Contractor restricted to those limits.
- B. All personnel required on the job site must at all times be in possession of **state issued** photo identification subject to examination by Construction Manager or Owner or their representative. Other security requirements may also be in place and is the responsibility of the General Contractor to abide by all school rules.
- C. Contractor and Subcontractors are further cautioned that the traffic on adjacent streets may place strict limitations on the rates and means of delivery of materials, equipment and supplies, the removal of rubbish, and, in some cases, the hours during which deliveries are made.

2.11 PROTECTION OF EXISTING PROPERTY ADJACENT

- A. Protect and cause no damage to adjacent area and site.
During progress of work, Contractor will be responsible for full and complete protection of property which the work is being done, insofar as related to work under this Contract. Any damage to adjacent property, or contents caused by failure in performance with these requirements must be made good by Contractor at his own expense and to the satisfaction of Owner. Any damage to existing adjacent areas outside contract work limits shall be replaced with exact same materials as that damaged.
- B. Provide for means to prevent objectionable dust and debris blowing onto adjacent property or streets from work being accomplished under this contract.

2.12 DIMENSIONS

Contractor and each Subcontractor shall verify dimensions at site for built-in work, for work adjoining that of other trades and for dimensions shown to existing structures or installations. Notify Construction Manager of any discrepancies.

2.13 SECURITY OF CONSTRUCTION AREA

Contractor shall secure on site storage of materials and equipment. Storage of materials shall be within the Contractor's limit of construction at the site. This General Contractor shall adhere to Owner's requirements for security of work area and under all conditions shall be subject to these security regulations and requirements. Off-site storage of materials and equipment that are to be installed in the project shall be in a bonded storage area as outlined in the General Conditions.

2.14 DELIVERING AND STORAGE

- A. Deliver packaged materials to site in manufacturer's original, unopened and labeled containers. Do not open containers until approximate time for use.
- B. Store materials in a manner that will prevent damage to materials or structure, and that will prevent injury to persons. No materials will be stored outside of contract work area by this Contractor.
- C. Store cementitious materials in dry, weathertight, ventilated spaces. Store ferrous materials to prevent contact with ground and to avoid rusting and damage from weather.

2.15 FIRE PROTECTION

Contractor to take all necessary steps to ensure prevention of fire. Contractor to have portable extinguishers on hand at site throughout the period of construction. Flammable and combustible materials shall be kept in metal cans with tight covers and removed from building at end of each working day.

Fire protection systems within existing buildings must be maintained in full operation during construction.

2.16 HOIST, RAMPS, ELEVATOR ACCESS, ETC.

Furnish and Maintain as Necessary: Hoists, ramps, railings, platforms, etc., required in conformance with local applicable regulations. Hoists shall be operated by qualified and experienced mechanics. Space for hoist shall be coordinated with Architect and Owner's assigned project representative.

2.17 CHASES AND OPENINGS

Provide all proper chases, openings and recesses as indicated for work under this Contract. Build in all sleeves, anchors, etc., for proper engagement of work to be installed. All post piercing of slabs and masonry shall be core drilling.

END OF SPECIAL PROJECT REQUIREMENTS

SECTION 01035

SPECIAL PROJECT PROCEDURES

1.0 Requirements

As set forth herein are applicable to the Work under every Section or Division of this Specification, of the General Contractor and all Subcontractors.

1.1 Completion Date

Work under this contract shall be sufficiently completed to permit Owner to occupy the building, or a designated portion thereof, on or before date stipulated on the Proposal Form and accepted by Owner. See Paragraph entitled Time for Completion under SPECIAL PROJECT REQUIREMENTS, SECTION 01030.

1.2 Acceptance of Preceding Work

Before starting any operation, Contractor and each Subcontractor shall examine existing work performed by others to which his work adjoins. Failure to remedy faults in or notify Architect of deficiencies or faults in preceding work will constitute acceptance thereof and waiver of any claim of its unsuitability.

1.3 Layouts and Levels

General Contractor shall establish principal lines, grades, levels and corners, and shall set and maintain adequate reference points therefore. Contractor shall lay out own work to dimension from principal lines and shall be responsible for layout of his subcontractor's work.

1.4 Product Approval

- A. In addition to items submitted for approval by Shop Drawings, Contractor to submit for approval within ten (10) days after receipt of Notice to Proceed a list of all products proposed for use in the work, listing manufacturer, make, model number, catalog listing Subcontractors' and / or vendors' names, and other manufacturers' identification for each particular product for each particular use. Submit in letter form in 3 copies, and approval obtained before material is ordered. Submit list of products requiring color selection. Approved list of products manufacturer and / or vendor will be returned promptly in order to avoid any delay of ordering materials specified. General Contractor shall review with Construction Manager and the Owner the actual status of availability of all materials and schedule of work in the building, (including Alternates).
- B. Submit complete Product Data and testing results, if requested.

1.5 Weather Protection

Contractor provide, maintain and pay all cost for all weather protection required to properly protect all parts of structure from damage during construction. Note that building heating and cooling system will remain in operation throughout the contract period.

1.6 Manufacturer's Directions

- A. Apply, install, connect and erect manufactured items or materials according to recommendations of manufacturer when such recommendations are not in conflict with Contract Documents.
- B. Furnish to Construction Manager and or Architect, on request, copies of manufacturer's recommendations. Secure approval of recommendations before proceeding with work.

1.7 Coordination Between Trades: Contractor's Pre-Construction Coordination Meeting

- A. Plumbing, Heating, Ventilating, Air Conditioning and Electrical Drawings are diagrammatic.
- B. BEFORE COMMENCING WORK UNDER THIS CONTRACT, GENERAL CONTRACTOR IS TO ARRANGE FOR A MEETING OF ALL MAJOR SUBCONTRACTORS (AND SEPARATE CONTRACTS AS APPLICABLE) TO DETERMINE THAT ALL ITEMS WILL FIT INTO SPACES PROVIDED. HEADROOMS MAINTAINED. CONCEALMENT REQUIRED. WALL THICKNESS SUFFICIENT FOR RECESS OF ITEMS, PRIORITIES ESTABLISHED IN INSTALLATION OF DUCTS. PIPING, ETC. EACH SUBCONTRACTOR MUST HAVE THEIR RESPECTIVE ON-SITE JOB FOREMAN PRESENT. Each Subcontractor to have drawings of all trades, and to be completely aware of and fully informed of, requirements and locations of work to be installed by other Subcontractors. In case of disagreements in locations, General Contractor is to settle same, giving preference to ductwork and larger items, except where grading of pipe may require preference. All decisions to be recorded on each Subcontractor's drawings and on jobsite set of drawings and fully inform all Subcontractors. No changes to be made which affect finish locations or alter requirements of contract without approval of the Architect. Do not cover or block previously installed alarm devices, valves, etc., without providing for access to same.
- C. If, in any location, it is impossible to install required items and maintain requirements as to ceiling heights, clearances dimensions, etc., or due to structural interference, General Contractor is to advise Architect for a decision.

1.8 City Ordinances

- A. Comply with all City rules, regulations and ordinances in regard to parking, unloading, blocking of street, sidewalk or alley; and provide all lights, barriers, temporary

walkways, protection, etc., as necessary for complete compliance.

- B. Comply with applicable Code and all local and Federal laws and ordinances in regard to safeguards during construction and fire protection, and all governing regulations pertaining to requirements during construction.

1.9 Operating and Maintenance Instructions

- A. Contractor shall instruct Owner's operating personnel in proper operation, lubrication and maintenance of all equipment items installed under this contract.
- B. At completion of job, Contractor shall provide three (3) copies of a brochure containing manufacturer's operating, lubricating and maintenance instructions and parts lists for each item of equipment furnished under this contract. Each copy shall be assembled and bound under a substantial hardboard cover with title and index. Provide a complete set of approved manufacturer's and contractor's shop and equipment "setting" drawings for major systems and equipment furnished under this contract.

One (1) copy of the Operating and Maintenance instructions shall be hand delivered to the Architect at the final inspection and the remaining copies shall be provided to the Owner prior to issuance of the Certificate of Substantial Completion

1.10 Site Limitation and Use

- A. General Contractor and each Subcontractor shall note the extent of site available for access and storage. Contractor restricted to those limits.
- B. All personnel required on the job site must at all times be in possession of **state issued** photo identification subject to examination by Construction Manager or Owner or their representative. Other security requirements may also be in place and is the responsibility of the General Contractor to abide by all school rules.
- C. Contractor and Subcontractors are further cautioned that the traffic on adjacent streets may place strict limitations on the rates and means of delivery of materials, equipment and supplies, the removal of rubbish, and, in some cases, the hours during which deliveries are made.

1.11 Protection of Existing Property Adjacent

- A. Protect and cause no damage to adjacent area and site.
During progress of work, Contractor will be responsible for full and complete protection of property which the work is being done, insofar as related to work under this Contract. Any damage to adjacent property, or contents caused by failure in performance with these requirements must be made good by Contractor at his own

expense and to the satisfaction of Owner. Any damage to existing adjacent areas outside contract work limits shall be replaced with exact same materials as that damaged.

- B. Provide for means to prevent objectionable dust and debris blowing onto adjacent property, buildings, or streets from work being accomplished under this contract.

1.12 Dimensions

Contractor and each Subcontractor shall verify dimensions at site for built-in work, for work adjoining that of other trades and for dimensions shown to existing structures or installations. Notify Construction Manager and Architect of any discrepancies.

1.13 Security of Construction Area

Contractor shall secure on site storage of materials and equipment. Storage of materials shall be within the Contractor's limit of construction at the site. This General Contractor shall adhere to Owner's requirements for security of work area and under all conditions shall be subject to these security regulations and requirements. Off-site storage of materials and equipment that are to be installed in the project shall be in a bonded storage area as outlined in the General Conditions.

1.14 Delivering and Storage

- A. Deliver packaged materials to site in manufacturer's original, unopened and labeled containers. Do not open containers until approximate time for use.
- B. Store materials in a manner that will prevent damage to materials or structure, and that will prevent injury to persons. No materials will be stored outside of contract work area by this Contractor.
- C. Store cementitious materials in dry, weathertight, ventilated spaces. Store ferrous materials to prevent contact with ground and to avoid rusting and damage from weather.

1.15 Fire Protection

Contractor to take all necessary steps to ensure prevention of fire. Contractor to have portable extinguishers on hand at site throughout the period of construction. Flammable and combustible materials shall be kept in metal cans with tight covers and removed from building at end of each working day.

Fire protection systems within existing buildings must be maintained in full operation during construction.

1.16 Hoist, Ramps, Elevator Access, Etc.

Furnish and Maintain as Necessary: Hoists, ramps, railings. Platforms, etc., required in conformance with local applicable regulations. Hoists shall be operated by qualified and experienced mechanics. Space for hoist shall be coordinated with Architect and Owner's assigned project representative.

1.17 Chases and Openings

Provide all proper chases, openings and recesses as indicated for work under this Contract. Build in all sleeves, anchors, etc., for proper engagement of work to be installed. All post piercing of slabs and masonry shall be core drilling.

END OF SPECIAL PROJECT PROCEDURES

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SECTION 01 0050

PROJECT SAFETY

PART 1 - GENERAL

1.1 SECTION INCLUDES

- A. Enforcement of OSHA regulation.
- B. Reporting of accidents.
- C. Responsibility for safety.
- D. Hot work permits.

1.2 ENFORCEMENT OF OSHA REGULATIONS

- A. Contractor and all Subcontractors shall adhere to OSHA regulations as they apply to safety of working conditions, conditions of personnel, and environmental contaminations.
- B. Contractor shall maintain on the project site a copy of OSHA regulations. Sections pertaining to safety as applied to the construction industry should be 'highlighted'.

1.3 REPORTING OF ACCIDENTS

- A. Contractor shall report any accident or injury in writing to the Owner's Construction Manager.
- B. Report to identify persons involved, (name, addresses, phone number, title, etc.) work being performed, extent of injury, witnesses, time and circumstances of accident.
- C. Injuries requiring hospitalization, medical evaluation report shall be submitted to Contractor, Owner, Construction Manager and Architect.
- D. Provide copies of claims for Workman's Compensation insurance to Contractor and Owner.

1.4 RESPONSIBILITY FOR SAFETY - SUBCONTRACTOR

- A. The Subcontractor or Tradesmen are solely responsible for the safety of working conditions and performance condition of personnel whom he has employed while present on the project site.

- B. No Subcontractor shall commence work after another trade or proceed with work if unsafe conditions exist upon his arrival.
- C. Drug testing of Subcontractors' personnel may be requested if persons who are suspect of being under the influence of drugs or alcohol. Cost of such testing to be at tested party's employer's expense.

1.5 RESPONSIBILITY FOR SAFETY - GENERAL CONTRACTOR

- A. The Contractor is responsible for the safety of his personnel and the working conditions of the tradesmen he employs.
- B. The Contractor is responsible for the total site working conditions and to monitor Subcontractors and other trades in their maintenance of safe working conditions.
- C. Drug testing of Contractor's personnel if requested to be at employer's expense.

1.6 HOT WORK PERMITS

PART 2 - PRODUCTS (Not Used.)

PART 3 - EXECUTION (Not Used.)

END OF PROJECT SAFETY

SECTION 01 0150

SPECIAL CONDITIONS

1.1 TIME FOR COMPLETION OF WORK:

- A. The Contractor may proceed to award sub-contracts, assemble materials, etc., at any time after award of Contract and "Notice To Proceed". The contractor's official time for construction to start on work shall be the earlier of either the date of the Owner's "Notice to Proceed" with Work or receipt of the fully executed Contract for the Work; and completion of the Work shall be within the stipulations indicated and the number of consecutive calendar days or by the date(s) indicated on the Contractor's Proposal Form. Contract time for the **Substantial Completion** of the work shall be **120 Calendar Days**.
 - 1. Properly supervised work, per requirements, will be permitted on Saturdays and Sundays, subject to at least 72 hours prior notice and approval of the Owner. General Contractor's superintendent must be present **AT ALL TIMES; NO EXCEPTIONS**, while work of subcontractors, or vendors is underway.
- B. Acceptance of the completed Work of this Contract will be at a single date, and not in phases, unless otherwise indicated.
- C. Nothing in the Contract Documents shall permit or be construed to permit payment to the Contractor for any extended overhead or profit due to completion of the project extending beyond the Contractual completion date. In no event shall the Owner, Construction Manager, or Architect be liable to the Contractor for damage(s) due to any delay to any portion of the Work of this Contract.
- D. Delays of exterior work due to inclement weather will be considered, only if the number of rain days is in excess of the National Weather Service 5-year average for this project's location, and proof of same is submitted along with any such claim.
 - 1. On-site records of daily rain and/or temperature readings kept by the Contractor may be accepted to verify weather and/or temperature variations which prevent exterior, earthwork, foundations and slabs, and/or roofing materials installation.

1.2 LIQUIDATED DAMAGES:

- A. Actual damages for delay in completion may be impossible to determine, and the Contractor shall be liable for and the Owner shall deduct as liquidated damages from the final payment due the Contractor.
 - 1. If a daily liquidated damage amount is not otherwise provided for in the Contract Documents, a time charge equal to six percent interest per annum on the total Contract Sum may be made against the Contractor for the entire period after

expiration of the Contract Time that the Contractor fails to achieve Substantial Completion of the Work.

- B. The submittal of a Bid and/or Proposal by any Contractor and their Subcontractors shall be construed as, in part, acknowledgment and acceptance of these provisions.

1.3 SITE RESTRICTIONS:

- A. The limits of work and known restrictions are indicated on the Site Plan and various portions of the Drawings and the Project Manual.

- 1. Refer also to Section 01010 - "Summary of Work," for additional information.

1.4 PRE-BID CONFERENCE:

- A. Refer to "Advertisement for Bids" for additional information and requirements.

1.5 PRE-CONSTRUCTION CONFERENCES:

- A. Prior to commencing any work on the project, a pre-construction conference shall be held. Mandatory attendance will be required of the General Contractor and representative of all specialty and principal subcontractors involved in the project. Time and date of said conference shall be established by the Construction Manager after award of construction contract.
- B. Similarly, prior to commencing any major portion of the Work of the project, preconstruction conferences shall be held. Mandatory attendance will be required of the General Contractor and representative of all specialty and principal subcontractors involved in the individual major portions of project. Time and date of said conferences shall be established by the General Contractor, and the Construction Manager, Architect, Owner, and appropriate Consultants shall be advised in writing of times and dates, by the General Contractor.
 - 1. "Major portion" may be defined as work items for each Subcontractor working on site, and shall include in part, but not be limited to, earthwork, sitework, site utilities, concrete work, masonry, Division 5, roof framing and Division 6, insulation, roofing systems, finishes, specialties, casework, mechanical, plumbing, and electrical.

1.6 CONTRACTOR ACCESS TO SITE:

- A. The Contractor will have access to the site immediately upon issuance of Notice to Proceed with work. All routes of access to the site and gate locations by the Contractor or their subcontractors, are subject to approval by Owner, Construction Manager, and Architect, and other authorities having jurisdiction. Check site plan and drawings for location of work limits. Refer to Section 01010 - "Summary of Work" and Section 01500 - "Temporary Facilities," for additional requirements.

- B. The Contractor shall be required to coordinate the Work of the project with the Owner's educational and other campus activities, to the extent that the Work of this Contract has little or no effect on normal college and campus operations.
- C. Work will not be permitted during the school's achievement testing, and/or examinations time periods. The Contractor shall coordinate timing of testing and any other special activities with the Owner (if required).

1.7 CONTRACTOR'S PLAN FOR CONSTRUCTION OF PROJECT:

- A. Contractor shall prepare and submit to the Owner, Construction Manager, and Architect for review and approval a CPM Schedule and Bar Graph, indicating their proposed plan and sequence of operations to complete each phase of this project, on schedule as required by contract. Update along with each request for partial payment.

1.8 CONTRACTOR JOB MEETINGS:

- A. On-Site Meetings with Construction Manager, and Architect and various trades and subcontractors, shall be conducted by the Contractor as directed by the Construction Manager, and Architect for purpose of furthering the progress of the work, solving construction problems, and issuing instructions.

1.9 STORED MATERIALS:

- A. It is recognized that certain portions of the site may be restrictive and that it may be necessary for the Contractor to store some materials for project at locations on the site, prior to removal or disposal. When such on-site storage is necessary, comply with requirements of authorities having jurisdiction, including in part, on site retention of earth, storm water run-off, slopes of debris, earth, etc.
- B. Store items to be incorporated in the Work in stable and secure manner, off of ground, separated by hardwood or treated wood blocking, and under cover or in storage building.
 - 1. Any materials found stored directly on ground or paving, in standing water, etc., will be rejected, immediately removed from site, and replaced with new materials at the Contractor's expense.
 - 2. Distribute materials around framing and the roof in such manner as to prevent any damage to structure, construction, improvements, etc.
- C. Refer to Section 01010 - "Summary of Work", for additional information and requirements for any off-site stored materials.

1.10 PROTECTION:

- A. The Contractor shall provide and maintain adequate and secure fencing, barricades, and temporary dust partitions, where indicated, and wherever required. Building entrances and exits shall always remain unobstructed when buildings are occupied. Remove temporary protections when acceptable to the Construction Manager and Owner and authorities having jurisdiction, near the date of or just prior to "Substantial Completion."
- B. The Contractor shall provide suitable protection for all employees, the public, students, children, users of other adjacent facilities, and the occupants of existing buildings at all times during the execution of and until the completion of the Work.
 - 1. Construction equipment shall not come in contact with or swing over existing facilities to remain or occupied buildings; public areas or right-of-ways (without proper permits), etc., which are to remain.
- C. The Contractor shall avoid damage as a result of their operations, to the existing buildings, walks, pavement, driveways, curbs, grass, shrubbery, trees, utilities, adjoining property, etc., and shall at their own expense, completely repair any damage thereto caused by their operations. All repair work is subject to the Construction Manager and Architect's approval, and that of its Owner.

1.11 WORK LIMITS PROTECTION:

- A. The Contractor shall locate all temporary buildings, storage of equipment, materials, etc., within a protected area to protect the public, children, and others from the construction activities. Type and location of such protection shall be as indicated on the Drawings, or if not indicated, as proposed and furnished by the Contractor, subject to acceptance of the Construction Manager, Architect, Owner, and authorities having jurisdiction.
 - 1. Any such fencing shall be removed upon completion of the work of this project, removed from the site, and any post holes filled and compacted same as adjacent grade or paving, by the Contractor.
 - 2. Responsibility and maintenance of such fencing and areas within such fencing shall be held by this Contractor beginning at the date of its erection and until its removal, close to the date of project completion.

1.12 EMPLOYMENT OF AND PAYMENT FOR TESTING SERVICES:

- A. The following information regarding Employment of and Payment for Testing Services under the work of Specifications shall take precedence over any conflicting statements otherwise, which may have remained in the Project Manual after editing:
 - 1. Initial testing required by the Contract Documents for Divisions 2 through 5 (except utility systems testing), shall be provided by an independent testing agency selected, employed, and paid for by the Owner.

2. Initial testing required by the Contract Documents for all other testing and Divisions 6 through 16 shall be provided by a testing agency acceptable to the Owner, and selected, employed, and paid by the Contractor from their Contract amount.
 3. Any retesting required (due to failure of initial testing to meet the requirements of the Contract Documents) shall be at the Contractor's expense.
 4. Any retesting required (due to questionable materials or construction methods, for verification purposes, and etc.) shall be at the Contractor's expense when the results of such retesting indicate any work or materials do not comply with requirements of the Contract Documents. Otherwise, such retesting will be at Owner's expense.
 5. Any retesting under the above provisions shall be performed by the same Owner accepted testing agency.
 6. Nothing in the Contract Documents shall prevent the Contractor from performing any other or additional Quality Control testing at their own expense, to verify compliance with the Bid and Contract Documents.
- B. The Contractor shall be responsible for contacting and directions to the accepted testing agency and for any follow-up communications required, for all testing required by the Contract Documents.
- C. No unsuitable or unsatisfactory existing soils or building materials (other than work in Contract) shall be removed without either the presence of or concurrence of and prior approval of the Construction Manager and Architect and the accepted testing agency, to assure quality of the Work is maintained, and to verify quantities of any additional work under bid "Unit Prices," for which the Contractor is due payment by the Owner.

1.13 PROHIBITED MATERIALS:

- A. ASBESTOS: All materials, equipment, components, accessories, and etc., installed in the work of this contract, both field installed and bought-out manufactured items from any source shall be 100-percent free of asbestos.
- B. LEAD CONTENT: All water-bearing lines, water dispensing equipment, finish materials, and paint other than exposed exterior roof flashings, shall be 100-percent free of lead.
- C. CALCIUM CHLORIDE: Calcium chloride and/or derivatives or additives thereof shall not be permitted in any concrete, concrete product, grout, masonry and/or mortar.
- D. ENVIRONMENTAL REGULATIONS: All materials, their application, installation, and completion, shall comply with applicable environmental regulations, including in part, erosion, air-borne contaminants, and volatile organic compounds (VOC's).
- E. FORMALDEHYDE: All insulation and other products shall be 100-percent free of urea formaldehyde.

1.14 PROJECT SIGNS:

- A. Provide, install, and maintain **ONE PROJECT SIGN**, as per Detail at the "General Conditions" Section of the Project Manual, at location on site as directed by the Owner, Construction Manager or Architect. Any statements elsewhere which may omit Project Sign are hereby not withstanding.
 - 1. Sign shall be in place within ten days from and including the day after date of Owner's "Notice to Proceed," and shall be removed within five days of the date all work on this project has been completed.
- B. Provide, securely install and maintain prefinished metal signs on each side of each gate leaf and at 50'-0" o.c. maximum on street/public side of all construction fencing provided (if any).
 - 1. Copy: "NO TRESPASSING
DANGER
CONSTRUCTION AREA"
 - 2. Size: Approximately 1'-6" wide x 1'-0" high.
- C. Provide other pedestrian and vehicular signs as necessary and required, in compliance with requirements of authorities having jurisdiction. Signs shall remain on site for duration of this Contract.
- D. General Contractor may have a sign on their Construction Office and as needed for delivery directions only.
- E. Subcontractors will not be allowed to post signs.

1.15 EXPERIENCE, PERSONNEL AND SUPERINTENDENTS:

- A. General Contractors and Subcontractors shall have no less than **5-years** verifiable commercial experience in their trade and no less than **5-years** verifiable commercial experience in their business enterprise contracting for work under this project; The type of work contracted or subcontracted for this project shall be the principal business of the Contractor or Subcontractor, respectively.
 - 1. In addition, the General Contractor shall have completed no less than 3 verifiable commercial projects of similar scope, extent, complexity and dollar value during the last 5 years.
 - 2. Failure to comply with these requirements will result in rejection of non-compliant bids.
- B. Superintendents and foremen, or other individual in the lead or supervisory position for any portion of the Work under this Contract shall have no less than **10-years** verifiable experience in performing the type of work they are responsible for.

1. The Contractor shall submit resumes of work and project experience for their Superintendent and foremen, as soon as possible and at least within five calendar days of receipt of the Contract to be executed for the work, for review and acceptance by the Construction Manager, Owner, and Architect.

1.18 SITE MAINTENANCE:

- A. The Owner will require all mud or debris resulting from this construction to be removed from streets, sidewalks, etc., by the Contractor as it appears, one or more times daily.
- B. Trash, debris, etc., must be removed from the site as Contractor's trash cans, waste receptacles, etc., are filled. Same will not be allowed to accumulate or blow around the site, within the buildings, etc.
- C. The Contractor shall be responsible for maintaining existing landscaping and lawns within and below any construction fencing, for the duration of the Work of the Contract, or until any such fencing is removed.
- D. Refer to Sections 01010, 01500 and other locations in the Bid and Contract Documents for additional information and requirements.

1.19 INSURANCE AND SPECIAL PROVISIONS:

- A. The Contractor and their insurer, by execution of the Contract, shall waive all rights of subrogation against ***"the Owner, Construction Manager, and the Architect, and their Consultants"***, and same shall be indicated on all insurance provided by the Contractor and each Subcontractor.
- B. The Contractor and their insurer, and each Subcontractor, shall name ***"the Owner, Construction Manager, Architect, and their Consultants"***, as additional named primary insureds on all insurance provided by the Contractor and each Subcontractor, except not for "Workers Compensation and Employers Liability".
- C. Refer to "General Conditions" and other portions of the Bid and Contract Documents, for additional information and insurance requirements. Note that Builder's Risk insurance is required, as described in "General Conditions".
 1. Extent of coverage required and/or any approval or acceptance of the insurance carried shall not act to modify the liability of the Contractor, or to imply that the limits, features and/or coverages described are adequate to protect the interests or exposures of the Contractor.

- D. The Contractor shall “hold harmless” and indemnify ***the Owner, Construction Manager, Architect, and their Consultants*** from any claim or legal action resulting from any circumstances related to the Work of this project, including in part, payment of any legal or other expenses, fines, judgments, etc.
- E. Insurance policies required by the Contract Documents shall not be canceled, altered, or changed, without first having given thirty (30) days written notice to the Construction Manager, with a copy sent to the Architect, except ten(10) days written notice for non-payment of premium.
 - 1. Copies of all policies, endorsements, and insurance certificates, including new, renewed, altered, and/or changed during this Contract shall be delivered to the Construction Manager within ten (10) days of effective date(s), with a copy sent to the Architect, by the Contractor.
- F. Refer to General Conditions of the Contract and Supplementary Conditions for additional information and requirements regarding minimum insurance and indemnity requirements.
- G. Special Provision: Nothing in this or other paragraphs of the Contract Documents shall create or give to third parties any claim or right of action beyond such as may legally exist irrespective of the Contract.

1.20 COSTS FOR DIVISIONS OF THE WORK:

- A. In order to provide effective cost controls and to make proper payment to Architect’s Consultants retained on a percentage fee basis, the Contractor shall submit to the Architect, cost break-downs for portions of the Work indicated below without the General Contractor’s mark-up or overhead added, and for other consultants as otherwise requested, within 15-days of award of the Contract. This shall be separate and in addition to the cost break-down for monthly Pay Requests.
 - 1. Site Work and Utilities
 - 2. Structural
 - 3. Plumbing
 - 2. Mechanical
 - 3. Electrical

1.21 ACCESSIBILITY OF ALL COMPLETED WORK:

- A. All products and installations of the Work of this Contract, shall be as designed by the fabricator, manufacturer, etc., and installed by the Contractor, Subcontractors, etc., to provide full accessibility to the handicapped and/or disabled, unless specifically indicated otherwise. This shall include in part, the following:
 - 1. Mounting heights of all electrical devices, switches, etc., all designated plumbing fixtures, and their operation, in all areas except mechanical and electrical rooms, and

- service areas which are not accessible at any time to the public or Owner's administrative (not service or maintenance) personnel.
 - 2. Signage.
 - 3. Door operation and hardware.
 - 4. Elevators and chair lifts (if any).
 - 5. Slip resistance of all completed flooring and walkway surfaces both interior and exterior.
- B. Comply with the more stringent requirements of at least the following, and all revisions and amendments thereto; and requirements of authorities having jurisdiction:
- 1. Americans With Disabilities Act of 1990 (ADA) "Accessibility Guidelines" (ADA-AG), and all revisions and amendments thereto.
 - 2. American National Standards Institute (ANSI), ANSI A 117.1, 2003.
 - 3. "2010 ADA Standards for Accessible Design", Published in the Federal Register September 15, 2010, and revisions and amendments thereto.
 - 4. Uniform Federal Accessibility Standards (UFAS).
 - 5. International Building Code, either the latest edition or latest adopted edition of the locality as applicable at the project locale, and all revisions and amendments thereto.

1.22 CONTRACTOR PROGRAMS AND CONDUCT OF PERSONNEL:

- A. The Contractor shall implement programs and make literature available to all construction and administration personnel to encourage making this project a safe place to work, including in part the following requirements: A project site free of any substance abuse, which does not allow any consumption of alcohol, and which does not allow any work to be performed while under the influence of any debilitating substance.
- 1. The Contractor and every Subcontractor shall have as part of their personnel, safety, substance abuse prevention, and/or quality programs, mandatory drug testing at pre-employment, post-accident, and at random during employees' tenure with their firms. Each such entity shall be prepared to provide non-confidential verification to the Construction Manager that such testing is consistently on-going, upon Construction Manager's request for same.
- B. Programs shall be as acceptable to or recommended by one or more of the following:
- 1. Contractor's Underwriter for Worker's Compensation or liability insurance.
 - 2. OSHA.
 - 3. Associated General Contractors.
 - 4. U.S. Department of Defense, Corps of Engineers, or Veterans Administration.
- C. Conduct of all personnel employed for the Work of this project shall be held to a high standard and shall not be offensive to others on or around the site, including in part, pedestrians, the public, the Owner, Owner's Consultants, etc.

1. The Contractor and their employees shall limit any discussion of the Work of this project to the Owner's representative named in the front of this Project Manual, inspecting authorities with jurisdiction, and the Architect; In no instance shall this project be discussed with others, except as may otherwise be indicated herein.
 2. The Contractor's personnel and Subcontractors shall not enter the Owner's building, nor use the Owner's telephones (except in emergencies), or the Owner's restrooms.
- D. The Contractor shall immediately dismiss and escort off the project site, any personnel who are obviously under the influence of alcohol or other debilitating substance, and any personnel exhibiting offensive behavior as described above or by law or by local statute or regulations of authorities having jurisdiction.

1.23 WORK BY OTHERS:

- A. The following items of work are to be provided by others, and are Not in Contract (N.I.C.). The Contractor will be required to coordinate with the Owner and Construction Manager as necessary to accommodate provisions for these items.
1. Movable furniture, furnishings, and equipment, unless otherwise indicated.

1.24 SELECTIVE DEMOLITION:

- A. Section 02070 - "Selective Demolition," is applicable to the entire Work of this project and not just to Division 2 where it occurs.

END OF SPECIAL CONDITIONS

SECTION 01 0260

UNIT PRICES

PART 1 – GENERAL

1.1 SUMMARY

A. Section includes administrative and procedural requirements for unit prices.

1. A unit price is an amount proposed by Bidders, as a price per unit of measurement for materials and/or services that will be added to or deducted from the Contract Sum by Change Order in the event the estimated quantities of Work required by the Contract Documents are increased or decreased, in accordance with the General Conditions and/or other provisions of the Bid and Contract Documents.
2. Unit prices shall include all necessary material, labor, fees, layout, supervision (field and home office), general expenses, insurance, bonds, overhead, profit and applicable taxes, for unit item of work in place.
3. Refer to other Division 1 Sections and individual Specification Sections for construction activities requiring the establishment of unit prices. Methods of approval, verification, measurement and payment for unit prices are specified in those sections.

B. Related Work specified elsewhere herein includes:

1. Section 01015 – "Special Conditions"
2. Section 02110 - "Site Clearing"
3. Section 02200 - "Earthwork"
4. Section 02900 - "Landscape Work"
5. Section 03310 - "Concrete"

C. Schedule

1. A "Unit Price Schedule" is included at the end of this Section. Specification Sections referenced in the Schedule contain requirements for materials and methods described under each unit price.
2. The Owner reserves the right to reject the Contractor's measurement of work-in-place that involves use of established unit prices, and to have this work measured by an independent surveyor acceptable to the Contractor at the Owner's expense.

PART 2 – PRODUCTS

2.1 NOT APPLICABLE

PART 3 – EXECUTION

3.1 ITEMIZED UNIT PRICE SCHEDULE:

A. Item No. 01 – Moisture Resistant Board

1. Furnish and install 5/8" moisture resistant board, taped and floated over existing wall framing; caulked and painted complete in place.
2. Unit of Cost – Per Square Foot (SF)

B. Item No. 02 – R-19 Batt Insulation

1. Furnish and install faced R-19 batt insulation in existing stud walls.
2. Unit of Cost – Per Square Foot (SF)

C. Item No. 03 – 1x6 Fire Retardant Treated Wood Trim

1. Furnish and install 1x6 fire retardant treated wood trim board around new rough openings.
2. Caulked and painted completed in place.
3. Unit of Cost – Per Square Foot (SF)

D. Item No. 04 – 2x6 Fire Retardant Treated Wood Framing

1. Furnish and install 2x6 fire retardant treated wood framing with required structural attachments complete in place.
2. Unit of Cost – Per Square Foot (SF)

END OF UNIT PRICES

SECTION 01061

REGULATORY REQUIREMENTS & TAX EXEMPTIONS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS:

- A. Drawings and general provisions of Contract, including General and Supplementary Conditions and other Division 1 Specification sections apply to work of this Section.
- B. References, Websites for additional information and requirements:
 - 1. Sales and Use Tax Certificates of Exemption shall be administered in accordance with Alabama Act 2013-205. Refer to the Alabama Department of Revenue's web site
Page 14 of 68 ACCS Manual of Procedures August 01, 2021
<https://revenue.alabama.gov/wp-content/uploads/2017/05/ST-EXC-01.pdf> for applicable forms

1.2 DESCRIPTION OF REQUIREMENTS:

- A. This project is being bid **EXCLUDING TAXES**, and requires the Contractor comply with the requirements of Act 2013-205, which was signed into law on May 9, 2013. The Contractor and the Owner will be required to apply for Certificates of Exemption with the Alabama Department of Revenue (ADOR) which will handle administration of the Certificates. The Contractor shall account for the tax savings for Base Bid and Alternates on "Attachment C To Proposal Form", and as otherwise may be required by the Alabama Department of Revenue during the course of the project.
- B. Base Bid and all Alternate Bids **shall exclude the cost of all required taxes**, including in part, sales and use tax, and/or as otherwise required by the Alabama Department of Revenue.
- C. Forms required to be completed and submitted shall be those included in the Bid and Contract Documents, those required by the Alabama Department of Revenue; and any others is required by the financing authority and/or Owner.
 - 1. The previously used "Agency Agreement" and/or similar provisions in the Construction Contract are not required.
- D. The purchase of tools, equipment and similar items, which do not become the Owner's property, are specifically excluded from the Owner's tax exemptions, and any additional exclusions as required by the Alabama Department of Revenue's Rules and Regulations for implementation of this new law.

1.3 GENERAL PROCEDURES:

- A. The provisions of this Section shall take precedence over applicable portions of the Contract and Bid Documents, including in part, "Instructions to Bidders," "General Conditions of the Contract," and "Supplementary Conditions;" Unaltered provisions of those documents shall remain in effect.
- B. The Contractor, subcontractors, and all material dealers are hereby made aware of the Intent of the Owner to reduce the cost of the project by the purchase of property, materials, etc., in the manner described herein, and neither they nor the Contractor shall withhold their consent to this arrangement.
- C. Administrative Costs: Any and all administrative costs incurred by the Contractor's administering the tax savings shall be considered to be included in the Base Bid Proposal and each Alternate for the Work. No additional amount shall be added to the Contract because of the service provided by Contractor in the purchase of property, materials, etc., in the name of the Contractor, Owner, or as otherwise described herein.
- D. Administration: The administration of the sale and use tax savings shall be in accordance with the terms indicated. The procedure will be administered as indicated herein and as otherwise required or directed by the Alabama Department of Revenue.
- E. Limitations and Liability:
 - 1. Responsibility: The Contractor, notwithstanding this special purchase arrangement, shall select, describe, order, obtain approvals, submit samples, coordinate, process, prepare shop drawings, pursue, receive, inspect, store, protect, insure, guarantee, warrantee, provide, and otherwise be responsible for all materials and systems, the same as if this tax savings procedure were not implemented.
 - 2. Any necessary or required Purchase Orders shall be used only for materials for the Work of this project.
 - 3. The Contractor shall be liable for any taxes due to failure to implement this procedure and due to any unauthorized use of Purchase Orders.

PART 2 - PRODUCTS

NOT APPLICABLE

PART 3 - EXECUTION

NOT APPLICABLE

END OF REGULATORY REQUIREMENTS & TAX EXEMPTIONS

SECTION 01 0950

REFERENCE STANDARDS AND DEFINITIONS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS:

- A. Drawings and general provisions of Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, apply to this Section.

1.2 DEFINITIONS:

- A. General: Basic Contract definitions are included in the Conditions of the Contract.
- B. Indicated: The term "indicated" refers to graphic representations, notes or schedules on the Drawings, or other Paragraphs or Schedules in the Specifications, and similar requirements in the Contract Documents. Where terms such as "shown," "noted," "scheduled," and "specified" are used, it is to help the reader locate the reference; no limitation on location is intended.
- C. Directed: Terms such as "directed," "requested," "authorized," "selected," "approved," "required," and "permitted" mean "directed by the Architect," "requested by the Architect," and similar phrases.
- D. Approve: The term "approved," where used in conjunction with the Architect's action on the Contractor's submittals, applications, and requests, is limited to the Architect's duties and responsibilities as stated in the Conditions of the Contract.
- E. Regulation: The term "Regulations" includes laws, ordinances, statutes, and lawful orders issued by authorities having jurisdiction, as well as rules, conventions, and agreements within the construction industry that control performance of the Work.
- F. Furnish: The term "furnish" is used to mean "supply and deliver to the Project site, ready for unloading, unpacking, assembly, installation, and similar operations."
- G. Install: The term "install" is used to describe operations at project site including the actual "unloading, temporary storage, unpacking, assembly, erection, placing, anchoring, applying, working to dimension, finishing, curing, protecting, cleaning, and similar operations."
- H. Provide: The term "provide" means "to furnish and install, complete and ready for the intended use."
- I. Installer:
 - 1. An "Installer" is the Contractor or an entity engaged by the Contractor, either as an employee, subcontractor, or contractor of lower tier for performance of a particular

construction activity, including installation, erection, application, and similar operations. Installers are required to be experienced in the operations they are engaged to perform.

2. The term “experienced,” when used with the term “Installer,” means having a minimum of five previous projects similar in size and scope to this Project, being familiar with the special requirements indicated, and having complied with requirements of the authority having jurisdiction.
3. Trades: Use of titles such as “carpentry” is not intended to imply that certain construction activities must be performed by accredited or unionized individuals of a corresponding generic name, such as “carpenter.” It also does not imply that requirements specified apply exclusively to tradespersons of the corresponding generic name.

J. Project Site is the space available to the Contractor for performance of construction activities, either exclusively or in conjunction with others performing other work as part of the Project. The extent of the Project Site is shown on the Drawings, and may or may not be identical with the description of the land on which the Project is to be built.

1. If areas available are not indicated, they will be as mutually agreed by Owner and Contractor at Preconstruction Conference and as modified during construction.

K. Testing Laboratories: A “testing laboratory” is an independent entity engaged to perform specific inspections or tests, either at the Project Site or elsewhere, and to report on and, if required, to interpret results of those inspections or tests.

1.3 SPECIFICATION FORMAT AND CONTENT EXPLANATION:

A. Specification Format: These Specifications are organized into Divisions and Sections based on the Construction Specifications Institute’s 16-Division format and MASTERFORMAT numbering system.

B. Specification Content: This Specification uses certain conventions in the use of language and the intended meaning of certain terms, words, and phrases when used in particular situations or circumstances. These conventions are explained as follows:

1. Abbreviated Language:
 - a. Language used in Specifications and other Contract Documents is the abbreviated type. Words and meanings shall be interpreted as appropriate. Words that are implied, but not stated shall be interpolated as the sense required. Singular words will be interpreted as plural and plural words interpreted as singular where applicable and the context of the Contract Documents so indicates.
2. Imperative and streamlined language is used generally in the Specifications. Requirements expressed in the imperative mood are to be performed by the Contractor. At certain locations in the text, for clarity, subjective language is used to

describe responsibilities that must be fulfilled indirectly by the Contractor, or by others when so noted.

1.4 INDUSTRY STANDARDS:

- A. Applicability of Standards: Except where 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 the standard in effect as of the date of the Contract Documents.
- C. Conflicting Requirements:
 - 1. Where compliance with two or more standards is specified, and the standards may establish different or conflicting requirements for minimum quantities or quality levels. Refer requirements that are different, but apparently equal, and uncertainties to the Architect for a decision before proceeding.
 - 2. 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. In complying with these requirements, indicated numeric values are minimum or maximum, as appropriate for the context of the requirements. Refer uncertainties to the Architect for a decision before proceeding.
- D. Copies of Standards:
 - 1. Each entity engaged in construction on the Project is required to be familiar with industry standards applicable to that entity's construction activity. Copies of applicable standards are not bound with the Contract Documents.
 - 2. Where copies of standards are needed for performance of a required construction activity, the Contractor shall obtain copies directly from the publication source.

1.5 DRAWING SYMBOLS:

- A. General: Except as otherwise indicated, graphic symbols used on drawings are those symbols recognized in the construction industry for purposes indicated. Where not otherwise noted, symbols are defined by "Architectural Graphic Standards", published by John Wiley & Sons, Inc., tenth edition.
- B. Mechanical/Electrical Drawings: Graphic symbols used on mechanical and electrical drawings are generally aligned with symbols recommended by ASHRAE. Where appropriate, these symbols are supplemented by more specific symbols as recommended by other recognized technical associations including ASME, ASPE, IEEE and similar organizations. Refer instances of uncertainty to the Architect/Engineer for clarification before proceeding.

1.6 SUBMITTALS:

- A. Permits, Licenses, and Certificates: For the Owner's records, submit copies of permits, licenses, certifications, inspection reports, releases, jurisdictional settlements, notices, receipts for fee payments, judgments, and similar documents, correspondence, and records established in conjunction with compliance with standards and regulations bearing upon performance of the Work.

PART 2 - PRODUCTS: Not Applicable.

PART 3 - EXECUTION Not Applicable.

END OF REFERENCE STANDARDS AND DEFINITIONS

SECTION 01 1010

SUMMARY OF THE WORK

PART 1 - GENERAL

1.1 RELATED DOCUMENTS AND GENERAL INFORMATION:

- A. Drawings and general provisions of Contract, including General and Supplementary Conditions and other Division-1 Specification sections, apply to work of this section.

1.2 PROJECT/WORK IDENTIFICATION:

- A. General: Project name is “**Welcome Center Envelope Building Repair**”; **Fairhope, Alabama**; as shown on the Contract Documents prepared by Goodwyn Mills Cawood, LLC,.
- B. Abbreviated Written Summary: Briefly and without force and effect upon the contract documents, the Work of the Contract can be summarized as follows:
 - 1. The Welcome Center Envelope Repairs project is a full exterior envelope restoration repair project for the existing building. The existing exterior insulation finish system and existing plywood sheathing are to be removed and replaced. New exterior rated fire retardant treated plywood sheathing system, new air and water barrier system, and new fiber cement horizontal lap siding system are to be installed over on the existing building framing. Next, the existing roofing system and roof plywood will be removed and replaced. Provide and install new fire retardant treated plywood sheathing, new self adhering flashing membrane and architectural asphalt shingles system. Lastly, a new separated metal balcony system with a new covered roof system and foundations shall be provided and installed with new guardrails and 16 new metal columns.
- C. Contract Documents: The contract documents (drawings and specifications) indicate the work of the Contract and related requirements and conditions that have an impact on the project. Related requirements and conditions that are indicated on the Contract Documents include, but are not necessarily limited to the following:
 - 1. Existing site conditions and restrictions on use of the site.
 - a. **The interior existing restrooms are to be open during the envelope repair project with a temporary protected construction tunnel installed for pedestrian safety.**
 - b. **All building closings are to be coordinated with the Owner Representative with a 72 hour notice.**
 - c. **The project is located in a downtown location that will require construction fencing to keep pedestrians out of the construction zones.**
 - 2. Protection of existing conditions.
 - 3. Construction of new buildings and site improvements as indicated on the drawings and project manual including but not limited to connection to existing utilities, new

- utilities and drainage, sitework, drives and parking areas, sidewalks, BMP's, new building, structural, architectural, mechanical, electrical and plumbing systems; Contractor is responsible for the complete coordination of all trades and work associated with the construction documents.
4. Site maintenance shall include daily clean-up of all work areas, coordination with Owner's requirements for removal and disposal of trash and construction debris.
 5. Coordination of the Work of the entire project, and with other contractors working on the site.
- C. Summary by References: Work of the Contract can be summarized by references to the Contract, General Conditions, Supplementary Conditions (if any), the Project Manual, Technical Specification Sections, Drawings, Addenda, and modifications to the Contract Documents issued after the initial printing of this Project Manual and the Drawings, and including but not necessarily limited to printed material referenced by any of these. It is recognized that the Work of the Contract is also unavoidably affected or influenced by governing regulations, natural phenomenon including weather conditions, and other forces outside the contract documents.

1.3 **DESCRIPTION OF WORK:**

- A. Preamble: The intent of this article is to clarify the work to be performed that will/may be awarded to complete the Work of this Contract, in accordance with and as further indicated in the Bid and Contract Documents.
- B. Scope of Work: Provide all sitework and utilities, new building construction, and all related work, and do so in accordance with the Bid and Contract Documents for the work indicated on the Drawings. Refer to the Drawings, "General Conditions of the Contract", "Special Conditions" and other portions of the Project Manual for additional information and requirements. The Work shall include, in part:
1. Inspection of all existing areas prior to bid date, with Contractor's acceptance of existing conditions confirmed by the submittal of a Proposal / Bid, and further by written confirmation prior to the start of the Work.
 2. The Work includes, in part, all selective demolition related activities where indicated and as otherwise required to accommodate and prepare the site and for new building construction
 3. Provide for all costs relative to in part, necessary and required safety precautions and guidelines, without exception, as indicated on the Drawings and in the Project Manual, and all related work; Note that safety and protection of persons and property remain the sole responsibility of the Contractor.
 4. Provide all permits, licenses, and fees, paid by the Contractor from the contract amount.
 5. Provide a full-time Project Manager and full-time Superintendent for the duration of the Contract; Refer to "General Conditions of the Contract" and "Special

- Conditions” for additional information and requirements, and minimum experience requirements.
6. Provide coordination and provide for all costs and expenses related to accessibility and any limitations of the project site, to include coordination and all costs for, transporting, storage, temporary storage, temporary lay-down, moving of materials and personnel in and out of the building, and all related work.
 7. Provide coordination and provide for all costs and expenses related to requirements for and limitations of the project site availability, project work hours, daily work hours, time frames / time of day or night.
 8. Contractor is responsible for all layout and controls relative to completion of the Work of the project. Immediate and written notification shall be given to the Architect of any discrepancies encountered, prior to proceeding with work in the affected area(s).
 9. The Owner will provide temporary electrical and water service for reasonable use by the Contractor; Refer to Division 1 Section “Temporary Facilities” for additional information and requirements.
 10. Completion dates for the Work are indicated on the Proposal Form.

1.4 CONTRACTOR USE OF PREMISES:

- A. General: During the construction period the Contractor shall have use of the premises for construction operations, including use of the site as shown on the Drawings.
 1. Limitations of use of the site:
 - a. Confine operations at the site to the areas permitted under the Contract. Portions of the site beyond areas on which work is indicated are not to be disturbed. Conform to applicable rules and regulations affecting the work while engaged in project construction. See site plan for egress and ingress to site, or if not indicated, same shall be as designated by the Construction Manager.
 - b. Keep existing public roads, driveways and entrances serving the premises clear and available at all times. Do not use these areas for parking or storage of materials. Remove dirt, mud, debris, etc., from site, sidewalks, streets, and public right-of-way as it occurs.
 - c. Do not unreasonably encumber the site with materials or equipment. Confine stockpiling of materials and location of storage sheds to the areas indicated. If additional storage is necessary, obtain and pay for such storage off site in a fully bonded and insured facility acceptable to the Construction Manager, with all items stored clearly identified as being assigned to this project.

- d. Lock automotive type vehicles, such as passenger cars and trucks and other mechanized or motorized construction equipment, when parked and unattended, so as to prevent unauthorized use. Do not leave such vehicles or equipment unattended with the motor running, or the ignition key in place.
- e. The Owner, and their representatives, the Architect and their Consultants, as well as authorities having jurisdiction will require site accessibility for inspections, observations, and perhaps other purposes, related to the planned new construction. The Contractor shall assist in such accessibility, to at least the point of providing and maintaining reasonably accessible dry paths to work in progress.
- f. Provide secure temporary barricades, fencing, etc., as indicated or otherwise required, to restrict pedestrian and vehicular traffic from construction operations, including in part, the public, students, children, and users of the immediately adjacent facilities.
- g. Minimum construction fencing required (if any) shall be at locations indicated on the Drawings, or if not indicated, as required by the Contractor and with gates as required by the Contractor and/or authorities having jurisdiction, and all related safety and warning signs, etc. Removal of any temporary fencing, refilling post holes, etc., shall also be the responsibility of the Contractor.
- h. Construction operations shall not effect in any manner, the on-going operations of the Owner, immediately adjacent facilities, adjacent property owners or businesses, or others. Refer to Division 1 Section "Special Conditions" for additional information and requirements.
- i. Construction equipment shall not come in contact with or swing over any existing facilities to remain, public areas, occupied buildings, right-of-ways, etc., which are to remain.
- j. The Contractor and their employees shall limit any discussion of the Work of this project to the Owner's representatives named in the front of this Project Manual, Consultants employed, inspecting authorities with jurisdiction, and the Architect. In no instance shall this project be discussed with others, except as may otherwise be indicated herein.
- k. Parking on-site, if any, shall be limited to the "staging areas" indicated on the Drawings, or if not indicated, as mutually agreed between the Construction Manager, Architect, and Contractor at the Pre-Construction Conference.
- l. Smoking or other use of tobacco products shall not be permitted within the Owner's facilities or on roofs.

- m. The use or presence of alcohol and/or other debilitating substances shall not be permitted on the project site.
- n. Firearms and/or other weapons shall not be permitted on the project site.

END OF SUMMARY OF THE WORK

SECTION 01 2100

ALLOWANCES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS:

- A. Drawings and general provisions of Contract, including General Conditions and Division-1 Specification sections, apply to work of this section.
 - 1. Coordinate allowance work with related work to ensure that it is completely integrated and interfaced with related work.
 - 2. **Include in Base Bid.**

1.2 DESCRIPTION OF REQUIREMENTS:

- A. Definitions and Explanations: Certain requirements of the work related to each allowance are shown and specified in contract documents. The allowance has been established in lieu of additional requirements for that work, and further requirements thereof (if any) will be issued by change order.
- B. Types of allowances scheduled herein for the work included the following:
 - 1. Quantity allowances.
 - 2. Lump sum allowances.
- C. Selection and Purchase:
 - 1. At earliest feasible date after award of Contract, advise Architect/Engineer of scheduled date when final selection and purchase of each product or system described by each allowance must be accomplished in order to avoid delays in performance of the work.
 - 2. As requested by the Architect/Engineer, obtain and submit proposals for the work of each allowance for use in making final selections; include recommendations for selection which are relevant to the proper performance of the work.
 - 3. Purchase products and systems as specified, and as selected (in writing) by the Architect/Engineer.
 - 4. Submit proposals and recommendations, for purchase of products or systems of allowances, in form specified for change orders.
- D. Change Order Data: Include in each change order proposal both the quantities of products being purchased and unit costs, along with total amount of purchases to be made. Where requested, furnish survey-of-requirements data to substantiate quantities. Indicate

applicable taxes, delivery charges, amounts of applicable trade discounts, and other relevant details as requested by the Architect.

1. Each change order amount for allowances shall be based on the unit price difference between the actual purchase amount and the allowance, multiplied by the final measure or count of work-in-place, with reasonable allowances, where applicable, for cutting losses, tolerances, mixing wastes, normal product imperfections and similar margins.
2. When requested, prepare explanations and documentation to substantiate the quantities, costs, and margins as claimed.

E. Change Order Mark-Up:

1. Except as otherwise indicated, comply with provisions of General Conditions. For each allowance, Contractor's claims for increased costs (for either purchase amount or Contractor's handling, labor, installation, overhead, and profit), because of a change in scope or nature of the allowance work as described in contract documents, must be submitted within 60 days of initial change order authorizing work to proceed on that allowance; otherwise, such claims will be rejected.
2. Where it is not economically feasible to return unused material to the manufacturer/supplier for credit, prepare unused material for the Owner's storage, and deliver to the Owner's storage space as directed. Otherwise, disposal of excess material is the Contractor's responsibility.

F. Time and Allowance Amounts:

1. Nothing in the Bid or Contract Documents shall be so constructed or interpreted as to provide a Contract time extension, due to use or non-use of any Allowance amount.
2. Nothing in the Bid or Contract Documents shall be so constructed or interpreted as to allow unused Allowances or any portion thereof, nor any overhead and profit therefor to be retained by or paid to the Contractor.
 - a. Amount of unused allowances to be returned shall include unused amount plus 10% overhead and profit.

PART 2 - PRODUCT

Not Applicable.

PART 3 - EXECUTION

3.1 SCHEDULE OF ALLOWANCES - INCLUDE IN BASE BID:

A. Allowance No. 1: Owner Contingency Allowance:

1. **Include the sum of \$50,000 for additional work as directed by the Architect and Owner.**
2. Installation and installation materials costs shall be included in Allowance, and not as part of the Base Bid.
3. Include overhead and profit in Base Bid, and not as part of Allowance.

B. Allowance No. 2 – Entrance Door:

1. Allow a Lump Sum of \$15,000.00 for the purchase and installation of six (6) new hurricane impact rated door systems , including purchase, all taxes, delivery to job site and all related costs
2. Installation and installation materials costs shall be included in Allowance, and not as part of the Base Bid.
3. Include overhead and profit in Base Bid, and not as part of Allowance.

END OF ALLOWANCES

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SECTION 01 2300

ALTERNATES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS:

- A. Drawings and general provisions of Contract, including General and Supplementary Conditions and Division 1 Specification sections, apply to work of this section.

1.2 DESCRIPTION OF REQUIREMENTS:

- A. Definition: An alternate is an amount proposed by Bidders and stated on the Bid Form that will be added to or deducted from Base Bid amount if the Owner decides to accept a corresponding change in either scope of work or in products, materials, equipment, systems or installation methods described in Contract Documents.
- B. Coordination: Coordinate related work and modify or adjust adjacent work as required to ensure that work affected by each accepted alternate is complete and fully integrated into the project.
- C. Notification: Immediately following award of Contract, prepare and distribute to each party involved, notification of the status of each alternate. Indicate whether alternates have been accepted, rejected or deferred for consideration at a later date. Include a complete description of negotiated modifications to alternates, if any.
- D. Schedule:
 - 1. A "Schedule of Alternates" is included at the end of this section. Specification sections referenced in the Schedule contain requirements for materials and methods necessary to achieve the work described under each alternate.
 - 2. Include as part of each alternate, miscellaneous devices, appurtenances and similar items incidental to or required for a complete installation whether or not mentioned as part of the alternate.

PART 2 - PRODUCTS

2.1 Not Applicable.

PART 3 - EXECUTION

3.1 SCHEDULE OF ALTERNATES:

A. Alternate No. 1 – Aluminum Clad Doors:

Provide and install aluminum clad with wood interior hurricane impact rated door systems for all 6 openings on the west elevation, Sierra Pacific or approved equal. Contractor shall field verify existing openings. For bidding purposes, price the following:

- A. One (1) new 6'-0" x 8'-0" French Double Doors, ADA Entrance door
- B. Five (5) new 4'-0" wide x 8'-0" tall Double French doors tall.

B. Alternate No. 2 – Thicker Fiber Cement Siding (Exterior Siding):

Provide and install the 5/8 inch thick fiber cement Horizontal Lap Siding System , Hardie Artisan Siding or approved equal, in lieu of the base bid typical 5/16 inch fiber cement horizontal lap siding. Provide and install thicker 2 inch (1-1/2 inch) fiber cement trim boards , Hardie Artisan Trim Board or approved equal, in lieu of the 5/4 inch thick Fiber Cement Trim Boards. Install per manufacturer written requirements and recommendations. **Soffit: HZ10 Hardie Artisan Siding V-Groove and Vented Hardi Soffit HZ10**

C. Alternate No.3 – New Exterior Composite Shutters:

Provide and install ten (10) new exterior PVC shutters system, painted. The new shutters will replace the existing shutters.

New Shutter Details:

- Dimension- Width: 24 inches
- Dimension -Height: 96 inches (95 inches minimum)
- Dimension - Depth: 1"-1.5 inches
- Top Profile: Straight
- Louver : 1"-1.75" inches louvers spacing
- Divider Rail : One Centered
- Tilt Bar: Faux Tilt Bar On All Louvers/Louvers Down
- Installation: Fixed Brackets
- Hinges: 4 hinges brackets fixed per shutter

D. Alternate No. 4 – New Exterior Copper Light Fixtures

Provide and install three (6) new exterior copper French Quarter Yoke Hanging Style 14 inch tall x 9 inch wide x 9 inch depth light fixtures with electric Single Candelabra flicker light bulbs, Architectural Heritage Bevolo French Quarter Yoke or approved equal. Provide all required wiring for a new fully functional light system back to the electrical panel. Route electrical light around the balcony framing.

Provide and install new four (2) exterior copper wall bracket mounted 14 inch tall x 10 inch wide x 7 inch depth electric candelabra light fixtures with flicker light bulbs, Architectural Heritage Bevolo Williamsburg or approved equal. These four (4) wall mounted light fixtures will replace reusing the existing light fixtures.

Decide Size that works better with columns 8.75" or 9" wide light:
Height: 12" or 14"
Width: 8" or 9"
Depth: 6" or 7"

END OF ALTERNATES

SECTION 01 3000

SUBMITTAL PROCEDURES

PART 1 - GENERAL

1.1 DESCRIPTION OF SCOPE AND INTENT

- A. The intent of this section is to define requirements and procedures for submittal and reviews of products and fabricated items. Construction Manager, Architect, and Owner, will not be held responsible for initial issuance and final approvals. Construction Manager, Architect, will review submittal for design intent only. Contractor shall be responsible for quantities and dimensions. Conflict between items will be the responsibility of the contractor.

1.2 SECTION INCLUDES

- A. Submittal procedures.
- B. Construction progress schedules.
- C. Proposed products list.
- D. Shop drawings.
- E. Product data.
- F. Samples.
- G. Manufacturers' instructions.
- H. Manufacturers' certificates.
- I. Submittal Review Schedule.

1.3 RELATED SECTIONS

- A. Contractor shall be responsible for coordination of work included in this specification with all other specification sections related to furnishing of all materials, labor, permit, fees, and services necessary for completion of work in this section.

1.4 SUBMITTAL PROCEDURES

- A. Transmit each submittal with Architect/Engineer accepted form. Fax submittals not accepted.

- B. Sequentially number the transmittal forms. Re-submittals to have original number with an alphabetic suffix.
- C. Identify Project, Contractor, Subcontractor or supplier; pertinent Drawing sheet and detail number(s), and specification Section number, as appropriate.
- D. Apply Contractor's stamp, signed or initialed certifying that review, verification of Products required, field dimensions, adjacent construction Work, and coordination of information, is in accordance with the requirements of the Work and Contract Documents.
- E. Schedule submittals to expedite the Project, and deliver to Architect/Engineer at business address. Coordinate submission of related items.
- F. Identify variations from Contract Documents and Product or system limitations which may be detrimental to successful performance of the completed Work.
- G. Provide space for Construction Manager and Architect review stamps.
- H. Revise and resubmit submittals as required, identify all changes made since previous submittal.
- I. Distribute copies of reviewed submittals to concerned parties. Instruct parties to promptly report any inability to comply with provisions.
- J. When multiple submittals are made to the Construction Manager, the contractor is to prioritize items for review based on critical nature of delivery. Refer to approval duration schedule at end of this section.
- K. All submittals will be reviewed for quality and design compliance of documents. All dimensions will be verified by contractor for field control.
- L. Item quantities required by documents to be verified by contractor.

1.5 CONSTRUCTION PROGRESS SCHEDULES

- A. Submit initial progress schedule in duplicate within 15 days after date established in Notice to Proceed for Construction Manager and Architect review.
- B. Revise and resubmit as required.
- C. Submit revised schedules with each Application for Payment, identifying changes since previous version.
- D. Submit a horizontal bar chart with separate line for each section of Work, identifying first work day of each week.

- E. Show complete sequence of construction by activity, identifying Work of separate stages and other logically grouped activities. Indicate the early and late start, early and late finish, float dates, and duration.
- F. Indicate estimated percentage of completion for each item of Work at each submission.
- G. Indicate submittal dates required for shop drawings, product data, samples, and product delivery dates, including those furnished by Owner and under Allowances if any.

1.6 PROPOSED PRODUCTS LIST

- A. Within 15 days after date of Notice to Proceed, submit complete list of major products proposed for use, with name of manufacturer, trade name, and model number of each product.
- B. For products specified only by reference standards, give manufacturer, trade name, model or catalog designation, and reference standards.

1.7 SHOP DRAWINGS

- A. Submit the number of opaque reproductions which Contractor requires, plus two copies which will be retained by Owner.
- B. After review, distribute in accordance with Article on Procedures above and for Record Documents described in Section 01700 - Contract Closeout.

1.8 PRODUCT DATA

- A. Submit the number of copies which the Contractor requires, plus two copies which will be retained by the Owner.
- B. Mark each copy to identify applicable products, models, options, and other data. Supplement manufacturers' standard data to provide information unique to this Project.
- C. After review, distribute in accordance with Article on Procedures above and provide copies for Record Documents described in Section 01770 - Closeout Procedures.

1.9 SAMPLES

- A. Submit samples to illustrate functional and aesthetic characteristics of the Product, with integral parts and attachment devices. Coordinate sample submittals for interfacing work.
- B. Submit samples of finishes from the full range of manufacturers' standard colors, textures, and patterns for Architect's selection.
- C. Include identification on each sample, with full Project information.

- D. Submit the number or samples specified in individual specification Sections; one of which will be retained by Owner.
- E. Reviewed samples which may be used in the Work are indicated in individual specification Sections.

1.10 MANUFACTURER'S INSTRUCTIONS

- A. When specified in individual specification Sections, submit manufacturers' printed instructions for delivery, storage, assembly, installation, start-up, adjusting, and finishing, in quantities specified for Product Data.
- B. Identify conflicts between manufacturers' instructions and Contract Documents.

1.11 MANUFACTURER'S CERTIFICATES

- A. When specified in individual specification Sections, submit manufacturers' certificate to Construction Manager and Architect for review, in quantities specified for Product Data.
- B. Indicate material or product conforms to or exceeds specified requirements. Submit supporting reference date, affidavits, and certifications as appropriate.
- C. Certificates may be recent or previous test results on material or Product, but must be acceptable to Construction Manager and Architect.

1.12 SUBMITTAL REVIEW DURATION SCHEDULE

- A. Review duration time:
 - 1. All submittals will be reviewed within 7 working days upon arrival to Architect and returned by the 7th day unless otherwise scheduled hereinafter.
 - 2. Issuance of multiple submittals to Architect will extend duration as determined by the Architect and without any right of damage claims by contractor. Contractor to prioritize submittal items.
 - 3. Review duration schedule for items exceeding 7 working days.
 - a. Structural 10 days
 - b. Millwork/Casework 10 days
 - c. Door and Hardware Schedules 14 days
 - d. Mechanical 14 days
 - e. Electrical 14 days
 - 4. Contractor shall work toward expediting submittal approvals by establishing submittal logs and tracking.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not used)

END OF SUBMITTAL PROCEDURES

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SECTION 01 3100

PROJECT MANAGEMENT AND COORDINATION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Section includes administrative provisions for coordinating construction operations on Project including, but not limited to, the following:
 - 1. General project coordination procedures.
 - 2. Administrative and supervisory personnel.
 - 3. Coordination drawings.
 - 4. Requests for Information (RFIs).
 - 5. Project meetings.
- B. Related Sections:
 - 1. Division 1 Section "Construction Progress Documentation" for preparing and submitting Contractor's construction schedule.
 - 2. Division 1 Section "Execution Requirements" for procedures for coordinating general installation and field-engineering services, including establishment of benchmarks and control points.
 - 3. Division 1 Section "Closeout Procedures" for coordinating closeout of the Contract.

1.3 DEFINITIONS

- A. RFI: Request from Owner, Architect, or Contractor seeking information from each other during construction.

1.4 COORDINATION

- A. Coordination: Coordinate construction operations included in different Sections of the Specifications to ensure efficient and orderly installation of each part of the Work. Coordinate construction operations, included in different Sections that depend on each other for proper installation, connection, and operation.
 - 1. Schedule construction operations in sequence required to obtain the best results where installation of one part of the Work depends on installation of other components, before or

- after its own installation.
 - 2. Coordinate installation of different components to ensure maximum performance and accessibility for required maintenance, service, and repair.
 - 3. Make adequate provisions to accommodate items scheduled for later installation.
- B. Prepare memoranda for distribution to each party involved, outlining special procedures required for coordination. Include such items as required notices, reports, and list of attendees at meetings.
- 1. Prepare similar memoranda for Owner and separate contractors if coordination of their Work is required.
- C. Administrative Procedures: Coordinate scheduling and timing of required administrative procedures with other construction activities to avoid conflicts and to ensure orderly progress of the Work. Such administrative activities include, but are not limited to, the following:
- 1. Preparation of Contractor's construction schedule.
 - 2. Preparation of the schedule of values.
 - 3. Installation and removal of temporary facilities and controls.
 - 4. Delivery and processing of submittals.
 - 5. Progress meetings.
 - 6. Preinstallation conferences.
 - 7. Project closeout activities.
 - 8. Startup and adjustment of systems.
 - 9. Project closeout activities.
- D. Conservation: Coordinate construction activities to ensure that operations are carried out with consideration given to conservation of energy, water, and materials. Coordinate use of temporary utilities to minimize waste.
- 1. Salvage materials and equipment involved in performance of, but not actually incorporated into, the Work. Refer to other Sections for disposition of salvaged materials that are designated as Owner's property.

1.5 COORDINATION DRAWINGS

- A. Coordination Drawings, General: Prepare coordination drawings in accordance with requirements in individual Sections, where installation is not completely shown on Shop Drawings, where limited space availability necessitates coordination, or if coordination is required to facilitate integration of products and materials fabricated or installed by more than one entity.
- 1. Content: Project-specific information, drawn accurately to a scale large enough to indicate and resolve conflicts. Do not base coordination drawings on standard printed data. Include the following information, as applicable:
 - a. Use applicable Drawings as a basis for preparation of coordination drawings. Prepare sections, elevations, and details as needed to describe relationship of various systems and components.
 - b. Indicate functional and spatial relationships of components of architectural, structural, civil, mechanical, and electrical systems.

- c. Indicate space requirements for routine maintenance and for anticipated replacement of components during the life of the installation.
- d. Show location and size of access doors required for access to concealed dampers, valves, and other controls.
- e. Indicate required installation sequences.
- f. Indicate dimensions shown on the Drawings. Specifically note dimensions that appear to be in conflict with submitted equipment and minimum clearance requirements. Provide alternate sketches to Architect indicating proposed resolution of such conflicts. Minor dimension changes and difficult installations will not be considered changes to the Contract.

B. Coordination Drawing Organization: Organize coordination drawings as follows:

1. *Floor Plans and Reflected Ceiling Plans*: Show architectural and structural elements, and mechanical, plumbing, fire protection, fire alarm, and electrical Work. Show locations of visible ceiling-mounted devices relative to acoustical ceiling grid. Supplement plan drawings with section drawings where required to adequately represent the Work.
2. Fire Protection System: Show the following:
 - a. Locations of standpipes, mains piping, branch lines, pipe drops, and sprinkler heads.
3. Review: Architect will review coordination drawings to confirm that the Work is being coordinated, but not for the details of the coordination, which are the Contractor's responsibility. If the Architect determines that the coordination drawings are not being prepared in sufficient scope or detail, or are otherwise deficient, the Architect will so inform the Contractor, who shall make changes as directed and resubmit.
4. Coordination Drawing Prints: Prepare coordination drawing prints in accordance with requirements of Division 1 Section "Submittal Procedures."

1.6 KEY PERSONNEL

- A. Key Personnel Names: Within 15 days of starting construction operations, submit a list of key personnel assignments, including superintendent and other personnel in attendance at Project site. Identify individuals and their duties and responsibilities; list addresses and telephone numbers, including home, office, and cellular telephone numbers and email addresses. Provide names, addresses, and telephone numbers of individuals assigned as standbys in the absence of individuals assigned to Project.
1. Post copies of list in project meeting room, in temporary field office, and by each temporary telephone. Keep list current at all times.

1.7 REQUESTS FOR INFORMATION (RFIs)

- A. General: Immediately on discovery of the need for additional information or interpretation of the Contract Documents, Contractor shall prepare and submit an RFI in the form specified.
1. Architect will return RFIs submitted to Architect by other entities controlled by Contractor with no response.
 2. Coordinate and submit RFIs in a prompt manner so as to avoid delays in Contractor's work or work of subcontractors.

- B. Content of the RFI: Include a detailed, legible description of item needing information or interpretation and the following:
1. Project name.
 2. Project number.
 3. Date.
 4. Name of Contractor.
 5. Name of Architect.
 6. RFI number, numbered sequentially.
 7. RFI subject.
 8. Specification Section number and title and related paragraphs, as appropriate.
 9. Drawing number and detail references, as appropriate.
 10. Field dimensions and conditions, as appropriate.
 11. *Contractor's suggested resolution.* If Contractor's solution(s) impacts the Contract Time or the Contract Sum, Contractor shall state impact in the RFI.
 12. Contractor's signature.
 13. Attachments: Include sketches, descriptions, measurements, photos, Product Data, Shop Drawings, coordination drawings, and other information necessary to fully describe items needing interpretation.
 - a. Include dimensions, thicknesses, structural grid references, and details of affected materials, assemblies, and attachments on attached sketches.
- C. RFI Forms: AIA Document G716.
- 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 2:00 p.m. Central time 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.
 - g. If the RFI is submitted without suggested resolution and the issue affects the contract schedule, the RFI will be returned for suggested resolution without comment.
 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 Division 1 Section "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 7 days of receipt of the RFI response.*
- E. 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 4 days if Contractor disagrees with response.

- F. RFI Log: Prepare, maintain, and submit a tabular log of RFIs organized by the RFI number. Submit log weekly. Include the following:
1. Project name.
 2. Name and address of Contractor.
 3. Name and address of Architect.
 4. RFI number including RFIs that were dropped and not submitted.
 5. RFI description.
 6. Date the RFI was submitted.
 7. Date Architect's response was received.
 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.

1.8 PROJECT MEETINGS

- A. General: Schedule and conduct meetings and conferences at Project site, unless otherwise indicated.
1. Attendees: Inform participants and others involved, and individuals whose presence is required, of date and time of each meeting. Notify Owner and Architect of scheduled meeting dates and times.
 2. Agenda: Prepare the meeting agenda. Distribute the agenda to all invited attendees.
 3. Minutes: Contractor responsible for conducting meeting will record significant discussions and agreements achieved. Distribute the meeting minutes to everyone concerned, including Owner and Architect, within three days of the meeting.
- B. Preconstruction Conference: 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.
1. Conduct the conference to review responsibilities and personnel assignments.
 2. Attendees: Authorized representatives of Owner, Architect, and their consultants; Contractor and its superintendent; major subcontractors; suppliers; and other concerned parties shall attend the conference. Participants at the conference shall be familiar with Project and authorized to conclude matters relating to the Work.
 3. Agenda: Discuss items of significance that could affect progress, including the following:
 - a. Tentative construction schedule.
 - b. Critical work sequencing and long-lead items.
 - c. Designation of key personnel and their duties.
 - d. Procedures for processing field decisions and Change Orders.
 - e. Procedures for RFIs.
 - f. Procedures for testing and inspecting.
 - g. Procedures for processing Applications for Payment.
 - h. Distribution of the Contract Documents.
 - i. Submittal procedures.
 - j. Preparation of record documents.

- k. Work restrictions.
 - l. Working hours.
 - m. Responsibility for temporary facilities and controls.
 - n. Construction waste management and recycling.
 - o. Equipment deliveries and priorities.
 - p. First aid.
 - q. Security.
 - r. Progress cleaning.
4. Minutes: Contractor responsible for conducting meeting will record and distribute meeting minutes.
- C. Preinstallation Conferences: Conduct a preinstallation conference at Project site before each construction activity that requires coordination with other construction.
- 1. Attendees: Installer and representatives of manufacturers and fabricators involved in or affected by the installation and its coordination or integration with other materials and installations that have preceded or will follow, shall attend the meeting. Advise Architect of scheduled meeting dates.
 - 2. Agenda: Review progress of other construction activities and preparations for the particular activity under consideration, including requirements for the following:
 - a. Contract Documents.
 - b. Options.
 - c. Related RFIs.
 - d. Related Change Orders.
 - e. Submittals.
 - f. Review of mockups.
 - g. Possible conflicts.
 - h. Compatibility problems.
 - i. Time schedules.
 - j. Weather limitations.
 - k. Manufacturer's written recommendations.
 - l. Warranty requirements.
 - m. Compatibility of materials.
 - n. Acceptability of substrates.
 - o. Space and access limitations.
 - p. Regulations of authorities having jurisdiction.
 - q. Testing and inspecting requirements.
 - r. Installation procedures.
 - s. Coordination with other work.
 - t. Required performance results.
 - u. Protection of adjacent work.
 - v. Protection of construction and personnel.
 - 3. Record significant conference discussions, agreements, and disagreements, including required corrective measures and actions.
 - 4. Reporting: Distribute minutes of the meeting to each party present and to other parties requiring information.
 - 5. Do not proceed with installation if the conference cannot be successfully concluded.

Initiate whatever actions are necessary to resolve impediments to performance of the Work and reconvene the conference at earliest feasible date.

- D. Project Closeout Conference: Schedule and conduct a Project closeout conference, at a time convenient to Owner and Architect, but no later than 60 days prior to the scheduled date of Substantial Completion.
1. Conduct the conference to review requirements and responsibilities related to Project closeout.
 2. Attendees: Authorized representatives of Owner, Architect, and their consultants; Contractor and its superintendent; major subcontractors; suppliers; and other concerned parties shall attend the meeting. Participants at the meeting shall be familiar with Project and authorized to conclude matters relating to the Work.
 3. Agenda: Discuss items of significance that could affect or delay Project closeout, including the following:
 - a. Preparation of record documents.
 - b. Procedures required prior to inspection for Substantial Completion and for final inspection for acceptance.
 - c. Submittal of written warranties.
 - d. Requirements for preparing operations and maintenance data.
 - e. Requirements for demonstration and training.
 - f. Preparation of Contractor's punch list.
 - g. Procedures for processing Applications for Payment at Substantial Completion and for final payment.
 - h. Submittal procedures.
 - i. Owner's partial occupancy requirements.
 - j. Installation of Owner's furniture, fixtures, and equipment.
 - k. Responsibility for removing temporary facilities and controls.
 4. Minutes: Contractor conducting meeting will record and distribute meeting minutes.
- E. Progress Meetings: Conduct progress meetings at biweekly intervals.
1. Coordinate dates of meetings with preparation of payment requests.
 2. 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.
 3. 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) Documentation of information for payment requests.
- 4. Minutes: Contractor responsible for conducting the meeting will record and distribute the meeting minutes to each party present and to parties requiring information.
 - a. Schedule Updating: Revise Contractor's construction schedule after each progress meeting where revisions to the schedule have been made or recognized. Issue revised schedule concurrently with the report of each meeting.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF PROJECT MANAGEMENT AND COORDINATION

SECTION 01 3200

CONSTRUCTION PROGRESS DOCUMENTATION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Section includes administrative and procedural requirements for documenting the progress of construction during performance of the Work, including the following:
 - 1. Start-up construction schedule.
 - 2. Contractor's construction schedule.
 - 3. Daily construction reports.
 - 4. Material location reports.
 - 5. Field condition reports.
 - 6. Special reports.
- B. Related Sections:
 - 1. Division 1 Section "Submittal Procedures" for submitting schedules and reports.
 - 2. Division 1 Section "Quality Requirements" for submitting a schedule of tests and inspections.

1.3 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. Cost Loading: The allocation of the schedule of values for the completion of an activity as scheduled. The sum of costs for all activities must equal the total Contract Sum, unless otherwise approved by Architect.
- 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.

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- D. Event: The starting or ending point of an activity.
- E. 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.
 - 2. Free float is the amount of time an activity can be delayed without adversely affecting the early start of the successor activity.
 - 3. Total float is the measure of leeway in starting or completing an activity without adversely affecting the planned Project completion date.
- F. Resource Loading: The allocation of manpower and equipment necessary for the completion of an activity as scheduled.

1.4 INFORMATIONAL SUBMITTALS

- A. Format for Submittals: Submit required submittals in the following format:
 - 1. PDF electronic file.
 - 2. Three paper copies.
- B. Start-up construction schedule.
 - 1. Approval of cost-loaded start-up construction schedule will not constitute approval of schedule of values for cost-loaded activities.
- C. Contractor's Construction Schedule: Initial schedule, of size required to display entire schedule for entire construction period.
- 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, cost and resource loading, 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.
- E. Daily Construction Reports: Submit at monthly intervals.
- F. Material Location Reports: Submit at monthly intervals.
- G. Field Condition Reports: Submit at time of discovery of differing conditions.
- H. Special Reports: Submit at time of unusual event.

1.5 QUALITY ASSURANCE

- A. Prescheduling Conference: Conduct conference at Project site to comply with requirements in Division 1 Section "Project Management and Coordination." Review methods and procedures related to the preliminary construction schedule and Contractor's construction schedule, including, but not limited to, the following:
 - 1. Review software limitations and content and format for reports.
 - 2. Verify availability of qualified personnel needed to develop and update schedule.
 - 3. Discuss constraints, including phasing work stages area separations interim milestones and partial Owner occupancy.
 - 4. Review delivery dates for Owner-furnished products.
 - 5. Review time required for review of submittals and resubmittals.
 - 6. Review requirements for tests and inspections by independent testing and inspecting agencies.
 - 7. Review time required for completion and startup procedures.
 - 8. Review and finalize list of construction activities to be included in schedule.
 - 9. Review submittal requirements and procedures.
 - 10. Review procedures for updating schedule.

1.6 COORDINATION

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

PART 2 - PRODUCTS

2.1 CONTRACTOR'S CONSTRUCTION SCHEDULE, GENERAL

- A. Time Frame: Extend schedule from date established for the Notice to Proceed to date of Substantial Completion.
 - 1. Contract completion date shall not be changed by submission of a schedule that shows an early completion date, unless specifically authorized by Change Order.
- B. Activities: Treat each story or separate area as a separate numbered activity for each principal element of the Work. Comply with the following:
 - 1. Activity Duration: Define activities so no activity is longer than 20 days, unless specifically allowed by Architect.

2. Procurement Activities: Include procurement process activities for long lead items and major items, requiring a cycle of more than 60 days, as separate activities in schedule. Procurement cycle activities include, but are not limited to, submittals, approvals, purchasing, fabrication, and delivery.
 3. Submittal Review Time: Include review and resubmittal times indicated in Division 1 Section "Submittal Procedures" in schedule. Coordinate submittal review times in Contractor's construction schedule with submittal schedule.
 4. Startup and Testing Time: Include not less than 15 days for startup and testing.
 5. Substantial Completion: Indicate completion in advance of date established for Substantial Completion, and allow time for Architect's administrative procedures necessary for certification of Substantial Completion.
 6. Punch List and Final Completion: Include not more than 30 days for punch list 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. Products Ordered in Advance: Include a separate activity for each product. Include delivery date indicated in Division 1 Section "Summary." Delivery dates indicated stipulate the earliest possible delivery date.
 2. Work Restrictions: Show the effect of the following items on the schedule:
 - a. Partial occupancy before Substantial Completion.
 - b. Use of premises restrictions.
 - c. Seasonal variations.
 - d. Environmental control.
 3. Work Stages: Indicate important stages of construction for each major portion of the Work, including, but not limited to, the following:
 - a. Subcontract awards.
 - b. Submittals.
 - c. Purchases.
 - d. Mockups.
 - e. Fabrication.
 - f. Deliveries.
 - g. Installation.
 - h. Tests and inspections.
 - i. Adjusting.
 - j. Startup and placement into final use and operation.
- 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. Cost Correlation: At the head of schedule, provide a cost correlation line, indicating planned and actual costs. On the line, show dollar volume of the Work performed as of dates used for preparation of payment requests.
1. Refer to Division 1 Section "Payment Procedures" for cost reporting and payment procedures.

- F. 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 RFIs.
 - 3. Rejected or unreturned submittals.
 - 4. Notations on returned submittals.
- G. 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. Indicate changes to working hours, working days, crew sizes, and equipment required to achieve compliance and date, by which recovery will be accomplished.
- H. Computer Scheduling Software: Prepare schedules using current version of a program that has been developed specifically to manage construction schedules.

2.2 START-UP CONSTRUCTION SCHEDULE

- A. Bar-Chart Schedule: Submit start-up horizontal bar-chart-type construction schedule within seven days of date established for the Notice of Award.
- B. Preparation: Indicate each significant construction activity separately. Identify first workday of each week with a continuous vertical line. Outline significant construction activities for first 60 days of construction. Include skeleton diagram for the remainder of the Work and a cash requirement prediction based on indicated activities.

2.3 CONTRACTOR'S CONSTRUCTION SCHEDULE (CPM SCHEDULE)

- A. General: Prepare network diagrams using AON (activity-on-node) format.
- B. CPM Schedule: Prepare Contractor's construction schedule using a cost- and resource-loaded, time-scaled CPM network analysis diagram for the Work.
 - 1. Conduct educational workshops to train and inform key Project personnel, including subcontractors' personnel, in proper methods of providing data and using CPM schedule information.
 - 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 correlate with Contract Time.
- C. CPM Schedule Preparation: Prepare a list of all activities required to complete the Work. Using the start-up 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. Installation.
 - g. Work by Owner that may affect or be affected by Contractor's activities.
 - h. Testing.
 - i. Punch list and final completion.
 - j. 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.
 5. Cost- and Resource-Loading of CPM Schedule: Assign cost to construction activities on the CPM schedule. Do not assign costs to submittal activities. Obtain Architect's approval prior to assigning costs to fabrication and delivery activities. Assign costs under principal subcontracts for testing and commissioning activities, operation and maintenance manuals, punch list activities, Project record documents, and demonstration and training (if applicable), in the amount of 5 percent of the Contract Sum.
 - a. Each activity cost shall reflect an appropriate value subject to approval by Architect.
 - b. Total cost assigned to activities shall equal the total Contract Sum.
- D. 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.
- E. 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. Principal 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).

- F. 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.
- G. Value Summaries: Prepare two cumulative value lists, sorted by finish dates.
 - 1. In first list, tabulate activity number, early finish date, dollar value, and cumulative dollar value.
 - 2. In second list, tabulate activity number, late finish date, dollar value, and cumulative dollar value.
 - 3. In subsequent issues of both lists, substitute actual finish dates for activities completed as of list date.
 - 4. Prepare list for ease of comparison with payment requests; coordinate timing with progress meetings.
 - a. In both value summary lists, tabulate "actual percent complete" and "cumulative value completed" with total at bottom.
 - b. Submit value summary printouts one week before each regularly scheduled progress meeting.

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. Approximate count of personnel at Project site.
 - 3. Equipment at Project site.
 - 4. Material deliveries.
 - 5. High and low temperatures and general weather conditions, including presence of rain or snow.
 - 6. Accidents.
 - 7. Meetings and significant decisions.
 - 8. Unusual events (refer to special reports).
 - 9. Orders and requests of authorities having jurisdiction.
 - 10. Change Orders received and implemented.
 - 11. Construction Change Directives received and implemented.
 - 12. Equipment or system tests and startups.
 - 13. Partial completions and occupancies.
 - 14. Substantial Completions authorized.
- B. Material Location Reports: At monthly intervals, prepare and submit a comprehensive list of materials delivered to and stored at Project site and offsite. List shall be cumulative, showing

materials previously reported plus items recently delivered. Include with list a statement of progress on and delivery dates for materials or items of equipment fabricated or stored away from Project site.

- C. Field Condition Reports: Immediately on discovery of a difference between field 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.

2.5 SPECIAL REPORTS

- A. General: Submit special reports directly to Owner within one day(s) of an occurrence. Distribute copies of report to parties affected by the occurrence.
- B. Reporting Unusual Events: When an event of an unusual and significant nature occurs at Project site, whether or not related directly to the Work, prepare and submit a special report. List chain of events, persons participating, response by Contractor's personnel, evaluation of results or effects, and similar pertinent information. Advise Owner in advance when these events are known or predictable.

PART 3 - EXECUTION

3.1 CONTRACTOR'S CONSTRUCTION SCHEDULE

- A. Contractor's Construction Schedule Updating: At monthly intervals, update schedule to reflect actual construction progress and activities. Issue schedule one week before each regularly scheduled progress meeting.
 - 1. Revise schedule immediately after each meeting or other activity where revisions have been recognized or made. Issue updated schedule concurrently with the report of each such meeting.
 - 2. Include a report with updated schedule that indicates every change, including, but not limited to, changes in logic, durations, actual starts and finishes, and activity durations.
 - 3. As the Work progresses, indicate final completion percentage for each activity.
- B. Distribution: Distribute copies of approved schedule to Architect, Owner, separate contractors, testing and inspecting agencies, and other parties identified by Contractor with a need-to-know schedule responsibility.
 - 1. Post copies in Project meeting rooms and temporary field offices.
 - 2. When revisions are made, distribute updated schedules to the same parties and post in the same locations. Delete parties from distribution when they have completed their assigned portion of the Work and are no longer involved in performance of construction activities.

END OF CONSTRUCTION PROGRESS DOCUMENTATION

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SECTION 01 32 33

PHOTOGRAPHIC DOCUMENTATION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. Section includes administrative and procedural requirements for the following:
 - 1. Preconstruction photographs.
 - 2. Preconstruction video recordings.
- B. Related Requirements:
 - 1. Section 01 33 00 "Submittal Procedures" for submitting photographic documentation.
 - 2. Section 01 77 00 "Closeout Procedures" for submitting photographic documentation as project record documents at Project closeout.
 - 3. Section 01 79 00 "Demonstration and Training" for submitting video recordings of demonstration of equipment and training of Owner's personnel.
 - 4. Section 02 41 16 "Structure Demolition" for photographic documentation before building demolition operations commence.
 - 5. Section 02 41 19 "Selective Structure Demolition" for photographic documentation before selective demolition operations commence.
 - 6. Section 31 10 00 "Site Clearing" for photographic documentation before site clearing operations commence.

1.3 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 or video recording. Indicate elevation or story of construction. Include same information as corresponding photographic documentation.
- B. Digital Photographs: Submit image files within three days of taking photographs.
 - 1. Digital Camera: Minimum sensor resolution of 8 megapixels.

2. Format: Minimum 3200 by 2400 pixels, in unaltered original files, with same aspect ratio as the sensor, uncropped, date and time stamped, in folder named by date of photograph, accompanied by key plan file.
3. Identification: Provide the following information with each image description in file metadata tag:
 - a. Name of Project.
 - b. Name of Architect.
 - c. Name of Contractor.
 - d. Date photograph was taken.
 - e. Description of vantage point, indicating location, direction (by compass point), and elevation or story of construction.
 - f. Unique sequential identifier keyed to accompanying key plan.

C. Recording.

1. Submit video recordings in digital video disc format.
2. Identification: With each submittal, provide the following information:
 - a. Name of Project.
 - b. Name of Architect.
 - c. Name of Contractor.
 - d. Date video recording was recorded.
 - e. Description of vantage point, indicating location, direction (by compass point), and elevation or story of construction.
 - f. Weather conditions at time of recording.
3. Transcript: Prepared on 8-1/2-by-11-inch paper, punched and bound in heavy-duty, three-ring, vinyl-covered binders. Mark appropriate identification on front and spine of each binder. Include a cover sheet with same label information as corresponding video recording. Include name of Project and date of video recording on each page.

1.4 USAGE RIGHTS

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

PART 2 - PRODUCTS

2.1 PHOTOGRAPHIC MEDIA

- A. Digital Images: Provide images in JPG format, produced by a digital camera with minimum sensor size of 8 megapixels, and at an image resolution of not less than 3200 by 2400 pixels.

PART 3 - EXECUTION

3.1 CONSTRUCTION PHOTOGRAPHS

- A. 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.
- B. 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.
- C. Preconstruction Photographs: Before commencement of demolition, take photographs of Project site and surrounding properties, including existing items to remain during construction, from different vantage points.
 - 1. Flag construction limits before taking construction photographs.
 - 2. Take 20 photographs to show existing conditions adjacent to property before starting the Work.
 - 3. Take 20 photographs of existing buildings either on or adjoining property to accurately record physical conditions at start of construction.
 - 4. Take additional photographs as required to record settlement or cracking of adjacent structures, pavements, and improvements.

3.2 CONSTRUCTION VIDEO RECORDINGS

- A. Recording: Mount camera on tripod before starting recording unless otherwise necessary to show area of construction. Display continuous running time and date. At start of each video recording, record weather conditions from local newspaper or television and the actual temperature reading at Project site.
- B. Narration: Describe scenes on video recording by **audio narration by microphone while** video recording is recorded. Include description of items being viewed, recent events, and planned activities. At each change in location, describe vantage point, location, direction (by compass point), and elevation or story of construction.
 - 1. Confirm date and time at beginning and end of recording.
 - 2. Begin each video recording with name of Project, Contractor's name, videographer's name, and Project location.

- C. Transcript: Provide a typewritten transcript of the narration. Display images and running time captured from video recording opposite the corresponding narration segment.
- D. Preconstruction Video Recording: Before starting demolition, record video recording of Project site and surrounding properties from different vantage points.
 - 1. Flag construction limits before recording construction video recordings.
 - 2. Show existing conditions adjacent to Project site before starting the Work.
 - 3. Show existing buildings either on or adjoining Project site to accurately record physical conditions at the start of demolition.
 - 4. Show protection efforts by Contractor.

END OF PHOTOGRAPHIC DOCUMENTATION

SECTION 01 4000

QUALITY REQUIREMENTS

PART 1 – GENERAL

1.1 RELATED DOCUMENTS:

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY:

- A. This 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. The Owner shall engage a qualified testing agency to perform testing and inspecting services for work performed in Divisions 2 through 32:
 - 2. Specific quality-assurance and control requirements for individual construction activities are specified in the Sections that specify those activities. Requirements in those Sections may also cover production of standard products.
 - 3. 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.
 - 4. Requirements for Contractor to provide quality-assurance and -control services required by Construction Manager, Architect, Owner or authorities having jurisdiction are not limited by provisions of this Section.
- C. Related Sections include the following:
 - 1. Division 1 Section "Allowances" for testing and inspecting allowances if any.
 - 2. Division 1 Section "Required Special Inspections" for developing a schedule of required tests and inspections.
 - 3. Division 1 Section "Cutting and Patching" for repair and restoration of construction disturbed by testing and inspecting activities.
 - 4. Divisions 2 through 16 Sections for specific test and inspection requirements.

1.3 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 the Architect.
- C. Mockups: Full-size, physical assemblies that are constructed on-site. Mockups are used to verify selections made under sample submittals, to demonstrate aesthetic effects and, where indicated, qualities of materials and execution, and to review construction, coordination, testing or operation; they are not Samples.
- D. Laboratory Mockups: Full-size, physical assemblies that are constructed at testing facility to verify performance characteristics.
- E. Preconstruction Testing: Tests and inspections that are performed specifically for the Project before products and materials are incorporated into the Work to verify performance or compliance with specified criteria.
- F. 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 industry standards.
- G. Source Quality-Control Testing: Tests and inspections that are performed at the source, i.e., plant, mill, factory, or shop.
- H. Field Quality-Control Testing: Tests and inspections that are performed on-site for installation of the Work and for completed Work.
- I. Testing Agency: An entity engaged to perform specific tests, inspections, or both. Testing laboratory shall mean the same as testing agency.
- J. Installer/Applicator/Erector: Contractor or another entity engaged by Contractor as an employee, Subcontractor, or Sub-subcontractor, to perform a particular construction operation, including installation, erection, application, and similar operations.
 - 1. Using a term such as "carpentry" does not imply that certain construction activities must be performed by accredited or unionized individuals of a corresponding generic name, such as "carpenter." It also does not imply that requirements specified apply exclusively to tradespeople of the corresponding generic name.

- K. Experienced: When used with an entity, “experienced” means having successfully completed a minimum of five previous projects similar in size and scope to this Project; being familiar with special requirements indicated; and having complied with requirements of authorities having jurisdiction.

1.4 CONFLICTING REQUIREMENTS:

- A. General: 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 uncertainties and 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.

1.5 SUBMITTALS:

- A. Qualification Data: 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.
- B. Schedule of Tests and Inspections: Prepare in tabular form and include the following:
1. Specification Section number and title.
 2. Description of test and inspection.
 3. Identification of applicable standards.
 4. Identification of test and inspection methods.
 5. Number of tests and inspections required.
 6. Time schedule or time span for tests and inspections.
 7. Entity responsible for performing tests and inspections.
 8. Requirements for obtaining samples.
 9. Unique characteristics of each quality-control service.
- C. Reports: Prepare and submit certified written reports that 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.

- D. 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. 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.
- C. 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.
- D. 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.
- 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 to those indicated for this Project in material, design, and extent.
- F. Specialists: Certain sections of the Specifications 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. Requirement for specialists shall not supersede building codes and regulations governing the Work.

- 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 548; 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. Factory-Authorized Service Representative Qualifications: An authorized representative of manufacturer who is trained and approved by manufacturer to 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. Provide sizes and configurations of test assemblies, mockups, and laboratory mockups to adequately demonstrate capability of products to comply with performance requirements.
 - d. Build site-assembled test assemblies and mockups using installers who will perform same tasks for Project.
 - e. Build laboratory mockups at testing facility using personnel, products, and methods of construction indicated for the completed Work.
 - f. When testing is complete, remove test specimens, assemblies, mockups and laboratory mockups; do not reuse products on this Project.
 - 2. Testing Agency Responsibilities: Submit a certified written report of each test, inspection, and similar quality-assurance service to Architect with copy to Contractor. Interpret tests and inspections and state in each report whether tested and inspected work complies with or deviates from the Contract Documents.

- J. Mockups: Before installing portions of the Work requiring mockups, build mockups for each form of construction and finish required to comply with the following requirements, using materials indicated for the completed Work:
1. Build mockups in location and of size indicated or, if not indicated, as directed by Architect.
 2. Notify Architect seven days in advance of dates and times when mockups will be constructed.
 3. Demonstrate the proposed range of aesthetic effects and workmanship.
 4. Obtain Architect's approval of mockups before starting work, fabrication, or construction.
 - a. Allow seven days for initial review and each re-review of each mockup.
 5. Maintain mockups during construction in undisturbed conditions as a standard for judging the completed Work.
 6. Demolish and remove mockups when directed, unless otherwise indicated.
- K. Laboratory Mockups: Comply with requirements of preconstruction testing and those specified in individual Sections in Divisions 2 through 16.

1.7 QUALITY CONTROL:

- A. The Contractor shall immediately contact the Construction Manager, Architect, Owner, and Structural Engineer when irregularities or deficiencies are noted during any phase of construction at the project site.
- B. Owner Responsibilities: Where quality-control services are indicated as Owner's responsibility, Owner has engaged a qualified testing agency to perform these services.
1. Owner will furnish Contractor with names, addresses, and telephone numbers of testing agency engaged and a description of types of testing and inspecting they are engaged to perform.
 2. Payment for these services will be made by the Owner.
 3. Cost 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. Tests and inspections not explicitly assigned to Owner are Contractor's responsibility. Unless otherwise indicated, provide quality-control services specified and those

required by authorities having jurisdiction. Perform quality-control services required of Contractor by authorities having jurisdiction, whether specified or not.

1. Where services are indicated as Contractor's responsibility, engage a qualified testing agency to perform these quality-control services.
 - a. Contractor shall not employ same entity engaged by Owner, unless agreed to in writing by Owner.
 2. Notify testing agencies at least 24 hours in advance of time when Work that requires testing or inspecting will be performed.
 3. Where quality-control services are indicated as Contractor's responsibility, submit a certified written report, in duplicate, of each quality-control service.
 4. Testing and inspecting requested by Contractor and not required by the Contract Documents are Contractor's responsibility.
 5. Submit additional copies of each written report directly to authorities having jurisdiction, when they so direct.
- C. Manufacturer's Field Services: Where indicated, engage a factory-authorized service representative to inspect field-assembled components and equipment installation, including service connections. Report results in writing as specified in Division 1 Section "Submittal Procedures."
- D. Retesting/Reinspecting: Regardless of whether original tests or inspections were Contractor's responsibility, provide quality-control services, including retesting and reinspecting, for construction that replaced Work that failed to comply with the Contract Documents.
- E. Testing Agency Responsibilities: Cooperate with Construction Manager Architect and Contractor in performance of duties. Provide qualified personnel to perform required tests and inspections.
1. Notify Construction Manager 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 location 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 Documents requirements or approve or accept any portion of the Work.
 6. Do not perform any duties of Contractor.
- F. Associated Services: Cooperate with agencies performing required tests, inspections, and similar quality-control services, and provide reasonable auxiliary services as requested. Notify agency sufficiently in advance of operations to permit assignment of personnel. Provide the following:
1. Access to the Work.
 2. Incidental labor and facilities necessary to facilitate tests and inspections.
 3. Adequate quantities of representative samples of materials that require testing and inspecting. Assist agency in obtaining samples.
 4. Facilities for storage and field curing of test samples.
 5. Delivery of samples to testing agencies.
 6. Preliminary design mix proposed for use for material mixes that require control by testing agency.
 7. Security and protection for samples and for testing and inspecting equipment at Project site.
- G. Coordination: Coordinate sequence of activities to accommodate required quality-assurance and -control services with a minimum of delay and to avoid necessity of removing and replacing construction to accommodate testing and inspecting.
1. Schedule times for tests, inspections, obtaining samples, and similar activities.
- H. Schedule of Tests and Inspections: Prepare a schedule of tests, inspections, and similar quality-control services required by the Contract Documents. Submit schedule within thirty (30) days of date established for commencement of the Work.
1. Distribution: Distribute schedule to Owner, Architect, testing agencies, and each party involved in performance of portions of the Work where tests and inspections are required.

1.8 SPECIAL TESTS AND INSPECTIONS:

- A. Special Tests and Inspections: Owner has engaged a qualified special inspector to conduct special tests and inspections required by authorities having jurisdiction as the responsibility of Owner, and as follows:

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

PART 2 – PRODUCTS

Not used.

PART 3 – EXECUTION

3.1 TEST AND INSPECTION LOG:

- A. 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 modifications 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. Restore patched areas and extend restoration into adjoining areas with durable seams that are as invisible as possible.
 - 2. Comply with the Contract Documents requirements for Division 1 Section "Cutting and Patching."
- 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 QUALITY REQUIREMENTS

SECTION 01 4100
STRUCTURAL TESTS AND SPECIAL INSPECTIONS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This Section includes administrative and procedural requirements required for compliance with the International Building Code, Chapter 17, Structural Tests and Special Inspections.
- B. Structural testing and special inspection services are required to verify compliance with requirements specified or indicated. These services do not relieve contractor of responsibility for compliance with other construction document requirements.
 - 1. Specific quality-assurance and -control requirements for individual construction activities are specified in the Sections that specify those activities. Requirements in those Sections may also cover production of standard products.
 - 2. Specified tests, inspections, and related actions do not limit Contractor's other quality-assurance and -control procedures that facilitate compliance with the construction document requirements.
 - 3. 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.
- C. The owner will engage one or more qualified special inspectors and / or testing agencies to conduct structural tests and special inspections specified in this section and related sections and as maybe specified in other divisions of these specifications.
- D. Related Sections include but are not limited to the following:
 - 1. Section 02 2000 - "Earthwork"
 - 2. Section 03 3000 - "Cast-In-Place Concrete"
 - 3. Section 03 3010 - "Cast-In-Place Concrete for Exposed Concrete Floors"
 - 4. Section 03 4100 - "Pre-Cast Structural Concrete"
 - 5. Section 05 1200 - "Structural Steel"
 - 6. Section 05 2100 - "Steel Joists"
 - 7. Section 05 3100 - "Steel Deck"
- E. Approved Agency: An established and recognized agency regularly engaged in conducting tests or furnishing inspection services, when such agency has been approved by the building official.
- F. Construction Documents: Written, graphic and pictorial documents prepared or assembled for describing the design, location and physical characteristics of the elements of a project necessary for obtaining a building permit. Construction Documents include all supplemental instructions, sketches, addenda, and revisions to the drawings and specifications issued by the registered design professional beyond those issued for a building permit.

- G. Shop Drawings / Submittal Data: Written, graphic and pictorial documents prepared and / or assembled by the contractor based on the Construction Documents.
- H. Structural Observation: Visual observation of the structural system by a representative of the registered design professional's office for general conformance to the approved construction documents. Structural observations are not considered part of the structural tests and special inspections and do not replace inspections and testing by the testing agency or special inspector.
- I. Special Inspector: A qualified person who demonstrating competence, to the satisfaction of the code enforcement official and registered design professional in responsible charge, for inspection of the construction or operation requiring special inspection. The special inspector shall be a licensed professional engineer or engineering intern or a qualified representative from the testing agency.
- J. Special Inspection, Continuous: The full-time observation of work requiring special inspection by an approved special inspector who is present in the area where the work is being performed.
- K. Special Inspection, Periodic: The part-time or intermittent observation of work requiring special inspection by an approved special inspector who is present in the area where the work has been or is being performed and at the completion of the work.
- L. Testing Agency: A qualified materials testing laboratory under the responsible charge of a licensed professional engineer, approved by the code enforcement official and the registered design professional in responsible charge, to measure, examine, test, calibrate, or otherwise determine the characteristics or performance of construction materials and verify confirmation with construction documents.

1.3 QUALITY ASSURANCE

- A. Testing Agency Qualifications:
 - 1. Minimum qualifications of inspection and testing agencies and their personnel shall comply with ASTM E329-03 Standard Specification for Agencies in the Testing and / or Inspection of Materials Used in Construction.
 - a. Inspectors and individuals performing tests shall be certified for the work being performed as outlined in the appendix of the ASTM E329. Certification by organizations other than those listed must be submitted to the building official for consideration before proceeding with work.
 - 2. In addition to these requirements, local jurisdiction may have additional requirements. It is the responsibility of the testing and inspection agencies to meet local requirements and comply with local procedures.
- B. Qualifications of Special Inspector: The Special Inspector shall be a qualified person who shall demonstrate competence, to the satisfaction of the Building Official, for inspection of the particular type of construction or operation being inspected. The Special Inspector shall meet the legal qualifications of the building code having jurisdiction.
 - 1. Duties and Responsibilities of the Special Inspector:

- a. The Special Inspector shall observe the work assigned to ascertain, to the best of his/her knowledge that it is in conformance with the approved design drawings and specifications.
- b. The Special Inspector shall furnish inspection reports to the Building Official, the Architect/Engineer, and the Owner. All discrepancies shall be brought to the immediate attention of the Architect/Engineer, Contractor, and Owner. A report that the corrected work has been inspected shall be sent to the Building Official, the Architect/Engineer, and the Owner.
- c. The Special Inspector shall create and maintain a log of all discrepancies throughout the duration of the project. This log shall include, but is not limited to, discrepancy date, description, drawing and/or detail reference, description of as-built condition, description of any remedial work performed, and status of discrepancy. This log shall be submitted to the Architect/Engineer on a periodic basis for the review and comment. Upon completion of the project, this log shall be submitted in its entirety as an attachment to the final signed report described below.
- d. The Special Inspector shall submit a final signed report stating whether the work requiring special inspection was, to the best of the inspector's knowledge, in conformance to the approved plans and specifications and the applicable workmanship provisions of the building code.

1.4 CONFLICTING REQUIREMENTS, REPORTS, AND TEST RESULTS

- A. General: 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 uncertainties and requirements that are different, but apparently equal, to the registered design professional in responsible charge 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 the registered design profession in responsible charge for a decision before proceeding.
- C. The special inspector's reports and testing agencies results shall have precedence over reports and test results provided by the contractor.
- D. Where a conflict exists between the construction documents and approved shop drawings / submittal data, the construction documents shall govern unless the shop drawings / submittal data are more restrictive. All conflicts shall be brought to the attention of the registered design professional in responsible charge.

1.5 SUBMITTALS BY SPECIAL INSPECTOR AND / OR TESTING AGENCY

- A. Special inspectors shall keep and distribute records of inspections. The special inspector shall furnish inspection reports to the building official, and to the registered design professional in responsible charge, contractor, architect, and owner. Reports shall indicate that work inspected was done in conformance to approved construction documents.

Discrepancies shall be brought to the immediate attention of the contractor for correction. If the discrepancies are not corrected, the discrepancies shall be brought to the attention of the building official and to the registered design professional in responsible charge prior to the completion of that phase of the work. A final report documenting required special inspections and correction of any discrepancies noted in the inspections shall be submitted at a point in time agreed upon by the permit applicant and the building official prior to the start of work.

1. Special inspection reports and test results shall include, but not be limited to, the following:
 - a. Date of inspection.
 - b. Description of inspections or tests performed including location (reference grid lines, floors, elevations, etc.).
 - c. Statement noting that the work, material, and / or product conforms or does not conform to the construction document requirements.
 - 1) Name and signature of contractor's representative who was notified of work, material, and / or products that do not meet the construction document requirements.
 - d. Name and signature of special inspector and / or testing agency representative performing the work.
- B. Schedule of Non-Compliant Work: Each agent shall maintain a log of work that does not meet the requirements of the construction documents. Include reference to original inspection / test report and subsequent dates of re-inspection / retesting.
- C. Reports and tests shall be submitted within 1 week of inspection or test. Schedule of Non-Compliant Work shall be updated daily and submitted at monthly intervals.
- D. Final Report of Special Inspections. Submitted by each agent listed in the schedule of Structural Testing and Special Inspections.

1.6 PAYMENT OF TESTING LABORATORY

- A. The Owner will pay for the initial laboratory services for the testing of materials for compliance with the requirements of the contract documents. The Contractor will be liable to the Owner for the cost for testing and retesting of materials that do not comply with the requirements of the contract documents and shall furnish and pay for the testing and inspection of other items as specified in these Specifications.

PART 2 - PRODUCTS (not used)

PART 3 - EXECUTION

3.1 CONTRACTOR'S RESPONSIBILITY

- A. The contractor shall coordinate the inspection and testing services with the progress of the work. The contractor shall provide sufficient notice to allow proper scheduling of all personnel. The contractor shall provide safe access for performing inspection and on site testing.

- B. The contractor shall submit schedules to the owner, registered design professionals and testing and inspecting agencies. Schedules will note milestones and durations of time for materials requiring structural tests and special inspections.
- C. The contractor shall repair and / or replace work that does not meet the requirements of the construction documents.
 - 1. Contractor shall engage an engineer / architect to prepare repair and / or replacement procedures.
 - 2. Engineer / architect shall be registered in the state in which the project is located. Engineer shall be acceptable to the registered design professional in responsible charge, code enforcement official, and owner.
 - 3. Procedures shall be submitted for review and acceptance by the registered design professional in responsible charge, code enforcement official, and owner before proceeding with corrective action.
- D. The contractor shall be responsible for costs of:
 - 1. Re-testing and re-inspection of materials, work, and / or products that do not meet the requirements of the construction documents and shop drawings / submittal data.
 - 2. Review of proposed repair and / or replacement procedures by the registered design professional in responsible charge and the inspectors and testing agencies.
 - 3. Repair or replacement of work that does not meet the requirements of the construction documents.

3.2 STRUCTURAL OBSERVATIONS

- A. Structural observations may be made periodically as determined by the registered design professional in responsible charge.

3.3 TESTING AND INSPECTION

- A. Testing and inspection shall be in accordance with the attached Schedule of Special Inspections.
- B. Reference related specifications for the minimum level of inspections and testing. Provide additional inspections and testing as necessary to determine compliance with the construction drawings.

3.4 SCHEDULES AND FORMS – ATTACHED OR IN CONSTRUCTION DOCUMENTS

- A. STATEMENT OF SPECIAL INSPECTIONS**
- B. SCHEDULE OF SPECIAL INSPECTIONS (ON STRUCTURAL DRAWINGS)**
- C. FINAL REPORT OF SPECIAL INSPECTIONS**

END OF STRUCTURAL TESTS AND SPECIAL INSPECTIONS

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STATEMENT OF SPECIAL INSPECTIONS

Project: Welcome Center Envelope Repairs

Project Address:

Permit Applicant:

Applicant Address:

Owner: City of Fairhope

Owner Address: 555 South Section St.

Fairhope, Alabama 36532

Registered Design Professionals (RDP):

Architect: Goodwyn Mills Cawood, LLC (GMC)

Geotechnical Engineer:

Structural Engineer:

Mechanical Engineer:

Electrical Engineer:

This statement of special inspections is submitted as a condition for permit issuance in accordance with Chapter 17 of the International Building Code. It includes a *Schedule of Special Inspections* applicable to the above referenced project as well as the identity of the individuals, agencies, or firms intended to be retained for conducting these inspections.

The Special Inspector(s) shall keep records of all inspections and shall furnish interim inspection reports to the building official and to the registered design professional in responsible charge at a frequency agreed upon by the design professionals and the building official prior to the start of work. If the discrepancies are not corrected, the discrepancies shall be brought to the attention of the building official and the registered design professional in responsible charge prior to completion of that phase of work. A *Final Report of Special Inspections* documenting required special inspections and correction of any discrepancies noted in the inspections shall be submitted to the building official and the registered design professional in responsible charge at the completion of that phase of work.

Maximum frequency of interim report submittals shall not be less than_____.

The Special Inspection program does not relieve the contractor of the responsibility to comply with the Contract Documents. Jobsite safety and means and methods of construction are solely the responsibility of the Contractor.

Owner's Acknowledgement:

Signature

Date

Building Official's Acceptance:

Signature

Date

Permit No.

Frequency of interim report submittals to building official:

☐ Monthly

☐ Bi-Monthly

☐ Upon Completion

☐ Per Attached Schedule

RDP in Responsible Charge



SCHEDULE OF SPECIAL INSPECTION SERVICES					
PROJECT	CITY OF FAIRHOPE WELCOME CENTER ENVELOPE REPAIRS				
			APPLICABLE TO THIS PROJECT		
MATERIAL / ACTIVITY	SERVICE	Y/N	EXTENT	AGENT*	COMMENT
1704.2.5 Inspection of Fabricators					
Verify fabrication/quality control procedures	In-plant review (3)	Y	Periodic	1	
The following fabricators, if registered and approved by the building official, may submit "certificate of compliance" at the completion of their scope of work that their fabricated items were constructed in accordance with the approved construction documents: steel fabricator, steel joist fabricator	Submittal Review	Y	Periodic		
1705.2 Steel Construction					
1. Fabricator and erector documents (Verify reports and certificates as listed in AISC 360, chapter N, paragraph 3.2 for compliance with construction documents)	Submittal Review	Y	Each submittal	1	
2. Material verification of structural steel	submittal review and field inspection	Y	Periodic	1	
3. Embedments (Verify diameter, grade, type, length, embedment. See 1705.3 for anchors)	Field inspection	Y	Periodic	1	
4. Verify member locations, braces, stiffeners, and application of joint details at each connection comply with construction documents	Field inspection	Y	Periodic	1	
5. Structural steel welding:					
a. Inspection tasks Prior to Welding (Observe, or perform for each welded joint or member, the QA tasks listed in AISC 360, Table N5.4-1)	Shop (3) and field inspection	Y	Observe or Perform as noted (4)	1	
b. Inspection tasks During Welding (Observe, or perform for each welded joint or member, the QA tasks listed in AISC 360, Table N5.4-1)	Shop (3) and field inspection	Y	Observe (4)	1	
c. Inspection tasks After Welding (Observe, or perform for each welded joint or member, the QA tasks listed in AISC 360, Table N5.4-3)	Shop (3) and field inspection	Y	Observe or Perform as noted (4)	1	
d. Nondestructive testing (NDT) of welded joints: see <i>Commentary</i>				1	
6. Structural steel bolting:	Shop (3) and field inspection				
a. Inspection tasks Prior to Bolting (Observe, or perform tasks for each bolted connection, in accordance with QA tasks listed in AISC 360, Table N5.6-1)		Y	Observe or Perform as noted (4)	1	
b. Inspection tasks During Bolting (Observe the QA tasks listed in AISC 360, Table N5.6-2)		Y	Observe (4)	1	
1) Snug-tight joints		Y	Periodic	1	
c. Inspection tasks After Bolting (Perform tasks for each bolted connection in accordance with QA tasks listed in AISC 360, Table N5.6-3)		Y	Perform (4)	1	

SCHEDULE OF SPECIAL INSPECTION SERVICES					
PROJECT	CITY OF FAIRHOPE WELCOME CENTER ENVELOPE REPAIRS				
MATERIAL / ACTIVITY	SERVICE	Y/N	APPLICABLE TO THIS PROJECT		
			EXTENT	AGENT*	COMMENT
1705.2.2 Steel Construction Other Than Structural Steel					
1. Material verification of cold-formed steel deck:					
a. Identification markings	Field inspection	Y	Periodic	1	
b. Manufacturer's certified test reports	Submittal Review	Y	Each submittal	1	
2. Connection of cold-formed steel deck to supporting structure:	field inspection				
a. Welding		Y	Periodic	N/A	
b. Other fasteners (in accordance with AISC 360, Section N6)				1	
1) Verify fasteners are in conformance with approved submittal		Y	Periodic	1	
2) Verify fastener installation is in conformance with approved submittal and manufacturer's recommendations		Y	Periodic	1	
1705.2.3 Open Web Steel Joists					
1. Inspect Joist end connections	Field Inspection	Y	Periodic	1	
2. Inspect horizontal or diagonal joist bridging	Field Inspection	Y	Periodic	1	
1705.3 Concrete Construction					
1. Inspection of reinforcing steel installation (see 1705.2.2 for welding)	field inspection	Y	Periodic	1	
3. Inspection of anchors and reinforcing steel post-installed in hardened concrete: Per research reports including verification of anchor type, anchor dimensions, hole dimensions, hole cleaning procedures, anchor spacing, edge distances, concrete minimum thickness, anchor embedment and tightening torque	Field inspection	Y	Periodic or as required by the research report issued by an approved source	1	
4. Verify use of approved design mix	Submittal review and field inspection	Y	Periodic	1	
5. Fresh concrete sampling, perform slump and air content tests and determine temperature of concrete	Field testing and field inspection	Y	Continuous	1	
6. Inspection of concrete and shotcrete placement for proper application techniques	field testing and field inspection	Y	Continuous	1	
7. Inspection for maintenance of specified curing temperature and techniques	Field testing and field inspection	Y	Periodic	1	
8. Inspection of formwork for shape, lines, location and dimensions	Field inspection	Y	Periodic	1	
9. Concrete strength testing and verification of compliance with construction documents	Field testing and review of laboratory reports	Y	Periodic	1	
1705.4 Masonry Construction					
(A) Level A, B and C Quality Assurance:					
1. Verify compliance with approved submittals	Field Inspection	Y	Periodic	1	
(B) Level B Quality Assurance:					

SCHEDULE OF SPECIAL INSPECTION SERVICES					
PROJECT	CITY OF FAIRHOPE WELCOME CENTER ENVELOPE REPAIRS				
			APPLICABLE TO THIS PROJECT		
MATERIAL / ACTIVITY	SERVICE	Y/N	EXTENT	AGENT*	COMMENT
1. Verification of f'm and f _{AAC} prior to construction	Testing by unit strength method or prism test method	Y	Periodic	1	
(C) Levels B and C Quality Assurance:					
1. Verification of Slump Flow and Visual Stability Index (VSI) of self-consolidating grout as delivered to the project	Field testing	Y	Continuous	1	
2. Verify compliance with approved submittals	Field inspection	Y	Periodic	1	
3. Verify proportions of site-mixed mortar, grout and prestressing grout for bonded tendons	Field Inspection	Y	Periodic	1	
4. Verify grade, type, and size of reinforcement and anchor bolts, and prestressing tendons and anchorages	Field Inspection	Y	Periodic	1	
5. Verify construction of mortar joints	Field Inspection	Y	Periodic	1	
6. Verify placement of reinforcement, connectors, and prestressing tendons and anchorages	Field Inspection	Y	Level C - Continuous	1	
7. Verify grout space prior to grouting	Field Inspection	Y	Level C - Continuous	1	
8. Verify placement of grout and prestressing grout for bonded tendons	Field Inspection	Y	Continuous	N/A	
9. Verify size and location of structural masonry elements	Field Inspection	Y	Periodic	N/A	
10. Verify type, size, and location of anchors, including details of anchorage of masonry to structural members, frames, or other construction.	Field inspection	Y	Level C - Continuous	N/A	
11. Verify preparation, construction, and protection of masonry during cold weather (temperature below 40°F) or hot weather (temperature above 90°F)	Field inspection	Y	Periodic	N/A	
1705.6 Soils					
1. Verify materials below shallow foundations are adequate to achieve the design bearing capacity.	Field inspection	Y	Periodic	1	
2. Verify excavations are extended to proper depth and have reached proper material.	Field inspection	Y	Periodic	1	
3. Perform classification and testing of controlled fill materials.	Field inspection	Y	Periodic	1	
4. Verify use of proper materials, densities, and lift thicknesses during placement and compaction of controlled fill	Field inspection	Y	Continuous	1	
5. Prior to placement of controlled fill, observe subgrade and verify that site has been prepared properly	Field inspection	Y	Periodic	1	
1705.10.3 Wind-resisting Components					
1. Roof cladding	Submittal review and field inspection	Y	Periodic	1	

SCHEDULE OF SPECIAL INSPECTION SERVICES					
PROJECT	CCITY OF FAIRHOPE WELCOME CENTER ENVELOPE REPAIRS				
APPLICABLE TO THIS PROJECT					
MATERIAL / ACTIVITY	SERVICE	Y/N	EXTENT	AGENT*	COMMENT
2. Wall cladding	Submittal review and field inspection	Y	Periodic	1	
1705.16 Fire-Resistant Penetrations and Joints					
1. Inspect penetration firestop	Field inspection	Y	Per ASTM E2174	1	
2. Inspect fire-resistant joint systems	Field inspection	Y	Per ASTM E2393	1	
* INSPECTION AGENTS FIRM 1. Special Inspection - TBD 2. 3. 4.					
<i>Notes: 1. The inspection and testing agent(s) shall be engaged and paid for by the Owner. The qualifications of the Special Inspector(s) and/or testing agencies may be subject to the approval of the Design Professional.</i> <i>2. The list of Special Inspectors may be submitted as a separate document, if noted so above.</i> <i>3. Special Inspections as required by Section 1704.2.5 are not required where the fabricator is approved in accordance with IBC Section 1704.2.5.2</i> <i>4. Observe on a random basis, operations need not be delayed pending these inspections.</i> <i>Perform these tasks for each welded joint, bolted connection, or steel element.</i> <i>5. NDT of welds completed in an approved fabricator's shop may be performed by that fabricator when approved by the AHJ. Refer to AISC 360, N7.</i>					
Are Requirements for Seismic Resistance included in the Statement of Special Inspections?				No	
Are Requirements for Wind Resistance included in the Statement of Special Inspections?				Yes	
DATE:					

FINAL REPORT OF SPECIAL INSPECTIONS

Project: Welcome Center Envelope Repairs

Project Address: 555 South Section St. Fairhope, Alabama

Testing / Inspection Agent:

Testing / Inspection Agent Address:

Scope of Testing / Inspections:

(To be completed by Testing / Inspection Agent)

To the best of my information, knowledge, and belief, the special inspections or testing required for this project, and designated for this Agent in the *Schedule of Special Inspections* submitted for permit, have been completed in accordance with the contract documents.

Interim reports submitted prior to this final report and numbered to , form a basis for, and are to be considered an integral part of this final report. The following discrepancies that were outstanding since the last interim report dated have been corrected:

(Attach 8 1/2" x 11" continuation sheet(s) if required to complete the description of corrections)

Prepared By:

Type or print name

Signature

Date

Special Inspector's Seal

(Licensed Professional Engineer)



SECTION 01 4200

REFERENCES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 DEFINITIONS

- A. General: Basic Contract definitions are included in the Conditions of the Contract.
- B. "Approved": When used to convey Construction Manager or 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 Construction Manager or 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": Unload, temporarily store, unpack, assemble, erect, place, anchor, apply, work to dimension, finish, cure, protect, clean, and similar operations at Project site.
- 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.

1.3 INDUSTRY STANDARDS

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

1.4 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."
- B. Industry Organizations: Where abbreviations and acronyms are used in Specifications or other Contract Documents, they shall mean the recognized name of the entities in the following list. This information is subject to change and is believed to be accurate as of the date of the Contract Documents.
 - 1. AA – Aluminum Association (The); www.aluminum.org.
 - 2. AABC – Associated Air Balance Council; www.aabc.com.
 - 3. AAMA – American Architectural Manufacturers Association; www.aamanet.org.
 - 4. AAN – American Nursery and Landscape Association; www.anla.org.
 - 5. AASHTO – American Association of State Highway and Transportation Officials; www.transportation.org.
 - 6. AATCC – American Association of Textile Chemists and Colorists; www.aatcc.org.
 - 7. ABAA – Air Barrier Association of America; www.airbarrier.org.
 - 8. ABMA – American Bearing Manufacturers Association; www.americanbearings.org.
 - 9. ACI – American Concrete Institute; (Formerly: ACI International); www.concrete.org.
 - 10. ACIL – American Council of Independent Laboratories; www.acil.org.
 - 11. ACPA – American Concrete Pipe Association; www.concrete-pipe.org.
 - 12. ADC – Air Diffusion Council; www.flexibleduct.org.
 - 13. AEIC – Association of Edison Illuminating Companies, Inc. (The); www.aeic.org.
 - 14. AF&PA – American Forest & Paper Association; www.afandpa.org.
 - 15. AGA – American Gas Association; www.aga.org.
 - 16. AHAM – Association of Home Appliance Manufacturers; www.aham.org.
 - 17. AHRI – Air-Conditioning, Heating, and Refrigeration Institute (The); www.ahrinet.org.
 - 18. AI – Asphalt Institute; www.asphaltinstitute.org.

19. AIA - American Institute of Architects (The); www.aia.org.
20. AISC - American Institute of Steel Construction; www.aisc.org.
21. AISI - American Iron and Steel Institute; www.steel.org.
22. AITC - American Institute of Timber Construction; www.aitc-glulam.org.
23. ALSC - American Lumber Standard Committee; www.alsc.org.
24. AMCA - Air Movement and Control Association International, Inc.; www.amca.org.
25. ANSI - American National Standards Institute; www.ansi.org.
26. AOSA - Association of Official Seed Analysts, Inc.; www.aosaseed.com.
27. APA - APA - The Engineered Wood Association; www.apawood.org.
28. APA - Architectural Precast Association; www.archprecast.org.
29. API - American Petroleum Institute; www.api.org.
30. ARI - Air-Conditioning & Refrigeration Institute; (See AHRI).
31. ARI - American Refrigeration Institute; (See AHRI).
32. ARMA - Asphalt Roofing Manufacturers Association; www.asphaltroofing.org.
33. ASC - Adhesive and Sealant Council; www.ascouncil.org.
34. ASCE - American Society of Civil Engineers; www.asce.org.
35. ASCE/SEI - American Society of Civil Engineers/Structural Engineering Institute; (See ASCE).
36. ASHRAE - American Society of Heating, Refrigerating and Air-Conditioning Engineers; www.ashrae.org.
37. ASME - ASME International; (American Society of Mechanical Engineers); www.asme.org.
38. ASPE - American Society for Plumbing Engineers; www.aspe.org.
39. ASSE - American Society of Safety Engineers (The); www.asse.org.
40. ASSE - American Society of Sanitary Engineering; www.asse-plumbing.org.
41. ASTM - ASTM International; (American Society for Testing and Materials International); www.astm.org.
42. ATIS - Alliance for Telecommunications Industry Solutions; www.atis.org.
43. AWCI - Association of the Wall and Ceiling Industry; www.awci.org.
44. AWEA - American Wind Energy Association; www.awea.org.
45. AWI - Architectural Woodwork Institute; www.awinet.org.
46. AWMAC - Architectural Woodwork Manufacturers Association of Canada; www.awmac.com.
47. AWPAA - American Wood Protection Association; (Formerly: American Wood-Preservers' Association); www.awpa.com.
48. AWS - American Welding Society; www.aws.org.
49. AWWA - American Water Works Association; www.awwa.org.
50. BHMA - Builders Hardware Manufacturers Association; www.buildershardware.com.
51. BIA - Brick Industry Association (The); www.gobrick.com.
52. BICSI - BICSI, Inc.; www.bicsi.org.
53. BIFMA - BIFMA International; (Business and Institutional Furniture Manufacturer's Association); www.bifma.com.
54. BISSC - Baking Industry Sanitation Standards Committee; www.bissc.org.
55. BOCA - BOCA; (Building Officials and Code Administrators International Inc.); (See ICC).
56. CCC - Carpet Cushion Council; www.carpetcushion.org.

57. CDA - Copper Development Association; www.copper.org.
58. CE – Corps of Engineers (US Department of the Army); www.usace.army.mil.
59. CEA - Canadian Electricity Association; www.electricity.ca.
60. CEA - Consumer Electronics Association; www.ce.org.
61. CFFA - Chemical Fabrics & Film Association, Inc.; www.chemicalfabricsandfilm.com.
62. CFSEI - Cold-Formed Steel Engineers Institute; www.cfsei.org.
63. CGA - Compressed Gas Association; www.cganet.com.
64. CIMA - Cellulose Insulation Manufacturers Association; www.cellulose.org.
65. CISCA - Ceilings & Interior Systems Construction Association; www.cisca.org.
66. CISPI - Cast Iron Soil Pipe Institute; www.cispi.org.
67. CLFMI - Chain Link Fence Manufacturers Institute; www.chainlinkinfo.org.
68. CPA - Composite Panel Association; www.pbmdf.com.
69. CRI - Carpet and Rug Institute (The); www.carpet-rug.org.
70. CRRC - Cool Roof Rating Council; www.coolroofs.org.
71. CRSI - Concrete Reinforcing Steel Institute; www.crsi.org.
72. CSA - Canadian Standards Association; www.csa.ca.
73. CSA - CSA International; (Formerly: IAS - International Approval Services); www.csa-international.org.
74. CSI - Construction Specifications Institute (The); www.csinet.org.
75. CSSB - Cedar Shake & Shingle Bureau; www.cedarbureau.org.
76. CTI - Cooling Technology Institute; (Formerly: Cooling Tower Institute); www.cti.org.
77. CWC - Composite Wood Council; (See CPA).
78. DASMA - Door and Access Systems Manufacturers Association; www.dasma.com.
79. DHI - Door and Hardware Institute; www.dhi.org.
80. ECA - Electronic Components Association; www.ec-central.org.
81. ECAMA - Electronic Components Assemblies & Materials Association; (See ECA).
82. EIA - Electronic Industries Alliance; (See TIA).
83. EIMA - EIFS Industry Members Association; www.eima.com.
84. EJCDC – Engineers Joint Contract Documents Committee’ www.ejcdc.org.
85. EJMA - Expansion Joint Manufacturers Association, Inc.; www.ejma.org.
86. ESD - ESD Association; (Electrostatic Discharge Association); www.esda.org.
87. ESTA - Entertainment Services and Technology Association; (See PLASA).
88. ETL SEMCO – Intertek ETL SEMCO (Formerly: ITS-Intertek Testing Service NA); www.intertek-etlsemko.com.
89. EVO - Efficiency Valuation Organization; www.evo-world.org.
90. FAA – Federal Aviation Administration; www.faa.gov.
91. FCC – Federal Communications Commission; www.fcc.gov.
92. FCIA – Firestopping Contractors International Organization; www.fcia.org.
93. FHA – Federal Housing Administration; www.hud.gov/fha.
94. FIBA - Federation Internationale de Basketball; (The International Basketball Federation); www.fiba.com.
95. FIVB - Federation Internationale de Volleyball; (The International Volleyball Federation); www.fivb.org.
96. FM - FM Global; (Formerly: FMG - FM Global); www.fmglobal.com.
97. FRSA - Florida Roofing, Sheet Metal & Air Conditioning Contractors Association, Inc.; www.floridarroof.com.

98. FSA - Fluid Sealing Association; www.fluidsealing.com.
99. FSC - Forest Stewardship Council U.S.; www.fscus.org.
100. FTI - Facing Tile Institute; www
101. GA - Gypsum Association; www.gypsum.org.
102. GANA - Glass Association of North America; www.glasswebsite.com.
103. GS - Green Seal; www.greenseal.org.
104. GSI - Geosynthetic Institute; www.geosynthetic-institute.org.
105. HI - Hydraulic Institute; www.pumps.org.
106. HI/GAMA - Hydronics Institute/Gas Appliance Manufacturers Association; (See AHRI).
107. HMA - Hardwood Manufacturers Association; wwwlhardwood.org.
108. HMMA - Hollow Metal Manufacturers Association; (See NAAMM).
109. HPVA - Hardwood Plywood & Veneer Association; www.hpva.org.
110. HPW - H. P. White Laboratory, Inc.; www.hpwhite.com.
111. IAPSC - International Association of Professional Security Consultants; www.iapsc.org.
112. IAS - International Approval Services; (See CSA).
113. ICBO - International Conference of Building Officials; (See ICC).
114. ICC - International Code Council; www.iccsafe.org.
115. ICEA - Insulated Cable Engineers Association, Inc.; www.icea.net.
116. ICPA - International Cast Polymer Alliance; www.icpa-hq.org.
117. ICRI - International Concrete Repair Institute, Inc.; www.icri.org.
118. ICPA - International Cast Polymer Association; www.icpa-hq.org.
119. IEC - International Electrotechnical Commission; www.iec.ch.
120. IEEE - Institute of Electrical and Electronics Engineers, Inc. (The); www.ieee.org.
121. IES - Illuminating Engineering Society; (Formerly: Illuminating Engineering Society of North America); www.ies.org.
122. IESNA - Illuminating Engineering Society of North America; (See IES).
123. IEST - Institute of Environmental Sciences and Technology; www.iest.org.
124. IGMA - Insulating Glass Manufacturers Alliance; www.igmaonline.org.
125. IGSHPA - International Ground Source Heat Pump Association; www.igshpa.okstate.edu.
126. ILI - Indiana Limestone Institute of America, Inc.; www.iliai.com.
127. ISA - International Society of Automation (The); (Formerly: Instrumentation, Systems, and Automation Society); www.isa.org.
128. ISAS - Instrumentation, Systems, and Automation Society (The); (See ISA).
129. ISFA - International Surface Fabricators Association; (Formerly: International Solid Surface Fabricators Association); www.isfanow.org.
130. ISO - International Organization for Standardization; www.iso.org.
131. ISSFA - International Solid Surface Fabricators Association; (See ISFA).
132. ITS - (Now: ETL SEMCO; Intertek Testing Service NA); www.intertek.com.
133. ITU - International Telecommunication Union; www.itu.int/home.
134. JOINT COMMISSION - (formerly JCAHO, Joint Commission on Accreditation of Healthcare Organizations); www.jointcommission.org.
135. KCMA - Kitchen Cabinet Manufacturers Association; www.kcma.org.
136. LGSEA - Light Gauge Steel Engineers Association; www.lgsea.com.

137. LMA - Laminating Materials Association; (See CPA).
138. LPI - Lightning Protection Institute; www.lightning.org.
139. MBMA - Metal Building Manufacturers Association; www.mbma.com.
140. MCA - Metal Construction Association; www.metalconstruction.org.
141. MCAA - Mechanical Contractors Association of America; www.mcaa.org.
142. MFMA - Maple Flooring Manufacturers Association, Inc.; www.maplefloor.org.
143. MFMA - Metal Framing Manufacturers Association, Inc.; www.metalframingmfg.org.
144. MHIA - Material Handling Industry of America; www.mhia.org.
145. MIA - Marble Institute of America; www.marble-institute.com.
146. MMPA - Moulding & Millwork Producers Association; (Formerly: Wood Moulding & Millwork Producers Association); www.wmmpa.com.
147. MPI - Master Painters Institute; www.paintinfo.com.
148. MSS - Manufacturers Standardization Society of The Valve and Fittings Industry Inc.; www.mss-hq.org.
149. NAAMM - National Association of Architectural Metal Manufacturers; www.naamm.org.
150. NACE - NACE International; (National Association of Corrosion Engineers International); www.nace.org.
151. NADCA - National Air Duct Cleaners Association; www.nadca.com.
152. NAIMA - North American Insulation Manufacturers Association; www.naima.org.
153. NAPA - National Asphalt Pavement Association; www.hotmix.org.
154. NBGQA - National Building Granite Quarries Association, Inc.; www.nbgqa.com.
155. NCAA - National Collegiate Athletic Association (The); www.ncaa.org.
156. NCMA - National Concrete Masonry Association; www.ncma.org.
157. NCTA - National Cable & Telecommunications Association; www.ncta.com.
158. NEBB - National Environmental Balancing Bureau; www.nebb.org.
159. NEC - National Electrical Code; www.nfpa.org.
160. NECA - National Electrical Contractors Association; www.necanet.org.
161. NEII - National Elevator Industry, Inc.; www.neii.org.
162. NeLMA - Northeastern Lumber Manufacturers Association; www.nelma.org.
163. NEMA - National Electrical Manufacturers Association; www.nema.org.
164. NETA - InterNational Electrical Testing Association; www.netaworld.org.
165. NFHS - National Federation of State High School Associations; www.nfhs.org.
166. NFPA - NFPA; (National Fire Protection Association); www.nfpa.org.
167. NFRC - National Fenestration Rating Council; www.nfrc.org.
168. NGA - National Glass Association; www.glass.org.
169. NHLA - National Hardwood Lumber Association; www.nhla.com.
170. NLGA - National Lumber Grades Authority; www.nlga.org.
171. NOFMA - National Oak Flooring Manufacturers Association; (See NWFA).
172. NOMMA - National Ornamental & Miscellaneous Metals Association; www.nomma.org.
173. NRCA - National Roofing Contractors Association; www.nrca.net.
174. NRMCA - National Ready Mixed Concrete Association; www.nrmca.org.
175. NSF - NSF International; (National Sanitation Foundation International); www.nsf.org.
176. NSPE - National Society of Professional Engineers; www.nspe.org.
177. NSSGA - National Stone, Sand & Gravel Association; www.nssga.org.

178. NTMA - National Terrazzo & Mosaic Association, Inc. (The); www.ntma.com.
179. NWFA - National Wood Flooring Association; www.nwfa.org.
180. NWWDA - National Wood Window and Door Association; www.nwwda.org.
181. PCA - Portland Cement Association; www.portcement.org.
182. PCI - Precast/Prestressed Concrete Institute; www.pci.org.
183. PDI - Plumbing & Drainage Institute; www.pdionline.org.
184. PEI - Porcelain Enamel Institute; www.porcelainenamel.com.
185. PGI - PVC Geomembrane Institute; www.pvcgeomembrane.com.
186. PLASA - PLASA; (Formerly: ESTA - Entertainment Services and Technology Association); www.plasa.org.
187. PTI - Post-Tensioning Institute; www.post-tensioning.org.
188. RCSC - Research Council on Structural Connections; www.boltcouncil.org.
189. RFCI - Resilient Floor Covering Institute; www.rfci.com.
190. RIS - Redwood Inspection Service; www.redwoodinspection.com.
191. SAE - SAE International; (Society of Automotive Engineers); www.sae.org.
192. SCAQMD - South Coast Air Quality Management District; www.aqmd.com.
193. SCTE - Society of Cable Telecommunications Engineers; www.scte.org.
194. SDI - Steel Deck Institute; www.sdi.org.
195. SDI - Steel Door Institute; www.steeldoor.org.
196. SEFA - Scientific Equipment and Furniture Association; www.sefalabs.com.
197. SEI/ASCE - Structural Engineering Institute/American Society of Civil Engineers; (See ASCE).
198. SIA - Security Industry Association; www.siaonline.org.
199. SJI - Steel Joist Institute; www.steeljoist.org.
200. SMA - Screen Manufacturers Association; www.smainfo.org.
201. SMACNA - Sheet Metal and Air Conditioning Contractors' National Association; www.smacna.org.
202. SMPTE - Society of Motion Picture and Television Engineers; www.smpte.org.
203. SPFA - Spray Polyurethane Foam Alliance; www.sprayfoam.org.
204. SPIB - Southern Pine Inspection Bureau; www.spib.org.
205. SPRI - Single Ply Roofing Industry; www.spri.org.
206. SRCC - Solar Rating and Certification Corporation; www.solar-rating.org.
207. SSINA - Specialty Steel Industry of North America; www.ssina.com.
208. SSPC - Steel Structures Painting Council; www.sspc.org.
209. STI - Steel Tank Institute; www.steeltank.com.
210. SWI - Steel Window Institute; www.steelwindows.com.
211. SWPA - Submersible Wastewater Pump Association; www.swpa.org.
212. TCA - Tilt-Up Concrete Association; www.tilt-up.org.
213. TCNA - Tile Council of North America, Inc.; (Formerly: TCA); www.tileusa.com.
214. TEMA - Tubular Exchanger Manufacturers Association, Inc.; www.tema.org.
215. TIA - Telecommunications Industry Association; (Formerly: TIA/EIA - Telecommunications Industry Association/Electronic Industries Alliance); www.tiaonline.org.
216. TIA/EIA - Telecommunications Industry Association/Electronic Industries Alliance; (See TIA).
217. TMS - The Masonry Society; www.masonrysociety.org.

218. TPI - Truss Plate Institute; www.tpinst.org.
 219. TPI - Turfgrass Producers International; www.turfgrasssod.org.
 220. TRI - Tile Roofing Institute; www.tilerroofing.org.
 221. UBC - Uniform Building Code; (See ICC).
 222. UL - Underwriters Laboratories Inc.; www.ul.com.
 223. UNI - Uni-Bell PVC Pipe Association; www.uni-bell.org.
 224. USAV - USA Volleyball; www.usavolleyball.org.
 225. USGBC - U.S. Green Building Council; www.usgbc.org.
 226. USITT - United States Institute for Theatre Technology, Inc.; www.usitt.org.
 227. WASTEC - Waste Equipment Technology Association; www.wastec.org.
 228. WCLIB - West Coast Lumber Inspection Bureau; www.wclib.org.
 229. WCMA - Window Covering Manufacturers Association; www.wcmanet.org.
 230. WDMA - Window & Door Manufacturers Association; www.wdma.com.
 231. WI - Woodwork Institute; (Formerly: WIC - Woodwork Institute of California); www.wicnet.org.
 232. WMMPA - Wood Moulding & Millwork Producers Association; (See MMPA).
 233. WRI - Wire Reinforcement Institute; www.wirereinforcementinstitute.org.
 234. WSRCA - Western States Roofing Contractors Association; www.wsrca.com.
 235. WWPA - Western Wood Products Association; www.wwpa.org.
- C. Code Agencies: Where abbreviations and acronyms are used in Specifications or other Contract Documents, they shall mean the recognized name of the entities in the following list. This information is believed to be accurate as of the date of the Contract Documents.
1. DIN - Deutsches Institute fur Normung e.V.; www.din.de.
 2. IAPMO - International Association of Plumbing and Mechanical Officials; www.iapmo.org.
 3. ICC - International Code Council; www.iccsafe.org.
 4. ICC-ES - ICC Evaluation Service, LLC; www.icc-es.org.
- D. Federal Government Agencies: Where abbreviations and acronyms are used in Specifications or other Contract Documents, they shall mean the recognized name of the entities in the following list. Information is subject to change and is up-to-date as of the date of the Contract Documents.
1. COE - Army Corps of Engineers; www.usace.army.mil.
 2. CPSC - Consumer Product Safety Commission; www.cpsc.gov.
 3. DOC - Department of Commerce; National Institute of Standards and Technology; www.nist.gov.
 4. DOD - Department of Defense; <http://dodssp.daps.dla.mil>.
 5. DOE - Department of Energy; www.energy.gov.
 6. EPA - Environmental Protection Agency; www.epa.gov.
 7. FAA - Federal Aviation Administration; www.faa.gov.
 8. FCC - Federal Communications Commission; www.fcc.gov.
 9. FDA - Food and Drug Administration; www.fda.gov.
 10. FEMA - Federal Emergency Management Agency; www.fema.gov.
 11. FG - Federal Government Publications; www.gpo.gov.
 12. GSA - General Services Administration; www.gsa.gov.
 13. HUD - Department of Housing and Urban Development; www.hud.gov.

14. LBL - Lawrence Berkeley National Laboratory; Environmental Energy Technologies Division; <http://eetd.lbl.gov>.
 15. NIST - National Institute of Standards and Technology; www.nist.gov.
 16. OSHA - Occupational Safety & Health Administration; www.osha.gov.
 17. SD - Department of State; www.state.gov.
 18. TRB - Transportation Research Board; National Cooperative Highway Research Program; www.trb.org.
 19. USDA - Department of Agriculture; Agriculture Research Service; U.S. Salinity Laboratory; www.ars.usda.gov.
 20. USDA - Department of Agriculture; Rural Utilities Service; www.usda.gov.
 21. USDJ - Department of Justice; Office of Justice Programs; National Institute of Justice; www.ojp.usdoj.gov.
 22. USP - U.S. Pharmacopeia; www.usp.org.
 23. USPS - United States Postal Service; www.usps.com.
- E. Standards and Regulations: Where abbreviations and acronyms are used in Specifications or other Contract Documents, they shall mean the recognized name of the standards and regulations in the following list. This information is subject to change and is believed to be accurate as of the date of the Contract Documents.
1. ADAAG - Americans with Disabilities Act Accessibility Guidelines for Buildings and Facilities; www.access-board.gov.
 2. CFR - Code of Federal Regulations; Available from Government Printing Office; www.gpo.gov/fdsys.
 3. DOD - Department of Defense; Military Specifications and Standards; Available from Department of Defense Single Stock Point; <http://dodssp.daps.dla.mil>.
 4. DSCC - Defense Supply Center Columbus; (See FS).
 5. FED-STD - Federal Standard; (See FS).
 6. FS - Federal Specification; Available from Department of Defense Single Stock Point; <http://dodssp.daps.dla.mil>.
 - a. Available from Defense Standardization Program; www.dsp.dla.mil.
 - b. Available from General Services Administration; www.gsa.gov.
 - c. Available from National Institute of Building Sciences/Whole Building Design Guide; www.wbdg.org/ccb.
 7. MILSPEC - Military Specification and Standards; (See DOD).
 8. UFAS - Uniform Federal Accessibility Standards; www.access-board.gov.
 9. USAB - United States Access Board; www.access-board.gov.
 10. USATBCB - U.S. Architectural & Transportation Barriers Compliance Board; (See USAB).
- F. State Government Agencies: Where abbreviations and acronyms are used in Specifications or other Contract Documents, they shall mean the recognized name of the entities in the following list. This information is subject to change and is believed to be accurate as of the date of the Contract Documents.
1. COM - City of Mobile; www.cityofmobile.org
 2. ACHA - Agency for Health Care Administration; www.acha.myflorida.com.
 3. ADEM - Alabama Dept. of Environmental Management; www.adem.alabama.gov

4. ADPH – Alabama Department of Public Health; www.adph.org.
5. DCH – Georgia Department of Community Health; www.dch.georgia.gov

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF REFERENCES

SECTION 015000

TEMPORARY FACILITIES

PART 1 - GENERAL

1.1 TEMPORARY FACILITIES:

- A. Proper provision shall be made for storage of bulk materials, parking of construction vehicles and direct access to the building site as acceptable to the Construction Manager and approved by the Architect.
 - 1. On-site parking may or may not be available to the Contractor with the “staging areas” indicated, or if not indicated, as agreed to and designated by the Owner.
 - 2. In the event that the Owner does not have parking available, the Contractor shall be responsible for providing their own parking facilities.
- B. Field Offices: Provide temporary field offices at the project site at location designated by or acceptable to the Construction Manager, of sufficient size, to accommodate required office personnel at the site, with at least finished interiors, heating, air conditioning, lighting, and one toilet room.
 - 1. Furnish suitably with not less than a desk and chairs, file cabinet, plan table and plan rack and a bookcase for use by Contractor.
 - 2. Water cooler or dispenser.
 - 3. Modern PC computer equipment with Windows operating platform, and at least word processing, photo storage and printing, and email capabilities; wireless Internet connection; printer and copy machine.
 - 4. Note: Office area shall be cleaned daily.
- C. Digital Camera: Provide no less than 8 megapixels resolution, with 5x zoom, for daily construction documentation at the site, including flash, memory cards, charger and rechargeable batteries, standard batteries as back-up or for primary use, and all standard accessories and hardware for complete and proper operation, and for downloading and emailing.

1.2 TOILET FACILITIES:

- A. Contractor shall provide temporary toilet(s) on site for the duration of the project, for construction personnel use. They shall be enclosed weatherproof and sanitary toilets.
 - 1. Toilet facilities in the Owner’s buildings are not available to and shall not be used by the Contractor, Subcontractors, etc.
- B. Maintain toilets in sanitary condition at all times. Remove outside toilets when no longer required, and leave site in clean condition.

- C. Conform to local ordinances and regulations.

1.3 TEMPORARY TELEPHONES:

- A. Provide telephone for Contractor, Construction Manager and Architect in the Contractor's job office at the project site, and provide a portable or cellular telephone to the Contractor's Superintendent. Cost of service and local calls shall be paid by General Contractor. Long distance and toll calls shall be paid by the party making such calls.
- B. Provide telephone answering machine or service, and "voice mail" for cellular phone, to facilitate communication with the Contractor's Superintendent.
- C. The Owner's telephones are not available to and shall not be used by the Contractor, except in an emergency situation.

1.4 TEMPORARY BARRIERS AND FENCES:

- A. Contractor shall provide and maintain adequate fencing, barricades and protective walkways where required to provide suitable protection for employees, children, and the public at all times until completion of the work, acceptable to authorities having jurisdiction.
- B. The Contractor shall confine the activities of work on this project to within the protected areas, unless otherwise directed by the Construction Manager, Architect or Owner.
- C. Refer to Section 01015 - "Special Conditions," and the Drawings, for additional requirements for temporary fencing and gates, signage, and related requirements.

1.5 ELECTRIC POWER:

- A. The Owner will provide electric service for reasonable use, as necessary for this project and any demolition and/or construction to continue without interruption, to the extent it is available at the site, and shall pay the power bills for such use for the duration of the Work of this Contract.
 - 1. Otherwise, the Contractor shall obtain the service from the local power company. Cost of temporary power from the local power company and related billings shall be paid by the Contractor from their Contract amount.
- B. Use of Owner's existing on-site power service shall be limited to 110V/120V hand tools, lighting, or other use acceptable to the Owner.
- C. Where need for electricity exists for use of other than 110V/120V hand tools or lighting, the Contractor shall provide temporary non-vibrating or vibration isolated portable generator with muffler in compliance with local noise ordinances, or other acceptable power source.

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- D. The Contractor shall be responsible for all extensions, connections, etc., as necessary for the Work. Contractor shall remove all temporary wiring, extensions, connections, etc., prior to Substantial Completion.
- E. The Contractor shall protect the Owner's systems from outage or damage, and repair of any damage to at least its previously existing condition - subject to the Owner's approval.

1.6 WATER:

- A. The Owner will provide water for reasonable use, as necessary for this project and any construction, and/or demolition to continue without interruption, to the extent it is available at the site, and shall pay the water bills for such use for the duration of the Work of this Contract.
 - 1. Otherwise, the Contractor shall obtain the service from the local utility company. Cost of temporary water from the utility company and related billings shall be paid by the Contractor from their Contract amount.
- B. The Contractor shall provide temporary stub-up, hose bib, etc., as necessary for the Work. Contractor shall remove all temporary piping, valves, etc., prior to substantial completion.
- C. The Contractor shall protect the Owner's water systems, new and temporary water lines, valves, etc., from freezing, damage and contamination, and repair of any damage to the Owner's water systems to at least its previously existing condition - subject to the Construction Manager's approval.
 - 1. Where new water service is indicated to be installed, the Owner will pay for reasonable use of water from this new source. However, the Contractor shall be responsible for any and all costs associated with the procurement and installation of any new meters, all fees for service connection, permits, tap fees, impact fees, etc., and pay for same from his/her Contract amount.

1.7 TEMPORARY HEAT:

- A. Contractor shall furnish temporary heat as required for uninterrupted construction and other operations, protection of new work, for drying out buildings, etc.

1.8 ENCLOSURES AND PROTECTION:

- A. Provide and maintain for the duration of construction of scaffolds, tarpaulins, canopies, warning signs, steps, platforms, bridges and other temporary construction necessary for proper completion and observation of the work, in compliance with pertinent safety and other regulations, and authorities having jurisdiction. Refer to Section 01015 - "Special Conditions," and the Drawings for additional information and requirements.

1.9 CLEAN UP:

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- A. The Contractor or his agent, upon completion of the work shall immediately remove all temporary fences, temporary utility lines, debris or any other obstructions and leave such property in as good a condition as it was before such work was commenced.
- B. The Contractor, upon completion of the work, shall remove all other temporary structures and facilities from the site.
- C. The Contractor shall legally dispose of all trash, debris, etc., off site, on a regular basis.
- D. Items salvaged by Contractor for his own purposes or for the Owner where indicated, may be stored temporarily on site and removed as soon as possible, unless directed otherwise by Architect, or Owner.
 - 1. The sale or advertising for sale of salvaged or other materials shall not be permitted on site under any circumstances.
- E. Control dust on site and clean mud and/or debris from on site and city streets and sidewalks, as it occurs.
 - 1. Provide facilities to wash mud off of truck tires, equipment, etc., before it can be tracked onto streets, etc.
- F. Maintain new landscape work, as well as shrubs and trees to remain, including trimming and raking leaves. Keep grass and weeds cut around fencing, and within the project site.

END OF TEMPORARY FACILITIES

SECTION 01 6000

PRODUCT REQUIREMENTS

PART 1 - GENERAL

1.1 DESCRIPTION OF SCOPE AND INTENT

- A. The intent of this section is basic requirements for standards and procedures identified. Good business practices may indicate additional or supplemental requirement procedures identified.

1.2 SECTION INCLUDES

- A. Products.
- B. Transportation and handling.
- C. Storage and protection.
- D. Product options.
- E. Substitutions.

1.3 PRODUCTS

- A. Products: Means new material, machinery, components, equipment, fixtures, and systems forming the Work. It does not include machinery and equipment used for preparation, fabrication, conveying and erection of the Work. Products may also include existing materials or components required for reuse.
- B. Do not re-use materials and equipment removed from existing premises, except as specifically permitted by the Contract Documents.
- C. Provide interchangeable components of the same manufacturer, for similar components.

1.4 TRANSPORTATION AND HANDLING

- A. Transport and handle products in accordance with manufacturer's instructions.
- B. Promptly inspect shipments to assure that products comply with requirements, quantities are correct, and products are undamaged.
- C. Provide equipment and personnel to handle products by methods to prevent soiling, disfigurement, or damage.

1.5 STORAGE AND PROTECTION

- A. Store and protect products in accordance with manufacturer's instructions, with seals and labels intact and legible. Store sensitive products in weather-tight, climate controlled enclosures.
- B. For exterior storage of fabricated products, place on sloped supports, above ground.
- C. Provide off-site storage and protection when site does not permit on-site storage or protection.
- D. Cover products subject to deterioration with impervious sheet covering. Provide ventilation to avoid condensation.
- E. Store loose granular materials on solid flat surfaces in a well-drained area. Provide mixing with foreign matter.
- F. Provide equipment and personnel to store products by methods to prevent soiling, disfigurement, or damage.
- G. Arrange storage of products to permit access for inspection. Periodically inspect to assure products are undamaged and are maintained under specified conditions.

1.6 PRODUCT OPTIONS

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

1.7 SUBSTITUTIONS

- A. The Architect will consider requests for Substitutions only up to 5 days prior to bidding.
- B. Substitutions may be considered when a product becomes unavailable through no fault of the Contractor.
- C. Document each request with complete data substantiating compliance of proposed Substitution with Contract Documents.
- D. A request constitutes a representation that the Bidder:
 - 1. Has investigated proposed product and determined that it meets or exceeds the quality level of the specified product.

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2. Will provide the same warranty for the Substitution as for the specified product.
 3. Will coordinate installation and make changes to other Work which may be required for the Work to be complete with no additional cost to Owner.
 4. Waives claims for additional costs or time extension which may subsequently become apparent.
- E. Substitutions will not be considered when they are indicated or implied on shop drawing or product data submittals, without separate written request, or when acceptance will require revision to the Contract Documents.
- F. Substitution Submittal Procedure:
1. Submit three copies of request for Substitution for consideration. Limit each request to one proposed Substitution.
 2. Submit shop drawings, product data, and certified test results attesting to the proposed product equivalence.
 3. The Architect will notify Contractor of decision to accept or reject request.

PART 2 – PRODUCTS

NOT USED

PART 3 - EXECUTION

NOT USED

END OF PRODUCT REQUIREMENTS

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SECTION 017000

CLOSEOUT PROCEDURES

PART 1 - GENERAL

1.1 DESCRIPTION OF SCOPE AND INTENT

- A. The intent of this section is to define minimum requirements to be satisfied and/or delivered in contract closeout procedures. Other items may be requested by Construction Manager or Owner to supplement required data.

1.2 SECTION INCLUDES

- A. Closeout procedures.
- B. Final cleaning.
- C. Adjusting.
- D. Project record documents.
- E. Operation and maintenance data.
- F. Warranties.
- G. Spare parts and maintenance materials.

1.3 RELATED SECTIONS

- A. Contractor is responsible for coordination of work included in this specification with all other specification sections related to furnishing of all materials, labor, permit, fees and services necessary for completion of work in this section.

1.4 CLOSEOUT PROCEDURES

- A. Submit written certification that Contract Documents have been reviewed, Work has been inspected, and that Work is complete in accordance with Contract Documents and ready for Architect/Engineer's inspection.
- B. Provide submittals to Construction Manager that are required by governing or other authorities.
- C. Submit final Application for Payment identifying total adjusted Contract Sum, previous payments, and sum remaining due.

1.5 FINAL CLEANING

- A. Execute final cleaning prior to final inspection.

- B. Clean interior and exterior glass and surfaces exposed to view; remove temporary labels, stains and foreign substances, polish transparent and glossy surfaces, vacuum carpeted and soft surfaces.
- C. Clean equipment and fixtures to a sanitary condition.
- D. Replace filters of operating equipment.
- E. Clean site and premises; sweep paved areas, clean landscaped surfaces.
- F. Remove waste and surplus materials, rubbish, and construction facilities from the site.

1.6 ADJUSTING

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

PROJECT RECORD DOCUMENTS

- B. Maintain on site, one set of the following record documents; record actual revisions to the Work:
 - 1. Contract Drawings.
 - 2. Specifications.
 - 3. Addenda.
 - 4. Change Orders and other Modifications to the Contract.
 - 5. Reviewed shop drawings, product data, and samples.
- C. Store Record Documents separate from documents used for construction.
- D. Record information concurrent with construction progress.
- E. Specifications: Legibly mark and record at each Product section description of actual Products installed, including the following:
 - 1. Manufacturer's name and product model and number.
 - 2. Product substitutions or alternates utilized.
 - 3. Changes made by Addenda and Modifications.
- F. Record Documents and Shop Drawings: Legibly mark each item to record actual construction including:
 - 1. Measured depths of foundations in relation to first floor datum.
 - 2. Measured horizontal and vertical locations of underground utilities and appurtenances, referenced to permanent surface improvements.
 - 3. Measured locations of internal utilities and appurtenances concealed in construction, referenced to visible and accessible features of the Work.

4. Field changes of dimension and detail.
5. Details not on original Contract Drawings.

G. Submit lien and claims release as provided in specifications.

H. Submit documents to Owner with claim for final Application for Payment.

1.7 OPERATION AND MAINTENANCE DATA

- A. Submit two sets prior to final inspection, bound in 8-1/2 x 11 inch text pages, three D side ring binders with durable plastic covers.
- B. Prepare binder covers with printed title "OPERATION AND MAINTENANCE INSTRUCTIONS", title of project.
- C. Internally subdivide the binder contents with permanent page dividers, logically organized as described below; with tab titling clearly printed under reinforced laminated plastic tabs.
- D. Contents: Prepare a Table of Contents for each volume, with each Product or system description identified type on white paper.
- E. Part 1: Directory, listing names, addresses, and telephone numbers of Contractor, Subcontractors, and major equipment suppliers.
- F. Part 2: Operation and maintenance instructions, arranged by system and subdivided by specification section. For each category, identify names, addresses, and telephone numbers of Subcontractors and suppliers. Identify the following:
 1. Significant design criteria.
 2. List of equipment.
 3. Parts list for each component.
 4. Operating instructions.
 5. Maintenance instructions for equipment and systems.
 6. Maintenance instructions for finishes, including recommended cleaning methods and materials and special precautions identifying detrimental agents.
- G. Part 3: Project documents and certificates, including the following:
 1. Shop drawings and product data.
 2. Air and water balance reports.
 3. Certificates.
 4. Photocopies of warranties.
- H. Submit one copy of completed volumes in final form 15 days prior to final inspection. This copy will be returned after final inspection, with

Architect/Engineer comments. Revise content of documents as required prior to final submittal.

- I. Submit final volumes revised, within ten days after final inspection.
- J. Provide on-site instruction of Owner's maintenance or engineering staff of all equipment operations and procedures.

1.8 WARRANTIES

- A. Provide duplicate notarized copies.
- B. Execute and assemble documents from subcontractors, suppliers, and manufacturers.
- C. Provide Table of Contents and assemble in three D side ring binder with durable plastic cover.
- D. Submit prior to final Application for Payment.
- E. For items of Work delayed beyond date of Substantial Completion, provide updated submittal within ten days after acceptance, listing date of acceptance as start of warranty period.

1.9 SPARE PARTS AND MAINTENANCE MATERIALS

- A. Provide products, spare parts, maintenance and extra materials in quantities specified in individual specification Sections.
- B. Deliver to and place in location as directed.

1.10 WAIVER OF CLAIMS

- A. Submit waiver of claims in accordance with General Conditions of the Contract for Construction.
- B. Utilize Alabama Building Commission, Contractor's Affidavit of Payment of Debts and Claims and Consent of Surety to Final Payment.

1.11 ADVERTISEMENT FOR COMPLETION

- A. Upon Substantial Completion run advertisement of completion of the project as per State of Alabama and Alabama Building Commission requirements.
- B. Format for the advertisement shall be the ABC, "Form of Advertisement for Completion".

PART 2 - PRODUCTS (Not used)

PART 3 - EXECUTION (Not used)

END OF CLOSEOUT PROCEDURES

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SECTION 01 7200

PROJECT RECORD DOCUMENTS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS:

- A. Drawings and general provisions of Contract, including General and Supplementary Conditions and other Division 1 Specification sections, apply to work of this section.

1.2 DOCUMENTS:

- A. Maintain at least one (1) copy of all drawings, specifications, addenda, approved shop drawings, change orders, filed orders, other contract modifications and other reviewed documents submitted by the Contractor in compliance with various sections of the specifications.

1.3 IDENTIFICATION AND MAINTENANCE:

- A. Each of these project record documents shall be clearly marked "Project Record Copy," maintained in good condition, available for inspection by the Architect or Owner, and not used for construction purposes.

1.4 RECORDS:

- A. Mark up the most appropriate documents with permanent red ink pen or red pencil to show:
 - 1. Significant changes made during the construction progress.
 - 2. Significant detail not shown in the original contract documents.
- B. The information given shall include, but not be limited to: The location of underground utilities and appurtenances, referenced to permanent surface improvements by dimensions(s) and description(s).
- C. Keep project record documents current. Do not permanently conceal any work until the required information has been recorded.
- D. As-built Drawings: At completion of project, the Contractor shall submit to Architect complete sets of marked-up Project Record Drawings, as follows:
 - 1. One (1) Original Set.
 - 2. One (1) set, blueline or blackline prints or copies.
 - 3. Two (2) sets of digital copies in latest edition of ISO/Adobe compliant "Portable Document Format" ("PDF") saved as "Read Only" on compact discs (CD's), clearly and permanently labeled as to their contents. MINIMUM RESOLUTION shall be 300

dpi for small format documents and 600 dpi for large format documents ("large format" is defined as larger than 11" x 17"). Original documents which include color, colored markings, etc., shall be scanned and saved as color documents. Documents may be saved in a non-proprietary ISO compliant self-extracting compressed file format, and no documents shall be password protected. Deliver in standard CD cases or sleeves which are free of any PVC content, also clearly and permanently labeled.

- E. As-built Project Manual and Specifications: At completion of project, the Contractor shall submit to Architect complete sets of marked-up Project Record Specifications, in same quantities and formats as required for the As-built Drawings.

1.5 SUBMITTALS:

- A. Submit project record documents and as-built drawings within ten (10) days of acceptance of the entire completed project.

END OF PROJECT RECORD DOCUMENTS

SECTION 017300

EXECUTION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. Section includes 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. Coordination of Owner-installed products.
 - 5. Progress cleaning.
 - 6. Starting and adjusting.
 - 7. Protection of installed construction.
- B. Related Requirements:
 - 1. Section 011000 "Summary" for limits on use of Project site.
 - 2. Section 017329 "Cutting and Patching" for cutting and patching requirements as necessary for the installation or performance of other components of the Work.
 - 3. Section 024119 "Selective Demolition" for demolition and removal of selected portions of the building.
 - 4. Section 078413 "Penetration Firestopping" for patching penetrations in fire-rated construction.

PART 2 - PRODUCTS (Not Used)

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. Acceptance of Conditions: Before proceeding with each component of the Work, examine substrates, areas, and conditions, with Installer or Applicator present where indicated, for compliance with requirements for installation tolerances and other conditions affecting performance. Record observations.
 - 1. Examine roughing-in for mechanical and electrical systems to verify actual locations of connections before equipment and fixture installation.
 - 2. Examine walls, floors, and roofs for suitable conditions where products and systems are to be installed.
 - 3. Verify compatibility with and suitability of substrates, including compatibility with existing finishes or primers.
- C. Written Report: Where a written report listing conditions detrimental to performance of the Work is required by other Sections, include the following:
 - 1. Description of the Work.
 - 2. List of detrimental conditions, including substrates.
 - 3. List of unacceptable installation tolerances.
 - 4. Recommended corrections.
- D. 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 Construction Manager 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 if such structures or appurtenances are not included in the scope of Work described in the Contract Documents. Coordinate with Authorities Having Jurisdiction.

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

3.4 FIELD ENGINEERING

- A. Identification: Identify existing benchmarks, control points, and property corners.
- B. 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.
 - 1. Do not change or relocate existing benchmarks or control points without prior written approval of Construction Manager. Report lost or destroyed permanent benchmarks or control points promptly. Report the need to relocate permanent benchmarks or control points to Construction Manager before proceeding.
 - 2. Replace lost or destroyed permanent benchmarks and control points promptly. Base replacements on the original survey control points.

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.
 - 4. Maintain minimum headroom clearance of 96 inches in spaces without a finished ceiling.
- B. Comply with manufacturer's written instructions and recommendations for installing products in applications indicated.
- C. Install products at the time and under conditions that will ensure the best possible results. Maintain conditions required for product performance until Substantial Completion.
- D. Conduct construction operations so no part of the Work is subjected to damaging operations or loading in excess of that expected during normal conditions of occupancy.
- E. Sequence the Work and allow adequate clearances to accommodate movement of construction items on site and placement in permanent locations.
- F. Tools and Equipment: Do not use tools or equipment that produce harmful noise levels.
- G. Templates: Obtain and distribute to the parties involved templates for work specified to be factory prepared and field installed. Check Shop Drawings of other work to confirm that adequate provisions are made for locating and installing products to comply with indicated requirements.
- H. Attachment: Provide blocking and attachment plates and anchors and fasteners of adequate size and number to securely anchor each component in place, accurately located and aligned

with other portions of the Work. Where size and type of attachments are not indicated, verify size and type required for load conditions.

1. Mounting Heights: Where mounting heights are not indicated, mount components at heights directed by Architect.
 2. Allow for building movement, including thermal expansion and contraction.
 3. Coordinate installation of anchorages. Furnish setting drawings, templates, and directions for installing anchorages, including sleeves, concrete inserts, anchor bolts, and items with integral anchors, that are to be embedded in concrete or masonry. Deliver such items to Project site in time for installation.
- I. Joints: Make joints of uniform width. Where joint locations in exposed work are not indicated, arrange joints for the best visual effect. Fit exposed connections together to form hairline joints.
- J. Hazardous Materials: Use products, cleaners, and installation materials that are not considered hazardous.

3.6 OWNER-INSTALLED PRODUCTS

- A. Site Access: Provide access to Project site for Owner's construction personnel.
- B. Coordination: Coordinate construction and operations of the Work with work performed by Owner's construction personnel.
1. Construction Schedule: Inform Owner of Contractor's preferred construction schedule for Owner's portion of the Work. Adjust construction schedule based on a mutually agreeable timetable. Notify Owner if changes to schedule are required due to differences in actual construction progress.
 2. Preinstallation Conferences: Include Owner's construction personnel at preinstallation conferences covering portions of the Work that are to receive Owner's work. Attend preinstallation conferences conducted by Owner's construction personnel if portions of the Work depend on Owner's construction.
- C. Refer to "General Conditions for the Contract", for further provisions relative to the right of the Owner to perform construction, award separate contracts, mutual responsibilities and remedies should delays, improperly timed activities, or defective construction occur on the part of either party.

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.
 3. Containerize hazardous and unsanitary waste materials separately from other waste. Mark containers appropriately and dispose of legally, according to regulations.
 - a. Use containers intended for holding waste materials of type to be stored.
 4. Coordinate progress cleaning for joint-use areas where Contractor and other contractors are working concurrently.
- B. Site: Maintain Project site free of waste materials and debris.
- C. Work Areas: Clean areas where work is in progress to the level of cleanliness necessary for proper execution of the Work.
1. Remove liquid spills promptly.
 2. Where dust would impair proper execution of the Work, broom-clean or vacuum the entire work area, as appropriate.
- D. Installed Work: Keep installed work clean. Clean installed surfaces according to written instructions of manufacturer or fabricator of product installed, using only cleaning materials specifically recommended. If specific cleaning materials are not recommended, use cleaning materials that are not hazardous to health or property and that will not damage exposed surfaces.
- E. Concealed Spaces: Remove debris from concealed spaces before enclosing the space.
- F. Exposed Surfaces in Finished Areas: Clean exposed surfaces and protect as necessary to ensure freedom from damage and deterioration at time of Substantial Completion.
- G. Waste Disposal: Do not bury or burn waste materials on-site. Do not wash waste materials down sewers or into waterways. Comply with waste disposal requirements in Section 015000 "Temporary Facilities and Controls."
- 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. Where applicable, such exposures include, but are not necessarily limited to:

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1. Excessive static or dynamic loading
2. Excessive internal or external pressures
3. Excessively high or low temperatures
4. Thermal shock
5. Excessively high or low humidity
6. Pollution and air contamination
7. Water or ice
8. Chemicals and solvents
9. Light
10. Radiation
11. Puncture
12. Abrasion
13. Heavy traffic
14. Soiling or staining
15. Corrosion
16. Bacteria
17. Rodent and insect infestation
18. Combustion
19. Electrical current
20. High-speed operation
21. Improper lubrication
22. Unusual wear or other misuse
23. Contact between incompatible materials
24. Destructive testing
25. Misalignment
26. Excessive weathering
27. Unprotected storage
28. Improper shipping or handling
29. Theft or vandalism

- K. Provide rodent-proof containers on each floor level of construction.

3.8 STARTING AND ADJUSTING

- A. Coordinate startup and adjusting of equipment and operating components as scheduled with, and in cooperation with, Owner's commissioning agent.
- B. Start equipment and operating components to confirm proper operation. Remove malfunctioning units, replace with new units, and retest.
- C. Adjust equipment for proper operation. Adjust operating components for proper operation without binding.
- D. Test each piece of equipment to verify proper operation. Test and adjust controls and safeties. Replace damaged and malfunctioning controls and equipment.

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- E. 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.

3.10 CORRECTION OF THE WORK

- A. Repair or remove and replace defective construction. Restore damaged substrates and finishes. Comply with requirements of Section 017329 "Cutting and Patching".
 - 1. Repairing includes replacing defective parts, refinishing damaged surfaces, touching up with matching materials, and properly adjusting operating equipment.
- B. Restore permanent facilities used during construction to their specified condition.
- C. Remove and replace damaged surfaces that are exposed to view if surfaces cannot be repaired without visible evidence of repair.
- D. Repair components that do not operate properly. Remove and replace operating components that cannot be repaired.

END OF EXECUTION

SECTION 01 7329

CUTTING AND PATCHING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. Section includes general administrative and procedural requirements for Cutting and Patching.
- B. Related Requirements:
 - 1. Section 013300 "Submittal Procedures" for submitting proposed cutting and patching information.
 - 2. Section 017000 "Execution" for procedural requirements for coordination with the installation or performance of other components of the Work.
 - 3. Section 024119 "Selective Demolition" for the demolition of selected portions of the building for alterations.
 - 4. Section 078413 "Penetration Firestopping" for patching penetrations in fire-rated construction.
 - 5. Divisions 02 through 49 Sections for specific requirements and limitations applicable to cutting and patching individual parts of the Work.

1.3 DEFINITIONS

- A. Cutting: Removal of in-place construction necessary to permit installation or performance of other work.
- B. Patching: Fitting and repair work required to restore construction to original conditions after installation of other work.
- C. Selective Demolition: The systematic removal of a portion of an existing structure, which often includes removing major structural elements to provide for the enlargement and alteration of the structure. Selective demolition may require the performance of cutting and patching as a part of the Work.

1.4 SUBMITTALS

- A. Certification of Compliance: Submit all information necessary to indicate full compliance to all requirements specified herein, otherwise submittal will be returned marked "Rejected".

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- B. Submit in accordance with the requirements specified in Section 013300 "Submittal Procedures".
- C. Action Submittals: (refer to Section 016000 "Product Requirements" in its entirety with particular attention to "Submittals" Article)
 - 1. Cutting and Patching Proposal: Submit a proposal describing methods, procedures, and locations of cutting and patching any structural element as defined herein. Submit proposal a minimum of fourteen (14) calendar days prior to scheduled date cutting and patching will be performed, requesting approval to proceed. Include the following information:
 - a. Extent: Describe cutting and patching, show how they will be performed, and indicate why they cannot be avoided.
 - b. Changes to In-Place Construction: Describe anticipated results. Include changes to structural elements and operation components as well as changes in building's appearance and other significant visual elements.
 - c. Products: List products to be used and firms or entities that will perform the Work.
 - d. Dates: Indicate when cutting and patching will be performed.
 - e. Utility Services and Mechanical or Electrical Systems: List services/systems that will be relocated and those that will be temporarily out of service. Indicate how long services/systems will be disrupted.
 - f. Drawings: Where cutting and patching involve cutting cutouts in and/or adding reinforcement to structural elements, submit fully dimensioned drawings, details, and engineering calculations showing integration of cutouts and/or reinforcement with original structure.
 - g. Construction Manager, Architect/Engineer Approval: Obtain approval of cutting and patching proposal before cutting and patching activities begin. Approval does not waive right to later require removal and replacement of unsatisfactory work.
 - 2. Product Schedule: Descriptive list of all materials proposed for use as described in Section 013300 "Submittal Procedures".

1.5 QUALITY ASSURANCE

- A. Structural Elements: do not cut and patch structural elements in a manner that could change their load-carrying capacity or load-deflection ratio. Structural elements include, but are not necessarily limited to, columns, beams, girders, headers, joists, bar joists, rafters, shear walls, bearing walls, tilt-up wall panels, precast floor/wall/roof panels, precast columns, hangers, haunches, bearing plates, bearing angles, braces, kickers, anchor bolts, rods, steel reinforcing, stair stringers, pan floor systems, and any prestressed column, beams, girders, headers, and joists.
 - 1. Cutting of any structural element requires the prior approval of the Engineer of Record.

- B. Operational Elements: Do not cut and patch operating elements and related components in a manner that results in reducing their capacity to perform as intended or that results in increased maintenance or decreased operational life or safety. Operating elements include, but are not necessarily limited to, primary operational systems and equipment; air or smoke barriers; fire-suppression systems; mechanical systems piping and ducts; control system; communication systems; conveying systems; electrical wiring systems; operating systems of special construction in Division 13 Sections.
- C. Miscellaneous Elements: Do not cut and patch miscellaneous elements or related components in a manner that could change their load-carrying capacity that results in reducing their capacity to perform as intended or that results in increased maintenance or decreased operation al life or safety. Miscellaneous elements include, but are not necessarily limited to, water, moisture, or vapor barriers; membranes and flashings; exterior curtain-wall construction; equipment supports; piping, ductwork, vessels, and equipment; noise and vibration control elements and systems.
- D. 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.
- E. Cutting and Patching Conference: Before proceeding, conduct conference at Project site. Comply with requirements in Section 013100 "Project Management and Coordination". Meet with parties involved in cutting and patching, including mechanical and electrical trades, to review areas of potential interference and conflict. Coordinate procedures and resolve potential conflicts before proceeding.
- F. Manufacturer's Installation Instructions: Obtain and maintain on-site manufacturer's written recommendations and instructions for installation of products and equipment.

1.6 WARRANTY

- A. Existing Warranties: Includes warranties associated with existing construction or with those associated with the Work of this contract.
- B. Remove, replace, patch, and repair materials and surfaces cut or damaged during cutting and patching operations, by methods and with materials so as not to void existing warranties.

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 as directed by the Architect that, when installed, will provide a match acceptable to Architect for the visual and functional performance of in-place materials.
- C. Salvaged Materials: Salvage sufficient quantities of cut or removed material to replace damaged work of existing construction when material is not readily obtainable on the current market.
 1. Use particular care in removal and salvage of the following items:
 - a. Door frames
 - b. Existing OFE equipment
 - c. Structural O.R. framing
 - d. Mechanical duct work
 - e. Light fixtures
 2. Store salvaged items in a dry, secure place on the Project site.
 3. Do not incorporate salvaged or used material in new construction except with permission of the Construction Manager and Architect
 4. Serviceable items not required for use in repair of existing work shall become the property of the Owner and shall be delivered to a location as directed by the Owner.
 5. Serviceable material not wanted by the Owner shall be removed from the project site and disposed of in a lawful manner.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine surfaces to be cut and patched and conditions under which cutting and patching are to be performed.
 1. Compatibility: Before patching, verify compatibility with and suitability of substrates, including compatibility with in-place finishes or primers.
 2. Proceed with installation only after unsafe or unsatisfactory conditions have been corrected.

3.2 PREPARATION

- A. Temporary Support: Provide temporary support of Work to be cut.
- B. Protection: Protect in-place construction (adjacent work, existing finishes, and equipment) which is scheduled to remain during cutting and patching to prevent damage. Provide protection from adverse weather conditions for portions of the Work that might be exposed during cutting and patching operations.
 1. Maintain existing interior work above 60 degrees F.
 2. Provide weather protection, waterproofing, heat and humidity control as needed to prevent damage to remaining existing work and to new work.

- C. Adjacent Occupied Areas: Avoid interference with use of adjoining areas or interruption of free passage to adjoining areas. Where interference is unavoidable, coordinate cutting and patching to occur at pre-arranged time/s acceptable to Construction Manager and Owner.
- D. Existing Utility Services and Mechanical/Electrical Systems: Where existing services/systems are required to be removed, relocated, or abandoned, bypass such services/systems before cutting to minimize or prevent interruption to occupied areas.

3.3 CUTTING AND PATCHING

- A. 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. 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. Breaking, chipping, denting, deforming, and/or otherwise damaging materials and/or surfaces to be cut and patched is not allowed.
 - 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 Division 31 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 only after construction operations requiring cutting are complete.
- C. 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, including fire-resistance ratings.
 - 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.

- a. Clean piping, conduit, and similar features before applying paint or other finishing materials.
 - b. Restore damaged pipe covering to its original condition.
 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.
 - a. Where patching occurs in a painted surface, prepare substrate and apply primer and intermediate paint coats appropriate for substrate over the patch, and apply final paint coat over entire unbroken surface containing the patch. Provide additional coats until patch blends with adjacent surfaces.
 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.
- D. Cleaning: Clean areas and spaces where cutting and patching are performed. Completely remove paint, overspray, and evidence of any spillage, mortar, oils, putty, and similar materials from all finished surfaces.

END OF SECTION 017329

SECTION 01 9180

BUILDING ENVELOPE MEMBRANE COMMISSIONING REQUIREMENTS

PART 1 - GENERAL

1.1 WORK INCLUDED

- A. Commissioning requirements common to all Building Envelope Related Sections.
- B. Validation of proper and thorough installation of Building Envelope components.
- C. Building enclosure component and system performance verification.
- D. Documentation of tests, check lists, and installations.
- E. Coordination and requirements for field mock-up, trial installation and limited Performance Testing events.
- F. Preparation and coordination of Building Envelope Commissioning Report.

1.2 GENERAL DESCRIPTION

- A. Statement of Building Envelope Design Intent (BEDI): The design intent of this building envelope is to provide a façade and roof assembly which limits water infiltration to the specified levels as required by the individual Building Envelope (BE) technical sections in Divisions 03 through 08, that eliminates uncontrolled air infiltration (including condensation), provides thermal insulation continuity; and includes products and assemblies that are technically sound, durable and serviceable.
- B. Building Envelope Commissioning (BECx) facilitates a quality-oriented process to verify that all building envelope components are installed and perform collectively according to the BEDI and that the installation is adequately tested and that the specified performance is verified and documented. It serves as a tool to identify deficiencies in the building envelope during the preconstruction and construction phases in an effort to advance the building envelope components from mock-up installations, through installation of the separate components on the structure, to a fully integrated, weather-tight assembly prior to occupancy, thereby reducing impact on the building end user.
- C. The Building Envelope Commissioning Coordinator (BECxC) shall work with the Contractor and Contractor's Quality Assurance and Quality Control Plan and personnel to oversee the BECx processes and performance testing. The BECxP will observe tests as deemed appropriate. All required testing, unless otherwise specified in each building envelope related section will be performed for and paid by the Owner.

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1.3 SCOPE

- A. This Section includes building envelope commissioning procedures, including exterior facade enclosure, and roofing or other construction that protects climate-controlled interior spaces from unconditioned spaces and the exterior environment, as follows:
 - 1. Building envelope construction, above grade including exterior opaque walls, windows, and doors including sheathing, framing, insulation and air and water barrier.
 - 2. Roofing, including roofing system, roofing insulation, and hatches, and other roof openings and penetrations.
 - 3. Foundation water proofing systems and sub-drainage.
 - 4. The aforementioned items including continuity between all sections (where applicable).
- B. Materials, Product and Assembly Performance Testing as required by individual sections, and/or as outlined in Part 3 of this specification. All performance values shall be as described within each relevant section of the Project Specification.
- C. Record Documents related to BECx.

1.4 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, apply to this Section.

1.5 RELATED SECTIONS

- A. **Commissioning Specifications:** See Division 01 Section 019113 - General Commissioning Requirements for general requirements for MEP commissioning including definitions, means and methods for conducting the commissioning process, commissioning team members, Owner's responsibilities, Contractor's responsibilities, and Commissioning Authority's responsibilities.
- B. **Individual Building Envelope Specification Sections:** Individual building envelope technical sections (Divisions 03-08) stipulate requirements for material testing, and warranties for the material, product or assembly specified in the Section. Installation, product testing, and assembly testing are stipulated in each section and/or Part 3 of this section.

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AI-	Action Item
AL-	Action List
BECxA-	Building Envelope Commissioning Authority
BECxC-	Building Envelope Commissioning Coordinator
BECx-	Building Envelope Commissioning
BECxP	Building Envelope Commissioning Provider
Consultant A/E-	Architect/Engineer-of-Record POC-Point of Contact
Cx-	Commissioning
CxA-	Commissioning Authority for Building Systems
CxT-	Commissioning Team
Owner-	Project Management
RFI-	Request for Information

1.7 DEFINITIONS

- A. Action Item (AI)- Any issue that requires a response, completion, corrective or additional work, or any other action related to the construction. Examples include a Contractor's Request for Information (RFI), an Architect's Field Directive, a clarification request, or a documented deficiency in the Work. Action Items must be categorized and assigned to the appropriate party for remedial action.
- B. Action List (AL)- This is a list that is maintained and updated by the BECxP that includes all Action Items (AI) that relate to BECx activities, including a summary description of each Action Item (including photograph where appropriate), the date that each Action Item was first documented, the appropriate party responsible for remedial action, the date corrective action was performed, and a brief summary of the remediation.
- C. A/E- Architect/Engineer-of-Record.
- D. Commissioning (Cx)- The process of ensuring that all building systems perform interactively according to the design intent, the systems are efficient and cost effective and meet the Owner's Project Requirements.

- E. Commissioning Authority (CxA)- The commissioning authority for the building systems.
- F. Building Envelope Commissioning Provider (BECxP)- The Party retained by the Owner will oversee the BECx process, develop and stipulate many of the BECx requirements, manage the BECx process, and validate that building envelop systems are designed, installed and tested to meet the Owner's requirements and/or contract documents provided by the Architect-of-Record.
- G. Commissioning Portal- This is an internet hub for the collaboration on Cx and BECx information. This portal will act as a hub for posting electronic information.
- H. Commissioning Report- The *Commissioning Report* is the final deliverable from the Cx process, and provides the information needed to understand, and maintain the facility's building enclosure. It should be the repository of all updates and corrections as they occur (even through occupancy). The *Facility Manual* expands the scope of standard O&M documentation to incorporate additional information developed through the commissioning process. This is also often called a 'Systems Manual' throughout ASHRAE Cx references. Traditionally this manual has documented only the MEP systems. For this project, the facility manual will also include the Building Envelope Commissioning (BECx) Documents.
- I. Commissioning Team (CxT)- The group of Parties involved in the commissioning process for any given system. The group is typically comprised of representatives from:
 - 1. Owner (PM) and his/her consultants
 - 2. General Contractor and/or Construction Manager (GC or Contractor/CM)
 - 3. Designer and Design Engineers (particularly the Architect and Engineers – A/E)
 - 4. Building Envelope Commissioning Provider (BECxP)
 - 5. Test Technician (TT) (as either trade quality control or BECxP)
 - 6. Building Envelope subcontractor and their sub-subcontractors (BESC)
 - 7. Specialty subcontractors
 - 8. Any other installing subcontractors or suppliers of materials or systems.
- J. Construction Phase- Phase of the project during which the facility is constructed. During this phase the Contractor and subcontractors complete the installation and field testing requirements.
- K. Contract Documents- The documents governing the responsibilities and relationships between Parties involved in the design and construction of this project including (but not necessarily limited to):
 - i. Agreements/Contracts;
 - ii. Construction Document Drawings and Specifications;

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- iii. Addenda;
- iv. Change Orders;
- L. Construction Documents- Refers generally to the Contract Documents that dictate the details of construction (all but item i. and v. above).
- M. Deficiency- A condition in the installation or function of a material, assembly, or system that is not in compliance with the Contract Documents (that is, does not perform properly or is not complying with the Design Intent).
- N. Contractor- As used herein, 'Contractor' is a general reference to the installing Party and can therefore refer to the GC, subcontractors, or vendors as inferred by its usage.
- O. BECx Software- A software tool used for collaborative commissioning information management.
- P. Building Envelope Commissioning (BECx)- The process of facilitating the quality installation of the building envelope materials, components, and systems in accordance with the contract documents and satisfy the requirements of the BEDI.
- Q. Building Envelope Commissioning Coordinator (BECxC)- This refers to the Individual that is designated the POC for BECx activities.
- R. Factory/Laboratory Testing: Off-Site Testing of Building Envelope materials, components and systems at the manufacturer's facility and/or independent Testing Agency. This testing will be witnessed and documented by the members of the BECx team as appropriate and as specified in the BE technical specifications.
- S. Field Testing Authorized/Accredited Representative- On-site testing of Building Envelope materials, components and systems conducted by an authorized Manufacturer's Technical Representative and/or independent Testing Agency.
- T. Manufacturer's Technical Representative- An individual in direct employ of the manufacturer of the applicable material, component, or system who is technically qualified in the judgment of BECxA to perform the applicable work for which the reference is made.
- U. Party- Entity responsible for portion of work.
- V. Project Management Consultant (Owner) – Project management consultant to the Owner.
- W. Point of Contact (POC) – (General reference to the key individual within each Party.
- X. Project Phases- Phases of the project including the Pre-Construction Phase, The

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Construction Phase, and The Warranty Phase, including Post-Occupancy Evaluation to be completed at the Owner's discretion by the appropriate members of the Commissioning Team for this project.

- Y. RFI- Request for Information
- Z. Substantial Completion- As defined in the Owner-Contractor agreement. This milestone will coincide with the end of the Construction Period and the acceptance of the Property, or portions thereof, by the Owner. This milestone also coincides with the start of the warranty period.
- AA. Testing Agency- An independent agency, fully accredited by the appropriate governing body for each of the materials, components or systems to be tested or evaluated for compliance with requirements of the contract documents. The Testing Agency shall submit qualifications as required in Section 014000 and individual BE technical sections for review and acceptance by the A/E and BECxP.
- BB. Warranty Phase – Beginning on the date of Substantial Completion and continuing through the Warranty Period of each Building Envelope material, component, and system.

1.8 REFERENCE STANDARDS

- A. ASHRAE NIBS Guideline 3-2012 "Building Enclosure Commissioning Process BECx" Reference standards as identified in the individual Building Envelope technical sections of this specification.

1.9 DOCUMENTATION

- A. BECxP shall perform a constructability review and provide comments related to the durability, performance and BE conformance with the Owner Project Requirements (OPR) for consideration by the Owner, A/E and Contractor.
- B. The Contractor shall provide to the BECxP the following per the procedures specified herein and in other BE Technical Sections of the specification (Divisions 03-09) for review and comment by the BECxP:
 - 1. Shop Drawings and Product Data: Provide shop drawings and submittal data for materials, products, systems and equipment that will be part of the BECx process. Refer to Section 019113 for additional requirements.
 - a. The Contractor shall forward to the BECxP one copy of Shop Drawings and Product Data concurrent with distribution to the A/E. BECxP shall review and provide comments to the Owner and A/E, who will then review and

incorporate the BECxP comments at their discretion and return to the Contractor. The Contractor shall then copy BECxP with the reviewed submittal with A/E submittal review stamp.

- b. Any action taken by the A/E or Contractor based in whole or in part on the comments and recommendations provided by the BECx as part of its submittal review shall be the sole responsibility of the A/E or Contractor.
2. Factory/Laboratory Test Reports: The Contractor shall provide any factory or laboratory testing documentation or certified test reports required by the specifications. These shall be provided prior to acceptance and installation of the specific item.
3. Schedule Updates: The Contractor shall issue periodic updates to the construction schedule every two week or less as appropriate. Contractor shall use schedule to notify BECx team of scheduled tests and milestone installation events. Contractor shall coordinate with BECxP for **meetings** as appropriate prior to and during construction.
4. Action Item Response: Respond to Action Items to which BECx team members assign the Contractor responsibility within 10 business days of issue.
5. Testing Agency Reports. Provide all documentation of work of independent testing agencies required by the specification. These shall be provided prior to acceptance by A/E and installation.
- C. Record Drawings: The Contractor shall maintain at the site an updated set of record or 'As-Built' documents reflecting actual installed conditions and all approved changes and modifications to the contract documents. The Contractor shall provide access to the BECxP to review the As-Built and Record Drawings. The Record Drawings shall be maintained concurrently with construction.

1.10 COORDINATION MANAGEMENT PROTOCOLS

- A. Unless otherwise defined and agreed to by the parties to the contract documents for this project, coordination responsibilities and management protocols relative to BECx are defined below, subject to further refinement during the Construction Phase BECx pre- construction **meeting**.
 1. Submittals and Shop Drawings: The BECxP shall review submittals and shop drawings in accordance with paragraph 1.09.B.1 above and Sections 013300 & 019113.
 2. Deficiencies Identified by the BECxP: When the BECxP identifies a

deficiency, the Contractor shall make a good faith assessment of responsible parties. Those parties shall be notified of the perceived deficiency. This communication is for information only and is not a direction to resolve the deficiency. Contractor may accept responsibility and resolve the deficiency voluntarily. If Contractor contests either the deficiency or responsibility for that deficiency, Contractor shall respond to that affect in writing to the BECxP. If a consensus is not reached as a result of this process, then the Contractor shall issue a work directive or RFI response via the normal contractual channels to resolve the issue.

3. Requests for **Meetings** (beyond regularly scheduled **meetings**): In general request by the Contractor for additional **meetings** with the BECxP shall be routed through the Owner who will then confirm the necessity for the **meeting**. Note that every attempt should be made to deal with BECx issues at regularly scheduled BECx **Meetings**.
4. Scheduling Coordination – Contractor shall review the BE technical specifications, identify required BECx items (including field and laboratory test requirements, specified test standards, mock-ups, product submissions, milestone installations and similar) and provide a schedule to the BECxP with anticipated dates for each. It is the responsibility of the Contractor to provide adequate time from submission of each BECx requirement to response from the BECx, and resolution of any identified deficiencies without unnecessary deleterious impact on the project schedule.
5. Notification of Completion Milestones – Contractor shall notify Owner and BECxP at least two weeks prior to an anticipated BECx activity or BECx milestone (such as installation of a new façade component). Contractor and BECxP shall then coordinate the scheduling of the activity between all required parties as applicable. Notification shall be via e-mail.
6. Action List: BECxP maintains a categorized Action List which tracks the BECx related action items. All content of the Action List will be available to all parties who have credentials on the portal. Any party with credentials may post an Action Item. Any party that is copied on an email resulting from an Action Item posting may respond to it and contribute to the dialogue.

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- A. As defined in this Section and in the individual BE technical sections, including but not limited to the following:
1. Attend the routine BECx meetings.
 2. Coordinate and Chair preconstruction and construction-phase coordination meetings.
 3. Provide summary and schedule of laboratory and field quality control tests and inspections required by the Contract Documents to BECxP.
 4. Participate in Pre-construction Mock-Up and Field-testing coordination meetings.
 5. Coordinate with the BECxP pre-construction and construction testing and submit laboratory and field quality control testing, field checklists and inspection reports on building enclosure construction to the BECxP. Perform out of sequence work as required to facilitate field tests.
 6. Develop and maintain check lists for building enclosure assemblies.
 7. Submit maintenance data for products, assemblies, and components to the BECxP.
 8. Provide test data, inspection reports, and certificates to BECxP.
 9. Review and respond to Action Item in a timely manner (typically within 10 business days).
 10. Contractor is responsible for the cost of all re-tests and compensation of time for Architect and BECxP related to all additional work necessitated by re-testing of specimens following an initial test failure.
 11. Provide input for final commissioning documentation.

1.12 A/E RESPONSIBILITIES

- A. As defined in this Section and in the individual BE technical sections, including but not limited to the following:
1. Attend the routine BECx meetings.
 2. Attend preconstruction and construction-phase coordination meetings.

3. Participate in Pre-construction Mock-Up and Field-testing coordination meetings.
4. Provide resolution to items for which the BECxP and Contractor may be in disagreement.
5. Provide input for final commissioning documentation.

1.13 BECxP RESPONSIBILITIES (BECxP is not to be retained by the Contractor)

- A. Develop Construction Phase BECx plan.
- B. Provide review comments on the 100% CD's related to the BE for compliance with the design intent and Owner's Project requirements. Refer to Part 1.09A for further information. The CxA shall review the design, identify design issues and/or conflicts that would present a problem for the total system commissioning.
- C. Provide comments on submittals related to building enclosure. Provide written comments to A/E for their consideration in their review of the submittals. Refer to Part 1.09B for further information.
- D. Convene Preconstruction Commissioning Conference: BECxP will schedule a preconstruction BECx conference before construction of the building enclosure starts, at a time convenient to Owner, A/E and Contractor. The BECxP will conduct the meeting to review commissioning responsibilities and personnel assignments.
 1. Attendees: Authorized representatives of Owner, BECxP, Contractor, A/E, and Contractor's superintendent; major BE subcontractors; their PMs, Superintendents and Project Foreman, 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 commissioning.
 2. Agenda: Discuss items of significance that could affect progress, including the following:
 - a. Commissioning Plan and related Specifications
 - b. Tentative construction schedule per Contractor.
 - c. Phasing and "Building Dry" milestone per Contractor.
 - d. Critical work sequencing and long-lead items per Contractor.
 - e. Designation of key personnel and their duties.
 - f. Field testing schedule, including any special provisions necessary for tests.

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- g. Procedures for testing and inspecting.
 - h. Submittal procedures.
 - i. Coordination of Record Documents.
 - j. Owner's occupancy requirements.
- 3. Minutes: BECxP will record and distribute meeting minutes.
- E. Participate in Project-Specific mock-ups and outline the commissioning process and Performance Test procedures. Attend the construction and testing of the mock-up to observe progress and provide written summary report.
- F. Witness building envelope component testing, milestone installations, and perform periodic site visits to document that work is being performed in compliance with the project specifications and Part 3. Conduct visits no less than weekly during construction of the BE.
- G. Conduct routine BECx meetings to review progress on Action Item list/ Portal and resolve issues affecting the building enclosure. Conduct meetings no less than every two weeks during construction of the BE.
- H. Compile test data, inspection reports, and certificates and provide them to the CxA for inclusion in the final Commissioning Report.

1.14 PERFORMANCE TESTING (BUILDING ENVELOPE)

- A. Quality Assurance and Control: Specific BECx quality-assurance and quality-control requirements for individual Building Envelope and materials, methods, and assemblies are specified in the BE Technical Sections relating to those activities. Specified commissioning tests, inspections, and related actions are specified in Part 3 of this section, do not limit Contractor's other quality-assurance and quality-control procedures that facilitate compliance with the Contract Document requirements.
- B. The objective of Performance Testing is to demonstrate that each Building Envelope system, and system-to-system interfaces meet or exceed the performance requirements of the Contract Documents and the BEDI.
- C. Costs associated with re-testing caused by failure of the building envelope tests, during mock-up or construction phase work shall be the responsibility of the Contractor.

1.15 DEFICIENCIES IDENTIFIED DURING BE FUNCTIONAL PERFORMANCE TESTING

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- A. **Non-Conformance.** Non-conformance deficiencies identified during Periodic **Site Visits** or Performance Testing shall be resolved as follows:
1. The BECxP will record the results of the review / functional performance test in the BECx Software project database. All deficiencies or non-conformance issues shall be noted as Action Items and reported to the Contractor.
 2. Corrections of identified minor deficiencies may be made during the review / tests at the discretion of the BECxP. In such cases the deficiency and associated resolution will be documented in the database.
 3. Every effort will be made by the BECxP to expedite the review / testing process and minimize unnecessary delays, while not compromising the integrity of the procedures.
 4. As reviews / tests progress and a deficiency is identified, the BECxP will discuss the issue with the Contractor for follow-up and resolution.
 - a. When there is no dispute with respect to the deficiency and the Contractor accepts responsibility to correct it:
 - 1) The BECxP shall document the deficiency and the Contractor's response. A copy/email/portal issue of the deficiency shall be generated and provided to the Contractor. The Contractor corrects the deficiency, completes the Action Item response certifying that the issue is resolved and /or the product, material or assembly is ready to be retested and notifies the Project Team.
 - 2) The Contractor reschedules the test and the test is repeated. This process is repeated until the test result(s) meets or exceeds the requirements of the contract documents and, at the discretion of the Owner, the remedial action taken will be implemented on a project-wide basis where applicable. The Contractor is responsible for all retest costs incurred by the BECxP, test agency, Owner and A/E.
 - b. If there is a dispute about a deficiency:
 - 1) The deficiency shall be documented as an Action Item with the Contractor's response and the Contractor will be notified. The Contractor will track this issue under the construction contract dispute resolution provisions.
 - 2) Final interpretive authority is with the Owner. Final acceptance authority is with the Owner or A/E.
 - 3) The BECxP documents the resolution to the Action Item.

- 4) Once the interpretation and resolution have been decided, the appropriate party corrects the deficiency, and responds to the Action Item indicating completion. The Contractor reschedules the review/test and the review/test is repeated until satisfactory performance is achieved. The Action Item is then considered as closed.
- B. **Failure:** As defined in each BE Technical Sections (Divisions 03-09) and/or Part 3. In event of test failure, the Contractor shall provide the Owner with the following:
1. Installer/Manufacturer's response in writing as to the cause of the failure and proposed resolution.
 2. Installer/Manufacturer shall implement their proposed resolution on a representative sample of the product.
 3. The Owner will determine whether a replacement of all identical units is required or if a repair is acceptable.
 4. Upon acceptance, the responsible Party shall replace or repair all identical items at their expense and shall extend the warranty accordingly.
 5. Systemic or frequent failures may result in additional testing beyond originally identified to verify performance. Additional costs to test systems due to deficiencies is to be borne by the responsible Contractor.

1.16 COMMISSIONING REPORT CONTENT

- A. Report content and format shall be as specified in Section 019113 and applicable industry standards.
- B. Commissioning Report
1. **Maintenance Schedule:** Contractor will provide a summary table that indexes the building enclosure component requiring maintenance and indicates the frequency each component will require repair or replacement (i.e. replacement of sealants, gaskets, IGUs, repair of paints or coatings). Contractor will provide subcontractors with an *Excel* spreadsheet that will be completed by each applicable subcontractor and returned to the Contractor for incorporation in the Commissioning Report by the BECxP.
 2. **Maintenance Information** Contractor shall provide Maintenance Information for each entry containing the following:
 - a. Product Data Sheet: Provide a summary of performance data.

- b. Extended Warranty Information: Include all warranties for products, equipment, components, and sub-components whose duration exceeds one year. Include warranties on components with the system they are a part of. Reference all specific operation and maintenance procedures that must be performed to keep the warranty valid.
 - c. Sources of Material: Include reference to contact information where specific materials can be obtained.
 - d. Installation and Maintenance Instructions: For each material, component or system.
- C. Construction Documentation
 - 1. **Record Drawings**: Contractor shall provide an index of all record drawings with drawing number, title, and electronic file name(s) including electronically referenced drawings.
 - 2. **Record Specifications**: Contractor shall provide a detailed index of the record specification. Include sections and major items in the specification all indexed to the appropriate page number.
 - 3. **Approved Product Data and Shop Drawings**:
 - a. Contractor shall provide an index of all product data and shop drawings. This shall list all BE materials, components or systems with the associated submittal number.
 - b. Contractor shall organize and compile only approved product data and shop drawings. Providing these in a filing format is acceptable provided all files are identified and organized for easy access.
 - c. Inclusion of any of this information in previous sections of the Commissioning Report does not allow exclusion in this section.
 - 4. **Commissioning Record**: BECxP shall provide complete commissioning records including all Performance Test documentation, in both written and electronic format at the discretion of the Owner.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

- A. BE PERFORMANCE TESTING BY OTHERS TO BE OBSERVED AND DOCUMENT BY THE BECxP AND THE BECxP. Testing and coordination are the responsibility of the General Contractor. Site Testing: In coordination with the Contractor, the BECxP will evaluate in-service performance testing by others of building envelope assemblies and construction and submit reports.
 - 1. Provide site testing as scheduled at the end of this Section.
 - 2. Carry out testing in accordance with this section and Section 019113.
 - 3. Schedule and number of tests shall be conducted as defined in each BE Technical Sections (Divisions 03-08).
 - 4. Test requirements apply only as appropriate to the materials, components, and systems specified in each BE Technical Sections (Divisions 03-08).
- B. Adhesion Tests: Arrange for field tests to take place with joint-sealant and adhered membrane manufacture's technical representative present. Field test sealant joints and self- adhering membranes for adhesion to substrates as follows:
 - 1. Test each type of sealant/membrane in each installation at every substrate indicated.
 - 2. Perform sealant tests in compliance with ASTM C1521 Standard Practice for Evaluating Adhesion of Installed Weatherproofing Sealant Joints, Method A, ASTM C1193 X1- Method A, Guide for Use of Joint Sealants: Field-Applied Sealant Joint Hand Pull Tab, ASTM C794 Test Method for Adhesion-in-Peel of Elastomeric Joint Sealants, and ASTM D4541 Standard Test Method for Pull-off Strength of Coatings Using Portable Adhesion Testers.
 - 3. For joints between dissimilar substrates, verify adhesion to each substrate separately; extend cut along one side, verifying adhesion to opposite side. Repeat procedure for opposite side.
 - 4. For sealants that fail adhesively, retest until satisfactory adhesion is obtained. Do not use sealants that fail to adhere to joint substrates during testing.
- C. Fenestration Field Water Tests:
 - 1. Test 50 LF installed **08 41 13 Aluminum Entrances and Storefronts** systems according to AAMA 501.2 "Field Check of Metal Storefronts, Curtain Walls and Sloped Glazing Systems For Water Leakage," and test two (2) locations **08920 Glazed Aluminum Curtain Walls** ASTM E-1105: Standard Test Method for Field Determination of Water Penetration of Installed Exterior Windows and Curtain

Walls by Uniform or Cyclic Static Air Pressure Differential.

2. Complete testing prior to installation of interior insulation and gypsum board.
 3. Contractor to provide powered scaffold, hose, water supply, communication system and manpower to perform tests.
 4. Contractor will work with the Test Engineer and CxA to determine necessity for additional test methods and for field chamber tests based upon evaluation of initial test results. The BECxP will interpret marginal results and adjust the test procedures as appropriate.
 5. Contractor to perform out-of-sequence work as required facilitating system tests.
 6. Contractor to perform out-of-sequence work as required facilitating system tests. Contractor to install all air seals / dams concealed within the mullions to facilitate air tests at curtain wall assemblies.
- D. Roof and Waterproofing Field Water and Air Leakage Tests:
1. Test installed roofing systems in keeping with ASTM C1153 Standard Practice for Location of Wet Insulation in Roofing Systems Using Infrared Imaging and Capacitance.
 2. Optional to be Priced Separately: Test installed roofing system using low voltage electronic leak detection.
 3. Complete testing prior to installation of interior insulation, gypsum wall board and interior ceiling finishes.
 4. Contractor will work with the Test Provider and CxA to determine necessity for revised or supplemental test methods. The CxA will interpret marginal results and adjust the test procedures as appropriate.
- E. Concrete Moisture Tests:
1. Test installed concrete that will serve as a substrate to coating systems, roofing materials, and associated flashings for moisture according to ASTM D4263 Standard Test Method for Indicating Moisture in Concrete by the Plastic Sheet Method.

3.2 FIELD PERFORMANCE TEST SCHEDULE

- A. Performance testing locations to be determined by A/E and BECxP.
- B. Schedule and number of tests shall be conducted as defined in each BE Technical

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Sections (Divisions 03-08), with the parameters provided below to serve as a guide.

- C. Test requirements listed below apply only as appropriate to the materials, components, and systems specified in each BE Technical Sections (Divisions 03-08). Additional test requirements may be included as specified in each BE Technical Sections (Divisions 03-08).
- D. Performance testing by the installers and trade contractors/subcontractors to be observed by BECxP: **Testing Agency to have a minimum of four (4) years of experience in BECxP Testing.**

Supplementary Performance Testing schedule:

Location / Test Type	Testing Standard	Description	Criteria	Schedule & Number of Tests
Field Air leakage testing:				
Air Barrier transitions to adjacent systems, field of AB, penetrations (3 locations)	ASTM E1186	Field air leakage tests for air barrier assembly and Building Envelope	0.40 cfm/sq.ft. @ .3" sp. for Renovated Building Construction 0.25 cfm/sq.ft. @ .3" sp. for New Building Construction	After completion: 4 successful Zone tests are required
Field Water leakage testing:				
Fenestration	ASTM E1105	Field water leakage test	No water at 0.67x (specified design pressure or 20% of wind load)	2 locations @ 10% completion
Fenestration	AAMA 501.2	Field water leakage test	No water leakage	51 LF @ 25%

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Adhesion Testing:				
Coatings	ASTM D4541	Pull-off Strength of Coatings using Port- able Adhesion Testers	Per manufacturer adhesion test data.	10 locations throughout construction
Concrete Moisture Testing:				
Concrete surfaces used as substrates for coatings, roofing materials, and associated flashings	ASTM D4263	Moisture in concrete by the plastic sheet method	Per manufacturer data	Each system with sampling size per ASTM D4263
Electronic Leak Detection Test:				
Roofing Systems	Electronic leak detection using high or low volt- age equipment	electronic leak detection	No breaches in roofing system	1 @ 100% Completion of Modified Bituminous Membrane Roofing
Roofing Systems	ASTM C1153	Standard Practice for locating wet insulation in roofing systems using infrared imaging	Locating leak areas	One (1) @ 100% completion of Mod-Bit membrane roofing minimal 10 ft x 10 ft at roof leak areas.

END OF SECTION 01 91 80

SECTION 02 41 19

SELECTIVE DEMOLITION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. Section Includes:
 - 1. Demolition and removal of selected site elements.
- B. Related Requirements:
 - 1. Section 011000 "Summary" for restrictions on use of the premises, Owner-occupancy requirements, and phasing requirements.
 - 2. Section 017300 "Execution" for cutting and patching procedures.
 - 3. Section 311000 "Site Clearing" for site clearing and removal of above- and below-grade improvements not part of selective demolition.

1.3 DEFINITIONS

- A. Remove: Detach items from existing construction and dispose of them off-site unless indicated to be salvaged or reinstalled.
- B. Existing to Remain: Leave existing items that are not to be removed and that are not otherwise indicated to be salvaged or reinstalled.

1.4 MATERIALS OWNERSHIP

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

1.5 PREINSTALLATION MEETINGS

- A. Predemolition Conference: Conduct conference at Project site.
 - 1. Inspect and discuss condition of construction to be selectively demolished.
 - 2. Review structural load limitations of existing structure.
 - 3. Review and finalize selective demolition schedule and verify availability of materials, demolition personnel, equipment, and facilities needed to make progress and avoid delays.
 - 4. Review requirements of work performed by other trades that rely on substrates exposed by selective demolition operations.
 - 5. Review areas where existing construction is to remain and requires protection.

1.6 INFORMATIONAL SUBMITTALS

- A. Qualification Data: For refrigerant recovery technician.
- B. Engineering Survey: Submit engineering survey of condition of building.
- C. Proposed Protection Measures: Submit report, including Drawings, that indicates the measures proposed for protecting individuals and property, for environmental protection, for dust control and, for noise control. Indicate proposed locations and construction of barriers.
- D. Schedule of Selective Demolition Activities: Indicate the following:
 - 1. Detailed sequence of selective demolition and removal work, with starting and ending dates for each activity. Ensure Owner's on-site operations are uninterrupted.
 - 2. Interruption of utility services. Indicate how long utility services will be interrupted.
 - 3. Coordination for shutoff, capping, and continuation of utility services.
 - 4. Use of elevator and stairs.
 - 5. Coordination of Owner's continuing occupancy of portions of existing building and of Owner's partial occupancy of completed Work.
- E. Predemolition Photographs or Video: Show existing conditions of adjoining construction, including finish surfaces that might be misconstrued as damage caused by demolition operations. Comply with Section 013233 "Photographic Documentation." Submit before Work begins.
- F. Statement of Refrigerant Recovery: Signed by refrigerant recovery technician responsible for recovering refrigerant, stating that all refrigerant that was present was recovered and that recovery was performed according to EPA regulations. Include name and address of technician and date refrigerant was recovered.
- G. Warranties: Documentation indicating that existing warranties are still in effect after completion of selective demolition.

1.7 CLOSEOUT SUBMITTALS

- A. Inventory: Submit a list of items that have been removed and salvaged.

1.8 QUALITY ASSURANCE

- A. Refrigerant Recovery Technician Qualifications: Certified by an EPA-approved certification program.

1.9 FIELD CONDITIONS

- A. Owner will occupy portions of building immediately adjacent to selective demolition area. Conduct selective demolition so Owner's operations will not be disrupted.
- B. Conditions existing at time of inspection for bidding purpose will be maintained by Owner as far as practical.
- C. Notify Architect of discrepancies between existing conditions and Drawings before proceeding with selective demolition.
- D. Hazardous Materials: Unknown materials exist in some items to be demolished. Contractor to determine, remediate as required, and dispose of properly.
- E. Storage or sale of removed items or materials on-site is not permitted.
- F. Utility Service: Maintain existing utilities indicated to remain in service and protect them against damage during selective demolition operations.
 - 1. Maintain fire-protection facilities in service during selective demolition operations.

1.10 COORDINATION

- A. Arrange selective demolition schedule so as not to interfere with Owner's operations.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

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

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Verify that utilities have been disconnected and capped before starting selective demolition operations.
- B. Perform an engineering survey of condition of building to determine whether removing any element might result in structural deficiency or unplanned collapse of any portion of structure or adjacent structures during selective building demolition operations.
 - 1. Perform surveys as the Work progresses to detect hazards resulting from selective demolition activities.
- C. Verify that hazardous materials have been remediated before proceeding with building demolition operations.
- D. Survey of Existing Conditions: Record existing conditions by use of preconstruction photographs or video.
 - 1. Comply with requirements specified in Section 01 32 33 "Photographic Documentation."

3.2 PREPARATION

- A. Refrigerant: Before starting demolition, remove refrigerant from mechanical equipment according to 40 CFR 82 and regulations of authorities having jurisdiction.

3.3 UTILITY SERVICES AND MECHANICAL/ELECTRICAL SYSTEMS

- A. Existing Services/Systems to Remain: Maintain services/systems indicated to remain and protect them against damage.
- B. Existing Services/Systems to Be Removed, Relocated, or Abandoned: Locate, identify, disconnect, and seal or cap off utility services and mechanical/electrical systems serving areas to be selectively demolished.
 - 1. Arrange to shut off utilities with utility companies.
 - 2. 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.
 - 3. Disconnect, demolish, and remove fire-suppression systems, plumbing, and HVAC systems, equipment, and components as required where building demolition is indicated on Drawings.

- a. Piping to Be Removed: Remove portion of piping to be removed and cap or plug remaining piping with same or compatible piping material.
- b. Piping to Be Abandoned in Place: Drain piping and cap or plug piping with same or compatible piping material and leave in place.
- c. Equipment to Be Removed: Disconnect and cap services and remove equipment.
- d. Equipment to Be Removed and Reinstalled: Disconnect and cap services and remove, clean, and store equipment; when appropriate, reinstall, reconnect, and make equipment operational.
- e. Ducts to Be Removed: Remove portion of ducts as required and plug remaining ducts with same or compatible ductwork material.
- f. Ducts to Be Abandoned in Place: Cap or plug ducts with same or compatible ductwork material and leave in place.

3.4 PROTECTION

- A. Temporary Protection: Provide temporary barricades and other protection required to prevent injury to people and damage to adjacent buildings and facilities to remain.
 1. Provide protection to ensure safe passage of people around selective demolition area and to and from occupied portions of building.
 2. Provide temporary weather protection, during interval between selective demolition of existing construction on exterior surfaces and new construction, to prevent water leakage and damage to structure and interior areas.
 3. Protect walls, ceilings, floors, and other existing finish work that are to remain or that are exposed during selective demolition operations.
 4. Cover and protect furniture, furnishings, and equipment that have not been removed.
 5. Comply with requirements for temporary enclosures, dust control, heating, and cooling specified in Section 015000 "Temporary Facilities and Controls."
- B. Temporary Shoring: Design, provide, and maintain shoring, bracing, and structural supports as required to preserve stability and prevent movement, settlement, or collapse of construction and finishes to remain, and to prevent unexpected or uncontrolled movement or collapse of construction being demolished.
 1. Strengthen or add new supports when required during progress of selective demolition.
- C. Remove temporary barricades and protections where hazards no longer exist.

3.5 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. Proceed with selective demolition systematically, from higher to lower level. Complete selective demolition operations above each floor or tier before disturbing supporting members on the next lower level.
 2. Neatly cut openings and holes plumb, square, and true to dimensions required. Use cutting methods least likely to damage construction to remain or adjoining construction. Use hand tools or small power tools designed for sawing or grinding, not hammering and chopping. Temporarily cover openings to remain.
 3. Cut or drill from the exposed or finished side into concealed surfaces to avoid marring existing finished surfaces.
 4. Do not use cutting torches until work area is cleared of flammable materials. At concealed spaces, such as duct and pipe interiors, verify condition and contents of hidden space before starting flame-cutting operations. Maintain portable fire-suppression devices during flame-cutting operations.
 5. Maintain fire watch during and for at least 24 hours after flame-cutting operations.
 6. Maintain adequate ventilation when using cutting torches.
 7. Remove decayed, vermin-infested, or otherwise dangerous or unsuitable materials and promptly dispose of off-site.
 8. Remove structural framing members and lower to ground by method suitable to avoid free fall and to prevent ground impact or dust generation.
 9. Locate selective demolition equipment and remove debris and materials so as not to impose excessive loads on supporting walls, floors, or framing.
 10. Dispose of demolished items and materials promptly.
- B. Site Access and Temporary Controls: Conduct selective demolition and debris-removal operations to ensure minimum interference with roads, streets, walks, walkways, and other adjacent occupied and used facilities.
- C. Existing Items to Remain: Protect construction indicated to remain against damage and soiling during selective demolition. When permitted by Architect, items may be removed to a suitable, protected storage location during selective demolition and cleaned and reinstalled in their original locations after selective demolition operations are complete.

3.6 SELECTIVE DEMOLITION PROCEDURES FOR SPECIFIC MATERIALS

- A. Concrete: Demolish in small sections. Using power-driven saw, cut concrete to a depth of at least 3/4 inch at junctures with construction to remain. Dislodge concrete from reinforcement at perimeter of areas being demolished, cut reinforcement, and then remove remainder of concrete. Neatly trim openings to dimensions indicated.
- B. Masonry: Demolish in small sections. Cut masonry at junctures with construction to remain, using power-driven saw, and then remove masonry between saw cuts.
- C. Concrete Slabs-on-Grade: Saw-cut perimeter of area to be demolished, and then break up and remove.

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- D. Resilient Floor Coverings: Remove floor coverings and adhesive according to recommendations in RFCI's "Recommended Work Practices for the Removal of Resilient Floor Coverings."
- E. Roofing: Remove no more existing roofing than what can be covered in one day and so that building interior remains watertight and weathertight.

3.7 DISPOSAL OF DEMOLISHED MATERIALS

- A. Remove demolition waste materials from Project site.
 - 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.
- B. Burning: Do not burn demolished materials.

3.8 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 SELECTIVE DEMOLITION

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**SECTION 03 3000
CAST-IN-PLACE CONCRETE**

PART 1 - GENERAL

1.1 SUMMARY:

- A. Section Includes:
 - 1. Formwork.
 - 2. Reinforcing.
 - 3. Cast-in place concrete including mix design, placement procedures, and finishes.
- B. Cast-in-place concrete includes the following:
 - 1. Foundations and footings.
 - 2. Slabs-on-grade.
 - 3. Slab on metal deck.
 - 4. Foundation and retaining walls.
 - 5. Concrete Walls.
 - 6. Equipment pads and bases.
- C. Related Documents: Drawings and general provisions of Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.
- D. Related Sections: The following Sections contain requirements that relate to this Section:
 - 1. Section 02 20 00, "Earthwork": Drainage fill under slabs on grade.
 - 2. Section 02 51 40, "Portland Cement Concrete Paving": Concrete paving and walks.
 - 3. Section 03 33 00, "Architectural Cast-In-Place Concrete."
 - 4. Section 05 50 00, "Metal Fabrications": Metal items to be built into concrete.
 - 5. Section 07 90 00, "Sealants and Joint Fillers": Sealants and joint fillers in concrete work.
 - 6. Respective Sections of Division 15 and 16, as applicable, for furnishing of inserts, anchorage and erection items required for mechanical and electrical work.
 - 7. Divisions 15 and 16, as applicable, for furnishing and setting of conduit, pipes and sleeves for mechanical and electrical equipment.

1.2 SUBMITTALS:

- A. General: Submit the following according to Conditions of the Contract and Division 1 Specification Sections.
 - 1. Product data for proprietary materials and items, including reinforcement and forming accessories, admixtures, patching compounds, waterstops, joint systems, curing compounds, dry-shake finish materials, and others if requested by Architect.
 - 2. Shop drawings for reinforcement detailing fabricating, bending, and placing concrete reinforcement. Comply with ACI 315 "Manual of Standard Practice for Detailing Reinforced Concrete Structures" showing bar schedules, stirrup spacing, bent bar diagrams, and arrangement of concrete reinforcement. Include special reinforcing required for openings through concrete structures.
 - 3. Shop drawings for formwork indicating fabrication and erection of forms for specific finished concrete surfaces. Show form construction including jointing, special form joints or reveals, location and pattern of form tie placement, and other items that affect exposed concrete visually. Formwork drawings shall bear the seal and signature of a Professional Engineer registered in the State of Alabama.
 - 4. Coordination drawings for all installed embeds, anchor bolts, embedded piping, etc.

5. Architect's review is for general architectural applications and features only. Designing formwork for structural stability and efficiency is Contractor's responsibility.
6. Samples of materials as requested by Architect, including names, sources, and descriptions, as follows:
 - a. Color finishes.
 - b. Normal weight aggregates.
 - c. Reglets.
 - d. Waterstops.
 - e. Vapor retarder/barrier.
7. Laboratory test reports for concrete materials and mix design test.
8. Material certificates in lieu of material laboratory test reports when permitted by Architect. Material certificates shall be signed by manufacturer and Contractor, certifying that each material item complies with or exceeds specified requirements. Provide certification from admixture manufacturers that chloride content complies with specification requirements.
9. Minutes of preinstallation conference.

1.3 QUALITY ASSURANCE:

- A. Codes and Standards: Comply with provisions of the following codes, specifications, and standards, except where more stringent requirements are shown or specified:
 1. ACI 301, "Specifications for Structural Concrete for Buildings".
 2. ACI 302, "Guide for Concrete Floor and Slab Construction".
 3. ACI 304, "Recommended Practice for Measuring, Mixing, Transporting and Placing Concrete".
 4. ACI 305, "Hot Weather Concreting".
 5. ACI 306, "Cold Weather Concreting".
 6. ACI 309, "Guide for Consolidation of Concrete".
 7. ACI 311, "Recommended Practice for Concrete Inspection".
 8. ACI 318, "Building Code Requirements for Reinforced Concrete".
 9. ACI 347, "Recommended Practice for Concrete Formwork".
 10. Concrete Reinforcing Steel Institute (CRSI), "Manual of Standard Practice."
 11. American Welding Society, AWS D1.4 "Structural Welding Code - Reinforcing Steel".
- B. Concrete Testing Service: Engage a testing agency acceptable to Architect to perform material evaluation tests and to design concrete mixes.
 1. Refer to Division 1 Section "Special Conditions" for additional information and requirements.
- C. Materials and installed work may require testing and retesting at any time during progress of Work. Tests, including retesting of rejected materials for installed Work, shall be done at Owner's expense.
- D. Pre-installation Conference: Conduct conference at Project site to comply with requirements of Division 1 Section "Project Meetings" and the following:
 1. At least 35 days prior to submitting design mixes, conduct a meeting to review detailed requirements for preparing concrete design mixes and to determine procedures for satisfactory concrete operations. Review requirements for submittals, status of

coordinating work, and availability of materials. Establish preliminary work progress schedule and procedures for materials inspection, testing, and certifications. Require representatives of each entity directly concerned with cast-in-place concrete to attend conference, including, but not limited to, the following:

- a. Contractor's superintendent.
- b. Agency responsible for concrete design mixes.
- c. Agency responsible for field quality control.
- d. Ready-mix concrete producer.
- e. Concrete subcontractor.
- f. Primary admixture manufacturers.

PART 2 - PRODUCTS

2.1 FORM MATERIALS:

- A. Forms for Exposed Finish Concrete: Plywood, metal, metal-framed plywood faced, or other acceptable panel-type materials to provide continuous, straight, smooth, exposed surfaces. Care shall be taken with the formwork on the bottom of the slabs, which will be exposed ceilings, to avoid the need for patching or repairs following the removal of the formwork. Furnish in largest practicable sizes to minimize number of joints and to conform to joint system shown on drawings.
 1. Use overlaid plywood complying with U.S. Product Standard PS-1 "A-C or B-B High Density Overlaid Concrete Form," Class I.
 2. Use plywood complying with U.S. Product Standard PS-1 "B-B (Concrete Form) Plywood," Class I, Exterior Grade or better, mill-oiled and edge-sealed, with each piece bearing legible inspection trademark.
- B. Forms for Unexposed Finish Concrete: Plywood, lumber, metal, or another acceptable material. Provide lumber dressed on at least two edges and one side for tight fit.
- C. Form Release Agent: Provide commercial formulation form release agent with a maximum of 350 g/L volatile organic compounds (VOCs) that will not bond with, stain, or adversely affect concrete surfaces and will not impair subsequent treatments of concrete surfaces.
- D. Form Ties: Factory-fabricated, adjustable-length, removable or snap-off metal form ties designed to prevent form deflection and to prevent spalling of concrete upon removal. Provide units that will leave no metal closer than 1-1/2 inches to the plane of the exposed concrete surface.
- E. Provide ties that, when removed, will leave holes not larger than 1 inch in diameter in the concrete surface.

2.2 REINFORCING MATERIALS:

- A. Reinforcing Bars: ASTM A 615, Grade 60, deformed.
- B. Steel Wire: ASTM A 82, plain, cold-drawn steel.
- C. Welded Wire Fabric: ASTM A 185, welded steel wire fabric.
- D. Supports for Reinforcement: Bolsters, chairs, spacers, and other devices for spacing, supporting, and fastening reinforcing bars and welded wire fabric in place. Use wire bar-type supports complying with CRSI specifications.

1. For slabs-on-grade, use concrete bricks or supports with sand plates or horizontal runners where base material will not support chair legs.
 2. For exposed-to-view concrete surfaces where legs of supports are in contact with forms, provide supports with legs that are protected by plastic (CRSI, Class 1) or stainless steel (CRSI, Class 2).
- E. Bar and Rod Mats: ASTM A 184 "Specification for Fabricated Deformed Steel Bar Mats for Concrete Reinforcement".
- F. Threaded Dowels: Continuous threaded high-strength steel bars equal to "Lasstud" by Richmond Screw Anchor Co., Inc. Provide inserts compatible with dowels, designed for ultimate pull-out force indicated on the drawings.
- G. Mechanical Splices: Equal to "Cadweld Rebar Splices", as manufactured by Erico Products, Inc., "C" Series, for developing 125% of minimum ASTM specified yield strengths, unless otherwise noted on drawings.
- H. Steel Shapes, Plates and Rods: Conform to ASTM A 36, "Specification for Structural Steel".
- I. Do Not Weld Reinforcing Steel: Unless specifically noted on drawings. If welding is shown, conform to latest revision of AWS D12.1, "Reinforcing Steel Welding Code of the American Welding Society". Perform all welding with certified welders qualified per AWS.

2.3 CONCRETE MATERIALS:

- A. Portland Cement: ASTM C 150, Type I, IL or IL.
1. Use one brand of cement throughout Project unless otherwise acceptable to Architect.
- B. Fly Ash: ASTM C 618, Type F.
1. Limit use of fly ash to not exceed 25 percent of cement content by weight.
- C. Normal-Weight Aggregates: ASTM C 33 and as specified. Provide aggregates from a single source for exposed concrete.
1. For exposed exterior surfaces, do not use fine or coarse aggregates that contain substances that cause spalling.
- D. Water: Potable.
- E. Admixtures, General: Provide concrete admixtures that contain not more than 0.1 percent chloride ions.
- F. Air-Entraining Admixture: ASTM C 260, certified by manufacturer to be compatible with other required admixtures.
1. Products: Subject to compliance with requirements, provide one of the following:
 - a. Air-Tite, Cormix Construction Chemicals.
 - b. Air-Mix or Perma-Air, Euclid Chemical Co.
 - c. Darex AEA or Daravair, W.R. Grace & Co.
 - d. MB-VR or Micro-Air, Master Builders, Inc.
 - e. Sealtight AEA, W.R. Meadows, Inc.
 - f. Sika AER, Sika Corp.
- G. Water-Reducing Admixture: ASTM C 494, Type A.
1. Products: Subject to compliance with requirements, provide one of the following:
 - a. PSI N, Cormix Construction Chemicals.
 - b. Eucon WR-75, Euclid Chemical Co.

- c. WRDA, W.R. Grace & Co.
 - d. Pozzoloth Normal or Polyheed, Master Builders, Inc.
 - e. Plastocrete 161, Sika Corp.
- H. High-Range Water-Reducing Admixture: ASTM C 494, Type F or Type G.
 - 1. Products: Subject to compliance with requirements, provide one of the following:
 - a. Eucon 37, Euclid Chemical Co.
 - b. WRDA 19 or Daracem, W.R. Grace & Co.
 - c. Rheobuild or Polyheed, Master Builders, Inc.
 - d. Sikament 300, Sika Corp.
- I. Water-Reducing, Accelerating Admixture: ASTM C 494, Type E.
 - 1. Products: Subject to compliance with requirements, provide one of the following:
 - a. Accelguard 80, Euclid Chemical Co.
 - b. Daraset, W.R. Grace & Co.
 - c. Pozzutec 20, Master Builders, Inc.
- J. Water-Reducing, Retarding Admixture: ASTM C 494, Type D.
 - 1. Products: Subject to compliance with requirements, provide one of the following:
 - a. Eucon Retarder 75, Euclid Chemical Co.
 - b. Daratard-17, W.R. Grace & Co.
 - c. Pozzoloth R, Master Builders, Inc.
 - d. Protard, Prokrete Industries.
 - e. Plastiment, Sika Corporation.

2.4 RELATED MATERIALS:

- A. Reglets: Where sheet flashing or bituminous membranes are terminated in reglets, provide reglets of not less than 0.0217-inch-thick (26-gage) galvanized sheet steel. Fill reglet or cover face opening to prevent intrusion of concrete or debris.
- B. Dovetail Anchor Slots: Hot-dip galvanized sheet steel, not less than 0.0336 inch thick (22 gage) with bent tab anchors. Fill slot with temporary filler or cover face opening to prevent intrusion of concrete or debris.
- C. Waterstops: Provide strip applied, flat, dumbbell-type or centerbulb-type waterstops at construction joints and other joints as indicated. Size to suit joints.
 - 1. Flexible Butyl Rubber Strip Applied Waterstops:
 - a. Manufacturers: Subject to compliance with requirements, provide products of one of the following:
 - 1. Swellstop, as manufactured by Greenstreak.
 - 2. Synkoflex.
 - 2. Rubber Waterstops: Corps of Engineers CRD-C 513.
 - a. Manufacturers: Subject to compliance with requirements, provide products of one of the following:
 - 1. The Burke Co.
 - 2. Progress Unlimited.
 - 3. Williams Products, Inc.

3. Polyvinyl Chloride Waterstops: Corps of Engineers CRD-C 572.
 - a. Manufacturers: Subject to compliance with requirements, provide products of one of the following:
 1. The Burke Co.
 2. Greenstreak Plastic Products Co.
 3. W.R. Meadows, Inc.
 4. Progress Unlimited.
 5. Schlegel Corp.
 6. Vinylex Corp.
- D. Vapor Barrier:
 1. Vapor Barrier, General Use (except as indicated below): At least, 10-mil thick polyethylene-coated barrier paper, or 1/8" thick asphalt core membrane sheet.
 - a. Product/Manufacturer: Equivalent to "Moistop Underslab", as manufactured by Fortifiber Building Products Systems; Reno, NV. Including in part, joint mastic and/or seals, and all other components required for a complete, proper, and vaporproof installation.
 - b. Locations for Use: Continuous below all building slabs, and other structural slabs, porches, stoops, pads, covered (below roofs) areas, etc., on grade, and turned-down to tops of footings.
- E. Coordinate the use (or non-use) of membrane-forming compounds with the suppliers of finishes to be provided on concrete surfaces. Do not use membrane-forming compounds at locations where they may have a detrimental effect on the permanent installation of the finish materials, floor coverings, their adhesives, setting beds, etc. At such locations, utilize only dissipating type compounds.
- F. Liquid Membrane-Forming Curing Compound: Liquid-type membrane-forming curing compound complying with ASTM C 309, Type I, Class A. Moisture loss not more than 0.55 kg/sq. meter when applied at 200 sq. ft./gal.
 1. Products: Subject to compliance with requirements, provide one of the following:
 - a. Spartan-Cote, The Burke Co.
 - b. Day-Chem Cure and Seal, Dayton Superior Corp.
 - c. Eucocure, Euclid Chemical Co.
 - d. Horn Clear Seal, A.C. Horn, Inc.
 - e. L&M Cure R, L&M Construction Chemicals, Inc.
 - f. Masterkure, Master Builders, Inc.
 - g. CS-309, W.R. Meadows, Inc.
 - h. Kure-N-Seal, Sonneborn-Chemrex.
- G. V.O.C. Compliant Acrylic Curing and Sealing Type (30 Percent): Liquid type membrane-forming curing compound complying with ASTM C 309, Type 1, Class A and B. Provide 30 percent solids minimum, for surfaces indicated to be sealed.
- H. Safe Cure and Seal: 30 percent (J-19), Dayton Superior Inc.
- I. Evaporation Control:
 1. Monomolecular film-forming compound applied to exposed concrete slab surfaces for

temporary protection from rapid moisture loss.

- a. Products: Subject to compliance with requirements, provide one of the following:
 1. Eucobar, Euclid Chemical Co.
 2. E-Con, L&M Construction Chemicals, Inc.
 3. Confilm, Master Builders, Inc.
- J. V.O.C. Compliant Evaporation Control: Sure Film (J-74), Dayton Superior Inc.
- K. Underlayment Compound: Free-flowing, self-leveling, pumpable, cement-based compound for applications from 1 inch thick to feathered edges.
 1. Products: Subject to compliance with requirements, provide one of the following:
 - a. K-15, Ardex, Inc.
 - b. LevelLayer II, Dayton Superior Corp.
 - c. Flo-Top, Euclid Chemical Co.
 - d. Gyp-Crete, Gyp-Crete Corp.
 - e. Levelex, L&M Construction Chemicals, Inc.
 - f. Underlayment 110, Master Builders, Inc.
 - g. Thoro Underlayment Self-Leveling, Thoro System Products.
- L. Bonding Agent: Polyvinyl acetate or acrylic base.
 1. Products: Subject to compliance with requirements, provide one of the following:
 - a. Polyvinyl Acetate (Interior Only):
 1. Superior Concrete Bonder, Dayton Superior Corp.
 2. Euco Weld, Euclid Chemical Co.
 3. Weld-Crete, Larsen Products Corp.
 4. Everweld, L&M Construction Chemicals, Inc.
 5. Ready Bond, Symons Corp.
 - b. Acrylic or Styrene Butadiene:
 1. Acrylic Bondcrete, The Burke Co.
 2. Day-Chem Ad Bond, Dayton Superior Corp.
 3. SBR Latex, Euclid Chemical Co.
 4. Daraweld C, W.R. Grace & Co.
 5. Hornweld, A.C. Horn, Inc.
 6. Everbond, L&M Construction Chemicals, Inc.
 7. Acryl-Set, Master Builders Inc.
 8. Intralok, W.R. Meadows, Inc.
 9. Sonocrete, Sonneborn-Chemrex.
- M. Epoxy Adhesive: ASTM C 881, two-component material suitable for use on dry or damp surfaces. Provide material type, grade, and class to suit Project requirements.
 1. Products: Subject to compliance with requirements, provide one of the following:
 - a. Resi-Bond (J-58), Dayton Superior.
 - b. Euco Epoxy System #452 or #620, Euclid Chemical Co.
 - c. Epoxite Binder 2390, A.C. Horn, Inc.
 - d. Epabond, L&M Construction Chemicals, Inc.
 - e. Concrasive Standard Liquid, Master Builders, Inc.
 - f. Rezi-Weld 1000, W.R. Meadows, Inc.
 - g. Sikadur 32 Hi-Mod, Sika Corp.

- N. Interior Epoxy Sealer: Use a maximum 35 percent type.
 - 1. Products: Subject to compliance with requirements, provide one of the following:
 - a. Epoxy-Plus; Dayton Superior Inc.
 - b. Eucopoxy 1; Euclid Chemical
 - c. Oauerseal 30E; Non-Crete, Inc.
 - d. Rescon R117; Symons Corp.
 - e. Son-No-Mar; Sonneborn, Div./Chem Rex Inc.
 - f. Super Seal 35; L & M Const. Chem. Co.
- O. V.O.C. Compliant Urethane Sealer:
 - 1. Day Chem Urethane V.O.C. (J-39); Dayton Superior Inc.

2.5 PROPORTIONING AND DESIGNING MIXES:

- A. Prepare design mixes for each type and strength of concrete by either laboratory trial mixtures or field experience methods as specified in ACI 318-89 Section 5.3. If trial mixtures method used, use an independent testing facility acceptable to Architect for preparing and reporting proposed mix designs. The testing facility shall not be the same as used for field quality control testing, unless otherwise acceptable to Architect.
- B. Trial mix designs and strength tests, made by qualified independent material laboratory, in accordance with ACI 318-89 Section 5.3 are required for the following types of concrete:
 - 1. Normal weight concrete with specified strength in excess of 4000 psi.
 - 2. All concrete designs for which a suitable experience record is not available.
- C. Mix design based on a record of past performance in accordance with ACI 318-89 Section 5.3, may be provided by qualified concrete supplier or precast concrete manufacturer for concrete designs. Mix design shall be certified by an independent testing laboratory.
- D. All concrete mix designs shall include the following information:
 - 1. Proportions of cement, fine and coarse aggregate and water.
 - 2. Water/cement ratio, design strength, slump and air content.
 - 3. Type of cement and aggregates.
 - 4. Type and dosage of all admixtures.
 - 5. Type, color and dosage of integral coloring compounds, where applicable.
 - 6. Special requirements for pumping.
 - 7. Any special characteristics of the mix which require precautions in the mixing, placing or finishing techniques to achieve the finished product specified.
- E. Submit written reports to Architect of each proposed mix for each class of concrete at least 15 days prior to start of Work. Do not begin concrete production until proposed mix designs have been reviewed by Architect.
- F. Design mixes to provide normal weight concrete with the following properties as indicated on drawings and schedules:
 - 1. 5000-psi, 28-day compressive strength.
 - 2. 4000-psi, 28-day compressive strength.
 - 3. 3000-psi, 28-day compressive strength.
- G. Water-Cement Ratio: Provide concrete for following conditions with maximum water-cement (W/C) ratios as follows:
 - 1. Subjected to freezing and thawing: W/C 0.45.

2. Subjected to deicers/watertight: W/C 0.40.
 3. Subjected to brackish water, salt spray, or deicers: W/C 0.40.
- H. Slump Limits: Proportion and design mixes to result in concrete slump at point of placement as follows:
1. Ramps and sloping surfaces: Not more than 3 inches.
 2. Reinforced foundation systems: Not less than 1 inch and not more than 3 inches.
 3. Concrete containing high-range water-reducing admixture (superplasticizer): Not more than 8 inches after adding admixture to site-verified 2-to-3-inch slump concrete.
 4. Other concrete: Not more than 5 inches or less than 3 inches.
- I. Adjustment to Concrete Mixes: Mix design adjustments may be requested by Contractor when characteristics of materials, job conditions, weather, test results, or other circumstances warrant, as accepted by Architect. Laboratory test data for revised mix design and strength results must be submitted to and accepted by Architect before using in Work.

2.6 ADMIXTURES:

- A. Use water-reducing admixture or high-range water-reducing admixture (superplasticizer) in concrete, as required, for placement and workability.
- B. Use accelerating admixture in concrete slabs placed at ambient temperatures below 50 deg.F (10 deg.C).
- C. Use high-range water-reducing admixture in pumped concrete, concrete for heavy-use industrial slabs, architectural concrete, parking structure slabs, concrete required to be watertight, and concrete with water-cement ratios below 0.50.
- D. Use air-entraining admixture in exterior exposed concrete unless otherwise indicated. Add air-entraining admixture at manufacturer's prescribed rate to result in concrete at point of placement having total air content with a tolerance of plus or minus 1-1/2 percent within the following limits:
1. Concrete structures and slabs exposed to freezing and thawing, deicer chemicals, or hydraulic pressure:
 - a. 5.0 percent (moderate exposure); 6.0 percent (severe exposure) for 3/4-inch maximum aggregate.
 - b. 5.5 percent (moderate exposure); 7.0 percent (severe exposure) for 1/2-inch maximum aggregate.
 2. Other concrete not exposed to freezing, thawing, or hydraulic pressure, or to receive a surface hardener: 2 to 4 percent air.
- E. Use admixtures for water reduction and set accelerating or retarding in strict compliance with manufacturer's directions.

2.7 CONCRETE MIXING

- A. Ready-Mixed Concrete: Comply with requirements of ASTM C 94, and as specified.
1. When air temperature is between 85 deg.F (30 deg.C) and 90 deg.F (32 deg.C), reduce mixing and delivery time from 1-1/2 hours to 75 minutes, and when air temperature is above 90 deg.F (32 deg.C), reduce mixing and delivery time to 60 minutes.

PART 3 - EXECUTION

3.1 GENERAL:

- A. Coordinate the installation of joint materials, vapor retarder/barrier, and other related materials with placement of forms and reinforcing steel.

3.2 FORMS:

- A. General: Design, erect, support, brace, and maintain formwork to support vertical, lateral, static, and dynamic loads that might be applied until concrete structure can support such loads. Formwork drawings shall bear the seal and signature of a Professional Engineer registered in the State of Alabama. Construct formwork so concrete members and structures are of correct size, shape, alignment, elevation, and position. Maintain formwork construction tolerances and surface irregularities complying with the following ACI 347 limits:

1. Provide Class A tolerances for concrete surfaces exposed to view.
2. Provide Class C tolerances for other concrete surfaces.

Care shall be taken with the formwork on the bottom of the slabs, which will be exposed ceilings, to avoid the need for patching or repairs following the removal of the formwork.

- B. Construct forms to sizes, shapes, lines, and dimensions shown and to obtain accurate alignment, location, grades, level, and plumb work in finished structures. Provide for openings, offsets, sinkages, keyways, recesses, moldings, rustications, reglets, chamfers, blocking, screeds, bulkheads, anchorages and inserts, and other features required in the Work. Use selected materials to obtain required finishes. Solidly butt joints and provide backup at joints to prevent cement paste from leaking.
- C. Fabricate forms for easy removal without hammering or prying against concrete surfaces. Provide crush plates or wrecking plates where stripping may damage cast concrete surfaces. Provide top forms for inclined surfaces where slope is too steep to place concrete with bottom forms only. Kerf wood inserts for forming keyways, reglets, recesses, and the like for easy removal.
- D. Provide temporary openings for clean-outs and inspections where interior area of formwork is inaccessible before and during concrete placement. Securely brace temporary openings and set tightly to forms to prevent losing concrete mortar. Locate temporary openings in forms at inconspicuous locations.
- E. Chamfer exposed corners and edges as indicated, using wood, metal, PVC, or rubber chamfer strips fabricated to produce uniform smooth lines and tight edge joints.
- F. Provisions for Other Trades: Provide openings in concrete formwork to accommodate work of other trades. Determine size and location of openings, recesses, and chases from trades providing such items. Accurately place and securely support items built into forms.
- G. Cleaning and Tightening: Thoroughly clean forms and adjacent surfaces to receive concrete. Remove chips, wood, sawdust, dirt, or other debris just before placing concrete. Retighten forms and bracing before placing concrete, as required, to prevent mortar leaks and maintain proper alignment.

3.3 VAPOR RETARDER/BARRIER INSTALLATION:

- A. General: Place vapor retarder/barrier sheeting in position with longest dimension parallel with direction of pour.
- B. Lap joints 6 inches and seal with manufacturer's recommended mastic or pressure-sensitive tape.

3.4 PLACING REINFORCEMENT:

- A. General: Comply with Concrete Reinforcing Steel Institute's recommended practice for "Placing Reinforcing Bars," for details and methods of reinforcement placement and supports and as specified.
 - 1. Avoiding cutting or puncturing vapor retarder/barrier during reinforcement placement and concreting operations. Repair damages before placing concrete.
- B. Clean reinforcement of loose rust and mill scale, earth, ice, and other materials that reduce or destroy bond with concrete.
- C. Accurately position, support, and secure reinforcement against displacement. Locate and support reinforcing by metal chairs, runners, bolsters, spacers, and hangers, as approved by Architect.
- D. Place reinforcement to maintain minimum coverages as indicated for concrete protection. Arrange, space, and securely tie bars and bar supports to hold reinforcement in position during concrete placement operations. Set wire ties so ends are directed into concrete, not toward exposed concrete surfaces.
- E. Install welded wire fabric in lengths as long as practicable. Lap adjoining pieces at least one full mesh and lace splices with wire. Offset laps of adjoining widths to prevent continuous laps in either direction.

3.5 JOINTS:

- A. Construction Joints: Locate and install construction joints so they do not impair strength or appearance of the structure, as acceptable to Architect.
- B. Provide keyways at least 1-1/2 inches deep in construction joints in walls and slabs and between walls and footings. Bulkheads designed and accepted for this purpose may be used for slabs.
- C. Place construction joints perpendicular to main reinforcement. Continue reinforcement across construction joints except as indicated otherwise. Do not continue reinforcement through sides of strip placements.
- D. Use bonding agent on existing concrete surfaces that will be joined with fresh concrete.
- E. Waterstops: Provide waterstops in construction joints as indicated. Install waterstops to form continuous diaphragm in each joint. Support and protect exposed waterstops during progress of Work. Field-fabricate joints in waterstops according to manufacturer's printed instructions.
- F. Isolation Joints in Slabs-on-Grade: Construct isolation joints in slabs-on-grade at points of contact between slabs-on-grade and vertical surfaces, such as column pedestals, foundation walls, grade beams, and other locations, as indicated.
 - 1. Joint fillers and sealants are specified in Section 07900, "Sealants and Joint Fillers".
- G. Contraction (Control) Joints in Slabs-on-Grade: Construct contraction joints in slabs-on-grade to form panels of patterns as shown. Use saw cuts 1/8 inch wide by one-fourth of slab depth or inserts 1/4 inch wide by one-fourth of slab depth, unless otherwise indicated.
 - 1. Form contraction joints by inserting premolded plastic, hardboard, or fiberboard strip into fresh concrete until top surface of strip is flush with slab surface. Tool slab edges round on each side of insert. After concrete has cured, remove inserts and clean groove

of loose debris.

2. Contraction joints in unexposed floor slabs may be formed by saw cuts as soon as possible after slab finishing as may be safely done without dislodging aggregate.
3. If joint pattern is not shown, provide joints not exceeding 15 feet in either direction and located to conform to bay spacing wherever possible (at column centerlines, half bays, third bays).
4. Joint fillers and sealants are specified in Division 7 Section "Joint Sealants."

3.6 INSTALLING EMBEDDED ITEMS:

- A. General: Set and build into formwork anchorage devices and other embedded items required for other work that is attached to or supported by cast-in-place concrete. Use setting drawings, diagrams, instructions, and directions provided by suppliers of items to be attached.
- B. Install reglets to receive top edge of foundation sheet waterproofing and to receive through-wall flashings in outer face of concrete frame at exterior walls, where flashing is shown at lintels, relieving angles, and other conditions.
- C. Install dovetail anchor slots in concrete structures as indicated on drawings.
- D. Forms for Slabs: Set edge forms, bulkheads, and intermediate screed strips for slabs to achieve required elevations and contours in finished surfaces. Provide and secure units to support screed strips using strike-off templates or compacting-type screeds.

3.7 PREPARING FORM SURFACES:

- A. General: Coat contact surfaces of forms with an approved, nonresidual, low-VOC, form-coating compound before placing reinforcement.
- B. Do not allow excess form-coating material to accumulate in forms or come into contact with in-place concrete surfaces against which fresh concrete will be placed. Apply according to manufacturer's instructions.
 1. Coat steel forms with a nonstaining, rust-preventative material. Rust-stained steel formwork is not acceptable.

3.8 CONCRETE PLACEMENT:

- A. Inspection: Before placing concrete, inspect and complete formwork installation, reinforcing steel, and items to be embedded or cast in. Notify other trades to permit installation of their work.
- B. General: Comply with ACI 304, "Guide for Measuring, Mixing, Transporting, and Placing Concrete," and as specified.
- C. Deposit concrete continuously or in layers of such thickness that no new concrete will be placed on concrete that has hardened sufficiently to cause seams or planes of weakness. If a section cannot be placed continuously, provide construction joints as specified. Deposit concrete to avoid segregation at its final location.
- D. Placing Concrete in Forms: Deposit concrete in forms in horizontal layers no deeper than 24 inches and in a manner to avoid inclined construction joints. Where placement consists of several layers, place each layer while preceding layer is still plastic to avoid cold joints.
 1. Consolidate placed concrete by mechanical vibrating equipment supplemented by hand-spading, rodding, or tamping. Use equipment and procedures for consolidation of

- concrete complying with ACI 309.
2. Do not use vibrators to transport concrete inside forms. Insert and withdraw vibrators vertically at uniformly spaced locations no farther than the visible effectiveness of the machine. Place vibrators to rapidly penetrate placed layer and at least 6 inches into preceding layer. Do not insert vibrators into lower layers of concrete that have begun to set. At each insertion, limit duration of vibration to time necessary to consolidate concrete and complete embedment of reinforcement and other embedded items without causing mix to segregate.
- E. Placing Concrete Slabs: Deposit and consolidate concrete slabs in a continuous operation, within limits of construction joints, until completing placement of a panel or section.
1. Consolidate concrete during placement operations so that concrete is thoroughly worked around reinforcement, other embedded items and into corners.
 2. Bring slab surfaces to correct level with a straightedge and strike off. Use bull floats or darbies to smooth surface free of humps or hollows. Do not disturb slab surfaces prior to beginning finishing operations.
 3. Maintain reinforcing in proper position on chairs during concrete placement.
- F. Cold-Weather Placement: Comply with provisions of ACI 306 and as follows. Protect concrete work from physical damage or reduced strength that could be caused by frost, freezing actions, or low temperatures.
- G. When air temperature has fallen to or is expected to fall below 40 deg.F (4 deg.C), uniformly heat water and aggregates before mixing to obtain a concrete mixture temperature of not less than 50 deg.F (10 deg.C) and not more than 80 deg.F (27 deg.C) at point of placement.
1. Do not use frozen materials or materials containing ice or snow. Do not place concrete on frozen subgrade or on subgrade containing frozen materials.
 2. Do not use calcium chloride, salt, or other materials containing antifreeze agents or chemical accelerators unless otherwise accepted in mix designs.
- H. Hot-Weather Placement: When hot weather conditions exist that would impair quality and strength of concrete, place concrete complying with ACI 305 and as specified.
1. Cool ingredients before mixing to maintain concrete temperature at time of placement to below 90 deg.F (32 deg.C). Mixing water may be chilled or chopped ice may be used to control temperature, provided water equivalent of ice is calculated to total amount of mixing water. Using liquid nitrogen to cool concrete is Contractor's option.
 2. Cover reinforcing steel with water-soaked burlap if it becomes too hot, so that steel temperature will not exceed the ambient air temperature immediately before embedding in concrete.
 3. Fog spray forms, reinforcing steel, and subgrade just before placing concrete. Keep subgrade moisture uniform without puddles or dry areas.
 4. Use water-reducing retarding admixture when required by high temperatures, low humidity, or other adverse placing conditions, as acceptable to Architect.

3.9 FINISHING FORMED SURFACES:

- A. Rough-Formed Finish: Provide a rough-formed finish on formed concrete surfaces not

exposed to view in the finished Work or concealed by other construction. This is the concrete surface having texture imparted by form-facing material used, with tie holes and defective areas repaired and patched, and fins and other projections exceeding 1/4 inch in height rubbed down or chipped off.

- B. Smooth-Formed Finish: Provide a smooth-formed finish on formed concrete surfaces exposed to view or to be covered with a coating material applied directly to concrete, or a covering material applied directly to concrete, such as waterproofing, dampproofing, veneer plaster, painting, or another similar system. This is an as-cast concrete surface obtained with selected form-facing material, arranged in an orderly and symmetrical manner with a minimum of seams. Care shall be taken with the formwork on the bottom of the slabs, which will be exposed ceilings, to avoid the need for patching or repairs following the removal of the formwork. Repair and patch defective areas with fins and other projections completely removed and smoothed.
- C. Smooth-Rubbed Finish: Provide smooth-rubbed finish on scheduled concrete surfaces that have received smooth-formed finish treatment not later than 1 day after form removal.
 - 1. Moisten concrete surfaces and rub with carborundum brick or another abrasive until producing a uniform color and texture. Do not apply cement grout other than that created by the rubbing process.
- D. Related Unformed Surfaces: At tops of walls, horizontal offsets, and similar unformed surfaces adjacent to formed surfaces, strike-off smooth and finish with a texture matching adjacent formed surfaces. Continue final surface treatment of formed surfaces uniformly across adjacent unformed surfaces unless otherwise indicated.

3.10 MONOLITHIC SLAB FINISHES:

- A. Scratch Finish: Apply scratch finish to monolithic slab surfaces to receive concrete floor topping or mortar setting beds for tile, portland cement terrazzo, and other bonded applied cementitious finish flooring material, and where indicated.
 - 1. After placing slabs, finish surface to tolerances specified in Section 3.11. Slope surfaces uniformly to drains where required. After leveling, roughen surface before final set with stiff brushes, brooms, or rakes.
- B. Float Finish: Apply float finish to monolithic slab surfaces to receive trowel finish and other finishes as specified; slab surfaces to be covered with membrane or elastic waterproofing, membrane or elastic roofing, or sand-bed terrazzo; and where indicated.
 - 1. After screeding, consolidating, and leveling concrete slabs, do not work surface until ready for floating. Begin floating, using float blades or float shoes only, when surface water has disappeared, or when concrete has stiffened sufficiently to permit operation of power-driven floats, or both. Consolidate surface with power-driven floats or by hand-floating if area is small or inaccessible to power units. Finish surfaces to tolerances specified in Section 3.11. Cut down high spots and fill low spots. Uniformly slope surfaces to drains. Immediately after leveling, refloat surface to a uniform, smooth, granular texture.
- C. Trowel Finish: Apply a trowel finish to monolithic slab surfaces exposed to view and slab

surfaces to be covered with resilient flooring, carpet, ceramic or quarry tile, paint, or another thin film-finish coating system.

1. After floating, begin first trowel-finish operation using a power-driven trowel. Begin final troweling when surface produces a ringing sound as trowel is moved over surface. Consolidate concrete surface by final hand-troweling operation, free of trowel marks, uniform in texture and appearance, and finish surfaces to tolerances specified in Section 3.11. Grind smooth any surface defects that would telegraph through applied floor covering system.
- D. Trowel and Fine Broom Finish: Where ceramic or quarry tile is to be installed with thin-set mortar, apply a trowel finish as specified, then immediately follow by slightly scarifying the surface with a fine broom.
- E. Nonslip Broom Finish: Apply a nonslip broom finish to exterior concrete platforms, steps, and ramps, and elsewhere as indicated.
 1. Immediately after float finishing, slightly roughen concrete surface by brooming with fiber-bristle broom perpendicular to main traffic route. Coordinate required final finish with Architect before application.

3.11 FLOOR FLATNESS/LEVELNESS REQUIREMENTS:

- A. After placing slabs, finish surface to the following tolerances of F(F) (floor flatness) and F(L) (floor levelness) measured according to ASTM E 1155:

FINISH	SLAB-ON-GRADE				FRAMED FLOOR	
	OVERALL		LOCAL		OVERALL	LOCAL
	FF	FL	FF	FL	FF	FF
Scratch Finish	18	15	15	13	25	22
Float Finish	20	17	17	15	25	22
Trowel Finish	25	22	22	19	25	22

Specified overall F-numbers apply to the whole floor, taken as one. Minimum local F-numbers apply to each slab, bounded by construction joints.

3.12 MISCELLANEOUS CONCRETE ITEMS:

- A. Filling In: Fill in holes and openings left in concrete structures for passage of work by other trades, unless otherwise shown or directed, after work of other trades is in place. Mix, place, and cure concrete as specified to blend with in-place construction. Provide other miscellaneous concrete filling shown or required to complete Work.
- B. Curbs: Provide monolithic finish to interior curbs by stripping forms while concrete is still green and by steel-troweling surfaces to a hard, dense finish with corners, intersections, and terminations slightly rounded.
- C. Equipment Bases and Foundations: Provide machine and equipment bases and foundations as shown on drawings. Set anchor bolts for machines and equipment to template at correct elevations, complying with diagrams or templates of manufacturer furnishing machines and equipment.

3.13 CONCRETE CURING AND PROTECTION:

- A. General: Protect freshly placed concrete from premature drying and excessive cold or hot temperatures. In hot, dry, and windy weather protect concrete from rapid moisture loss before and during finishing operations with an evaporation-control material. Apply according to manufacturer's instructions after screeding and bull floating, but before power floating and troweling.
- B. Start initial curing as soon as free water has disappeared from concrete surface after placing and finishing. Weather permitting, keep continuously moist for not less than 7 days.
- C. Curing Methods: Cure concrete by curing compound, by moist curing, by moisture-retaining cover curing, or by combining these methods, as specified.
 - 1. Provide moisture curing by the following methods:
 - a. Keep concrete surface continuously wet by covering with water.
 - b. Use continuous water-fog spray.
 - c. Cover concrete surface with specified absorptive cover, thoroughly saturate cover with water, and keep continuously wet. Place absorptive cover to provide coverage of concrete surfaces and edges, with a 4-inch lap over adjacent absorptive covers.
 - 2. Provide moisture-retaining cover curing as follows:
 - a. Cover concrete surfaces with moisture-retaining cover for curing concrete, placed in widest practicable width with sides and ends lapped at least 3 inches and sealed by waterproof tape or adhesive. Immediately repair any holes or tears during curing period using cover material and waterproof tape.
 - 3. Apply curing compound on exposed interior slabs and on exterior slabs, walks, and curbs as follows:
 - a. Apply curing compound to concrete slabs as soon as final finishing operations are complete (within 2 hours and after surface water sheen has disappeared). Apply uniformly in continuous operation by power spray or roller according to manufacturer's directions. Recoat areas subjected to heavy rainfall within 3 hours after initial application. Maintain continuity of coating and repair damage during curing period.
 - b. Use membrane curing compounds that will not affect surfaces to be covered with finish materials applied directly to concrete.
- D. Curing Formed Surfaces: Cure formed concrete surfaces, including underside of beams, supported slabs, and other similar surfaces, by moist curing with forms in place for the full curing period or until forms are removed. If forms are removed, continue curing by methods specified above, as applicable.
- E. Curing Unformed Surfaces: Cure unformed surfaces, including slabs, floor topping, and other flat surfaces, by applying the appropriate curing method.
 - 1. Final cure concrete surfaces to receive finish flooring with a moisture-retaining cover, unless otherwise directed.

3.14 SHORES AND SUPPORTS:

- A. General: Comply with ACI 347 for shoring and reshoring in multistory construction, and as specified.

- B. Shoring requirements shall be designed by a professional engineer registered in the State of Florida. All designs shall be submitted to the Architect bearing the seal and signature of the Professional Engineer.
- C. Extend shoring from ground to roof for structures four stories or less, unless otherwise permitted.
- D. Extend shoring at least three floors under floor or roof being placed for structures over four stories. Shore floor directly under floor or roof being placed, so that loads from construction above will transfer directly to these shores. Space shoring in stories below this level in such a manner that no floor or member will be excessively loaded or will induce tensile stress in concrete members where no reinforcing steel is provided. Extend shores beyond minimums to ensure proper distribution of loads throughout structure.
- E. Remove shores and reshore in a planned sequence to avoid damage to partially cured concrete. Locate and provide adequate reshoring to support work without excessive stress or deflection.
- F. Keep reshores in place a minimum of 15 days after placing upper tier, or longer, if required, until concrete has attained its required 28-day strength and heavy loads due to construction operations have been removed.
- G. For concrete exposed to view, all formwork shall be tight to prevent leaks and fins.

3.15 REMOVING FORMS:

- A. General: Formwork not supporting weight of concrete, such as sides of beams, walls, columns, and similar parts of the work, may be removed after cumulatively curing at not less than 50 deg.F (10 deg.C) for 24 hours after placing concrete, provided concrete is sufficiently hard to not be damaged by form-removal operations, and provided curing and protection operations are maintained.
- B. Formwork supporting weight of concrete, such as beam soffits, joists, slabs, and other structural elements, may not be removed in less than 14 days or until concrete has attained at least 75 percent of design minimum compressive strength at 28 days. Determine potential compressive strength of in-place concrete by testing field-cured specimens representative of concrete location or members.
- C. Form-facing material may be removed 4 days after placement only if shores and other vertical supports have been arranged to permit removal of form-facing material without loosening or disturbing shores and supports.

3.16 REUSING FORMS:

- A. Clean and repair surfaces of forms to be reused in the Work. Split, frayed, delaminated, or otherwise damaged form-facing material will not be acceptable for exposed surfaces. Apply new form-coating compound as specified for new formwork.
- B. When forms are extended for successive concrete placement, thoroughly clean surfaces, remove fins and laitance, and tighten forms to close joints. Align and secure joint to avoid offsets. Do not use patched forms for exposed concrete surfaces except as acceptable to Architect.

3.17 CONCRETE SURFACE REPAIRS:

- A. Patching Defective Areas: Repair and patch defective areas with cement mortar immediately

after removing forms, when acceptable to Architect.

- B. Mix dry-pack mortar, consisting of one part portland cement to 2-1/2 parts fine aggregate passing a No. 16 mesh sieve, using only enough water as required for handling and placing.
 - 1. Cut out honeycombs, rock pockets, voids over 1/4 inch in any dimension, and holes left by tie rods and bolts down to solid concrete but in no case to a depth less than 1 inch. Make edges of cuts perpendicular to the concrete surface. Thoroughly clean, dampen with water, and brush-coat the area to be patched with bonding agent. Place patching mortar before bonding agent has dried.
 - 2. For surfaces exposed to view, blend white portland cement and standard portland cement so that, when dry, patching mortar will match surrounding color. Provide test areas at inconspicuous locations to verify mixture and color match before proceeding with patching. Compact mortar in place and strike-off slightly higher than surrounding surface.
- C. Repairing Formed Surfaces: Remove and replace concrete having defective surfaces if defects cannot be repaired to satisfaction of Architect. Surface defects include color and texture irregularities, cracks, spalls, air bubbles, honeycomb, rock pockets, fins and other projections on the surface, and stains and other discolorations that cannot be removed by cleaning. Flush out form tie holes and fill with dry-pack mortar or precast cement cone plugs secured in place with bonding agent.
 - 1. Repair concealed formed surfaces, where possible, containing defects that affect the concrete's durability. If defects cannot be repaired, remove and replace the concrete.
- D. Repairing Unformed Surfaces: Test unformed surfaces, such as monolithic slabs, for smoothness and verify surface tolerances specified for each surface and finish. Correct low and high areas as specified. Test unformed surfaces sloped to drain for trueness of slope and smoothness by using a template having the required slope.
 - 1. Repair finished unformed surfaces containing defects that affect the concrete's durability. Surface defects include crazing and cracks in excess of 0.01 inch wide or that penetrate to the reinforcement or completely through nonreinforced sections regardless of width, spalling, popouts, honeycombs, rock pockets, and other objectionable conditions.
 - 2. Correct high areas in unformed surfaces by grinding after concrete has cured at least 14 days.
 - 3. Correct low areas in unformed surfaces during or immediately after completing surface finishing operations by cutting out low areas and replacing with patching mortar. Finish repaired areas to blend into adjacent concrete. Proprietary underlayment compounds may be used when acceptable to Architect.
 - 4. Repair defective areas, except random cracks and single holes not exceeding 1 inch in diameter, by cutting out and replacing with fresh concrete. Remove defective areas with clean, square cuts and expose reinforcing steel with at least 3/4-inch clearance all around. Dampen concrete surfaces in contact with patching concrete and apply bonding agent. Mix patching concrete of same materials to provide concrete of same type or class as original concrete. Place, compact, and finish to blend with adjacent

finished concrete. Cure in same manner as adjacent concrete.

- E. Perform structural repairs with prior approval of Architect for method and procedure, using specified epoxy adhesive and mortar.
- F. Repair methods not specified above may be used, subject to acceptance of Architect.

3.18 QUALITY CONTROL TESTING DURING CONSTRUCTION:

- A. General: The Owner will employ a testing agency to perform tests and to submit test reports.
- B. Sampling and testing for quality control during concrete placement may include the following, as directed by Architect.
 - 1. Sampling Fresh Concrete: ASTM C 172, except modified for slump to comply with ASTM C 94.
 - a. Slump: ASTM C 143; one test at point of discharge for each day's pour of each type of concrete; additional tests when concrete consistency seems to have changed.
 - b. Air Content: ASTM C 173, volumetric method for lightweight or normal weight concrete; ASTM C 231, pressure method for normal weight concrete; one for each day's pour of each type of air-entrained concrete.
 - c. Concrete Temperature: ASTM C 1064; one test hourly when air temperature is 40 deg.F (4 deg.C) and below, when 80 deg.F (27 deg.C) and above, and one test for each set of compressive-strength specimens.
 - d. Compression Test Specimen: ASTM C 31; one set of four standard cylinders for each compressive-strength test, unless otherwise directed. Mold and store cylinders for laboratory-cured test specimens except when field-cured test specimens are required.
- C. Compressive-Strength Tests: ASTM C 39; one set for each day's pour exceeding 5 cu. yd. plus additional sets for each 50 cu. yd. more than the first 25 cu. yd. of each concrete class placed in any one day, or for each 5000 sq ft of surface are placed; one specimen tested at 7 days, two specimens tested at 28 days, and one specimen retained in reserve for later testing if required.
 - 1. Any additional cylinder required by the Contractor for early strength gain tests for form stripping or post-tensioning are Contractor's responsibility and shall be paid for by Contractor.
 - 2. When frequency of testing will provide fewer than five strength tests for a given class of concrete, conduct testing from at least five randomly selected batches or from each batch if fewer than five are used.
 - 3. When strength of field-cured cylinders is less than 85 percent of companion laboratory-cured cylinders, evaluate current operations and provide corrective procedures for protecting and curing the in-place concrete.
 - 4. Strength level of concrete will be considered satisfactory if averages of sets of three consecutive strength test results equal or exceed specified compressive strength and no individual strength test result falls below specified compressive strength by more than 500 psi.
 - 5. Test results will be reported in writing to Architect, Structural Engineer, ready-mix producer, and Contractor within 24 hours after tests. Reports of compressive strength

tests shall contain the Project identification name and number, date of concrete placement, name of concrete testing service, concrete type and class, location of concrete batch in structure, design compressive strength at 28 days, concrete mix proportions and materials, compressive breaking strength, and type of break for both 7-day tests and 28-day tests.

6. Nondestructive Testing: Impact hammer, sonoscope, or other nondestructive device may be permitted but shall not be used as the sole basis for acceptance or rejection.
7. Additional Tests: The testing agency will make additional tests of in-place concrete when test results indicate specified concrete strengths and other characteristics have not been attained in the structure, as directed by Architect. Testing agency may conduct tests to determine adequacy of concrete by cored cylinders complying with ASTM C 42, or by other methods as directed.

END OF CAST-IN-PLACE CONCRETE

SECTION 05 1200

STRUCTURAL STEEL

PART 1 – GENERAL

1.1 SUMMARY:

- A. Section Includes:
 - 1. Structural steel work including schedules, notes and details showing size and location of members, typical connections, and type of steel required.
 - 2. Structural steel is that work defined in American Institute of Steel Construction (AISC) “Code of Standard Practice” and as otherwise shown on drawings.
 - 3. Related work specified elsewhere:
 - a. Miscellaneous Metal Fabrications are specified elsewhere in Division 5
 - b. Refer to Division 3 for anchor bolt installation in concrete, Division 4 for anchor bolt installation in masonry.
- B. Related Documents: Drawings and general provisions of Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.
- C. Related Sections: The following Sections contain requirements that relate to this Section:
 - 1. Section 05500, “Metal Fabrications”: Loose steel bearing plates and miscellaneous steel framing.

1.2 PERFORMANCE REQUIREMENTS:

- A. Structural Performance: Engineer structural steel members and connections required by the Contract Documents to be selected or completed by the fabricator to withstand design loadings indicated.
- B. Design of Members and Connections: Details shown are typical, similar details apply to similar conditions, unless otherwise indicated. Verify dimensions at site whenever possible without causing delay in the work.

1.3 SUBMITTALS:

- A. General: Submit each item in this Article according to the Conditions of the Contract and Division 1 Specification Sections.
 - 1. Submit all shop drawings on one reproducible print (sepia) and two blue line prints only. The reproducible print will be returned. All blue line prints required by the contractor are the responsibility of the Contractor and shall be made after reproducible is returned.
- B. Product Data or manufacturer’s specifications and installation instructions for following products. Include laboratory test reports and other data to show compliance with specifications (including specified standards). This data is submitted for information only.
 - 1. Structural steel (each type), including certified copies of mill reports covering chemical and physical properties.
 - 2. High-strength bolts (each type), including nuts and washers.
 - a. Include Direct Tension Indicators if used.

3. Structural steel primer paint.
 4. Shrinkage-resistant grout.
 5. Welder's certificates
 6. Submit evidence of fabricator and erector qualifications.
- C. Shop Drawings prepared under the supervision of, signed and sealed by a Licensed Professional Engineer, including complete details and schedules for fabrication and assembly of structural steel members, procedures and diagrams.
1. Include details of cuts, connections, camber, holes, and other pertinent data.
 2. Welds: Indicate welds by standard AWS A2.1 and A2.4 symbols. Distinguishing between shop and field welds, and show size, length, and type of each weld.
 3. Bolts: Indicate type, size, and length of bolts, distinguishing between shop and field bolts. Identify high-strength bolted slip-critical, direct-tension, or tensioned shear/bearing connections.
 4. Setting Drawings: Provide setting drawings, templates, and directions for installation of anchor bolts and other anchorage's to be installed by others.
 5. Erection Drawings: Prepare and furnish to the Architect for review, erection drawings, detailed shop drawings and connection design calculations for all structural steel. Manufacturing of any material or performing of any work before final review of shop drawings will be entirely at risk.
 6. Contract documents shall not be used for shop drawing, including erection plans or details.
 7. All shop drawings which are resubmitted for any reason shall have all revised items clouded or identified for each submittal.
 8. Fabrication, assembly and erection shall conform to reviewed shop drawings.
- D. Connection Calculations:
1. All structural steel connections not specifically detailed on the drawings shall be designed to resist forces indicated, by the Contractor, under the direct supervision of a professional engineer registered in the State of Alabama.
 2. Design calculations for the connections designed by the Contractor shall be submitted for the files of the Architect and Engineer. Calculations shall bear the seal of a professional engineer registered in the State of Alabama. Shop drawings containing connections for which calculations have not been received will be returned unchecked as an incomplete submittal.
 3. For each connection, the following shall be noted on the shop drawings:
 4. Required design reaction.
 5. Calculation sheet number for design.
 6. Capacity of detailed connection.
- E. Qualification data for firms and persons specified in the "Quality Assurance" Article to demonstrate their capabilities and experience. Include lists of completed projects with

project names and addresses, names and addresses of architects and owners, and other information specified.

- F. Mill test reports signed by manufacturers certifying that their products, including the following, comply with requirements.
 - 1. Structural steel, including chemical and physical properties.
 - 2. Bolts, nuts, and washers, including mechanical properties and chemical analysis.
 - 3. Direct-tension indicators.
 - 4. Shear stud connectors.
 - 5. Shop primers.
 - 6. Nonshrink grout.

1.4 QUALITY ASSURANCE:

- A. Erector Qualifications: Engage an experienced Erector who has completed structural steel work similar in material, design, and extent to that indicated for this Project and with a record of successful in-service performance.
- B. Fabricator Qualifications: Engage a firm experienced in fabricating structural steel similar to that indicated for this Project and with a record of successful in-service performance, as well as sufficient production capacity to fabricate structural steel without delaying the Work.
- C. Codes and Standards: Comply with provisions of following, except as otherwise indicated:
 - 1. AISC's "Specification for Structural Steel Buildings—Allowable Stress Design and Plastic Design."
 - 2. AISC's "Load and Resistance Factor Design (LFRD) Specification for Structural Steel Buildings."
 - 3. AISC "Specifications for Structural Steel Buildings, Section 10, Architecturally Exposed Structural Steel."
 - 4. AISC's "Specification for Allowable Stress Design of Single-Angle Members."
 - 5. AISC's "Specification for Load and Resistance Factor Design of Single-Angle Members."
 - 6. AISC's "Seismic Provisions for Structural Steel Buildings."
 - 7. American Institute of Steel Construction (AISC) "Code of Standard Practice for Steel Buildings and Bridges", dated June 10, 1992
 - a. General: AISC "Code of Standard Practice" shall apply except to the extent that references are made to the responsibility of the Owner and/or Architect or Engineer in which event those references shall have no applicability. Where a conflict exists between the Code of Standard Practice and the Contract Documents, the Contract Documents shall govern.
 - b. Paragraph 3.1: Add the following: "3.1.8 Include in the bid price for the work structural steel members shown on drawings, but not identified as to size, section, and material grade by assuming sizes, sections, and material grades shown for similarly loaded members having approximately the same overall length except on areas that are noted on the drawings as incomplete. Identify such members and their associated cost in the bid for the work".

- c. Paragraph 3.3: Delete the first sentence, "In case of discrepancies between plans and specifications for buildings, the specifications govern", and insert the following in its place, "In case of discrepancies between drawings and specifications for buildings, the drawings govern".
 - d. Paragraph 3.4: In the first sentence, delete the phrase "and made to a scale not less than 1.8" to the foot".
 - e. Paragraph 5.1: Delete the first sentence, "When the fabricator receives 'released for construction' plans and specifications, the fabricator may immediately place orders for the material necessary for fabrication". and insert the following in its place "when the fabricator receives 'issued for structural steel mill order of wide flange beams, girders and columns only' plans and specifications, the fabricator may immediately place orders for the material necessary for fabrication". Delete the second sentence, "The contract documents must note any materials or areas which should not be ordered due to a design which is incomplete or subject to revision".
- 8. ASTM A 6 (ASTM A 6M) "Specification for General Requirements for Rolled Steel Plates, Shapes, Sheet Piling, and Bars for Structural Use."
 - 9. Research Council on Structural Connections' (RCSC) "Specification for Structural Joints Using ASTM A 325 or A 490 Bolts."
 - 10. Research Council on Structural Connections' (RCSC) "Load and Resistance Factor Design Specification for Structural Joints Using ASTM A 325 or A 490 Bolts."
- D. Welding Standards: Comply with applicable provisions of AWS D1.1 "Structural Welding Code—Steel."
 - E. Present evidence that each welder has satisfactorily passed AWS qualification tests for welding processes involved and, if pertinent, has undergone recertification in the past year.

1.5 DELIVERY, STORAGE, AND HANDLING:

- A. Deliver structural steel to Project site in such quantities and at such times to ensure continuity of installation.
- B. Store materials to permit easy access for inspection and identification. Keep steel members off ground by using pallets, platforms, or other supports. Protect steel members and packaged materials from erosion and deterioration.
 - 1. Store fasteners in a protected place. Clean and relubricate bolts and nuts that become dry or rusty before use.
 - 2. Do not store materials on structure in a manner that might cause distortion or damage to members or supporting structures. Repair or replace damaged materials or structures as directed.

1.6 SEQUENCING:

- A. Supply anchorage items to be embedded in or attached to other construction without delaying the Work. Provide setting diagrams, templates, instructions, and directions, as required, for installation.

1.7 TESTING SERVICES:

- A. Provide the Testing Laboratory with the following:
 - 1. A complete set of shop and erection drawings reviewed by the Architect.
 - 2. Mill test reports, cutting lists, order sheets, material bills and welder's certificates.
 - 3. Full and ample means and assistance for testing all material.
 - 4. Proper facilities, including scaffolding, temporary work platforms, hoisting facilities, etc., for inspection of the work in the mills, shop and field.
- B. Propose procedures, acceptable to the Architect, to correct deficiencies in structural steel work which inspections and laboratory test reports have indicated to be not in compliance with requirements.
- C. Provide additional tests, by the Quality Control Testing Laboratory, as may be necessary, to reconfirm any noncompliance of the original work, and as may be necessary to show compliance off corrected work.

PART 2 – PRODUCTS

2.1 STEEL MATERIALS:

- A. Metal Surfaces, General: For fabrication of work that will be exposed to view, use only materials that are smooth and free of surface blemishes including pitting, rust and scale seam marks, roller marks, rolled trade names, and roughness. Remove such blemishes by grinding, or by welding and grinding, prior to cleaning, treating, and applying surface finishes.
- B. Structural Steel Shapes, Plates, and Bars: As follows:
 - 1. Carbon Steel: ASTM A 36 (ASTM A 36M).
 - 2. High-Strength, Low-Alloy Columbium-Vanadium Steel: ASTM A 572 (ASTM A 572M), Grade 50.
- C. Cold-Formed Structural Steel Tubing: ASTM A 500, Grade B.
- D. Hot-Formed Structural Steel Tubing: ASTM A 501.
- E. Steel Pipe: ASTM A 53, Type E or S, Grade B.
 - 1. Finish: Black, except where indicated to be galvanized.
- F. Connection Material: Unless noted otherwise on the drawings, stiffener plates, doubler plates, gusset plates and the connecting plates shall be the same grade of steel as members being connected.
 - 1. Finish: Black, except where indicated to be galvanized.
- G. Shear Connectors: ASTM A 108, Grade 1015 through 1020, headed-stud type, cold-finished carbon steel, AWS D1.1, Type B.
- H. Anchor Rods, Bolts, Nuts, and Washers: As follows:
 - 1. Unheaded Rods: ASTM A 36 (ASTM A 36M).
 - 2. Headed Bolts: ASTM A 307, Grade A (ASTM F 568, Property Class 4.6); carbon-steel, hex-head bolts; and carbon-steel nuts.
 - 3. Washers: ASTM A 36 (ASTM A 36M).

- I. High-Strength Bolts, Nuts, and Washers: ASTM A 325 (ASTM A 325M), Type 1, heavy hex steel structural bolts, heavy hex carbon-steel nuts, and hardened carbon-steel washers.
 - 1. Finish: Plain, uncoated.
- J. Welding Electrodes: Comply with AWS requirements.

2.2 PRIMER:

- A. Primer: SSPC-Paint 15, Type I, red oxide.

2.3 GROUT:

- A. Nonmetallic, Shrinkage-Resistant Grout: Premixed, nonmetallic, noncorrosive, nonstaining grout containing selected silica sands, portland cement, shrinkage compensating agents, plasticizing and water-reducing agents, complying with ASTM C 1107, of consistency suitable for application, and a 30-minute working time. Subject to compliance with requirements, provide one of the following:
 - 1. High Performance (Non-Metallic):
 - a. "Masterflow 928"; Master Builders.
 - b. "Crystex"; L & M Const. Chemical Co.
 - 2. Construction Grade (Non-Metallic):
 - a. "Set Grout"; Master Builders.
 - b. "Euco-NS Grout"; Euclid Chemical Co.
 - c. "Duragrout"; L & M Const. Chemical Co.
 - d. "Horn Non-Corrosive Non-Shrink Grout"; A.C. Horn, Inc.
 - e. "588 Grout"; W.R. Meadows, Inc.
 - f. "Five Star Grout"; Five Star Products, Inc.

2.4 FABRICATION:

- A. Fabricate and assemble structural steel in shop to greatest extent possible. Fabricate structural steel according to AISC specifications referenced in this Section and in Shop Drawings.
 - 1. Camber structural steel members where indicated.
 - 2. Identify high-strength structural steel according to ASTM A 6 (ASTM A 6M) and maintain markings until steel has been erected.
 - 3. Mark and match-mark materials for field assembly.
 - 4. Fabricate for delivery a sequence that will expedite erection and minimize field handling of structural steel.
 - 5. Complete structural steel assemblies, including welding of units, before starting shop-priming operations.
 - 6. Comply with fabrication tolerance limits of AISC's "Code of Standard Practice for Steel Buildings and Bridges" for structural steel.
 - 7. Piping and/or cracks in flanges or webs of all rolled shapes or plates are to be removed and welded solid by AISC procedures.
- B. Thermal Cutting: Perform thermal cutting by machine to greatest extent possible.
 - 1. Plane thermally cut edges to be welded.

- C. Finishing: Accurately mill ends of columns and other members transmitting loads in bearing.
- D. Shear Connectors: Prepare steel surfaces as recommended by manufacturer of shear connectors. Use automatic end welding of headed-stud shear connectors according to AWS D1.1 and manufacturer's printed instructions.
- E. Steel Wall Framing: Select true and straight members for fabricating steel wall framing to be attached to structural steel framing. Straighten as required to provide uniform, square, and true members in completed wall framing.
- F. Welded Door Frames: Build up welded door frames attached to structural steel framing. Weld exposed joints continuously and grind smooth. Plug-weld fixed steel bar stops to frames. Secure removable stops to frames with countersunk, cross-recessed head machine screws, uniformly spaced not more than 10 inches (250 mm) o.c., unless otherwise indicated.
- G. Holes: Provide holes required for securing other work to structural steel framing and for passage of other work through steel framing members, as shown on Shop Drawings.
 - 1. Cut, drill, or punch holes perpendicular to metal surfaces. Do not flame-cut holes or enlarge holes by burning. Drill holes in bearing plates.
 - 2. Weld threaded nuts to framing and other specialty items as indicated to receive other work.
- H. Assemble and weld built-up sections by methods which will produce true alignment of axes without warp.
- I. Shear Connectors: Prepare steel surfaces as recommended by manufacturer of shear connectors. Shop weld shear connectors, spaced as shown, to beams and girders in composite construction. Use automatic end welding of headed stud shear connectors in accordance with manufacturer's printed instructions.

2.5 SHOP CONNECTIONS:

- A. Simple Beam Connections: Standard double angle framed beam connections using bolts as specified.
 - 1. Seated Beam Connections and Stiffened Seated Beam Connections shall not be used unless indicated on the drawings or unless Engineer approval is obtained to verify capacity of supporting member for the resulting eccentricity. The fabricator must verify and bear responsibility that the use of such connections does not interfere with architectural or MEP requirements.
- B. Shop install and tighten high-strength bolts according to RCSC's "Specification for Structural Joints Using ASTM A 325 or A 490 Bolts."
 - 1. Connection Type: Snug tightened, unless indicated as slip-critical, direct-tension, or tensioned shear/bearing connections.
- C. Weld Connections: Comply with AWS D1.1 for procedures, appearance and quality of welds, and methods used in correcting welding work.
 - 1. Assemble and weld built-up sections by methods that will maintain true alignment of axes without warp.

2.6 SHOP PRIMING:

- A. Shop prime steel surfaces, except the following:

1. Surfaces embedded in concrete or mortar. Extend priming of partially embedded members to a depth of 2 inches (50 mm).
 2. Surfaces to be field welded.
 3. Surfaces to be high-strength bolted with slip-critical connections.
 4. Surfaces to receive sprayed-on fireproofing, [unless otherwise specified].
 5. Galvanized surfaces.
- B. Surface Preparation: Clean surfaces to be painted. Remove loose rust, loose mill scale, and spatter, slag, or flux deposits. Prepare surfaces according to SSPC specifications as follows:
1. SSPC-SP 2 "Hand Tool Cleaning."

2.7 SOURCE QUALITY CONTROL:

- A. Independent Testing and Inspecting Laboratory: Owner will engage an Independent Testing and Inspecting Laboratory to perform shop inspections and tests and to prepare test reports.
1. Testing laboratory will conduct and interpret tests and state in each report whether test specimens comply with or deviate from requirements.
 2. Provide testing laboratory with access to places where structural steel work is being fabricated or produced so required inspection and testing can be accomplished.
- B. Correct deficiencies in or remove and replace structural steel that inspections and test reports indicate do not comply with specified requirements.
- C. Additional testing, at Contractor's expense, will be performed to determine compliance of corrected Work with specified requirements.
- D. Shop-bolted connections will be tested and inspected according to RCSC's "Specification for Structural Joints Using ASTM A325 or A 490 Bolts".
- E. In addition to visual inspection, shop-welded connections will be inspected and tested according to AWS D1.1 and the inspection procedures listed below, at testing laboratory's option.
1. Magnetic Particle Inspection: ASTM E 709; performed on root pass and on finished weld. Cracks or zones of incomplete fusion or penetration will not be accepted.
 2. Ultrasonic Inspection: ASTM E 164.

PART 3 –EXECUTION:

3.1 INSPECTION:

- A. Before erection proceeds, and with the steel erector present, verify elevations of concrete [and masonry bearing surfaces] and locations of anchorages for compliance with requirements.
- B. Do not proceed with erection until unsatisfactory conditions have been corrected.

3.2 PREPARATION:

- A. Provide temporary shores, guys, braces, and other supports during erection to keep structural steel secure, plumb, and in alignment against temporary construction loads and loads equal in intensity to design loads. Remove temporary supports when permanent structural steel, connections, and bracing are in place, unless otherwise indicated.

1. Do not remove temporary shoring supporting composite deck construction until cast-in-place concrete has attained its design compressive strength.
- B. Temporary Planking: Provide temporary planking and working platforms as necessary to effectively complete work.

3.3 ERECTION:

- A. Set structural steel accurately in locations and to elevations indicated and according to AISC specifications referenced in this Section.
- B. Base and Bearing Plates: Clean concrete and masonry bearing surfaces of bond-reducing materials and roughen surfaces prior to setting base and bearing plates. Clean bottom surface of base and bearing plates.
 1. Set base and bearing plates for structural members on wedges, shims, or setting nuts as required.
 2. Tighten anchor bolts after supported members have been positioned and plumbed. Do not remove wedges or shims but, if protruding, cut off flush with edge of base or bearing plate prior to packing with grout.
 3. Pack grout solidly between bearing surfaces and plates so no voids remain. Finish exposed surfaces, protect installed materials, and allow to cure.
 - a. Comply with manufacturer's instructions for proprietary grout materials.
- C. Maintain erection tolerances of structural steel within AISC's "Code of Standard Practice for Steel Buildings and Bridges."
- D. Align and adjust various members forming part of complete frame or structure before permanently fastening. Before assembly, clean bearing surfaces and other surfaces that will be in permanent contact. Perform necessary adjustments to compensate for discrepancies in elevations and alignment.
 1. Level and plumb individual members of structure.
 2. Establish required leveling and plumbing measurements on mean operating temperature of structure. Make allowances for difference between temperature at time of erection and mean temperature at which structure will be when completed and in service.
- E. Splice members only where indicated.
- F. Remove erection bolts on welded, architecturally exposed structural steel; fill holes with plug welds; and grind smooth at exposed surfaces.
- G. Do not use thermal cutting during erection.
- H. Do not enlarge unfair holes in members by burning or by using drift pins. Ream holes that must be enlarged to admit bolts.

3.4 FIELD CONNECTIONS:

- A. Install and tighten nonhigh-strength bolts, except where high-strength bolts are indicated.
- B. Install and tighten high-strength bolts according to RCSC's "Specification for Structural Joints Using ASTM A 325 or A 490 Bolts."
- C. Weld Connections: Comply with AWS D1.1 for procedures, appearance and quality of welds, and methods used in correcting welding work.

1. Comply with AISC specifications referenced in this Section for bearing, adequacy of temporary connections, alignment, and removal of paint on surfaces adjacent to field welds.
 2. Verify that weld sizes, fabrication sequence, and equipment used for architecturally exposed structural steel will limit distortions to allowable tolerances. Prevent surface bleeding of back-side welding on exposed steel surfaces. Grind smooth exposed fillet welds ½ inch (13 mm) and larger. Grind flush butt welds. Dress exposed welds.
- D. Shear Connectors: Prepare steel surfaces as recommended by manufacturer of shear connectors. Weld shear connectors in field, spaced as shown, to beams and girders in composite construction. Use automatic end welding of headed stud shear connectors in accordance with manufacturer's printed instructions.

3.5 FIELD QUALITY CONTROL:

- A. Testing Laboratory Responsibility: The Owner's Testing Laboratory will perform field special inspections and tests on and to prepare test reports as follows:
1. Testing Laboratory shall also approve welding certificates. Contractor shall submit three (3) copies of welding certificates and procedures for each welder involved in the Work.
 2. Testing Laboratory shall conduct and interpret tests, certificates and procedures and state in each report whether tested Work complies with or deviates from requirements.
- B. Quantity of Required Inspections and Tests: Testing Laboratory shall perform inspections or tests in accordance with AISC specification:
1. Shop Bolted Connections: Special Inspection requirements per 2012 IBC. Refer to Special Inspection Schedule in Construction Documents.
 2. Shop Welded Connections: Special Inspection requirements per 2012 IBC. Refer to Special Inspection Schedule in Construction Documents.
 3. Field-Bolted Connections: Special Inspection requirements per 2012 IBC. Refer to Special Inspection Schedule in Construction Documents.
 4. Field Welding: Special Inspection requirements per 2012 IBC. Refer to Special Inspection Schedule in Construction Documents.
 5. Other Inspections as required by AISC and indicated on Special Inspection Schedule in Construction Documents.
- C. Provide access for Testing Laboratory to places where structural steel work is being fabricated or produced so that required inspection and testing can be accomplished.
- D. Deficiencies: Correct deficiencies in or remove and replace structural steel that inspections and test reports indicate do not comply with specified requirements.
- E. Field Inspections and Tests: check steel as received in the field for possible shipping damage workmanship, piece making and verification of required camber.
- F. Additional testing, at Contractor's expense, will be performed to determine compliance of corrected Work with specified requirements.

3.6 CLEANING

- A. Touch up Painting: Immediately after erection, clean field welds, bolted connections, and abraded areas of shop paint. Apply paint to exposed areas using same material as used for shop painting.
 - 1. Apply by brush or spray to provide a minimum dry film thickness of 1.5 mils (0.038 mm).
- B. Touch up Painting: Cleaning and touch up painting of field welds, bolted connections, and abraded areas of shop paint on structural steel are included in Section 09900, "Painting."

END OF STRUCTURAL STEEL

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SECTION 05 3100

STEEL DECK

PART 1 - GENERAL

1.1 SUMMARY:

- A. Section Includes:
 - 1. Steel roof deck.
- B. Related Documents: Drawings and general provisions of Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this section.
- C. Related Sections: The following Sections contain requirements that relate to this Section:
 - 1. Section 03 3100, "Concrete":
 - 2. Section 05 1200, "Structural Steel": Shop-welded shear connectors.
 - 3. Section 05 5000, "Metal Fabrications": Framing openings with miscellaneous steel shapes.
 - 4. Section 07 8150, "Sprayed-On Fireproofing".
 - 5. Section 09 9000, "Painting":
 - a. Touch-up and repair painting of deck.
 - b. Touch-up and repair of special deck coatings.

1.2 SUBMITTALS:

- A. General: Submit each item in this Article according to the Conditions of the Contract and Division 1 Specification Sections.
- B. Submit all shop drawings on one reproducible print (sepia) and one blue line print only. The reproducible print will be returned. All blue line prints required by the Contractor will be the responsibility of the Contractor and shall be made after reproducible is returned.
- C. Product data for each type of deck, accessory, and product specified.
 - 1. Provide test data for mechanical fasteners used in lieu of welding for fastening deck to supporting structures.
- D. Shop drawings showing layout and types of deck panels, anchorage details, reinforcing channels, pans, cut openings, closure strips, deck openings, special jointing, accessories, and attachments to other construction.
- E. Welder certificates signed by Contractor certifying that welders comply with requirements specified under the "Quality Assurance" Article.
- F. Product test reports from qualified independent testing agencies evidencing compliance with requirements of the following based on comprehensive testing:
 - 1. Mechanical fasteners.
- G. Research reports or evaluation reports of the model code organization acceptable to authorities having jurisdiction that evidence steel deck's compliance with the building code in effect for the Project.

1.3 QUALITY ASSURANCE:

- A. Codes and Standards: Comply with provisions of the following codes and standards, except

as otherwise indicated:

1. American Iron and Steel Institute (AISC), "Specification for the Design of Cold-Formed Steel Structural Members".
 2. American Welding Society (AWS), D1.3 "Structural Welding Code - Sheet Steel".
 3. Steel Deck Institute (SDI), "Design Manual for Composite Decks, Form Decks and Roof Decks".
- B. Installer Qualifications: Engage an experienced Installer who has completed steel deck similar in material, design, and extent to that indicated for this Project and with a record of successful in-service performance.
- C. Welding Standards: Comply with applicable provisions of AWS D1.1 "Structural Welding Code-Steel" and AWS D1.3 "Structural Welding Code-Sheet Steel."
1. Certify that each welder has satisfactorily passed AWS qualification tests for welding processes involved and, if pertinent, has undergone recertification.
- D. Welded decking in place is subject to inspection and testing. Owner will bear expense of removing and replacing portions of decking for testing purposes if welds are found to be satisfactory. Remove work found to be defective and replace with new acceptable work.
- E. Fire-Test-Response Characteristics: Where indicated, provide steel deck panels identical to those tested as part of an assembly for fire resistance per ASTM E 119 by a testing and inspection agency performing testing and follow-up services, that is acceptable to authorities having jurisdiction.
- F. Fire-Resistance Ratings: As indicated by design designations listed in UL "Fire Resistance Directory," or by Warnock Hersey or another testing and inspecting agency.
- G. Labeling: Identify steel deck with appropriate markings of applicable testing and inspecting agency.
- H. Installation Tolerances: Conform to the installation tolerances specified in Part 3.

1.4 DELIVERY, STORAGE, AND HANDLING:

- A. Protect steel deck from corrosion, deformation, and other damage during delivery, storage, and handling.
- B. Stack steel deck on platforms or pallets and slope to provide drainage. Protect with a waterproof covering and ventilate to avoid condensation.

1.5 COORDINATION:

- A. Coordinate installation of sound-absorbing insulation strips in acoustic deck ribs with related units of Work specified in other Sections to ensure that the insulation is protected against damage from effects of the weather and other causes.

PART 2 - PRODUCTS

2.1 MANUFACTURERS:

- A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 1. Steel Roof Deck:
 - a. Bowman Metal Deck Armco, Inc.

- b. Epic Metals Corp.
- c. Centria/Robertson.
- d. Vulcraft Div. of Nucor Corp.
- e. New Millenium.

2.2 ROOF DECK:

- A. Steel Roof Deck: Fabricate panels without top-flange stiffening grooves conforming to SDI Publication No. 28 "Specifications and Commentary for Steel Roof Deck" and the following:
 - 1. Galvanized-Steel Sheet: ASTM A 446, Grade A, G 60 (ASTM A 446M, Grade A, Z 180) zinc coated according to ASTM A 525 (ASTM A 525M).
 - 2. Deck Profile:
 - a. Type WR, wide rib. Vented deck at light gauge roof trusses.
 - 3. Profile Depth:
 - a. 1-1/2 inches.
 - 4. Design Uncoated-Steel Thickness:
 - a. 0.0295 inch.
 - 5. Span Condition:
 - a. Triple span or more.
 - 6. Side Joints:
 - a. Overlapped or interlocking seam at Contractor's option.

2.3 FABRICATION AND ACCESSORIES:

- A. General: Form deck units in lengths of three or more spans, with flush, telescoped, or nested 2-inch laps at ends and interlocking or nested side laps, unless noted. End laps shall occur over a support.
- B. Roof Deck Units: Provide deck configurations that comply with SDI "Specifications and Commentary for Steel Roof Deck".
- C. Cant Strips: Fabricate cant strips of not less than 20 gage galvanized sheet steel of same quality as the deck units. Bend cant strips to form a 45 degree cant not less than 5 inches wide with top and bottom flanges not less than 2 inches wide, unless noted. Provide cant strips in 10 foot lengths where possible.
- D. Ridge and Valley Plates: Fabricate ridge and valley plates of not less than 20 gage galvanized sheet steel of the same quality as deck units. Bend to provide tight-fitting closure with deck units. Each leg of bend shall not be less than 3 inches. Provide plates in 10 foot lengths where possible.
- E. Accessories: Provide accessory materials for steel deck that comply with requirements indicated and recommendations of the steel deck manufacturer.
- F. Mechanical Fasteners: Manufacturer's standard, corrosion-resistant, low-velocity, powder-actuated or pneumatically driven carbon steel fasteners; or self-drilling, self-threading screws.
- G. Side Lap Fasteners: Manufacturer's standard, corrosion-resistant, hexagonal washer head; self-drilling, carbon steel screws, No. 10 (4.8 mm) minimum diameter.
- H. Rib Closure Strips: Manufacturer's standard vulcanized, closed-cell, synthetic rubber.

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- I. Miscellaneous Roof Deck Accessories: Steel sheet, 0.0359-inch (0.91-mm) thick minimum ridge and valley plates, finish strips, and reinforcing channels, of same material as roof deck.
- J. Column Closures, End Closures, Z-Closures, and Cover Plates: Steel sheet, of same material and thickness as deck panels, unless otherwise indicated.
- K. Weld Washers: Manufacturer's standard uncoated-steel sheet weld washers, shaped to fit deck rib, 0.0598 inch (1.5 mm) thick with 3/8-inch (9.5-mm) minimum diameter prepunched hole.
- L. Recessed Sump Pans: Manufacturer's standard size, single piece steel sheet 0.071-inch- (1.8-mm-) thick minimum, of same material as deck panels, with 1-1/2-inch- (38-mm-) minimum deep level recessed pans and 3-inch- (76-mm-) wide flanges. Cut holes for drains in the field.
- M. Flat Receiver Pan: Manufacturer's standard size, single-piece steel sheet, 0.071-inch- (1.8-mm-) thick minimum units, of same material as deck panels. Cut holes for drains in the field.
- N. Shear Connectors: ASTM A 108, Grade 1010 through 1020 headed stud type, cold-finished carbon steel, AWS D1.1, Type B.
- O. Steel Sheet Accessories: ASTM A 446, G 60 (ASTM A 446M, Z 180) coating class, galvanized according to ASTM A 525 (ASTM A 525M).
- P. Galvanizing Repair Paint: SSPC-Paint 20 or DOD-P-21035, with dry film containing a minimum of 94 percent zinc dust by weight.

PART 3 - EXECUTION**3.1 EXAMINATION:**

- A. Examine supporting framing and field conditions for compliance with requirements for installation tolerances and other conditions affecting performance of steel deck.

3.2 PREPARATION:

- A. Do not place deck panels on concrete supporting structure until concrete has cured and is dry.
- B. Locate decking bundles to prevent overloading of supporting members.

3.3 INSTALLATION, GENERAL:

- A. Install deck panels and accessories according to applicable specifications and commentary of SDI Publication No. 28, manufacturer's recommendations, and requirements of this Section.
- B. Install temporary shoring before placing deck panels when required to meet deflection limitations.
- C. Place deck panels on supporting framing and adjust to final position with ends accurately aligned and bearing on supporting framing before being permanently fastened. Do not stretch or contract side lap interlocks.
 - 1. Do not place deck units on concrete supporting structure until concrete has cured and is dry.
 - 2. Coordinate and cooperate with structural steel erector in locating decking bundles to

- prevent overloading of structural members.
 - 3. Do not use deck units for storage or working platforms until permanently secured.
 - 4. Place deck panels flat and square and fasten to supporting framing without warp or deflection.
 - 5. Cut and neatly fit deck panels and accessories around openings and other work projecting through or adjacent to the decking.
 - 6. Provide additional reinforcement and closure pieces at openings as required for strength, continuity of decking, and support of other work.
 - 7. Comply with AWS requirements and procedures for manual shielded metal arc welding, appearance and quality of welds, and methods used in correcting welding work.
 - 8. Mechanical fasteners may be used in lieu of welding to fasten deck. Locate mechanical fasteners and install according to deck manufacturer's instructions.
- D. Deck Edge Tolerances: Perimeter deck edges shall be within $\pm 1/2$ inch of the indicated lines.

3.4 ROOF DECK INSTALLATION:

- A. Fasten roof deck panels to steel supporting members by arc spot (puddle) welds of the surface diameter indicated or arc seam welds with an equal perimeter, but not less than 1-1/2 inches (38 mm) long, and as follows:
 - 1. Comply with AWS requirements and procedures for manual shielded metal arc welding, appearance and quality of welds, and methods used in correcting welding work.
 - 2. Weld Diameter:
 - a. 5/8 inch (16 mm), nominal.
 - 3. Weld Spacing: Space and locate welds as indicated.
 - 4. Weld Washers: Install weld washers at each weld location.
 - 5. Side Lap and Perimeter Edge Fastening: Fasten side laps and perimeter edges of panels between supports, at intervals not exceeding 36 inches (910 mm), using one of the following methods:
 - a. Mechanically fasten with self-drilling No. 10- (4.8-mm-) diameter or larger carbon steel screws.
- B. End Bearing: Install deck ends over supporting framing with a minimum end bearing of 1-1/2 inches (38 mm), with end joints as follows:
 - 1. End Joints:
 - a. Lapped 2 inches (51 mm) minimum.
- C. Uplift Loading: Install and anchor roof deck units to resist gross uplift loading of 45 psf at eave overhang and 30 psf for other roof areas.
- D. Reinforcement at Openings: Provide additional metal reinforcement and closure pieces as required for strength, continuity of decking, and support of other work shown.
- E. Roof Sump Pans and Sump Plates: Install over openings provided in roof decking, and weld

flanges to top of deck. Space welds not more than 12 inches (305 mm) apart with at least one weld at each corner.

- F. Miscellaneous Roof Deck Accessories: Install ridge and valley plates, finish strips, cover plates, end closures, and reinforcing channels according to deck manufacturer's recommendations. Weld to substrate to provide a complete deck installation.

3.5 FIELD QUALITY CONTROL:

- A. Testing Agency: A qualified independent testing agency employed and paid Owner will perform field quality-control testing.
 - 1. Field welds will be subject to inspection.
- B. Testing Agency will report test results promptly and in writing to Contractor and Architect.
- C. Remove and replace work that does not comply with specified requirements.
- D. Additional testing will be performed to determine compliance of corrected work with specified requirements.

3.6 REPAIRS AND PROTECTION:

- A. Galvanizing Repairs: Prepare and repair damaged galvanized coatings on both surfaces with galvanized repair paint according to ASTM A 780 and the manufacturer's instructions.

END OF STEEL DECK

SECTION 05 5000

METAL FABRICATIONS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS:

- A. Drawings and general provisions of Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.
- B. Related work specified elsewhere includes:
 - 1. Division 3 - Concrete Sections
 - 2. Section 04200 - "Unit Masonry"
 - 3. Section 05120 - "Structural Steel"
 - 4. Section 05210 - "Steel Joists"
 - 5. Section 05310 - "Steel Deck"
 - 6. Section 05400 - "Cold-Formed Metal Framing"
 - 7. Section 05510 - "Metal Stairs"
 - 8. Section 05520 - "Handrails and Railings"

1.2 DESCRIPTION OF WORK:

- A. Work described in this section includes metal fabrications, which include items made from iron and steel shapes, plates, bars, strips, tubes, pipes and castings which are not a part of structural steel or other metal systems specified elsewhere. Types of work in this section includes metal fabrications for:
 - 1. Rough hardware.
 - 2. Loose bearing and leveling plates.
 - 3. Loose steel lintels.
 - 4. Miscellaneous framing and supports.
 - 5. Concrete stair and concrete filled metal stair nosings (at any new stairs or steps).
 - 6. Temporary elevator hoist / support beams.
 - 7. Elevator sill support angles.
 - 8. Galvanized pipe bollards (galvanized steel pipe with galvanized domed cap, concrete fill, paint, etc.; Minimum 36-inches height unless other height is specifically indicated on the Drawings).
 - 9. Ladders.
 - 10. Temporary elevator hoist / support beams; Elevator sill support angles.
 - 11. Metal downspout boots.

1.3 QUALITY ASSURANCE:

- A. Shop Assembly: Preassemble items in shop to greatest extent possible to minimize field splicing and assembly. Disassemble units only as necessary for shipping and handling limitations. Clearly mark units for reassembly and coordinated installation.
- B. Structural Design Responsibility: Framing and supports which are structural by nature, uses, applications, etc., shall be designed by the Fabricator's Structural Engineer, who is experienced in design of the items indicated and who is currently licensed to practice in the State of Alabama, and design documents, Drawings and calculations shall be submitted; To include the responsible Design Engineer's signed and dated seal on all such submittals.
- C. Manufactured Items: Submit manufacturer's complete product data, details and dimensioned drawings. Provide shop drawings when manufacturer's data does not indicate all required information. Manufactured items (i.e.: ladders, etc.) shall be designed by the manufacturer's Structural Engineer.

1.4 PERFORMANCE REQUIREMENTS:

- A. Structural Performance of Ladders: Provide ladders capable of withstanding the effects of loads and stresses within limits and under conditions specified in ANSI A14.3.
- B. Thermal Movements: Provide exterior metal fabrications that allow for thermal movements resulting from the following maximum change (range) in ambient and surface temperatures by preventing buckling, opening of joints, overstressing of components, failure of connections, and other detrimental effects. Base engineering calculation on surface temperatures of materials due to both solar heat gain and nighttime-sky heat loss.
 - 1. Temperature Change (Range): 120 deg F (67 deg C), ambient; 180 deg F (100 deg C), material surfaces.

1.5 SUBMITTALS:

- A. Product Data: Submit manufacturer's specifications, anchor details and installation instructions for products used in miscellaneous metal fabrications, including paint products and grout.
- B. Shop Drawings: Submit shop drawings for fabrication and erection of miscellaneous metal fabrications. Include plans, elevations and details of sections and connections. Show anchorage and accessory items. Provide templates for anchor and bolt installation by others. Where materials or fabrications are indicated to comply with certain requirements for design loadings include structural computations, material properties and other information needed for structural analysis.

1. Show fabrication and installation details. In addition to applicable requirements above, include plans, elevations, sections, and details of connections. Show anchorage and accessory items. Provide templates for anchors and bolts specified for installation under other Sections.
- C. Samples: Submit representative samples of materials and finished products as may be requested by Architect.
- D. Seals: Framing and supports which are structural by nature, uses, applications, etc., shall be designed by the Fabricator's Structural Engineer, who is experienced in design of the items indicated and currently licensed to practice in the State of Alabama and City of Montgomery, and design documents, Drawings and calculations shall be submitted; To include the responsible Design Engineer's signed and dated seal on all such submittals.

1.6 PROJECT CONDITIONS:

- A. Field Measurements: Where fabrications are indicated to fit to other construction, verify dimensions of other construction by field measurements before fabrication and indicate measurements on Shop Drawings. Coordinate fabrication schedule with construction progress to avoid delaying the Work.
 1. Established Dimensions: Where field measurements cannot be made without delaying the Work, establish dimensions and proceed with fabrication without field measurements. Coordinate construction to ensure that actual dimensions correspond to established dimensions. Allow for trimming and fitting acceptable to fabricator's professional engineer, and in a manner that will not affect structural performance, deflection, safety, etc.

1.7 COORDINATION:

- A. Coordinate installation of anchorages for metal fabrications and supports. 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, without delaying the work of this section or the Work of the project.

PART 2 - PRODUCTS

2.1 MATERIALS:

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

1. Steel Plates, Shapes and Bars: ASTM A 36.
 2. Steel Bar Grating: ASTM A 569 or ASTM A 36.
 3. Steel Tubing: Cold formed, ASTM A 500, Grade B.
 4. Structural Steel Sheet: Hot-rolled, ASTM A 570; or cold-rolled ASTM A 611, Class 1; of grade required for design loading.
 5. Galvanized Structural Sheet Steel: ASTM A 446, of grade required for design loading. Coating designation as indicated, or if not indicated, G90.
 6. Steel Pipe: ASTM A 53; Type and grade (If applicable) as selected by fabricator and as required for design loading; black finish unless galvanizing is indicated; standard weight (schedule 40), unless otherwise indicated.
 7. Gray Iron Castings: ASTM A 48, Class 30.
 8. Malleable Iron Castings: ASTM A 47, grade as selected by fabricator.
 9. Brackets, Flanges and Anchors: Cast or formed metal of the same type material and finish as supported rails, unless otherwise indicated.
 10. Concrete Inserts: Threaded or wedge type; galvanized ferrous castings, either malleable iron, ASTM A 47, or cast steel, ASTM A 27. Provide bolts, washers and shims as required, hot-dip galvanized, ASTM A 153.
- C. Non-Ferrous Metals:
1. Aluminum Drawn Seamless Tube: ASTM B 483, 6063-T832.
 2. Aluminum Castings: ASTM B 26, 356.0-T6.
 3. Aluminum Plate and Sheet: ASTM B 209, 6061-T6.
- D. Grout - Non-Shrink Non-Metallic Grout: Pre-mixed, factory-packaged, non-staining, non-corrosive, non-gaseous grout complying with CE-CRD-C621. Provide grout specifically recommended by manufacturer for interior and exterior applications of type specified in this section.
- E. Fasteners:
1. Provide zinc-coated, galvanized fasteners for exterior use, and where built into interior and exterior walls. Select fasteners for the type, grade and class

required.

2. Provide stainless steel fasteners for any use where fasteners come in contact with and/or are anchored to preservative pressure treated (P.T.) wood, fire-retardent treated wood, and at roofs and roof related construction. Select fasteners for the type, grade and class required.

F. Paint:

1. Metal Primer Paint: Southern Coating "Heavy Duty RIP Primer 1-0900", Tnemec A10- 99 Primer", or approved equivalent.
2. Primer selected must be compatible with finish coats of paint. Coordinate selection of metal primer with finish paint requirements specified in Section 09900 - "Painting".
3. Galvanizing Repair Paint: High zinc dust content paint for re-galvanizing welds in galvanized steel, complying with Military Specifications MIL-P-21035 (Ships), or SSPC- Paint-20.
4. Bituminous Paint: Cold-applied asphalt mastic complying with SSPC-Paint 12, except containing no asbestos fibers, or cold-applied asphalt emulsion complying with ASTM D 1187.

2.2 **FABRICATION, GENERAL:**

A. Workmanship:

1. Use materials of size and thickness shown or, if not shown, of required size and thickness to produce strength and durability in finished product. Work to dimensions shown or accepted on shop drawings, using proven details of fabrication and support. Use type of materials shown or specified for various components of work.
2. Form exposed work true to line and level with accurate angles and surfaces and straight sharp edges. Ease exposed edges to a radius of approximately 1/32-inch unless otherwise shown. Form bent metal corners to smallest radius possible without causing grain separation or otherwise impairing work.
3. Weld corners and seams continuously, complying with AWS recommendations. At exposed connections, grind exposed welds smooth and flush to match and blend with adjoining surfaces.
4. Form exposed connections with hairline joints, flush and smooth, using concealed fasteners wherever possible. Use exposed fasteners of type shown,

or if not shown, Phillips flat-head (countersunk) screws or bolts.

5. Provide for anchorage of type shown, coordinated with supporting structure. Fabricate and space anchoring devices to provide adequate support for intended use.
 6. Cut, reinforce, drill and tap miscellaneous metal work as indicated to receive finish hardware and similar items.
 7. Fabricate joints which will be exposed to weather in a manner to exclude water or provide weep holes where water may accumulate.
- B. Galvanizing: Provide a zinc coating for those items shown or specified to be galvanized, as follows:
1. ASTM A 153 for galvanizing iron and steel hardware.
 2. ASTM A 123 for galvanizing rolled, pressed and forged steel shapes, plates, bars, and strip 1/8-inch thick and heavier.
 3. ASTM A 386 for galvanizing assembled steel products.
- C. Shop Painting:
1. Apply shop primer to surfaces of metal fabrications except those which are galvanized or as indicated to be embedded in concrete or masonry, unless otherwise indicated, and in compliance with requirements of SSPC-PA1 "Paint Application Specification No. 1" and the paint manufacturer's current written instructions and recommendations, for all shop painting.
 2. Stripe paint all edges, corners, crevices, bolts, welds and sharp edges.
- D. Surface Preparation:
1. Prepare ferrous metal surfaces to comply with minimum requirements indicated below for SSPC surface preparation specification and environmental exposure conditions of installed metal fabrications, except as otherwise required by paint manufacture's current written instructions and recommendations for the substrates to be coated:
 2. Exterior (SSPC Zone 1B): SSPC-SP6 "Commercial Blast Cleaning."
 3. Interiors (SSPC Zone 1A): SSPC-SP3 "Power Tool Cleaning."

2.3 ROUGH HARDWARE:

- A. Furnish bent or otherwise custom fabricated bolts, plates, anchors, hangers, dowels and other miscellaneous steel and iron shapes as required for framing and supporting woodwork, and for anchoring or securing woodwork to concrete or other structures. Straight bolts and other stock rough hardware items are specified in Division 6 sections.
- B. Fabricate items of sizes, shapes and dimensions required. Furnish malleable iron washers for heads and nuts which bear on wood structural connections; elsewhere, furnish steel washers.

2.4 LOOSE BEARING AND LEVELING PLATES:

- A. Provide loose bearing and leveling plates for steel items bearing on masonry or concrete construction, made flat, free from warps or twists, and of required thickness and bearing area. Drill plates to receive anchor bolts and for grouting as required. Galvanize after fabrication.

2.5 LOOSE STEEL LINTELS:

- A. Provide loose structural steel lintels for openings and recesses in masonry walls and partitions as shown. Weld adjoining members together to form a single unit where indicated. Provide not less than 8-inches bearing at each side of openings, unless otherwise shown.
 - 1. Galvanize all loose steel lintels in exterior walls.

2.6 MISCELLANEOUS FRAMING AND SUPPORTS:

- A. Provide miscellaneous steel framing and supports which are not a part of structural steel framework, as required to complete work.
- B. Fabricate miscellaneous units to sizes, shapes and profiles shown or, if not shown, of required dimensions to receive adjacent other work to be retained by framing. Except as otherwise shown, fabricate from structural steel shapes and plates and steel bars, of welded construction using mitered joints for field connection. Cut, drill and tap units to receive hardware and similar items.
- C. Equip units with integrally welded anchors for casting into concrete or building into masonry. Furnish inserts if units must be installed after concrete is placed. Except as otherwise shown, space anchors 24-inches o.c. and provide minimum anchor units of 1-1/4-inches wide x 1/4-inch x 8-inch long steel straps.
- D. Galvanize exterior miscellaneous frames and supports.

2.7 CAST STAIR NOSINGS:

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- A. Fabricate units of metal indicated below in sizes and configurations indicated and in lengths necessary to accurately fit openings or conditions. Provide units with an integral abrasive finish consisting of aluminum oxide, silicon carbide, or a combination of both.
1. Metal: Cast aluminum, abrasive finish at tread.
 2. Configurations: At Interior Metal / Concrete Stairs, provide cast units at treads at nosings adjacent to each landing (e.g.: at every top and bottom tread's stair nosing of each stair run landing), and at Exterior Stairs provide at every stair nosing, whether or not indicated on the Drawings, and in the following configurations, unless otherwise indicated, equivalent to standard products indicated, as manufactured by American Safety Tread, Inc. (Phone: 1-800-245-4881):
 - a. Nosings for Cast-In-Place Concrete Stairs: Equivalent to Style No. 816, cross-hatched units, 4 inches (100 mm) wide x tread length less 4 inches at each end, for casting flush into cast-in-place concrete steps.
 - b. Nosings for Concrete Filled Metal Pan Stairs: Equivalent to Style No. 820, cross-hatched units, 4 inches (100 mm) wide by tread width less 3 inches at each end, for casting flush into concrete filled metal pan stairs.
 3. Provide anchors for embedding units in concrete, as an integral part of nosing units, as standard with manufacturer.
 4. Apply bituminous paint to concealed bottoms, sides, and edges of units set into concrete.
 5. Provide a cast-in silicone carbide granules embedded into walking surface, at top of tread and where cross-hatched surfaces are indicated.
 6. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - a. American Safety Tread Co., Inc. (basis of design)
 - b. Amstep Products.
 - c. Armstrong Products, Inc.
 - d. Balco/Metalines, Inc.
 - e. Granite State Casting Co.
 - f. Safe-T-Metal Co.
 - g. Wooster Products Inc.

2.8 METALLADDERS:

- A. General:

1. Comply with ANSI A14.3, unless otherwise indicated.
 2. For elevator pit ladders, comply with ASME A17.1.
 3. Space siderails 18 inches (457 mm) apart, unless otherwise indicated.
 4. Support each ladder at top and bottom and not more than 60 inches (1500 mm) o.c. with welded or bolted brackets, made from same metal as ladder.
- B. Steel Ladders: Unless specifically indicated otherwise on the Drawings, comply with the following:
1. Siderails: Continuous, 3/8-by-2-1/2-inch (9.5-by-64-mm) steel flat bars, with eased edges.
 2. Rungs: 3/4-inch- (19-mm-) diameter square steel bars.
 3. Fit rungs in centerline of siderails; plug-weld and grind smooth on outer rail faces.
 4. Provide nonslip surfaces on top of each rung by coating with abrasive material metallically bonded to rung by a proprietary process.
 5. Subject to compliance with requirements, provide equivalent to one of the following:
 - a. IKG Industries, a Harsco company; Mebac.
 - b. W. S. Molnar Company; SlipNOT.
 6. Prime ladders, including brackets and fasteners, with zinc-rich primer.
 - a. Finish painting is specified in Division 9 Section "Painting", not the work of this Section 05500.

2.9 METAL DOWNSPOUT BOOTS:

- A. Source Limitations: Obtain downspout boots from single source from single manufacturer.
- B. Provide downspout boots made from cast aluminum in heights indicated with inlets of size and shape to suit downspouts. Provide units with flanges and holes for countersunk anchor bolts.
1. Outlet: Horizontal, to discharge into pipe.

PART 3 - EXECUTION

3.1 PREPARATION:

- A. Field Measurements: Take field measurements prior to preparation of shop drawings and fabrication, where possible. Do not delay job progress; allow for trimming and fitting where taking field measurements before fabrication might delay work.
- B. Coordinate and furnish anchorages, setting drawings, diagrams, templates, instructions, and directions for installation of anchorages, such as concrete insets, sleeves, anchor

bolts and miscellaneous items having integral anchors, which are to be embedded in concrete or masonry construction. Coordinate delivery of such items to project site.

3.2 **INSTALLATION:**

A. General:

1. Fastening to In-Place Construction: Provide anchorage devices and fasteners where necessary for securing miscellaneous metal fabrications to in-place construction, including threaded fasteners for concrete and masonry inserts, toggle bolts, through- bolts, lag bolts, wood screws and other connectors as required.
2. Cutting, Fitting and Placement: Perform cutting, drilling and fitting required for installation of miscellaneous metal fabrications. Set work accurately in location, alignment and elevation, plumb, level, true and free of rack, measured from established lines and levels. Provide temporary bracing or anchors in formwork for items which are to be built into concrete, masonry or similar construction.
3. Fit exposed connections accurately together to form tight hairline joints. Weld connections which are not to be left as exposed joints, but cannot be shop welded because of shipping size limitations. Grind exposed joints smooth and touch up shop paint coat. Do not weld, cut or abrade the surfaces of exterior units which have been hot-dip-galvanized after fabrication, and are intended for bolted or screwed field connections.

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

C. Setting Loose Plates:

1. Clean concrete and masonry bearing surfaces of any bond-reducing materials, and roughen to improve bond to surfaces. Clean bottom surface of bearing plates.
2. Set loose leveling and bearing plates on wedges, or other adjustable devices. After the bearing members have been positioned and plumbed, tighten the anchor bolts. Do not remove wedges or shims, but if protruding, cut off flush with the edge of the bearing plate before packing with grout. Use non-metallic, non-shrink grout.
3. Pack grout solidly between bearing surfaces and plates to insure that no voids remain.

- D. Manufactured Items: Install in strict accordance with manufacturer's current written instructions, recommendations and reviewed submittals and shop drawings.

3.3 ADJUST AND CLEAN:

- A. Touch up Painting:
 - 1. Immediately after erection, clean field welds, bolted connections, and abraded areas of shop paint, and paint exposed areas with same materials as used for shop painting.
 - 2. Apply by brush or spray to provide a minimum dry film thickness of 2.0 mils.
- B. For Galvanized Surfaces: Clean field welds, bolted connections and abraded areas and apply galvanized repair paint to comply with ASTM A 780.

END OF METAL FABRICATIONS

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SECTION 05 5213

PIPE & TUBE RAILINGS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS:

- A. Drawings and general provisions of Contract, including General and Supplementary Conditions and Division-1 Specification sections, apply to work of this section.
- B. Related work specified elsewhere includes:
 - 1. Section 033000- "Cast In Place Concrete"
 - 2. Section 055000 - "Metal Fabrications"
 - 3. Section 079200 - "Joint Sealers" (at base of uprights in concrete slabs and paving)
 - 4. Section 09900 - "Painting"

1.2 SUMMARY:

- A. Extent of handrails and railings is indicated on drawings and includes miscellaneous handrails and railing systems, interior and exterior, not included in other sections of these specifications.
- B. Types of handrails and railing system in this section include:
 - 1. Interior galvanized steel pipe handrails and railing systems, with infill as indicated and shop applied high performance primers as specified.
 - 2. Exterior handrails and railings shall be hot-dipped galvanized **with smooth finish**, after fabrication, with infill as indicated and shop applied high performance primers as specified.
- C. Products furnished but not installed under this section include inserts and anchors preset in masonry and concrete for anchorage of handrails and railing systems.
- D. Definitions in ASTM E 985 for railing-related terms apply to this section.

1.3 SYSTEM PERFORMANCE:

- A. Structural Performances:
 - 1. Provide railing, guardrail and handrail assemblies which, when installed, comply with the following minimum requirements for structural performance, unless otherwise indicated.

2. Handrail and guardrail assemblies, handrails, top rails and infill shall be designed so they are capable of withstanding the following minimum loads applied as indicated:
 - a. Handrail assemblies and guards shall be designed to resist a load of 50 plf applied in any direction at the top and to transfer this load through the supports to the structure.
 - b. Handrail assemblies and guards shall be able to resist a single concentrated load of 200-pounds applied in any direction at any point along the top, and have attachment devices and supporting structure to transfer this loading to appropriate structural elements of the building. This load need not be assumed to act concurrently with the loads specified in the preceding paragraph.
 - c. Components: Intermediate rails (all those except the handrail), balusters and panel fillers shall be designed to withstand a horizontally applied normal load of 50 pounds on an area equal to 1 square foot, including openings and space between rails. Reactions due to this loading are not required to be superimposed with those loads indicated in the two paragraphs above.
 - d. Increase minimum loads indicated above, as required by applicable codes and/or authorities having jurisdiction.

1.4 **QUALITY ASSURANCE:**

- A. Shop Assembly: Preassemble items in shop to greatest extent possible to minimize field splicing and assembly. Disassemble units only as necessary for shipping and handling limitations. Clearly mark units for reassembly and coordinated installation.
- B. Comply with referenced standards and "Quality Assurance" article in Section 055000 - "Metal Fabrications".

1.5 **SUBMITTALS:**

- A. Product Data: Submit manufacturer's product specifications and installation instructions for products and processes used in handrails and railings, including finishes and grout.
- B. Shop Drawings: Submit shop drawings for fabrication and erection of handrails and railings. Include plans, elevations and details of fittings, connections, and anchorages to other work. Provide templates for anchor and bolt installation by others.
- C. Samples: Submit samples for each type of metal finish indicated. Prepare samples on metal on same gage and alloy to be used in work. Where normal color and texture variations are to be expected, provide "range" samples showing limits of such variations.

1. Include samples of fittings and brackets proposed for use.
2. Include sample of typical welded connection.

1.6 STORAGE:

- A. Store handrails and railing systems in clean, dry location away from uncured concrete and masonry, protected against damage of any kind. Cover with waterproof, tarpaulin, or polyethylene sheeting; allow for air circulation inside the covering.

PART 2 - PRODUCTS

2.1 MATERIALS:

- A. Metal Surfaces, General: For fabrication of railing and handrail components which will be exposed to view, use only materials which are smooth and free of surface blemishes including pitting, seam marks, roller marks, rolled trade names and roughness.
- B. Steel and Iron: Provide steel and iron in the form indicated complying with the following requirements:
 1. Tubing: Cold-formed, ASTM A 500; or hot-rolled, ASTM A 501; at least 3/16-inch nominal finished wall thickness.
 2. Steel Plates, Shapes and Bars: ASTM A 36.
 3. Gray Iron Castings: ASTM A 48, Class 30.
 4. Malleable Iron Castings: ASTM A 47, grade as recommended by fabricator for type of use indicated.
 5. Steel Pipe: Schedule 40 (galvanized).
- C. Aluminum (only if indicated): Provide alloy and temper recommended by aluminum producer of finisher for type of use and finish indicated, and with not less than the strength and durability properties of the alloy and temper designated below for each aluminum form required.
 1. Drawn Seamless Tube: ASTM B 483, 6063-T832.
 2. Plate and Sheet: ASTM B 209, 6061-T6.
 3. Die and Hand Forgings: ASTM B 247, 6061-T6.
 4. Castings: ASTM B 26, 356.0-T6.
 5. Prefinished Guardrail and Railing Section: Schedule 40 aluminum.

2.2 MISCELLANEOUS MATERIALS:

- A. Nonshrink Nonmetallic Grout: Pre-mixed, factory-packaged, nonstaining, noncorrosive, nongaseous grout complying with CE CRD C621. Provide grout specifically recommended by manufacturer for interior and exterior applications of type specified in this section.
- B. Welding Electrodes and Filler Metal: Provide type and alloy of filler metal and electrodes as recommended by producer of metal to be welded, complying with applicable AWS Specifications, and as required for color match, strength, and compatibility in fabricated items.
- C. Fasteners:
 - 1. Use fasteners of same basic metal as the fastened metal, unless otherwise indicated. Do not use metals which are corrosive or incompatible with materials joined.
 - 2. Provide concealed fasteners for interconnection of handrail and railing components where welding is not feasible and for their attachment to other work, except where otherwise indicated.
- D. Anchors and Inserts: Provide anchors of proper type, size, and material for type of loading and installation condition shown, as recommended by manufacturer, unless otherwise indicated. Use non-ferrous metal or hot-dipped galvanized anchors and inserts for exterior locations and elsewhere as required for corrosion resistance. Use toothed steel or lead expansion bolt devices for drilled-in-place anchors. Furnish inserts, as required, to be set into concrete or masonry work.
- E. Painting:
 - 1. All steel railings shall be shop primed as specified. All surface preparation work and paint application shall be done in accordance with paint manufacturer's recommendations.

2.3 **FABRICATION:**

- A. General:
 - 1. Fabricate handrails and railings to design, dimensions and details shown. Provide handrail and railing members in sizes and profiles indicated, with supporting spots and brackets for size and spacing shown, but not less than required to support the design loadings indicated.
 - a. Provide handrail returns to wall at terminations, **whether or not indicated.**
 - b. Center handrails shall be continuous and without height changes,

whether or not indicated.

2. Pits, grind marks and other depressions shall be filled and sanded smooth.
3. Field joints shall be completely concealed (weld, grind smooth, fill as required, then sand smooth).
4. Installed railings and handrails shall be perfectly straight, aligned, and equally spaced, and posts shall be plumb.

B. Welded Connections:

1. Fabricate railings by welding. Preassemble railing units in shop to maximum extent practicable and consistent with shipping and handling limitations. Perform welding to comply with applicable AWS specifications, using method appropriate for metal and finish indicated. Grind exposed welds perfectly smooth and flush to match and blend with adjoining surfaces.
2. Interconnect ferrous railing and handrail members by butt-welding or welding with internal connectors, at fabricator's option, unless otherwise indicated.
 - a. At tee and cross intersections provide coped joints.
 - b. Form bends by use of prefabricated elbow fittings and radius bends, as applicable, of radiuses indicated, except where configuration indicated requires bending of railing members.
 - c. Where bending is required, form simple and compound curves by bending members in jigs to produce uniform curvature for each repetitive configuration required; maintain profile of member throughout entire bend without buckling, twisting, or otherwise deforming exposed surfaces of handrail and railing components.
3. Repair galvanized coatings with cold-process galvanizing repair paint.

C. For exterior handrails and railings and those exposed to moisture from condensation or other surfaces, provide weepholes or other means for evacuation of entrapped water in hollow sections of railing members.

D. Fittings and Anchors: Provide manufacturer's standard miscellaneous fittings and anchors for interconnection of handrail and railing members to other work, unless otherwise indicated. Furnish inserts and other anchorage devices for connecting handrails and railings to concrete or masonry work. Fabricate and space anchorage devices as indicated and as required to provide adequate support. Coordinate anchorage devices with supporting structure.

2.4 METAL FINISHES, GENERAL:

- A. Comply with NAAMM “Metal Finishes Manual” for recommendations and designations of finishes, except as otherwise indicated.

2.5 STEEL FINISHES:

- A. Surface Preparation: As recommended by paint manufacturer for galvanized substrate; non-destructive.
- B. Primer: One coat of the following, shop applied or field applied over galvanized repair paint coating specified:
 - 1. Tnemec “90-97 TNEME-ZINC” one package epoxy zinc-rich primer.
- C. Intermediate Coat: One coat of the following, shop applied Tnemec “Series 66 HI-BUILD EPOXOLINE.”
- D. Finish Coats: Refer to Section 09900 - “Painting”; not the work of this Section 055213.
- E. Galvanizing Repair Paint: High zinc dust content paint for regalvanizing welds in galvanized steel, complying with Military Specification MIL-P-21035 (Ships) or SSPC Paint 20.

PART 3 - EXECUTION

3.1 PREPARATION:

- A. Coordinate setting drawings, diagrams, templates, instructions, and directions for installation of anchorages, such as sleeves, concrete inserts, anchor bolts and miscellaneous items having integral anchors, which are to be embedded in concrete and masonry construction. Coordinate delivery of such items to project site.
- B. Field Measurements: Take field measurements prior to fabrication.

3.2 INSTALLATION, GENERAL:

- A. Fit exposed connections accurately together to form tight, hairline joints.
- B. Perform cutting, drilling and fitting required for installation of handrails and railings. Set work accurately in location, alignment and elevation, plumb, level, true and free of rack, measured from established lines and levels.
- C. Field Welding: Comply with applicable AWS specification for procedures of manual shielded metal-arc welding, for appearance and quality of welds made, and for methods used in correcting welding work. Weld connections which are not to be left as exposed

joints, but cannot be shop welded because of shipping size limitations. Grind exposed joints smooth, fill, sand, apply cold-process galvanizing repair paint, and touch-up shop paint coat.

- D. Adjust handrails and railings prior to anchoring to ensure matching alignment at abutting joints. Space posts at interval indicated, but not less than that required by design loadings.

3.3 ANCHORING POSTS:

- A. Anchor posts to metal surfaces with manufacturer's standard fittings designed for this purpose, unless otherwise indicated.
- B. Anchor posts in concrete and stone by core drilling holes not less than 5" deep (excluding depth of stone veneer), and 3/4" greater than outside dimensions of posts. Clean holes of all loose material, insert posts and fill annular space between post and concrete with non-shrink, non-metallic grout, mixed and placed to comply with grout manufacturer's directions.
 - 1. Seal around rail penetration with pourable sealer, as per Section 07900 - "Joint Sealers."
 - 2. Cover anchorage joint with flange or escutcheon plate attached to post after filling of annular space.

3.4 RAILING CONNECTIONS:

- A. Welded Connections: Use fully welded joints for permanently connecting railing components by welding. Cope or butt components to provide 100-percent contact or use manufacturer's standard fittings designed for this purpose.

3.5 ANCHORING RAILING ENDS:

- A. Anchor railing ends into concrete or masonry with manufacturer's standard fittings designed for this purpose, unless otherwise indicated.
- B. Anchor railing ends to metal surfaces by welding using manufacturer's standard concealed fittings, unless otherwise indicated.
- C. Expansion Joints: Provide expansion joints at locations indicated, or if not indicated, at intervals not to exceed 40-feet. Provide slip-joint internal sleeve extending 2" beyond joint on either side; fasten internal sleeve securely to one side, locate joint within 6" of post.

3.6 ATTACHMENT OF HANDRAILS TO WALLS:

- A. General: Secure handrails to walls with manufacturer's standard wall brackets and end fittings, unless otherwise indicated.
- B. For concrete and solid masonry, use drilled-in expansion shields and concealed hanger bolts, unless otherwise indicated.
- C. For hollow masonry anchorage, use toggle bolts with square heads, unless otherwise indicated.
- D. For stud partitions use lag bolts fastened to 2 x 12 treated wood blocking between studs. Coordinate with spacing of studs for accurate location of blocking members.

3.7 PROTECTION:

- A. Protect finishes of railings and handrails from damage during construction period by use of temporary protection coverings approved by railing manufacturer. Remove protective covering at project completion or when directed by Architect.
- B. Restore finishes damaged during installation and construction period so that no evidence remains of correction work. Return items which cannot be refinished in the field to the shop; make required alterations and refinish entire unit, or provide new units as required.

END OF PIPE & TUBE RAILINGS

SECTION 06 1000

ROUGH CARPENTRY

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. Section Includes:

- 1. Framing with dimension lumber.
- 2. Rooftop equipment bases and support curbs.
- 3. Wood blocking, cants, and nailers.
- 4. Plywood backing panels.

- B. Related Requirements:

- 1. Section 01 91 80 "Building Envelope Commissioning Requirements" apply to this Section
- 2. Section 01 91 13 "General Commissioning Requirements" apply to this Section.
- 3. Section 06 16 00 "Sheathing" for sheathing.

1.3 DEFINITIONS

- A. Boards or Strips: Lumber of less than 2 inches nominal size in least dimension.
- B. Dimension Lumber: Lumber of 2 inches nominal size or greater but less than 5 inches nominal size in least dimension.
- C. Exposed Framing: Framing not concealed by other construction.
- D. Timber: Lumber of 5 inches nominal size or greater in least dimension.

1.4 ACTION SUBMITTALS

- A. Product Data: For each type of process and factory-fabricated product. Indicate component materials and dimensions and include construction and application details.

1. Include data for wood-preservative treatment from chemical treatment manufacturer and certification by treating plant that treated materials comply with requirements. Indicate type of preservative used and net amount of preservative retained.
 2. Include data for fire-retardant treatment from chemical treatment manufacturer and certification by treating plant that treated materials comply with requirements. Include physical properties of treated materials based on testing by a qualified independent testing agency.
 3. For fire-retardant treatments, include physical properties of treated lumber both before and after exposure to elevated temperatures, based on testing by a qualified independent testing agency according to ASTM D5664.
 4. For products receiving a waterborne treatment, include written statement that moisture content of treated materials was reduced to levels specified before shipment to Project site.
- B. Fastener Patterns: Full-size templates for fasteners in exposed framing.

1.5 INFORMATIONAL SUBMITTALS

- A. Material Certificates: For dimension lumber specified to comply with minimum allowable unit stresses. Indicate species and grade selected for each use and design values approved by the ALSC Board of Review.
- B. Evaluation Reports: For the following, from ICC-ES:
1. Wood-preservative-treated wood.
 2. Fire-retardant-treated wood.
 3. Power-driven fasteners.
 4. Post-installed anchors.
 5. Metal framing anchors.

1.6 QUALITY ASSURANCE

- A. Testing Agency Qualifications: For testing agency providing classification marking for fire-retardant treated material, an inspection agency acceptable to authorities having jurisdiction that periodically performs inspections to verify that the material bearing the classification marking is representative of the material tested.

1.7 DELIVERY, STORAGE, AND HANDLING

- A. Stack wood products flat with spacers beneath and between each bundle to provide air circulation. Protect wood products from weather by covering with waterproof sheeting, securely anchored. Provide for air circulation around stacks and under coverings.

PART 2 - PRODUCTS

2.1 WOOD PRODUCTS, GENERAL

- A. Lumber: DOC PS 20 and applicable rules of grading agencies indicated. If no grading agency is indicated, comply with the applicable rules of any rules-writing agency certified by the ALSC Board of Review. Grade lumber by an agency certified by the ALSC Board of Review to inspect and grade lumber under the rules indicated.
 - 1. Factory mark each piece of lumber with grade stamp of grading agency.
 - 2. Dress lumber, S4S, unless otherwise indicated.
- B. Maximum Moisture Content of Lumber: 19 percent for 2-inch nominal thickness or less; no limit for more than 2-inch nominal thickness unless otherwise indicated.

2.2 WOOD-PRESERVATIVE-TREATED LUMBER

- A. Preservative Treatment by Pressure Process: AWP A U1; Use Category UC2.
 - 1. Preservative Chemicals: Acceptable to authorities having jurisdiction and containing no arsenic or chromium.
 - 2. For exposed items indicated to receive a stained or natural finish, chemical formulations shall not require incising, contain colorants, bleed through, or otherwise adversely affect finishes.
- B. Kiln-dry lumber after treatment to a maximum moisture content of 19 percent. Do not use material that is warped or that does not comply with requirements for untreated material.
- C. Mark lumber with treatment quality mark of an inspection agency approved by the ALSC Board of Review.
- D. Application: Treat items indicated on Drawings, and the following:
 - 1. Wood cants, nailers, curbs, equipment support bases, blocking, stripping, and similar members in connection with roofing, flashing, vapor barriers, and waterproofing.

2.3 FIRE-RETARDANT-TREATED MATERIALS

- A. General: Where fire-retardant-treated materials are indicated, materials shall comply with requirements in this article, that are acceptable to authorities having jurisdiction, and with fire-test-response characteristics specified as determined by testing identical products per test method indicated by a qualified testing agency.

- B. Fire-Retardant-Treated Lumber and Plywood by Pressure Process: Products with a flame-spread index of 25 or less when tested according to ASTM E84, and with no evidence of significant progressive combustion when the test is extended an additional 20 minutes, and with the flame front not extending more than 10.5 feet beyond the centerline of the burners at any time during the test.
 - 1. Treatment shall not promote corrosion of metal fasteners.
 - 2. Exterior Type: Treated materials shall comply with requirements specified above for fire-retardant-treated lumber and plywood by pressure process after being subjected to accelerated weathering according to ASTM D2898.
 - 3. Design Value Adjustment Factors: Treated lumber shall be tested according to ASTM D5664 and design value adjustment factors shall be calculated according to ASTM D6841.
- C. Kiln-dry lumber after treatment to maximum moisture content of 19 percent.
- D. Identify fire-retardant-treated wood with appropriate classification marking of qualified testing agency.
- E. For exposed items indicated to receive a stained or natural finish, chemical formulations shall not bleed through, contain colorants, or otherwise adversely affect finishes.
- F. Application: Treat items indicated on Drawings, and the following:
 - 1. Concealed blocking.
 - 2. Roof construction.
 - 3. Plywood backing panels.

2.4 MISCELLANEOUS LUMBER

- A. General: Provide miscellaneous lumber indicated and lumber for support or attachment of other construction, including the following:
 - 1. Blocking.
 - 2. Nailers.
 - 3. Rooftop equipment bases and support curbs.
 - 4. Cants.
- B. Dimension Lumber Items: Construction or No. 2 grade lumber of any of the following species:
 - 1. Hem-fir (north); NLGA.
 - 2. Mixed southern pine or southern pine; SPIB.
 - 3. Spruce-pine-fir; NLGA.
 - 4. Hem-fir; WCLIB or WWPA.
 - 5. Spruce-pine-fir (south); NeLMA, WCLIB, or WWPA.
 - 6. Eastern softwoods; NeLMA.

- C. Concealed Boards: 19 percent maximum moisture content and the following species and grades:
 - 1. Mixed southern pine or southern pine; No. 2 grade; SPIB.
 - 2. Hem-fir or hem-fir (north); Construction or No. 2 Common grade; NLGA, WCLIB, or WWP.
 - 3. Spruce-pine-fir (south) or spruce-pine-fir; Construction or No. 2 Common grade; NeLMA, NLGA, WCLIB, or WWP.
 - 4. Eastern softwoods; No. 2 Common grade; NeLMA.
- D. For blocking not used for attachment of other construction, Utility, Stud, or No. 3 grade lumber of any species may be used provided that it is cut and selected to eliminate defects that will interfere with its attachment and purpose.
- E. For blocking and nailers used for attachment of other construction, select and cut lumber to eliminate knots and other defects that will interfere with attachment of other work.

2.5 PLYWOOD BACKING PANELS

- A. Equipment Backing Panels: Unless otherwise noted on drawings, Plywood, DOC PS 1, Exposure 1, C-D Plugged, fire-retardant treated, in thickness indicated or, if not indicated, not less than 3/4-inch nominal thickness.

2.6 FASTENERS

- A. General: Fasteners shall be of size and type indicated and shall comply with requirements specified in this article for material and manufacture.
 - 1. Where rough carpentry is exposed to pressure-preservative treated, or in area of high relative humidity, provide fasteners with hot-dip zinc coating complying with ASTM A153/A153M.
- B. Nails, Brads, and Staples: ASTM F1667.
- C. Power-Driven Fasteners: Fastener systems with an evaluation report acceptable to authorities having jurisdiction, based on ICC-ES AC70.
- D. Post-Installed Anchors: Fastener systems with an evaluation report acceptable to authorities having jurisdiction, based on ICC-ES AC01, ICC-ES AC58, ICC-ES AC193, or ICC-ES AC308 as appropriate for the substrate.
 - 1. Material: Carbon-steel components, zinc plated to comply with ASTM B633, Class Fe/Zn 5.

2.7 METAL FRAMING ANCHORS

- A. Allowable design loads, as published by manufacturer, shall meet or exceed those indicated. Manufacturer's published values shall be determined from empirical data or by rational engineering analysis and demonstrated by comprehensive testing performed by a qualified independent testing agency. Framing anchors shall be punched for fasteners adequate to withstand same loads as framing anchors.
- B. Galvanized-Steel Sheet: Hot-dip, zinc-coated steel sheet complying with ASTM A653/A653M, G60 coating designation.
 - 1. Use for interior locations unless otherwise indicated.
- C. Hot-Dip, Heavy-Galvanized Steel Sheet: ASTM A653/A653M; structural steel (SS), high-strength low-alloy steel Type A (HSLAS Type A), or high-strength low-alloy steel Type B (HSLAS Type B); G185 coating designation; and not less than 0.036 inch thick.
 - 1. Use for wood-preservative-treated lumber and where indicated.

2.8 MISCELLANEOUS MATERIALS

- A. Flexible Flashing: Composite, self-adhesive, flashing product consisting of a pliable, butyl rubber or rubberized-asphalt compound, bonded to a high-density polyethylene film, aluminum foil, or spunbonded polyolefin to produce an overall thickness of not less than 0.025 inch.

PART 3 - EXECUTION

3.1 INSTALLATION, GENERAL

- A. Framing Standard: Comply with AF&PA's WCD 1, "Details for Conventional Wood Frame Construction," unless otherwise indicated.
- B. Set rough carpentry to required levels and lines, with members plumb, true to line, cut, and fitted. Fit rough carpentry accurately to other construction. Locate nailers, blocking, and similar supports to comply with requirements for attaching other construction.
- C. Install plywood backing panels by fastening to studs; coordinate locations with roofing wall base flashing needs and utilities requiring backing panels. Install fire-retardant-treated plywood backing panels with classification marking of testing agency exposed to view.
- D. Install metal framing anchors to comply with manufacturer's written instructions. Install fasteners through each fastener hole.

- E. Provide blocking and framing as indicated and as required to support facing materials, fixtures, specialty items, and trim.
 - 1. Provide metal clips for fastening gypsum board at corners and intersections where framing or blocking does not provide a surface for fastening edges of panels. Space clips not more than 16 inches o.c.
- F. Sort and select lumber so that natural characteristics do not interfere with installation or with fastening other materials to lumber. Do not use materials with defects that interfere with function of member or pieces that are too small to use with minimum number of joints or optimum joint arrangement.
- G. Comply with AWWA M4 for applying field treatment to cut surfaces of preservative-treated lumber.
 - 1. Use inorganic boron for items that are continuously protected from liquid water.
 - 2. Use copper naphthenate for items not continuously protected from liquid water.
- H. Where wood-preservative-treated lumber is installed adjacent to metal decking, install continuous flexible flashing separator between wood and metal decking.
- I. Securely attach rough carpentry work to substrate by anchoring and fastening as indicated, complying with the following:
 - 1. Table 2304.9.1, "Fastening Schedule," in ICC's International Building Code (IBC).
 - 2. ICC-ES evaluation report for fastener.
- J. Use steel common nails unless otherwise indicated. Select fasteners of size that will not fully penetrate members where opposite side will be exposed to view or will receive finish materials. Make tight connections between members. Install fasteners without splitting wood. Drive nails snug but do not countersink nail heads unless otherwise indicated.

3.2 INSTALLATION OF WOOD BLOCKING AND NAILERS

- A. Install where indicated and where required for attaching other work. Form to shapes indicated and cut as required for true line and level of attached work. Coordinate locations with other work involved.
- B. Attach items to substrates to support applied loading. Recess bolts and nuts flush with surfaces unless otherwise indicated.

3.3 PROTECTION

- A. Protect wood that has been treated with inorganic boron (SBX) from weather. If, despite protection, inorganic boron-treated wood becomes wet, apply EPA-registered borate treatment. Apply borate solution by spraying to comply with EPA-registered label.
- B. Protect rough carpentry from weather. If, despite protection, rough carpentry becomes wet enough that moisture content exceeds that specified, apply EPA-registered borate treatment. Apply borate solution by spraying to comply with EPA-registered label.
- C. Do not overload the roof sheathing with lumber or plywood stored on completed low-slope roofing area.

END OF ROUGH CARPENTRY

SECTION 06 1600

SHEATHING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. Section Includes:
 - 1. Wall sheathing.
 - 2. Roof sheathing.
 - 3. Parapet sheathing.
- B. Related Requirements:
 - 1. Section 06 1000 "Rough Carpentry" for plywood backing panels.
 - 2. Section 01 9180 "Building Envelope Commissioning Requirements" apply to this Section.
 - 3. Section 01 9113 "General Commissioning Requirements" apply to this Section.
 - 4. Section 07272 "Fluid Applied Air Barrier" for fluid-applied air barrier installed over wall sheathing.
 - 5. Section 07 9300 "Total Building Air Leakage Testing".

1.3 ACTION SUBMITTALS

- A. Product Data: For each type of process and factory-fabricated product. Indicate component materials and dimensions and include construction and application details.
 - 1. Include data for wood-preservative treatment from chemical treatment manufacturer and certification by treating plant that treated plywood complies with requirements. Indicate type of preservative used and net amount of preservative retained.
 - 2. Include data for fire-retardant treatment from chemical treatment manufacturer and certification by treating plant that treated plywood complies with requirements. Include physical properties of treated materials.
 - 3. For fire-retardant treatments, include physical properties of treated plywood both before and after exposure to elevated temperatures, based on testing by a qualified independent testing agency according to ASTM D5516.

4. For products receiving waterborne treatment, include statement that moisture content of

1.4 INFORMATIONAL SUBMITTALS

- A. Qualification Data: For Installer testing and inspecting agency.
- B. Evaluation Reports: For the following, from ICC-ES:
 1. Wood-preserved-treated plywood.
 2. Fire-retardant-treated plywood.
- C. Field quality-control reports.

1.5 DELIVERY, STORAGE, AND HANDLING

- A. Stack panels flat with spacers beneath and between each bundle to provide air circulation. Protect sheathing from weather by covering with waterproof sheeting, securely anchored. Provide for air circulation around stacks and under coverings.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

- A. Fire-Resistance Ratings: As tested according to ASTM E119; testing by a qualified testing agency. Identify products with appropriate markings of applicable testing agency.
 1. Fire-Resistance Ratings: Indicated by design designations from UL's "Fire Resistance Directory" or from the listings of another qualified testing agency.

2.2 WOOD PANEL PRODUCTS

- A. Thickness: As needed to comply with requirements specified, but not less than thickness indicated.
- B. Factory mark panels to indicate compliance with applicable standard.

2.3 PRESERVATIVE-TREATED PLYWOOD

- A. Preservative Treatment by Pressure Process: AWP A U1; Use Category UC2.
 1. Preservative Chemicals: Acceptable to authorities having jurisdiction and containing no arsenic or chromium.

- B. Mark plywood with appropriate classification marking of an inspection agency acceptable to authorities having jurisdiction.
- C. Application: Treat items indicated on Drawings and plywood in contact with masonry or concrete or used with roofing, flashing, vapor barriers, and waterproofing.

2.4 FIRE-RETARDANT-TREATED PLYWOOD

- A. General: Where fire-retardant-treated materials are indicated, use materials complying with requirements in this article that are acceptable to authorities having jurisdiction and with fire-test-response characteristics specified as determined by testing identical products per test method indicated by a qualified testing agency.
- B. Fire-Retardant-Treated Plywood by Pressure Process: Products with a flame-spread index of 25 or less when tested according to ASTM E84, and with no evidence of significant progressive combustion when the test is extended an additional 20 minutes, and with the flame front not extending more than 10.5 feet beyond the centerline of the burners at any time during the test.
 - 1. Use treatment that does not promote corrosion of metal fasteners.
 - 2. Exterior Type: Treated materials shall comply with requirements specified above for fire-retardant-treated plywood by pressure process after being subjected to accelerated weathering according to ASTM D2898. Use for exterior locations and where indicated.
 - 3. Design Value Adjustment Factors: Treated lumber plywood shall be tested according to ASTM D5516 and design value adjustment factors shall be calculated according to ASTM D6305. Span ratings after treatment shall be not less than span ratings specified.
- C. Kiln-dry material after treatment to a maximum moisture content of 15 percent. Do not use material that is warped or does not comply with requirements for untreated material.
- D. Identify fire-retardant-treated plywood with appropriate classification marking of qualified testing agency.
- E. Application: Treat plywood indicated on Drawings, and the following:
 - 1. Wall sheathing within 48 inches of fire walls.

2.5 WALL SHEATHING

- A. Fire-Retardant-Treated Plywood Sheathing: DOC PS 1, Exterior sheathing.
 - 1. Span Rating: Not less than 24/0.
 - 2. Nominal Thickness: 5/8 inch minimum.

- B. Fire-Retardant-Treated Furring: DOC PS 1, Exterior sheathing/lumber.

1. Span Rating: Not less than 24/0.
2. Nominal Thickness: 3/8 inch minimum.

2.6 ROOF SHEATHING

- A. Fire-Retardant-Treated Plywood Sheathing: DOC PS 1, Exterior sheathing.
1. Span Rating: Not less than 24/0.
 2. Nominal Thickness: 5/8 inch minimum.

2.7 PARAPET SHEATHING

- A. Fire-Retardant-Treated Plywood Sheathing: DOC PS 1, Exterior sheathing.
1. Span Rating: Not less than 24/0.
 2. Nominal Thickness: 5/8 inch minimum.

2.8 FASTENERS

- A. General: Provide fasteners of size and type indicated that comply with requirements specified in this article for material and manufacture.
1. For roof, parapet and wall sheathing, provide fasteners with hot-dip zinc coating complying with ASTM A153/A153M.
- B. Nails, Brads, and Staples: ASTM F1667.
- C. Power-Driven Fasteners: Fastener systems with an evaluation report acceptable to authorities having jurisdiction, based on ICC-ES AC70.
- D. Screws for Fastening Sheathing to Wood Framing: ASTM C1002.
- E. Screws for Fastening Wood Structural Panels to Cold-Formed Metal Framing: ASTM C954, except with wafer heads and reamer wings, length as recommended by screw manufacturer for material being fastened.
- F. Screws for Fastening Gypsum Sheathing to Steel Deck: Steel drill screws, in length recommended by sheathing manufacturer for thickness of sheathing to be attached.
1. For steel deck less than 0.0329 inch thick, use screws that comply with ASTM C1002.
 2. For steel deck from 0.033 to 0.112 inch thick, use screws that comply with ASTM C954.

2.9 MISCELLANEOUS MATERIALS

- A. Adhesives for Field Gluing Panels to Wood Framing: Formulation complying with ASTM D3498 that is approved for use with type of construction panel indicated by manufacturers of both adhesives and panels.

PART 3 - EXECUTION

3.1 INSTALLATION, GENERAL

- A. Do not use materials with defects that impair quality of sheathing or pieces that are too small to use with minimum number of joints or optimum joint arrangement. Arrange joints so that pieces do not span between fewer than three support members.
- B. Cut panels at penetrations, edges, and other obstructions of work; fit tightly against abutting construction unless otherwise indicated.
- C. Securely attach to substrate by fastening as indicated, complying with the following:
 - 1. Table 2304.9.1, "Fastening Schedule," in the ICC's International Building Code.
 - 2. Table R602.3(1), "Fastener Schedule for Structural Members," and Table R602.3(2), "Alternate Attachments," in the ICC's International Residential Code for One- and Two-Family Dwellings.
 - 3. ICC-ES evaluation report for fastener.
- D. Use common wire nails unless otherwise indicated. Select fasteners of size that will not fully penetrate members where opposite side will be exposed to view or will receive finish materials. Make tight connections. Install fasteners without splitting wood.
- E. Coordinate wall, parapet and roof sheathing installation with flashing and joint-sealant installation so these materials are installed in sequence and manner that prevent exterior moisture from passing through completed assembly.
- F. Do not bridge building expansion joints; cut and space edges of panels to match spacing of structural support elements.
- G. Coordinate sheathing installation with installation of materials installed over sheathing so sheathing is not exposed to precipitation or left exposed at end of the workday when rain is forecast.
- H. Adhere to the manufacturer's printed temperature limitations regarding sheathing adhesive storage and applications.

3.2 WOOD STRUCTURAL PANEL INSTALLATION

- A. General: Comply with applicable recommendations in APA Form No. E30, "Engineered Wood Construction Guide," for types of structural-use panels and applications indicated. Exercise precautions to avoid "ghost" holes in the sheathing. Where feasible, seal "Ghost" holes with high performance urethane sealant prior to air and water barrier applications and cladding installations. Address all other sheathing installation deficiencies prior to air and water barrier applications and cladding installations.
- B. Fastening Methods: Fasten panels as indicated below:
 - 1. Wall and Roof Sheathing:
 - a. Screw to cold-formed metal framing / steel deck.
 - b. Space panels 1/8 inch apart at edges and ends.

END OF SHEATHING

SECTION 06 2000

FINISH CARPENTRY

PART 1- GENERAL

1.1 RELATED DOCUMENTS:

- A. Drawings and general provisions of Contract, including General and Supplementary Conditions and Division-1 Specification sections, apply to work of this section.
- B. Related work specified elsewhere includes:
 - 1. Section 055000 - "Metal Fabrications"
 - 2. Section 061000 - "Rough Carpentry"
 - 3. Section 064000 - "Architectural Woodwork"
 - 4. Section 079000 - "Joint Sealers"
 - 5. Section 087100 - "Finish Hardware"
 - 6. Section 099113 - "Painting"

1.2 DESCRIPTION OF WORK:

- A. Definition: Finish carpentry includes carpentry work which is exposed to view, is non-structural, and which is not specified as part of other sections.
- B. Types of finish carpentry work in this section include:
 - 1. Interior and exterior running and standing trim, and sills.
 - 2. Plywood; APA certified/labeled.
- C. Refer to Section 061000 - "Rough Carpentry", Section 055000 - "Metal Fabrications" and Structural Drawings for framing anchors.
- D. Finish carpentry is intended to be finish painted on site, under section 099113.
 - 1. All standing and running trim and all exposed lumber and wood products shall be back-primed prior to installation.
 - 2. Framing and deck above any soffit vents and any perforated soffit materials shall be painted with minimum 1-coat non-specular flat black enamel prior to installation of soffit vents, under Section 09900.

1.3 QUALITY ASSURANCE:

- A. Factory-mark each piece of lumber and plywood with type, grade, mill and grading agency identification; except omit marking from surfaces to receive transparent finish, and submit mill certificate that material has been inspected and graded in accordance with requirements if it cannot be marked on a concealed surface.
- B. Wood products listed in this section shall be Fire Retardant Treated Wood. Hoover Treated Wood Products, Inc. are considered to be approved, or other equals.

1.4 SUBMITTALS:

- A. Product Data: Submit manufacturer's specifications and installation instructions for each item of factory-fabricated products, siding, paneling, trim, etc. Include color samples for items requiring color selection.
- B. Samples: Submit the following samples for each species and cut or pattern of finish carpentry.
 - 1. Interior Standing and Running Trim: 2'-0" long x full board or molding width, unfinished.
 - 2. Exterior Standing and Running Trim: 2'-0" long x full board or molding width, unfinished.
- C. Wood Treatment Data: Submit chemical treatment manufacturer's instructions for handling, storage, installation and finishing treated materials, if required.

1.5 PRODUCT DELIVERY, STORAGE AND HANDLING:

- A. Protect finish carpentry materials during transit, delivery, storage and handling to prevent damage, soiling and deterioration.
- B. Do not deliver finish carpentry materials, until painting, wet work, grinding and similar operations which could damage, soil or deteriorate woodwork have been completed in installation areas. If, due to unforeseen circumstances, finish carpentry materials must be stored in other than installation areas, store only in areas meeting requirements specified for installation areas.

1.6 JOB CONDITIONS:

- A. Conditioning: Installer shall advise Contractor of temperature and humidity requirements for finish carpentry installation areas. Do not install finish carpentry until required temperature and relative humidity conditions have been stabilized and will be maintained in installation areas.
- B. Maintain temperature and humidity in installation area as required to maintain moisture content of installed finish carpentry within a 1.0 percent tolerance of

optimum moisture content, from date of installation through remainder of construction period. The fabricator of woodwork shall determine optimum moisture content and required temperature and humidity conditions.

PART 2 - PRODUCTS

2.1 WOOD PRODUCT QUALITY STANDARDS:

- A. Softwood Lumber Standards: Comply with PS 20 and with applicable grading rules of the respective grading and inspecting agency for the species and product indicated.
- B. Western Red Cedar: Western Red Cedar Lumber Association (WRCLA) and National Lumber Grading Authority (NLGA) rules.
- C. Plywood Standard: Comply with PS 1/ANSI A199.1.
- D. Hardwood Lumber Standard: Comply with National Hardwood Lumber Association (NHLA) rules.
- E. Woodworking Standard: Where indicated for a specific product comply with specified provision of the following:
 - 1. Architectural Woodwork Institute (AWI) "Quality Standards".

2.2 MATERIALS:

- A. General:
 - 1. Nominal sizes are indicated, except as shown by detailed dimensions. Provide dressed or worked and dressed lumber, as applicable, manufactured to the actual sizes as required by PS 20 or to actual sizes and pattern as shown, unless otherwise indicated.
 - 2. Moisture Content of Softwood Lumber: Provide kiln-dried (KD) lumber having a moisture content from time of manufacture until time of installation not greater than values required by the applicable grading rules of the respective grading and inspecting agency for the species and product indicated.
 - 3. Moisture Content of Hardwood Lumber: Provide kiln-dried (KD) lumber having a moisture content from time of manufacture until time of installation within the ranges required in the referenced woodworking standard.
 - 4. Lumber for Transparent Finish (Stained or Clear): Refer to Section 064000 - "Architectural Woodwork".
 - 5. Lumber for Painted Finish: At Contractor's option, use pieces which are

either glued-up lumber or made of solid lumber stock.

B. Interior and Exterior Finish Carpentry:

1. WM/Series Wood Molding Patterns: For stock molding patterns graded under Wood Molding and Millwork Producers Industry WM 4, provide the following grade based on finish indicated and fabricated from any Western hardwood species graded and inspected by WWPA or other referenced standard or agency.
 - a. Moldings for Transparent Finish: N-Grade (finger joints not permitted); Refer to Section 064000 - "Architectural Woodwork".
 - b. Moldings for Painted Finish: P-Grade.
2. Standing and Running Trim for Painted (opaque) Finish: Any Western hardwood species (interior) graded and inspected by WWPA, and softwood (exterior) as indicated, complying with following requirements:
 - a. Grade for Standard Sizes and Patterns:
 - 1) "C Select" or "Choice" for White Pine or Spruce (exposed at exterior)
 - 2) "C Select" or "Choice" for White or Yellow Poplar (interior), except where trim is associated with woodwork specified in Section 064000, in which case such trim shall match the stained and sealed hardwood indicated therein.
 - b. Grade for Special (Custom) Sizes and Patterns: Custom for quality of materials and manufacture as required in referenced woodworking standard.
3. Hardwood Plywood Stock Panels: Provide manufacturer's stock hardwood plywood panels complying with applicable requirements of PS 51 for species and grade of face veneers and backing, adhesive, construction, thickness, panel size, and finish.
 - a. Face Veneer Species for Painted Finish: Rotary cut Natural Birch.
 - b. Grade: Premium.
 - c. Backing Veneer Species: Any hardwood compatible with face species.
 - d. Construction: Veneer core.

- e. No. of Plies: 5.
 - f. Thickness: As indicated on the Drawings, or if not indicated, at least 3/4- inch.
 - g. Panel Size: As required.
 - h. Plywood Type (Water Resistance Capability): Type I at Exterior and Type II at Interior.
 - i. Face Pattern: Plain (no grooves) with veneer edge matched within each panel face to comply with type of match required by referenced product standard.
 - j. Face Veneer Matching (Panel-to-Panel): No match required.
 - k. Finish: Polish sanded.
4. Softwood Plywood: Comply with DOCPS1, "U.S. Product Standard for Construction and Industrial Plywood."
- a. Face Veneer Species for Painted Finish: SYP, or any similar species permitted by referenced standards.
 - b. Grade:
 - 1) Plywood Soffits, Medium Density Overlay (MDO): A-C, minimum
 - 2) Sub-flooring: Tongue-and-groove, and as follows:
 - a) Below Carpet and at Attics: B-C, minimum.
 - b) Below Vinyl Floor Coverings: A-C, minimum.
 - c. Backing Veneer Species: Same as face veneer.
 - d. Construction: Veneer core.
 - e. Thickness: As indicated on the Drawings, or if not indicated, at least as follows:
 - 1) Soffits: 1/2-inch.
 - 2) Sub-flooring: 3/4-inch, tongue-and-groove.
 - f. Panel Size: As required.

- g. Plywood Type (Water Resistance Capability): Type I (exterior).
- h. Finish: Exterior pieces primed at back and edges prior to installation (typical), with face finish as follows:
 - 1) Typical: Sanded.

2.3 MISCELLANEOUS MATERIALS:

- A. Fasteners and Anchorages: Provide nails, screws and other anchoring devised of the type, size, material, and finish required for application indicated to provide secure attachment, concealed where possible, and complying with applicable Federal Specifications and the International Building Code.
 - 1. Where finish carpentry is exposed on exterior or in areas of high relative humidity, provide fasteners and anchorages with a hot-dipped zinc coating (ASTM A 153).

PART 3 - EXECUTION

3.1 PREPARATION:

- A. Condition wood materials to average prevailing humidity conditions in installation areas prior to installing.
- B. Backprime Lumber and panel products for painted finish exposed on the exterior and where exposed to moisture and high relative humidity on the interior. Comply with requirements of Section 09900 - "Painting", for primers and their application.
- C. Pre-Installation Meeting: Meet at project site prior to delivery of finish carpentry materials and review coordination and environmental controls required for proper installation and ambient conditioning in areas to receive work. Include in meeting the Contractor, Architect and other Owner Representatives (if any), Installers of finish carpentry, wet work including plastering, other finishes, painting, mechanical work and electrical work, and firms and persons responsible for continued operation (whether temporary or permanent) of HVAC system as required to maintain temperature and humidity conditions. Proceed with finish carpentry on interior only when everyone concerned agrees that required ambient conditions can be properly maintained.

3.2 INSTALLATION:

- A. Discard units of material which are unsound, warped, bowed twisted, improperly treated, not adequately seasoned or too small to fabricate work with minimum of joints or optimum jointing arrangements, or which are of defective manufacture with respect to surfaces, sizes or patterns.

- B. Install the work plumb, level, true and straight with no distortions. Shim as required using concealed shims. Install to a tolerance of 1/8" in 8'-0" for plumb and level countertops; and with 1/16" maximum offset in flush adjoining 1/8" maximum offsets in revealed adjoining surfaces.
- C. Scribe and cut work to fit adjoining work, and refinish cut surfaces or repair damaged finish at cuts.
- D. Standing and Running Trim: Install with minimum number of joints possible, using full-length pieces (from maximum lengths of lumber available) to the greatest extent possible. Stagger joints in adjacent and related members. Cope at returns, miter at corners, to produce tight fitting joints with full surface contact throughout length of joint. Use scarf joints for end-to-end joints.
- E. Anchor finish carpentry work to anchorage devices or blocking built-in or directly attached to substrates. Secure to grounds, stripping and blocking with countersunk, concealed fasteners and blind nailing as required for a complete installation. Except where prefinished matching fasteners heads are required, use fine finishing nail for exposed nailings, countersunk and filled flush with finished surface, and matching final finish where transparent is indicated.
- F. Hardwood Plywood Paneling: Where grain character or color variations are noticeable, select and arrange panels on each wall for best match of adjacent panels. Install with uniform, tight joints between panels.
 - 1. Attach panels to supports with panel adhesive and fasteners, plus nailing, in accordance with manufacturer's current written instructions for concealed-fastener installation.
 - 2. Apply panel adhesive on supports, immediately prior to panel placement and nailing.
 - 3. Apply battens and corner trim as indicated.
- G. Plywood Panels: Install panels with edges over continuous framing or blocking. Nail at 6-inch (150-mm) intervals at panel perimeter and 12-inch (300-mm) intervals at intermediate supports, unless manufacturer recommends other intervals. Leave 1/16-inch (1.5-mm) gap between adjacent panels, unless otherwise recommended in writing by panel manufacturer. Leave 1/8-inch (3-mm) gap at perimeter and openings, unless otherwise recommended by panel manufacturer.
 - 1. Seal unavoidable butt joints at inside and outside corners and at trim locations.
 - 2. Apply as indicated.
 - 3. Conceal fasteners to greatest practical extent by countersinking and filling.

3.3 ADJUSTMENT, CLEANING, FINISHING AND PROTECTION:

- A. Repair damaged and defective finish carpentry work wherever possible to eliminate defects functionally and visually; where not possible to repair properly, replace woodwork. Adjust joinery for uniform appearance.
- B. Clean finish carpentry work on exposed and semi-exposed surfaces. Touch-up shop-applied finishes to restore damaged or soiled areas.
- C. Refer to Section 099113 - "Painting", for final finishing of installed finish carpentry work, not the work of this Section 062000.
- D. Protection: Installer of finish carpentry work shall advise Contractor of final protection and maintained conditions necessary to ensure that work will be without damage or deterioration at time of acceptance.

END OF FINISH CARPENTRY

SECTION 07 2100

THERMAL INSULATION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS:

- A. Drawings and general provisions of Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.
- B. Related work specified elsewhere includes:
 - 1. Section 06100 - "Rough Carpentry"
 - 2. Section 09250 - "Gypsum Drywall"

1.2 SUMMARY:

- A. This Section includes the following:
 - 1. Building insulation, **formaldehyde-free**, in batt form, in any exterior stud walls, below roof deck, at bottom of wood and metal trusses, at miscellaneous locations, and as otherwise required to provide a continuous and complete insulation envelope between interior and exterior of building; And at any uninsulated walls, attics, etc., opened or otherwise encountered during the course of the work of this project.
 - 2. Extend insulation up to at least the bottom of primary attic or roof insulation, at all wood and metal stud exterior walls.
 - 3. Extend sound batts up to top of wall or up to bottom of attic insulation, at new wood and metal stud interior walls where so indicated, or if not indicated, at least at perimeter interior walls of all mechanical, electrical and equipment rooms, rooms which contain toilet and shower fixtures, conference rooms, offices, and within all stud walls fire-rated 2-hours or more.
 - 4. Supports and miscellaneous accessories.
 - a. **Note:** Insulation shall be supported above the surface of any horizontal fire-rated gypsum board, using manufacturer's standard wires, straps, or other effective method acceptable to product manufacturers and authorities having jurisdiction. The only acceptable alternative will be assembly test data which indicates no reduction in the fire-rating of fire protection materials due to insulation being in direct contact with fire-rated assembly materials.

1.3 DEFINITIONS:

- A. Thermal Resistivity: Where the thermal resistivity of insulation products are designated by “r-values,” they represent the reciprocal of thermal conductivity (k-values). Thermal conductivity is the rate of heat flow through a homogenous material exactly 1 inch thick. Thermal resistivities are expressed by the temperature difference in degrees F between the two exposed faces required to cause one BTU to flow through one square foot per hour at mean temperatures indicated.

1.4 SUBMITTALS:

- A. General: Submit the following in accordance with Conditions of Contract and Division 1 Specification Sections.
- B. Product data for each type of insulation product and accessory specified.

1.5 QUALITY ASSURANCE:

- A. Fire Performance Characteristics: Provide insulation materials identical to those whose indicated fire performance characteristics have been determined per the ASTM test method indicated below, by UL or other testing and inspecting organizations acceptable to authorities having jurisdiction. Identify products with appropriate markings of applicable testing and inspecting organization.
- B. Single-Source Responsibility for Insulation Products: Obtain each type of building insulation from a single source with resources to provide products of consistent quality in appearance and physical properties without delaying progress of the Work.

1.6 DELIVERY, STORAGE, AND HANDLING:

- A. Protect insulation materials from physical damage and from deterioration by moisture, soiling, and other sources. Store inside and in a dry location. Comply with manufacturer’s recommendations for handling, storage, and protection during installation.

PART 2 - PRODUCTS

2.1 MANUFACTURERS:

- A. Manufacturers: Subject to compliance with requirements, provide **formaldehyde-free** insulation products of one of the following:
 - 1. Manufacturers of Glass Fiber Insulation: **(formaldehyde-free)**
 - a. CertainTeed Corp.
 - b. Georgia-Pacific
 - c. Knauf Fiber Glass GmbH.
 - d. Manville Building Insulations Div., Manville Sales Corp.

- e. Ottawa Fibre, Inc.
- f. Owens/Corning Fiberglass Corp.

2.2 INSULATING MATERIALS:

A. General:

1. Provide insulating materials that comply with requirements and with referenced standards.
2. Preformed Units: Sizes to fit applications indicated, selected from manufacturer's standard thicknesses, widths, and lengths.

B. Unfaced Mineral Fiber Blanket/Batt Insulation (sound batts): Thermal insulation produced by combining mineral fibers of type described below with **formaldehyde-free** thermosetting resins to comply with ASTM C 665 for Type I (blankets without membrane facing); and as follows:

1. Mineral Fiber Type: Fibers manufactured from glass or slag; **formaldehyde-free**.
2. Surface Burning Characteristics: Maximum flame spread and smoke developed values of 25 and 50, respectively.
3. Thickness: Unfaced 3" or 3-1/2" for use in all areas shown on Drawings and where sound batts are indicated herein this Section 07210, and for in-fill of voids around windows, frames, etc., at metal and wood framing.

C. Faced Mineral Fiber Blanket/Batt Insulation: Thermal insulation produced by combining mineral fibers of type described below with thermosetting resins to comply with ASTM C 665 for Type III, Class A (blankets with reflective vapor-retarder membrane facing with flame spread of 25 or less); foil-scrim-kraft membrane on one face, and as follows:

1. Mineral Fiber Type: Fibers manufactured from glass or slag; **formaldehyde-free**.
2. Surface Burning Characteristics: Maximum flame spread and smoke developed values of 25 and 50, respectively.
3. Thickness: **Full stud depth**, generally 3-1/2 inches nominal, R-19; 5-1/2 inches nominal, R-19; and 8 inches nominal, R-23, etc., continuous at all exterior stud walls; and 10 inches nominal, R-30 where indicated.
4. NOTE: Where insulation is concealed by other construction (inside walls, on or above ceiling materials, etc.), the following insulation may be used, except NOT at Mechanical plenum spaces.
 - a. ASTM C 665, Type II, Class C; Kraft-faced membrane on one face; **Formaldehyde-free**, and otherwise same as above.

2.3 MISCELLANEOUS MATERIALS:

- A. General: Provide support system acceptable to insulation manufacturer where insulation batts are not fully concealed in wall construction, occur between open horizontal framing (i.e.: nothing else at bottom of framing if in attic), where a reduction occurs in fire protection materials fire-rating due to insulation being in direct contact with fire-rated assembly materials, etc., in addition to mechanical anchorage.
 - 1. Products: Provide one of the following or other method acceptable to Architect:
 - a. Galvanized struts or straps, at 2'-0" o.c. maximum, anchored at each end.
 - b. Galvanized 2" mesh "chicken wire," continuous, and anchored to framing at 1'-0" o.c. maximum.
- B. Baffles: Provide insulation manufacturer's standard recommended baffles at eaves, only where batt insulation is to be installed in ventilated attic, to close-off edges of insulation and to keep from extending batts into above soffit area. Provide at least 1-inch clear from roof decking to allow ventilation through attic and concealed areas from soffit vents.

PART 3 - EXECUTION

3.1 EXAMINATION:

- A. Examine substrates and conditions with Installer present, for compliance with requirements of the Sections in which substrates and related work are specified and to determine if other conditions affecting performance of insulation are satisfactory. Do not proceed with installation of insulation until unsatisfactory conditions have been corrected.

3.2 INSTALLATION, GENERAL:

- A. Comply with insulation manufacturer's instructions applicable to products and application indicated. If printed instructions are not available or do not apply to project conditions, consult manufacturer's technical representative for specific recommendations before proceeding with installation of insulation.
 - 1. Do not install insulation which is or has been wet, or otherwise damaged.
- B. Provide support system at locations where insulation is exposed in open or partially exposed framing, or is otherwise unsupported.
- C. Extend insulation full thickness as indicated to envelop entire area to be insulated. Cut and fit tightly around obstructions, and fill voids with insulation. Remove projections that interfere with placement.
 - 1. Omit insulation over recessed lighting fixtures.
- D. Apply a single layer of insulation of required thickness, unless otherwise shown or required to make up total thickness.

3.3 INSTALLATION OF GENERAL BUILDING INSULATION:

- A. Apply insulation units to substrate by method indicated, complying with manufacturer's recommendations. If no specific method is indicated, bond units to substrate using mechanical anchorage to provide permanent placement and support of units.
- B. Set vapor retarder faced units with vapor retarder to warm side of construction, except as otherwise indicated. Do not obstruct ventilation spaces, except for firestopping.
- C. Stuff glass fiber loose fill insulation into miscellaneous voids and cavity spaces. Compact to approximately 40 percent of normal maximum volume (to a density of approximately 2.5 pcf).

3.4 PROTECTION:

- A. General: Protect installed insulation from damage due to harmful weather exposures, physical abuse, and other causes. Provide temporary coverings or enclosures where insulation will be subject to abuse and cannot be concealed and protected by permanent construction immediately after installation.

END OF BUILDING INSULATION

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SECTION 07 2726

FLUID-APPLIED MEMBRANE AIR BARRIERS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. Section Includes:
 - 1. Vapor-permeable, fluid-applied air barriers.
 - a. Surface Preparation.
 - b. Application of fluid-applied air barriers.
 - c. Application of materials to provide bridge and seal air leakage pathways in
 - 1) Wall and roof connections and penetrations.
 - 2) Connections to foundation walls.
 - 3) Walls, windows, curtain walls, storefronts, louvers and doors.
 - 4) Expansion and control joints.
 - 5) All other penetrations through wall assembly(ies).
- B. Related Requirements:
 - 1. Section 076200 "Flashing and Sheet Metal".
 - 2. Section 079200 "Joint Sealers".
 - 3. Section 061600 "Sheathing" for wall sheathing.
 - 4. Section 079300 "Total Building Air Leakage Testing".

1.3 DEFINITIONS

- A. Air-Barrier Material: A primary element that provides a continuous barrier to the movement of air.
- B. Air-Barrier Accessory: A transitional component of the air barrier that provides continuity.
- C. Air-Barrier Assembly: The collection of air-barrier materials and accessories applied to an opaque wall, including joints and junctions to abutting construction, to control air movement through the wall.

1.4 PREINSTALLATION MEETINGS

- A. Preinstallation Conference: Conduct conference at Project site.
 - 1. Review air-barrier requirements and installation, special details, mockups, air-leakage and bond testing, air-barrier protection, and work scheduling that covers air barriers.

1.5 ACTION SUBMITTALS

- A. Product Data: For each type of product.
 - 1. Include manufacturer's written instructions for evaluating, preparing, and treating each substrate; technical data; dry film thickness; and tested physical and performance properties of products.
- B. Shop Drawings: For air-barrier assemblies.
 - 1. Show locations and extent of air-barrier materials, accessories, and assemblies specific to Project conditions.
 - 2. Include details for substrate joints and cracks, counterflashing strips, penetrations, inside and outside corners, terminations, and tie-ins with adjoining construction.
 - 3. Include details of interfaces with other materials that form part of air barrier.
 - 4. Include details for all interface between wall to roof overlap for a continuous air and water barrier system.

1.6 INFORMATIONAL SUBMITTALS

- A. Qualification Data: For Installer.
- B. Product Certificates: From air-barrier manufacturer, certifying compatibility of air barriers and accessory materials with Project materials that connect to or that come in contact with the barrier.
- C. Product Test Reports: For each air-barrier assembly, for tests performed by a qualified testing agency.
- D. Field quality-control reports.

1.7 QUALITY ASSURANCE

- A. Mockups: Build mockups to set quality standards for materials and execution and for preconstruction testing.
 - 1. Build integrated mockups of exterior wall assembly, 150 sq. ft., incorporating backup wall construction, external cladding, window, storefront, door frame and sill, insulation, ties

and other penetrations, and flashing to demonstrate surface preparation, crack and joint treatment, application of air barriers, and sealing of gaps, terminations, and penetrations of air-barrier assembly.

- a. Coordinate construction of mockups to permit inspection and testing of air barrier before external insulation and cladding are installed.
 - b. Include junction with roofing membrane, building corner condition, and foundation wall intersection.
 - c. If Architect determines mockups do not comply with requirements, reconstruct mockups and apply air barrier until mockups are approved.
2. Approval of mockups does not constitute approval of deviations from the Contract Documents contained in mockups unless Architect specifically approves such deviations in writing.
 3. Subject to compliance with requirements, approved mockups may become part of the completed Work if undisturbed at time of Substantial Completion.

1.8 PRECONSTRUCTION TESTING

- A. Preconstruction Testing Service: Engage a qualified testing agency to perform preconstruction testing on field mockups.
- B. Mockup Testing: Air-barrier assemblies shall comply with performance requirements indicated, as evidenced by reports based on mockup testing by a qualified testing agency.
 1. Air-Leakage-Volume Testing: Mockups will be tested for air-leakage rate according to ASTM E783.
 2. Adhesion Testing: Mockups will be tested for required air-barrier adhesion to substrate according to ASTM D4541.
 3. Notify Architect seven days in advance of the dates and times when mockups will be tested.

1.9 DELIVERY, STORAGE, AND HANDLING

- A. Remove and replace liquid materials that cannot be applied within their stated shelf life.
- B. Protect stored materials from direct sunlight.

1.10 FIELD CONDITIONS

- A. Environmental Limitations: Apply air barrier within the range of ambient and substrate temperatures recommended in writing by air-barrier manufacturer.
 1. Protect substrates from environmental conditions that affect air-barrier performance.
 2. Do not apply air barrier to a damp or wet substrate or during snow, rain, fog, or mist.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. Source Limitations: Obtain primary air-barrier materials and air-barrier accessories from single source from single manufacturer.

2.2 PERFORMANCE REQUIREMENTS

- A. Air-Barrier Performance: Air-barrier assembly and seals with adjacent construction shall be capable of performing as a continuous air barrier and as a liquid-water drainage plane flashed to discharge to the exterior incidental condensation or water penetration. Air-barrier assemblies shall be capable of accommodating substrate movement and of sealing substrate expansion and control joints, construction material changes, penetrations, tie-ins to installed waterproofing, and transitions at perimeter conditions without deterioration and air leakage exceeding specified limits.
- B. Air-Barrier Assembly Air Leakage: Maximum 0.04 cfm/sq. ft. of surface area at 1.57 lbf/sq. ft., when tested according to ASTM E2357.

2.3 LOW-BUILD AIR BARRIERS, VAPOR PERMEABLE

- A. Low-Build, Vapor-Permeable Air Barrier: Synthetic polymer material with an installed dry film thickness, according to manufacturer's written instructions, of 15 mils over smooth, void-free substrates.
 - 1. Physical and Performance Properties:
 - a. Air Permeance: Maximum 0.003 cfm/sq. ft. of surface area at 1.57-lbf/sq. ft. pressure difference; ASTM E2178.
 - b. Vapor Permeance: Minimum 10.1 perms; ASTM E96/E96M, Desiccant Method, Procedure A.
 - c. Ultimate Elongation: Minimum 650 percent; ASTM D412, Die C.
 - d. Adhesion to Substrate: Minimum 30 lb/sq. in. when tested according to ASTM D4541.
 - e. Fire Propagation Characteristics: Passes NFPA 285 testing as part of an approved assembly.
 - f. UV Resistance: Can be exposed to sunlight for 180 days according to manufacturer's written instructions.
 - 2. Basis-of-Design:
 - a. Sto Gold Coat System (Basis of Design)
 - b. Prosoco Cat 5
 - c. Dow Corning® DefendAir 200
 - d. Carlisle

- e. or approved equal.

2.4 ACCESSORY MATERIALS

- A. Requirement: Provide primers, transition strips, termination strips, joint reinforcing fabric and strips, joint sealants, counterflashing strips, flashing sheets and metal termination bars, termination mastic, substrate patching materials, adhesives, tapes, foam sealants, lap sealants, and other accessory materials that are recommended in writing by air-barrier manufacturer to produce a complete air-barrier assembly and that are compatible with primary air-barrier material and adjacent construction to which they may seal.
- B. Primer: Liquid solvent free primer recommended for substrate by air-barrier material manufacturer.
- C. Stainless-Steel Sheet: ASTM A240/A240M, Type 304, 0.0187 inch- or- 0.0250 inch- thick as recommended in writing by fluid-applied membrane air barrier manufacturer, and Series 300 stainless-steel fasteners.

2.5 QUALITY CONTROL:

- A. Provide Testing of Air Barrier application in accordance with Section 079300 - Total Building Air Leakage Testing and Section 019180 - Building Envelope Commissioning Requirements.
- B. Provide Coatings Adhesion Testing as specified in Section 019180 - Building Envelope Commissioning Requirements.

Perform a field peel-adhesion test on the applied coating. Test the air barrier for adhesion in accordance with ASTM D4541 using a Type II pull tester except use a disk that is 4 inches in diameter and cut through the membrane to separate the material attached to the dish from the surrounding material.

Perform test after curing period in accordance with manufacturer's written recommendations. Record mode of failure and area which failed in accordance with ASTM D4541. Compare adhesion values with the manufacturer's established minimum values for the particular combination of material and substrate. Indicate on the inspection report whether the manufacturer's requirement has been met.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine substrates, areas, and conditions, with Installer present, for compliance with requirements and other conditions affecting performance of the Work.
 - 1. Verify that substrates are sound and free of oil, grease, dirt, excess mortar, or other contaminants.
 - 2. Verify that substrates have cured and aged for minimum time recommended in writing by air-barrier manufacturer.
 - 3. Verify that substrates are visibly dry and free of moisture.
 - 4. Verify that masonry joints are flush and completely filled with mortar.
 - 5. Verify that sheathing joints are properly configured and sheathing and joint deficiencies have been corrected.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 SURFACE PREPARATION

- A. Clean, prepare, treat, fill, and seal substrate and joints and cracks in substrate according to manufacturer's written instructions and details. Provide clean, dust-free, and dry substrate for air-barrier application.
- B. Mask off adjoining surfaces not covered by air barrier to prevent spillage and overspray affecting other construction.
- C. Remove grease, oil, bitumen, form-release agents, paints, curing compounds, and other penetrating contaminants or film-forming coatings from concrete.
- D. Remove fins, ridges, mortar, and other projections and fill honeycomb, aggregate pockets, holes, and other voids in concrete with substrate-patching material.
- E. Remove excess mortar from masonry ties, shelf angles, and other obstructions.
- F. At changes in substrate plane, apply sealant or termination mastic beads at sharp corners and edges to form a smooth transition from one plane to another.
- G. Cover gaps in substrate plane and form a smooth transition from one substrate plane to another with stainless-steel sheet as recommended in writing by fluid-applied membrane air barrier manufacturer mechanically fastened to structural framing to provide continuous support for air barrier.
- H. Bridge expansion joints and discontinuous wall-to-wall, deck-to-wall, and deck-to-deck joints with air-barrier accessory material that accommodates joint movement according to manufacturer's written instructions and details.

3.3 ACCESSORIES INSTALLATION

- A. Install accessory materials according to air-barrier manufacturer's written instructions and details to form a seal with adjacent construction and ensure continuity of air and water barrier.
 - 1. Coordinate the installation of air barrier with installation of roofing membrane and base flashing to ensure continuity of air barrier with roofing membrane.
 - 2. Install transition strip on roofing membrane or base flashing so that a minimum of 3 inches of coverage is achieved over each substrate.
 - 3. Unless manufacturer recommends in writing against priming, apply primer to substrates at required rate and allow it to dry.
 - 4. Apply primer to substrates at required rate and allow it to dry. Limit priming to areas that will be covered by air-barrier material on same day. Reprime areas exposed for more than 24 hours.
- B. Connect and seal exterior wall air-barrier material continuously to roofing-membrane air barrier, concrete below-grade structures, floor-to-floor construction, exterior glazing and window systems, glazed curtain-wall systems, storefront systems, exterior louvers, exterior door framing, and other construction used in exterior wall openings, using accessory materials.
- C. At end of each working day, seal top edge of strips and transition strips to substrate with termination mastic.
- D. Apply joint sealants forming part of air-barrier assembly within manufacturer's recommended application temperature ranges. Consult manufacturer when sealant cannot be applied within these temperature ranges.
- E. Wall Openings: Prime concealed, perimeter frame surfaces of windows, curtain walls, storefronts, and doors. Apply transition strip as recommended in writing by manufacturer so that a minimum of 3 inches of coverage is achieved over each substrate. Maintain 3 inches of full contact over firm bearing to perimeter frames, with not less than 1 inch of full contact.
 - 1. Transition Strip: Roll firmly to enhance adhesion.
 - a. Basis-of-Design: Dowsil™ 123 or equal.
- F. Fill gaps in perimeter frame surfaces of windows, curtain walls, storefronts, and doors, and miscellaneous penetrations of air-barrier material with foam sealant.
- G. Seal strips and transition strips around masonry reinforcing or ties and penetrations with termination mastic.
- H. Seal top of through-wall flashings to air barrier with an additional 6-inch- wide, transition strip.
- I. Seal exposed edges of strips at seams, cuts, penetrations, and terminations not concealed by metal counterflashings.

- J. Repair punctures, voids, and deficient lapped seams in strips and transition strips. Slit and flatten fishmouths and blisters. Patch with transition strips extending 6 inches beyond repaired areas in strip direction.

3.4 PRIMARY AIR-BARRIER MATERIAL INSTALLATION

- A. Apply air-barrier material to form a seal with strips and transition strips and to achieve a continuous air barrier according to air-barrier manufacturer's written instructions and details. Apply air-barrier material within manufacturer's recommended application temperature ranges.
 - 1. Unless manufacturer recommends in writing against priming, apply primer to substrates at required rate and allow it to dry.
 - 2. Limit priming to areas that will be covered by air-barrier material on same day. Reprime areas exposed for more than 24 hours.
 - 3. Where multiple prime coats are needed to achieve required bond, allow adequate drying time between coats.
- B. Low-Build Air Barriers: Apply continuous unbroken air-barrier material to substrates according to the following thickness. Apply an increased thickness of air-barrier material in full contact around protrusions such as masonry ties.
 - 1. Vapor-Permeable, Low-Build Air Barrier: Total dry film thickness as recommended in writing by manufacturer to comply with performance requirements, applied in one coat. Apply additional material as needed to achieve void- and pinhole-free surface, but do not exceed thickness on which required vapor permeability is based.
- C. Do not cover air barrier until it has been tested and inspected by testing agency.
- D. Correct deficiencies in or remove air barrier that does not comply with requirements; repair substrates and reapply air-barrier components.

3.5 FIELD QUALITY CONTROL

- A. ABAA Quality Assurance Program: Perform examinations, preparation, installation, testing, and inspections under ABAA's Quality Assurance Program.
- B. Provide Testing of Air Barrier application in accordance with Section 079300 - Total Building Air Leakage Testing and Section 019180 - Building Envelope Commissioning Requirements.
- C. Provide Coatings Adhesion Testing as specified in Section 019180 - Building Envelope Commissioning Requirements.
- D. Testing Agency: Owner will engage a qualified testing agency to perform tests and inspections.

- E. Inspections: Air-barrier materials, accessories, and installation are subject to inspection for compliance with requirements. Inspections may include the following:
 - 1. Continuity of air-barrier system has been achieved throughout the building envelope with no gaps or holes.
 - 2. Air-barrier dry film thickness.
 - 3. Continuous structural support of air-barrier system has been provided.
 - 4. Masonry and concrete surfaces are smooth, clean, and free of cavities, protrusions, and mortar droppings.
 - 5. Site conditions for application temperature and dryness of substrates have been maintained.
 - 6. Maximum exposure time of materials to UV deterioration has not been exceeded.
 - 7. Surfaces have been primed, if applicable.
 - 8. Laps in strips and transition strips have complied with minimum requirements and have been shingled in the correct direction (or mastic has been applied on exposed edges), with no fishmouths.
 - 9. Termination mastic has been applied on cut edges.
 - 10. Strips and transition strips have been firmly adhered to substrate.
 - 11. Compatible materials have been used.
 - 12. Transitions at changes in direction and structural support at gaps have been provided.
 - 13. Connections between assemblies (air-barrier and sealants) have complied with requirements for cleanliness, surface preparation and priming, structural support, integrity, and continuity of seal.
 - 14. All penetrations have been sealed.
- F. Tests: As determined by testing agency from among the following tests:
 - 1. Air-Leakage-Volume Testing: Air-barrier assemblies will be tested for air-leakage rate according to ASTM E783.
 - 2. Adhesion Testing: Air-barrier assemblies will be tested for required adhesion to substrate according to ASTM D4541 for each 600 sq. ft. of installed air barrier or part thereof.
- G. Air barriers will be considered defective if they do not pass tests and inspections.
 - 1. Apply additional air-barrier material, according to manufacturer's written instructions, where inspection results indicate insufficient thickness.
 - 2. Remove and replace deficient air-barrier components for retesting as specified above.
- H. Repair damage to air barriers caused by testing; follow manufacturer's written instructions.
- I. Prepare test and inspection reports.

3.6 CLEANING AND PROTECTION

- A. Protect air-barrier system from damage during application and remainder of construction period, according to manufacturer's written instructions.
 - 1. Protect air barrier from exposure to UV light and harmful weather exposure as recommended in writing by manufacturer. If exposed to these conditions for longer than recommended, remove and replace air barrier or install additional, full-thickness, air-barrier application after repairing and preparing the overexposed materials according to air-barrier manufacturer's written instructions.
 - 2. Protect air barrier from contact with incompatible materials and sealants not approved by air-barrier manufacturer.
- B. Clean spills, stains, and soiling from construction that would be exposed in the completed work using cleaning agents and procedures recommended in writing by manufacturer of affected construction.
- C. Remove masking materials after installation.

END OF SECTION FLUID APPLIED MEMBRANE AIR BARRIERS

SECTION 073113

ASPHALT SHINGLES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS:

- A. Drawings and general provisions of Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to work of this Section.
- B. Related work specified elsewhere includes:
 - 1. Section 061000 - "Rough Carpentry"
 - 2. Section 076200 - "Sheet Metal Flashing and Trim"

1.2 DESCRIPTION OF WORK:

- A. Extent of roofing work is indicated on drawings.
- B. Work described in this section includes new heavy weight, laminated, architectural, self-sealing ("seal-tab") strip roof shingles with stain and fungus protection, and continuous ridge vents; Roofing shall be installed over self-adhered membrane underlayment over entire roof deck. Double self adhering membrane underlayment at ("Special Flashing") locations at eaves, valleys, roof penetrations are to have at and where indicated on the drawings and turn up at least 8 inches on vertical surfaces intersecting roof; and in accordance with manufacturer's written instructions and recommendations; to include in part, extra nails, roofing cement at tabs, etc., for any mansard roofing and any higher than normal wind zone indicated.
- C. Required metal flashings, continuous drip edge; special roof edge, perimeter, ridge, penetration and valley flashing / waterproofing underlayment ("Ice and Water Shield"), etc., are specified in Section 076200 - "Sheet Metal Flashing and Trim," and shall be coordinated and installed in proper sequence with roofing work.

1.3 SUBMITTALS:

- A. Product Data: For each type of product indicated.
- B. Samples:
 - 1. Shingles: Submit full range of physical color samples for color(s) and texture verification; After verification, submit two (2) full-size shingles for verification of each color, style and texture selected.

2. Accessories: Submit at least three (3) samples or ridge vent material and each roofing accessory.
 3. Include color samples for items where color selections are available, and where color selection(s) is required.
- C. Warranties: Special warranties specified in this Section.
- D. Qualification data for roofing manufacturer and installer.
- E. Manufacturer's certification for installer.
- F. Manufacturer's certification for roofing system; shall also be attached to completed and executed warranty.
- G. **Certification:** The roofing manufacturer shall be required to provide written documentation certifying that the roof design provided complies with the performance requirements, for that particular system, as set forth in IBC Chapter 15 in Section 1504; This certification shall be included in other required submittals and be attached to completed and executed manufacturer's roofing warranty provided at the close out of the project.
1. The written documentation from roofing manufacturer shall also certify that roofing design and system provided comply with requirements specified and the manufacturer's requirements for the roofing system provided.

1.4 **QUALITY ASSURANCE:**

- A. Installer Qualifications: Engage an experienced Installer (Roofer) to perform roofing work who has specialized in installing roofing systems similar to that required for this Project and who is acceptable to manufacturer of primary roofing materials.
1. Installer's Field Supervision: Require Installer to maintain a full-time supervisor/foreman who is on job site during times that roofing work is in progress and who is experienced in installing roofing systems similar to type and scope required for this Project.
 2. Refer to Division 1 Section "Special Conditions", for additional information and experience and other requirements.
- B. Manufacturer Qualifications: A qualified manufacturer that has 10 years experience in manufacturing shingle roofing system identical to that specified for this Project.
1. Refer to Division 1 Section "Special Conditions", for additional information and experience and other requirements.
 2. Certification: Provide written certification from roofing manufacturer that roofing design and system provided comply with requirements specified and manufacturer's requirements for the roofing system provided.
 3. This certification shall be included in other required submittals and be attached to

- completed and executed manufacturer's roofing warranty.
4. Upon request, submit evidence of complying with requirements.
- C. **Single Source Responsibility:** Obtain primary products, including each type of roofing, bitumen, composition flashings, etc., from a single manufacturer. Provide secondary products as recommended by manufacturer of primary products to use with roofing system specified.
- D. **Insurance, Code and Warranty Requirements:** Provide materials complying with governing regulations that can be installed to comply with the following:
1. UL Fire Classified.
 2. Wind Uplift Resistance: As per local building code and warranty requirements.
 3. Wind Speed at the Project Site: As per local building code and warranty requirements, but no less than **160 mph**, unless a higher wind load is indicated on Structural Drawings or otherwise required by applicable codes. Refer to Drawings for additional information and requirements.
- E. **Insurance Certification:** Assist Owner in preparing and submitting roof installation acceptance certification as necessary in connection with fire and extended-coverage insurance on roofing and associated work.
- F. **UL Listing:** Provide roofing system and component materials that have been tested for application and slopes indicated and that are listed by UL for Class A external fire exposure.
1. Provide roof-covering materials bearing UL Classification Marking on bundle, package, or container indicating that materials have been produced under UL's Classification and Follow-up Service. Submit nailing pattern and size of plates.
- G. **Pre-Roofing Conference:** A pre-roofing conference is required before any roofing materials are installed. This conference shall be conducted by a representative of the Architect and attended by representatives of the Owner, General Contractor, Roofing Contractor, Roof Deck Manufacturer (if applicable), and the Roofing Materials Manufacturer (if warranty is required of this manufacturer). If equipment of substantial size is to be placed on the roof, the Mechanical Contractor must also attend this meeting.
1. The pre-roofing conference is intended to clarify demolition (for renovation or re-roofing projects) and application requirements for work to be completed before roofing operations can begin. This would include a detailed review of the specifications, roof plans, roof deck information, flashing details, and approved shop drawings, submittal data, and samples. If conflict exists between the specifications and the Manufacturer's requirements, this shall be resolved. If this pre-roofing conference cannot be satisfactorily concluded without further inspection and investigation by any of the parties present, it shall be reconvened at the earliest possible time to avoid delay of the work. In no case should the work proceed without inspection of all roof deck areas and substantial agreement on all points.

2. The following are to be accomplished during the conference:
 - a. Review all Factory Mutual and Underwriters Laboratories requirements listed in the specifications and resolve any questions or conflicts that may arise.
 - b. Establish trade-related job schedules, including the installation of roof-mounted mechanical equipment.
 - c. Establish roofing schedule and work methods that will prevent roof damage.
 - d. Require that all roof penetrations and walls be in place prior to installing the roof.
 - e. Establish those areas on the job site that will be designated as work and storage areas for roofing operations.
 - f. Establish weather and working temperature conditions to which all parties must agree.
 - g. Establish acceptable methods of protecting the finished roof if any trades must travel across or work on or above any areas of the finished roof.
3. The Architect shall prepare a written report indicating actions taken and decisions made at this pre-roofing conference. This report shall be made a part of the project record and copies furnished the General Contractor and the Owner.

1.5 DELIVERY, STORAGE AND HANDLING:

- A. Deliver materials in manufacturer's unopened, labeled bundles, rolls, or containers.
- B. Store materials to avoid water damage, and store rolled goods on end. Comply with manufacturer's recommendations for job-site storage and protection.
- C. Refer to Division 1 Sections "Summary of Work" and "Special Conditions" for additional information and requirements regarding stored materials.

1.6 JOB CONDITIONS:

- A. Weather Conditions: Proceed with Shingle work only when weather conditions are in compliance with manufacturer's current written instructions and recommendations and when substrate is completely dry.

1.7 WARRANTIES AND GUARANTEES:

- A. Manufacturer's Roofing System and Wind Warranty: Provide shingle manufacturer's warranty on installed work, agreeing to pay for repair or replacement of defective shingles and roofing system components; and as necessary to eliminate leaks.

Period of warranty:

1. No less than Thirty (30) years from date of "Substantial Completion"; Warranty shall provide 100% non-prorated coverage for materials and labor (workmanship errors) for:

- a. The first 20 years, then prorated thereafter for the remainder of the 30 years.

2. Warranty coverage for shingles to withstand wind gusts up to 160 MPH.

- B. Special Project Guarantee: Provide 3 fully executed copies of "Roofing Guarantee" on the form included in the "General Conditions" Section of the Project Manual, covering the work of this Section, including in part, roofing, concealed and exposed flashings, accessories, etc., signed by the General Contractor.
- C. Repairs that become necessary, such as for leaks, wind damage or temperature stress while roofing is under warranty and/or guarantee, shall be performed by the installer within 7-days of notification. Should for any reason, the installer not be able to perform the repairs, it shall be incumbent upon the manufacturer to do so. If repairs are not begun on time, Owner shall have work done by others and costs will be charged to the Contractor, with no detrimental effect on the remaining warranty and no termination of warranty.
- D. The above warranties and guarantee shall be in addition to, shall be in effect simultaneously with, and shall not alter or limit other project or product warranties or guarantees, nor shall they serve as a limitation to other remedies available to the Owner.
- E. Standard manufacturer's roofing warranties and guarantees which contain language regarding the governing of the warranties and guarantees by any state other than the State of Alabama, must be amended to exclude such language, and substituting the requirement that the Laws of the State of Alabama shall govern all such warranties and guarantees.

PART 2 - PRODUCTS

2.1 ASPHALT SHINGLE MATERIALS:

- A. Asphalt Shingle Material -
Granule surfaced, self-sealing, fiberglass reinforced asphalt shingle. UL 790 Class A fire-test response rated with UL 997 Wind Resistance Label; ASTM D 7158, Class H; ASTM D 3161, Type 1; ASTM D 3018, Type 1; ASTM D 3462.
 1. Subject to compliance with requirements, provide one (1) of the following, or approved equivalent:
 - a. Timberline Series by GAF Corp.
 - b. Landmark Series by CertainTeed Corp.
 - c. Duration Series by Owens Corning Roofing and Asphalt, LLC.
 2. Color: Submit manufacturer's full line of standard color samples available on bid date for color and texture to be selected by Architect / Owner during submittals.
- C. Synthetic Roofing Underlayment equal to Grace SYN 15 exceeding the requirements of ASTM D226

- D. Self-Adhered Membrane Underlayment (“Ice and Water Shield”): Refer to Division 7 Section “Sheet Metal Flashing and Trim”, for information and requirements.
- E. Asphalt Plastic Cement: Fibrated asphalt cement complying with ASTM D 2822, designed for trowel application.
- F. Hip and Ridge Shingles: Manufacturer’s standard factory pre-cut units to match shingles.
- G. Nails:
 - 1. Aluminum or hot-dip galvanized 11 or 12-gage, sharp-pointed, conventional roofing nails with barbed shanks, minimum 3/8" diameter head, and of sufficient length to penetrate 3/4" into solid decking or to penetrate through plywood sheathing.
 - 2. **The use of square head nails, staples, and pneumatic, and/or electric nail or staple guns are strictly prohibited.**
- H. Ridge Vents (if any): Equivalent to “Ridge Master,” as manufactured by Mid-America Building Products Corp. (Phone: 1-800-521-8486).

PART 3 - EXECUTION

3.1 INSPECTION:

- A. Examine substrate under which shingle work is to be performed and notify Contractor in writing of unsatisfactory conditions. Do not proceed with shingle work until unsatisfactory conditions have been corrected.

3.2 **PREPARATION OF SUBSTRATE:**

- A. Clean substrate of any projections and substances detrimental to shingling work. Cover knotholes or other minor voids in substrate with sheet metal flashing secured with roofing nails.
- B. Coordinate installation of shingles with flashing and other adjoining work to ensure proper sequencing. Do not install shingle roofing until all vent stacks and other penetrations through roofing have been installed and are securely fastened against movement.

3.3 **INSTALLATION:**

- A. General: Comply with current written instructions and recommendations of shingle and accessories manufacturers, except to extent more stringent requirements are indicated, including in part extra nails, roofing cement at tabs, etc., for the higher than normal wind zone indicated.
 - 1. Coordinate all work under this Section 07311 with other roofing systems and roof related work of other trades.
- B. Underlayment: Coordinate installation of the following with requirements of Division 7 Section "Flashing and Sheet Metal", including in part, special flashing / waterproofing underlayment (below felts), continuous metal drip edge, and other materials indicated or otherwise required by project conditions.
 - 1. Apply one layer synthetic roof underlayment where indicated on Drawings.
 - 2. Apply one layer of self-adhered membrane underlayment at eaves, valleys, roof penetrations and expansion joints and as indicated on Drawings
- C. Shingles: Install starter strip of roll roofing or inverted shingles with tabs removed; fasten shingles in pattern, weather exposure and number of fasteners per shingle as recommended in writing by manufacturer. Use horizontal and vertical chalk lines to ensure straight coursing.
- D. Comply with installation details and recommendations of shingle and accessories manufacturers and NRCA Steep Roofing Manual.
- E. Flashing and Edge Protection:
 - 1. Install metal flashing, vent flashing and edge protection as indicated and in compliance with details and recommendations of the NRCA Steep Roofing manual.
 - 2. Install diverters 1'-0" above roof edge at locations where water would otherwise run over exterior doorways or mechanical units.

3.4 PROTECTION:

- A. Restrict areas of completed work from all non-essential pedestrian traffic or other use.

3.5 CLEANING:

- A. Remove all trash, scraps, debris, etc., from roof and site, which results from work under this Section, and legally dispose of off-site.

END OF SECTION ASPHALT SHINGLES

SECTION 07 4646

FIBER-CEMENT SIDING SYSTEMS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This Section includes the following:
 - 1. Fiber-cement siding systems, including in part, siding, soffit, trim, and decorative accessories; Extent of fiber-cement siding systems is indicated on the Drawings.
 - 2. Fiber-cement products are to be factory prime painted on all surfaces, and touched-up as necessary and finish painted on site as specified in Division 9 Section "Painting", not the work of this Section.
- B. Related Sections include the following:
 - 1. Division 6 Section "Rough Carpentry" for wood framing and blocking, plywood sheathing, and air infiltration barrier.
 - 2. Division 6 Section "Finish Carpentry" for exterior wood trim and prefinished extruded aluminum soffit vents and mouldings.
 - 3. Division 7 Section "Flashing and Sheet Metal" for waterproofing underlayment, flashing, gutters, sheet metal work, and related work.
 - 4. Division 7 Section "Joint Sealers."
 - 5. Division 9 Section "Painting", for finish painting.

1.3 SUBMITTALS

- A. Product Data: For each type of product indicated.
- B. Samples for Initial Selection: For siding, soffit, trim, and decorative accessories.
- C. Samples for Verification: For each type, color, texture, and pattern required.
 - 1. 12-inch- (300-mm-) long-by-actual-width Sample of siding.
 - 2. 12-inch- (300-mm-) long-by-actual-width Sample of soffit.
 - 3. 12-inch- (300-mm-) long-by-actual-width Sample of trim.
- D. Product Certificates: For each type of siding and soffit, signed by product manufacturer.

- E. Research/Evaluation Reports: For each type of siding required.

1.4 QUALITY ASSURANCE

- A. Source Limitations for Siding, Soffit, Trim and Decorative Accessories: Obtain each type, color, texture, and pattern of siding, soffit, and trim, including related accessories, through one source from a single manufacturer.
- B. Mockup: Build mockup to verify selections made under sample submittals and to demonstrate aesthetic effects.
 - 1. Build mockup approximately 48 inches (1200 mm) long by 60 inches (1800 mm) high. Include outside corner on one end of mockup and inside corner on other end.
- C. Preinstallation Conference: Conduct conference at Project site to comply with requirements in Division 1 Section "Project Management and Coordination."

1.5 DELIVERY, STORAGE, AND HANDLING

- A. Store materials off of ground, under cover, in a dry, well-ventilated, weathertight place.
- B. Refer to Division 1 Sections and "Special Conditions" for additional information and requirements.

1.6 PROJECT CONDITIONS

- A. Weather Limitations: Proceed with siding installation only if substrate is completely dry and if existing and forecasted weather conditions permit siding to be installed according to manufacturer's written instructions.

1.7 SEQUENCING

- A. Coordinate installation with flashings and other adjoining construction to ensure proper sequencing.

1.8 WARRANTY

- A. Special Warranty: Manufacturer's standard form in which manufacturer agrees to repair or replace siding that does not comply with requirements or that fails within specified warranty period. Failures include, but are not limited to, cracking, deforming, or otherwise deteriorating beyond normal weathering.
 - 1. Warranty Period: **50** years from date of entire project's Substantial Completion.
- B. The above warranty and guarantee shall be in addition to, shall be in effect simultaneously with, and shall not alter other project or product warranties or guarantees, nor shall they serve as limitations to other remedies available to the Owner.

1.9 EXTRA MATERIALS

- A. Furnish extra materials described below that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.
 - 1. Furnish full lengths of siding and trim in a quantity equal to 2 percent of amount installed.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. In other Part 2 articles where titles below introduce lists, the following requirements apply to product selection:
 - 1. Acceptable Products: The design for each siding and soffit is based on standard products of James Hardie, Inc. Subject to compliance with requirements, provide either the named product or an equivalent product by one of the other named manufacturers, subject to acceptance by and as judged solely by the Architect, based on submittal data provided by the Contractor and/or Supplier.
 - 2. Proof of equivalency of other products is the sole responsibility of the Contractor and/or Supplier.
 - 3. Refer to Division 1 Section "Special Conditions" for additional information and requirements for submittal and consideration of equivalent products.

2.2 SIDING

- A. Fiber-Cement Siding: Siding made from fiber-cement board that does not contain asbestos fibers; complies with ASTM C 1186, Type A, Grade II; is classified as noncombustible when tested according to ASTM E 136; and has a flame-spread index of 25 or less when tested according to ASTM E 84.
 - 1. Basis-of-Design Product: Provide "HardiPanel HZ10" line of products, as manufactured by James Hardie, Inc. or an acceptable equivalent product by one of the following:
 - a. Cemplank, Inc.
 - b. CertainTeed Corp.
 - c. MaxiTile, Inc.
 - 2. Type:

- **Base Bid:** HZ10 5/16 inch thick fiber cement horizontal lap siding system, Hardie Plank or approved equivalent.
 - **Alternate #1:** HZ10 Thicker 5/8 inch Fiber Cement Horizontal Lap Siding System, Hardie Artisan Siding or approved equivalent.
 - Width 7.250 inch ;
 - Length: 144.000 inch;
 - Thickness 0.625 inch;
 - exposure width: 6.00 inches
3. Factory Priming: Manufacturer's standard factory-applied acrylic primer on all surfaces.

2.3 SOFFIT

- A. Fiber-Cement Soffit: Panels made from fiber-cement board that does not contain asbestos fibers; complies with ASTM C 1186, Type A, Grade II; is classified as noncombustible when tested according to ASTM E 136; and has a flame-spread index of 25 or less when tested according to ASTM E 84.
1. Basis-of-Design Product: Provide "HardiSoffit HZ10" as applicable to project conditions and indications on the Drawings, as manufactured by James Hardie, Inc., or an acceptable equivalent product by one of the following:
- a. Cemplank, Inc.
 - b. CertainTeed Corp.
 - c. MaxiTile, Inc.
2. Pattern: Hardie Panel Sierra 8 (Base Bid) Sheet width required to avoid longitudinal joints in face of soffits, with smooth texture.
- **Alternate #1 - Soffit: HZ10 Hardie Artisan Siding V-Groove and Vented Hardi Soffit HZ10**
3. Ventilation: Provide vented and non-vented soffit where indicated on the drawings.
4. Factory Priming: Manufacturer's standard factory-applied acrylic primer on all surfaces.

2.4 TRIM

- A. Fiber-Cement Trim: Boards made from fiber-cement board that does not contain asbestos fibers; complies with ASTM C 1186, Type A, Grade II; is classified as noncombustible when tested according to ASTM E 136; and has a flame-spread index of 25 or less when tested according to ASTM E 84.

1. Basis-of-Design Product: Provide “HardiTrim HZ10” as applicable to project conditions and indications on the Drawings, as manufactured by James Hardie, Inc., or an acceptable equivalent product by one of the following:
 - a. Cemplank, Inc.
 - b. CertainTeed Corp.
 - c. MaxiTile, Inc.
2. Products:
 - a. **5/4 Boards, widths indicated on Drawings; Smooth Texture. (Base Bid)**
 1. **Alternate #1: Thicker 2 inch (1- 1/2 “) inch fiber cement trim boards system , Hardie Artisan Trim Board or approved equivalent.**
 - **2x4 Trim Boards, location per drawings:**
 - **Width: 3.500 inches**
 - **Length: 144 inches**
 - **Thickness 1.5 inches**
 - **Exposure Width 3.5 inch**
 - **2x6 Trim Boards, location per drawings:**
 - **Width: 5.500 inches**
 - **Length: 144 inches**
 - **Thickness 1.5 inches**
 - **Exposure Width 5.5 inch**
 - b. **Fascia boards, sizes indicated on Drawings; Smooth Texture. (Base Bid)**
3. Length: 12 feet.
4. Factory Priming: Manufacturer’s standard factory-applied acrylic primer on all surfaces

2.5 ACCESSORIES

- A. Decorative Accessories: Provide the following types of decorative accessories, and as otherwise indicated or required by project conditions; Provide manufacturer’s standard factory-applied acrylic primer on all surfaces.
 1. Corner boards with same total width on each face, at interior and exterior corners, and corner posts (if any) only where specifically indicated.
 2. Door and window casings.
 3. Entrance and window head pediments (if any), only where indicated on the Drawings.
 4. Pilasters (if any), only where indicated on the Drawings.
 5. Moldings and trim.
- B. Partially Exposed Prefinished Flashing: Provide either “Galvalume” or G90 galvanized metal flashings, complying with requirements of Division 7 Section “Flashing and Sheet Metal” at

exposed terminal edges of siding, and at heads of windows, doors, other openings, and where otherwise indicated or required by project conditions.

- C. Concealed Flashings: Provide "Elastic Flashing" (flexible flashing) complying with requirements of Division 7 Section "Flashing and Sheet Metal", at perimeter of all wall and other openings, at least 24-inches wide centered over all interior and exterior corners and any angled changes in direction of walls, and as base flashing, so as to facilitate evacuation of moisture from behind fiber-cement siding systems, and contiguous work.
- D. Elastomeric Joint Sealant: Single-component non-sag urethane joint sealant complying with requirements in Division 7 Section "Joint Sealers" for Use NT (nontraffic) and for Uses M, G, A, and, as applicable to joint substrates indicated, O joint substrates; Mold and mildew resistant, and paintable.
- E. Fasteners:
 - 1. General: Provide concealed fasteners wherever possible.
 - 2. For fastening to wood, use ribbed bugle-head screws of sufficient length to penetrate a minimum of 1 inch (25 mm) into substrate.
 - 3. For fastening to metal, use ribbed bugle-head screws of sufficient length to penetrate a minimum of 1/4 inch (6 mm) or 3 screw-threads into substrate.
 - 4. For fastening fiber-cement siding, use hot-dip galvanized or stainless-steel fasteners.
- F. Soffit Vents: Prefinished extruded aluminum soffit vents with bug screens, same as specified in Division 6 Section "Finish Carpentry"; where indicated on drawings.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine substrates for compliance with requirements for installation tolerances, completed and properly installed moisture barriers and flashings, and other conditions affecting performance of siding systems. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

- A. Clean substrates of projections and substances detrimental to application.

3.3 INSTALLATION

- A. General: Comply with siding manufacturer's current written installation instructions applicable to products and applications indicated unless more stringent requirements

apply. Center fasteners and nails in elongated nailing slots without binding siding to allow for thermal movement. Overlap joints to shed water away from direction of prevailing wind.

- B. Comply with sealant manufacturer's current written installation instructions applicable to products and applications indicated, and Division 7 section "Joint Sealers", unless more stringent requirements apply.

3.4 ADJUSTING AND CLEANING

- A. Remove damaged, improperly installed, or otherwise defective siding materials and siding related materials, and replace with new materials complying with specified requirements.
- B. Clean finished surfaces according to siding manufacturer's written instructions and maintain in a clean condition during construction.

END OF SECTION FIBER-CEMENT SIDING SYSTEMS

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SECTION 07 62 00

SHEET METAL FLASHING TRIM

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to work of this section.

1.2 SUMMARY

- A. This Section includes the following:
 - 1. Formed steep-slope roof sheet metal fabrications.
 - 2. Sealants / Caulking.
- B. Related Work in Other Sections
 - 1. Division 6 Section "Rough Carpentry" for wood nailers and blocking.
 - 2. Division 7 Section "Metal Roof Panels" for installing metal roof panels.

1.3 PERFORMANCE REQUIREMENTS

- A. General: Flashing and sheet metal assemblies shall withstand wind loads, structural movement, thermally induced movement, and exposure to weather without failure due to defective manufacture, fabrication, installation or other defects in construction. Completed flashing and sheet metal shall not rattle, leak, or loosen, and shall remain watertight.
- B. Flashing and sheet metal: Comply with NRCA's "The NRCA Roofing Manual" and SMACNA's "Architectural Sheet Metal Manual" requirements for dimensions and profiles shown unless more stringent requirements are indicated.
- C. SPRI Wind Design Manual: Manufacture and install roof edge flashings testing according to SPRI ES-1 and capable of resisting the design pressures as calculated from ASCE 7-10.
 - 1. Roof Edge Design Pressure for roofs 30' and below.
 - a. Outward Pressure: 96 psf.
 - b. Upward Pressure: 157 psf.
- D. Thermal Movements: Allow for thermal movements from ambient and surface temperature changes to prevent buckling, opening of joints, overstressing of components, failure of joint

sealants, failure of connections, and other detrimental effects. Base calculations on surface temperatures of materials due to both solar heat gain and nighttime-sky heat loss.

1. Temperature Change: 120 deg F, ambient; 180 deg F, material surfaces.

1.4 CLOSEOUT SUBMITTALS

- A. Maintenance Data: For flashing and sheet metal and accessories to include in maintenance manuals.

1.5 QUALITY ASSURANCE

- A. Fabricator Qualifications: Employs skilled workers who custom fabricate flashing and sheet metal similar to that required for this Project and whose products have a record of successful in-service performance.
 1. For rood edge flashings that are SPRI ES-1 tested, shop shall upon approval of required shop drawings be required to provide in-place mock-up of each of the flashing types that are to be used including straight run, corner and joints. Final acceptance shall be by Owner and Architect.

1.6 DELIVERY, STORAGE, AND HANDLING

- A. Do not store flashing and sheet metal materials in contact with other materials that might cause staining, denting, or other surface damage.
- B. Protect strippable protective covering on flashing and sheet metal from exposure to sunlight and high humidity, except to the extent necessary for the period of flashing and sheet metal installation.

1.7 WARRANTY

- A. Special Warranty on Finishes: Manufacturer agrees to repair finish or replace flashing and sheet metal that shows evidence of deterioration of factory-applied finishes specified warranty period.
 1. Exposed Panel Finish: Deterioration includes, but is not limited to, the following:
 - a. Color fading more than 5 Hunter units when tested according to ASTM D 2244.
 - b. Chalking in excess of a No. 8 rating when tested according to ASTM D 4214.
 - c. Cracking, checking, peeling, or failure of paint to adhere to bare metal.
 2. Finish Warranty Period: 10 years from date of Substantial Completion.

1.8 SUBMITTALS

- A. Product Data; Flashing, Sheet Metal, and Accessories: Manufacturer's technical product data, installation instructions and general recommendations for each specified sheet material and fabricated product.
- B. Shop Drawings: Submit shop drawings showing layout, profiles, methods of joining, and anchorage details, including major counter-flashings, trim units, and expansion joint systems. Provide layouts at 1/4 inch scale and details at 3 inch scale.

1.9 PROJECT CONDITIONS

- A. Coordinate work of this section with interfacing and adjoining work for proper sequencing of each installation. Ensure best possible weather resistance and durability of work and protection of materials and finishes.
- B. Sheet metal fabrications shall follow the recommendations and procedures of the Sheet Metal and Air conditioning Contractors National Association (SMACNA) "Architectural Sheet Metal Manual".

PART 2 - PRODUCTS

2.1 FLASHING AND SHEET METAL MATERIALS

- A. General: Protect mechanical and other finishes on exposed surfaces from damage by applying a strippable, temporary protective film before shipping.
- B. Aluminum Sheet: ASTM B 209, alloy as standard with manufacturer for finish required, with temper as required to suit forming operations and performance required.
 - 1. Exposed Coil-Coated Finishes:
 - a. Two-Coat Fluoropolymer: AAMA 620. Fluoropolymer finish containing not less than 70 percent PVDF resin by weight in color coat (kynar finish). Prepare, pretreat, and apply coating to exposed metal surfaces to comply with coating and resin manufacturers' written instructions.
 - 2. Color to be selected from manufacturer's full range of colors and finishes.
 - 3. Concealed Finish: Pretreat with manufacturer's standard white or light-colored acrylic or polyester backer finish, consisting of prime coat and wash coat with minimum total dry film thickness of 0.5 mil.
- C. Metallic-Coated Steel Sheet: Restricted flatness steel sheet, metallic coated by the hot-dip process and prepainted by the coil-coating process to comply with ASTM A 755/A 755M.
 - 1. Aluminum-Zinc Alloy-Coated Steel Sheet: ASTM A 792/A 792M, Class AZ50 coating designation, Grade 40; structural quality.

2.2 UNDERLAYMENT MATERIALS

- A. Self-Adhering, High-Temperature Sheet: Minimum 40 mils thick, consisting of slip-resisting polyethylene-film top surface laminated to layer of butyl or SBS-modified asphalt adhesive, with release-paper backing; cold applied. Provide primer when recommended by underlayment manufacturer.
 - 1. Products: Subject to compliance with requirements, available products that may be incorporated into the Work include, but are not limited to, the following:
 - a. Grace Construction Products, a unit of W. R. Grace & Co.; Ultra.
 - b. Henry Company; Blueskin PE200 HT.
 - c. Metal-Fab Manufacturing, LLC; MetShield.
 - d. Owens Corning; WeatherLock Metal High Temperature Underlayment.

2.3 MISCELLANEOUS MATERIALS AND ACCESSORIES

- A. General: Provide materials and types of fasteners, solder, welding rods, protective coatings, separators, sealants, and other miscellaneous items as required for complete sheet flashing and sheet metal installation and recommended by manufacturer of primary sheet metal unless otherwise indicated.
- B. Fasteners: Same metal as flashing/sheet metal or, other non-corrosive metal as recommended by sheet manufacturer. Match finish of exposed heads with material being fastened.
- C. Solder: Comply with ASTM B32.
- D. Sealant Tape: Pressure-sensitive, 100 percent solids, gray polyisobutylene compound sealant tape with release-paper backing. Provide permanently elastic, nonsag, nontoxic, nonstaining tape 1/2 inch wide and 1/8 inch thick.
- E. Elastomeric Sealant: ASTM C 920, elastomeric polyurethane sealant; of type, grade, class, and use classifications as recommended in writing by elastomeric sealant manufacturer to seal joints in flashing and sheet metal and remain watertight.
 - 1. Match metal color as closely as possible.
- F. Butyl Sealant: ASTM C 1311, single-component, solvent-release butyl rubber sealant; polyisobutylene plasticized; heavy bodied for hooked-type expansion joints with limited movement.
- G. Epoxy Seam Sealer: Two-part, noncorrosive, aluminum seam-cementing compound, recommended by aluminum manufacturer for exterior nonmoving joints, including riveted joints.
- H. Bituminous Coating: Cold-applied asphalt emulsion according to ASTM D 1187.

CITY OF FAIRHOPE

- I. Metal Accessories: Provide sheet metal cleats, clips, straps, anchoring devices and similar accessory units as required for installation of work, matching or compatible with material being installed, noncorrosive, size and gage required for performance.
- J. Asphalt Roofing Cement: ASTM D 4586, asbestos free, of consistency required for application.

2.4 FABRICATED UNITS

- A. General Metal Fabrication: Shop-fabricate work to greatest extent possible. Comply with details shown, and with applicable requirements of SMACNA "Architectural Sheet Metal Manual", 2009 International Building Code, The NRCA Roofing and Waterproofing Manual and other recognized industry practices. Obtain field measurements for accurate fit before shop fabrication. Fabricate for waterproof and weather-resistant performance; with expansion provisions for running work, sufficient to permanently prevent leakage, damage or deterioration of the work. Form work to fit substrates. Comply with material manufacturer instructions and recommendations for forming material. Form exposed sheet metal work without excessive oil-canning, buckling and tool marks, true to line and levels indicated, with exposed edges folded back to form hems. Form sections square, true and accurate to size, free from distortion and other defects detrimental to appearance or performance.
- B. Fabrication Tolerances: Fabricate flashing and sheet metal that is capable of installation to a tolerance of 1/4 inch in 20 feet on slope and location lines as indicated on Drawings and within 1/8-inch offset of adjoining faces and of alignment of matching profiles.
- C. Sealant Joints: Where movable, non-expansion type joints are indicated or required for proper performance of work, form metal to provide for proper installation of elastomeric sealant, in compliance with SMACNA standards.
- D. Expansion Provisions: Form metal for thermal expansion of exposed flashing. Where lapped or bayonet-type expansion provisions in work cannot be sealed, or would not be sufficiently water/weatherproof, form expansion joints of intermeshing hooked flanges, not less than 1 inch deep, filled with mastic sealant (concealed within joints).
- E. Fabricate cleats and attachment devices from same material as accessory being anchored or from compatible, noncorrosive metal.
- F. Seams: Fabricate non-moving seams in sheet metal with flat-lock seams. Form aluminum seams with epoxy seam sealer; rivet joints for additional strength where required.
- G. Do not use graphite pencils to mark metal surfaces.
- H. Separations: Provide for separation of metal from non-compatible metal or corrosive substrates by coating concealed surfaces at locations of contact, with bituminous coating or other permanent separation as recommended by manufacturer/fabricator.
- I. Wipe and wash clean, soldered joints, to remove traces of flux immediately after soldering.

- J. Round vent pipes shall be flashed in compliance with the NRCA Metal Flashing Sleeve.

2.5 STEEP-SLOPE ROOF SHEET METAL FABRICATIONS

- A. Gutters: Manufactured in uniform section lengths not exceeding 12 feet, with matching corner units, ends, outlet tubes, and other accessories. Elevate back edge at least 1 inch above front edge. Furnish flat-stock gutter straps, gutter brackets, expansion joints, and expansion-joint covers fabricated from same metal as gutters.
1. Aluminum: 0.063 inch thick.
 2. Gutter Profile: As indicated according to SMACNA's "Architectural Sheet Metal Manual."
 3. Gutter Supports: Gutter brackets and straps with finish matching the gutters.
 4. Gutter Accessories: Continuous screened leaf guard with sheet metal frame.
- B. Downspouts: Plain rectangular complete with mitered elbows, manufactured from the following exposed metal. Furnish with metal hangers, from same material as downspouts, and anchors.
1. Aluminum: 0.040 inch thick.
- C. Drip Edges: Fabricate from the following material:
1. Aluminum: 0.040 inch thick.
- D. Counterflashing: Fabricate from the following material:
1. Aluminum: 0.040 inch thick.
- E. Vent Pipe Flashing:
1. 4 lb. lead conforming to ASTM B 749, Type L51121 unless otherwise indicated.
 2. Sleeve sized to slip over and turn down into pipe and soldered to flange.
 3. Flange shall extend at least 4 inches from pipe onto roof and match slope of roof.

PART 3 - EXECUTION

3.1 GENERAL

- A. Install components to produce a complete roof-edge drainage system according to manufacturer's written instructions. Coordinate installation of roof perimeter flashing with installation of roof-edge drainage system.

3.2 EXAMINATION

- A. Examine substrates, areas, and conditions, with Installer present, for compliance with requirements for installation tolerances, substrate, and other conditions affecting performance of the Work.
 - 1. Verify compliance with requirements for installation tolerances of substrates.
 - 2. Verify that substrate is sound, dry, smooth, clean, sloped for drainage, and securely anchored.
 - 3. Verify that air- or water-resistant barriers have been installed over sheathing or backing substrate to prevent air infiltration or water penetration.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.3 UNDERLAYMENT INSTALLATION

- A. Install self-adhering sheet underlayment, wrinkle free. Apply primer if required by underlayment manufacturer. Comply with temperature restrictions of underlayment manufacturer for installation; use primer rather than nails for installing underlayment at low temperatures. Apply in shingle fashion to shed water, with end laps of not less than 6 inches staggered 24 inches between courses. Overlap side edges not less than 3-1/2 inches. Roll laps with roller. Cover underlayment within 14 days.

3.4 INSTALLATION REQUIREMENTS

- A. General: Comply with manufacturer's installation instructions and recommendations, with SMACNA "Architectural Sheet Metal Manual", with 2021 International Building Code, and with the NRCA Roofing and Waterproofing Manual as required. Anchor units of work securely in place by methods indicated, providing for thermal expansion of metal units; conceal fasteners where possible, and set units true to line and level as indicated. Install work with laps, joints and seams which will be permanently watertight and weatherproof. Install sheet metal work in accordance with details
 - 1. Install flashing and sheet metal true to line, levels, and slopes. Provide uniform, neat seams with minimum exposure of solder, welds, and sealant.
 - 2. Install flashing and sheet metal to fit substrates and to result in watertight performance. Verify shapes and dimensions of surfaces to be covered before fabricating sheet metal.
 - 3. Install continuous cleats concealed with fasteners not more than 12 inches apart. Hook flashing over cleat prior to anchoring flashing.
 - 4. Install exposed flashing and sheet metal with limited oil canning, and free of buckling and tool marks.
 - 5. Torch cutting of sheet metal flashing and trim is not permitted.
 - 6. Do not use graphite pencils to mark metal surfaces.
 - 7. Flashing shall be securely fastened and water and weatherproof. Neatly install with sharp clean breaks. Metal work shall meet Owner's and Architect's approval.

8. Butt and locked joints in metal work shall be watertight. Joints shall be lapped in direction of flow.
 9. Solder joints shall be screwed or riveted to take stress, with solder acting as sealant between metal.
 10. Insulate dissimilar materials with an approved insulator. No dissimilar metal shall be touching. Work shall be arranged so moisture from one metal does not drain onto dissimilar metal.
 11. Install work with proper allowance for expansion and contraction from thermal changes.
 12. Carefully form flashing to conform to material dimensions as shown and according to field dimensions as verified.
- B. Underlayment: Where aluminum is to be installed directly on wood substrates, install a slip sheet of red rosin paper and a course of polyethylene underlayment.
- C. Expansion Provisions: Provide for thermal expansion of exposed flashing and trim. Space movement joints at maximum of 10 feet with no joints within 24 inches of corner or intersection.
1. Form expansion joints of intermeshing hooked flanges, not less than 1 inch deep, filled with sealant concealed within joints.
- D. Conceal fasteners and expansion provisions where possible in exposed work and locate to minimize possibility of leakage. Cover and seal fasteners and anchors as required for a watertight installation.
- E. Bed flanges of work in a thick coat of bituminous roofing cement where required for waterproof performance.
- F. Nail flanges of expansion joint units to curb nailers, at maximum spacing of 6 inches o.c. Fabricate seams at joints between units with minimum 3-inch overlap, to form a continuous, waterproof system.
- G. Sealant: Comply with sealant manufacturer's written installation instructions for products and applications indicated, unless more stringent requirements apply.
- H. Seal joints as required for watertight construction.
1. Use sealant-filled joints unless otherwise indicated. Embed hooded flanges of joint members not less than 1 inch into sealant. Form joints to completely conceal sealant. When ambient temperature at time of installation is between 40 and 70 deg F, set joint members for 50 percent movement each way. Adjust setting proportionately for installation at higher ambient temperatures. Do not install sealant-type joints at temperatures below 40 deg F.
 2. Prepare joints and apply sealants to comply with requirements in Division 7 Section "Joint Sealants".

3.5 LOCATION OF JOINTS IN METAL

- A. Joints to be balanced in exposed metal conditions as directed by Owner's representative.
- B. Joints to be placed where convenient to metal lengths, not to exceed 10 foot lengths.

3.6 TYPES OF METAL AND JOINTS

- A. Lapped Joints: Lapped joints acceptable at counter flashing and similar cover type metal where integrity is not critical.

3.7 CONSTRUCTION OF END JOINTS

- A. Lapped Joints: Lap 4 inches in direction of water flow. At counter flashing, lock bottom edges together.
- B. Sealant: Apply concealed sealant in each joint.
- C. No nails permitted at exposed surfaces of exposed roof metal; only screws shall be used. Form angles to lesser degrees than required to insure snug fit after installation.

3.8 ROOF EDGE, STEEP-SLOPE ROOF

- A. Install continuous metal drip edge flashing prior to installation of metal roof panels. Form metal to field verified dimension and configuration as indicated on the drawings. The drip edge shall be secured with ring shank or spiral type nails. Drip edge metal at rakes will be installed over the self-adhering underlayment.
- B. Install metal straight, in-line, rigidly screwed and watertight.

3.9 GUTTERS

- A. Join and seal gutter lengths. Allow for thermal expansion. Attach gutters to firmly anchored gutter supports spaced not more than 24 inches apart. Attach ends with rivets and seal with sealant to make watertight. Slope to downspouts.
 - 1. Install gutter with expansion joints at locations indicated but not exceeding 50 feet apart. Install expansion joint caps.
 - 2. Install continuous leaf guards on gutters with noncorrosive fasteners, removable for cleaning gutters.

3.10 DOWNSPOUTS

- A. Join sections with manufacturer's standard telescoping joints. Provide hangers with fasteners designed to hold downspouts securely to walls and 1 inch away from walls; locate fasteners at top and bottom and at approximately 60 inches o.c.
- B. Provide elbows at base of downspout to direct water away from building.

3.11 COUNTER FLASHING, STEEP-SLOPE ROOF

- A. Counter-flash mechanical items projecting through roofing.
- B. Round vent pipes shall be flashed in compliance with drawings and specifications.
- C. Fabricate cleats of same material as sheet, inter-lockable with sheet.
- D. Form pieces in longest possible lengths.
- E. Hem exposed edges on underside 1/2 inch, miter and seam corners.
- F. Fabricate vertical faces with bottom edge formed outward 1/4 inch and hemmed to form drip.

3.12 ROOF-PENETRATION FLASHING, STEEP-SLOPE ROOF

- A. Vent Pipes: Coordinate installation of vent pipe flashing with installation of asphalt shingles.

3.13 ERECTION TOLERANCES

- A. Shim and align flashing and sheet metal within installed tolerance of 1/4 inch in 20 feet on slope and location indicated on Drawings and within 1/8-inch offset of adjoining faces and of alignment of matching profiles.

3.14 CLEANING AND PROTECTION

- A. Clean exposed metal surfaces:
 - 1. Remove substances which might cause corrosion of metal or deterioration of finishes.
 - 2. Remove substances that interfere with uniform oxidation and weathering.
- B. Clean and neutralize flux materials. Clean off excess solder
- C. Clean off excess sealants.
- D. Removed temporary covering and strippable films as flashing and sheet metal is installed unless otherwise indicated in manufacturer's written installation instructions. On completion of flashing

and sheet metal installation, remove unused materials and clean finished surfaces as recommended by flashing and sheet metal manufacturer. Maintain flashing and sheet metal in clean condition during construction.

- E. Replace flashing and sheet metal that has been damaged or that has deteriorated beyond successful repair by finish touchup or similar minor repair procedures.
- F. Protection: Ensure that work will be without damage or deterioration, other than natural weathering at time of substantial completion.

3.15 FIELD QUALITY CONTROL

- A. Field inspection will be performed by the General Contractor and verified by the Architect and Owner's representative.
- B. Inspection will involve surveillance of work during installation to ascertain compliance with specified requirements.
- C. Upon completion of work, the General Contractor will perform a detailed inspection of the site. All damages or flaws will be repaired at no cost to the Owner. All tools and any excess material or waste shall be removed from the site prior to acceptance by the Owner.

3.16 WARRANTY

- A. All metal flashing shall be included in the Contractor's five-year Roof Guarantee.

END OF SECTION SHEET METAL FLASHING AND TRIM

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SECTION 07 9200

JOINT SEALERS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS:

- A. Drawings and general provisions of Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.
- B. Related work specified elsewhere includes:
 - 1. Section 32 10 00 – “Portland Cement Concrete Paving”
 - 2. Section 32 13 13 – “Curbs and Gutters”
 - 3. Section 03 30 00 - “Concrete Work”
 - 4. Section 04 22 00 - “Unit Masonry”
 - 5. Division 6 - “Wood And Plastics”
 - 6. Division 7 - “Siding, Soffit and Roofing Systems”
 - 7. Division 8 - “Doors and Windows”
 - 8. Division 9 - “Finishes”
 - 9. Division 10 - “Specialties”
 - 10. Divisions 23 - (Joint sealers for mechanical work)
 - 11. Divisions 26 - (Joint sealers for electrical work)

1.2 DESCRIPTION OF WORK:

- A. Work described in this section includes joint sealer systems.

1.3 SYSTEM PERFORMANCES:

- A. Provide joint sealers that have been produced and installed to establish and maintain watertight and airtight continuous seals.

1.4 QUALITY ASSURANCE:

- A. Installer Qualifications: Engage an Installer who has successfully completed within the last three years at least 3 joint sealer applications similar in type and size to that of this project and who will assign mechanics from these

earlier applications to this project, of which one will serve as lead mechanic.

- B. Single Source Responsibility for Joint Sealer Materials: Obtain joint sealer materials from a single manufacturer for each different product required.
- C. Refer to Division 1 Section "Special Conditions", for additional information and minimum experience requirements.

1.5 SUBMITTALS:

- A. Product Data: Submit manufacturer's complete product specifications, handling/installation/curing instructions, color charts and performance tested data sheets for each product required.

1.6 DELIVER, STORAGE AND HANDLING:

- A. Deliver materials to project site in original unopened containers or bundles with labels informing about manufacturer, product name and designation, color, expiration period for use, pot life, curing time and mixing instructions for multi-component materials.
- B. Store and handle materials to prevent their deterioration or damage due to moisture, temperature changes, contaminants, or other causes.
- C. Refer to Division 1 Sections "Summary of Work" and "Special Conditions" for additional information and requirements regarding stored materials.

1.7 PROJECT CONDITIONS:

- A. Environmental Conditions: Do not proceed with installation of joint sealers under the following conditions:
 - 1. When ambient and substrate temperature conditions are outside the limits permitted by joint sealer manufacturer or below 40° F.
 - 2. When joint substrates are wet due to rain, frost, condensation or other causes.
- B. Joint Width Conditions: Do not proceed with installation of joint sealers when joint widths are less than allowed by joint sealer manufacturer for application indicated.
- C. Asbestos Prohibited: Refer to Section 01015- "Special Conditions".

PART 2 - PRODUCTS

2.1 MATERIALS, GENERAL:

- A. Compatibility: Provide joint sealers, joint fillers and other related materials that are compatible with one another and with joint substrates under conditions of service and application, as demonstrated by testing and field experience.
- B. Colors: Provide color of exposed joint sealers indicated, or if not indicated, as selected by Architect from manufacturer's standard colors.

2.2 ELASTOMERIC JOINT SEALANTS:

- A. Elastomeric Sealant Standard: Provide manufacturer's standard chemically curing, elastomeric sealant of base polymer indicated which complies with ASTM C 920 requirements, including those for Type, Grade, Class and Uses.
- B. Multi-Part Nonsag Urethane Sealant: Type M, Grade NS, Class 25, Uses NR, M, A and, as applicable to joint substrates indicated, O.
 - 1. Products: Subject to compliance with requirements, provide one of the following:
 - a. BASF Building Systems, "MasterSeal NP 2"
 - b. Pecora Corp., "Dynatrol II"
 - c. Sika Corporation, "Sikaflex 2CNS"
 - d. Tremco, Inc., "Dymeric 240FC"
 - 2. Locations for Use: Exterior joints and penetrations in vertical surfaces of concrete, and between metal and concrete, mortar of stone; overhead or ceiling joints; perimeters of metal frames in exterior walls; vertical expansion and control joints in masonry and concrete; and at all miscellaneous locations requiring a joint sealant.
 - 3. Equivalent 1-part sealants will be acceptable for interior surfaces only, by one of the above named manufacturers.
 - 4. Where used in conjunction with stucco or EIFS, provide 1-part non-yellowing aliphatic polyurethane, equivalent to one of the following:
 - a. BASF Building Systems, "MasterSeal CR 195"
 - b. Pecora Corp., "Dynatrol I-XL Tru-White"
- C. Two-Part Pourable Urethane Sealant: Type M, Grade P, Class 25; Uses T, M, A and, as applicable to joint substrates indicated, O.

1. Products: Subject to compliance with requirements, provide one of the following:
 - a. BASF Building Systems, "MasterSeal SL 2
 - b. Bostik Findley, "Chem-Calk 550".
 - c. Pecora Corporation, "NR-200 Urexpan".
 - d. Sika Corporation, "Sikaflex 2CSL"
 - e. Tremco, Inc., "THC-900/901".
 - f. Tremco, Inc., "Vulkem 45SSL".
 - g. W. R. Meadows, Inc., "Pourthane".
 2. Locations for Use: Exterior and interior expansion, control and construction joints in horizontal surfaces; and joints subject to pedestrian and light vehicular traffic.
- D. One-Part Mildew-Resistant Silicone Sealant: Type S, Grade NS; Class 25, Uses NT, G, A and, as applicable to nonporous joint substrates indicated, O; formulated with fungicide for sealing interior joints with nonporous substrates around ceramic tile, showers, sinks and plumbing fixtures.
1. Products: Subject to compliance with requirements, provide one of the following:
 - a. Dow Corning Corp., "Dow-Corning 786"
 - b. General Electric, "SCS 1702".
 - c. Pecora Corp., "863 #345 White"
 - d. Sika Corporation, Sikasil GP
 - e. Tremco, Inc., "Tremsil 200"; White, Clear.
 2. Locations for Use: Interior joints in vertical surfaces and terminal edges of tile; and joints at damp areas, such as around sinks and plumbing fixtures and pipe penetrations; and exposed terminal edges of vinyl flooring, such as around door frames and terminations at concrete.

2.3 **LATEX JOINT SEALERS:**

- A. Acrylic-Emulsion Sealant: Manufacturer's standard, one part nonsag, acrylic, mildew resistant, acrylic emulsion sealant complying with ASTM C 834, formulated to be paintable and recommended for exposed applications on interior and on protected exterior exposures involving joint movement of not more than $\pm 7.5\%$.
1. Products: Subject to compliance with requirements, provide with one of the following:
 - a. Bostik Construction Products Div.; "Chem-Calk 600";

- b. Pecora Corp.; "AC-20";
 - c. Tremco Inc.; "Tremflex 834";
- 2. Locations for Use: Interior joints in field-painted vertical and overhead surfaces at perimeter of metal door frames, gypsum drywall, plaster and concrete or concrete masonry; and all other interior locations not indicated otherwise.

2.4 FIRE-RESISTANT JOINT SEALERS:

- A. Refer to Section 07270 - "Firestopping," for additional information and detailed requirements.

2.5 JOINT SEALANT BACKING:

- A. General: Provide sealant backings of material and type which are non-staining; are compatible with joint substrates, sealants, primers and other joint fillers; and are approved for applications indicated by sealant manufacturer based on field experience and laboratory testing.
- B. Plastic Foam Joint-Fillers:
 - 1. Preformed, compressible, resilient, non-waxing, non-extruding strips of plastic foam of material indicated below, and of size, shape and density to control sealant depth and otherwise contribute to producing optimum sealant performance.
 - 2. Backer Rod: Premium grade, closed cell polyethylene foam rod; Sealtight Backer Rod, as manufactured by W.R. Meadows, Inc., or approved equivalent.
 - 3. Joint Filler: "Ceramar" flexible foam expansion joint filler, as manufactured by W.R. Meadows, Inc., or approved equivalent.
- C. Bond Breaker Tape: Polyethylene tape or other plastic tape as recommended by sealant manufacturer for preventing bond between sealant and joint filler or other materials at back (3rd) surface of joint. Provide self-adhesive tape where applicable.

2.6 MISCELLANEOUS MATERIALS:

- A. Primer: Provide type recommended by joint sealer manufacturer where required for adhesion of sealant to joint substrates indicated.
- B. Cleaners for Nonporous Surfaces: Provide non-staining, chemical cleaner of type acceptable to manufacturer of sealant and sealant backing materials which are not harmful to substrates and adjacent nonporous materials.

- C. Masking Tape: Provide non-staining, non-absorbent type compatible with joint sealants and to surface adjacent to joints.

PART 3 - EXECUTION

3.1 INSPECTION:

- A. Require Installer to inspect joints indicated to receive joint sealers for compliance with requirements for joint configuration, installation tolerances and other conditions affecting joint sealer performance. Obtain Installer's written report listing any conditions detrimental to performance of joint sealer work. Do not allow joint sealer work to proceed until unsatisfactory conditions have been corrected.

3.2 PREPARATION:

- A. Surface Cleaning of Joints: Clean out joints immediately before installing joint sealers to comply with recommendations of joint sealer manufacturers and the following requirements:
1. Remove all foreign material from joint substrates which could interfere with adhesion of joint sealer, including dust; paints, except for permanent, protective coatings tested and approved for sealant adhesion and compatibility by sealant manufacturer; oil; grease; waterproofing; water repellents; water; surface dirt and frost.
 2. Clean concrete, masonry, unglazed surfaces of ceramic tile and similar porous joint substrate surfaces, by brushing, grinding, blast cleaning, mechanical abrading, acid washing or a combination of these methods to produce a clean, sound substrate capable of developing optimum bond with joint sealers. Remove loose particles remaining from above cleaning operations by vacuuming or blowing out joints with oil-free compressed air.
 3. Remove latence and form release agents from concrete.
 4. Clean metal, glass, porcelain enamel, glazed surfaces of ceramic tile and other non-porous surfaces by chemical cleaners or other means which are not harmful to substrates or leave residues capable of interfering with adhesion of joint sealers.
- B. Joint Priming: Prime joint substrates where indicated or where recommended by joint sealer manufacturer based on preconstruction joint sealer-substrate tests or prior experience. Apply primer to comply with joint sealer manufacturer's recommendations. Confine primers to areas of joint sealer bond, do not allow spillage or migration onto adjoining surfaces.

- C. Masking Tape: Use masking tape where required to prevent contact of sealant with adjoining surfaces which otherwise would be permanently stained or damaged by such contact or by cleaning methods required to remove sealant smears. Remove tape immediately after tooling without disturbing joint seal.

3.3 INSTALLATION OF JOINT SEALERS:

- A. General: Comply with joint sealer manufacturer's printed installation instructions applicable to products and applications indicated, except where more stringent requirements apply.
- B. Elastomeric Sealant Installation Standard: Comply with recommendations of ASTM C 1193 for use of joint sealants as applicable to materials, applications and conditions indicated.
- C. Latex Sealant Installation Standard: Comply with requirements of ASTM C 790 for use of latex sealants.
- D. Installation of Sealant Backings:
 - 1. Install sealant backings to comply with the following requirements:
 - 2. Install joint-fillers of type indicated or recommended by sealant manufacturer to provide support of sealants during application and at position required to produce the cross-sectional shapes and depths of installed sealants relative to joint widths which allow optimum sealant movement capability.
 - a. Do not leave gaps between ends of joint-fillers.
 - b. Do not stretch, twist, puncture or tear joint-fillers.
 - c. Remove absorbent joint-fillers which have become wet prior to sealant application and replace with dry material.
 - 3. Install bond breaker tape between sealants and joint-fillers, compression seals or back of joints where required to prevent third-side adhesion of sealant to back of joint.
- E. Installation of Sealants: Install sealants by proven techniques that result in sealants directly contacting and fully wetting joint substrates, completely filling recesses provided for each joint configuration and providing uniform, cross-sectional shapes and depths relative to joint widths which allow optimum sealant movement capability.

F. Tooling of Nonsag Sealants:

1. Immediately after sealant application and prior to time skinning or curing begins, tool sealants to form smooth, uniform beads of configuration indicated, to eliminate air pockets and to ensure contact and adhesion of sealant with sides of joint. Remove excess sealants from surfaces adjacent to joint. Do not use tooling agents which discolor sealants or adjacent surfaces or are not approved by sealant manufacturer.
2. Concave joint configuration per Figure 5A in ASTM C 1193, unless otherwise indicated.

3.4 PROTECTION AND CLEANING:

- A. Protect joint sealers during and after curing period from contact with contaminating substances or from damage resulting from construction operations or other causes so that they are without deterioration or damage at time of substantial completion. If, despite such protection, damage or deterioration occurs, cut out and remove damaged or deteriorated joint sealers immediately and reseal joints with new materials to produce joint sealer installations with repaired areas indistinguishable from original work.
- B. Clean off excess sealants or sealant smears adjacent to joints as work progresses by methods and with cleaning materials approved by manufacturers of joint sealers and of products in which joints occur.

3.5 SCHEDULE OF ACOUSTICAL JOINT SEALANTS:

- A. Acoustical Joint Sealant: Manufacturer's standard nonsag, paintable, nonstaining latex sealant complying with ASTM C 834. Product effectively reduces airborne sound transmission through perimeter joints and openings in building construction as demonstrated by testing representative assemblies according to ASTM E 90.
- B. Manufacturers/Products: Subject to compliance with requirements, provide preapproved equivalent to one of the following:
 1. Pecora Corporation; AC-20 FTR or AIS-919.
 2. USG Corporation; SHEETROCK Acoustical Sealant.
- C. Locations for Use: At locations indicated for various materials and systems, including in part, both sides of stud tracks for interior stud wall assemblies, top flange of lay-in ceiling grids and gypsum ceiling supporting grid systems and other locations so indicated.

3.6 JOINT SEALANT ADHESION TESTING:

- A. Provide Air Barrier to transition membrane to fenestration adhesion testing in accordance with ASTM C1521, Method A and Section 01 91 80 "Building Envelope Commissioning Requirements".
- B. Adhesion Testing per ASTM C1521-19

During three (3) phases of the project and after curing time has passed, three (3) adhesion test should be conducted at 25%, 50% and 75% of the project. Adhesion testing should be conducted by an approved representative of the sealant company. These tests should be submitted in writing on the Sealant Company's Letterhead. Failure could result in the removal of all sealant install and a full replacement at no cost to the Owner.

END OF JOINT SEALERS

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SECTION 081100

STEEL DOORS AND FRAMES

PART - GENERAL

1.1 RELATED DOCUMENTS:

- A. Drawings and general provisions of Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.
- B. Related work specified elsewhere includes:
 - 1. Section 04200 - "Unit Masonry"
 - 2. Section 05400 - "Cold-Formed Metal Framing"
 - 3. Section 06100 - "Rough Carpentry"
 - 4. Section 07900 - "Joint Sealers"
 - 5. Section 09900 - "Painting"

1.2 DESCRIPTION OF WORK:

- A. Work described in this section includes steel doors and frames, and any indicated glazing, fire-rated where indicated.
 - 1. All frames shall be equally and double rabbetted, unless otherwise indicated.
 - 2. All frames shall be fully welded with joints ground smooth.
- B. **All exterior hollow metal doors and hollow metal frames (exposed to outside air) shall be Large Missile Impact Rated.**
 - 1. Glazing in hollow metal frames shall be same as required in Division 8 Section "Glass and Glazing", fire rated where indicated.

1.3 QUALITY ASSURANCE:

- A. Provide doors and frames complying with Steel Door Institute "Recommended Specifications: Standard Steel Doors and Frames" (SDI-100) and as herein specified.
- B. Fire-Rated Door and Frame Assemblies:
 - 1. Where fire-rated door assemblies are indicated or required, provide fire-rated door and frame assemblies that comply with NFPA 80 "Standard for Fire Doors and Windows," and have been tested, listed and labeled in accordance with ASTM E 152 "Standard Methods of Fire Tests of Door Assemblies" by a nationally recognized independent testing and inspection agency acceptable to authorities having jurisdiction.

2. Labels mounted on doors and door frames must indicate the time rating of the door/frame assembly.
- C. Large Missile Impact and Hurricane Resistant Rated Assemblies, and Fire Rated Where Indicated:
1. Provide insulated exterior door and frame assemblies which have been tested and certified as "Large Missile Impact" and "Hurricane Resistant" rated, including compliance with State of Florida Building Code and Dade County, Florida protocol, and third-party tested/certified by equivalent to UL and ITS/WH certified to one or all of the following test standards, as applicable:
 - a. ANSI A250.13
 - b. ASTM E330/E1886/E1996
 - c. PA201, PA202, PA203
 - d. TAS201, TAS202, TAS203
 2. Certification shall also include fire door certification, where door and frame assemblies are also to be fire-rated.
 3. All frames shall be fully-welded with joints ground smooth. No knock-down frames.

1.4 **SUBMITTALS:**

- A. General: Submit the following in accordance with Conditions of Contract and Division 1 Specification Sections.
- B. Product Data: Submit manufacturer's technical product data substantiating that products comply with requirements.
- C. Shop Drawings:
 1. Submit for fabrication and installation of steel doors and frames. Include details of each frame type, elevations of door design types, conditions at openings, details of construction, location and installation requirements of finish hardware and reinforcements, and details of joints and connections. Show anchorage and accessory items.
 2. Provide schedule of doors and frames using same reference numbers for details and openings as those on contract drawings.
 3. Coordinate glazing frames and stops with glass and glazing requirements.

1.5 **DELIVERY, STORAGE AND HANDLING:**

- A. Comply with manufacturer's current written instructions and recommendations.

CITY OF FAIRHOPE

- B. Deliver hollow metal work cartoned or crated to provide protection during transit and job storage. Provide additional sealed plastic wrapping for factory finished doors.
- C. Inspect hollow metal work upon delivery for damage. Minor damages may be repaired provided finish items are equivalent in all respects to new work and acceptable to Architect; otherwise, remove and replace damaged items as directed.
- D. Store doors and frames at building site under cover. Place units on minimum 4-inch-high wood blocking. Avoid use of non-vented plastic or canvas shelters which could create humidity chamber. If cardboard wrapper on door becomes wet, remove carton immediately. Provide 1/4-inch spaces between stacked doors to promote air circulation.
- E. Refer to Division 1 Sections "Summary of Work" and "Special Conditions" for additional information and requirements regarding stored materials.

PART 2 - PRODUCTS**2.1 ACCEPTABLE MANUFACTURERS:**

- A. Manufacturer: Subject to compliance with requirements, provide steel doors and frames by one of the following, fire-rated where indicated:
 - 1. Steel Doors and Frames, (General):
 - a. Amweld Div, American Welding & Mfg. Co.,
 - b. Builder's Manufacturing Company
 - c. Ceco Corp.
 - d. Curries Manufacturing, Inc.
 - e. Dittco Products Inc.
 - f. Fenestra Corp.
 - g. Habersham Metal Products Company
 - h. Mesker Industries, Inc.
 - i. Overly Manufacturing Company
 - j. Pioneer Bldrs. Products Corp./Div. CORE Industries, Inc.
 - k. Republic Builders Products Corp./Subs. Republic Steel.
 - l. SteelCraft/Div. American Standard Co.
 - 2. Thermal Rated Steel Door and Frame Assemblies:
 - a. Subject to compliance with requirements, any above named manufacturer.
 - b. Ceco Corp.
 - c. Copco Door Co.
 - d. Curries Mfg., Inc.
 - e. Fenestra Corp.
 - f. Mesker Industries, Inc.
 - g. Pioneer Bldrs, Products Corp./Div. CORE Industries, Inc.

- h. Republic Builders Products Corp./Subs. Republic Steel.
- i. SteelCraft/Div. American Standard Co.

2.2 MATERIALS:

- A. Hot-Rolled Steel Sheets and Strip: Commercial quality carbon steel, pickled and oiled, complying with ASTM A 569 and ASTM A 568.
- B. Cold-Rolled Steel Sheets: Commercial quality carbon steel, complying with ASTM A 366 and ASTM SA 568.
- C. Galvanized or Galvanealed Steel Sheets; Smooth and Paintable Finish: Zinc-coated carbon steel sheets of commercial quality, complying with ASTM A 526, with ASTM A 525, G60 zinc coating, mill phosphatized; or ASTM A60 Galvannealed.
- D. Supports and Anchors: Fabricate of not less than 18-gage galvanized sheet steel.
- E. Inserts, Bolts and Fasteners: Manufacturer's standard units, except hot-dip galvanize items to be built into exterior walls, complying with ASTM A 153, Class C or D as applicable.
- F. Galvanizing Repair Paint: High zinc dust content paint for repair of galvanized surfaces damaged by fabrication or welding, complying with M.I. Specification MIL-P-21035.
- G. Shop Applied Primer: Rust-inhibitive enamel or paint, either air drying or baking, suitable as a base for specified finish paints.

2.3 FABRICATION:

- A. Fabricate steel door and frame units to be rigid, neat in appearance and free from defects, warp or buckle. Wherever practicable, fit and assemble units in manufacturer's plant. Clearly identify work that cannot be permanently factory assembled before shipment, to assure proper assembly at project site.
- B. Fabricate exposed faces of doors and panels, including stiles and rails of non-flush units, from only cold-rolled steel.
- C. Fabricate frames, concealed stiffeners, reinforcement, edge channels and moldings from either cold-rolled or hot-rolled steel (at fabricator's option).
- D. Fabricate exterior doors, panels and frames from galvanized sheet steel. Close top and bottom edges of exterior doors as integral part of door construction or by addition of minimum 16-gauge inverted steel channels.
 - 1. Use galvanizing repair paint for surfaces damaged by fabrication or welding.

- E. Exposed Fasteners: Unless otherwise indicated, provide countersunk flat Phillips heads for exposed screws and bolts.
- F. Thermal-Rated (Insulating) Assemblies:
 - 1. At exterior locations and elsewhere as shown or scheduled, provide doors which have been fabricated as thermal insulating door and frame assemblies and tested in accordance with ASTM C 236.
 - 2. Unless otherwise indicated, provide urethane insulated thermal-rated assemblies with U factor of 0.12 Btu, (hr./ft²./F Degrees) or better.
- G. Finish Hardware Preparation:
 - 1. Prepare doors and frames to receive mortise and concealed finish hardware in accordance with final Finish Hardware Schedule and templates provided by hardware supplier. Comply with applicable requirements of ANSI A 115 series specifications for door and frame preparation for hardware.
 - 2. Reinforce doors and frames to receive surface applied hardware. Drilling and tapping for surface-applied finish hardware may be done at project site.
 - 3. Locate finish hardware as indicated on final shop drawings, or if not indicated, in accordance with "Recommended Locations for Builders' Hardware," published by Door and Hardware Institute.
- H. Shop Painting:
 - 1. Clean, treat and paint exposed surfaces of steel door and frame units, including galvanized surfaces.
 - 2. Clean steel surfaces of mill scale, rust, oil, grease, dirt and other foreign materials before application of paint.
 - 3. Use galvanizing repair paint for surfaces damaged by fabrication or welding, prior to prime coat.
 - 4. Apply shop coat of prime paint of even consistency to provide a uniformly finished surface ready to receive finish paint.
 - 5. Do not paint fire labels on doors or frames.

2.4 STANDARD STEEL DOORS:

- A. Provide metal doors of types and styles as indicated on drawings or schedules, of seamless, hollow steel construction with 16-gauge face sheets. Form exterior doors of hot dip galvanized steel.

2.5 STANDARD STEEL FRAMES:

- A. Provide metal frames for doors, transoms, sidelights, borrowed lights, and other openings, of types and styles as shown on drawings and schedules. Conceal fastenings,

unless otherwise indicated. Fabricated frames of minimum 16-gauge cold-rolled furniture steel.

1. Frames for doors 7'-10" or more in height and/or over 3'-5" in width: 14 gauge cold-rolled furniture steel, and one additional hinge, whether or not indicated in hardware schedule.
- B. Frames shall be formed by press brake with corners sharp and true. Corners shall be mitered and accurately fitted, and shall be fully electrically welded and then ground smooth. Removable spreaders shall be welded to the bottom of the frame. Frames shall be accurately mortised for hardware.
- C. A minimum of three wall anchors shall be provided at each jamb, except four at doors 7'-10" high or more, and six at doors 10-foot high or more. Anchors shall be attached to door frames, adjustable, suitable for wall conditions and job requirements, and shall be 16 gauge minimum. Floor anchors shall be provided and welded to foot of each jamb with two 5/16" holes for securing to the floor.
- D. Reinforcements of adequate gauge shall be provided for strikes, closers and brackets and other surface applied hardware for field drilling and tapping.
- E. Form exterior frames of hot dip galvanized steel.
- F. Door Silencers: Except on weatherstripped frames, drill stops to receive 3 silencers on strike jambs of single-swing frames and 2 silencers on heads of double-swing frames. Provide silencers equivalent to "GJ64" silencers as manufactured by Glenn-Johnson Corp., for metal frames, when not provided under the work of Section 08710 - "Finish Hardware."
 1. Provide additional door silencers at doors over 3'-0" wide or 7'-0" in height.
- G. Plaster Guards: Provide 26-gauge steel plaster guards or mortar boxes, welded to frame, at back of finish hardware cutouts where mortar or other materials might obstruct hardware operation.

PART 3 - EXECUTION

3.1 INSTALLATION:

- A. General: Install standard steel doors, frames and accessories in accordance with final shop drawings and manufacturer's data, and as herein specified.
- B. Placing Frames:

1. Comply with provisions of SDI-1-06 "Recommended Erection Instructions for Steel Frames," unless otherwise indicated.
2. Except for frames located at in-place concrete or masonry, place frames prior to construction of enclosing walls and ceilings. Set frames accurately in position, plumbed, aligned, and braced securely until permanent anchors are set. After wall construction is completed, remove temporary braces and spreaders leaving surfaces smooth and undamaged.
3. In masonry construction, locate a minimum of 3 wall anchors per jamb at hinge and strike levels. Add 1 wall anchor per jamb at hinge and strike levels for each whole 1'-10" height increment over 6'-0"; Similar at glazed and cased openings. Fill solid with grout as adjacent construction progresses.
4. At in-place concrete or masonry construction, set frames and secure to adjacent construction with machine screws and masonry anchorage devices.
5. In metal stud partitions, install at least 3 wall anchors per jamb at hinge and strike levels. Attach wall anchors to studs with tapping screws. Add additional anchors as indicated in Paragraph 3.1-B3 above.
6. Install fire-rated frames in accordance with NFPA Std. No. 80.
7. Install hurricane-resistant, large-missile impact rated doors and frames in accordance with tested and certified criteria.

C. Door Installation:

1. Fit hollow metal doors accurately in frames, within clearances specified in SDI-100.
2. Place fire-rated doors with clearances as specified in NFPA Std. No. 80.
3. Place hurricane-resistant, large-missile impact rated doors and frames in accordance with tested and certified criteria.
4. Install silencers after all painting of doors and frames has been completed.

3.2 ADJUST AND CLEAN:

A. Prime Coat Touch-up:

1. Immediately after erection, sand smooth any rusted or damaged areas of prime coat and apply touch-up of compatible air-drying primer.
2. Use galvanizing repair paint for galvanized surfaces, prior to prime coat.

B. Final Adjustments: Check and readjust operating finish hardware items, leaving steel doors and frames undamaged and in complete and proper operating condition.

END OF STEEL DOORS AND FRAMES

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SECTION 08 4113

ALUMINUM ENTRANCES AND STOREFRONTS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS:

- A. Drawings and general provisions of Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.
- B. Related work specified elsewhere includes:
 - 1. Section 061000 - "Rough Carpentry"
 - 2. Section 079200 - "Joint Sealers"
 - 3. Section 087100 - "Door Hardware"
 - 4. Section 088100 - "Glass and Glazing"

1.2 SUMMARY:

- A. This Section includes design and installation of the following types of prefinished, non- thermally broken aluminum entrance and storefront systems, which are of hurricane, wind, and wind-blown "large missile" resistant design and installation and outside glazed at exterior; and prefinished aluminum entrance and storefront systems inside glazed at interior:
 - 1. Flush center-glazed aluminum entrances and storefront, with special beveled stops at doors only; Muntins (if any) only as indicated on the Drawings:
 - a. Hurricane, wind, and wind-blown "large missile" resistant, medium stile exterior entrance doors with continuous-type hinge design, and door frames (not thermally broken);
 - 1) 9/16-inch laminated clear transparent Low-E glass, heat strengthened or fully tempered glass (as required by glass size and code) for exterior doors is specified in Division 8 Section "Glass and Glazing".
 - b. Hurricane, wind, and wind-blown "large missile" resistant, outside glazed transoms, sidelights and frames for entrances and storefront framing systems, at exterior; not thermally broken.

2. If indicated, prefinished aluminum faced insulated panels in storefront framing system.
 3. Sub-Sill: At all sill locations (whether indicated on the Drawings or not) provide matching 0.040-inch (minimum) brake-metal, with hemmed edges, turned up at rear and ends, and angled down at extended front/exterior edge. Set in solid bed of silicone sealant.
- B. The extent of aluminum entrances and storefront is indicated on the Drawings.
- C. Glazing shall be as specified elsewhere, but no less than 1-5/16 inches over-all insulated units at exterior, 9/16-inch minimum thickness at exterior doors, and 1/4-inch minimum at interior frames and doors.

1.3 **SYSTEM PERFORMANCE REQUIREMENTS:**

- A. Delegated Design: Engage a qualified Alabama professional engineer, as defined in Section 01 40 00 "Quality Requirements," to design exterior aluminum entrances in glazed curtain walls as provided and installed under this Section.
- B. General: Design and provide aluminum entrance and storefront assemblies that comply with performance characteristics specified, as demonstrated by testing the manufacturer's corresponding stock or custom assemblies according to test methods indicated; Hurricane, wind, and wind-blown "large missile" resistant at exterior locations.
- C. Thermal Movement: Design the aluminum entrance and storefront framing systems to provide for expansion and contraction of the component materials. Entrance doors shall function normally over the specified temperature range.
1. The system shall be capable of withstanding a metal surface temperature range of 180 deg F (100 deg C) without buckling, failure of joint seals, undue stress on structural elements, damaging loads on fasteners, reduction of performance, stress on glass, or other detrimental effects.
- D. Design Requirements: Provide aluminum entrance and storefront systems that comply with structural performance (with reinforcing as necessary), air infiltration, and water penetration requirements indicated.
1. Wind Loads: Provide aluminum entrance and storefront assemblies capable of withstanding wind pressures for components and cladding as indicated on the Structural Drawings.
 2. **Design wind load at the project site is 160 mph** (minimum), unless greater loads are indicated on Structural Drawings or otherwise required by applicable building codes or authorities having jurisdiction.

- E. Structural Performance: Conduct tests for structural performance in accordance with ASTM E 330. At the conclusion of the tests there shall be no glass breakage or permanent damage to fasteners, anchors, hardware or actuating mechanism. Framing members shall have no permanent deformation in excess of 0.2 percent of their clear span.
 - 1. Deflection Normal to the Plane of the Wall: Test pressure required to measure deflection of framing members normal to the plane of the wall shall be equivalent to the wind load specified above. Deflection shall not exceed 1/360 of the clear span, when subjected to uniform load deflection test.
 - 2. Deflection Parallel to the Plane of the Wall: Test pressures required to measure deflection parallel to the plane of the wall shall be equal to 1.5 times the wind pressures specified above. Deflection of any member carrying its full dead load shall not exceed an amount that will reduce glass bite below 75 percent of the design dimension and shall not reduce the edge clearance between the member and the fixed panel, glass or other fixed member above to less than 1/8-inch. The clearance between the member and an operable door or window shall be at least 1/16-inch.
- F. Air Infiltration: Provide aluminum entrance and storefront framing system with an air infiltration rate of not more than 0.06 CFM per sq. ft. of fixed area (excluding operable door edges) when tested in accordance with ASTM E 283 at a static air pressure differential of 6.24 psf.
- G. Water Penetration: Provide framing systems with no uncontrolled water penetration (excluding operable door edges) as defined in the test method when tested in accordance with ASTM E 331 at a minimum static air pressure differential of 12 psf, as defined by AAMA 501.
- H. Condensation Resistance: Where framing systems are of "thermal-break" construction, provide units tested for thermal performance in accordance with AAMA 1503 showing condensation resistance factor (CRF) of not less than 45.

1.4 **SUBMITTALS:**

- A. General: Submit the following in accordance with Conditions of the Contract and Division 1 Specification Sections.
 - 1. Product data for each aluminum entrance and storefront system required, including:
 - a. Manufacturer's standard details and fabrication methods.
 - b. Data on finishing, hardware and accessories.
 - c. Recommendations for maintenance and cleaning of exterior surfaces.

2. Shop drawings for each aluminum entrance and storefront system required, including:
 - a. For exterior aluminum entrances in glazed curtain walls as provided and installed under this Section:
 - 1) Prepared by or under the supervision of a qualified professional engineer detailing fabrication and assembly of exterior aluminum entrances for glazed curtain walls.
 - 2) Show connection to and continuity with adjacent glazed curtain walls components.
 - b. Delegated-Design Submittal: For aluminum entrances in glazed curtain walls provided and installed under this Section, including the following:
 - 1) Analysis data signed, dated and sealed by the qualified Alabama professional engineer responsible for their preparation
 - 2) Anchorage (*to include fasteners with embeds and other criteria*) of the steel studs at the perimeter of openings into CMU as required to meet frame anchor requirements of storefront manufacturer's approval criteria. See head, jamb and sill details for storefront on the drawings.
 - c. Layout and installation details, including relationship to adjacent work.
 - d. Elevations at 1/4-inch scale.
 - e. Detail sections of typical composite members.
 - f. Anchors and reinforcement.
 - g. Hardware mounting heights.
 - h. Provisions for expansion and contraction.
 - i. Glazing details, including in part, special beveled stops for doors, and any muntins.
3. Hardware Schedule: Submit complete hardware schedule organized into sets based on hardware specified. Coordinate hardware with doors, frames, and related work to ensure proper size, thickness, hand, function, and finish. Include item name, name of the manufacturer and complete designations of every item required for each door opening.
4. Samples for Color Selection: Submit pairs of samples of each specified color and finish on 12-inch-long sections of extrusions or formed shapes. Where normal color variations are anticipated, include 2 or more units in each set of samples indicating extreme limits of color variations.
5. Samples for Verification Purposes: The Architect reserves the right to require samples, that show fabrication techniques and workmanship, and design of hardware and accessories.
6. Test Reports: Provide certified test reports from a qualified independent

testing laboratory showing that aluminum entrance and storefront systems have been tested in accordance with specified test procedures and comply with performance characteristics indicated.

1.5 QUALITY ASSURANCE:

- A. Installer Qualifications: Engage an Installer with at least five (5) years experience in and who has completed installations of aluminum storefront and entrances similar in design and extent to those required for the project and whose work has resulted in construction with a record of successful in-service performance.
- B. Manufacturer's Qualifications: Provide aluminum entrances and storefront systems produced by a firm with at least five (5) years experience in manufacturing systems that are similar to those indicated for this project and that have a record of successful in-service performance.
- C. Single Source Responsibility: Obtain aluminum entrance and storefront systems, and structural sealants, from one source and from a single manufacturer.
- D. Design Criteria: The drawings indicate the size, profile, and dimensional requirements of aluminum entrance and storefront work required and are based on the specific types and models indicated. Aluminum entrance and storefront by other manufacturers may be considered, provided deviations in dimensions and profiles are minor and do not change the design concept, as judged solely by the Architect. The burden of proof of equality is on the proposer.
- E. Refer to Division 1 Section "Special Conditions", for additional information and minimum experience requirements.

1.6 DELIVERY, STORAGE, AND HANDLING:

- A. Deliver aluminum entrance and storefront components in the manufacturer's original protective packaging.
- B. Store aluminum components in a clean dry location away from uncured masonry or concrete. Cover components with waterproof paper, tarpaulin or polyethylene sheeting in a manner to permit circulation of air.
 - 1. Stack framing components in a manner that will prevent bending and avoid significant or permanent damage.

1.7 PROJECT CONDITIONS:

- A. Field Measurements: Check openings by accurate field measurement before fabrication. Show recorded measurements on shop drawings. Coordinate

fabrication schedule with construction progress to avoid delay of the work.

1. Coordinate fabrication tolerances to ensure proper fit.

1.8 WARRANTY:

- A. Warranty: Submit a written warranty, executed by the manufacturer, agreeing to repair or replace units that fail in materials or workmanship within the specified warranty period. Failures include, but are not necessarily limited to:
 1. Structural failures including excessive deflection, excessive leakage or air infiltration.
 2. Faulty operation.
 3. Deterioration of metals, metal finishes and other materials beyond normal weathering.
- B. Warranty Period: 3 years after the date of project Substantial Completion.
 1. Finish Warranty: 10 years after date of project Substantial Completion.
- C. The above warranty shall be in addition to, shall be in effect simultaneously with, and shall not alter other project or product warranties or guarantees, nor shall it serve as a limitation to other remedies available to the Owner.

PART 2 - PRODUCTS

2.1 MANUFACTURERS:

- A. Manufacturer: Subject to compliance with requirements, provide entrance and storefront systems manufactured by one of the following:
 1. Oldcastle Building Envelope
 2. Coral Architectural Products.
 3. EFCO Corporation.
 4. Kawneer Company, Inc., an Alcoa company.
 5. CRL/United States Aluminum Corp.
 6. YKK Architectural Products
- B. Product/Manufacturer: Provide one (1) of the following systems, or pre-approved equivalent by one (1) of the above-named manufacturers.
 1. Exterior Entrances and Storefront: 2-1/2-inches x 5-inches nominal mullion profile which accommodates 1-5/16" laminated glass; flush center-glazed, and as indicated, with stiffeners and/or structural reinforcement as required to

comply with project loads, and windload and large missile impact requirements:

- a. Oldcastle Series 5100.
- b. Kawneer IR501.
- c. U.S. Aluminum IG600.
- d. Coral Architectural Products, 380 Metal Infill Panel or WS500. Double wide Stile Entrance
 1. Provide with 10" ADA Bottom Rail Option.
 2. Bottom panel to be metal infill panels

2.2 **MATERIALS:**

A. Aluminum:

1. ASTM B221, alloy 6063-T6 for extrusions; ASTM B209, alloy 5005-H16 for sheets; or other alloys and temper recommended by manufacturer appropriate for specified finish.
2. Minimum thickness of [0.080] inch for main framing members.

B. Internal Reinforcing:

1. ASTM A36 for carbon steel; or ASTM B308 for structural aluminum.
2. (1 ¼" x 4 9/16" x ¼") steel channel (vertical mullions) and (1 ¼" x 4 11/16" x 12 ga) steel channel (vertical jambs).
3. Steel components factory coated with alkyd type zinc chromate primer complying with FS TT-P-645.

C. Anchorage Devices:

1. Manufacturer's standard formed or fabricated steel or aluminum assemblies of shapes, plates, bars or tubes.
2. Hot-dip galvanize steel assemblies after fabrication; comply with ASTM A123, 2.0 ounce minimum coating.

D. Fasteners:

1. Aluminum, non-magnetic stainless steel or other non-corrosive materials compatible with items being fastened.
2. Provide concealed fasteners wherever possible.
3. For exposed locations, provide Phillips flathead screws with finish matching item fastened.
4. For concealed locations, provide manufacturer's standard fasteners.

E. Expansion Anchor Devices: Lead-shield or toothed-steel, drilled-in, expansion bolt

anchors.

- F. Protective Coatings: Cold-applied asphalt mastic complying with SSPC-Paint 12, compounded for 30 mil thickness for each coat; or alkyd type zinc chromate primer complying with FS TT-P-645.
- G. Touch-Up Primer for Galvanized Components: Zinc oxide conforming with FS TT-P-641.
- H. Glazing Gaskets:
 - 1. Compression type design, replaceable extruded, of neoprene, polyvinyl chloride (PVC), or ethylene propylene diene monomer (EPDM) at exterior gasket. Profile and hardness as required to maintain uniform pressure for watertight seal.
 - 2. Dow – Corning #795 structural silicone sealant at interior gasket with Norton “V-2110” SSA spacer tape.
- I. Glass and Glazing:
 - 1. Refer to Section 08800
- I. Weatherstripping:
 - 1. Provide D-1913 EPDM fin seal in AS-6 adjustable astragal.
 - 2. Provide D-174 silicone weatherstripping in bottom door rail.
- J. Internal Sealants and Sealant Tapes.

2.3 **HARDWARE:**

- A. Finish Hardware Schedule (per door): Equivalent to the following, **EXCEPT as modified and upgraded by the storefront supplier to comply with the required large missile impact rated exterior door assemblies and systems.**
 - 1. Butt hinges: BH-1M (4-1/2" x 4")-Regent
 - 2. Continuous gear hinge: 224 HD-Roton
 - 3. Concealed overhead closers: LCN 2030
 - 4. Surface closers: LCN 4040
 - 5. Push bar: Manufacturer's standard.
 - 6. Pulls: Manufacturer's standard.
 - 7. Panic devices: First Choice CVR CR-100 or Jackson 2086 to First Choice RP-100,
 - 8. Deadlocks: 1850-505 Adams-Rite
 - 9. Cylinders: Best Access Systems IE-72 and IE-74, 48H-7 Coordinate exact requirements with Hardware Schedule and Owner.
 - 10. Thresholds: Provide with integral raised stop and bulb-type weather stripping for outward opening storefront doors. Manuf. of storefront system must provide

a “tested” threshold as described herein, that will provide a fully warrantable system or provide documentation that their product will be fully warrantable with a raised stop and bulb type threshold. **No exceptions will be allowed.**

11. Flush bolts: FB-1201-VRM-International
12. Weatherstripping: D-118/D-120- Oldcastle Building Envelope®
13. Manufactures standard meeting stile. Coordinate with door hardware schedule for location and coordination with wiring requirements scheduled therein.

B. Accessories: As required by project conditions.

2.4 **COMPONENTS:**

A. Storefront Framing System: Provide storefront and entrance framing systems fabricated from extruded aluminum members of size and profile indicated. Include subframes and other reinforcing members of the type indicated. Provide for flush glazing storefront from the interior on all sides without projecting stops. Shop-fabricate and preassemble frame components where possible. Provide storefront frame sections without exposed seams.

1. Mullion Configurations (if any mullions are indicated on the Drawings): Provide pockets at the inside glazing face to receive resilient elastomeric glazing. Mullions and horizontals shall be one piece. Make provisions to drain moisture accumulation to the exterior.

B. Entrance Door Frames: Provide tubular and channel frame entrance door frame assemblies, as indicated, with welded or mechanical joints in accordance with manufacturer's standards. Reinforce as necessary to support required loads, and reinforce at all door jambs.

C. Hurricane Resistant Stile-and-Rail Type Entrance Doors: Provide tubular frame members, fabricated with mechanical joints using heavy inserted reinforcing plates and concealed tie- rods or j-bolts. Provide special beveled stops for doors; and muntins at locations where any muntins are indicated on the Drawings.

1. Glazing: Fabricate doors to facilitate replacement of glass or panels, without disassembly of stiles and rails. Provide beveled, snap-on, extruded aluminum glazing stops, with exterior stops anchored for non removal.
2. Design: Oldcastle Building Envelope Model MSD-375 StormMax; or pre-approved equivalent by one of the manufacturers listed in Part 2.1 of this specification section.
 - a. 1 ¾-inch deep; 0.125 wall thickness
 - b. Medium stile; 4 3/4-inch, unless indicated otherwise.
 - c. Bottom Rail: 9-inches total height, MINIMUM, unless greater height is otherwise indicated on the Drawings.

2.5 FABRICATION:

A. Coordination of Fabrication:

1. Check actual frame or door openings required in construction work by accurate field measurements before fabrication.
2. Fabricate units to withstand loads, which will be applied when system is in place.

B. General:

1. Thermal Break Construction: Fabricate storefront framing system with an integrally concealed, low conductance thermal barrier, located between exterior materials and exposed interior members to eliminate direct metal to metal contact. Use manufacturer's standard construction that has been in use for similar projects for period of not less than 3 years.
2. Conceal fasteners wherever possible.
3. Reinforce work as necessary for performance requirements, and for support to structure.
4. Separate dissimilar metals and aluminum in contact with concrete utilizing protective coating or preformed separators, which will prevent contact and corrosion.
5. Comply with Section 08810 for glazing requirements.

C. Prefabrication: Complete fabrication, assembly, finishing, hardware application, and other work to the greatest extent possible before shipment to the Project site. Disassemble components only as necessary for shipment and installation.

1. Perform fabrication operations, including cutting, fitting, forming, drilling and grinding of metal work to prevent damage to exposed finish surfaces. Complete these operations for hardware prior to application of finishes.
2. Do not drill and tap for surface mounted hardware items until time of installation at project site.

D. Aluminum Framing:

1. Provide members of size, shape and profile indicated, designed to provide for glazing from interior.
2. Fabricate frame assemblies with joints straight and tight fitting.
3. Reinforce internally with structural members as necessary to support design loads.
4. Maintain accurate relation of planes and angles, with hairline fit of contacting members.
5. Seal horizontals and direct moisture accumulation to exterior.
6. Provide flashings and other materials used internally or externally that are corrosive resistant, non-staining, non-bleeding and compatible with adjoining materials.

CITY OF FAIRHOPE

7. Provide manufacturer's extrusions and accessories to accommodate expansion and contraction due to temperature changes without detrimental to appearance or performance.
 8. Make provisions in framing for minimum edge clearance, nominal edge cover and nominal pocket width for thickness and type of glazing or infill used in accordance with recommendations of manufacturer and FGMA Glazing Manual.
- E. Welding:
1. Comply with recommendations of the American Welding Society.
 2. Use recommended electrodes and methods to avoid distortion and discoloration.
 3. Grind exposed welds smooth and flush with adjacent surfaces; restore mechanical finish.
- F. Flashings: Form from sheet aluminum with same finish as extruded sections. Material thickness as required to suit condition without deflection or "oil canning".

2.7 FINISHES:

- A. Organic Coating [high performance fluorocarbon]:
1. Comply with requirements of AAMA 2605.
 2. Surfaces cleaned and given conversion coating pre-treatment prior to application of 0.3 mil dry film thickness of epoxy or acrylic primer following recommendations of finish coat manufacturer.
 3. Finish coat of 70% minimum fluorocarbon resin fused to primed surfaces at temperature recommended by manufacturer, 1.0 mil minimum dry film thickness.
 4. Acceptable coatings are Trinar by Akzo Coatings, Inc.; Nubelar by Glidden Company; Fluoroceram by Morton International, Inc.; Duranar by PPG Industries Inc.; and Fluropon by Valspar Corporation.
 5. Provide in either a 2, 3, or 4 coat system as required for color selected.
 6. Manufacturer's standard colors as selected by Architect.
- B. Provide samples of final selected finishes for architect's verification; Refer to "Submittals" paragraph above.

PART 3 - EXECUTION**3.1 EXAMINATION:**

- A. Examine substrates and supports, with the Installer present, for compliance with requirements indicated, installation tolerances, and other conditions that affect installation of aluminum entrances and storefronts. Correct unsatisfactory conditions before proceeding with the installation.

- 1. Do not proceed with installation until unsatisfactory conditions are corrected.

3.2 INSTALLATION:

- A. Comply with manufacturer's current written instructions and recommendations for installation, for each product and system.
- B. Set units plumb, level, and true to line, without warp or rack of framing members, doors, or panels. Install components in proper alignment and relation to established lines and grades indicated. Provide proper support and anchor securely in place.
- C. Construction Tolerances: Install aluminum entrance and storefront to comply with the following tolerances:
 - 1. Variation from Plane: Do not exceed 1/8-inch in 12 feet of length or 1/4-inch in any total length.
 - 2. Offset from Alignment: The maximum offset from true alignment between two identical members abutting end to end in line shall not exceed 1/16-inch.
 - 3. Diagonal Measurements: The maximum difference in diagonal measurements shall not exceed 1/8-inch.
 - 4. Offset at Corners: The maximum out-of-plane offset of framing at corners shall not exceed 1/32-inch.
- D. Separate aluminum and other corrodible metal surfaces from sources of corrosion or electrolytic action at points of contact with other materials.
 - 1. Zinc or cadmium plate steel anchors and other unexposed fasteners after fabrication.
 - 2. Paint dissimilar metals where drainage from them passes over aluminum.
 - 3. Paint aluminum surfaces in contact with mortar, concrete or other masonry with alkali resistant coating.
 - 4. Paint wood and similar absorptive material in contact with aluminum and exposed to the elements or otherwise subject to wetting, with two coats of aluminum house paint. Seal joints between the materials with approved sealant.
- E. Drill and tap frames and doors and apply surface-mounted hardware items. Comply with hardware manufacturer's instructions and template requirements. Use concealed fasteners wherever possible.

- F. Set sill members and other members in bed of sealant as indicated, or with joint fillers or gaskets as indicated to provide weathertight construction. Comply with requirements of Division 7 for sealants, fillers, and gaskets.
- G. Refer to "Glass and Glazing" Section of Division 8 for installation of glass and other panels indicated to be glazed into doors and framing, and not preglazed by manufacturer.
 - 1. Refer to Drawings for locations of insulated panels which may occur in place of glazing and/or at interior side behind glazing in applied stops.

3.3 ADJUSTING:

- A. Adjust operating hardware to function properly, for smooth operation without binding, and for weathertight closure.

3.4 CLEANING:

- A. Clean the completed system, inside and out, promptly after installation, exercising care to avoid damage to coatings.
- B. Clean glass surfaces after installation, complying with requirements contained in the "Glass and Glazing" Section for cleaning and maintenance. Remove excess glazing and sealant compounds, dirt and other substances from aluminum surfaces.

3.5 PROTECTION:

- A. Institute protective measures required throughout the remainder of the construction period to ensure that aluminum entrances and storefronts will be without damage or deterioration, other than normal weathering, at time of acceptance.

3.6 FIELD QUALITY CONTROL:

- A. Water Spray Test – After the installation cure time of the sealant, hose nozzle water test 50 LF of storefront perimeter in keeping with AAMA 501.2 standards. No water penetration is accepted.
- B. If failure occurs, re-test failed unit(s). After repairs have been made, test a minimum of an additional 50 LF at no expense to the Owner.

END OF ALUMINUM ENTRANCES AND STOREFRONTS

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SECTION 08 7100

DOOR HARDWARE

PART 1 – GENERAL

1.01 SUMMARY

- A. Section includes hardware for doors specified in “Hardware Sets”.
- B. Related Divisions:
 - 1. Division 03 Concrete
 - 2. Division 06 Rough & Finish Carpentry
 - 3. Division 07 Joint Sealants
 - 4. Division 08 Openings
 - 5. Division 09 Finishes
 - 6. Division 10 Specialties
 - 7. Division 13 Special Construction
 - 8. Division 26 Electrical
 - 9. Division 27 Communications
 - 10. Division 28 Electronic Safety and Security

1.02 REFERENCES

- A. American National Standards Institute/Builders Hardware Manufacturers Association (ANSI/BHMA):
 - 1. ANSI/BHMA A156.1 Butts & Hinges (2016)
 - 2. ANSI/BHMA A156.2 Bored & Preamsembled Locks & Latches (2017)
 - 3. ANSI/BHMA A156.3 Exit Devices (2020)
 - 4. ANSI/BHMA A156.4 Door Controls – Closers (2019)
 - 5. ANSI/BHMA A156.5 Cylinders and Input Devices for Locks (2020)
 - 6. ANSI/BHMA A156.6 Architectural Door Trim (2015)
 - 7. ANSI/BHMA A156.7 Template Hinge Dimensions (2016)
 - 8. ANSI/BHMA A156.8 Door Controls – Overhead Stops and Holders (2015)
 - 9. ANSI/BHMA A156.16 Auxiliary Hardware (2018)
 - 10. ANSI/BHMA A156.18 Materials & Finishes (2020)
 - 11. ANSI/BHMA A156.19 Power Assist & Low Energy Power Operated Doors (2019)
 - 12. ANSI/BHMA A156.21 Thresholds (2019)
 - 13. ANSI/BHMA A156.22 Door Gasketing Systems (2017)
 - 14. ANSI/BHMA A156.26 Continuous Hinges (2017)
 - 15. ANSI/BHMA A156.28 Keying Systems (2018)
 - 16. ANSI/BHMA A156.33 Internally Powered Architectural Hardware Devices (2019)
 - 17. ANSI/BHMA A156.35 Power Supplies for Electronic Access Control (2020)
- B. International Code Council/American National Standards Institute (ICC/ANSI)/ADA:
 - 1. ICC/ANSI A117.1 Standards for Accessible and Usable Buildings and Facilities.
- C. Door and Hardware Institute (DHI):
 - 1. DHI Publication – Abbreviations and Symbols (2019).
 - 2. DHI Publication – Installation Guide for Doors and Hardware (2020).
 - 3. DHI Publication – Sequence and Format of Hardware Schedule (2019).

- D. National Fire Protection Agency (NFPA):
 - 1. NFPA 70 National Electrical Code.
 - 2. NFPA 80 Standard for Fire Doors and Other Opening Protectives.
 - 3. NFPA 105 Standard for the Installation of Smoke Door Assemblies.

1.03 SUBMITTALS

- A. Submit in accordance with Conditions of the Contract and Division 01 Administrative Requirements and Submittal Procedures Section.
- B. Shop Drawings:
 - 1. Schedule hardware in vertical format using the DHI publication Sequence and Formatting for the Hardware Schedule.
 - 2. Include abbreviations and symbols page to include manufacturers' abbreviations, finish code descriptions, and fastener abbreviations including descriptions according to the DHI publication Abbreviations and Symbols.
 - 3. Detail headings referencing the Architect's heading, opening number, locations, fire rating, handing, degree of opening, and description of the opening elements. Include Voltage, amperage, and operational descriptions for openings that have electrified hardware.
 - 4. Coordinate final door hardware schedule with doors, frames, and related work listing proper sizing of hardware, addressing door thickness, handing, function, mounting accessories, and finish of hardware.
 - 5. List related door devices specified in other Sections for each opening.
 - 6. Architectural Hardware Consultant (AHC), as certified by DHI, who will affix seal attesting to completeness and correctness, including the review of the hardware schedule prior to submittal.
- C. Product Data:
 - 1. Furnish manufacturers' catalog sheets on design, grade, and function of items listed in hardware schedule. Submit only relevant information and circle or highlight the technical information including: model numbers, sizing information, voltage and amperage requirements, options and accessories required, means of fastening, listings of fire-rated applications, and finishes.
- E. Templates:
 - 1. Within fourteen days of receiving approved door hardware submittals submit complete list of templates for each hardware item to the opening manufacturers and the installers. Include detailed lists of the hardware location requirements for mortised and surface applied hardware.
- F. Wiring Diagrams: Detail a title block for each drawing that includes the project name, project address, architect name, architect's opening number, hardware set, date, and name of the author.
 - 1. Elevation Riser Drawings:
 - a. Furnish one set of elevation drawings with each hardware schedule submittal for hardware sets that contain electrified hardware. Illustrate the openings with proportional representations of the opening and electrified hardware components and dimension their mounting locations as well as sizes of junction boxes and power supplies. Label the components, wire quantities and gauges, high voltage requirements, as well as other building interfaces. Create a legend that complements the drawings with brand names, model numbers, and include voltage and amperage requirements. Add an operational description that includes the normal state of the door, ingress, egress, and what happens in case of power loss or fire alarm activation and any special conditions.
 - b. Upon receipt of approved hardware correct and resubmit elevation drawings with the point-to-point and system drawings.
 - 2. Point-to-Point and System Drawings: Upon receipt of approved hardware schedule, submit point-to-point per hardware set and a system drawing. Cross-reference all wiring diagrams and the associated drawings to each other.

- a. Point-to-Point Drawings: Draw each product in a realistic representation including each terminal including those not used, and lines representing wires from component to component, labeling wire colors and gauges.
 - b. System Drawing: illustrate all equipment and building interfaces required for the entire system. Include room labels and locations, opening numbers and locations.
- G. Closeout Submittals: Include the following information as well as highlight and flag fire rated openings for annual inspections:
 1. Cover page with required information:
 - a. Project name
 - b. Hardware supplier's name and contact information.
 - c. Date of substantial completion.
 2. Final record hardware schedule.
 3. Product Data.
 4. Keying Schedule.
 5. Record Wiring Diagrams.
 - a. System Drawing.
 - b. Elevations.
 - c. Point-to-Point Drawings with all final wire colors noted as terminated. (Include network IP and/or MAC addresses of field devices).
 6. Operating and Maintenance Manual.
 7. Warranty Information.
 8. Maintenance service agreement(s).

1.04 QUALITY ASSURANCE

- A. Hardware supplier shall employ an Architectural Hardware Consultant (AHC) as certified by DHI and a member of the seal program who will be available at reasonable times during course of work for Project hardware consultation.
 1. Electrified Door Hardware Supplier Qualifications: Experienced door hardware supplier who has completed projects with electrified door hardware similar in material, design, and extent to that is indicated for this Project, whose work has resulted in construction with a record of successful in-service performance.
 2. Access and Electrified Security Supplier Qualifications: Experienced supplier who has completed projects with access and electrified security door hardware similar in material, design, and extent to that is indicated for this Project, whose work has resulted in construction with a record of successful in-service performance and be a factory authorized distributor.
- B. Where openings are required to be accessible door hardware shall conform to ICC/ANSI A117.1.
- C. Fire Rated Door Assemblies: Where fire-rated door assemblies are indicated, provide door hardware complying with NFPA 80 that are listed and/or labeled by a qualified testing agency for fire-protection ratings indicated.
- D. Smoke and Draft Control Door Assemblies: Where smoke and draft control doors are required, provide door hardware that meets requirements of assemblies in compliance with NFPA 105.
- E. Door hardware certified to ANSI/BHMA standards as noted, manufacturer must participate and be listed in BHMA Certified Products Directory.
- F. Substitution requests shall be submitted in compliance with Division 01: create a comparison chart that includes the testing information as well as the warranty for both the specified product and the proposed substitution. Include the reason for requesting the substitution, clear catalog copy highlighting the proposed product and options,

compliance statement, technical data, product warranty and lead time, to show how the proposed can meet or exceed established level of design, function, and quality.

1. Items listed with no substitute manufacturers have been requested by the Owner to meet existing standard and will not be reviewed for substitution unless the product is no longer available.

G. Meetings: Comply with requirements in Division 01 Section "Project Meetings."

1. Low-voltage Coordination Meeting
 - a. Prior to furnishing door hardware submittals, convene a low-voltage coordination meeting. Meeting participants should include all affected trades including the following, but not limited to: Contractor, installer, supplier, electrical contractor, security consultant and installer, Owner's IT representative, and fire alarm consultant.
 - b. Review sequence of operation for each opening with electrified hardware to ensure that every opening functions properly for the Owner's use.
 - c. Discuss the types of electrified door hardware, inspection, and electrical roughing-in and other preparatory work performed by other trades.
 - d. Verify wire quantities, wire types, wire sizes, conduit sizes, and locations including if the power supplies will be centrally located or if they will be located near each opening.
 - e. Coordinate the door hardware, power supplies, back-up power requirements, access control components, fire alarm interfaces, elevator controls, and related building systems have all proper and necessary components to interface and operate correctly.
2. Keying Meeting
 - a. Within fourteen days of receiving approved door hardware submittals, contact Owner to establish a keying conference. Include keying meeting decisions into final keying schedule submittal after reviewing the following, but not limited to:
 - i. Function of the building, flow of traffic, individual area's purpose, and degree of security.
 - ii. Lock functions and operation.
 - iii. Preliminary key system schematic diagram.
 - iv. Verify existing keyway(s), and/or proposed keyway(s)
 - v. Visual key and cylinder identification
 - vi. Quantity of keys required including master level keys, change keys, and keys per lock.
 - vii. Review the key control system.
 - viii. Determine the recipient and contact information for the delivery of keys and accessories.
3. Pre-installation Meeting
 - a. Convene meeting within fourteen days of receiving approved door hardware submittals. Participants from all affected buildings trades shall attend. Minimum participants should include: Contractor, installer, material supplier, manufacturer representatives, electrical contractor, security consultant, and fire alarm consultant.
 - b. Inspect and discuss preparatory work performed by other trades.
 - c. Include in-conference decisions regarding proper installation methods and procedures for receiving and handling hardware.
 - d. Review all system, elevation, and point-to-point drawings to ensure that all necessary components are provided and detailed.
 - e. Review and finalize construction schedule and verify availability of materials, installer's personnel, equipment, and facilities needed to make progress and avoid delays.
 - f. Review required testing, inspecting, and certifying procedures.

H. Installer Qualifications: Specialized in performing installation of this Section and have five years minimum documented experience.

1. Electrified Hardware Supplier Qualifications: Experienced door hardware installer who has installed projects with electrified door hardware 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.

2. Access Control and Electrified Security Supplier Qualifications: Experienced installer who has completed projects with access and electrified security door hardware 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 and be a factory authorized to install and commission the system.

1.05 DELIVERY, STORAGE, AND HANDLING

- A. Pack each item complete with necessary parts and fasteners in manufacturer's original packaging.
- B. Mark hardware that is not bulk packed with architect's opening number, hardware set number, and item number for each type of hardware. Include keyset symbols and corresponding hardware component for keyed products. Mark hardware that is bulk packed with manufacturers' part number and reference all hardware sets associated.
- C. Deliver hardware to the job site according to the phasing agreed upon in the pre-installation meeting. Inventory the delivery with the supplier's assistance. Immediately note shortages and damages on the shipping receipts and bill of lading. Coordinate replacement or repair with the supplier.
- D. Deliver permanent keys, cores, access control credentials, software, and related accessories directly to Owner via registered mail or overnight package service. Establish the instructions for delivery to Owner at "Keying Conference."
- E. Provide a clean, dry, and secure room for hardware delivered. Shelf hardware off the floor and with larger items of hardware stored on pallets. Arrange locksets and keyed cylinders by opening number. Organize the balance of hardware by brand, model of hardware, and hardware set number. Leave the door markings of the hardware visible for installers.
- F. Waste Management and Disposal: Separate waste materials for use or recycling in accordance with Division 01.

1.06 WARRANTY

- A. General Warranty: Comply Division 01 for Warranty requirements.
- B. Special Warranty: Warranties specified in this article will not deprive Owner of other rights.
 1. Ten years for manual door closers.
 2. Five years for locks.
 3. Five years for exit devices.
 4. One year for electromechanical door hardware.
 5. All access and electrified security equipment and systems will be warranted for a period of one (1) year commencing with the filing date of the Notice of Completion, provided the system has been inspected and signed off by a factory authorized installer and the factory authorized commissioning agent.

1.07 MAINTENANCE

- A. Maintenance Tool and Instructions: Furnish a complete set of specialized tools and maintenance instructions for Owner's continued adjustment, maintenance, removal, and replacement of door hardware.

PART 2 – PRODUCTS

2.01 MATERIALS

- A. General:

1. Produce hardware units of basic metal and forming method using manufacturer's standard metal alloy, composition, temper, and hardness, but in no case of lesser (commercially recognized) quality than specified within this specification section for applicable hardware units for finish designations indicated.

B. Fasteners:

1. Furnish screws for installation with each hardware item. Use only fasteners that are furnished by the hardware manufacturer to meet the manufacturer's templating requirements, warranty and NFPA 80 requirements.
2. Provide Phillips flat-head screws except as otherwise indicated.
3. Finish exposed screws to match hardware finish or, if exposed in surfaces of other work, to match finish of this other work as closely as possible including "prepared for paint" surfaces to receive painted finish.
4. Use machine screws with lead expansion shields at hardware mounting to masonry walls and floors.
5. Wood screw with plastic anchors at drywall applications without reinforcement and wood screws at applications with reinforcements.
6. Provide concealed fasteners for hardware units that are exposed when door is closed except to the extent no standard units of type specified are available with concealed fasteners.
 - a. Do not use thru bolts for installation where bolt head or nut on opposite face is exposed in other work unless their use is the only means of reinforcing the work adequately to fasten the hardware securely.
 - b. Where thru-bolts are used as a means of reinforcing the work, provide sleeves for each thru-bolt or use sex nut fasteners.
7. At exterior openings furnish stainless-steel fasteners for exposed fasteners, for example thresholds and screw-applied weatherstripping.

2.02 ALUMINUM GEARED CONTINUOUS HINGES

- A. Continuous hinges of one manufacturer as listed for continuity of design and consideration of warranty.

- B. Standards: Products to be certified and listed by ANSI/BHMA A156.26 Grade 1.

- C. Determine final model numbers and accessories required using the following criteria:

1. Door inset in relation to the frame face.
2. Door thickness and weight.
3. At fire rated openings provide hinges that carry a UL certification, up to and including 90-minute applications for wood doors and up to 3-hour applications for metal doors and provide studs as required by the manufacturer's listings.
4. Provide heavy-duty hinges for high frequency and exterior applications.
5. When full width of opening is required, use hinges that are designed to swing door completely from opening when door is opened to 95 degrees.
6. Size length of hinge to equal the actual door height unless otherwise stated in hardware sets.

- D. Material and Design:

1. Base material: Anodized aluminum manufactured from 6063-T6 material; unexposed working metal surfaces be coated with TFE dry lubricant.
2. Bearings:
 - a. Continuous hinges are to have a minimum spacing between bearings of 2-9/16". Typical door from 80" to 84" in height to have a minimum of 32 bearings.
3. Options:
 - a. Provide factory-cut preparations for concealed electric power transfers.

- E. Acceptable Manufacturers:

1. Hager
2. Bommer

3. Select

2.03 POWER TRANSFER

- A. Power transfer of one manufacturer as listed for continuity of design and consideration of warranty.
- B. Products to be certified and listed by the following:
1. UL Listed Miscellaneous Fire Door Accessories.
 2. UL 10C Listed for up to 3 hours on fire-rated doors and frames.
 3. Classified according to Uniform Building Code (UBC) Standard 7-2, Fire Test of Door Assemblies (1997).
- C. Design:
1. Stainless steel tubular wire transfer and cast housing with steel back boxes to provide weather and tamper resistance when door is open or closed.
 2. Mortise door and frame installation
 3. Two 18-gauge wires, 5 amps @ 12/24 VAC/DC.

D. Acceptable Manufacturers:

Hager
SDC

2.04 COORDINATORS

- A. Coordinators: Provide for labeled pairs of doors with automatic flush bolts or with vertical rod exit device with a mortise-locking device per hardware schedule. Provide filler piece to extend full width of stop on frame. Provide mounting brackets for closers and special preparation for latches where applicable.

B. Acceptable Manufacturers:

Hager
Rockwood
Trimco

2.05 EXIT DEVICES

- A. Exit Devices of one manufacturer as listed for continuity of design and consideration of warranty. Touchpad type finish to match balance of door hardware.
- B. Standards: Manufacturer to be certified and/or listed by the following:
1. BHMA Certified ANSI A156.3 Grade 1.
 2. UL/cUL Listed for up to 3 hours for "A" labeled doors.
 3. UL10C/UBC 7-2 Positive Pressure Rated.
 4. UL10B Neutral Pressure Rated.
 5. UL 305 Listed for Panic Hardware.
 6. 2007 Florida Building Code Certification Number: FL9481.1.
 7. ANSI/BHMA A250.13 Severe Windstorm Resistant Component.
- C. Material and Design:
1. Provide exit devices with actuators that extend a minimum of one-half of door width.
 2. Where trim is indicated in hardware sets provide the lever design to match design of lock levers.
 3. Exit device to mount flush with door.
 4. Latch bolts:

- a. Rim device – 3/4” throw, Pullman type with automatic dead-latching, stainless steel
 - b. Surface vertical rod device – Top 1/2” throw, Pullman type with automatic dead-latching, stainless steel.
Bottom 1/2” throw, Pullman type, held retracted during door swing, stainless steel.
5. Fasteners: Wood screws, machine screws, and thru bolts.

D. Lock and Latch Functions: Function numbers and descriptions of manufacturer’s series and lever styles indicated in door hardware sets.

E. Acceptable Manufactures:

Hager
Von Duprin
Sargent

F. Electric Modifications:

1. Motorized Latch Retraction (MLR): An electric motor retracts the latch bolt for momentary or maintained periods of time.
2. Provide Request to Exit (REX) switches as scheduled.

2.06 CYLINDERS AND KEYING

A. Cylinders of one manufacturer as listed for continuity of design and consideration of warranty.

B. Products to be certified and listed by the following:

1. Auxiliary Locks: ANSI/BHMA A156.5

C. Cylinders:

1. Provide cylinders matched to the types required for hardware that has a locking function and for keyed electronic functions. Furnish with appropriate collars, cams, and tailpieces to fit and operate associated hardware. Stacking collars is not acceptable, a single collar of proper size is required.
2. Manufacturer’s standard tumbler type, seven-pin IC core and seven-pin conventional core supported by the Hager H series keyway.
3. Manufacturer’s standard tumbler type six-pin conventional cylinder.
4. Manufacturer’s six-pin seven-pin small format interchangeable core (SFIC).
5. Provide concealed key control (CKC) at cylinder by stamping or permanently marking the keyset symbol in a location on the cylinder that is concealed when installed.

D. Keying:

1. Provide a new factory registered key system.
2. Provide a bitting list to Owner of combinations as established and expand to twenty-five percent for future use or as directed by Owner.
 - a. Include all the keysets and bittings of the original key system creating one clean version of the entire key system.
3. Keys to be shipped directly to the Owner’s Representative as established during the keying conference.
 - a. Package the keys in individual envelopes, grouped by keyset symbol, and label envelopes with project name, factory registry number, and keyset symbol.
4. Stamp large bow key blanks with visual key control (keyset symbol) and “Do Not Duplicate”.
5. Provide interchangeable cores with construction cores as required per the keying meeting.
6. Provide construction keyed cylinders as required per the keying meeting.
7. Single seven-pin key will operate both conventional cores and SFIC small format interchangeable cores. (Hager H series keyway)

E. Acceptable Manufacturers:

Hager
Schlage
Sargent

2.07 PUSH/PULL PLATES AND BARS

A. Push/Pull plates and bars of one manufacturer as listed for continuity of design and consideration of warranty.

B. Standards: Manufacturer to be certified by the following:

1. Architectural Door Trim: ANSI/BHMA A156.6.
2. Americans with Disabilities Act Accessibility Guidelines (ADAAG).

C. Pull Bar Sets: 1" round bar stock with 3" clearances from face of door.

D. Acceptable Manufacturers:

Hager
Rockwood
Trimco

2.08 CLOSERS

A. Closers of one manufacturer as listed for continuity of design and consideration of warranty. Unless otherwise indicated on hardware schedule, comply with manufacturer's recommendations for size of closer, depending on width of door, frequency of use, atmospheric pressure, ADAAG requirements, and fire rating.

B. Standards: Manufacturer to be certified by the following:

1. BHMA Certified ANSI A156.4 Grade 1.
2. ADA Complaint ANSI A117.1.
3. UL/cUL Listed up to 3 hours.
4. UL10C Positive Pressure Rated.
5. UL10B Neutral Pressure Rated.

C. Material and Design:

1. Provide aluminum non-handed bodies with full plastic covers.
2. Closers will have separate staked adjustable valve screws for latch speed, sweep speed, and backcheck.
3. Provide Tri-Pack arms and brackets for regular arm, top jamb, and parallel arm mounting.
4. Double heat-treated steel, tempered springs.
5. Precision machined heat-treated steel piston.
6. Triple heat-treated steel spindle.
7. Full rack and pinion operation.

D. Mounting:

1. Out-swing doors surface parallel arm mount closers except where noted on hardware schedule.
2. In-swing doors surface regular arm mount closers except where noted on hardware schedule.
3. Provide brackets and shoe supports for aluminum doors and frames to mount fifth screw.
4. Furnish drop plates where top rail conditions on door do not allow for mounting of closer and where backside of closer is exposed through glass.

E. Size closers in compliance with requirements for accessibility (ADAAG). Comply with following maximum opening force requirements.

1. Interior hinged openings: 5.0 lbs.
2. Fire-rated and exterior openings are to be adjusted to have minimum opening force allowable by authority having jurisdiction.

F. Fasteners: Provide self-reaming, self-tapping wood and machine screws, and sex nuts and bolts for each closer.

G. Acceptable manufacturers:

Hager
Norton
Sargent

2.09 LOW ENERGY POWER OPERATORS

A. Low energy power operators of one manufacturer as listed for continuity of design and consideration of warranty.

B. Products to be certified and listed by the following:

1. Power Assist and Low Energy Power Operated Doors: ANSI/BHMA A156.19.
2. ADA Complaint ANSI A117.1.

C. Materials and Design:

1. Self-contained electrical control unit, including necessary transformers, relays, rectifiers, and other electronic components for proper operation, switching and control of door up to 350 lbs. and include time delay for normal cycle.
2. On pairs of doors, door to be opened manually without the other door opening.
3. Operates as a mechanical closer if power is disconnected. Forces consistent with ANSI A117.1 and ANSI A156.19.
4. Provide delay switches for motor activation, exit device latch retraction interfacing, and hold open times. Hold open times to be adjustable from 1 second to continuous seconds.
5. Adjustable vestibule sequencing input for operation of two or more units. Specify 2-659-0240.
6. Adjustable powered swing degree from 80 degrees to 110 degrees.
7. Integral obstruction detection for closing and opening cycle.
8. Adjustable built-in stop set from 80 degrees maximum to 180 degrees manual swing.
9. When in "blow open" operation for smoke ventilation, operator will stay in the open position when loss of power.
10. Boost to close selectable on/off switch.

D. Signage: Provide signage in according to the requirements of ANSI/BHMA A156.19.

E. Acceptable Manufacturers:

Hager
LCN
Norton

F. Actuators:

1. Opening cycle activated by pressing switches with international symbol of accessibility and "PUSH TO OPEN" engraved on faceplate.
2. Switches installed in standard 2-gang electrical wall box and placed in a location in compliance with ANSI A117.1.
3. Wireless actuators optional.
4. Provide bollards as required where a suitable wall mount is not possible.

G. Acceptable Manufacturers:

Hager

MS Sedco
SDC

2.10 PROTECTIVE TRIM

- A. Protective trim of one manufacturer as listed for continuity of design and consideration of warranty.
- B. Size of protection plate: single doors, size two inches less door width (LDW) on push side of door, and one inch less door width on pull side of door. For pairs of doors, size one inch less door width (LDW) on push side of door, and 1/2 inch on pull side of door. Adjust sizes to accommodate accompanying hardware, such as, edge guards, astragals, and others.
1. Kick Plates 10" high or sized to door bottom rail height.
 2. Mop Plates 4" high.
 3. Armor Plates 36" high.
- C. Products to be certified and listed by the following:
1. Architectural Door Trim: ANSI/BHMA A156.6.
 2. UL.
- D. Material and Design:
1. 0.050" gage stainless steel.
 2. Corners square, polishing lines, or dominant direction of surface pattern so they run across door width of plate.
 3. Bevel top, bottom, and sides uniformly leaving no sharp edges.
 4. Countersink holes for screws. Space screw holes so they are no more than eight inches CTC, along a centerline not over 1/2" in from edge around plate. End screws maximum of 0.53" from corners.
- E. UL label stamp required on protection plates when top of plate is more than 16 inches above bottom of door on fire rated openings. Verify door manufacturer's UL listing for maximum height and width of protection plate to be used.

F. Acceptable Manufacturers:

Hager
Trimco
Burns

2.11 STOPS AND HOLDERS

- A. Stops and holders of one manufacturer as listed for continuity of design and consideration of warranty.
- B. Overhead Stops and Holders: Provide overhead stops and holders for doors that open against equipment, casework sidelights and other objects that would make wall stops/holders and floor stops/holders inappropriate. Provide sex bolt attachments for mineral core wood door applications.
- C. Products to be certified and listed by the following:
1. Overhead Stops and Holders: ANSI/BHMA A156.8 Grade 1.

D. Acceptable Manufacturers:

Hager
Glynn Johnson
Sargent

2.12 WALL READER/CONTROL UNIT (HS4/SVN)

- A. Where indicated in the hardware sets provide wall readers/control unit that are manufactured by one manufacturer for continuity of design and consideration of warranty.
- B. Wall Readers
 - 1. Include support for wall readers and be MiFare/DESfire capable. Secure reader to wall with a vandal resistant frame and tamper proof fasteners.
- C. Control Unit:
 - 1. Be 12VDC and compliant to ISO 15.93 and FCC Part 15 and certified to the following standards: CE, UL 294, FCC part 15.
 - 2. Provide Ethernet connectivity of all on-line devices via IPv4 addressing, either hardwired or BLUENet ZigBee 16 Channel Connection (802.15.4).
 - 3. Must support the ability to use 1 IP address, and connect 4 additional controllers using RS485 (10 card readers per IP address).
 - 4. Provide the ability to support 2 readers with on board programmable relays.
 - 5. Support a minimum of 400 foot in cable length for each card reader and support Anti-Pass back.
 - 6. Encryption between the controller and must meet 128-bit AES.
 - 7. Provide a minimum of 6 auxiliary inputs. Must support a minimum of 30 inputs per IP address without the use of an auxiliary input board or device.
 - 8. Provide two on board tamper option, and must include built in tamper switch input.
 - 9. During times of power failure: hold its designation and zones it belongs to, operational configuration, audit trail and a list of cancelled keys in non-volatile memory.
 - 10. Have the capability to operate both as an off-line stand-alone door controller or, be easily upgraded with additional hardware to function as an integrated part of the on-line EAC system.
- D. Acceptable Manufacturers:
 - 1. Hager.
 - 2. Approved equal.

2.13 MODULAR ACCESS CONTROL POWER SUPPLIES

- A. Power supplies of one manufacturer as listed for continuity of design and consideration of warranty.
- B. Products to be certified and listed by the following:
 - 1. UL Listed.
- C. Design:
 - 1. Use with modular access control systems.
 - 2. Field selectable filtered and regulated 12 VDC or 24 VDC constant voltage.
 - 3. 1-, 2-, 4-, and 6-AMP load capacities. Match the power supply amperage to the total load of the opening /system plus an additional thirty percent to cover line drop, as well as possible expansion.
 - 4. Circuit breaker protected AC input voltage; secondary output PTC protected.
 - 5. Fire alarm input provides simultaneous release of fail-safe locks and holders.
 - 6. Interface relay.
 - 7. LED status indicators provide information regarding AC input, DC output, and battery backup status.
 - 8. Separate inputs for activation switch on entry and egress and ingress side of opening.
 - 9. 5-amp hour battery backup.
 - 10. Input 115 VAC (230 VAC optional).
 - 11. Optional dual 12 VDC or 24 VDC output.

12. Optional power supply monitor module to monitor power supply status, A/C power, and D/C output and battery status.
 13. Boxes and enclosures containing security system components or cabling, which are easily accessible to employees or to the public, shall be provided with a keyed lock. Boxes above ceiling level in occupied areas of the building will not be considered accessible. Junction boxes and small device enclosures below ceiling level and easily accessible to employees or the public will be covered with a suitable cover plate and secured with tamper-proof screws.
- D. Include optional modules as required to properly interface, control, and sequence the hardware with the access control system.
- E. Acceptable Manufacturer:

Hager	29T4
	29TX

2.14 THRESHOLDS

- A. Thresholds of one manufacturer as listed for continuity of design and consideration of warranty.
- B. Set thresholds for exterior and acoustical openings in full bed of sealant with lead expansion shields and stainless-steel machine screws complying with requirements specified in Division 07 Section "Joint Sealants: Notched in field to fit frame by hardware installer. Refer to Drawings for special details.
- C. Standards: Manufacturer to be certified by the following:
1. Thresholds: ANSI/BHMA A156.21.
 2. American with Disabilities Act Accessibility Guidelines (ADAAG).
- D. Acceptable Manufacturers:

Hager
K.N. Crowder
Reese

2.15 DOOR GASKETING AND WEATHERSTRIP

- A. Door gasketing and weatherstrip of one manufacturer as listed for continuity of design and consideration of warranty.
- B. Provide continuous weatherstrip gasketing on exterior doors and provide smoke, light, or sound gasketing where indicated on hardware schedule. Provide noncorrosive fasteners for exterior applications.
1. Perimeter gasketing: Apply to head and jamb, forming seal between door and frame.
 2. Meeting stile gasketing: Fasten to meeting stiles, forming seal when doors are in closed position.
 3. Door bottoms: Apply to bottom of door, forming seal with threshold or floor when door is in closed position.
 4. Sound Gasketing: Cutting or notching for stop mounted hardware not permitted.
 5. Drip Guard: Apply to exterior face of frame header. Lip length to extend 4" beyond width of door.
- C. Products to be certified and listed by the following:
1. Door Gasketing and Edge Seal Systems: ANSI/BHMA A156.22.
 2. BHMA certified for door sweeps, automatic door bottoms, and adhesive applied gasketing.
- D. Smoke-Labeled Gasketing: Comply with NFPA 105 listed, labeled, and acceptable to Authorities Having Jurisdiction, for smoke control indicated.

1. Provide smoke-labeled gasketing on 20-minute rated doors and on smoke rated doors.
- E. Fire-Rated Gasketing: Comply with NFPA 80 listed, labeled, and acceptable to Authorities Having Jurisdiction, for fire ratings indicated.
- F. Refer to Section 08 1416 Wood Doors for Category A or Category B. Comply with UBC 7-2 and UL10C positive pressure where frame applied intumescent seals are required.
- G. Acceptable Manufacturers:

Hager
K.N. Crowder
Reese

2.16 DOOR POSITION SWITCHES

- A. Provide door position switches for openings that require door monitoring.
- B. Acceptable Manufacturers:

Non-Rated
Fire Rated

2.17 ACCESS AND SECURITY MANAGEMENT SYSTEM (HS4/SVN)

- A. System requirements
 1. Support central management of users' rights, access policies and credentialing.
 2. Application will be capable of implementing access policies through the assignment of entry permission based on door zones and calendars. Allow for schedules to be applied at doors, governing their remaining unlocked or locked condition.
 3. Allow for creation and editing of cardholder credentials.
 4. Provide views of events and alarms throughout the installation and be capable of triggering hardware and communicative actions-based system configuration.
 5. Capable of generating standard and custom reports and provide a detailed log of all system events as defined by the system operator.
 6. Capable of real time door access monitoring with on-line capability.
 7. System will support a combination of wireless and online (hardwired) readers to secure perimeter doors as well as battery powered electronic locks to secure all interior doors, manufactured in the and supported by the same manufacturer.
 8. Card readers and electronic locks shall be compatible with smart card (RFID) technologies, operating on the industry standard frequency of 13.56MHz MiFare 4k Bytes.
 - a. (50) MiFare Keycards
 - b. (2) Construction Keycards
- B. Software
 1. Incorporate 128-bit AES encrypted data.
 2. Server required that meets system requirements.
 3. The system must be capable of managing 4 million users, 64,000 doors, 256 calendars, 1024 zones, and 256 time zones, 1024 time periods, both with 8 intervals each.
 4. Support integration with other software systems through API.
 5. Be capable of being expanded throughout the site.

6. Capable of dynamic master-keying: each credential can change access privileges transparently “on the fly” without the need to visit the access control administrator to reprogram keycards and without the need to reprogram the electronic locks with a handheld programmer.
7. Lost keycard cancellation: Contactless smart cards be capable of conveying lists of cancelled keys to avoid having to reprogram locks with a handheld device any time a keycard is lost.
8. The software will be supplied ready to support any number and configuration of off-line and on-line stand-alone locks and wall readers, with the capacity to manage multiple or single sites.
9. A Portable Programming Device (PPD) for transferring information to and from the database for all off-line locks and wall readers will also be included.
10. Operator Groups will be defined hierarchically and be password protected to allow only authorized staff to make amendments to sections of the database for which they have responsibility.
11. Must have a proven Application Programming Interface (API) for interfacing with existing and well-established traditional access control systems.
12. Have a graphic map feature that will indicate to the operator where a system annunciated alarm is located.
13. Support an “Out of Site” feature which will work in conjunction with IN and OUT on-line readers to disable user access when leaving a facility and enabling user access when entering it.
14. Support a “Limited User Access” feature which can be set to allow a maximum number of users assigned to a door.
15. Support a “Limited User Occupancy” monitor which can be set to disallow access after the desired number is reached in an area.
16. Incorporate an activation date and time setting for user cards.
17. Allow multiple operator groups to be created with software features able to be individually allowed or denied to the group.
18. The system software will support the following optional features:
 - a. SPABASIC0
 - b. SPACE-OPT-0032 Graphical mapping
19. As a standard feature in all software versions, database import and export utilizing “flat files” will be supported only if database is synchronized.
20. Connect directly to the Electronic Access Control (EAC) application and be capable of making changes to the individual user access profile when a credential is presented and at the same time pass the list of recently cancelled cards on to the key and upload any stored “on key” audits of attempts to access doors and any low battery warnings from the stand-alone locks.

2.18 FINISHES

- A. Appearance of Finished Work: Variations in appearance of abutting or adjacent pieces are acceptable if within range of approved samples. Noticeable variations in the same piece are not acceptable. Variations in appearance of other components are acceptable if they are within range of approved samples.
- B. Comply with base material and finish requirements indicated by ANSI/BHMA A156.18 designations in hardware schedule.

PART 3 – EXECUTION

3.01 EXAMINATION

- A. Examine doors and frames, with installers present, for compliance with requirements for installation tolerances, labeled fire-rated construction, wall and floor construction, and other conditions affecting performance.
- B. Where hardware will be installed directly on walls inspect applications for blocking material of sufficient type and size for hardware.

- C. Examine roughing-in and cabling for electrical power systems to verify actual locations of wiring connections and wiring supplied matches the requirements as described in the wiring diagrams before electrified door hardware installation.
- D. Perform a site survey to determine proper mounting locations for all wirelessly communicating devices. Verify that the surrounding construction and equipment will not interfere with the communication between components.
- E. Where existing products will be reused, examine existing door and frame sizes, preps, swings, ratings, and compare to the specified hardware for compatibility and functionality. The hardware set specified should act as guide for design and function. Provide filler plates as needed to fill and repair existing materials. Test any existing to remain hardware for functionality and visually inspect for damage. Note any defective or damaged products as well as noting any code deficiencies and submit issues and estimated costs for direction of how to proceed with repair or replacement.
- F. Notify Architect via a prepared written report and endorsed by installer of any discrepancies between the door schedule, door types, drawings, and scheduled hardware. List conditions detrimental to application, to the proper and timely completion of the work and performance of the hardware. Proceed only after such discrepancies or conflicts have been resolved in writing.

3.02 INSTALLATION

- A. Install hardware using manufacturers' recommended fasteners and installation instructions, at height locations and clearance tolerances that comply with:
 - 1. NFPA 80
 - 2. NFPA 105
 - 3. ICC/ANSI A117.1
 - 4. DHI Publication – Installation Guide for Doors and Hardware
 - 5. Approved shop drawings
 - 6. Approved hardware schedule
- B. Install soffit mounted gaskets prior to other soffit mounted hardware ensuring a continuous seal around the perimeter of the opening without cutting or notching.
- C. Locate surface mounted door closers on stairwell side of stair doors, interior side of exterior openings, or on the room side of openings, unless it is a sterile room.
- D. Locate wall mounted bumper to contact the operating trim. Verify that pushbuttons of locksets do not contact the stop and inadvertently lock the door.
- E. Mount armor, mop, and kick plates flush with the bottom of the door and centered horizontally on the door.
- F. Notch thresholds with no larger than a 1/32-inch gap matching the frame profile. Set in a full bed of sealant complying with requirements specified in Division 07 Section "Joint Sealants" forming a tight seal between threshold and mounting surface. Caulk and seal the entire perimeter to prevent water leakage. Remove excess sealants immediately and clean the area thoroughly.
- G. Do not install surface mounted items until finishes have been completed on substrates involved. Set unit level, plumb and true to line location.
- H. Locate power supplies and junction boxes as directed and verified in the low-voltage coordination meeting.

- I. Perform final connections of the system components to match the approved operational narratives. Use cable markers to label wires at each termination or end to match the final wiring diagrams. Terminate wiring in accordance with the manufacturer's recommendations. Where quick-connects are seated correctly. Provide wire ties and adhesive pads to secure and organize wires in enclosures. Outside of enclosures seal terminations in waterproof connectors. Include record drawings of the point-point and the elevations in a plastic sleeve attached to the inside cover of the power supply/junction box enclosure for the Owner's use.

3.03 FIELD QUALITY CONTROL

- A. Schedule a final walk through to inspect hardware installation ten (10) business days before final acceptance of the Owner. Visually inspect for proper fasteners and verify that doors open, close, latch properly, and that openings are installed to meet NFPA 80 and ANSI A117.1 requirements. Correct deficiencies, including missing hardware immediately. Provide a written report detailing discrepancies of each opening within five (5) business days of the walk through.
- B. Prior to receiving certificate of occupancy have doors inspected by a Certified Fire and Egress Door Assembly Inspector (CFDAI), as certified by Intertek (ITS), submit a written report to the Owner and Contractor. Doors failing inspection must be adjusted, modified, or replaced to be within appropriate code requirements without delay.
- C. Test the functionality of electrified openings upon completion of the installation in accordance with the description of operation and the Owner's intent under the supervision of a factory authorized representative and an Owner's representative, verify that all features of the software are working correctly, including interfaces with any associated trades. Document the result of all tests and provide these results to the Owner and correct immediately.

3.04 ADJUSTMENT, CLEANING, AND DEMONSTRATING

- A. Prior to final adjustments, the HVAC system must be completed and balanced. Test that all openings meet ANSI A117.1 for closer opening pressure, closing speed, latching, and hardware operating forces. Replace items that cannot be adjusted to operate freely and smoothly or as intended for application.
- B. Prior to final walk-through inspection, clean adjacent surfaces soiled by hardware installation. Clean finish hardware per manufacturer's instructions after final adjustments have been made. Remove all protection and replace items that cannot be cleaned to manufacturer's level of finish quality.
- C. Demonstration and training will be conducted as per the following sessions. All sessions will be recorded and turned over to the Owner for future use.
 1. Hardware Maintenance: Conduct a training class for building maintenance personnel demonstrating the adjustment, operation, and maintenance of mechanical and electrified hardware. Special tools for finish hardware to be turned over and demonstrated usage at the meeting.
 2. Key control system: Train the Owner's designated representative on the key control system demonstrating the permanent file keys, duplicate loaner keys, key receipts, key envelopes, key change identification sheets, bitting lists, tags, and labels. When key management software is provided training will be provided for the setup and usage of the software.
 3. Access control: Demonstrate the management and programming of the access control system including the following, but not limited to:
 - a. System administration personnel to manage the LAN and databases including updating, maintaining, and backing up the system and database software.
 - b. Instruct on all software features and programming for managing the credentials, users, access points, time zones, alarms and events, door monitoring, audit trails, and time schedules.

3.05 PROTECTION

- A. Leave manufacturer's protective film intact and, protect exit devices, locks, and surface mounted hardware with kraft paper or bubble wrap. Cover fire labels at painted products that bear a label with magnetic or masking tape. Keep protection in place until time of final cleaning and adjustment.

3.06 HARDWARE SET SCHEDULE

- A. Door hardware items have been placed in sets which are intended to be a guide of design, grade, quality, function, operation, and performance.
1. Review products that may require mounting accessories to meet door, frame, and swing conditions as these final details vary from manufacturer to manufacturer and provide as required.
 2. Where additional items of hardware are required for completion of the Work, a written statement of such omission, error, or other discrepancy is required to be submitted to the Architect, prior to bid date for clarification via an addendum.
 3. Abbreviations listed below do not appear in the manufacturer's literature, for any other abbreviations refer to manufacturer's literature:
 - a. LDW = Less than Door Width
 - b. LAR = Length as Required
 - c. QTY = Quantity
 - d. CTC = Centerline to Centerline
 - e. BTB = Back-to-Back mounting

3.07 HARDWARE SCHEDULE

Finish List

Code	Description
32D	Satin Stainless Steel
630	Satin Stainless Steel
ALM	Sprayed Aluminum
BLK	Black
CLR	Clear Anodized
MIL	Mill Finish
US26D	Chromium Plated, Dull
US32D	Stainless Steel, Dull

Manufacturer List

Code	Name
	By Others
DJ	Don-Jo
HA	Hager
HA	Hager Companies
HO	HS4

Hardware Sets

Set #01

Doors: 101

2 Continuous Hinge(s)	780-112HD x LAR EPT Prep	CLR	HA
2 Power Transfer(s)	2-679-0623	ALM	HA
2 Exit Device(s)	4501 SVR WR MLRX FEC	US32D	HA
1 Rim Cylinder(s)	3901 SFIC	US26D	HA
1 Cylinder Core(s)	3969-C	US26D	HA
2 Door Pull(s)	H 12L	US32D	HA
2 Overhead Stop(s)	7016 SRF	US32D	HA
1 Pair Operator	8319 Push	ALM	HA
1 Vertical Rod Protector	81	630	DJ
1 Vertical Rod Protector	83	630	DJ
1 Threshold	520S N x LAR ADA Door Threshold	MIL	HA
1 Weatherstrip	By Frame Mfr./Supplier		
1 Meeting Stiles	By Door Mfr./Supplier		
2 Sweep(s)	750S N x LAR	32D	HA
2 Door Position Switch(es)	2-679-0626		HA
1 Wall Reader	WRDB0A4B0		HO
1 Actuator	8228-02H/00 8226-06M	US32D	HA
1 Actuator	8228-02H/00	US32D	HA
1 Power Supply(s)	Central Power Supply (See Misc Set)		HA
1 Wiring Diagrams	Wiring Diagrams		

Operational Description:

During Scheduled Hours:

Doors are normally closed and unlocked.

Free ingress and egress at all times, by manually opening door or by pressing actuator.

Operators are disabled upon loss of power.

After Business Hours:

Doors are normally closed and locked.

Valid credential allows entry and enables outside actuator.

Free egress at all times, by manually opening door or by pressing actuator.

Upon loss of power, operator will be disabled and battery backup will allow operation for 4-6 hours.

Doors are monitored by access control system.

Door must be tested as an assembly for International Building Code compliance.

Set #02

Doors: 104

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Set #02

1 Continuous Hinge(s)	780-111HD x LAR EPT/Prep	CLR	HA
1 Power Transfer(s)	2-679-0623	ALM	HA
1 Exit Device(s)	4501 RIM MLRX FEC	US32D	HA
1 Rim Cylinder(s)	3901 SFIC	US26D	HA
1 Cylinder Core(s)	3969-C	US26D	HA
1 Overhead Stop(s)	7016 SRF	US32D	HA
1 Single Operator	8318 Push	ALM	HA
1 Kick Plate(s)	190S 10" x 2" LDW	US32D	HA
1 Threshold	520S N x LAR	MIL	HA
1 Weatherstrip	881S N x LAR	MIL	HA
1 Sweep(s)	770S V x LAR	MIL	HA
1 Rain Drip	810S x LAR	MIL	HA
1 Door Position Switch(es)	2-679-0626		HA
1 Wall Reader	WRDB0A4B0		HO
2 Actuator	8228-02H/00	US32D	HA
1 Power Supply(s)	Central Power Supply (See Misc Set)		HA
1 Wiring Diagrams	Wiring Diagrams		

Operational Description:

Door is normally closed and locked.

Valid credential allows entry and enables outside actuator.

Free egress at all times, by manually opening door or by pressing actuator.

Upon loss of power, operator will be disabled and battery backup will allow operation for 4-6 hours.

Door is monitored by access control system.

Door must be tested as an assembly for International Building Code compliance.

Set #03

Doors: 201, 202, 203

1 Cylinder Housing(s)	3901/3902 SFIC (as req'd)	US26D	HA
1 Cylinder Core(s)	3969-C	US26D	HA
1 Balance of Hardware	By Door Mfr/Supplier		

Doors must be tested as an assembly for International Building Code compliance.

Set #04

Doors: 102, 103

1 Balance of Hardware	By Door Mfr/Supplier

Doors to fixed.

Must be tested as an assembly for International Building Code compliance.

Set #MISC

Doors: MISC

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Set #MISC

1	Card Encoder	EC904B0US		HO
1	Software	SPABASIC0		HO
1	Alarm & Events Module	SPACE-OPT-0032		HO
1	Smart Cards	PCM04KHA0001-50		HO
2	Construction Cards	PCM01KC00		HO
	Power Supply	29T4/29TX (Type & Qty as Req'd)	BLK	HO
	Battery Backup	2-679-1002		HO
	Control Unit	CU42E0TUS		HO
	Battery Enclosure(s)	NEMA Rated Battery Enclosure By Others		

SECTION 09 2900

GYPSUM BOARD

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. Section Includes:
 - 1. Interior gypsum board.
 - 2. Tile backing panels.
- B. Related Requirements:
 - 1. Division 09 Section "Non-Structural Metal Framing" for non-structural framing and suspension systems that support gypsum board panels.

1.3 ACTION SUBMITTALS

- A. Product Data: For each type of product.
- B. Samples: For the following products:
 - 1. Trim Accessories: Full-size Sample in 12-inch- long length for each trim accessory indicated.

1.4 DELIVERY, STORAGE AND HANDLING

- A. Store materials inside under cover and keep them dry and protected against weather, condensation, direct sunlight, construction traffic, and other potential causes of damage. Stack panels flat and supported on risers on a flat platform to prevent sagging.

1.5 FIELD CONDITIONS

- A. Environmental Limitations: Comply with ASTM C 840 requirements or gypsum board manufacturer's written recommendations, whichever are more stringent.

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- B. Do not install paper-faced gypsum panels until installation areas are enclosed and conditioned.
- C. Do not install panels that are wet, those that are moisture damaged, and those that are mold damaged.
 - 1. Indications that panels are wet or moisture damaged include, but are not limited to, discoloration, sagging, or irregular shape.
 - 2. Indications that panels are mold damaged include, but are not limited to, fuzzy or splotchy surface contamination and discoloration.

PART 2 - PRODUCTS**2.1 PERFORMANCE REQUIREMENTS**

- A. STC-Rated Assemblies: For STC-rated assemblies, provide materials and construction identical to those tested in assembly indicated according to ASTM E 90 and classified according to ASTM E 413 by an independent testing agency.

2.2 GYPSUM BOARD, GENERAL

- A. Size: Provide maximum lengths and widths available that will minimize joints in each area and that correspond with support system indicated.

2.3 INTERIOR GYPSUM BOARD

- A. Gypsum Ceiling Board, Type X: ASTM C 1396/C 1396M.
 - 1. Thickness: 5/8 inch.
 - 2. Long Edges: Tapered or tapered and featured (rounded or beveled) for prefilling.
- B. Abuse-Resistant Gypsum Board: ASTM C 1396/C 1396M gypsum board, tested according to ASTM C 1629/C 1629M.
 - 1. Core: 5/8 inch, Type X.
 - 2. Surface Abrasion: ASTM C 1629/C 1629M, meets or exceeds Level 2 requirements.
 - 3. Indentation: ASTM C 1629/C 1629M, meets or exceeds Level 1 requirements.
 - 4. Soft-Body Impact: ASTM C 1629/C 1629M, meets or exceeds Level 1 requirements.
 - 5. Long Edges: Tapered.
- C. Moisture- and Mold-Resistant Gypsum Board: ASTM C 1396/C 1396M. With moisture- and mold-resistant core and paper surfaces.
 - 1. Core: 5/8 inch, Type X.
 - 2. Long Edges: Tapered.

3. Mold Resistance: ASTM D 3273, score of 10.

2.4 TILE BACKING PANELS

- A. Glass-Mat Interior Gypsum Board: ASTM C 1658/C 1658M. With fiberglass mat laminated to both sides. Specifically designed for interior use.
 1. Core: 5/8 inch.
 2. Long Edges: Tapered.
 3. Mold Resistance: ASTM D 3273, score of 10.

2.5 TRIM ACCESSORIES

- A. Interior Trim: ASTM C 1047.
 1. Material: Galvanized or aluminum-coated steel sheet or rolled zinc
 2. Shapes:
 - a. Cornerbead.
 - b. Bullnose bead.
 - c. U-Bead: J-shaped.
 - d. Expansion (control) joint.
- B. Aluminum Trim: Extruded accessories of profiles and dimensions indicated on the drawings.
 1. Aluminum: Alloy and temper with not less than the strength and durability properties of ASTM B 221, Alloy 6063-T5.
 2. Finish: Corrosion-resistant primer compatible with joint compound and finish materials specified.

2.6 JOINT TREATMENT MATERIALS

- A. General: Comply with ASTM C 475/C 475M.
- B. Joint Tape:
 1. Interior Gypsum Board: Paper.
 2. Tile Backing Panels: As recommended by panel manufacturer.
- C. Joint Compound for Interior Gypsum Board: For each coat use formulation that is compatible with other compounds applied on previous or for successive coats.
 1. Prefilling: At open joints, rounded or beveled panel edges, and damaged surface areas, use setting-type taping compound.

2. Embedding and First Coat: For embedding tape and first coat on joints, fasteners, and trim flanges, use setting-type taping compound.
 - a. Use setting-type compound for installing paper-faced metal trim accessories.
3. Fill Coat: For second coat, use sandable topping compound.
4. Finish Coat: For third coat, use setting-type, sandable topping compound.

2.7 AUXILIARY MATERIALS

- A. General: Provide auxiliary materials that comply with referenced installation standards and manufacturer's written recommendations.
- B. Laminating Adhesive: Adhesive or joint compound recommended for directly adhering gypsum panels to continuous substrate.
- C. Steel Drill Screws: ASTM C 1002, unless otherwise indicated.
 1. Use screws complying with ASTM C 954 for fastening panels.
- D. Sound Attenuation Blankets: ASTM C 665, Type I (blankets without membrane facing) produced by combining thermosetting resins with mineral fibers manufactured from glass, slag wool, or rock wool.
 1. Fire-Resistance-Rated Assemblies: Comply with mineral-fiber requirements of assembly.
- E. Acoustical Joint Sealant: Manufacturer's standard nonsag, paintable, nonstaining latex sealant complying with ASTM C 834. Product effectively reduces airborne sound transmission through perimeter joints and openings in building construction as demonstrated by testing representative assemblies according to ASTM E 90.
 1. Products: Subject to compliance with requirements, available products that may be incorporated into the Work include, but are not limited to, the following:
 - a. Accumetric LLC; BOSS 824 Acoustical Sound Sealant.
 - b. Grabber Construction Products; Acoustical Sealant GSC.
 - c. Pecora Corporation; AC-20 FTR or AIS-919.
 - d. Specified Technologies, Inc.; Smoke N Sound Acoustical Sealant.
 - e. USG Corporation; SHEETROCK Acoustical Sealant.
- F. Thermal Insulation: As specified in Section 07 21 00 "Thermal Insulation."

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine areas and substrates including welded hollow-metal frames and framing, with Installer present, for compliance with requirements and other conditions affecting performance.
- B. Examine panels before installation. Reject panels that are wet, moisture damaged, and mold damaged.
- C. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 APPLYING AND FINISHING PANELS, GENERAL

- A. Comply with ASTM C 840.
- B. Install ceiling panels across framing to minimize the number of abutting end joints and to avoid abutting end joints in central area of each ceiling. Stagger abutting end joints of adjacent panels not less than one framing member.
- C. Install panels with face side out. Butt panels together for a light contact at edges and ends with not more than 1/16 inch of open space between panels. Do not force into place.
- D. Locate edge and end joints over supports, except in ceiling applications where intermediate supports or gypsum board back-blocking is provided behind end joints. Do not place tapered edges against cut edges or ends. Stagger vertical joints on opposite sides of partitions. Do not make joints other than control joints at corners of framed openings.
- E. Form control and expansion joints with space between edges of adjoining gypsum panels.
- F. Cover both faces of support framing with gypsum panels in concealed spaces (above ceilings, etc.), except in chases braced internally.
 - 1. Unless concealed application is indicated or required for sound, fire, air, or smoke ratings, coverage may be accomplished with scraps of not less than 8 sq. ft. in area.
 - 2. Fit gypsum panels around ducts, pipes, and conduits.
 - 3. Where partitions intersect structural members projecting below underside of floor/roof slabs and decks, cut gypsum panels to fit profile formed by structural members; allow 1/4 to 3/8 inch wide joints to install sealant.
- G. Isolate perimeter of gypsum board applied to non-load-bearing partitions at structural abutments, except floors. Provide 1/4 to 1/2-inch wide spaces at these locations and trim edges with edge trim where edges of panels are exposed. Seal joints between edges and abutting structural surfaces with acoustical sealant.

- H. Attachment to Steel Framing: Attach panels so leading edge or end of each panel is attached to open (unsupported) edges of stud flanges first.
- I. STC-Rated Assemblies: Seal construction at perimeters, behind control joints, and at openings and penetrations with a continuous bead of acoustical sealant. Install acoustical sealant at both faces of partitions at perimeters and through penetrations. Comply with ASTM C 919 and with manufacturer's written recommendations for locating edge trim and closing off sound-flanking paths around or through assemblies, including sealing partitions above acoustical ceilings.
- J. Install sound attenuation blankets before installing gypsum panels unless blankets are readily installed after panels have been installed on one side.

3.3 APPLYING INTERIOR GYPSUM BOARD

- A. Install interior gypsum board in the following locations:
 - 1. Abuse-resistant Type X: At all interior walls, except as noted below for moisture- and mold-resistant type and glass-mat interior type.
 - 2. Ceiling Type: Ceiling surfaces.
 - 3. Moisture- and Mold-Resistant Type: As indicated on Drawings.
 - 4. Glass-Mat Interior Type: As required by tile manufacturer for base cove (wall tile) backing in toilet rooms.
- B. Single-Layer Application:
 - 1. On ceilings, apply gypsum panels before wall/partition board application to greatest extent possible and at right angles to framing unless otherwise indicated.
 - 2. On partitions/walls, apply gypsum panels vertically (parallel to framing) unless otherwise indicated or required by fire-resistance-rated assembly, and minimize end joints.
 - a. Stagger abutting end joints not less than one framing member in alternate courses of panels.
 - b. At high walls, install panels horizontally unless otherwise indicated or required by fire-resistance-rated assembly.
 - 3. Fastening Methods: Apply gypsum panels to supports with steel drill screws.

3.4 APPLYING TILE BACKING PANELS

- A. Glass-Mat, Water-Resistant Backing Panels: Comply with manufacturer's written installation instructions and install at locations indicated to receive base cove tile. Install with 1/4-inch gap where panels abut other construction or penetrations.
- B. Where tile backing panels abut other types of panels in same plane, shim surfaces to produce a uniform plane across panel surfaces.

3.5 INSTALLING TRIM ACCESSORIES

- A. General: For trim with back flanges intended for fasteners, attach to framing with same fasteners used for panels. Otherwise, attach trim according to manufacturer's written instructions.
- B. Control Joints: Install control joints at locations indicated on Drawings according to ASTM C 840 and in specific locations approved by Architect for visual effect.
- C. Interior Trim: Install in the following locations:
 - 1. Cornerbead: Use at outside corners.
 - 2. Bullnose Bead: Use where indicated.
 - 3. U-Bead: Use where indicated.
- D. Aluminum Trim: Install in locations indicated on Drawings.

3.6 FINISHING GYPSUM BOARD

- A. General: Treat gypsum board joints, interior angles, edge trim, control joints, penetrations, fastener heads, surface defects, and elsewhere as required to prepare gypsum board surfaces for decoration. Promptly remove residual joint compound from adjacent surfaces.
- B. Prefill open joints, rounded or beveled edges, and damaged surface areas.
- C. Apply joint tape over gypsum board joints, except for trim products specifically indicated as not intended to receive tape.
- D. Gypsum Board Finish Levels: Finish panels to levels indicated below and according to ASTM C 840:
 - 1. Level 1: Ceiling plenum areas, concealed areas, and where indicated.
 - 2. Level 2: Panels that are substrate for (wall) tile.
 - 3. Level 4: At panel surfaces that will be exposed to view unless otherwise indicated.
 - a. Primer and its application to surfaces are specified in Section 09 91 23 "Interior Painting".
- E. Glass-Mat Faced Panels: Finish according to manufacturer's written instructions.

3.7 PROTECTION

- A. Protect adjacent surfaces from drywall compound and promptly remove from floors and other non-drywall surfaces. Repair surfaces stained, marred, or otherwise damaged during drywall application.

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- B. Protect installed products from damage from weather, condensation, direct sunlight, construction, and other causes during remainder of the construction period.
- C. Remove and replace panels that are wet, moisture damaged, and mold damaged.
 - 1. Indications that panels are wet or moisture damaged include, but are not limited to, discoloration, sagging, or irregular shape.
 - 2. Indications that panels are mold damaged include, but are not limited to, fuzzy or splotchy surface contamination and discoloration.

END OF SECTION GYPSUM BOARD

SECTION 09 5153

ACOUSTICAL PANEL CEILINGS:

PART 1- GENERAL

1.1 RELATED DOCUMENTS:

- A. Drawings and general provisions of Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.
- B. Related work specified elsewhere includes:
 - 1. Section 061000 - "Rough Carpentry" (concealed P.T. wood blocking and grounds)
 - 2. Section 062000 - "Finish Carpentry"
 - 3. Section 072100 - "Building Insulation"
 - 4. Section 079200 - "Joint Sealers"
 - 5. Section 092116 - "Gypsum Drywall"
 - 6. Division 15 - (Mechanical items, etc., mounted in ceilings).
 - 7. Division 16 - (Electrical items, light fixtures, etc., mounted in ceilings).
- C. Thermal insulation and sound batts for installation on acoustical panel ceilings, if required, is specified in Section 07210 - "Building Insulation."

1.2 SUMMARY:

- A. This Section includes acoustical and non-acoustical panel ceilings installed with grid suspension systems.

1.3 SUBMITTALS:

- A. General: Submit the following in accordance with Conditions of Contract and Division 1 Specification Sections.
 - 1. Product data for each type of product specified.
 - 2. Samples for verification purposes of each type of exposed finish required, prepared on samples of size indicated below and of same thickness and material indicated for final unit of Work. Where finishes involve normal color and texture variations, include sample sets showing full range of variations expected.
 - a. 6-inch-square samples of each acoustical panel type, pattern, and color.

- b. Set of 12-inch-long samples of exposed suspension system members, including moldings, for each color and system type required.

1.4 **QUALITY ASSURANCE:**

- A. Installer Qualifications: Engage an experienced Installer who has successfully completed acoustical ceilings similar in material, design, and extent to those indicated for Project, and which is acceptable to manufacturer of acoustical products herein, as indicated by written statement by their manufacturer(s).
 - 1. Refer to Section 01015- "Special Conditions", for additional experience requirements and information.
- B. Fire-Performance Characteristics: Provide acoustical ceilings that are identical to those tested for the following fire-performance characteristics, per ASTM test method indicated below, by UL or other testing and inspecting organizations acceptable to authorities having jurisdiction. Identify acoustical ceiling components with appropriate markings of applicable testing and inspecting organization.
 - 1. Surface Burning Characteristics: As follows, tested per ASTM E 84 and complying with ASTM E 1264 for Class A products.
 - a. Flame Spread: 25 or less.
 - b. Smoke Developed: 50 or less.
- C. Acoustical Performance Characteristics: Provide acoustical ceiling systems which have been tested by UL or other acceptable independent testing organization, to certify compliance with STC and CAC minimum requirements indicated herein.
- D. Single-Source Responsibility for Ceiling Units: Obtain each type of acoustical ceiling unit from a single source with resources to provide products of consistent quality in appearance and physical properties without delaying progress of the Work.
- E. Coordination of Work: Coordinate layout and installation of acoustical ceiling units and suspension system components with other construction that penetrates ceilings or is supported by them, including light fixtures, HVAC equipment, and wall and partition systems.

1.5 **DELIVERY, STORAGE, AND HANDLING:**

- A. Deliver acoustical ceiling units to project site in original, unopened packages and store them in a fully enclosed space where they will be protected against damage from moisture, direct sunlight, surface contamination, and other causes.
- B. Before installing acoustical ceiling units, permit them to reach room temperature

and a stabilized moisture content.

- C. Handle acoustical ceiling units carefully to avoid chipping edges or damaging units in any way.

1.6 PROJECT CONDITIONS:

- A. Space Enclosure: Do not install interior acoustical ceilings until space is enclosed and weatherproof, wet-work in space is completed and nominally dry, work above ceilings is complete, and ambient conditions of temperature and humidity will be continuously maintained at values near those indicated for final occupancy.

1.7 EXTRA MATERIAL:

- A. Deliver extra materials to Owner. Furnish extra materials described below that match products installed, are packaged with protective covering for storage, and are identified with appropriate labels.

- 1. Acoustical and Non-Acoustical Ceiling Units: Furnish quantity of full-size units equal to 2.0 percent of amount installed, in whole unused cartons.

PART 2 - PRODUCTS

2.1 ACOUSTICAL CEILING UNITS, GENERAL:

- A. Standard for Acoustical Ceiling Units: Provide manufacturer's standard units of configuration indicated that comply with ASTM E 1264 classifications as designated by reference to types, patterns, acoustical ratings, and light reflectance, unless otherwise indicated.

- 1. Mounting Method for Measuring NRC: Type E-400 (plenum mounting in which face of test specimen is 15-3/4 inches [400 mm] away from the test surface) per ASTM E 795.

- B. Colors and Patterns: Provide products to match appearance characteristics indicated under each product type, or if not indicated, as selected by Architect from manufacturer's standard colors, surface textures, and patterns available for ceiling panels and exposed metal suspension systems of quality indicated herein.

2.2 ACOUSTICAL UNITS:

- A. Basis of Design, ACT-2 Armstrong Fine Fissured 1728– Or Approved Equal

2.3 NON-ACOUSTICAL UNITS:

- A. Not Applicable.

2.4 METAL SUSPENSION SYSTEMS, GENERAL:

- A. Refer to Drawings.
- B. Finishes and Colors: Provide manufacturer's standard factory-applied finish for type of system indicated, unless otherwise required.
1. High-Humidity Finish: Comply with ASTM C 635 requirements for "Coating Classification for Severe Environment Performance" where high-humidity finishes are indicated.
- a. Product/Manufacturer: "Environmental" grid system.
- 1) "Environmental ZXA Grid System," as manufactured by USG Interiors or Donn.
- 2) "Exposed Environmental (HD) Series," as manufactured by National Rolling Mills.
- 3) "Prelude XL" Environmental Tee System, as manufactured by Armstrong World Industries, Inc.
- 4) Equivalent products manufactured by lay-in panel manufacturer.
- C. Attachment Devices: Size for 5 times design load indicated in ASTM C 635, Table 1, Direct Hung unless otherwise indicated.
- D. Wire for Hangers and Ties: ASTM A 641, Class 1 zinc coating, soft temper, pre-stretched.
1. Gauge: Provide wire sized to that stress at 3 times hanger design load (ASTM C 635, Table 1, Direct-Hung), will be less than yield stress of wire, but provide not less than 0.106-inch diameter (12 gauge).
- E. Hanger Rods - (as required): Mild steel, zinc coated, or protected with rust-inhibitive paint.
- F. Angle Hangers - (as required): Angles with legs not less than 7/8 inch wide, formed with 0.0365-inch-thick galvanized steel sheet complying with ASTM A 446, Coating Designation G90, with bolted connections and 5/16-inch-diameter bolts.
- G. Edge Moldings and Trim: Metal or extruded aluminum of types and profiles indicated or, if not indicated, manufacturer's standard moldings for edges and penetrations that fit type of edge detail and suspension system indicated.

- H. Subject to compliance with requirements, provide suspension systems of one of the following:
1. Manufacturers of Steel Exposed Suspension Systems:
 - a. Same as ceiling panel unit manufacturer.
 - b. Armstrong World Industries, Inc.
 - c. Chicago Metallic Corporation.
 - d. Donn Corporation.
 2. Manufacturers of Moldings and Trim:
 - a. Construction Specialties.
 - b. Fry Reglet Corporation.
 - c. Gordon, Inc.
 - d. MM Systems.
 - e. Technical Ceiling Systems, Inc.
 - f. Same as Suspension system manufacturer.

2.4 NON-FIRE-RESISTANCE-RATED DIRECT-HUNG SUSPENSION SYSTEMS:

- A. Wide-Face Capped Double-Web Steel Suspension System: Main and cross-runners roll- formed from galvanized cold-rolled steel sheet, with prefinished 15/16-inch-wide metal caps on flanges; other characteristics as follows:
1. Structural Classification: Intermediate-Duty System.
 2. End Condition of Cross-Runners: Override (stepped) or butt-edge type, as standard with manufacturer.
 3. Cap Material and Finish:
 - a. Steel sheet, painted (typical).
 - b. Aluminum sheet with painted finish, (at "Environmental" grid systems).

PART 3 - EXECUTION

3.1 EXAMINATION:

- A. Examine substrates and structural framing to which ceiling system attaches or abuts, with Installer present, for compliance with requirements specified in this and other sections that affect installation and anchorage of ceiling system. Do not proceed with installation until unsatisfactory conditions have been corrected.

3.2 PREPARATION:

- A. Coordination: Furnish layouts for preset inserts, clips, and other ceiling anchors, or supports, whose installation is specified in other sections.
 - 1. Furnish galvanized inserts and similar devices as required for wood structure (if required), to other trades for installation well in advance of time needed for coordination of other work.
- B. Measure each ceiling area and establish layout of acoustical units to balance border widths at opposite edges of each ceiling. Avoid use of less-than-half-width units at borders, and comply with reflected ceiling plans.

3.3 INSTALLATION:

- A. General: Install acoustical ceiling systems to comply with installation standard referenced below, per manufacturer's current written instructions and Cisca "Ceiling Systems Handbook."
 - 1. Standard for Installation of Ceiling Suspension Systems: Comply with ASTM C 636.
- B. Arrange acoustical units and orient directionally patterned units, (if any) in a manner shown by reflected ceiling plans.
 - 1. Install panels with pattern running in one direction, as indicated, or if not indicated, as requested from and directed by Architect.
- C. Suspend ceiling hangers from building structural members and as follows, with system leveling tolerance of 1/8 inch in 12'-0":
 - 1. Install hangers plumb and free from contact with insulation or other objects within ceiling plenum that are not part of supporting structural or ceiling suspension system. Splay hangers only where required to miss obstructions and offset resulting horizontal forces by bracing, countersplaying, or other

equally effective means.

2. Where width of ducts and other construction within ceiling plenum produces hanger spacings that interfere with the location of hangers at spacings required to support standard suspension system members, install supplemental suspension members and hangers in form of trapezes or equivalent devices. Size supplemental suspension members and hangers to support ceiling loads within performance limits established by referenced standards.
 3. Secure wire hangers by looping and wire-tying, either directly to structures or to inserts, eyescrews, or other devices that are secure and appropriate for substrate, and in a manner that will not cause them to deteriorate or otherwise fail due to age, corrosion, or elevated temperatures.
 4. Secure, angle, and rod hangers, (if any) to structure, including intermediate framing members, by attaching to inserts, eyescrews, or other devices that are secure and appropriate for structure to which hangers are attached as well as for type of hanger involved, and in a manner that will not cause them to deteriorate or fail due to age, corrosion, or elevated temperatures.
 5. Space hangers not more than 4'-0" o.c. along each member supported directly from hangers, unless otherwise shown, and provide hangers not more than 8 inches from ends of each member.
 - a. Provide additional hangers as necessary, so that one hanger occurs on each side of lay-in and surface-mounted light fixtures, and at other grid supported equipment, devices, etc.
 6. Install "high humidity finish" systems at all areas indicated to receive lay-in vinyl-faced gypsum "non-acoustical" ceiling panels.
- D. Install edge moldings of type indicated at perimeter of acoustical ceiling area and where necessary to conceal edges of acoustical units.
1. Screw-attach moldings to substrate at intervals not over 16 inches o.c. and not more than 3 inches from ends, leveling with ceiling suspension system to tolerance of 1/8 inch in 12'-0". Miter corners accurately and connect securely.

3.4 CLEANING:

- A. Clean exposed surfaces of acoustical ceilings, including trim, edge moldings, and suspension members. Comply with manufacturer's instructions for cleaning and touch-up of minor finish damage. Remove and replace work that cannot be successfully cleaned and repaired to permanently eliminate evidence of damage.

3.5 EXTRA MATERIALS:

- A. Deliver extra materials stock as indicated above, to Owner.

3.6 SCHEDULE:

- A. Refer to ceiling system schedule as provided in the construction documents.

END OF ACOUSTICAL PANEL CEILINGS

SECTION 09 9000

PAINTING

PART 1- GENERAL

1.1 RELATED DOCUMENTS:

- A. Drawings and general provisions of Contract, including General and Supplementary Conditions and Division 1 Specification sections, apply to this section.

1.2 SUMMARY:

- A. This Section includes surface preparation, painting, and finishing of exposed interior and exterior items and surfaces, except where noted otherwise.
 - 1. Surface preparation, priming, and finish coats specified in this section are in addition to shop priming and surface treatment specified under other sections.
- B. Paint exposed surfaces whether or not colors are designated in "schedules," except where a surface or material is specifically indicated not to be painted or is to remain natural. Where an item or surface is not specifically mentioned, paint the same as similar adjacent materials or surfaces. If color or finish is not designated, the Architect will select from standard colors or finishes available.
 - 1. Painting includes field painting exposed bare and covered pipes and ducts (including color coding), hangers, exposed steel and iron work, and primed metal surfaces of mechanical and electrical equipment.
 - 2. Pipe identification tags end markers or bands, direction of flow arrows, voltage identification, etc., if any, are provided under Division 15 - "Mechanical", and Division 16 - "Electrical."
- C. Painting is not required on prefinished items, finished metal surfaces, concealed surfaces, operating parts, and labels.
 - 1. Examples of prefinished items not to be painted include, in part, the following factory-finished components:
 - a. Metal and plastic laminate toilet enclosures and partitions.
 - b. Acoustic materials.
 - c. Plastic laminate casework.
 - d. Finished mechanical and electrical equipment.
 - e. Light fixtures.
 - f. Switchgear.

- g. Distribution cabinets.
 - h. Signage, Plaques, Directories, and Bulletin Boards.
 - i. Storefront.
 - j. Finish Hardware.
 - 2. Examples of concealed surfaces not to be painted include, in part, wall or ceiling surfaces in the following generally inaccessible areas:
 - a. Foundation spaces.
 - b. Furred areas.
 - c. Utility tunnels.
 - d. Pipe spaces or chases.
 - e. Duct shafts.
 - 3. Examples of Finished metal surfaces not to be painted include, in part, the following:
 - a. Anodized aluminum.
 - b. Stainless steel.
 - c. Chromium plate.
 - d. Copper.
 - e. Bronze.
 - f. Brass.
 - g. Prefinished aluminum windows and trim.
 - 4. Examples of operating parts not to be painted include, in part, moving parts of operating equipment such as the following:
 - a. Valve and damper operators.
 - b. Linkages.
 - c. Sensing devices.
 - d. Motor and fan shafts.
 - 5. Labels: Do not paint over Underwriter's Laboratories, Factory Mutual or other code-required labels or equipment name, identification, performance rating, or nomenclature plates.
- D. Related Sections: The following sections contain requirements that relate to this section:
- 1. Divisions 5 Sections, for shop priming metal work.
 - 2. Division 6 Sections, for shop priming woodwork.
- E. Where walls are indicated or otherwise required to be fire-rated and/or smokestop partitions, and at all corridor partitions, exit enclosures, and fire walls, they shall be effectively and permanently identified with signs or stenciling in a manner acceptable to the authority having jurisdiction. Such identification shall be above any decorative

ceiling and in concealed spaces. Suggested wording, "Fire and Smoke Barrier - Protect All Openings":

1. Minimum size of lettering to be 1-1/2" high.
2. Minimum of one sign or stencil at each side of each such wall.
3. Maximum spacing of signs or stenciling at each side of continuous walls to be 20'-0" on center.

1.3 SUBMITTALS:

- A. General: Submit the following in accordance with Conditions of Contract and Division 1 Specification Sections.
- B. Product Data: Manufacturer's most current technical information, label analysis, and application instructions for each material proposed for use.
 1. List each material and cross-reference to scheduled paint types, and including each specific coating, finish system, and application. Identify each material by the manufacturer's catalog number and general classification.
- C. Samples for initial color selection in the form of manufacturer's color charts from paint manufacturer intended for use.
- D. Samples for verification purposes: Provide samples of each color and material to be applied, with texture to simulate actual conditions, on representative samples of the actual substrate. Define each separate coat, including fillers and primers. Use representative colors when preparing samples for review. Resubmit until required sheen, color, and texture are achieved.
 1. Submit samples on the following substrates for the Architect's review of color and texture only: Stained or Natural Wood: Provide two 4- by 8-inch samples of natural and stained wood finish on actual wood surfaces.

1.4 QUALITY ASSURANCE:

- A. Single-Source Responsibility: Provide primers and undercoat paint produced by the same manufacturer as the finish coats. Use only thinners approved by paint manufacturer, and use only within the recommended limits.
- B. Coordination of Work: Review other sections in which primers are provided to ensure compatibility of the total systems for various substrates. On request, furnish information on characteristics of finish materials to ensure use of compatible primers.
 1. Notify the Architect of any problems anticipated using the materials specified, prior to proceeding with work.

- C. Material Quality: Provide the manufacturer's best quality grade paint material of the various coating types specified. Paint material containers not displaying manufacturer's product identification will not be acceptable.
 - 1. Proprietary names used to designate colors or materials are not intended to imply that products named are required or to exclude approved equivalent products of other manufacturers.
- D. Color Pigments: Pure, non-fading, applicable types to suite substrates and service indicated.
- E. Lead content in pigments or other painting materials and components is not allowed.
- F. Solvents and V.O.C. Compliance: At the time of this writing, sufficient product data and information is not available from paint manufacturers to specify new products to replace solvent based products specified. If new regulations are in effect restricting use of solvents and/or they are not available at the time painting is required for this project, submit and provide the equivalent water-borne products to those specified, at no additional cost to the Owner.

1.5 DELIVERY, STORAGE, AND HANDLING:

- A. Comply with manufacturer's current written instructions and recommendations.
- B. Deliver materials to the job site in the manufacturer's original, unopened packages and containers bearing manufacturer's name and label, and the following information:
 - 1. Product name or title of material.
 - 2. Product description (generic classification or binder type).
 - 3. Manufacturer's name, stock number, and date of manufacture.
 - 4. Contents by volume, for pigment and vehicle constituents.
 - 5. Thinning instructions.
 - 6. Application instructions.
 - 7. Color name and number.
- C. Store materials not in use in tightly covered containers in a well-ventilated area at a minimum ambient temperature of 45 deg F. Maintain containers used in storage in a clean condition, free of foreign materials and residue.
 - 1. Protect from freezing. Keep storage area neat and orderly. Remove oily rags and waste daily. Take necessary measures to ensure that workers, others present or passing through or inspecting work areas (painting or any other work), and the work areas themselves are protected from fire and health hazards resulting from handling, mixing, and application of materials.
- D. Refer to Division 1 Sections "Summary of Work" and "Special Conditions" for additional information and requirements regarding stored materials.

1.6 JOB CONDITIONS:

- A. Apply water-based paints only when the temperature of surfaces to be painted and surrounding air temperatures are between 50 deg F and 90 deg F, unless otherwise permitted by paint manufacturer's printed instructions.
- B. Apply solvent-thinned paints only when the temperature of surfaces to be painted and surrounding air temperatures are between 45 deg F and 95 deg F, unless otherwise permitted by paint manufacturer's printed instructions.
- C. Do not apply paint in snow, rain, fog, or mist, or when the relative humidity exceeds 85 percent, or at temperatures less than 5 deg F above the dew point, or to damp or wet surfaces, unless otherwise permitted by paint manufacturer's printed instructions.
 - 1. Painting may continue during inclement weather if surfaces and areas to be painted are enclosed and heated within temperature limits specified by the manufacturer, during application, drying and curing periods.

PART 2 - PRODUCTS

2.1 MANUFACTURERS:

- A. Manufacturer: Subject to compliance with requirements, provide products of one of the following:
 - 1. Benjamin Moore and Co. (Moore).
 - 2. PPG Industries, Pittsburgh Paints (Pittsburgh).
 - 3. The Sherwin-Williams Company (SW).
 - 4. TNEMEC Company, Inc.

PART 3 - EXECUTION

3.1 EXAMINATION:

- A. Examine substrates and conditions under which painting will be performed for compliance with requirements for application of paint. Do not begin paint application until unsatisfactory conditions have been corrected.
 - 1. Start of painting will be construed as the Applicator's acceptance of surfaces and conditions within a particular area.

3.2 PREPARATION:

- A. General Procedures: Remove hardware and hardware accessories, plates, machined surfaces, lighting fixtures, and similar items in place that are not to be painted, or provide surface-applied protection prior to surface preparation and painting. Remove these items if necessary for complete painting of the items and adjacent surfaces. Following completion of painting operations in each space or area, have items reinstalled by workers skilled in the trades involved.
 - 1. Clean surfaces before applying paint or surface treatments. Remove oil and grease prior to cleaning. Schedule cleaning and painting so that dust and other contaminants from the cleaning process will not fall on wet, newly painted surfaces.

- B. Surface Preparation: Clean and prepare surfaces to be painted in accordance with the manufacturer's instructions for each particular substrate condition and as specified.
 - 1. Provide barrier coats over incompatible primers or remove and reprime. Notify Architect in writing of problems anticipated with using the specified finish-coat material with substrates primed by others.

 - 2. Cementitious Materials: Prepare concrete, concrete masonry block, cement plaster, and mineral-fiber-reinforced cement panel surfaces to be painted. Remove efflorescence, chalk, dust, dirt, grease, oils, and release agents. Roughen as required to remove glaze. If hardeners or sealers have been used to improve curing, use mechanical methods of surface preparation.
 - a. Use abrasive blast-cleaning methods if recommended by the paint manufacturer.
 - b. Determine alkalinity and moisture content of surfaces by performing appropriate tests. If surfaces are sufficiently alkaline to cause blistering and burning of finish paint, correct this condition before application. Do not paint surfaces where moisture content exceeds that permitted in manufacturer's printed directions.

 - 3. Wood: Clean surfaces of dirt, oil, and other foreign substances with scrapers, mineral spirits, and sandpaper, as required. Sand surfaces exposed to view smooth and dust off.
 - a. Scrape and clean small, dry, seasoned knots and apply a thin coat of white shellac or other recommended knot sealer before application of primer. After priming, fill holes and imperfections in finish surfaces with putty or plastic wood filler. Fill cracks in wood or plywood floors with a latex filler and prime filled areas after sanding, except where otherwise recommended by paint manufacturer. Sand

- smooth when dried.
 - b. Prime, stain, or seal unfinished wood to be painted immediately upon delivery. Prime edges, ends, faces, undersides, and backsides of wood, including cabinets, counters, cases, and paneling.
 - c. When transparent finish is required, backprime with spar varnish.
 - d. Backprime paneling on interior partitions where masonry, plaster, or other wet wall construction occurs on backside.
 - e. Seal tops, bottoms, and cutouts of unprimed wood doors with a heavy coat of varnish or sealer immediately upon delivery.
- 4. Ferrous Metals: Clean nongalvanized ferrous-metal surfaces that have not been shop coated; remove oil, grease, dirt, loose mill scale, and other foreign substances. Use solvent or mechanical cleaning methods that comply with recommendations of the Steel Structures Painting Council.
 - a. Treat bare, sandblasted, or pickled clean metal with a metal treatment wash coat before priming.
 - b. Touch up bare areas and shop-applied prime coats that have been damaged. Wire-brush, clean with solvents recommended by the paint manufacturer, and touch up with the same primer as the shop coat.
- 5. Galvanized Surfaces: Clean galvanized surfaces with non- petroleum-based solvents so that the surface is free of oil and surface contaminants. Remove pretreatment from galvanized sheet metal fabricated from coil stock by mechanical methods.
- C. Materials Preparation: Carefully mix and prepare paint materials in accordance with manufacturer's directions.
 - 1. Maintain containers used in mixing and application of paint in a clean condition, free of foreign materials and residue.
 - 2. Stir material before application to produce a mixture of uniform density; stir as required during application. Do not stir surface film into material. Remove film and, if necessary, strain material before using.
 - 3. Use only thinners approved by the paint manufacturer, and only within recommended limits.
- D. Tinting: Tint each primer and undercoat a lighter shade to facilitate identification of each coat where multiple coats of the same material are applied. Tint undercoats to match the color of the finish coat(s), but provide sufficient differences in shade of undercoats to distinguish each separate coat.
 - 1. Finish coats as scheduled, shall be same color for each coat required.

3.3 APPLICATION:

- A. Apply paint in accordance with manufacturer's directions. Use applicators and techniques best suited for substrate and type of material being applied. Use of spray equipment at the site is not allowed, except where specifically indicated.
1. Do not paint over dirt, rust, scale, grease, moisture, scuffed surfaces, or conditions detrimental to formation of a durable paint film.
 2. Paint surface treatments and finishes are indicated on the Drawings and in Specifications.
 3. Finish colors will be selected after Bidding, unless indicated otherwise.
 4. Provide finish coats that are compatible with primers used.
 5. The number of coats and film thickness required is the same regardless of the application method. Do not apply succeeding coats until the previous coat has cured as recommended by the manufacturer. Sand between applications where sanding is required to produce an even smooth surface in accordance with the manufacturer's directions.
 6. Apply additional coats when undercoats, stains, or other conditions show through final coat of paint until paint film is of uniform finish, color, and appearance. Give special attention to ensure that surfaces, including edges, corners, crevices, welds, and exposed fasteners, receive a dry film thickness equivalent to that of flat surfaces.
 7. The term "exposed surfaces" includes areas visible when permanent or built-in fixtures, connector covers, covers for finned tube radiation, grilles, and similar components are in place. Extend coatings in these areas as required to maintain the system integrity and provide desired protection.
 8. Paint surfaces behind movable equipment and furniture same as similar exposed surfaces. Paint surfaces behind permanently fixed equipment or furniture with prime coat only before final installation of equipment.
 9. Paint interior surfaces of ducts, where visible through registers or grilles, with a flat, non-specular black paint.
 10. Paint back sides of access panels and removable or hinged covers to match exposed surfaces.
- B. Finish interior of wall and base cabinets and similar field-finished casework to match exterior.
- C. Finish doors on tops, bottoms, and side edges same as faces.
1. Sand lightly between each succeeding enamel or varnish coat.
- D. Primers:
1. Omit primer on metal surfaces that have been shop-primed and touch-up painted, only after verifying full compatibility of shop primers with materials

- specified for the next coat and finish coats.
2. Primer may be omitted at previously painted existing surfaces in good condition, except at interior concrete, plaster and drywall surfaces, after repairs to any existing damaged substrates and after spot priming of existing damaged paint finish, followed by cleaning and preparation recommended in writing by paint manufacturer.
- E. Scheduling Painting: Apply first coat to surfaces that have been cleaned, pretreated, or otherwise prepared for painting as soon as practicable after preparation and before subsequent surface deterioration.
1. Allow sufficient time between successive coats to permit proper drying. Do not recoat until paint has dried to where it feels firm, and does not deform or feel sticky under moderate thumb pressure and where application of another coat of paint does not cause lifting or loss of adhesion of the undercoat.
- F. Minimum Coating Thickness: Apply materials at not less than the manufacturer's recommended spreading rate. Provide a total dry film thickness of the entire system as recommended by the manufacturer.
- G. Mechanical and Electrical Work: Painting mechanical and electrical work is limited to items exposed in mechanical equipment rooms and in occupied spaces.
1. Mechanical items to be painted include but are not limited to:
 - a. Piping, pipe hangers, and supports.
 - b. Tanks.
 - c. Ductwork.
 - d. Insulation.
 - e. Supports.
 - f. Accessory items.
 2. Electrical items to be painted include but are not limited to:
 - a. Conduit and fittings.
 - b. Switchgear.
- H. Block Fillers: Apply block fillers to new or previously unpainted concrete masonry block at a rate to ensure complete coverage with pores filled.
- I. Prime Coats: Before application of finish coats, apply a prime coat of material, as recommended by the manufacturer, to material that is required to be painted or finished and has not been prime coated by others. Recoat primed and sealed surfaces where evidence of suction spots or unsealed areas in first coat appears, to assure a finish coat with no burn through or other defects due to insufficient sealing.

- J. Pigmented (Opaque) Finishes: Completely cover to provide an opaque, smooth surface of uniform finish, color, appearance, and coverage. Cloudiness, spotting, holidays, laps, brush marks, runs, sags, ropiness, or other surface imperfections will not be acceptable.
- K. Transparent (Clear) Finishes: Use multiple coats to produce a glass-smooth surface film of even luster. Provide a finish free of laps, cloudiness, color irregularity, runs, brush marks, orange peel, nail holes, or other surface imperfections.
 - 1. Provide satin finish for final coats.
- L. Completed Work: Match approved samples for color, texture, and coverage. Remove, refinish, or repaint work not in compliance with specified requirements.

3.4 CLEANING:

- A. Cleanup: At the end of each work day, remove empty cans, rags, rubbish, and other discarded paint materials from the site.
- B. Upon completion of painting, clean glass and paint-spattered surfaces. Remove spattered paint by washing and scraping, using care not to scratch or damage adjacent finished surfaces.

3.5 PROTECTION:

- A. Protect work of other trades, whether to be painted or not, against damage by painting. Correct damage by cleaning, repairing or replacing, and repainting, as acceptable to Architect.
- B. Provide "wet paint" signs to protect newly painted finishes. Remove temporary protective wrappings provided by others for protection of their work after completion of painting operations.
- C. At completion of construction activities of other trades, touch up and restore damaged or defaced painted surfaces.

3.6 EXTERIOR PAINT SCHEDULE:

- A. General: Provide the following paint systems for the various substrates indicated.
(Abbreviations Note: ct = coat; cts = coats)

A: IRON AND STEEL SURFACES:

- 1. Sherwin-Williams:
 - a. Primer (1ct): Pro Industrial Pro-Cryl Universal Primer, B66-310
 - b. Finish (2cts): Sher-Cryl HPA High Performance

Acrylic (Gloss, B66-300 or Semi-Gloss, B66-350)

B: GALVANIZED STEEL AND ALUMINUM SURFACES:

1. Sherwin-Williams:
 - a. Primer (1ct): Pro Industrial Pro-Cryl Universal Primer, B66-310
 - b. Finish (2cts): Sher-Cryl HPA High Performance Acrylic, (Gloss, B66-300 or Semi-Gloss, B66-350)

C: PAINTED STUCCO, AND CONCRETE SURFACES:

1. Sherwin-Williams:
 - a. Primer (1ct): Loxon XP Concrete & Masonry Primer, LX11W0051;
Brush and Roller application only.
 - b. Finish (2cts): A-100 Exterior Latex Flat House Paint, A6 Series;
Brush and Roller application only.

D: CMU, BRICK, AND MASONRY SURFACES:

1. Sherwin-Williams:
 - a. Primer (1ct): Loxon Concrete & Masonry Primer, LX02 Series; Brush and Roller application only.
 - b. Finish (2cts): Loxon XP, LX11 Series Brush and Roller application only.
 - c. All block pores shall be completely filled.

E: PAINTED WOOD SURFACES - (Opaque Finish):

1. Sherwin-Williams:
 - a. Primer (1ct): Exterior Latex Wood Primer, A24W8041;
Option: Exterior Alkyd Wood Primer, Y24W8020
 - b. Finish (2cts): A-100 Exterior Latex Gloss House Paint, A8 Series

F: PAINTED PLYWOOD SURFACES:

1. Sherwin-Williams:
 - a. Primer (1ct): Exterior Latex Wood Primer, A24W8041
 - b. Finish (2cts): A-100 Exterior Latex Gloss House Paint, A8 Series

3.7 INTERIOR PAINT SCHEDULE:

- A. General: Provide the following paint systems for the various substrates, as indicated.

A: IRON AND STEEL SURFACES:

1. Sherwin-Williams:
 - a. Primer (1ct): Pro Industrial Pro-Cryl Universal Primer, B66-310
 - b. Finish (2cts): Pro Industrial 0 VOC Acrylic, B66-600 Series (Gloss, B66-600 Series / Semi-Gloss, B66-650 Series)
2. **NOTE:** Provide equivalent “dry-fall” product **spray-applied finish coats** over primer for any steel structure and exposed steel decking which will remain exposed after other work and improvements; 2 Coats.

Sherwin-Williams:

- a. Primer (1ct): Pro Industrial Pro-Cryl Universal Primer, B66-310
- b. Finish (2cts): Low VOC Waterbased Dry Fall, (Flat, B42W81 – EggShell, B42W82 – S/G, B42W83)

COMPLETELY COVER AND PROTECT ENTIRE FLOOR IN ROOMS WHERE OCCURS, PRIOR TO APPLICATIONS.

B: GALVANIZED STEEL AND ALUMINUM SURFACES:

1. Sherwin-Williams:
 - a. Primer (1ct): Pro Industrial Pro-Cryl Universal Primer, B66-310
 - b. Finish (2cts): Pro Industrial 0 VOC Acrylic, B66-600 Series (Gloss, B66-600 Series / Semi-Gloss, B66-650 Series)

C: PLASTER AND CONCRETE SURFACES:

1. Sherwin-Williams:
 - c. Primer (1ct): Loxon Concrete & Masonry Primer, A24W8300
 - d. Finish (2cts): ProMar 200 Zero VOC Interior Latex Egg-Shell, B20-2600

D: WOOD SURFACES TO BE PAINTED (OPAQUE FINISH):

1. Sherwin-Williams:
 - a. Primer (1ct): Premium Wall & Wood Primer, B28W8111
 - b. Finish (2cts): ProMar 200 Zero VOC Interior Latex S/G, B31-2600; Option: ProMar 200 WB Acrylic-Alkyd S/G, B34-8251

E: WOOD SURFACES TO RECEIVE NATURAL FINISH (STAINED):

1. Sherwin-Williams:
 - a. First Coat: Alkyd Interior Paste Wood Filler, fully compatible with other finish system products below.
 - b. Second Coat: Wood Classics "250" Interior Oil Stain, A49-800
 - c. Third Coat: Wood Classics WB Polyurethane, A68 Series
 - d. Fourth Coat: Wood Classics WB Polyurethane, A68 Series (Satin, A68F90 – Gloss, A68V91)
 - d. Fifth Coat: Wood Classics WB Polyurethane, A68 Series (Satin, A68F90 – Gloss, A68V91)
2. Natural finish (stained) shall be typical finish, unless indicated otherwise, for:
 - a. New wood doors, unless specifically indicated otherwise.
 - b. Elsewhere as indicated on the Drawings.

F: DRYWALL SURFACES - (Dry Areas):

1. Sherwin-Williams:
 - a. Primer (1ct): HB Interior Latex Primer/Surfacer, B28W08601; Approximately **20-mil dry thickness; <This primer only, spray- applied>**.

Number of coats as required to conceal minor wall irregularities, imperfections, differing textures, joint taping and mudding, etc., prior to finish coats.
 - b. Finish (2cts): ProMar 200 Zero VOC Interior Latex Egg-Shell, B20-2600

G: DRYWALL SURFACES - (Wet Areas: Toilet, Locker, Shower & Janitors Rooms, Kitchen Areas, any room with a plumbing fixture, and areas where food is stored, prepared, cooked and/or served):

1. Sherwin-Williams:
 - a. Primer (1ct): HB Interior Latex Primer/Surfacer, B28W08601; Approximately **20-mil dry thickness; <This primer only, spray- applied>**.
Number of coats as required to conceal minor wall irregularities, imperfections, differing textures, joint taping and mudding, etc., prior to Second Primer and finish coats.
 - b. Finish (3cts): Waterbased Catalyzed Epoxy, B70W211 (Semi-Gloss, B60V25 – Gloss, B60V15)

H: CMU AND BRICK SURFACES - (Dry Areas):

1. Sherwin-Williams:
 - a. Primer (1ct): PrepRite Interior / Exterior Block Filler, B25W25;
Brush and Roller application only.
 - b. Finish (2cts): ProMar 200 Zero VOC Interior Latex S/G, B31-2600;
Brush and Roller application only.
 - c. All block pores shall be completely filled.

I: CMU AND BRICK SURFACES - (Wet Areas: Toilet, Locker, Shower & Janitors Rooms, Kitchen Areas, any room with a plumbing fixture, and areas where food is stored, prepared, cooked and/or served):

1. Sherwin-Williams
 - a. Primer (1ct): Heavy Duty Block Filler, B42W46; **Brush and Roller application only.**
Option: Cement-Plex 875 Epoxy Block Filler, B42W200;
Brush and Roller application only.
 - b. Finish (2cts): Pro Industrial Zero VOC WB Catalyzed Epoxy, B73-300 Series; **Brush and Roller application only.**
 - c. All block pores shall be completely filled.

END OF PAINTING

APPENDIX A

GEOTECHNICAL REPORT



June 30, 2025

Ms. Brooke Rodriguez-Feo, AIA, LEED AP BD+C

GMC

2039 Main Street

Daphne, Alabama 36526

**RE: REPORT OF LIMITED GEOTECHNICAL EXPLORATION
 FAIRHOPE WELCOME CENTER IMPROVEMENTS
 FAIRHOPE, ALABAMA
 GMC PROJECT GMOB250020**

Dear Ms. Rodriguez-Feo,

Goodwyn Mills Cawood, LLC (Geotechnical & Construction Services Division) is pleased to provide this report of our limited geotechnical exploration performed for the above referenced project. This report includes the results of our field testing and recommendations for foundation design.

Project Information

We understand that the planned improvements to the Fairhope Welcome Center will involve the addition of a brick veneer to the existing exterior façade and construction of an outdoor canopy. The proposed brick veneer will be approximately 34 feet in length and 22.5 feet in height. We have not been provided with design information for the canopy. We have assumed maximum loads of 1 kip per foot for the brick veneer addition and 3 kips for the canopy columns. We have been requested to provide soil bearing pressures and foundation recommendations for the exterior framing of the veneer and for the canopy.

Field Exploration

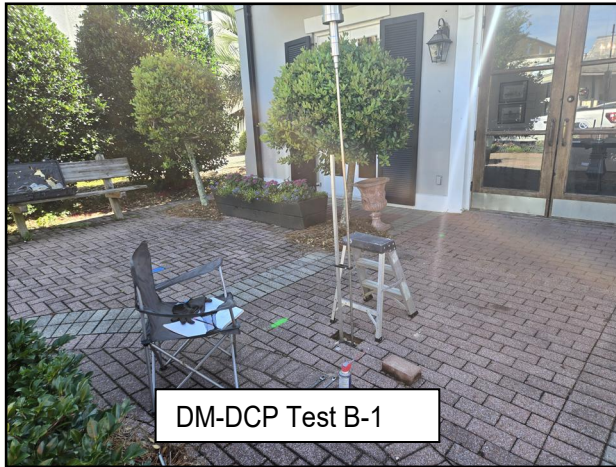
Our proposed scope of work was to perform a total of three (3) dual-mass dynamic cone penetrometer (DM-DCP) tests at the proposed location of the brick veneer addition and canopy. DM-DCP test B-1 was performed in the proposed canopy footprint. DM-DCP tests B-2 and B-3 were performed in the area of the proposed brick veneer addition. DM-DCP tests were advanced approximately 5.8 to 8.6 feet below the existing ground surface.

Dual-Mass Dynamic Cone Penetrometer tests (DM-DCP) test is intended to provide continuous data that can be correlated to an in-situ California Bearing Ratio test and provide available soil bearing pressures. A 0.79-inch O.D. cone is seated at the test location and driven with a 17.6-pound (or 10.1-pound) weight falling 22.6 inches. The length of penetration is recorded with a given number of blows. The values are then evaluated and correlated with an in situ CBR and soil bearing pressures.

Site Conditions

The site was located on the west side (front entrance) of the existing Fairhope Welcome Center. The site had been previously developed as part of the Welcome Center and consisted of brick patio landscaping.

The images below shows the locations of the Dual-Mass DCP testing locations:



Subsurface Conditions

The evaluation of the subsurface was conducted by performing three (3) DM-DCP tests. The material encountered generally consisted of poorly-graded sand (SP) from the surface to a depth of approximately 1.5 feet. The soils transitioned from poorly-graded sand to sandy lean clay (CL) to the testing termination depths of 5.8 to 8.6 feet. The DM-DCP test values generally indicated allowable bearing pressures of less than 1,500 pounds per square foot (psf) from the surface to depths ranging from 3 to 5 feet. DM-DCP tests B-1 (canopy) and B-3 (brick veneer addition) encountered soil with an allowable bearing pressure in excess of 1,500 psf at approximately 3 below existing surface elevation. DM-DCP test B-2 (brick veneer addition) encountered soil with an allowable bearing pressure in excess of 1,500 psf at approximately 5 below existing surface elevation.

Groundwater

Groundwater was not encountered during the field exploration of the investigation.

Foundation Recommendations

Option 1 – Shallow Foundations

Column and wall foundations can be supported on shallow foundations. We recommend that conventional shallow foundations should be sized for a maximum allowable bearing capacity of 1,500 pounds per square foot (psf). The foundations should bear in materials with allowable bearing capacities of 1,500 psf or greater. **We recommend foundations extend to a minimum of 5 feet below the existing surface.**



Even though computed footing dimensions may be less, column footings and continuous footings should have minimum width dimensions of 24 inches and 18 inches, respectively. This allows for hand cleaning of materials disturbed during the excavation process and reduces the potential for punching shear failure.

Foundation concrete should be placed the same day as footings are excavated so that the foundation bearing soils can remain near the existing moisture content. Foundation bearing surfaces should not be disturbed or left exposed during inclement weather. Saturation of the on-site soils can cause a loss of strength and increased compressibility. If bearing soils dry excessively, they can later swell and heave foundations. Excavations for footings should be hand cleaned to remove loose soil or mud and the bearing surface should be thoroughly compacted. If concrete placement is not possible immediately after excavation, we recommend that a thin layer (approximately 2 inches) of lean concrete or CLSM be placed on the bearing surface for protection after we have observed and evaluated the exposed bearing surfaces.

All foundation excavations should be observed by the geotechnical engineer or his representative. The engineer can provide geotechnical guidance to the owner's design team should any unforeseen foundation problems develop during construction. If areas of foundation surfaces prove to be unsuitable, the foundation may need to be over-excavated. The over-excavated area can be backfilled with "lean" concrete, controlled low strength material (CLSM), or well-compacted dense graded crushed stone (ALDOT 825B) up to the planned foundation bearing depth.

Option 2 – Helical Piers

To limit over-excavation of foundations, we recommend a helical pier system be installed. Helical piers are designed to transfer structural loads to deeper soils with suitable bearing capacities and are ideal for applications where a combination of both vertical compression (downward) and uplift loads are anticipated.

Helical piers consist of a steel shaft with welded helical plates (auger blades), which are screw-driven into the ground by applying a calibrated torque. Helical piers generate resistance to vertical movement by developing a bearing reaction between the helical plates and the surrounding soil as torque is applied during the installation process. Allowable vertical capacities of 15 to 25 kips can be expected depending on the number of piers, the diameter of the helical plates, and the suitability of underlying soils.

A helical pier foundation system should be designed and constructed by a specialty contractor with experience in local soil conditions. We recommend that the piers be extended to medium to dense sands or stiff to very stiff clays (minimum 1500 psf). The specialty contractor should work in conjunction with the geotechnical and structural engineers to provide design specifications such as pier spacing, length, and individual allowable vertical capacities. The specialty contractor should also provide an estimate on potential settlement under design loading conditions.

The geotechnical and structural engineer should review installation and test procedures prior to construction. Helical pier installation should be observed by the geotechnical engineer or his representative to ensure proper conformance with construction procedures and specifications.



Report Limitations

The recommendations submitted are based on the available soil information obtained by GMC and the general concept of what is planned for the site. Once plans for the site are developed, a geotechnical exploration should be performed that addresses specific buildings and the required site grading. If deviations from the subsurface conditions noted in this report are encountered during construction, we should be notified immediately to determine if changes in the foundation, or other, recommendations are required. If GMC is not retained to perform these functions, GMC cannot be responsible for the impact of those conditions on the performance of the project.

The findings, recommendations, specifications, or professional advice contained herein have been made in accordance with generally accepted professional geotechnical engineering practices in the local area. No other warranties are implied or expressed.

After the plans and specifications are more complete, the geotechnical engineer should be provided the opportunity to review the final design plans and specifications to check that our engineering recommendations have been properly incorporated into the design documents. At that time, it may be necessary to submit supplementary recommendations.

Contractors reviewing this report should acknowledge that the discussions and recommendations contained herein are for design and informational purposes only.

Closing

We appreciate the opportunity to perform this study on this phase of the project for you and look forward to continued participation during the construction phase of this project. If you have any questions pertaining to this report, or if we may be of further service, please do not hesitate to call.

Sincerely,

GOODWYN MILLS CAWOOD, LLC

David D. Gamlin, PE
Geotechnical Engineer
Licensed Alabama 51465



Michael J. McNeill, PE
Vice President
Licensed Alabama 26331

Attachments:

- DM-DCP Test Locations – Front Elevation
- Dual-Mass Dynamic Cone Penetrometer Results

Fairhope Welcome Center Improvements

DM-DCP Locations

Legend

 Welcome Center



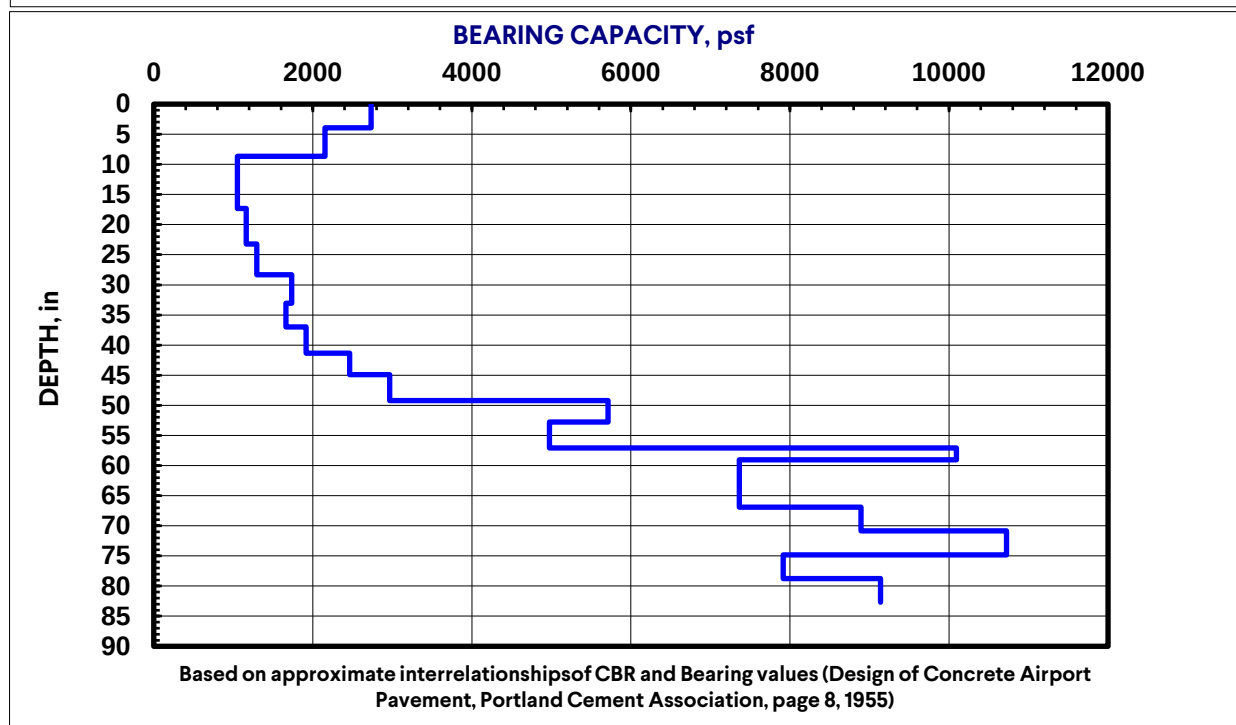
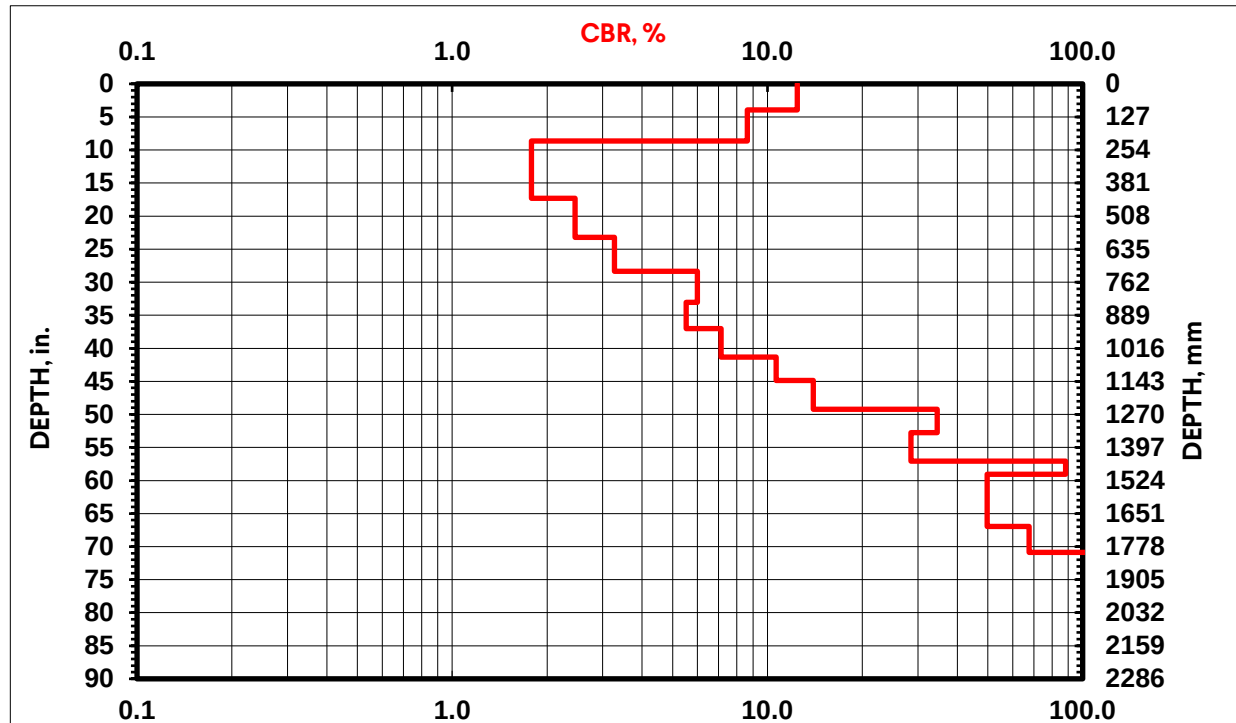


Dual-Mass Dynamic Cone Penetrometer

Project Number: GMOB250020
Location: Fairhope Welcome Center
Test Location No.: B-1: West, Center.

Date: June 11, 2025
Soil Type: Lean Clay (CL)
Hammer: 17.6 lb Hammer

Notes: 0' to 1'-6": Reddish, White Poorly Graded Sand (SP); 1'-6" to 5'-0": Yellowish, Light Brown Lean Clay (CL).



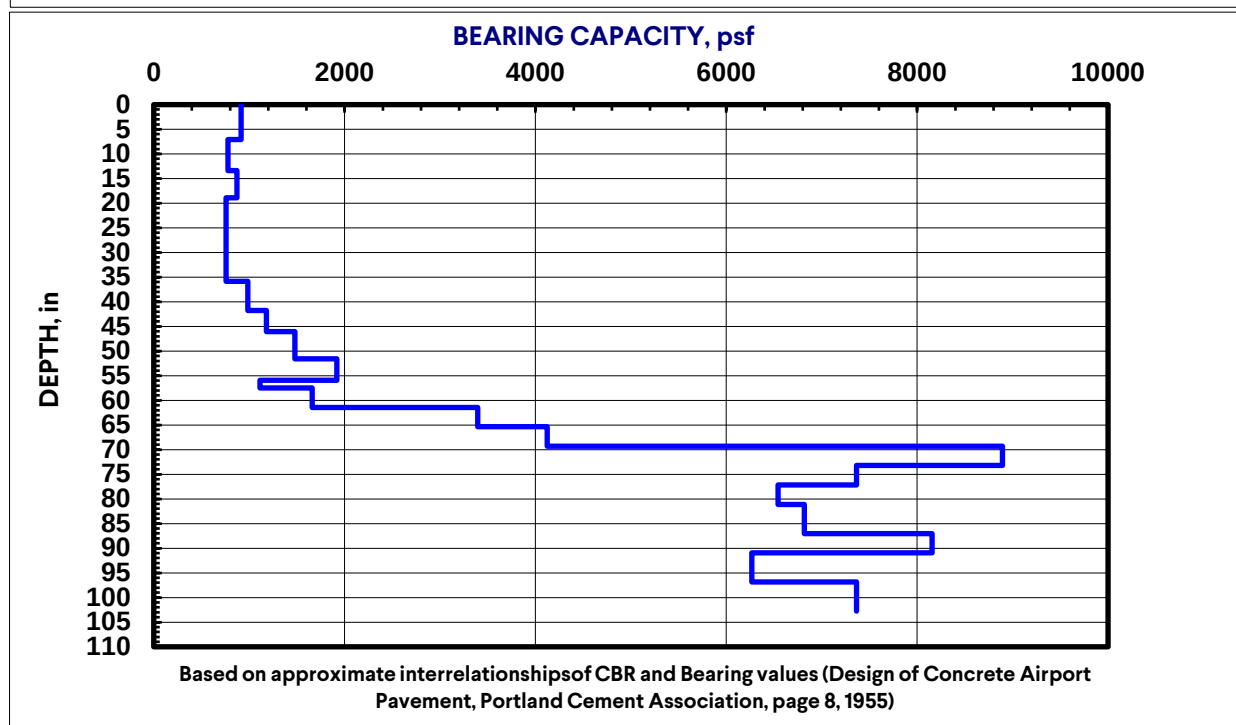
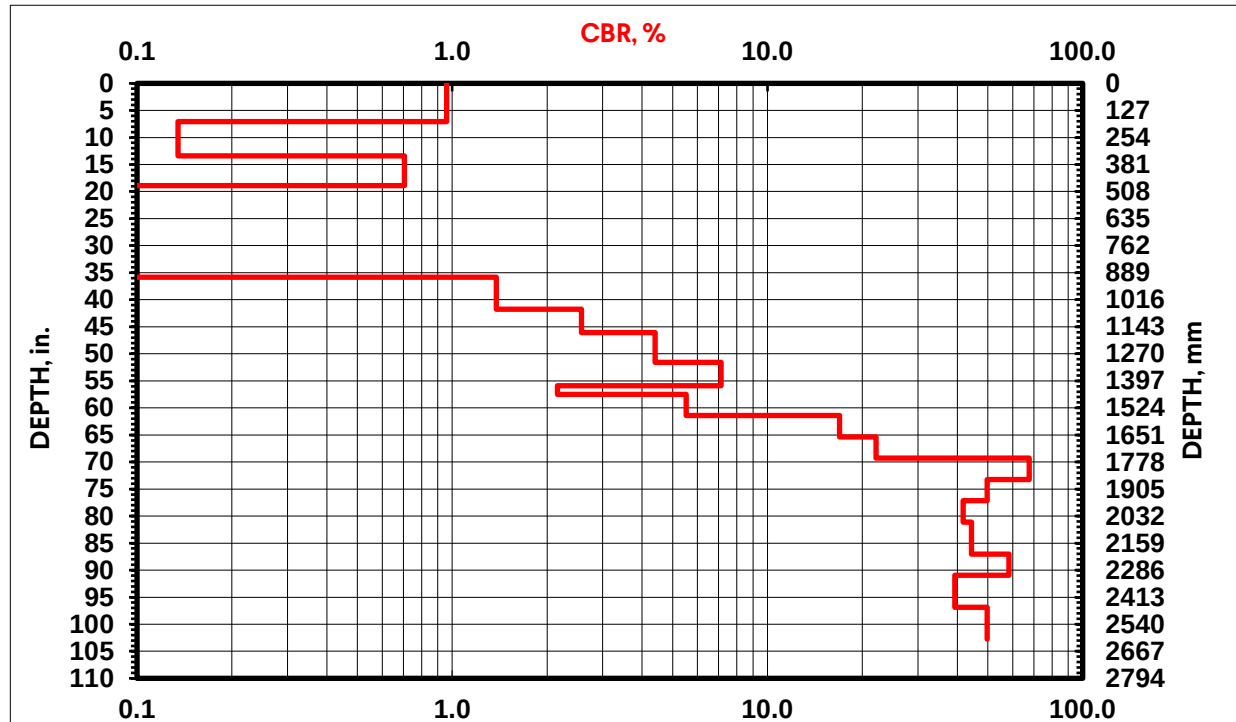


Dual-Mass Dynamic Cone Penetrometer

Project Number: GMOB250020
Location: Fairhope Welcome Center
Test Location No.: B-2: Northeast.

Date: June 11, 2025
Soil Type: Lean Clay (CL)
Hammer: 17.6 lb Hammer

Notes:



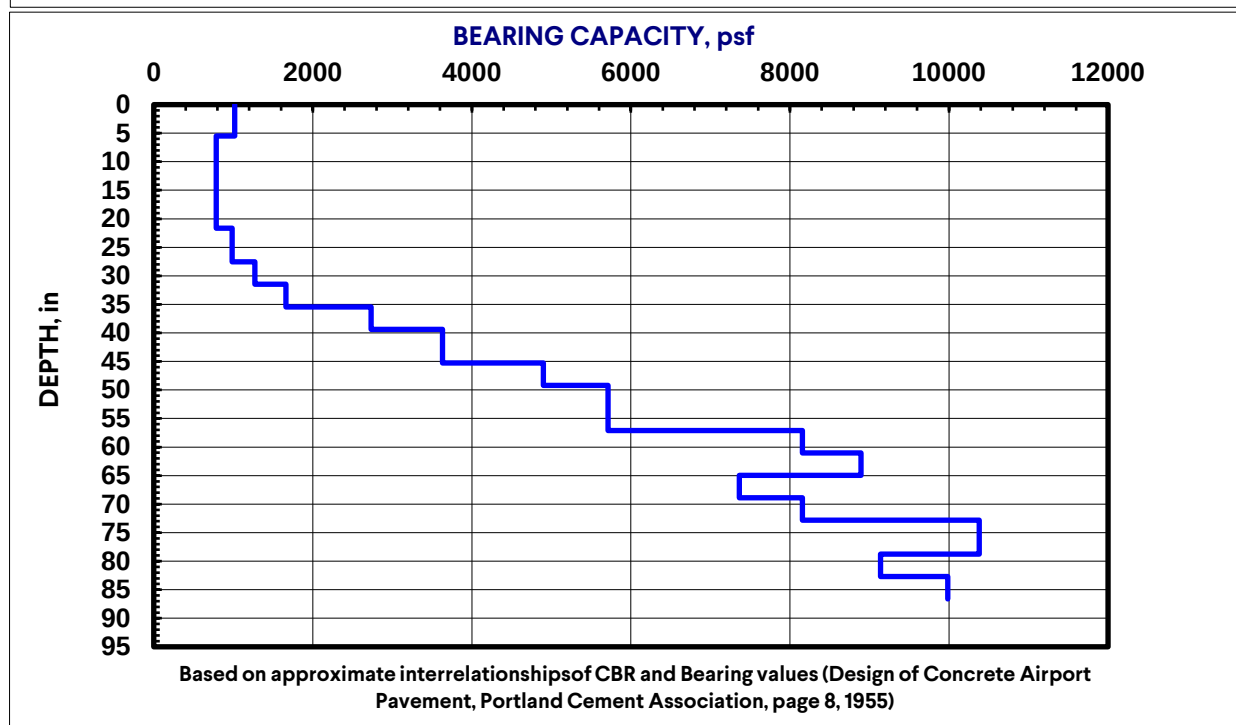
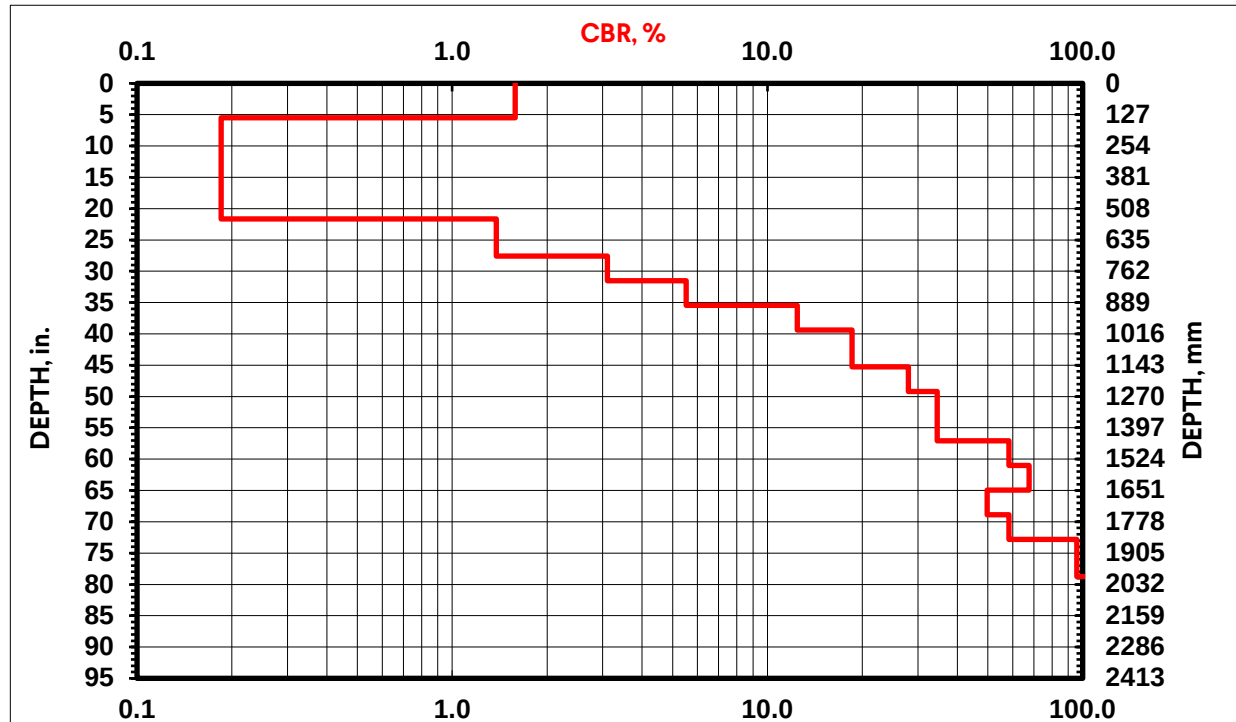


Dual-Mass Dynamic Cone Penetrometer

Project Number: GMOB250020
Location: Fairhope Welcome Center
Test Location No.: B-3: Southeast.

Date: June 11, 2025
Soil Type: Lean Clay
Hammer: 17.6 lb Hammer

Notes:

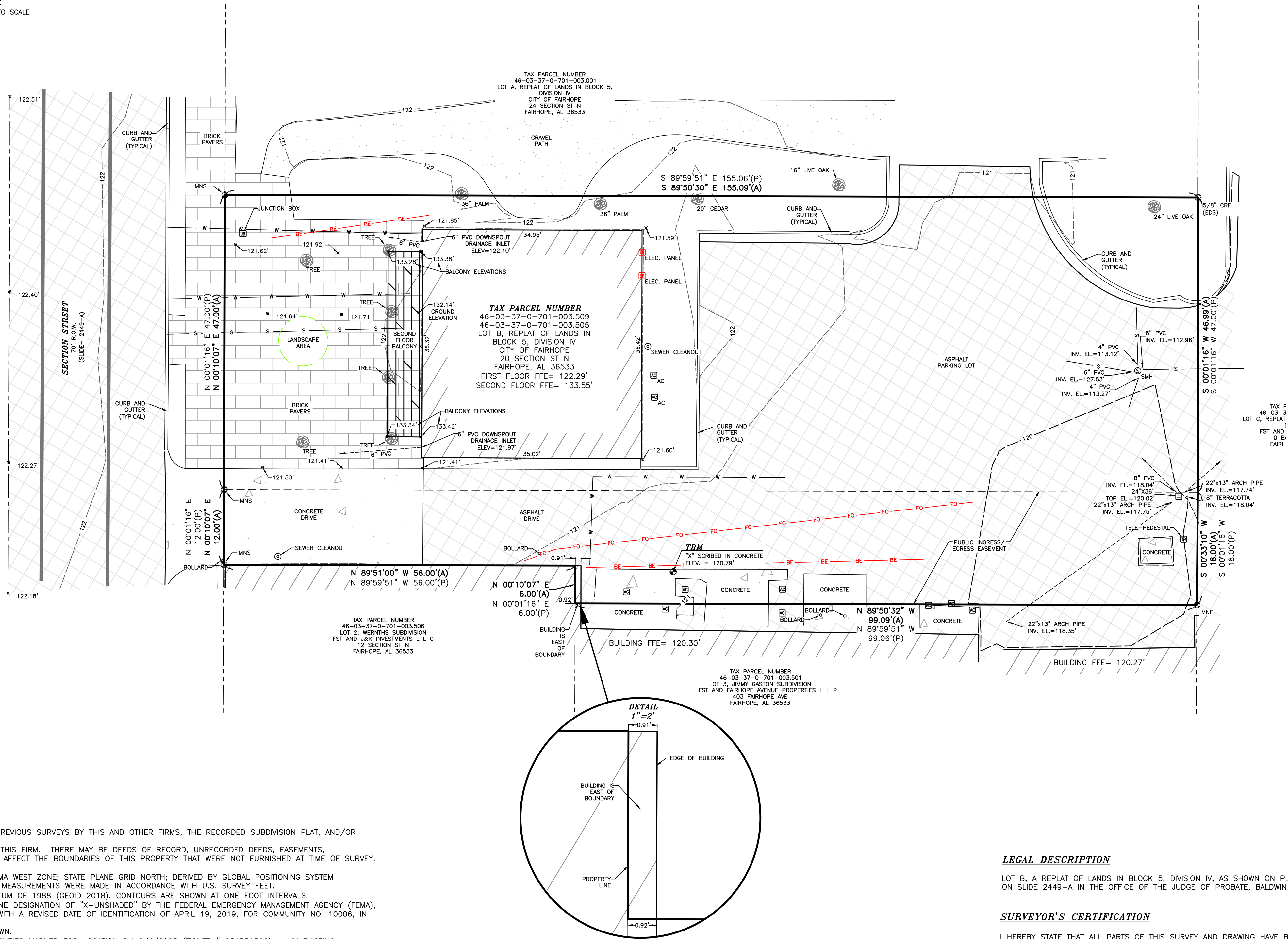


APPENDIX B

SURVEY

DRAWING FILE: T:\Projects\ALL\Fairhope, City of\CMOB250059 - Fairhope Welcome Center\1 GEOSPATIAL\SURVEY\DWG\CMOB250059.BDY AND TOPO.dwg
 COTED: Jun 22 2005 1:41pm

<u>LEGEND</u>	
P.O.C. POINT OF COMMENCEMENT	 TELEPHONE BOX (VAULT)
P.O.B. POINT OF BEGINNING	 WATER METER
(A) ACTUAL	 SANITARY SEWER VALVE
(R) RECORD DEED	 WATER VALVE
(P) PLAT OF RECORD	 GAS VALVE
(C) COMPUTED	 TRANSFORMER BOX
OTIF OPEN TOP IRON PIPE FOUND	 LIGHT POLE
IPF IRON PIN FOUND	 CABLE TV BOX
CMF CRIMP TOP IRON PIPE FOUND	 ELECTRIC BOX
CRF CAPED REBAR FOUND	 ELECTRIC PANEL
RBf REBAR FOUND	 IRRIGATION CONTROL VALVE
CRS 5/8" CAPPED REBAR SET STAMPED CA#1196	 SANITARY SEWER MANHOLE
RCRS 5/8" REFERENCE CAPPED REBAR SET STAMPED CA#1196	 STORM DRAIN MANHOLE
TBM TEMPORARY BENCHMARK	 TELEPHONE MANHOLE
CMF CONCRETE MONUMENT FOUND	 SEWER CLEANOUT
CMS CONCRETE MONUMENT SET	 SEWER GRINDER PUMP
RCRS 5/8" CAPPED REBAR WITH REFERENCE CAP SET	 GREASE TRAP
MMF MAGNAL FOUND	 FLAG POLE
MNS MAGNAL SET WITH DISK	 GAS LINE SIGN MARKER
LS# LICENSED PROFESSIONAL SURVEYOR'S NUMBER	 TELEPHONE SIGN MARKER
CA# CERTIFICATE OF AUTHORIZATION NUMBER	 WATERLINE MARKER
(DIST) DISTANCE	 FIBER OPTIC LINE MARKER
(REF) REFERENCE CORNER SET ON LINE	 EXCEPTION
(UNR) UNREADABLE/ILLEGIBLE	— F0 — UNDERGROUND FIBER OPTIC LINE
INST # INSTRUMENT NUMBER	— 0E — OVERHEAD ELECTRIC
SS# SECTION	— BE — BURIED ELECTRIC LINE
T— TOWNSHIP	— UT — UNDERGROUND TELEPHONE LINE
R— RANGE	— S — UNDERGROUND SEWER LINE
0— POWER POLE	— W — UNDERGROUND WATERLINE
6— GUY WIRE	— G — UNDERGROUND GAS LINE
R/W RIGHT-OF-WAY	— TV — UNDERGROUND TELEVISION
R.O.W. RIGHT-OF-WAY	⊗ # ## SPOT GRADE ELEVATIONS
0 FIRE HYDRANT	CMP CORRUGATED METAL PIPE
⊗ SICK	RCP REINFORCED CONCRETE PIPE
⊗ TELEPHONE PEDESTAL	OPP CORRUGATED PLASTIC PIPE
⊗ ELECTRIC METER BOX	(*) DENOTES STATEMENT BY LAND SURVEYOR
⊗ AIR CONDITIONER	Λ LAND HOOK
⊗ JUNCTION BOX (VAULT)	√ LAND LINE NOT TO SCALE
EL/ELEV ELEVATION	
INV INVERT	
 ASPHALT	 WETLANDS
 CONCRETE	 DIRT
 GRAVEL	



GENERAL SURVEYOR'S NOTES

1. SOURCES OF INFORMATION USED TO CULIATE THIS SURVEY WERE PREVIOUS SURVEYS BY THIS AND OTHER FIRMS, THE RECORDED SUBDIVISION PLAT, AND/OR OTHER RECORDED DOCUMENTS SHOWN HEREON.
2. NO TITLE SEARCH, TITLE OPINION OR ABSTRACT WAS PERFORMED BY THIS FIRM. THERE MAY BE DEEDS OF RECORD, UNRECORDED DEEDS, EASEMENTS, RIGHT-OF-WAYS, OR OTHER INSTRUMENTS OF RECORD WHICH COULD AFFECT THE BOUNDARIES OF THIS PROPERTY THAT WERE NOT FURNISHED AT TIME OF SURVEY.
3. FIELD WORK FOR THIS SURVEY WAS COMPLETED ON 6/19/2025.
4. ALL BEARING ARE BASED ON THE NORTH AMERICAN DATUM OF 1983, ALABAMA WEST ZONE; STATE PLANE GRID NORTH; DERIVED BY GLOBAL POSITIONING SYSTEM OBSERVATION; ALL DISTANCES SHOWN ARE GROUND DISTANCES. ALL MEASUREMENTS WERE MADE IN ACCORDANCE WITH U.S. SURVEY FEET.
5. ELEVATIONS ARE REFERENCED TO THE NORTH AMERICAN VERTICAL DATUM OF 1988 (GEOID 1988). CONTOURS ARE SHOWN AT ONE FOOT INTERVALS.
6. THE SURVEYED PROPERTY IS LOCATED WITHIN AN AREA HAVING A ZONE DESIGNATION OF "X-UNSHADED" BY THE FEDERAL EMERGENCY MANAGEMENT AGENCY (FEMA), AS SCALED FROM FLOOD INSURANCE RATE MAP NO. 0100300644M, WITH A REVISED DATE OF IDENTIFICATION OF APRIL 19, 2019, FOR COMMUNITY NO. 10006, IN BALDWIN COUNTY, STATE OF ALABAMA.
7. NO UNDERGROUND IMPROVEMENTS HAVE BEEN LOCATED UNLESS SHOWN.
8. ALABAMA ONE CALL WAS CONTACTED TO HAVE THE UNDERGROUND UTILITIES MARKED FOR LOCATION ON 6/4/2025 (TICKET # 251551366). ANY EXISTING UNDERGROUND UTILITIES NOT SHOWN HEREON WERE NOT MARKED AT THE TIME OF THIS SURVEY. THE SURVEYOR MAKES NO GUARANTEE THAT THE UNDERGROUND UTILITIES SHOWN COMPRISE ALL SUCH UTILITIES IN THE AREA, EITHER IN SERVICE OR ABANDONED. THE SURVEYOR FURTHER DOES NOT WARRANT THAT THE UNDERGROUND UTILITIES SHOWN ARE IN THE EXACT LOCATION INDICATED, BUT THE UTILITIES ARE SHOWN AS THEY WERE MARKED IN THE FIELD UNLESS OTHERWISE STATED.
9. THIS IS A BOUNDARY AND TOPOGRAPHIC SURVEY.
10. THE SURVEYED PROPERTY LIES WITHIN SECTION 37, TOWNSHIP 6 SOUTH, RANGE 2 EAST IN BALDWIN COUNTY, ALABAMA.

LEGAL DESCRIPTION

LOT B, A REPLAT OF LANDS IN BLOCK 5, DIVISION IV, AS SHOWN ON PLAT THEREOF RECORDED ON SLIDE 2449-A IN THE OFFICE OF THE JUDGE OF PROBATE, BALDWIN COUNTY, ALABAMA.

SURVEYOR'S CERTIFICATION

I HEREBY STATE THAT ALL PARTS OF THIS SURVEY AND DRAWING HAVE BEEN COMPLETED IN ACCORDANCE WITH THE CURRENT REQUIREMENTS OF THE STANDARDS OF PRACTICE FOR LAND SURVEYING IN THE STATE OF ALABAMA TO THE BEST OF MY KNOWLEDGE, INFORMATION AND BELIEF.

STUART L. SMITH, PLS
ALABAMA LICENSE NUMBER 27403

DATE _____

*DRAWING IS INVALID WITHOUT THE SIGNATURE & SEAL OF A LICENSED LAND SURVEYOR



BOUNDARY AND TOPOGRAPHIC SURVEY

FAIRHOPE WELCOME CENTER
CITY OF FAIRHOPE

2039 Main Street
Daphne, AL 36526
T 251.626.2626
GMCNETWORK.COM

CMOB250059

sheet 1 of 1

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DRAWN BY:	KMK
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GOODWYN MILLS CAWOOD, LLC

